

Department of the Interior
U.S. Geological Survey

**LANDSAT 1-5
MULTISPECTRAL SCANNER (MSS)
CALIBRATION PARAMETER FILE (CPF) DEFINITION**

Version 5.0

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Executive Summary

This document describes the contents of the Calibration Parameter File (CPF) generated by the Image Assessment System (IAS) for the Multispectral Scanner (MSS). The CPF supplies the radiometric and geometric correction parameters and other relevant information required during Level 0 and Level 1 processing to create products of uniform consistency. This file is provided to the IAS CPF service, which distributes it to any client that needs it. The CPF is also posted on the Landsat web pages for use by International Ground Stations (IGSs) and other interested users.

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Section 1 Introduction

1.1 Background

The Landsat Multispectral Scanner (MSS) is a multi-band remote sensing image receiver onboard the Landsat satellites one through five. The multi-band sensors acquired images of the earth through red, green, and two near infrared (R, G, NIR1 and NIR2) filters almost continuously for twenty years, from July 1972 to October 1992, and continued with sporadic acquisitions until 2012. The objective of the Landsat MSS mission was to provide global, seasonally refreshed, high-resolution (79-meter multispectral) imagery of Earth's land areas from a near-polar, sun-synchronous orbit.

During its history, the MSS image format for data in the U.S. Geological Survey (USGS) archive has undergone several changes. The first type of MSS imagery was called MSS-X. This was the product of Landsat 1 and some of Landsat 2 and Landsat 3, and was more of a media type designation than a formal product distinguisher. After transition of the raw compressed data from the Landsat satellite, the data were reformatted from Band Interleaved by Pixel Pair (BIP2) to the Band Sequential (BSQ) format called MSS-X. The MSS-X format has two variations, MSS-X CCT and MSS-X WBV, which differ in historical archival processing. MSS-X data have been radiometrically corrected. MSS-X data are archived on a scene-by-scene basis, and the calibration data are available for viewing.

The second type of MSS imagery, known as Multispectral Scanner – Archive Format (MSS-A), is a data format produced from 1981 until the end of MSS data acquisitions. This format includes all of the MSS imagery from Landsat 4 and Landsat 5. Similar to MSS-X, these data have been radiometrically corrected. MSS-A data are archived on a scene-by-scene basis and the calibration data are available in the image data.

The third type of MSS imagery, known as Multispectral Scanner – Processed Format (MSS-P), is different from MSS-A and MSS-X in that it has been corrected for system, radiometric, and geometric distortion. The MSS-P data have been processed using a National Land Archive Production System (NLAPS)-like program to geo-reference the image and adjust the scan-line offsets. The calibration correction values used to generate the MSS-P product are not stored after product generation. The MSS-P format includes some Landsat 2 and Landsat 3 data and is archived on a scene-by-scene basis.

The fourth type of MSS imagery found in the USGS archive is Multispectral Scanner – Raw Format (MSS-R). The MSS-R data are raw data, archived without any radiometric or geometric corrections. These data became available in the USGS archive through the Landsat Global Archive Consolidation (LGAC) effort that began in 2010. The MSS-R data are archived on a scene-by-scene basis and contain complete calibration wedge responses. The data in MSS-R format include MSS imagery from all Landsat 1-5 satellites.

1.2 Purpose and Scope

This document describes the contents of the MSS Calibration Parameter File (CPF) that the Image Assessment System (IAS) generates. The MSS functionality of the IAS is responsible for offline assessment of MSS image quality. In addition to its assessment functions, the IAS periodically performs radiometric and geometric calibration to provide updates to the CPF. This file is sent to the IAS CPF Service for further distribution to clients that need it. The CPF supplies the radiometric and geometric correction parameters and other relevant coefficients required during Level 0 and Level 1 processing to create products of uniform consistency across the Landsat system.

1.3 Document Organization

This document contains the following sections:

- Section 1 provides an introduction

- Section 2 explains the MSS CPF file structure

- Section 3 provides a definition of CPF

- Section 4 provides an explanation of the CPF Object Description Language (ODL) and two CPF samples

- Appendix A provides acronym terms and definitions

- The References section contains a list of reference documents

Section 2 File Structure

All parameters are stored as American Standard Code for Information Interchange (ASCII) text using the Object Description Language (ODL) syntax that the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL) developed. ODL is a tagged keyword language developed to provide a human-readable data structure to encode data for simplified interchange. The ODL interpreter that JPL developed may provide, in certain cases, the handling of lexical elements (e.g., building blocks). This is included in the Consultative Committee for Space Data Systems (CCSDS) specification of the Parameter Value Language (PVL), which is a superset of ODL. The IAS CPF is a pure ODL implementation without any PVL extensions.

The body of the file is composed of two statement types:

1. Attribute assignment statement: used to assign values to parameters
2. Group statements: used to aid in file organization and enhance parsing granularity of parameter sets

The Planetary Data System Standards Reference provides ODL details (see References).

2.1 CPF Updates

MSS data have not been collected since 2012. Therefore, quarterly CPF updates are not required and CPF updates are only released if necessary.

2.1.1 Effective Dates

Each CPF is time-stamped with an effective date range. The third and fourth parameters in the file—`Effective_Date_Begin` and `Effective_Date_End`—designate the range of valid acquisition dates and are in `yyyy-mm-dd` format. The parameter file used in processing a scene has an effective date range that includes the acquisition date of the ordered image.

2.2 File Naming Conventions

Throughout the mission, a serial collection of CPFs has been generated and made available for distribution. The CPFs need updates when improved calibration parameters for a given period become available or when a file error occurs. Unique file version numbers are needed when file contents change. With the start of Collection processing in the summer of 2016 (IAS 10.16 / LPGS 12.8 releases), the CPF naming convention changed. The CPFs used in Collection processing contain the collection number in the file name to designate the collection version.

For Pre-Collection processing, the IAS used this CPF naming convention (refer to version 4.0 of this document for more details):

LMSCPFy₁y₁y₁m₁m₁d₁d₁_y₂y₂y₂m₂m₂d₂d₂.nn .

Since the start of Collection processing, the following file-naming procedure is used to name the CPFs:

LM0SCPF_y₁y₁y₁m₁m₁d₁d₁_y₂y₂y₂m₂m₂d₂d₂_cc.nn

where

- L = Constant for Landsat
- M = Constant for sensor (M = MSS)
- OS = Satellite numerical designation (01, 02, 03, 04 or 05)
- CPF = Three-letter CPF designator
- y₁y₁y₁y₁ = Four-digit effectivity starting year
- m₁m₁ = Two-digit effectivity starting month
- d₁d₁ = Two-digit effectivity starting day
- y₂y₂y₂y₂ = Four-digit effectivity ending year
- m₂m₂ = Two-digit effectivity ending month
- d₂d₂ = Two-digit effectivity ending day
- cc = Collection number (01-99)
- nn = Version number for this file (00-99)

2.3 File Content Description

Table 3-1 lists all CPF parameters. Within this table, each parameter entry is characterized by five attributes:

1. Parameter group: Identifies a related set of parameters.
2. Parameter name: Uniquely identifies and describes the content of each parameter.
3. Value type: Describes the parameter as either static or dynamic. A static value generally remains unchanged over the life of the mission. A dynamic value changes, or has the potential to change, over the life of the mission. Significant changes to dynamic values trigger a CPF update.
4. Data type: Uses a Hierarchical Data Format (HDF) number type nomenclature, type#, where type is given by the descriptors 'char' (character), 'int' (integer), or 'float' (floating point), and # is a decimal count of the number of bits used to represent the data type. The type mnemonics int and char may be preceded by the letter u, indicating an unsigned value. For example, the data type uint32 refers to an unsigned 32-bit integer value. Table 2-1 describes the data types relevant to the CPF.

Data Type	HDF Nomenclature
8-bit character	char8
8-bit unsigned integer	uint8
16-bit signed integer	int16
32-bit signed integer	int32
32-bit floating point number	float32
64-bit floating point number	float64

Table 2-1. Data Types in CPF

5. Description: Briefly describes the parameter and its format. If not specifically stated, the parameter is available for all MSS CPFs (1-5). The valid parameter format for numeric data is described using letters S, N, and E. The letter S stands for the sign and can assume values + or -. If no sign is specified, the + sign is assumed. The letter N stands for any digit between 0 and 9. The letter E is in scientific (exponential) notation to represent the “multiplication by 10 raised to the power” specified by the value following the letter E. For example, the valid format SNNN.NNNNESNN can assume any positive or negative value ranging from 0.0000 to 999.9999 multiplied by 10 raised to the power of any whole number between -99 and 99.

Section 3 CPF Definition

Table 3-1 lists the Landsat MSS CPF parameters.

Parameter Groups	Parameter Name	Value Type	Data Type	Description
FILE_ATTRIBUTES	Spacecraft_Name	Static	char8	Descriptor used to identify the spacecraft for which the calibration parameters are applicable. Valid format: Landsat_S, where S = 1,2,3,4, or 5
FILE_ATTRIBUTES	Sensor_Name	Static	char8	Descriptor used to identify the sensor for which the calibration parameters are applicable. Valid format: Multi_Spectral_Scanner
FILE_ATTRIBUTES	Effective_Date_Begin	Dynamic	char8	Effective start date for this file. Valid format: YYYY-MM-DD, e.g., 1972-07-23
FILE_ATTRIBUTES	Effective_Date_End	Dynamic	char8	Effective end date for this file. Valid format: YYYY-MM-DD, e.g., 1983-03-31
FILE_ATTRIBUTES	CPF_File_Name	Dynamic	char8	Original file name that IAS assigned. Valid format: described in Section 2.2
FILE_ATTRIBUTES	File_Source	Dynamic	char8	Baseline CPF used as a source to create the present CPF Valid format: described in Section 2.2
FILE_ATTRIBUTES	Collection_Number	Dynamic	uint8	Collection version number Valid format: NN, where NN = 01 to 99
FILE_ATTRIBUTES	Version	Dynamic	uint8	CPF version number Valid format: NN, where NN = 00 to 99
EARTH_CONSTANTS	Ellipsoid_Name	Static	char8	Name of the World Geodetic System (WGS) ellipsoid used to represent the semi-major and semi-minor axes of the Earth. Valid format: WGS84
EARTH_CONSTANTS	Semi_Major_Axis	Static	float64	Earth semi-major axis; distance in meters from the center of the Earth to the equator. Valid format: NNNNNNN.NNNN
EARTH_CONSTANTS	Semi_Minor_Axis	Static	float64	Earth semi-minor axis; distance in meters from the center of the Earth to the poles. Valid format: NNNNNNN.NNNN
EARTH_CONSTANTS	Ellipticity	Static	float64	Ratio describing polar flattening or the Earth's deviation from an exact sphere (WGS84 standard). Valid format: N.NNNNNNNNNNNNNNN
EARTH_CONSTANTS	Eccentricity	Static	float64	Number describing the Earth ellipsoid eccentricity squared (WGS84 standard). Valid format: N.NNNNNNNNNNNNNNN
EARTH_CONSTANTS	Earth_Spin_Rate	Static	float64	Earth's diurnal spin rate in radians per second. Valid format: NN.NNNNNNNNNNESNN
EARTH_CONSTANTS	Gravity_Constant	Static	float64	Universal gravitational constant x mass of Earth. This parameter is given in units of meters cubed per second squared (m^3/s^2). Valid format: N.NNNNNNENN
EARTH_CONSTANTS	J2_Earth_Model_Term	Static	float64	Term that describes Earth's spherical harmonic. Valid format: NNNN.NNESNN
ORBIT_PARAMETERS	WRS_Cycle_Days	Static	uint8	Time period, in days, required for the satellite to view the Earth once. Valid format: NN
ORBIT_PARAMETERS	WRS_Cycle_Orbits	Static	uint8	Number of orbits or paths in a complete World Reference System (WRS) cycle. Valid format: NNN
ORBIT_PARAMETERS	Scenes_Per_Orbit	Static	uint8	Number of scenes or row locations per orbit. Valid format: NNN
ORBIT_PARAMETERS	Orbital_Period	Static	float64	Time required, in seconds, to complete one orbit. Valid format: NNNN.NNNN
ORBIT_PARAMETERS	Angular_Momentum	Static	float64	Angular momentum in orbit, specified in meters squared per second (m^2/s). Valid format: NN.NNNNNNEN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
ORBIT_PARAMETERS	Orbit_Radius	Static	float64	Nominal distance in kilometers (km) from the Earth's center to the spacecraft track. Valid format: NNNN.NNNN
ORBIT_PARAMETERS	Orbit_Semimajor_Axis	Static	float64	Nominal semi-major axis in km of the satellite's orbit. Valid format: NNNN.NNNN
ORBIT_PARAMETERS	Orbit_Semiminor_Axis	Static	float64	Nominal semi-minor axis in km of the satellite's orbit. Valid format: NNNN.NNNN
ORBIT_PARAMETERS	Orbit_Eccentricity	Static	float64	Nominal eccentricity of the satellite's orbit. Valid format: N.NNNNNNNN
ORBIT_PARAMETERS	Inclination_Angle	Static	float64	Angle in degrees formed by the Earth's equatorial and satellite plane. Valid format: SN.NNNN
ORBIT_PARAMETERS	Argument_Of_Perigee	Static	float32	Nominal angle in degrees of point nearest the Earth in orbit as measured from ascending node in the direction of satellite motion. Valid format: SNN.N
ORBIT_PARAMETERS	Descending_Node_Row	Static	uint8	Row corresponding to the Earth's equator. Valid format: NNN
ORBIT_PARAMETERS	Long_Path1_Row60	Static	float32	Longitude in degrees west of the point at which path 1 crossed the equator (row 60). Valid format: SN.NN
ORBIT_PARAMETERS	Descending_Node_Time_Min	Static	char8	Minimum local solar time of descending node in AM hours and minutes. Valid format: HH:MM
ORBIT_PARAMETERS	Descending_Node_Time_Max	Static	char8	Maximum local solar time of descending node in AM hours and minutes. Valid format: HH:MM
ORBIT_PARAMETERS	Nodal_Regression_Rate	Static	float64	Rate in degrees per day that the orbital plane rotates with respect to the Earth. Valid format: SN.NNNNNNNN
SCANNER_PARAMETERS	Lines_Per_Scan_60	Static	uint8	Number of lines per scan (number of detectors per band). Valid format: N
SCANNER_PARAMETERS	Scans_Per_Scene	Static	int16	Number of scans per nominal WRS scene. Valid format: NNN
SCANNER_PARAMETERS	Swath_Angle	Dynamic	float32	Object space angle in radians of scan mirror travel during active scan time. Valid format: SN.NNNN
SCANNER_PARAMETERS	Scan_Rate	Static	float32	Angular scan velocity in radians per second of the scan mirror. Valid format: N.NNNESN
SCANNER_PARAMETERS	Dwell_Time_60	Static	float64	Detector sample time in microseconds. Valid format: N.NNNESN
SCANNER_PARAMETERS	IC_Line_Length_60	Static	int16	Nominal number of detector samples for the internal calibrator. Valid format: NNN
SCANNER_PARAMETERS	Scan_Line_Length_60	Static	int16	Nominal number of detector samples during active scan time. Valid format: NNNN
SCANNER_PARAMETERS	Filter_Frequency_60	Static	float32	Bandwidth in kilohertz (kHz) of detector presample filter (defined by 3-dB roll-off point). Valid format: NNNN.NNN
SCANNER_PARAMETERS	IFOV_B1234	Static	float32	Angle in μ rad subtended by a detector when the scanning motion is stopped. Valid format: NN.NESN
SCANNER_PARAMETERS	IFOV_B1234_ALONG	Static	float 32	Along-scan angle in μ rad subtended by a detector when the scanning motion is stopped. Valid format: NN.NESN
SCANNER_PARAMETERS	IFOV_B1234_ACROSS	Static	float 32	Across-scan angle in μ rad subtended by a detector when the scanning motion is stopped. Valid format: NN.NESN
SCANNER_PARAMETERS	Scan_Period	Static	float64	Time in units of seconds of a complete scan cycle, including forward and reverse scans. Valid format: N.NNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
SCANNER_PARAMETERS	Scan_Frequency	Static	float32	Number of scans in one second (hertz [Hz]). Valid format: NN.NN
SCANNER_PARAMETERS	Active_Scan_Time	Static	float32	Time in units of seconds required for scan mirror to travel from its scan-line-start to End-of-Line (EOL). Valid format: N.NNNNNN
SCANNER_PARAMETERS	Turn_Around_Time	Static	float32	Time in milliseconds from EOL to the next scan-line-start, during which the scan mirror motion reverses direction. Valid format: NN.NNN
MSS_PROCESSING_CONSTANTS	Image_Center_Line	Static	float32	Line number of MSS-X data associated with the image center line. Valid format: NNNN.N
MSS_PROCESSING_CONSTANTS	Image_Center_Sample	Static	float32	Sample number of MSS-X data associated with the image center time. Valid format: NNNN.N
MSS_PROCESSING_CONSTANTS	Image_Center_Scan	Static	float32	Scan number of MSS-X data associated with the image center time. Valid format: NNN.N
MSS_PROCESSING_CONSTANTS	Number_Channels	Static	uint8	Number of data channels in the MSS focal plane. Valid format: NN
MSS_PROCESSING_CONSTANTS	Image_Line_Rate	Static	float64	Along track scan rate of MSS-X. In units of lines per second. Valid format: NN.NNNNNNNN
MSS_PROCESSING_CONSTANTS	Image_Yaw	Static	float64	Yaw angle of MSS-X focal plane. Valid format: SN.NNNNNNNNN
MSS_PROCESSING_CONSTANTS	Image_Sample_Slope	Static	float64	Across track scan rate of MSS-X. In units of samples per radian. Valid format: NNNNN.NNNNNNN
MSS_PROCESSING_CONSTANTS	Image_Frame_Size	Static	float32	Size of projection frame used for MSS-X product framing. Units of meters. Valid format: NNNNNN.N
MSS_PROCESSING_CONSTANTS	Xcorrect_Delays	Static	float32 (6 values)	MSS detector adjustments used to align MSS-X pixels in the along-scan direction. Units of Instantaneous Field of View (IFOVs). Valid format: SN.NN
MIRROR_PARAMETERS	Number_Mirr_Coef	Static	uint8	Number of MSS-X along-scan mirror profile coefficients. Valid format: N
MIRROR_PARAMETERS	Time_Mid_Scan	Static	float32	Time associated with the middle of the mirror scan units of seconds. Valid format: N.NNNNNN
MIRROR_PARAMETERS	Mirr_First_Half_Coef	Static	float32 (3 values)	MSS-X first half along-scan mirror polynomials. Valid format: SNN.NNN
MIRROR_PARAMETERS	Mirr_Second_Half_Coef	Static	float32 (3 values)	MSS-X second half along-scan mirror polynomials. Valid format: SNN.NNN
ATTITUDE_PARAMETERS	Gyro_To_Attitude_Matrix	Static	float32 (9 values)	Matrix describing the relationship of the gyro axis to the attitude control reference axis. Valid format: SN.NNNNEN
ATTITUDE_PARAMETERS	Attitude_To_Sensor_Matrix	Static	float32 (9 values)	Matrix describing the relationship of the attitude control reference axis to the MSS optical axis. Valid format: SN.NNNNEN
ATTITUDE_PARAMETERS	Spacecraft_Roll_Bias	Static	float32	Spacecraft roll bias in radians. Valid format: N.NNNNNNNN
ATTITUDE_PARAMETERS	Spacecraft_Pitch_Bias	Static	float32	Spacecraft pitch bias in radians. Valid format: N.NNNNNNNN
ATTITUDE_PARAMETERS	Spacecraft_Yaw_Bias	Static	float32	Spacecraft yaw bias in radians. Valid format: N.NNNNNNNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO_B1	Static	float32 (6 values)	Landsat 4-5 forward along-scan detector offsets in IFOV for each detector in Band 1. Valid format: N.NNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B1	Static	float32 (6 values)	Landsat 4-5 reverse along-scan detector offsets in IFOV for each detector in Band 1. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO _B2	Static	float32 (6 values)	Landsat 4-5 forward along-scan detector offsets in IFOV for each detector in Band 2. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B2	Static	float32 (6 values)	Landsat 4-5 reverse along-scan detector offsets in IFOV for each detector in Band 2. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO _B3	Static	float32 (6 values)	Landsat 4-5 forward along-scan detector offsets in IFOV for each detector in Band 3. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B3	Static	float32 (6 values)	Landsat 4-5 reverse along-scan detector offsets in IFOV for each detector in Band 3. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO _B4	Static	float32 (6 values)	Forward along-scan detector offsets in IFOV for each detector in Band 4. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B4	Static	float32 (6 values)	Reverse along-scan detector offsets in IFOV for each detector in Band 4. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO _B5	Static	float32 (6 values)	Landsat 1-3 forward along-scan detector offsets in IFOV for each detector in Band 5. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B5	Static	float32 (6 values)	Landsat 1-3 reverse along-scan detector offsets in IFOV for each detector in Band 5. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO _B6	Static	float32 (6 values)	Landsat 1-3 forward along-scan detector offsets in IFOV for each detector in Band 6. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B6	Static	float32 (6 values)	Landsat 1-3 reverse along-scan detector offsets in IFOV for each detector in Band 6. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Along_Scan_DO _B7	Static	float32 (6 values)	Landsat 1-3 forward along-scan detector offsets in IFOV for each detector in Band 7. Valid format: N.NNN
GROUP: FOCAL_PLANE_ PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Along_Scan_DO _B7	Static	float32 (6 values)	Landsat 1-3 reverse along-scan detector offsets in IFOV for each detector in Band 7. Valid format: N.NNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B1	Static	float32 (6 values)	Landsat 4-5 forward across-scan detector offsets in IFOV for each detector in Band 1. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B1	Static	float32 (6 values)	Landsat 4-5 reverse across-scan detector offsets in IFOV for each detector in Band 1. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B2	Static	float32 (6 values)	Landsat 4-5 forward across-scan detector offsets in IFOV for each detector in Band 2. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B2	Static	float32 (6 values)	Landsat 4-5 reverse across-scan detector offsets in IFOV for each detector in Band 2. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B3	Static	float32 (6 values)	Landsat 4-5 forward across-scan detector offsets in IFOV for each detector in Band 3. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B3	Static	float32 (6 values)	Landsat 4-5 reverse across-scan detector offsets in IFOV for each detector in Band 3. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B4	Static	float32 (6 values)	Forward across-scan detector offsets in IFOV for each detector in Band 4. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B4	Static	float32 (6 values)	Reverse across-scan detector offsets in IFOV for each detector in Band 4. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B5	Static	float32 (6 values)	Landsat 1-3 forward across-scan detector offsets in IFOV for each detector in Band 5. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B5	Static	float32 (6 values)	Landsat 1-3 reverse across-scan detector offsets in IFOV for each detector in Band 5. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B6	Static	float32 (6 values)	Landsat 1-3 forward across-scan detector offsets in IFOV for each detector in Band 6. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B6	Static	float32 (6 values)	Landsat 1-3 reverse across-scan detector offsets in IFOV for each detector in Band 6. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Forward_Across_Scan_D O_B7	Static	float32 (6 values)	Landsat 1-3 forward across-scan detector offsets in IFOV for each detector in Band 7. Valid format: N.NNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: FOCAL_PLANE_PARAMETERS GROUP: DETECTOR_OFFSETS	Reverse_Across_Scan_D O_B7	Static	float32 (6 values)	Landsat 1-3 reverse across-scan detector offsets in IFOV for each detector in Band 7. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: BAND_OFFSETS	Along_Scan_Band_ Offsets	Static	float32 (4 values)	Nominal displacement in μ rad from the center of the focal plane to each Band's optical axis. Valid format: N.NNN
GROUP: FOCAL_PLANE_PARAMETERS GROUP: BAND_OFFSETS	Across_Scan_Band_ Offsets	Static	float32 (4 values)	Nominal displacement in μ rad from the center of the focal plane to each band's scan motion axis. Valid format: N.N
GROUP: FOCAL_PLANE_PARAMETERS GROUP: BAND_OFFSETS	Forward_Focal_Plane_ Offsets	Static	float32 (4 values)	Offset in IFOVs for focal plane forward scans. Valid format: N.N
GROUP: FOCAL_PLANE_PARAMETERS GROUP: BAND_OFFSETS	Reverse_Focal_Plane_ Offsets	Static	float32 (4 values)	Offset in IFOVs for focal plane reverse scans. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B1	Static	float32 (6 values)	Landsat 4-5 individual detector timing delays for Band 1. Units of IFOVs. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B2	Static	float32 (6 values)	Landsat 4-5 individual detector timing delays for Band 2. Units of IFOVs. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B3	Static	float32 (6 values)	Landsat 4-5 individual detector timing delays for Band 3. Units of IFOVs. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B4	Static	float32 (6 values)	Individual detector timing delays for Band 4. Units of IFOVs. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B5	Static	float32 (6 values)	Landsat 1-3 individual detector timing delays for Band 5. Units of IFOVs. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B6	Static	float32 (6 values)	Landsat 1-3 individual detector timing delays for Band 6. Units of IFOVs. Valid format: N.N
DETECTOR_TIME_SHIFTS	Detector_Time_ Shift_B7	Static	float32 (6 values)	Landsat 1-3 individual detector timing delays for Band 7. Units of IFOVs. Valid format: N.N
EPHEMERIS_CONSTANTS	Ephemeris_Semi_Major_ Axis	Static	float32	Semi-major axis associate with MSS-X ephemeris ellipsoid model. Units of meters. Valid format: NNNNNNN.N
EPHEMERIS_CONSTANTS	Ephemeris_Semi_Minor_ Axis	Static	float32	Semi-minor axis associated with MSS-X ephemeris ellipsoid model. Units of meters. Valid format: NNNNNNN.N
EPHEMERIS_CONSTANTS	Ephemeris_Flat	Static	float32	MSS-X ellipsoid flattening of ephemeris model. Valid format: NNN.NNNNNNN
EPHEMERIS_CONSTANTS	Ephemeris_ Eccentricity	Static	float32	MSS-X ellipsoid eccentricity of ephemeris model. Valid format: N.NNNNNNNNN
DETECTOR_STATUS	Status_Band1	Static	char8 (6 values)	Landsat 4-5 health status of Band 1's six detectors. Valid format: ABCDE, where A = 0 (live), 1 (dead), 2 (intermittent) B = 0 (noise in spec), 1 (noisy low signal), 2 (noisy high signal), 3 (both noisy signals) C = 0 (reserved) D = 0 (dynamic range in spec) 1 (fail, high end), 2 (fail, low end), 3 (fail, both ends) E = 0 (reserved)
DETECTOR_STATUS	Status_Band2	Static	char8 (6 values)	Landsat 4-5 health status of Band 2's six detectors. Valid format: ABCDE, as defined above

