Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
ASCENDING_NODE_LONGITUDE	value of the angle of the xy-plane of the J2000 coordinate system to the ascending node computed from the spacecraft's position- and velocity vector at periapsis (not to be used during test and cruise)	deg	real		M94_ORBIT	1			HS
BUFFER_MODE_ID	The BUFFER_MODE_ID element indicates the buffer storage mode used by an instrument. Note: For MARS EXPRESS the data from the Super Resolution Channel (SRC) are in 14-bit. A small buffer connected to this channel can store 4 images in 14-bit (BUFFER_14) or		string	DIRECT, BUFFER_8, BUFFER_14	M94_CAMERAS	1		3	S
CLOCK_ID	The CLOCK_ID element identifies the onboard clock used to time tag a data product, HRSC only.		int	0,1,2,3	M94_CAMERAS	1		4	
DATA_SET_ID	The data_set_id element is a unique alphanumeric identifier for a data set or a data product.		string	MEX-M-HRSC-3-RDR-V1.0,MEX-M-SRC-3-RDR-V1.0,MEX-X-HRSC-3-RDR-V1.0,MEX-X-SRC-3-RDR-V1.0	FILE	1			HS
DETECTOR_ID	identifies which of the ten CCD detectors was used for this particular image.		string	MEX_HRSC_S2, MEX_HRSC_RED, MEX_HRSC_P2, MEX_HRSC_BLUE, MEX_HRSC_NADIR, MEX_HRSC_GREEN, MEX_HRSC_P1, MEX_HRSC_IR, MEX_HRSC_S1, MEX_HRSC_SRC,MEX_HRSC_10, MEX_HRSC_11	M94_INSTRUMENT	1		4	HS
DETECTOR_TEMPERATURE	TEMPERATURE SPL_F (Dornier HKD doc.) for sensor P2,RE,S2, TEMPERATURE SPL_N (Dornier HKD doc.) for sensor BL,ND,GR, TEMPERATURE SPL_A (Dornier HKD doc.) for sensor P1,IR,S1; , temp_fpm in hrhk23, SRC first level is 2	Celsius	real		H	1		3	H
DETECTOR_TEMPERATURE__UNIT	Unit, just for the MIPL-PDS-Converter		string		H	1		4	H

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
ERROR_FRAMES	The ERROR_FRAMES element provides the total number of defective frames in a file that have been corrupted. For example, this could be due to missing or overflow frames, synchronization, clipping, uncorrectable Reed-Solomon, and checksum errors or, later,		int		H	1		4	
EVENT_TYPE	identifies the classification of an event, HRSC specific, to be defined by HRSC planning group		string		FILE	1		4	HS
EXPOSURE_DURATION	SRC exposure times	ms	real		M94_CAMERAS	1		2	S
EXPOSURE_DURATION__UNIT	Unit, just for the MIPL-PDS-Converter		string		M94_CAMERAS	1		4	S
FILE_NAME	usual default name of the output file; this entry allows the user to check for accidental renaming of files, filename without path		string		FILE	1		1	HS
FIRST_INS_CMPRS_BLOCK_NUMBER	first DCE framecounter in the image file		int		M94_CAMERAS	1	1	3	
FOCAL_PLANE_TEMPERATURE	TEMPERATURE OPTICS in Dornier HKD document, HRSC only, temp_co in hrhk23	Celsius	real		H	1		2	H
FOCAL_PLANE_TEMPERATURE__UNIT	Unit, just for the MIPL-PDS-Converter		string		H	1		4	H
IMAGE_TIME	date and time of imaging time in UTC format "YYYY-MM-DDTHH:MM:SS.MMMZ" (SRC only)		string		M94_ORBIT	1		4	S
INST_CMPRS_NAME	flag indicating whether spacecraft on-board compression has been bypassed, in which case, the received data were uncompressed; HRSC: config. byte 1/2, bit 2 = 1 ==> BYPASS_FLAG = "YES"		string	NONE,DCT	M94_CAMERAS	1		2	HS
INST_CMPRS_QUALITY	The compression index parameter in the table of scale factors (TABF). It is is in the range from 0 to 15. A higher value means more compression		int	0,1,2,3,4,5,...,15	M94_CAMERAS	1		4	HS
INST_CMPRS_QUANTZ_TBL_ID	Number of the quantization matrix in the PMEM file, TB*2 + Malgo		int	0,1,2,3	M94_CAMERAS	1		4	HS
INST_CMPRS_RATIO	mean compression rate for the entire image data represented in the file, this number is =1 for data collected in the bypass mode.		real		M94_CAMERAS	1		2	HS