Parameter Groups	Parameter Name	Value Type	Data Type	Description
DETECTOR_STATUS	Status_Band3	Static	char8 (6 values)	Landsat 4-5 health status of Band 3's six detectors. Valid format: ABCDE, as defined above
DETECTOR_STATUS	Status_Band4	Static	char8 (6 values)	Health status of Band 4's six detectors. Valid format: ABCDE, as defined above
DETECTOR_STATUS	Status_Band5	Static	char8 (6 values)	Landsat 1-3 health status of Band 5's six detectors. Valid format: ABCDE, as defined above
DETECTOR_STATUS	Status_Band6	Static	char8 (6 values)	Landsat 1-3 health status of Band 6's six detectors. Valid format: ABCDE, as defined above
DETECTOR_STATUS	Status_Band7	Static	char8 (6 values)	Landsat 1-3 health status of Band 7's six detectors. Valid format: ABCDE, as defined above
STRIPING	Correction_Reference_B1	Static	uint8	Landsat 4-5 striping correction methodology flag, relative to the band average or reference detector for Band 1. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
STRIPING	Correction_Reference_B2	Static	uint8	Landsat 4-5 striping correction methodology flag, relative to the band average or reference detector for Band 2. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
STRIPING	Correction_Reference_B3	Static	uint8	Landsat 4-5 striping correction methodology flag, relative to the band average or reference detector for Band 3. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
STRIPING	Correction_Reference_B4	Static	uint8	Striping correction methodology flag, relative to the band average or reference detector for Band 4. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
STRIPING	Correction_Reference_B5	Static	uint8	Landsat 1-3 striping correction methodology flag, relative to the band average or reference detector for Band 5. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
STRIPING	Correction_Reference_B6	Static	uint8	Landsat 1-3 striping correction methodology flag, relative to the band average or reference detector for Band 6. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
STRIPING	Correction_Reference_B7	Static	uint8	Landsat 1-3 striping correction methodology flag, relative to the band average or reference detector for Band 7. Valid format: N, where N = 0 (band average), 1 (reference detector), or 2 (no correction)
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B1	Static	float32 (6 values)	Landsat 4-5 standard deviation of the image region data for each detector of Band 1. Valid format: N.NNNNN
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B2	Static	float32 (6 values)	Landsat 4-5 standard deviation of the image region data for each detector of Band 2. Valid format: N.NNNNN
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B3	Static	float32 (6 values)	Landsat 4-5 standard deviation of the image region data for each detector of Band 3. Valid format: N.NNNNN
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B4	Static	float32 (6 values)	Standard deviation of the image region data for each detector of Band 4. Valid format: N.NNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B5	Static	float32 (6 values)	Landsat 1-3 standard deviation of the image region data for each detector of Band 5. Valid format: N.NNNNN
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B6	Static	float32 (6 values)	Landsat 1-3 standard deviation of the image region data for each detector of Band 6. Valid format: N.NNNNN
GROUP: HISTOGRAM GROUP: DETECTOR_NOISE	Detector_Noise_Level_B7	Static	float32 (6 values)	Landsat 1-3 standard deviation of the image region data for each detector of Band 7. Valid format: N.NNNNN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B1	Static	uint8	Landsat 4-5 detector used as a reference when computing relative detector gains and biases (least noisy) for Band 1. Valid format: NN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B2	Static	uint8	Landsat 4-5 detector used as a reference when computing relative detector gains and biases (least noisy) for Band 2. Valid format: NN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B3	Static	uint8	Landsat 4-5 detector used as a reference when computing relative detector gains and biases (least noisy) for Band 3. Valid format: NN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B4	Static	uint8	Detector used as a reference when computing relative detector gains and biases (least noisy) for Band 4. Valid format: NN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B5	Static	uint8	Landsat 1-3 detector used as a reference when computing relative detector gains and biases (least noisy) for Band 5. Valid format: NN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B6	Static	uint8	Landsat 1-3 detector used as a reference when computing relative detector gains and biases (least noisy) for Band 6. Valid format: NN
GROUP: HISTOGRAM GROUP: REFERENCE_ DETECTORS	Reference_Detector_B7	Static	uint8	Landsat 1-3 detector used as a reference when computing relative detector gains and biases (least noisy) for Band 7. Valid format: NN
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B1	Static	uint8	Landsat 4-5 minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 1. Valid format: NNNN
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B2	Static	uint8	Landsat 4-5 minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 2. Valid format: NNNN
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B3	Static	uint8	Landsat 4-5 minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 3. Valid format: NNNN
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B4	Static	uint8	Minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 4. Valid format: NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B5	Static	uint8	Landsat 1-3 minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 5. Valid format: NNNN
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B6	Static	uint8	Landsat 1-3 minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 6. Valid format: NNNN
GROUP: HISTOGRAM GROUP: SATURATION_ THRESHOLDS	Saturation_Bin_Threshold_B7	Static	uint8	Landsat 1-3 minimal number of pixels that a bin must have to test it as a saturation candidate bin for Band 7. Valid format: NNNN
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B1	Static	uint8	Landsat 4-5 number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 1. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B2	Static	uint8	Landsat 4-5 number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 2. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B3	Static	uint8	Landsat 4-5 number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 3. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B4	Static	uint8	Number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 4. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B5	Static	uint8	Landsat 1-3 number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 5. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B6	Static	uint8	Landsat 1-3 number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 6. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_NUMBER	Adjacent_Bin_Number_B7	Static	uint8	Landsat 1-3 number of bins adjacent to a possible saturation bin that must have fewer pixels than "adjacent bin threshold" to declare a possible bin as a saturation bin for Band 7. Valid format: N
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B1	Static	uint8	Landsat 4-5 number of adjacent bin pixels that cannot be exceeded for the Band 1 candidate saturation bin to be a valid saturation bin. Valid format: NN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B2	Static	uint8	Landsat 4-5 number of adjacent bin pixels that cannot be exceeded for the Band 2 candidate saturation bin to be a valid saturation bin. Valid format: NN
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B3	Static	uint8	Landsat 4-5 number of adjacent bin pixels that cannot be exceeded for the Band 3 candidate saturation bin to be a valid saturation bin. Valid format: NN
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B4	Static	uint8	Number of adjacent bin pixels that cannot be exceeded for the Band 4 candidate saturation bin to be a valid saturation bin. Valid format: NN
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B5	Static	uint8	Landsat 1-3 number of adjacent bin pixels that cannot be exceeded for the Band 5 candidate saturation bin to be a valid saturation bin. Valid format: NN
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B6	Static	uint8	Landsat 1-3 number of adjacent bin pixels that cannot be exceeded for the Band 6 candidate saturation bin to be a valid saturation bin. Valid format: NN
GROUP: HISTOGRAM GROUP: ADJACENT_BINS GROUP: BIN_THRESHOLD	Adjacent_Bin_Threshold_B7	Static	uint8	Landsat 1-3 number of adjacent bin pixels that cannot be exceeded for the Band 7 candidate saturation bin to be a valid saturation bin. Valid format: NN
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B1	Static	uint8	Landsat 4-5 left-most pixel in the window to be tested for Band 1. Valid format: N
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B2	Static	uint8	Landsat 4-5 left-most pixel in the window to be tested for Band 2. Valid format: N
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B3	Static	uint8	Landsat 4-5 left-most pixel in the window to be tested for Band 3. Valid format: N
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B4	Static	uint8	Left-most pixel in the window to be tested for Band 4. Valid format: N
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B5	Static	uint8	Landsat 1-3 left-most pixel in the window to be tested for Band 5. Valid format: N
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B6	Static	uint8	Landsat 1-3 left-most pixel in the window to be tested for Band 6. Valid format: N
GROUP: HISTOGRAM GROUP: STARTING_PIXEL	Start_pixel_B7	Static	uint8	Landsat 1-3 left-most pixel in the window to be tested for Band 7. Valid format: N

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B1	Static	uint8	Landsat 4-5 width of the window, in pixels, to be tested for Band 5. Valid format: NNNN
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B2	Static	uint8	Landsat 4-5 width of the window, in pixels, to be tested for Band 6. Valid format: NNNN
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B3	Static	uint8	Landsat 4-5 width of the window, in pixels, to be tested for Band 7. Valid format: NNNN
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B4	Static	uint8	Width of the window, in pixels, to be tested for Band 4. Valid format: NNNN
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B5	Static	uint8	Landsat 1-3 width of the window, in pixels, to be tested for Band 5. Valid format: NNNN
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B6	Static	uint8	Landsat 1-3 width of the window, in pixels, to be tested for Band 6. Valid format: NNNN
GROUP: HISTOGRAM GROUP: WINDOW_WIDTH	Window_Samples_B7	Static	uint8	Landsat 1-3 width of the window, in pixels, to be tested for Band 7. Valid format: NNNN
CHANNEL_SATURATION	High_Level_B1	Static	uint8 (6 values)	Landsat 4-5 digital count at which the channel saturates at the high end in Band 1; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	High_Level_B2	Static	uint8 (6 values)	Landsat 4-5 digital count at which the channel saturates at the high end in Band 2; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	High_Level_B3	Static	uint8 (6 values)	Landsat 4-5 digital count at which the channel saturates at the high end in Band 3; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	High_Level_B4	Static	uint8 (6 values)	Digital count at which the channel saturates at the high end in Band 4; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	High_Level_B5	Static	uint8 (6 values)	Landsat 1-3 digital count at which the channel saturates at the high end in Band 5; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	High_Level_B6	Static	uint8 (6 values)	Landsat 1-3 digital count at which the channel saturates at the high end in Band 6; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	High_Level_B7	Static	uint8 (6 values)	Landsat 1-3 digital count at which the channel saturates at the high end in Band 7; array contains one value per detector. Valid format: NNN
CHANNEL_SATURATION	Low_Level_B1	Static	uint8 (6 values)	Landsat 4-5 digital count at which the channel saturates at the low end in Band 1; array contains one value per detector. Valid format: N
CHANNEL_SATURATION	Low_Level_B2	Static	uint8 (6 values)	Landsat 4-5 digital count at which the channel saturates at the low end in Band 2; array contains one value per detector. Valid format: N

Parameter Groups	Parameter Name	Value Type	Data Type	Description
CHANNEL_SATURATION	Low_Level_B3	Static	uint8 (6 values)	Landsat 4-5 digital count at which the channel saturates at the low end in Band 3; array contains one value per detector. Valid format: N
CHANNEL_SATURATION	Low_Level_B4	Static	uint8 (6 values)	Digital count at which the channel saturates at the low end in Band 4; array contains one value per detector. Valid format: N
CHANNEL_SATURATION	Low_Level_B5	Static	uint8 (6 values)	Landsat 1-3 digital count at which the channel saturates at the low end in Band 5; array contains one value per detector. Valid format: N
CHANNEL_SATURATION	Low_Level_B6	Static	uint8 (6 values)	Landsat 1-3 digital count at which the channel saturates at the low end in Band 6; array contains one value per detector. Valid format: N
CHANNEL_SATURATION	Low_Level_B7	Static	uint8 (6 values)	Landsat 1-3 digital count at which the channel saturates at the low end in Band 7; array contains one value per detector. Valid format: N
RECAL_TO_MSSR	B1_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B2_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B3_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B4_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Band 4 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B5_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B6_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B7_ReCal_Bias_MSSP_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical bias used to adjust data archived in MSS-P format to MSS-R format in radiance space (W/m2 sr μ m). Valid format: SN.NNNN
RECAL_TO_MSSR	B1_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B2_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B3_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B4_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Band 4 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
RECAL_TO_MSSR	B5_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B6_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B7_ReCal_Gain_MSSP_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical gain used to adjust data archived in MSS-P format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B1_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B2_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B3_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B4_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Band 4 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B5_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B6_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B7_ReCal_Bias_MSSA_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical bias used to adjust data archived in MSS-A format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B1_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B2_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B3_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B4_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Band 4 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B5_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B6_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
RECAL_TO_MSSR	B7_ReCal_Gain_MSSA_T O_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical gain used to adjust data archived in MSS-A format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B1_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B2_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B3_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B4_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Band 4 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B5_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B6_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B7_ReCal_Bias_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical bias used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B1_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B2_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B3_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B4_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Band 4 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B5_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B6_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B7_ReCal_Gain_MSSXC CT_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical gain used to adjust data archived in MSS-X CCT format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B1_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
RECAL_TO_MSSR	B2_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B3_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B4_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Band 4 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B5_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B6_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B7_ReCal_Bias_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical bias used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space (W/m ² sr μm). Valid format: SN.NNNN
RECAL_TO_MSSR	B1_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 1 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B2_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 2 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B3_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 4-5 Band 3 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B4_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Band 4 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B5_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 5 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B6_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 6 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
RECAL_TO_MSSR	B7_ReCal_Gain_MSSXW BV_TO_MSSR	Dynamic	float32	Landsat 1-3 Band 7 statistical gain used to adjust data archived in MSS-X WBV format to MSS-R format in radiance space. Valid format: N.NNNN
CROSS_CAL_TO_L5	B1_Cross_Cal_Bias_ To_L5	Static	float32	Landsat 4-5 Band 1 cross-calibration statistical bias difference in comparison to Band 1 onboard Landsat 5 MSS (W/m ² sr μm). Valid format: N.NNNN
CROSS_CAL_TO_L5	B2_Cross_Cal_Bias_ To_L5	Static	float32	Landsat 4-5 Band 2 cross-calibration statistical bias difference in comparison to Band 2 onboard Landsat 5 MSS (W/m ² sr μm). Valid format: N.NNNN
CROSS_CAL_TO_L5	B3_Cross_Cal_Bias_ To_L5	Static	float32	Landsat 4-5 Band 3 cross-calibration statistical bias difference in comparison to Band 3 onboard Landsat 5 MSS (W/m ² sr μm). Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
CROSS_CAL_TO_L5	B4_Cross_Cal_Bias_To_L5	Static	float32	Landsat 4-5 Band 4 cross-calibration statistical bias difference in comparison to Band 4 onboard Landsat 5 MSS ($W/m^2 sr \mu m$). Valid format: N.NNNN
				Landsat 1-3 Band 4 cross-calibration statistical bias difference in comparison to Band 1 onboard Landsat 5 MSS ($W/m^2 sr \mu m$). Valid format: N.NNNN
CROSS_CAL_TO_L5	B5_Cross_Cal_Bias_To_L5	Static	float32	Landsat 1-3 Band 5 cross-calibration statistical bias difference in comparison to Band 2 onboard Landsat 5 MSS ($W/m^2 sr \mu m$). Valid format: N.NNNN
CROSS_CAL_TO_L5	B6_Cross_Cal_Bias_To_L5	Static	float32	Landsat 1-3 Band 6 cross-calibration statistical bias difference in comparison to Band 3 onboard Landsat 5 MSS ($W/m^2 sr \mu m$). Valid format: N.NNNN
CROSS_CAL_TO_L5	B7_Cross_Cal_Bias_To_L5	Static	float32	Landsat 1-3 Band 7 cross-calibration statistical bias difference in comparison to Band 4 onboard Landsat 5 MSS ($W/m^2 sr \mu m$). Valid format: N.NNNN
CROSS_CAL_TO_L5	B1_Cross_Cal_Gain_To_L5	Static	float32	Landsat 4-5 Band 1 cross-calibration statistical gain difference in comparison to Band 1 onboard Landsat 5 MSS. Valid format: N.NNNN
CROSS_CAL_TO_L5	B2_Cross_Cal_Gain_To_L5	Static	float32	Landsat 4-5 Band 2 cross-calibration statistical gain difference in comparison to Band 2 onboard Landsat 5 MSS. Valid format: N.NNNN
CROSS_CAL_TO_L5	B3_Cross_Cal_Gain_To_L5	Static	float32	Landsat 4-5 Band 3 cross-calibration statistical gain difference in comparison to Band 3 onboard Landsat 5 MSS ($W/m^2 sr \mu m$). Valid format: N.NNNN
CROSS_CAL_TO_L5	B4_Cross_Cal_Gain_To_L5	Static	float32	Landsat 4-5 Band 4 cross-calibration statistical gain difference in comparison to Band 4 onboard Landsat 5 MSS. Valid format: N.NNNN
				Landsat 1-3 Band 4 cross-calibration statistical gain difference in comparison to Band 1 onboard Landsat 5 MSS. Valid format: N.NNNN
CROSS_CAL_TO_L5	B5_Cross_Cal_Gain_To_L5	Static	float32	Landsat 1-3 Band 5 cross-calibration statistical gain difference in comparison to Band 2 onboard Landsat 5 MSS. Valid format: N.NNNN
CROSS_CAL_TO_L5	B6_Cross_Cal_Gain_To_L5	Static	float32	Landsat 1-3 Band 6 cross-calibration statistical gain difference in comparison to Band 3 onboard Landsat 5 MSS. Valid format: N.NNNN
CROSS_CAL_TO_L5	B7_Cross_Cal_Gain_To_L5	Static	float32	Landsat 1-3 Band 7 cross-calibration statistical gain difference in comparison to Band 4 onboard Landsat 5 MSS. Valid format: N.NNNN
CROSS_CAL_TO_L5	B1_Cross_Cal_TDF_A_To_L5	Static	float32	Landsat 4-5 Band 1 regression slope of the gain change versus time model ($W/m^2 sr \mu m / year$). Valid format: N.NNNNN
CROSS_CAL_TO_L5	B2_Cross_Cal_TDF_A_To_L5	Static	float32	Landsat 4-5 Band 2 regression slope of the gain change versus time model ($W/m^2 sr \mu m / year$). Valid format: N.NNNNN
CROSS_CAL_TO_L5	B3_Cross_Cal_TDF_A_To_L5	Static	float32	Landsat 4-5 Band 3 regression slope of the gain change versus time model ($W/m^2 sr \mu m / year$). Valid format: N.NNNNN
CROSS_CAL_TO_L5	B4_Cross_Cal_TDF_A_To_L5	Static	float32	Band 4 regression slope of the gain change versus time model ($W/m^2 sr \mu m / year$). Valid format: N.NNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
CROSS_CAL_TO_L5	B5_Cross_Cal_TDF_A_To_L5	Static	float32	Landsat 1-3 Band 5 regression slope of the gain change versus time model (W/m^2 sr μm / year). Valid format: N.NNNNN
CROSS_CAL_TO_L5	B6_Cross_Cal_TDF_A_To_L5	Static	float32	Landsat 1-3 Band 6 regression slope of the gain change versus time model (W/m^2 sr μm / year). Valid format: N.NNNNN
CROSS_CAL_TO_L5	B7_Cross_Cal_TDF_A_To_L5	Static	float32	Landsat 1-3 Band 7 regression slope of the gain change versus time model (W/m^2 sr μm / year). Valid format: N.NNNNN
CROSS_CAL_TO_L5	B1_Cross_Cal_TDF_B_To_L5	Static	float32	Landsat 4-5 Band 1 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B2_Cross_Cal_TDF_B_To_L5	Static	float32	Landsat 4-5 Band 2 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B3_Cross_Cal_TDF_B_To_L5	Static	float32	Landsat 4-5 Band 3 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B4_Cross_Cal_TDF_B_To_L5	Static	float32	Band 4 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B5_Cross_Cal_TDF_B_To_L5	Static	float32	Landsat 1-3 Band 5 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B6_Cross_Cal_TDF_B_To_L5	Static	float32	Landsat 1-3 Band 6 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B7_Cross_Cal_TDF_B_To_L5	Static	float32	Landsat 1-3 Band 7 bias derived from the regression offset of the gain versus time model (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B1_Cross_Cal_TDF_C_To_L5	Static	float32	Landsat 4-5 Band 1 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B2_Cross_Cal_TDF_C_To_L5	Static	float32	Landsat 4-5 Band 2 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B3_Cross_Cal_TDF_C_To_L5	Static	float32	Landsat 4-5 Band 3 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B4_Cross_Cal_TDF_C_To_L5	Static	float32	Band 4 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B5_Cross_Cal_TDF_C_To_L5	Static	float32	Landsat 1-3 Band 5 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B6_Cross_Cal_TDF_C_To_L5	Static	float32	Landsat 1-3 Band 6 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	B7_Cross_Cal_TDF_C_To_L5	Static	float32	Landsat 1-3 Band 7 estimated radiance of the reference site at the time of satellite launch (W/m^2 sr μm). Valid format: NNN.NN
CROSS_CAL_TO_L5	T_Launch	Static	float32	Satellite launch date (decimal years). Valid format: NNNN.NNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
ABSOLUTE_CALIBRATION	L5B1_Abs_Cal	Static	float32	Coefficient used to bring radiances obtained after the cross-calibration to Landsat 5 MSS to the absolute scale, for Band 1. Valid format: N.NNN
ABSOLUTE_CALIBRATION	L5B2_Abs_Cal	Static	float32	Coefficient used to bring radiances obtained after the cross-calibration to Landsat 5 MSS to the absolute scale, for Band 2. Valid format: N.NNN
ABSOLUTE_CALIBRATION	L5B3_Abs_Cal	Static	float32	Coefficient used to bring radiances obtained after the cross-calibration to Landsat 5 MSS to the absolute scale, for Band 3. Valid format: N.NNN
ABSOLUTE_CALIBRATION	L5B4_Abs_Cal	Static	float32	Coefficient used to bring radiances obtained after the cross-calibration to Landsat 5 MSS to the absolute scale, for Band 4. Valid format: N.NNN
ORIGINAL_SCALING_PARAMETERS	B4a_Lmin_LMax_PreLaunch	Static	float32 (2 values)	Landsat 3 prelaunch Lmin and Lmax values for Band 4. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B5a_Lmin_LMax_PreLaunch	Static	float32 (2 values)	Landsat 3 prelaunch Lmin and Lmax values for Band 5. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B6a_Lmin_LMax_PreLaunch	Static	float32 (2 values)	Landsat 3 prelaunch Lmin and Lmax values for Band 6. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B7a_Lmin_LMax_PreLaunch	Static	float32 (2 values)	Landsat 3 prelaunch Lmin and Lmax values for Band 7. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B1a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Landsat 4-5 original Lmin and Lmax values for Band 1 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B2a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Landsat 4-5 original Lmin and Lmax values for Band 2 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B3a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Landsat 4-5 original Lmin and Lmax values for Band 3 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B4a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Original Lmin and Lmax values for Band 4 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B5a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Landsat 1-3 original Lmin and Lmax values for Band 5 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B6a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Landsat 1-3 original Lmin and Lmax values for Band 6 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B7a_Lmin_LMax_Before_Proc_Date	Static	float32 (2 values)	Landsat 1-3 original Lmin and Lmax values for Band 7 data acquired prior to the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B1a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Landsat 4-5 original Lmin and Lmax values for Band 1 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B2a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Landsat 4-5 original Lmin and Lmax values for Band 2 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N

Parameter Groups	Parameter Name	Value Type	Data Type	Description
ORIGINAL_SCALING_PARAMETERS	B3a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Landsat 4-5 original Lmin and Lmax values for Band 3 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B4a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Original Lmin and Lmax values for Band 4 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B5a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Landsat 1-3 original Lmin and Lmax values for Band 5 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B6a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Landsat 1-3 original Lmin and Lmax values for Band 6 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	B7a_Lmin_LMax_After_Proc_Date	Static	float32 (2 values)	Landsat 1-3 original Lmin and Lmax values for Band 7 data acquired after the processing date, Proc_Date, defined below. Valid format: NNN.N
ORIGINAL_SCALING_PARAMETERS	Proc_Date	Static	char8	Satellite-specific processing date. Valid format: YYYY-MM-DD, e.g., 1978-06-01
FINAL_SCALING_PARAMETERS	B1f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Landsat 4-5 final Lmin and Lmax values for Band 1 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B2f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Landsat 4-5 final Lmin and Lmax values for Band 2 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B3f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Landsat 4-5 final Lmin and Lmax values for Band 3 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B4f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Final Lmin and Lmax values for Band 4 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B5f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Landsat 1-3 final Lmin and Lmax values for Band 5 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B6f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Landsat 1-3 final Lmin and Lmax values for Band 6 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B7f_Lmin_Lmax_Before_Proc_Date	Static	float32 (2 values)	Landsat 1-3 final Lmin and Lmax values for Band 7 data acquired before the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B1f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Landsat 4-5 final Lmin and Lmax values for Band 1 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B2f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Landsat 4-5 final Lmin and Lmax values for Band 2 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B3f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Landsat 4-5 final Lmin and Lmax values for Band 3 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B4f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Final Lmin and Lmax values for Band 4 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N

Parameter Groups	Parameter Name	Value Type	Data Type	Description
FINAL_SCALING_PARAMETERS	B5f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Landsat 1-3 final Lmin and Lmax values for Band 5 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B6f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Landsat 1-3 final Lmin and Lmax values for Band 6 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N
FINAL_SCALING_PARAMETERS	B7f_Lmin_Lmax_After_Proc_Date	Static	float32 (2 values)	Landsat 1-3 final Lmin and Lmax values for Band 7 data acquired after the processing date, Proc_Date, defined above. Valid format: NNN.N
SOLAR_SPECTRAL_IRRADIANCES	B1_Solar_Irradiance	Dynamic	float32	Landsat 4-5 mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 1. Valid format: NNNN.N
SOLAR_SPECTRAL_IRRADIANCES	B2_Solar_Irradiance	Dynamic	float32	Landsat 4-5 mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 2. Valid format: NNNN.N
SOLAR_SPECTRAL_IRRADIANCES	B3_Solar_Irradiance	Dynamic	float32	Landsat 4-5 mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 3. Valid format: NNN.N
SOLAR_SPECTRAL_IRRADIANCES	B4_Solar_Irradiance	Dynamic	float32	Mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 4. Valid format: NNNN.N
SOLAR_SPECTRAL_IRRADIANCES	B5_Solar_Irradiance	Dynamic	float32	Landsat 1-3 mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 5. Valid format: NNNN.N
SOLAR_SPECTRAL_IRRADIANCES	B6_Solar_Irradiance	Dynamic	float32	Landsat 1-3 mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 6. Valid format: NNNN.N
SOLAR_SPECTRAL_IRRADIANCES	B7_Solar_Irradiance	Dynamic	float32	Landsat 1-3 mean solar exoatmospheric spectral irradiance ($W/m^2 \mu m$) for Band 7. Valid format: NNNN.N
RESIDUAL_BIAS_ADJUST	B1_Residual_Bias_Adjust	Dynamic	float32	Landsat 4-5 statistical residual bias estimated from radiance-based cross-calibration for Band 1 ($W/m^2 sr \mu m$). Valid format: SNN.NN
RESIDUAL_BIAS_ADJUST	B2_Residual_Bias_Adjust	Dynamic	float32	Landsat 4-5 statistical residual bias estimated from radiance-based cross-calibration for Band 2 ($W/m^2 sr \mu m$). Valid format: SNN.NN
RESIDUAL_BIAS_ADJUST	B3_Residual_Bias_Adjust	Dynamic	float32	Landsat 4-5 statistical residual bias estimated from radiance-based cross-calibration for Band 3 ($W/m^2 sr \mu m$). Valid format: SNN.NN
RESIDUAL_BIAS_ADJUST	B4_Residual_Bias_Adjust	Dynamic	float32	Statistical residual bias estimated from radiance-based cross-calibration for Band 4 ($W/m^2 sr \mu m$). Valid format: SNN.NN
RESIDUAL_BIAS_ADJUST	B5_Residual_Bias_Adjust	Dynamic	float32	Landsat 1-3 statistical residual bias estimated from radiance-based cross-calibration for Band 5 ($W/m^2 sr \mu m$). Valid format: SNN.NN
RESIDUAL_BIAS_ADJUST	B6_Residual_Bias_Adjust	Dynamic	float32	Landsat 1-3 statistical residual bias estimated from radiance-based cross-calibration for Band 6 ($W/m^2 sr \mu m$). Valid format: SNN.NN
RESIDUAL_BIAS_ADJUST	B7_Residual_Bias_Adjust	Dynamic	float32	Landsat 1-3 statistical residual bias estimated from radiance-based cross-calibration for Band 7 ($W/m^2 sr \mu m$). Valid format: SNN.NN
REFLECTANCE_RESCALE	Reflectance_Additive_Factor	Static	float32 array (4 values)	Post-calibration 16-bit dynamic range additive reflectance scaling factors for all four bands. Valid format: SN.NNNNNN, where S = "+" or "-" and N = 0 to 9

Parameter Groups	Parameter Name	Value Type	Data Type	Description
REFLECTANCE_RESCALE	Reflectance_Multiplicative_Factor	Static	float32 array (4 values)	Post-calibration 16-bit dynamic range multiplicative reflectance scaling factors for all four bands. Valid format: N.NNNNNNESNN, where S = "+" or "-" and N = 0 to 9
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B1L_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B1L_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B1L_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B1L_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B1L_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B1L_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B2L_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B2L_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B2L_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B2L_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B2L_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B2L_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B3L_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B3L_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B3L_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B3L_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B3L_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B3L_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B4L_Bias_C_Detector_6	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B4L_Bias_C_Detector_5	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B4L_Bias_C_Detector_4	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B4L_Bias_C_Detector_3	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B4L_Bias_C_Detector_2	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B4L_Bias_C_Detector_1	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B5L_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B5L_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B5L_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B5L_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B5L_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B5L_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B6L_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B6L_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B6L_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B6L_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B6L_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B6L_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B7L_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B7L_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B7L_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B7L_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B7L_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_LOW	B7L_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B1H_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B1H_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B1H_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B1H_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B1H_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B1H_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B2H_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B2H_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B2H_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B2H_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B2H_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B2H_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B4H_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B4H_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B4H_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B4H_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B4H_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B4H_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B5H_Bias_C_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 6 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B5H_Bias_C_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 5 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B5H_Bias_C_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 4 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B5H_Bias_C_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 3 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B5H_Bias_C_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 2 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_OFFSET_COEFFS_HIGH	B5H_Bias_C_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for bias of Detector 1 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B1L_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B1L_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B1L_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B1L_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B1L_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B1L_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 1 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B2L_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B2L_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B2L_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B2L_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B2L_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B2L_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 2 for the low-gain operational mode. Valid format: SN.NNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B3L_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B3L_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B3L_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B3L_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B3L_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B3L_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 3 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B4L_Gain_D_Detector_6	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B4L_Gain_D_Detector_5	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B4L_Gain_D_Detector_4	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B4L_Gain_D_Detector_3	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B4L_Gain_D_Detector_2	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B4L_Gain_D_Detector_1	Static	float32 (6 values)	Prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 4 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B5L_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B5L_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B5L_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B5L_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B5L_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B5L_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 5 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B6L_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B6L_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B6L_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B6L_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B6L_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B6L_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 6 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B7L_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B7L_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B7L_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B7L_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B7L_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_LOW	B7L_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 7 for the low-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B1H_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B1H_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B1H_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B1H_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B1H_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B1H_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 1 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B2H_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B2H_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B2H_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B2H_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B2H_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B2H_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 4-5 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 2 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B4H_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B4H_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B4H_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B4H_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B4H_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B4H_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 4 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B5H_Gain_D_Detector_6	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 6 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B5H_Gain_D_Detector_5	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 5 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B5H_Gain_D_Detector_4	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 4 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B5H_Gain_D_Detector_3	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 3 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B5H_Gain_D_Detector_2	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 2 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_GAIN_COEFFS_HIGH	B5H_Gain_D_Detector_1	Static	float32 (6 values)	Landsat 1-3 prelaunch regression coefficients used to obtain an initial estimate for gain of Detector 1 in Band 5 for the high-gain operational mode. Valid format: SN.NNNNNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B4_Detector_6	Static	float32	Landsat 1-3 multiplicative modifier for Detector 6 in Band 4 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B4_Detector_5	Static	float32	Landsat 1-3 multiplicative modifier for Detector 5 in Band 4 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B4_Detector_4	Static	float32	Landsat 1-3 multiplicative modifier for Detector 4 in Band 4 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B4_Detector_3	Static	float32	Landsat 1-3 multiplicative modifier for Detector 3 in Band 4 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B4_Detector_2	Static	float32	Landsat 1-3 multiplicative modifier for Detector 2 in Band 4 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B4_Detector_1	Static	float32	Landsat 1-3 multiplicative modifier for Detector 1 in Band 4 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B5_Detector_6	Static	float32	Landsat 1-3 multiplicative modifier for Detector 6 in Band 5 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B5_Detector_5	Static	float32	Landsat 1-3 multiplicative modifier for Detector 5 in Band 5 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B5_Detector_4	Static	float32	Landsat 1-3 multiplicative modifier for Detector 4 in Band 5 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B5_Detector_3	Static	float32	Landsat 1-3 multiplicative modifier for Detector 3 in Band 5 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B5_Detector_2	Static	float32	Landsat 1-3 multiplicative modifier for Detector 2 in Band 5 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B5_Detector_1	Static	float32	Landsat 1-3 multiplicative modifier for Detector 1 in Band 5 used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B6_Detector_6	Static	float32	Landsat 1-3 multiplicative modifier for Detector 6 in Band 6 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B6_Detector_5	Static	float32	Landsat 1-3 multiplicative modifier for Detector 5 in Band 6 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B6_Detector_4	Static	float32	Landsat 1-3 multiplicative modifier for Detector 4 in Band 6 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B6_Detector_3	Static	float32	Landsat 1-3 multiplicative modifier for Detector 3 in Band 6 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B6_Detector_2	Static	float32	Landsat 1-3 multiplicative modifier for Detector 2 in Band 6 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B6_Detector_1	Static	float32	Landsat 1-3 multiplicative modifier for Detector 1 in Band 6 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B7_Detector_6	Static	float32	Landsat 1-3 multiplicative modifier for Detector 6 in Band 7 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B7_Detector_5	Static	float32	Landsat 1-3 multiplicative modifier for Detector 5 in Band 7 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B7_Detector_4	Static	float32	Landsat 1-3 multiplicative modifier for Detector 4 in Band 7 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B7_Detector_3	Static	float32	Landsat 1-3 multiplicative modifier for Detector 3 in Band 7 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B7_Detector_2	Static	float32	Landsat 1-3 multiplicative modifier for Detector 2 in Band 7 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS	M_B7_Detector_1	Static	float32	Landsat 1-3 multiplicative modifier for Detector 1 in Band 7 used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B1L_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B1L_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B1L_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B1L_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B1L_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B1L_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B2L_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B2L_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B2L_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B2L_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B2L_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B2L_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B3L_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B3L_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B3L_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B3L_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B3L_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B3L_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B4L_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B4L_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B4L_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B4L_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B4L_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_LOW	M_B4L_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B1H_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B1H_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B1H_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B1H_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B1H_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B1H_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B2H_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B2H_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B2H_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B2H_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B2H_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B2H_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B3H_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B3H_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B3H_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B3H_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B3H_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B3H_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B4H_Detector_6	Static	float32	Landsat 4-5 multiplicative modifier for Detector 6 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B4H_Detector_5	Static	float32	Landsat 4-5 multiplicative modifier for Detector 5 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B4H_Detector_4	Static	float32	Landsat 4-5 multiplicative modifier for Detector 4 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B4H_Detector_3	Static	float32	Landsat 4-5 multiplicative modifier for Detector 3 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B4H_Detector_2	Static	float32	Landsat 4-5 multiplicative modifier for Detector 2 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_MULTIPLICATIVE_MODIFIERS_HIGH	M_B4H_Detector_1	Static	float32	Landsat 4-5 multiplicative modifier for Detector 1 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B4_Detector_6	Static	float32	Landsat 1-3 additive modifier for Detector 6 in Band 4 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B4_Detector_5	Static	float32	Landsat 1-3 additive modifier for Detector 5 in Band 4 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B4_Detector_4	Static	float32	Landsat 1-3 additive modifier for Detector 4 in Band 4 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B4_Detector_3	Static	float32	Landsat 1-3 additive modifier for Detector 3 in Band 4 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B4_Detector_2	Static	float32	Landsat 1-3 additive modifier for Detector 2 in Band 4 used to refine the basic calibration equation. Valid format: SN.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B4_Detector_1	Static	float32	Landsat 1-3 additive modifier for Detector 1 in Band 4 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B5_Detector_6	Static	float32	Landsat 1-3 additive modifier for Detector 6 in Band 5 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B5_Detector_5	Static	float32	Landsat 1-3 additive modifier for Detector 5 in Band 5 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B5_Detector_4	Static	float32	Landsat 1-3 additive modifier for Detector 4 in Band 5 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B5_Detector_3	Static	float32	Landsat 1-3 additive modifier for Detector 3 in Band 5 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B5_Detector_2	Static	float32	Landsat 1-3 additive modifier for Detector 2 in Band 5 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B5_Detector_1	Static	float32	Landsat 1-3 additive modifier for Detector 1 in Band 5 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B6_Detector_6	Static	float32	Landsat 1-3 additive modifier for Detector 6 in Band 6 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B6_Detector_5	Static	float32	Landsat 1-3 additive modifier for Detector 5 in Band 6 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B6_Detector_4	Static	float32	Landsat 1-3 additive modifier for Detector 4 in Band 6 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B6_Detector_3	Static	float32	Landsat 1-3 additive modifier for Detector 3 in Band 6 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B6_Detector_2	Static	float32	Landsat 1-3 additive modifier for Detector 2 in Band 6 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_ MODIFIERS	A_B6_Detector_1	Static	float32	Landsat 1-3 additive modifier for Detector 1 in Band 6 used to refine the basic calibration equation. Valid format: SN.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B7_Detector_6	Static	float32	Landsat 1-3 additive modifier for Detector 6 in Band 7 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B7_Detector_5	Static	float32	Landsat 1-3 additive modifier for Detector 5 in Band 7 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B7_Detector_4	Static	float32	Landsat 1-3 additive modifier for Detector 4 in Band 7 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B7_Detector_3	Static	float32	Landsat 1-3 additive modifier for Detector 3 in Band 7 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B7_Detector_2	Static	float32	Landsat 1-3 additive modifier for Detector 2 in Band 7 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS	A_B7_Detector_1	Static	float32	Landsat 1-3 additive modifier for Detector 1 in Band 7 used to refine the basic calibration equation. Valid format: SN.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B1L_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B1L_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B1L_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B1L_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B1L_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B1L_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 1, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B2L_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B2L_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B2L_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B2L_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B2L_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B2L_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 2, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B3L_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B3L_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B3L_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B3L_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B3L_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B3L_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 3, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B4L_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B4L_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B4L_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B4L_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B4L_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_LOW	A_B4L_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 4, operating in low-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B1H_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B1H_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B1H_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B1H_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B1H_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B1H_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 1, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B2H_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B2H_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B2H_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B2H_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B2H_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B2H_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 2, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B3H_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B3H_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B3H_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B3H_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B3H_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B3H_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 3, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B4H_Detector_6	Static	float32	Landsat 4-5 additive modifier for Detector 6 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B4H_Detector_5	Static	float32	Landsat 4-5 additive modifier for Detector 5 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B4H_Detector_4	Static	float32	Landsat 4-5 additive modifier for Detector 4 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B4H_Detector_3	Static	float32	Landsat 4-5 additive modifier for Detector 3 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B4H_Detector_2	Static	float32	Landsat 4-5 additive modifier for Detector 2 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_ADDITIVE_MODIFIERS_HIGH	A_B4H_Detector_1	Static	float32	Landsat 4-5 additive modifier for Detector 1 in Band 4, operating in high-gain mode, used to refine the basic calibration equation. Valid format: N.NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_DECOMPRESSION_TABLES	B1-Decompression_Table	Static	uint8 (64 values)	Landsat 4-5 decompression table used to linearize Band 1 data and rescale to 7-bit dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_DECOMPRESSION_TABLES	B2-Decompression_Table	Static	uint8 (64 values)	Landsat 4-5 decompression table used to linearize Band 2 data and rescale to 7-bit dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_DECOMPRESSION_TABLES	B3-Decompression_Table	Static	uint8 (64 values)	Landsat 4-5 decompression table used to linearize Band 3 data and rescale to 7-bit dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_DECOMPRESSION_TABLES	B4-Decompression_Table	Static	uint8 (64 values)	Landsat 1-3 decompression table used to linearize Band 4 data and rescale to 7-bit dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_DECOMPRESSION_TABLES	B5-Decompression_Table	Static	uint8 (64 values)	Landsat 1-3 decompression table used to linearize Band 5 data and rescale to 7-bit dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_DECOMPRESSION_TABLES	B6-Decompression_Table	Static	uint8 (64 values)	Landsat 1-3 decompression table used to linearize Band 6 data and rescale to 7-bit dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS	scale_factor	Static	uint8	Factor used to scale the calibrated data over the desired dynamic range. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Start_B4	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge signal's rising edge for Band 4 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Start_B5	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge signal's rising edge for Band 5 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Start_B6	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge signal's rising edge for Band 6 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Start_B7	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge signal's rising edge for Band 7 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Val_B4	Static	uint8 (6 values)	Landsat 1-3 signal level in Digital Number (DN) at the starting sample location of cal wedge signal's rising edge for Band 4 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Val_B5	Static	uint8 (6 values)	Landsat 1-3 signal level in DN at the starting sample location of cal wedge signal's rising edge for Band 5 Detectors 6 to 1. Valid format: NN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Val_B6	Static	uint8 (6 values)	Landsat 1-3 signal level in DN at the starting sample location of cal wedge signal's rising edge for Band 6 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Rise_Val_B7	Static	uint8 (6 values)	Landsat 1-3 signal level in DN at the starting sample location of cal wedge signal's rising edge for Band 7 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Start_B4	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge's saturated region for Band 4 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Start_B5	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge's saturated region for Band 5 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Start_B6	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge's saturated region for Band 6 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Start_B7	Static	uint8 (6 values)	Landsat 1-3 starting sample location of the cal wedge's saturated region for Band 7 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_End_B4	Static	uint8 (6 values)	Landsat 1-3 ending sample location of the cal wedge's saturated region for Band 4 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_End_B5	Static	uint8 (6 values)	Landsat 1-3 ending sample location of the cal wedge's saturated region for Band 5 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_End_B6	Static	uint8 (6 values)	Landsat 1-3 ending sample locations of the cal wedge's saturated region for Band 6 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_End_B7	Static	uint8 (6 values)	Landsat 1-3 ending sample location of the cal wedge's saturated region for Band 7 Detectors 6 to 1. Valid format: NNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Val_B4	Static	uint8 (6 values)	Landsat 1-3 cal wedge high saturation signal level in DN for Band 4 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Val_B5	Static	uint8 (6 values)	Landsat 1-3 cal wedge high saturation signal level in DN for Band 5 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Val_B6	Static	uint8 (6 values)	Landsat 1-3 cal wedge high saturation signal level in DN for Band 6 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Saturation_Val_B7	Static	uint8 (6 values)	Landsat 1-3 cal wedge high saturation signal level in DN for Band 7 Detectors 6 to 1. Valid format: NN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Hump_Location_B4	Static	uint8 (6 values)	Landsat 1-3 location of the hump feature in cal wedge data for Band 4 Detectors 6 to 1. Valid format: NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Hump_Location_B5	Static	uint8 (6 values)	Landsat 1-3 location of the hump feature in cal wedge data for Band 5 Detectors 6 to 1. Valid format: NNNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Hump_Location_B6	Static	uint8 (6 values)	Landsat 1-3 location of the hump feature in cal wedge data for Band 6 Detectors 6 to 1. Valid format: NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Hump_Location_B7	Static	uint8 (6 values)	Landsat 1-3 location of the hump feature in cal wedge data for Band 7 Detectors 6 to 1. Valid format: NNNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Type	Static	uint8 (4 values)	Landsat 1-3 per band curve fit type for the cal wedge falling edge. Valid format: N, where 0 = exponential 1 = polynomial (up to the 5 th order)
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B4_Detector_6	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 4 Detector 6. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B4_Detector_5	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 4 Detector 5. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B4_Detector_4	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 4 Detector 4. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B4_Detector_3	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 4 Detector 3. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B4_Detector_2	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 4 Detector 2. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B4_Detector_1	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 4 Detector 1. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B5_Detector_6	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 5 Detector 6. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B5_Detector_5	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 5 Detector 5. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B5_Detector_4	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 5 Detector 4. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B5_Detector_3	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 5 Detector 3. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B5_Detector_2	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 5 Detector 2. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B5_Detector_1	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 5 Detector 1. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B6_Detector_6	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 6 Detector 6. Valid format: SN.NNNNNESNN

Parameter Groups	Parameter Name	Value Type	Data Type	Description
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B6_Detector_5	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 6 Detector 5. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B6_Detector_4	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 6 Detector 4. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B6_Detector_3	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 6 Detector 3. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B6_Detector_2	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 6 Detector 2. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B6_Detector_1	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 6 Detector 1. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B7_Detector_6	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 7 Detector 6. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B7_Detector_5	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 7 Detector 5. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B7_Detector_4	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 7 Detector 4. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B7_Detector_3	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 7 Detector 3. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B7_Detector_2	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 7 Detector 2. Valid format: SN.NNNNNESNN
GROUP: CAL_WEDGE_PARAMS GROUP: CAL_WEDGE_MODEL	Wedge_Fit_Params_B7_Detector_1	Static	float32 (6 values)	Landsat 1-3 cal wedge falling edge curve fit parameters for Band 7 Detector 1. Valid format: SN.NNNNNESNN

Table 3-1. Landsat MSS CPF Parameters

Section 4 CPF ODL

4.1 Introduction to ODL Syntax

The ODL syntax employs the following conventions:

- The parameter definition is in the form of parameter = value.
- The value can be either a scalar or an array. Array values are enclosed in parentheses and are separated by commas.
- Parameter arrays can and do exist on multiple lines.
- A carriage return <CR> and line feed <LF> end each line in the file.
- Blank spaces and lines are ignored.
- Each line of comments must begin with /* and end with */, including comments embedded on the same line as a parameter definition.
- Quotation marks are required for values that are text strings, including single characters. The exceptions to this rule are the GROUP and END_GROUP identifiers or values, which do not use quotation marks. The third and fourth parameters in the file, Effective_Date_Begin and Effective_Date_End, also do not have quotation marks. ODL recognizes dates if they follow prescribed formats.
- In general, case is not significant for the ODL. For the CPF, however, the case is significant for keyword and group names. Keywords are mixed case letters and group names are all uppercase letters.
- Indentation is not significant but is used for readability.
- The reserve word END concludes the file.

4.2 Sample MSS CPF ODL Files

The following is a prototype of CPF files that contain valid parameter values for the Landsat 2 MSS satellite and Landsat 5 MSS satellite. These files were selected to show examples of WRS 1 and WRS 2 CPFs.

Landsat MSS 2 CPF ODL File

```
GROUP = FILE_ATTRIBUTES
  Spacecraft_Name = "Landsat_2"
  Sensor_Name = "Multi_Spectral_Scanner"
  Effective_Date_Begin = 1975-01-01
  Effective_Date_End = 1982-02-28
  CPF_File_Name = "LM02CPF_19750101_19820228_01.01"
  File_Source = "LM2CPF19750101_19820228.09"
  Collection_Number = 1
  Version = 1
END_GROUP = FILE_ATTRIBUTES
GROUP = EARTH_CONSTANTS
  Ellipsoid_Name = "WGS84"
  Semi_Major_Axis = 6378137.0000
  Semi_Minor_Axis = 6356752.3142
  Ellipticity = 0.00335281066474
  Eccentricity = 0.00669437999013
```

Earth_Spin_Rate = 72.921158553E-06
 Gravity_Constant = 3.986005E14
 J2_Earth_Model_Term = 1082.63E-06
 END_GROUP = EARTH_CONSTANTS
 GROUP = ORBIT_PARAMETERS
 WRS_Cycle_Days = 18
 WRS_Cycle_Orbits = 251
 Scenes_Per_Orbit = 248
 Orbital_Period = 6534.4538
 Angular_Momentum = 53.896030E9
 Orbit_Radius = 7295.14
 Orbit_Semimajor_Axis = 7289.60
 Orbit_Semiminor_Axis = 7281.28
 Orbit_Eccentricity = 0.00118
 Inclination_Angle = 99.2000
 Argument_Of_Perigee = 90.0
 Descending_Node_Row = 60
 Long_Path1_Row60 = -65.48
 Descending_Node_Time_Min = "08:45"
 Descending_Node_Time_Max = "09:45"
 Nodal_Regression_Rate = 0.9856473
 END_GROUP = ORBIT_PARAMETERS
 GROUP = SCANNER_PARAMETERS
 Lines_Per_Scan_60 = 6
 Scans_Per_Scene = 390
 Swath_Angle = 0.2007
 Scan_Rate = 9.958e-6
 Dwell_Time_60 = 9.958e-6
 IC_Line_Length_60 = 100
 Scan_Line_Length_60 = 3240
 Filter_Frequency_60 = 0.0
 IFOV_B1234 = 86.0e-6
 IFOV_B1234_ALONG = 86.0e-6
 IFOV_B1234_ACROSS = 86.0e-6
 Scan_Period = 0.07342
 Scan_Frequency = 13.62
 Active_Scan_Time = 0.032130
 Turn_Around_Time = 10.719
 END_GROUP = SCANNER_PARAMETERS
 GROUP = MSS_PROCESSING_CONSTANTS
 Image_Center_Line = 1170.0
 Image_Center_Sample = 1620.0
 Image_Center_Scan = 195.0
 Number_Channels = 25
 Image_Line_Rate = 81.72160174
 Image_Yaw = -0.000584133
 Image_Sample_Slope = 16039.2641185
 Image_Frame_Size = 268000.0
 Xcorrect_Delays = (0.20,0.12,0.04,-0.04,-0.12,-0.20)
 END_GROUP = MSS_PROCESSING_CONSTANTS
 GROUP = MIRROR_PARAMETERS
 Number_Mirr_Coef = 3
 Time_Mid_Scan = 0.016035
 Mirr_First_Half_Coef = (-76.976,224.763,-141.956)
 Mirr_Second_Half_Coef = (-76.976,224.763,-141.956)
 END_GROUP = MIRROR_PARAMETERS

```

GROUP = ATTITUDE_PARAMETERS
  Gyro_To_Attitude_Matrix = (+1.0000E0,+0.0000E0,+0.0000E0, +0.0000E0,+1.0000E0,+0.0000E0,
+0.0000E0,+0.0000E0,+1.0000E0)
  Attitude_To_Sensor_Matrix = (+1.0000E0,+0.0000E0,+0.0000E0, +0.0000E0,+1.0000E0,+0.0000E0,
+0.0000E0,+0.0000E0,+1.0000E0)
  Spacecraft_Roll_Bias = 0.0000000
  Spacecraft_Pitch_Bias = 0.0000000
  Spacecraft_Yaw_Bias = 0.0000000
END_GROUP = ATTITUDE_PARAMETERS
GROUP = FOCAL_PLANE_PARAMETERS
GROUP = DETECTOR_OFFSETS
  Forward_Along_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Along_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Along_Scan_DO_B5 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Along_Scan_DO_B5 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Along_Scan_DO_B6 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Along_Scan_DO_B6 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Along_Scan_DO_B7 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Along_Scan_DO_B7 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Across_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Across_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Across_Scan_DO_B5 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Across_Scan_DO_B5 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Across_Scan_DO_B6 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Across_Scan_DO_B6 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Forward_Across_Scan_DO_B7 = (0.000,0.000,0.000,0.000,0.000,0.000)
  Reverse_Across_Scan_DO_B7 = (0.000,0.000,0.000,0.000,0.000,0.000)
END_GROUP = DETECTOR_OFFSETS
GROUP = BAND_OFFSETS
  Along_Scan_Band_Offsets = (0.0,172.0,344.0,516.0)
  Across_Scan_Band_Offsets = (0.0,0.0,0.0,0.0)
  Forward_Focal_Plane_Offsets = (0.0,2.0,4.0,6.0)
  Reverse_Focal_Plane_Offsets = (0.0,2.0,4.0,6.0)
END_GROUP = BAND_OFFSETS
END_GROUP = FOCAL_PLANE_PARAMETERS
GROUP = DETECTOR_TIME_SHIFTS
  Detector_Time_Shift_B4 = (0.0,2.0,4.0,6.0,8.0,10.0)
  Detector_Time_Shift_B5 = (0.0,2.0,4.0,6.0,8.0,10.0)
  Detector_Time_Shift_B6 = (0.0,2.0,4.0,6.0,8.0,10.0)
  Detector_Time_Shift_B7 = (0.0,2.0,4.0,6.0,8.0,10.0)
END_GROUP = DETECTOR_TIME_SHIFTS
GROUP = EPHEMERIS_CONSTANTS
  Ephemeris_Semi_Major_Axis = 6378206.4
  Ephemeris_Semi_Minor_Axis = 6356583.8
  Ephemeris_Flat = 294.9786982
  Ephemeris_Eccentricity = 0.0067686580
END_GROUP = EPHEMERIS_CONSTANTS
GROUP = DETECTOR_STATUS
  Status_Band4 = ("00000","00000","00000","00000","00000","00000")
  Status_Band5 = ("00000","00000","00000","00000","00000","00000")
  Status_Band6 = ("00000","00000","00000","00000","00000","00000")
  Status_Band7 = ("00000","00000","00000","00000","00000","00000")
END_GROUP = DETECTOR_STATUS
GROUP = STRIPING
  Correction_Reference_B4 = 0
  Correction_Reference_B5 = 0

```

```

Correction_Reference_B6 = 0
Correction_Reference_B7 = 0
END_GROUP = STRIPING
GROUP = HISTOGRAM
GROUP = DETECTOR_NOISE
  Detector_Noise_Level_B4 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
  Detector_Noise_Level_B5 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
  Detector_Noise_Level_B6 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
  Detector_Noise_Level_B7 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
END_GROUP = DETECTOR_NOISE
GROUP = REFERENCE_DETECTORS
  Reference_Detector_B4 = 01
  Reference_Detector_B5 = 01
  Reference_Detector_B6 = 01
  Reference_Detector_B7 = 01
END_GROUP = REFERENCE_DETECTORS
GROUP = SATURATION_THRESHOLDS
  Saturation_Bin_Threshold_B4 = 1000
  Saturation_Bin_Threshold_B5 = 1000
  Saturation_Bin_Threshold_B6 = 1000
  Saturation_Bin_Threshold_B7 = 1000
END_GROUP = SATURATION_THRESHOLDS
GROUP = ADJACENT_BINS
GROUP = BIN_NUMBER
  Adjacent_Bin_Number_B4 = 2
  Adjacent_Bin_Number_B5 = 2
  Adjacent_Bin_Number_B6 = 2
  Adjacent_Bin_Number_B7 = 2
END_GROUP = BIN_NUMBER
GROUP = BIN_THRESHOLD
  Adjacent_Bin_Threshold_B4 = 10
  Adjacent_Bin_Threshold_B5 = 10
  Adjacent_Bin_Threshold_B6 = 10
  Adjacent_Bin_Threshold_B7 = 10
END_GROUP = BIN_THRESHOLD
END_GROUP = ADJACENT_BINS
GROUP = STARTING_PIXEL
  Start_pixel_B4 = 1
  Start_pixel_B5 = 1
  Start_pixel_B6 = 1
  Start_pixel_B7 = 1
END_GROUP = STARTING_PIXEL
GROUP = WINDOW_WIDTH
  Window_Samples_B4 = 3200
  Window_Samples_B5 = 3200
  Window_Samples_B6 = 3200
  Window_Samples_B7 = 3200
END_GROUP = WINDOW_WIDTH
END_GROUP = HISTOGRAM
GROUP = CHANNEL_SATURATION
  High_Level_B4 = (127,127,127,127,127,127)
  High_Level_B5 = (127,127,127,127,127,127)
  High_Level_B6 = (127,127,127,127,127,127)
  High_Level_B7 = (127,127,127,127,127,127)
  Low_Level_B4 = (0,0,0,0,0,0)
  Low_Level_B5 = (0,0,0,0,0,0)

```

Low_Level_B6 = (0,0,0,0,0)
 Low_Level_B7 = (0,0,0,0,0)
 END_GROUP = CHANNEL_SATURATION
 GROUP = RECAL_TO_MSSR
 B4_ReCal_Bias_MSSP_TO_MSSR = 3.3008
 B5_ReCal_Bias_MSSP_TO_MSSR = -0.8181
 B6_ReCal_Bias_MSSP_TO_MSSR = 0.0621
 B7_ReCal_Bias_MSSP_TO_MSSR = 2.2554
 B4_ReCal_Gain_MSSP_TO_MSSR = 0.9731
 B5_ReCal_Gain_MSSP_TO_MSSR = 1.0311
 B6_ReCal_Gain_MSSP_TO_MSSR = 1.0018
 B7_ReCal_Gain_MSSP_TO_MSSR = 0.9981
 B4_ReCal_Bias_MSSA_TO_MSSR = -0.8121
 B5_ReCal_Bias_MSSA_TO_MSSR = -0.7856
 B6_ReCal_Bias_MSSA_TO_MSSR = -1.0511
 B7_ReCal_Bias_MSSA_TO_MSSR = 0.4745
 B4_ReCal_Gain_MSSA_TO_MSSR = 1.0084
 B5_ReCal_Gain_MSSA_TO_MSSR = 1.0202
 B6_ReCal_Gain_MSSA_TO_MSSR = 1.0196
 B7_ReCal_Gain_MSSA_TO_MSSR = 1.0176
 B4_ReCal_Bias_MSSXCCT_TO_MSSR = 0.0239
 B5_ReCal_Bias_MSSXCCT_TO_MSSR = 0.0967
 B6_ReCal_Bias_MSSXCCT_TO_MSSR = -0.0607
 B7_ReCal_Bias_MSSXCCT_TO_MSSR = 3.4683
 B4_ReCal_Gain_MSSXCCT_TO_MSSR = 0.9906
 B5_ReCal_Gain_MSSXCCT_TO_MSSR = 0.9901
 B6_ReCal_Gain_MSSXCCT_TO_MSSR = 0.9958
 B7_ReCal_Gain_MSSXCCT_TO_MSSR = 0.9166
 B4_ReCal_Bias_MSSXWBV_TO_MSSR = -0.0387
 B5_ReCal_Bias_MSSXWBV_TO_MSSR = -0.0616
 B6_ReCal_Bias_MSSXWBV_TO_MSSR = -0.0099
 B7_ReCal_Bias_MSSXWBV_TO_MSSR = 0.0026
 B4_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0005
 B5_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0014
 B6_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0011
 B7_ReCal_Gain_MSSXWBV_TO_MSSR = 0.9998
 END_GROUP = RECAL_TO_MSSR
 GROUP = CROSS_CAL_TO_L5
 B4_Cross_Cal_Bias_To_L5 = 0.0000
 B5_Cross_Cal_Bias_To_L5 = 0.0000
 B6_Cross_Cal_Bias_To_L5 = 0.0000
 B7_Cross_Cal_Bias_To_L5 = 0.0000
 B4_Cross_Cal_Gain_To_L5 = 1.3236
 B5_Cross_Cal_Gain_To_L5 = 0.9770
 B6_Cross_Cal_Gain_To_L5 = 0.9334
 B7_Cross_Cal_Gain_To_L5 = 0.9329
 B4_Cross_Cal_TDF_A_To_L5 = 0.0
 B5_Cross_Cal_TDF_A_To_L5 = 0.0
 B6_Cross_Cal_TDF_A_To_L5 = 0.0
 B7_Cross_Cal_TDF_A_To_L5 = 0.0
 B4_Cross_Cal_TDF_B_To_L5 = 1.0
 B5_Cross_Cal_TDF_B_To_L5 = 1.0
 B6_Cross_Cal_TDF_B_To_L5 = 1.0
 B7_Cross_Cal_TDF_B_To_L5 = 1.0
 B4_Cross_Cal_TDF_C_To_L5 = 1.0
 B5_Cross_Cal_TDF_C_To_L5 = 1.0

B6_Cross_Cal_TDF_C_To_L5 = 1.0
 B7_Cross_Cal_TDF_C_To_L5 = 1.0
 T_Launch = 1975.06
 END_GROUP = CROSS_CAL_TO_L5
 GROUP = ABSOLUTE_CALIBRATION
 L5B1_Abs_Cal = 0.791
 L5B2_Abs_Cal = 0.912
 L5B3_Abs_Cal = 0.976
 L5B4_Abs_Cal = 0.968
 END_GROUP = ABSOLUTE_CALIBRATION
 GROUP = ORIGINAL_SCALING_PARAMETERS
 B4a_Lmin_Lmax_Before_Proc_Date = (10.0,210.0)
 B5a_Lmin_Lmax_Before_Proc_Date = (7.0,156.0)
 B6a_Lmin_Lmax_Before_Proc_Date = (7.0,140.0)
 B7a_Lmin_Lmax_Before_Proc_Date = (5.0,138.0)
 B4a_Lmin_Lmax_After_Proc_Date = (8.0,263.0)
 B5a_Lmin_Lmax_After_Proc_Date = (6.0,176.0)
 B6a_Lmin_Lmax_After_Proc_Date = (6.0,152.0)
 B7a_Lmin_Lmax_After_Proc_Date = (4.0,130.0)
 Proc_Date = "1975-07-16"
 END_GROUP = ORIGINAL_SCALING_PARAMETERS
 GROUP = FINAL_SCALING_PARAMETERS
 B4f_Lmin_Lmax_Before_Proc_Date = (-5.9,205.2)
 B5f_Lmin_Lmax_Before_Proc_Date = (5.7,142.6)
 B6f_Lmin_Lmax_Before_Proc_Date = (5.5,129.1)
 B7f_Lmin_Lmax_Before_Proc_Date = (4.5,127.2)
 B4f_Lmin_Lmax_After_Proc_Date = (-8.0,261.2)
 B5f_Lmin_Lmax_After_Proc_Date = (4.8,161.0)
 B6f_Lmin_Lmax_After_Proc_Date = (4.6,140.2)
 B7f_Lmin_Lmax_After_Proc_Date = (3.6,119.9)
 END_GROUP = FINAL_SCALING_PARAMETERS
 GROUP = SOLAR_SPECTRAL_IRRADIANCES
 B4_Solar_Irradiance = 1795.0
 B5_Solar_Irradiance = 1507.0
 B6_Solar_Irradiance = 1263.0
 B7_Solar_Irradiance = 864.4
 END_GROUP = SOLAR_SPECTRAL_IRRADIANCES
 GROUP = RESIDUAL_BIAS_ADJUST
 B4_Residual_Bias_Adjust = 14.92
 B5_Residual_Bias_Adjust = 0.0
 B6_Residual_Bias_Adjust = 0.0
 B7_Residual_Bias_Adjust = 0.0
 END_GROUP = RESIDUAL_BIAS_ADJUST
 GROUP = REFLECTANCE_RESCALE
 Reflectance_Additive_Factor = (-0.100000,-0.100000,-0.100000,-0.100000)
 Reflectance_Multiplicative_Factor = (2.000000E-05,2.000000E-05,2.000000E-05,2.000000E-05)
 END_GROUP = REFLECTANCE_RESCALE
 GROUP = CAL_WEDGE_PARAMS
 GROUP = CAL_OFFSET_COEFFS_LOW
 B4L_Bias_C_Detector_6 = (-0.120850,-0.046143,0.076416,0.125244,0.201172,0.257324)
 B4L_Bias_C_Detector_5 = (-0.158691,-0.057861,0.098145,0.163086,0.260498,0.334961)
 B4L_Bias_C_Detector_4 = (-0.174561,-0.077148,0.101562,0.169922,0.286865,0.375000)
 B4L_Bias_C_Detector_3 = (-0.168213,-0.078613,0.100342,0.166992,0.286621,0.373779)
 B4L_Bias_C_Detector_2 = (-0.194092,-0.078369,0.114990,0.192871,0.322021,0.420410)
 B4L_Bias_C_Detector_1 = (-0.151123,-0.062256,0.093018,0.154053,0.252441,0.326172)
 B5L_Bias_C_Detector_6 = (-0.053711,-0.025635,0.032715,0.062256,0.097656,0.123291)

B5L_Bias_C_Detector_5 = (-0.089600,-0.045898,0.058694,0.098145,0.158936,0.200196)
B5L_Bias_C_Detector_4 = (-0.088379,-0.045898,0.047119,0.094482,0.152832,0.197266)
B5L_Bias_C_Detector_3 = (-0.083740,-0.042480,0.052002,0.077881,0.155273,0.198730)
B5L_Bias_C_Detector_2 = (-0.094727,-0.048828,0.055176,0.106445,0.167725,0.214600)
B5L_Bias_C_Detector_1 = (-0.149902,-0.074707,0.090332,0.168213,0.264648,0.336670)
B6L_Bias_C_Detector_6 = (-0.176758,-0.090332,0.103027,0.174316,0.287354,0.348877)
B6L_Bias_C_Detector_5 = (-0.106934,-0.051768,0.060059,0.101807,0.171387,0.207764)
B6L_Bias_C_Detector_4 = (-0.135010,-0.069824,0.072998,0.123047,0.214844,0.261719)
B6L_Bias_C_Detector_3 = (-0.103027,-0.055176,0.058594,0.096680,0.168701,0.205811)
B6L_Bias_C_Detector_2 = (-0.120605,-0.065430,0.072021,0.115967,0.199463,0.243652)
B6L_Bias_C_Detector_1 = (-0.064941,-0.031006,0.038574,0.062988,0.105713,0.128418)
B7L_Bias_C_Detector_6 = (-0.473877,-0.219971,0.075928,0.363281,0.634277,0.903320)
B7L_Bias_C_Detector_5 = (-0.709473,-0.353760,0.076416,0.500244,0.922363,1.354980)
B7L_Bias_C_Detector_4 = (-0.490479,-0.245361,0.041504,0.321045,0.616943,0.934570)
B7L_Bias_C_Detector_3 = (-0.644775,-0.333008,0.059570,0.427490,0.824463,1.232422)
B7L_Bias_C_Detector_2 = (-0.363525,-0.180176,0.039795,0.256104,0.477295,0.704834)
B7L_Bias_C_Detector_1 = (-0.535400,-0.263916,0.066895,0.377686,0.713867,1.056885)

END_GROUP = CAL_OFFSET_COEFFS_LOW

GROUP = CAL_OFFSET_COEFFS_HIGH

B4H_Bias_C_Detector_6 = (-0.229248,-0.053955,0.050781,0.266625,0.427734,0.539795)
B4H_Bias_C_Detector_5 = (-0.229248,-0.051514,0.050537,0.263918,0.427246,0.539795)
B4H_Bias_C_Detector_4 = (-0.225586,-0.070313,0.049072,0.265695,0.437256,0.547363)
B4H_Bias_C_Detector_3 = (-0.220459,-0.069092,0.046584,0.261476,0.434814,0.545166)
B4H_Bias_C_Detector_2 = (-0.222900,-0.056396,0.045410,0.262451,0.434326,0.537598)
B4H_Bias_C_Detector_1 = (-0.225095,-0.057861,0.048584,0.262695,0.434570,0.537598)
B5H_Bias_C_Detector_6 = (-0.454102,-0.202881,0.057373,0.310059,0.520020,0.769775)
B5H_Bias_C_Detector_5 = (-0.449219,-0.215088,0.038330,0.345947,0.514648,0.765869)
B5H_Bias_C_Detector_4 = (-0.482422,-0.217285,0.043945,0.333498,0.521729,0.800781)
B5H_Bias_C_Detector_3 = (-0.444824,-0.205322,0.062246,0.327148,0.504395,0.766846)
B5H_Bias_C_Detector_2 = (-0.450195,-0.207764,0.053711,0.322266,0.510742,0.771484)
B5H_Bias_C_Detector_1 = (-0.502197,-0.233398,0.065186,0.393311,0.496826,0.780762)

END_GROUP = CAL_OFFSET_COEFFS_HIGH

GROUP = CAL_GAIN_COEFFS_LOW

B4L_Gain_D_Detector_6 = (1.124023,0.710205,0.031738,-0.238770,-0.658203,-0.968018)
B4L_Gain_D_Detector_5 = (1.268066,0.786377,0.040283,-0.269287,-0.734131,-1.090332)
B4L_Gain_D_Detector_4 = (1.088379,0.720459,0.045166,-0.212646,-0.654053,-0.986572)
B4L_Gain_D_Detector_3 = (1.113770,0.760010,0.050537,-0.211426,-0.684082,-1.027832)
B4L_Gain_D_Detector_2 = (1.145996,0.736572,0.051025,-0.224121,-0.680176,-1.028076)
B4L_Gain_D_Detector_1 = (1.114502,0.723877,0.039307,-0.229248,-0.661865,-0.985596)
B5L_Gain_D_Detector_6 = (1.049561,0.735107,0.073975,-0.256592,-0.656494,-0.944824)
B5L_Gain_D_Detector_5 = (1.221924,0.872559,0.036621,-0.276367,-0.761963,-1.090820)
B5L_Gain_D_Detector_4 = (0.979004,0.697754,0.080666,-0.230713,-0.615479,-0.910400)
B5L_Gain_D_Detector_3 = (0.978027,0.706299,0.074219,-0.237305,-0.614502,-0.832520)
B5L_Gain_D_Detector_2 = (0.938721,0.672607,0.065918,-0.231689,-0.586914,-0.858643)
B5L_Gain_D_Detector_1 = (0.975586,0.689941,0.058105,-0.238037,-0.604980,-0.879883)
B6L_Gain_D_Detector_6 = (1.194580,0.831787,0.018555,-0.278809,-0.753662,-1.011475)
B6L_Gain_D_Detector_5 = (1.132324,0.766002,0.022948,-0.251953,-0.713379,-0.955811)
B6L_Gain_D_Detector_4 = (1.133545,0.787598,0.025146,-0.240723,-0.728271,-0.976807)
B6L_Gain_D_Detector_3 = (1.043213,0.740967,0.020752,-0.219727,-0.675293,-0.908936)
B6L_Gain_D_Detector_2 = (1.046875,0.750244,0.011230,-0.224609,-0.673340,-0.909180)
B6L_Gain_D_Detector_1 = (1.156250,0.782959,0.014160,-0.255127,-0.724854,-0.973145)
B7L_Gain_D_Detector_6 = (1.763672,1.112793,0.352539,-0.383057,-1.077881,-1.767334)
B7L_Gain_D_Detector_5 = (1.740234,1.126709,0.383301,-0.348389,-1.077148,-1.823730)
B7L_Gain_D_Detector_4 = (1.468262,0.944336,0.330078,-0.266113,-0.898926,-1.576660)
B7L_Gain_D_Detector_3 = (1.533936,1.005615,0.340576,-0.281494,-0.953857,-1.644287)
B7L_Gain_D_Detector_2 = (1.455811,0.942383,0.322998,-0.280762,-0.900635,-1.539063)

B7L_Gain_D_Detector_1 = (1.612305,1.044922,0.352539,-0.296143,-1.002197,-1.714844)
 END_GROUP = CAL_GAIN_COEFFS_LOW
 GROUP = CAL_GAIN_COEFFS_HIGH
 B4H_Gain_D_Detector_6 = (0.930420,0.518555,0.272461,-0.231934,-0.612793,-0.875732)
 B4H_Gain_D_Detector_5 = (1.061279,0.585205,0.311523,-0.260254,-0.697998,-0.999023)
 B4H_Gain_D_Detector_4 = (0.822266,0.496828,0.246094,-0.200928,-0.566406,-0.797119)
 B4H_Gain_D_Detector_3 = (0.867920,0.528320,0.264404,-0.212402,-0.600098,-0.847412)
 B4H_Gain_D_Detector_2 = (0.919189,0.526611,0.286133,-0.225586,-0.630859,-0.874756)
 B4H_Gain_D_Detector_1 = (0.892334,0.511475,0.268799,-0.218202,-0.609619,-0.843994)
 B5H_Gain_D_Detector_6 = (1.280273,0.762451,0.225342,-0.295654,-0.728271,-1.243408)
 B5H_Gain_D_Detector_5 = (1.460693,0.905518,0.304443,-0.424805,-0.624707,-1.420410)
 B5H_Gain_D_Detector_4 = (1.158203,0.685303,0.218750,-0.297363,-0.633301,-1.130859)
 B5H_Gain_D_Detector_3 = (1.156738,0.703857,0.216553,-0.303467,-0.638184,-1.134521)
 B5H_Gain_D_Detector_2 = (1.137939,0.690918,0.206252,-0.266865,-0.634521,-1.114990)
 B5H_Gain_D_Detector_1 = (1.321289,0.709527,0.200439,-0.447266,-0.661855,-1.212402)
 END_GROUP = CAL_GAIN_COEFFS_HIGH
 GROUP = CAL_MULTIPLICATIVE_MODIFIERS
 M_B4_Detector_6 = 1.0080
 M_B4_Detector_5 = 1.0040
 M_B4_Detector_4 = 1.0040
 M_B4_Detector_3 = 0.9960
 M_B4_Detector_2 = 1.0040
 M_B4_Detector_1 = 0.9800
 M_B5_Detector_6 = 1.0000
 M_B5_Detector_5 = 1.0000
 M_B5_Detector_4 = 0.9960
 M_B5_Detector_3 = 0.9920
 M_B5_Detector_2 = 1.0040
 M_B5_Detector_1 = 1.0040
 M_B6_Detector_6 = 1.0000
 M_B6_Detector_5 = 1.0200
 M_B6_Detector_4 = 0.9960
 M_B6_Detector_3 = 0.9920
 M_B6_Detector_2 = 1.0000
 M_B6_Detector_1 = 0.9880
 M_B7_Detector_6 = 1.0000
 M_B7_Detector_5 = 0.9960
 M_B7_Detector_4 = 1.0040
 M_B7_Detector_3 = 0.9920
 M_B7_Detector_2 = 0.9920
 M_B7_Detector_1 = 1.0160
 END_GROUP = CAL_MULTIPLICATIVE_MODIFIERS
 GROUP = CAL_ADDITIVE_MODIFIERS
 A_B4_Detector_6 = -0.2100
 A_B4_Detector_5 = -0.1400
 A_B4_Detector_4 = 0.1600
 A_B4_Detector_3 = -0.2600
 A_B4_Detector_2 = -0.0900
 A_B4_Detector_1 = 0.3800
 A_B5_Detector_6 = -0.0900
 A_B5_Detector_5 = -0.0200
 A_B5_Detector_4 = -0.0200
 A_B5_Detector_3 = 0.1400
 A_B5_Detector_2 = -0.2200
 A_B5_Detector_1 = 0.1700
 A_B6_Detector_6 = -0.0200


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A_B6_Detector_5 = -0.8000
A_B6_Detector_4 = 0.3100
A_B6_Detector_3 = 0.1500
A_B6_Detector_2 = 0.1200
A_B6_Detector_1 = 0.2600
A_B7_Detector_6 = 0.0600
A_B7_Detector_5 = -0.0500
A_B7_Detector_4 = 0.0800
A_B7_Detector_3 = 0.0300
A_B7_Detector_2 = 0.0900
A_B7_Detector_1 = -0.2100
END_GROUP = CAL_ADDITIVE_MODIFIERS
GROUP = CAL_DECOMPRESSION_TABLES
  B4-Decompression_Table =
(0,1,1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18,20,22,23,25,26,28,30,32,34,35,37,39,41,43,45,47,49,51,53,55,58,60,6
3,66,68,71,74,77,80,84,87,90,92,95,98,101,104,108,111,114,117,120,123,125,127)
  B5-Decompression_Table =
(0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,17,18,19,20,22,23,25,26,28,30,32,34,35,37,39,41,42,45,47,49,52,54,56,58,60,
63,66,69,72,74,77,80,83,86,89,92,95,98,101,104,107,110,113,116,119,122,125,127)
  B6-Decompression_Table =
(0,1,1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18,20,22,23,25,26,28,30,32,34,35,37,39,41,43,45,47,49,51,53,55,58,60,6
3,66,68,71,74,77,80,84,87,90,92,95,98,101,104,108,111,114,117,120,123,125,127)
END_GROUP = CAL_DECOMPRESSION_TABLES
scale_factor = 127
GROUP = CAL_WEDGE_MODEL
  Wedge_Rise_Start_B4 = (22, 18, 20, 19, 17, 18)
  Wedge_Rise_Start_B5 = (17, 19, 18, 17, 16, 16)
  Wedge_Rise_Start_B6 = (19, 18, 16, 16, 17, 16)
  Wedge_Rise_Start_B7 = (22, 21, 20, 21, 22, 19)
  Wedge_Rise_Val_B4 = (1, 1, 1, 1, 1, 1)
  Wedge_Rise_Val_B5 = (1, 1, 1, 1, 1, 1)
  Wedge_Rise_Val_B6 = (1, 1, 1, 1, 1, 1)
  Wedge_Rise_Val_B7 = (1, 1, 1, 1, 1, 1)
  Saturation_Start_B4 = (52, 51, 49, 49, 49, 48)
  Saturation_Start_B5 = (53, 53, 48, 48, 48, 48)
  Saturation_Start_B6 = (49, 49, 48, 48, 48, 48)
  Saturation_Start_B7 = (54, 54, 52, 51, 52, 52)
  Saturation_End_B4 = (277, 251, 269, 264, 239, 241)
  Saturation_End_B5 = (396, 396, 396, 396, 379, 396)
  Saturation_End_B6 = (396, 396, 396, 396, 368, 340)
  Saturation_End_B7 = (210, 210, 208, 214, 212, 210)
  Saturation_Val_B4 = (63, 63, 63, 63, 63, 63)
  Saturation_Val_B5 = (63, 63, 63, 63, 63, 63)
  Saturation_Val_B6 = (63, 63, 63, 63, 63, 63)
  Saturation_Val_B7 = (49, 50, 50, 49, 48, 49)
  Hump_Location_B4 = (900, 900, 900, 900, 900, 900)
  Hump_Location_B5 = (900, 900, 900, 900, 900, 900)
  Hump_Location_B6 = (900, 900, 900, 900, 900, 900)
  Hump_Location_B7 = (900, 900, 900, 900, 900, 900)
  Wedge_Fit_Type = (0, 0, 0, 1)
  Wedge_Fit_Params_B4_Detector_6 = (6.15E+01, 3.5E-03, 0, 0, 0, 0)
  Wedge_Fit_Params_B4_Detector_5 = (6.05E+01, 3.3E-03, 0, 0, 0, 0)
  Wedge_Fit_Params_B4_Detector_4 = (6.22E+01, 3.2E-03, 0, 0, 0, 0)
  Wedge_Fit_Params_B4_Detector_3 = (6.30E+01, 3.1E-03, 0, 0, 0, 0)
  Wedge_Fit_Params_B4_Detector_2 = (6.30E+01, 3.2E-03, 0, 0, 0, 0)
  Wedge_Fit_Params_B4_Detector_1 = (6.20E+01, 4.5E-03, 0, 0, 0, 0)

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Wedge_Fit_Params_B5_Detector_6 = (6.20E+01, 3.2E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B5_Detector_5 = (6.10E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B5_Detector_4 = (5.85E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B5_Detector_3 = (6.20E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B5_Detector_2 = (5.83E+01, 3.2E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B5_Detector_1 = (5.70E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B6_Detector_6 = (5.90E+01, 3.2E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B6_Detector_5 = (6.10E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B6_Detector_4 = (5.85E+01, 2.9E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B6_Detector_3 = (6.20E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B6_Detector_2 = (5.73E+01, 3.1E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B6_Detector_1 = (5.80E+01, 3.2E-03, 0, 0, 0, 0)
Wedge_Fit_Params_B7_Detector_6 = (5.19410E+01, -4.12140E-01, 1.61375E-03, -3.38454E-06, 3.53759E-09,
0)
Wedge_Fit_Params_B7_Detector_5 = (5.23948E+01, -3.82850E-01, 1.41941E-03, -2.88297E-06, 2.94984E-09,
0)
Wedge_Fit_Params_B7_Detector_4 = (5.31753E+01, -4.04682E-01, 1.40662E-03, -2.72658E-06, 2.69651E-09,
0)
Wedge_Fit_Params_B7_Detector_3 = (5.48689E+01, -3.79836E-01, 1.29768E-03, -2.46529E-06, 2.39629E-09,
0)
Wedge_Fit_Params_B7_Detector_2 = (5.24094E+01, -4.26723E-01, 1.38536E-03, -2.47246E-06, 2.25843E-09,
0)
Wedge_Fit_Params_B7_Detector_1 = (5.15199E+01, -3.70433E-01, 1.16642E-03, -2.00329E-06, 1.75316E-09,
0)
END_GROUP = CAL_WEDGE_MODEL
END_GROUP = CAL_WEDGE_PARAMS
END

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Landsat MSS 5 CPF ODL File

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GROUP = FILE_ATTRIBUTES
Spacecraft_Name = "Landsat_5"
Sensor_Name = "Multi_Spectral_Scanner"
Effective_Date_Begin = 1984-11-09
Effective_Date_End = 1994-04-28
CPF_File_Name = "LM05CPF_19841109_19940428_01.01"
File_Source = "LM5CPF19841109_19940428.05"
Collection_Number = 1
Version = 1
END_GROUP = FILE_ATTRIBUTES
GROUP = EARTH_CONSTANTS
Ellipsoid_Name = "WGS84"
Semi_Major_Axis = 6378137.0000
Semi_Minor_Axis = 6356752.3142
Ellipticity = 0.00335281066474
Eccentricity = 0.00669437999013
Earth_Spin_Rate = 72.921158553E-06
Gravity_Constant = 3.986005E14
J2_Earth_Model_Term = 1082.63E-06
END_GROUP = EARTH_CONSTANTS
GROUP = ORBIT_PARAMETERS
WRS_Cycle_Days = 16
WRS_Cycle_Orbits = 233
Scenes_Per_Orbit = 248
Orbital_Period = 5933.0472
Angular_Momentum = 53.136250E9

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Orbit_Radius = 7083.4457
Orbit_Semimajor_Axis = 7083.4457
Orbit_Semiminor_Axis = 7083.4408
Orbit_Eccentricity = 0.00117604
Inclination_Angle = 98.2096
Argument_Of_Perigee = 90.0
Descending_Node_Row = 60
Long_Path1_Row60 = -64.6
Descending_Node_Time_Min = "09:10"
Descending_Node_Time_Max = "10:15"
Nodal_Regression_Rate = 0.985647366
END_GROUP = ORBIT_PARAMETERS
GROUP = SCANNER_PARAMETERS
Lines_Per_Scan_60 = 6
Scans_Per_Scene = 390
Swath_Angle = 0.2623
Scan_Rate = 9.958e-6
Dwell_Time_60 = 9.958e-6
IC_Line_Length_60 = 100
Scan_Line_Length_60 = 3240
Filter_Frequency_60 = 0.0
IFOV_B1234 = 86.0e-6
IFOV_B1234_ALONG = 86.0e-6
IFOV_B1234_ACROSS = 86.0e-6
Scan_Period = 0.07342
Scan_Frequency = 13.62
Active_Scan_Time = 0.032130
Turn_Around_Time = 10.719
END_GROUP = SCANNER_PARAMETERS
GROUP = MSS_PROCESSING_CONSTANTS
Image_Center_Line = 1170.0
Image_Center_Sample = 1620.0
Image_Center_Scan = 195.0
Number_Channels = 25
Image_Line_Rate = 81.72160174
Image_Yaw = -0.000584133
Image_Sample_Slope = 16039.2641185
Image_Frame_Size = 268000.0
Xcorrect_Delays = (0.20,0.12,0.04,-0.04,-0.12,-0.20)
END_GROUP = MSS_PROCESSING_CONSTANTS
GROUP = MIRROR_PARAMETERS
Number_Mirr_Coef = 3
Time_Mid_Scan = 0.016035
Mirr_First_Half_Coef = (-76.976,224.763,-141.956)
Mirr_Second_Half_Coef = (-76.976,224.763,-141.956)
END_GROUP = MIRROR_PARAMETERS
GROUP = ATTITUDE_PARAMETERS
Gyro_To_Attitude_Matrix = (+1.0000E0,+0.0000E0,+0.0000E0, +0.0000E0,+1.0000E0,+0.0000E0,
+0.0000E0,+0.0000E0,+1.0000E0)
Attitude_To_Sensor_Matrix = (+1.0000E0,+0.0000E0,+0.0000E0, +0.0000E0,+1.0000E0,+0.0000E0,
+0.0000E0,+0.0000E0,+1.0000E0)
Spacecraft_Roll_Bias = 0.0000000
Spacecraft_Pitch_Bias = 0.0000000
Spacecraft_Yaw_Bias = 0.0000000
END_GROUP = ATTITUDE_PARAMETERS
GROUP = FOCAL_PLANE_PARAMETERS

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GROUP = DETECTOR_OFFSETS
Forward_Along_Scan_DO_B1 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Along_Scan_DO_B1 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Along_Scan_DO_B2 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Along_Scan_DO_B2 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Along_Scan_DO_B3 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Along_Scan_DO_B3 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Along_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Along_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Across_Scan_DO_B1 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Across_Scan_DO_B1 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Across_Scan_DO_B2 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Across_Scan_DO_B2 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Across_Scan_DO_B3 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Across_Scan_DO_B3 = (0.000,0.000,0.000,0.000,0.000,0.000)
Forward_Across_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
Reverse_Across_Scan_DO_B4 = (0.000,0.000,0.000,0.000,0.000,0.000)
END_GROUP = DETECTOR_OFFSETS
GROUP = BAND_OFFSETS
Along_Scan_Band_Offsets = (0.0,172.0,344.0,516.0)
Across_Scan_Band_Offsets = (0.0,0.0,0.0,0.0)
Forward_Focal_Plane_Offsets = (0.0,2.0,4.0,6.0)
Reverse_Focal_Plane_Offsets = (0.0,2.0,4.0,6.0)
END_GROUP = BAND_OFFSETS
END_GROUP = FOCAL_PLANE_PARAMETERS
GROUP = DETECTOR_TIME_SHIFTS
Detector_Time_Shift_B1 = (0.0,2.0,4.0,6.0,8.0,10.0)
Detector_Time_Shift_B2 = (0.0,2.0,4.0,6.0,8.0,10.0)
Detector_Time_Shift_B3 = (0.0,2.0,4.0,6.0,8.0,10.0)
Detector_Time_Shift_B4 = (0.0,2.0,4.0,6.0,8.0,10.0)
END_GROUP = DETECTOR_TIME_SHIFTS
GROUP = EPHEMERIS_CONSTANTS
Ephemeris_Semi_Major_Axis = 6378206.4
Ephemeris_Semi_Minor_Axis = 6356583.8
Ephemeris_Flat = 294.9786982
Ephemeris_Eccentricity = 0.0067686580
END_GROUP = EPHEMERIS_CONSTANTS
GROUP = DETECTOR_STATUS
Status_Band1 = ("00000","00000","00000","00000","00000","00000")
Status_Band2 = ("00000","00000","00000","00000","00000","00000")
Status_Band3 = ("00000","00000","00000","00000","00000","00000")
Status_Band4 = ("00000","00000","00000","00000","00000","00000")
END_GROUP = DETECTOR_STATUS
GROUP = STRIPING
Correction_Reference_B1 = 0
Correction_Reference_B2 = 0
Correction_Reference_B3 = 0
Correction_Reference_B4 = 0
END_GROUP = STRIPING
GROUP = HISTOGRAM
GROUP = DETECTOR_NOISE
Detector_Noise_Level_B1 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
Detector_Noise_Level_B2 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
Detector_Noise_Level_B3 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
Detector_Noise_Level_B4 = (0.00000,0.00000,0.00000,0.00000,0.00000,0.00000)
END_GROUP = DETECTOR_NOISE

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GROUP = REFERENCE_DETECTORS
Reference_Detector_B1 = 01
Reference_Detector_B2 = 01
Reference_Detector_B3 = 01
Reference_Detector_B4 = 01
END_GROUP = REFERENCE_DETECTORS
GROUP = SATURATION_THRESHOLDS
Saturation_Bin_Threshold_B1 = 1000
Saturation_Bin_Threshold_B2 = 1000
Saturation_Bin_Threshold_B3 = 1000
Saturation_Bin_Threshold_B4 = 1000
END_GROUP = SATURATION_THRESHOLDS
GROUP = ADJACENT_BINS
GROUP = BIN_NUMBER
Adjacent_Bin_Number_B1 = 2
Adjacent_Bin_Number_B2 = 2
Adjacent_Bin_Number_B3 = 2
Adjacent_Bin_Number_B4 = 2
END_GROUP = BIN_NUMBER
GROUP = BIN_THRESHOLD
Adjacent_Bin_Threshold_B1 = 10
Adjacent_Bin_Threshold_B2 = 10
Adjacent_Bin_Threshold_B3 = 10
Adjacent_Bin_Threshold_B4 = 10
END_GROUP = BIN_THRESHOLD
END_GROUP = ADJACENT_BINS
GROUP = STARTING_PIXEL
Start_pixel_B1 = 1
Start_pixel_B2 = 1
Start_pixel_B3 = 1
Start_pixel_B4 = 1
END_GROUP = STARTING_PIXEL
GROUP = WINDOW_WIDTH
Window_Samples_B1 = 3200
Window_Samples_B2 = 3200
Window_Samples_B3 = 3200
Window_Samples_B4 = 3200
END_GROUP = WINDOW_WIDTH
END_GROUP = HISTOGRAM
GROUP = CHANNEL_SATURATION
High_Level_B1 = (127,127,127,127,127,127)
High_Level_B2 = (127,127,127,127,127,127)
High_Level_B3 = (127,127,127,127,127,127)
High_Level_B4 = (127,127,127,127,127,127)
Low_Level_B1 = (0,0,0,0,0,0)
Low_Level_B2 = (0,0,0,0,0,0)
Low_Level_B3 = (0,0,0,0,0,0)
Low_Level_B4 = (0,0,0,0,0,0)
END_GROUP = CHANNEL_SATURATION
GROUP = RECAL_TO_MSSR
B1_ReCal_Bias_MSSP_TO_MSSR = 0.0000
B2_ReCal_Bias_MSSP_TO_MSSR = 0.0000
B3_ReCal_Bias_MSSP_TO_MSSR = 0.0000
B4_ReCal_Bias_MSSP_TO_MSSR = 0.0000
B1_ReCal_Gain_MSSP_TO_MSSR = 1.0000
B2_ReCal_Gain_MSSP_TO_MSSR = 1.0000

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B3_ReCal_Gain_MSSP_TO_MSSR = 1.0000
 B4_ReCal_Gain_MSSP_TO_MSSR = 1.0000
 B1_ReCal_Bias_MSSA_TO_MSSR = 0.9491
 B2_ReCal_Bias_MSSA_TO_MSSR = 0.2316
 B3_ReCal_Bias_MSSA_TO_MSSR = 0.1378
 B4_ReCal_Bias_MSSA_TO_MSSR = -1.5037
 B1_ReCal_Gain_MSSA_TO_MSSR = 1.0681
 B2_ReCal_Gain_MSSA_TO_MSSR = 1.0425
 B3_ReCal_Gain_MSSA_TO_MSSR = 1.0155
 B4_ReCal_Gain_MSSA_TO_MSSR = 1.0199
 B1_ReCal_Bias_MSSXCCT_TO_MSSR = 0.0000
 B2_ReCal_Bias_MSSXCCT_TO_MSSR = 0.0000
 B3_ReCal_Bias_MSSXCCT_TO_MSSR = 0.0000
 B4_ReCal_Bias_MSSXCCT_TO_MSSR = 0.0000
 B1_ReCal_Gain_MSSXCCT_TO_MSSR = 1.0000
 B2_ReCal_Gain_MSSXCCT_TO_MSSR = 1.0000
 B3_ReCal_Gain_MSSXCCT_TO_MSSR = 1.0000
 B4_ReCal_Gain_MSSXCCT_TO_MSSR = 1.0000
 B1_ReCal_Bias_MSSXWBV_TO_MSSR = 0.0000
 B2_ReCal_Bias_MSSXWBV_TO_MSSR = 0.0000
 B3_ReCal_Bias_MSSXWBV_TO_MSSR = 0.0000
 B4_ReCal_Bias_MSSXWBV_TO_MSSR = 0.0000
 B1_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0000
 B2_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0000
 B3_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0000
 B4_ReCal_Gain_MSSXWBV_TO_MSSR = 1.0000
 END_GROUP = RECAL_TO_MSSR
 GROUP = CROSS_CAL_TO_L5
 B1_Cross_Cal_Bias_To_L5 = 0.0000
 B2_Cross_Cal_Bias_To_L5 = 0.0000
 B3_Cross_Cal_Bias_To_L5 = 0.0000
 B4_Cross_Cal_Bias_To_L5 = 0.0000
 B1_Cross_Cal_Gain_To_L5 = 1.0000
 B2_Cross_Cal_Gain_To_L5 = 1.0000
 B3_Cross_Cal_Gain_To_L5 = 1.0000
 B4_Cross_Cal_Gain_To_L5 = 1.0000
 B1_Cross_Cal_TDF_A_To_L5 = 0.0
 B2_Cross_Cal_TDF_A_To_L5 = 0.0
 B3_Cross_Cal_TDF_A_To_L5 = 0.0
 B4_Cross_Cal_TDF_A_To_L5 = 0.0
 B1_Cross_Cal_TDF_B_To_L5 = 1.0
 B2_Cross_Cal_TDF_B_To_L5 = 1.0
 B3_Cross_Cal_TDF_B_To_L5 = 1.0
 B4_Cross_Cal_TDF_B_To_L5 = 1.0
 B1_Cross_Cal_TDF_C_To_L5 = 1.0
 B2_Cross_Cal_TDF_C_To_L5 = 1.0
 B3_Cross_Cal_TDF_C_To_L5 = 1.0
 B4_Cross_Cal_TDF_C_To_L5 = 1.0
 T_Launch = 1984.167
 END_GROUP = CROSS_CAL_TO_L5
 GROUP = ABSOLUTE_CALIBRATION
 L5B1_Abs_Cal = 0.791
 L5B2_Abs_Cal = 0.912
 L5B3_Abs_Cal = 0.976
 L5B4_Abs_Cal = 0.968
 END_GROUP = ABSOLUTE_CALIBRATION

GROUP = ORIGINAL_SCALING_PARAMETERS
B1a_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B2a_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B3a_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B4a_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B1a_Lmin_Lmax_After_Proc_Date = (3.0,268.0)
B2a_Lmin_Lmax_After_Proc_Date = (3.0,179.0)
B3a_Lmin_Lmax_After_Proc_Date = (5.0,148.0)
B4a_Lmin_Lmax_After_Proc_Date = (3.0,123.0)
Proc_Date = "1972-07-22"
END_GROUP = ORIGINAL_SCALING_PARAMETERS
GROUP = FINAL_SCALING_PARAMETERS
B1f_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B2f_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B3f_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B4f_Lmin_Lmax_Before_Proc_Date = (0.0,0.0)
B1f_Lmin_Lmax_After_Proc_Date = (2.4,227.2)
B2f_Lmin_Lmax_After_Proc_Date = (2.7,170.4)
B3f_Lmin_Lmax_After_Proc_Date = (4.9,146.8)
B4f_Lmin_Lmax_After_Proc_Date = (1.5,120.0)
END_GROUP = FINAL_SCALING_PARAMETERS
GROUP = SOLAR_SPECTRAL_IRRADIANCES
B1_Solar_Irradiance = 1768.0
B2_Solar_Irradiance = 1528.0
B3_Solar_Irradiance = 1227.0
B4_Solar_Irradiance = 828.1
END_GROUP = SOLAR_SPECTRAL_IRRADIANCES
GROUP = RESIDUAL_BIAS_ADJUST
B1_Residual_Bias_Adjust = 0.0
B2_Residual_Bias_Adjust = 0.0
B3_Residual_Bias_Adjust = 0.0
B4_Residual_Bias_Adjust = 0.0
END_GROUP = RESIDUAL_BIAS_ADJUST
GROUP = REFLECTANCE_RESCALE
Reflectance_Additive_Factor = (-0.100000,-0.100000,-0.100000,-0.100000)
Reflectance_Multiplicative_Factor = (2.000000E-05,2.000000E-05,2.000000E-05,2.000000E-05)
END_GROUP = REFLECTANCE_RESCALE
GROUP = CAL_WEDGE_PARAMS
GROUP = CAL_OFFSET_COEFFS_LOW
B1L_Bias_C_Detector_6 = (-0.05044050,-0.02074160,0.00846760,0.03403190,0.51373140,0.51495150)
B1L_Bias_C_Detector_5 = (-0.04896130,-0.01938700,0.00774470,0.03452540,0.51237920,0.51369880)
B1L_Bias_C_Detector_4 = (-0.04889510,-0.01909270,0.00701670,0.03240320,0.51355590,0.51501270)
B1L_Bias_C_Detector_3 = (-0.04896040,-0.01941010,0.00730540,0.03306160,0.51314280,0.51486010)
B1L_Bias_C_Detector_2 = (-0.04955080,-0.02222870,0.00953270,0.03481040,0.51269500,0.51474140)
B1L_Bias_C_Detector_1 = (-0.04973960,-0.01888300,0.00796110,0.03248670,0.51322930,0.51494550)
B2L_Bias_C_Detector_6 = (-0.05544900,-0.01940160,0.01182860,0.04251390,0.50862710,0.51188080)
B2L_Bias_C_Detector_5 = (-0.05443910,-0.01916970,0.01063320,0.03967680,0.50986750,0.51343050)
B2L_Bias_C_Detector_4 = (-0.05335200,-0.01817020,0.01165940,0.03866120,0.50908450,0.51211670)
B2L_Bias_C_Detector_3 = (-0.05441640,-0.01823660,0.01291340,0.04082070,0.50803260,0.51088560)
B2L_Bias_C_Detector_2 = (-0.05380060,-0.01977140,0.01027140,0.04085980,0.50946330,0.51297680)
B2L_Bias_C_Detector_1 = (-0.05412580,-0.01990290,0.00992610,0.04152150,0.50942310,0.51315740)
B3L_Bias_C_Detector_6 = (-0.05704220,-0.02197540,0.00842300,0.03960200,0.51324970,0.51774330)
B3L_Bias_C_Detector_5 = (-0.05796830,-0.02231510,0.00827520,0.03914950,0.51417110,0.51868670)
B3L_Bias_C_Detector_4 = (-0.05926110,-0.02706710,0.00411550,0.03753270,0.52006830,0.52461070)
B3L_Bias_C_Detector_3 = (-0.06022840,-0.02476510,0.00752620,0.03826340,0.51731030,0.52189270)
B3L_Bias_C_Detector_2 = (-0.05873130,-0.02233320,0.00803440,0.03840870,0.51492430,0.51969520)

B3L_Bias_C_Detector_1 = (-0.05866450,-0.02347670,0.00884060,0.03874310,0.51493910,0.51961750)
 B4L_Bias_C_Detector_6 = (-0.08950200,-0.04144460,-0.00395170,0.03990730,0.54677160,0.54822120)
 B4L_Bias_C_Detector_5 = (-0.08913090,-0.04259440,-0.00207010,0.03881090,0.54638960,0.54859710)
 B4L_Bias_C_Detector_4 = (-0.08683630,-0.03995820,-0.00112650,0.03891670,0.54373020,0.54527510)
 B4L_Bias_C_Detector_3 = (-0.08828550,-0.04554920,-0.00276330,0.04064930,0.54713930,0.54881220)
 B4L_Bias_C_Detector_2 = (-0.08513990,-0.04298810,-0.00074280,0.03921280,0.54410990,0.54554780)
 B4L_Bias_C_Detector_1 = (-0.08418970,-0.04236670,-0.00032460,0.03645530,0.54427150,0.54615470)
 END_GROUP = CAL_OFFSET_COEFFS_LOW
 GROUP = CAL_OFFSET_COEFFS_HIGH
 B1H_Bias_C_Detector_6 = (-0.05034660,-0.02014560,0.00956990,0.03634670,0.50902370,0.51555020)
 B1H_Bias_C_Detector_5 = (-0.04696410,-0.01757830,0.01402540,0.03933630,0.50183560,0.50934310)
 B1H_Bias_C_Detector_4 = (-0.04951040,-0.02031000,0.00976100,0.03898490,0.50693160,0.51414200)
 B1H_Bias_C_Detector_3 = (-0.04863200,-0.91837630,0.01167500,0.03824920,0.50499750,0.51208570)
 B1H_Bias_C_Detector_2 = (-0.04772620,-0.01728000,0.01305800,0.03843440,0.50311910,0.51039380)
 B1H_Bias_C_Detector_1 = (-0.04818700,-0.01804520,0.01234110,0.03968050,0.50312670,0.51108310)
 B2H_Bias_C_Detector_6 = (-0.04978410,-0.01379920,0.02319780,0.05015760,0.49147150,0.49875520)
 B2H_Bias_C_Detector_5 = (-0.04786690,-0.00549920,0.02722291,0.04969290,0.48500600,0.49144170)
 B2H_Bias_C_Detector_4 = (-0.04764340,-0.00608500,0.03098510,0.05721700,0.48036720,0.48515870)
 B2H_Bias_C_Detector_3 = (-0.04595430,-0.01156960,0.02572820,0.05119340,0.48716230,0.49343900)
 B2H_Bias_C_Detector_2 = (-0.04826260,-0.01290520,0.02150040,0.04753510,0.49267700,0.49945340)
 B2H_Bias_C_Detector_1 = (-0.04813180,-0.00968410,0.02116110,0.04747740,0.49101130,0.49816510)
 END_GROUP = CAL_OFFSET_COEFFS_HIGH
 GROUP = CAL_GAIN_COEFFS_LOW
 B1L_Gain_D_Detector_6 = (0.4066399,0.3510138,0.2963050,0.2484233,-0.6500483,-0.6523336)
 B1L_Gain_D_Detector_5 = (0.4174407,0.3601867,0.3076617,0.2558161,-0.6692752,-0.6718299)
 B1L_Gain_D_Detector_4 = (0.4083158,0.3518636,0.3024074,0.2543204,-0.6570740,-0.6598334)
 B1L_Gain_D_Detector_3 = (0.4205451,0.3629122,0.3108079,0.2605745,-0.6757452,-0.6790944)
 B1L_Gain_D_Detector_2 = (0.4177801,0.3649877,0.3036175,0.2547755,-0.6686032,-0.6725572)
 B1L_Gain_D_Detector_1 = (0.4202252,0.3603066,0.3081800,0.2605552,-0.6729670,-0.6762997)
 B2L_Gain_D_Detector_6 = (0.3761566,0.3151097,0.2622208,0.2102647,-0.5791156,-0.5846258)
 B2L_Gain_D_Detector_5 = (0.3768380,0.3167271,0.2659329,0.2164330,-0.5849292,-0.5910016)
 B2L_Gain_D_Detector_4 = (0.3771513,0.3168435,0.2657101,0.2194242,-0.5869656,-0.5921633)
 B2L_Gain_D_Detector_3 = (0.3847621,0.3217964,0.2675844,0.2190160,-0.5940966,-0.5990620)
 B2L_Gain_D_Detector_2 = (0.3696881,0.3126266,0.2622496,-0.2109577,-0.5748152,-0.5807067)
 B2L_Gain_D_Detector_1 = (0.3807511,0.3217345,0.2702951,0.2158096,-0.5910753,-0.5975148)
 B3L_Gain_D_Detector_6 = (0.4055327,0.3419647,0.2868595,0.2303389,-0.8282750,-0.6364208)
 B3L_Gain_D_Detector_5 = (0.4074523,0.3427829,0.2872969,0.2312958,-0.6303183,-0.6385089)
 B3L_Gain_D_Detector_4 = (0.4143347,0.3552930,0.2981066,0.2368220,-0.6481126,-0.6564431)
 B3L_Gain_D_Detector_3 = (0.4272965,0.3605108,0.2996986,0.2418133,-0.6603447,-0.6689745)
 B3L_Gain_D_Detector_2 = (0.4306794,0.3611317,0.3031066,0.2450689,-0.6654352,-0.6745509)
 B3L_Gain_D_Detector_1 = (0.4225129,0.3565332,0.2959356,0.2398664,-0.6530377,-0.6618102)
 B4L_Gain_D_Detector_6 = (0.4161379,0.3380703,0.2771646,0.2059172,-0.6174682,-0.6198230)
 B4L_Gain_D_Detector_5 = (0.4322807,0.3536371,0.2851537,0.2160676,-0.6417043,-0.6454350)
 B4L_Gain_D_Detector_4 = (0.4192705,0.3417387,0.2775145,0.2112885,-0.6236283,-0.6261835)
 B4L_Gain_D_Detector_3 = (0.4478498,0.3727786,0.2976214,0.2213627,-0.6683377,-0.6712764)
 B4L_Gain_D_Detector_2 = (0.4754781,0.3958642,0.3161137,0.2406665,-0.7127149,-0.7154302)
 B4L_Gain_D_Detector_1 = (0.4599492,0.3832669,0.3061812,0.2387447,-0.6923453,-0.6957984)
 END_GROUP = CAL_GAIN_COEFFS_LOW
 GROUP = CAL_GAIN_COEFFS_HIGH
 B1H_Gain_D_Detector_6 = (0.4393915,0.3782430,0.3180776,0.2638616,-0.6931777,-0.7063921)
 B1H_Gain_D_Detector_5 = (0.4459089,0.3845716,0.3186063,0.2657746,-0.6995937,-0.7152642)
 B1H_Gain_D_Detector_4 = (0.4415793,0.3819324,0.3205073,0.2608126,-0.6950506,-0.7097797)
 B1H_Gain_D_Detector_3 = (0.4504787,0.3871738,0.3242962,0.2686936,-0.7079045,-0.7227359)
 B1H_Gain_D_Detector_2 = (0.4419056,0.3791494,0.3166170,0.2643114,-0.6934940,-0.7084886)
 B1H_Gain_D_Detector_1 = (0.4475009,0.3847212,0.3214320,0.2644894,-0.7007846,-0.7173566)
 B2H_Gain_D_Detector_6 = (0.4471573,0.3728172,0.2963855,0.2406913,-0.6710020,-0.6860487)

B2H_Gain_D_Detector_5 = (0.4527151,0.3633089,0.2942579,0.2468412,-0.6717733,-0.6853501)
B2H_Gain_D_Detector_4 = (0.4620484,0.3724492,0.2925267,0.2359710,-0.6763325,-0.6866624)
B2H_Gain_D_Detector_3 = (0.4537220,0.3803466,0.3007549,0.2464138,-0.6839200,-0.6973141)
B2H_Gain_D_Detector_2 = (0.4394034,0.3671185,0.2967794,0.2435538,-0.6664988,-0.6803529)
B2H_Gain_D_Detector_1 = (0.4532148,0.3720921,0.3070097,0.2514838,-0.6843521,-0.6994466)

END_GROUP = CAL_GAIN_COEFFS_HIGH

GROUP = CAL_MULTIPLICATIVE_MODIFIERS_LOW

M_B1L_Detector_6 = 0.9310
M_B1L_Detector_5 = 0.9210
M_B1L_Detector_4 = 0.9160
M_B1L_Detector_3 = 0.9130
M_B1L_Detector_2 = 0.9190
M_B1L_Detector_1 = 0.9160
M_B2L_Detector_6 = 0.9900
M_B2L_Detector_5 = 0.9940
M_B2L_Detector_4 = 1.0050
M_B2L_Detector_3 = 0.9860
M_B2L_Detector_2 = 1.0200
M_B2L_Detector_1 = 1.0030
M_B3L_Detector_6 = 0.8670
M_B3L_Detector_5 = 0.8700
M_B3L_Detector_4 = 0.8630
M_B3L_Detector_3 = 0.8600
M_B3L_Detector_2 = 0.8550
M_B3L_Detector_1 = 0.8630
M_B4L_Detector_6 = 0.9910
M_B4L_Detector_5 = 1.0120
M_B4L_Detector_4 = 0.9950
M_B4L_Detector_3 = 1.0050
M_B4L_Detector_2 = 0.9870
M_B4L_Detector_1 = 1.0090

END_GROUP = CAL_MULTIPLICATIVE_MODIFIERS_LOW

GROUP = CAL_MULTIPLICATIVE_MODIFIERS_HIGH

M_B1H_Detector_6 = 0.9989
M_B1H_Detector_5 = 1.0080
M_B1H_Detector_4 = 0.9908
M_B1H_Detector_3 = 0.9915
M_B1H_Detector_2 = 1.0140
M_B1H_Detector_1 = 0.9961
M_B2H_Detector_6 = 0.9938
M_B2H_Detector_5 = 1.0000
M_B2H_Detector_4 = 1.0050
M_B2H_Detector_3 = 0.9943
M_B2H_Detector_2 = 1.0090
M_B2H_Detector_1 = 0.9989
M_B3H_Detector_6 = 0.8670
M_B3H_Detector_5 = 0.8700
M_B3H_Detector_4 = 0.8630
M_B3H_Detector_3 = 0.8600
M_B3H_Detector_2 = 0.8550
M_B3H_Detector_1 = 0.8630
M_B4H_Detector_6 = 0.9910
M_B4H_Detector_5 = 1.0120
M_B4H_Detector_4 = 0.9950
M_B4H_Detector_3 = 1.0050
M_B4H_Detector_2 = 0.9870

M_B4H_Detector_1 = 1.0090
END_GROUP = CAL_MULTIPLICATIVE_MODIFIERS_HIGH
GROUP = CAL_ADDITIVE_MODIFIERS_LOW
A_B1L_Detector_6 = 0.1210
A_B1L_Detector_5 = 0.0930
A_B1L_Detector_4 = 0.0200
A_B1L_Detector_3 = 0.1560
A_B1L_Detector_2 = 0.1060
A_B1L_Detector_1 = 0.0370
A_B2L_Detector_6 = 0.0660
A_B2L_Detector_5 = 0.1260
A_B2L_Detector_4 = 0.3110
A_B2L_Detector_3 = 0.0750
A_B2L_Detector_2 = 0.2690
A_B2L_Detector_1 = 0.0260
A_B3L_Detector_6 = 0.8480
A_B3L_Detector_5 = 0.4840
A_B3L_Detector_4 = 0.0790
A_B3L_Detector_3 = 0.6200
A_B3L_Detector_2 = 0.0070
A_B3L_Detector_1 = 0.1440
A_B4L_Detector_6 = 0.1360
A_B4L_Detector_5 = 0.1580
A_B4L_Detector_4 = 0.2620
A_B4L_Detector_3 = 0.0430
A_B4L_Detector_2 = 0.8000
A_B4L_Detector_1 = 0.1760
END_GROUP = CAL_ADDITIVE_MODIFIERS_LOW
GROUP = CAL_ADDITIVE_MODIFIERS_HIGH
A_B1H_Detector_6 = 0.4803
A_B1H_Detector_5 = 0.6869
A_B1H_Detector_4 = 0.2802
A_B1H_Detector_3 = 0.1141
A_B1H_Detector_2 = 0.0369
A_B1H_Detector_1 = 0.4105
A_B2H_Detector_6 = 0.4768
A_B2H_Detector_5 = 0.8926
A_B2H_Detector_4 = 1.2940
A_B2H_Detector_3 = 0.0670
A_B2H_Detector_2 = 1.0350
A_B2H_Detector_1 = 0.5394
A_B3H_Detector_6 = 0.8480
A_B3H_Detector_5 = 0.4840
A_B3H_Detector_4 = 0.0790
A_B3H_Detector_3 = 0.6200
A_B3H_Detector_2 = 0.0070
A_B3H_Detector_1 = 0.1440
A_B4H_Detector_6 = 0.1360
A_B4H_Detector_5 = 0.1580
A_B4H_Detector_4 = 0.2620
A_B4H_Detector_3 = 0.0430
A_B4H_Detector_2 = 0.8000
A_B4H_Detector_1 = 0.1760
END_GROUP = CAL_ADDITIVE_MODIFIERS_HIGH
GROUP = CAL_DECOMPRESSION_TABLES

```
B1-Decompression_Table =
(0,1,1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,18,19,21,22,24,25,27,29,31,32,34,36,38,40,42,44,46,48,50,52,54,56,59,6
1,64,67,70,72,75,78,81,84,87,90,93,96,99,102,105,108,111,114,117,120,123,127)
B2-Decompression_Table =
(0,1,2,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18,19,21,22,24,25,27,29,31,32,34,36,38,40,42,44,46,48,49,51,53,56,59,6
1,64,67,70,73,76,78,81,84,87,90,93,96,99,102,105,108,111,114,117,120,123,127)
B3-Decompression_Table =
(0,1,1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,18,19,21,22,24,25,27,29,31,32,34,36,38,40,42,44,46,48,50,52,54,56,59,6
1,64,67,70,72,75,78,81,84,87,90,93,96,99,102,105,108,111,114,117,120,123,127)
END_GROUP = CAL_DECOMPRESSION_TABLES
scale_factor = 127
END_GROUP = CAL_WEDGE_PARAMS
END
```

Appendix A Acronyms

ASCII	American Standard Code for Information Interchange
ATK	Alliant Techsystems
BATC	Ball Aerospace and Technologies Corporation
BIP2	Band Interleaved by Pixel Pair
BSQ	Band Sequential
CCSDS	Consultative Committee for Space Data Systems
CPF	Calibration Parameter File
EOL	End-of-Line
HDF	Hierarchical Data Format
Hz	hertz
IAS	Image Assessment System
IFOV	Instantaneous Field of View
IGS	International Ground Station
JPL	Jet Propulsion Laboratory
kHz	kilohertz
km	kilometers
LGAC	Landsat Global Archive Consolidation
m	meters
MSS	Multispectral Scanner
MSS-P	Multispectral Scanner – Processed Format
MSS-R	Multispectral Scanner – Raw Format
NASA	National Aeronautics and Space Administration
NLAPS	National Land Archive Production System
ODL	Object Description Language
PVL	Parameter Value Language
TM	Thematic Mapper
WGS84	World Geodetic System 1984
WRS	Worldwide Reference System

References

Jet Propulsion Laboratory (JPL). California Institute of Technology. Pasadena, California. JPL-D-7669. Part 2. Planetary Data System Standards Reference. Revision 3.6. August 1, 2003.