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
INSTRUMENT_HOST_ID	The instrument_host_id element provides a unique identifier for the host where an instrument is located.		strig	MEX	M94_INSTRUMENT	1			HS
INSTRUMENT_HOST_NAME	full name of the spacecraft		string	MARS_EXPRESS	M94_INSTRUMENT	1		2	HS
INSTRUMENT_ID	The instrument_id element provides an abbreviated name or acronym which identifies an instrument.		string	HRSC	M94_INSTRUMENT	1			HS
INSTRUMENT_NAME	full name of an instrument		string	HIGH_RESOLUTION_STEREO_SCANNER	M94_INSTRUMENT	1		1	HS
INSTRUMENT_TEMPERATURE	TEMPERATURE FEE in Dornier HKD document, temp_fee in hrhk23, SRC first level is 2	Celsius	real		H	1		2	H
INSTRUMENT_TEMPERATURE__UNIT	Unit, just for the MIPL-PDS-Converter		string		H	1		4	H
LAST_INS_CMPRS_BLOCK_NUMBER	last DCE framecounter in the image file		int		M94_CAMERAS	1	1	3	
LENS_TEMPERATURE	TEMPERATURE OPTICAL BENCH in Dornier HKD document, HRSC only, temp_ob in hrhk23	Celsius	real		H	1		2	H
LENS_TEMPERATURE__UNIT	Unit, just for the MIPL-PDS-Converter		string		H	1		4	H
MACROPIXEL_SIZE	macropixel format		int	1,2,4,8	M94_CAMERAS	1		2	H
MISSING_FRAMES	The MISSING_FRAMES element is the total number of frames that are missing from a file. (Cf. ERROR_FRAMES and OVERFLOW_FRAMES). Note: For MARS EXPRESS, a frame, which is also called a "row", is eight lines of data. Each line, in turn, is composed of a s		int		H	1		4	HS
MISSION_NAME	full name of mission		string	MARS_EXPRESS	M94_INSTRUMENT	1		2	HS
MISSION_PHASE_NAME	The mission_phase_name element provides the commonly-used identifier of a mission phase.		string		M94_ORBIT	1			HS
ORBIT_NUMBER	number of the orbital revolution of the s/c around the target body (not to be used during test and cruise)		int		M94_ORBIT	1		3	HS

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
ORBITAL_ECCENTRICITY	value of orbit eccentricity computed from the spacecraft's position- and velocity vector at periapsis (not to be used during test and cruise)		real		M94_ORBIT	1		3	HS
ORBITAL_INCLINATION	value of the angle of inclination with respect to the xy-plane computed from the spacecraft's position- and velocity vector at periapsis		real		M94_ORBIT	1		2	HS
ORBITAL_SEMIMAJOR_AXIS	value of orbit semi-major axis cumputed from spacecraft 's position - and velocity vector at periapsis (not to be used during test and cruise)	km	real		M94_ORBIT	1		3	HS
OVERFLOW_FRAMES	The OVERFLOW_FRAMES element is the total number of frames that are lost due to overflow. This may be caused when data is sent uncompressed, and is subsequently lost due to data storage space shortage, or inadequate compression. Please see MISSING_FRAMES.		int		H	1		4	
PARAMETER_SEQUENCE_NUMBER	The PARAMETER_SEQUENCE_NUMBER element provides the order in which the charge-coupled devices (CCDs) are read through a signal chain. Please see SIGNAL_CHAIN_ID, HRSC only. Note: For MARS EXPRESS the High-Resolution Stereo Colour Imager (HRSC) has four sig		int	0,1,2,3,4,5,6,7	M94_CAMERAS	1		4	
PERIAPSIS_ALTITUDE	The PERIAPSIS_ALTITUDE element provides the distance between the spacecraft and the target body at periapsis. Periapsis is the closest approach point of the spacecraft to the target body in its orbit around the target body. Note: For MARS EXPRESS, the al	km	real		M94_ORBIT	1		3	HS
PERIAPSIS_ARGUMENT_ANGLE	angle in the xy-plane of the J2000 coordinate system from the ascending node to periapsis (not to be used during test and cruise)	deg	real		M94_ORBIT	1		3	HS
PERIAPSIS_TIME	The PERIAPSIS_TIME element is the time, in UTC format "YYYY-MM-DDThh:mm:ss[.fff]Z", when the spacecraft passes through periapsis. Periapsis is the closest approach point of the spacecraft to the target body in its orbit around the target body. (not to be	time	string		M94_ORBIT	1		3	HS

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
PIXEL_SUBSAMPLING_FLAG	The PIXEL_SUBSAMPLING_FLAG element indicates whether this product is the result of subsampling of the data, HRSC only.		string	Y,N	M94_CAMERAS	1		4	H
PMEM_FILE_NAME	The PMEM_FILE_NAME element is the name of the compression parameter memory (PMEM) file used for controlling the compressor algorithm. Note: For MARS EXPRESS the compression parameter memory (PMEM) file is divided into 4 pages. Page 0 is used for busy or c		string		M94_CAMERAS	1		3	
PROCESSING_HISTORY_TEXT	program version number and version data (dd-mmm-yyyy)		string		H	1		3	
PROCESSING_LEVEL_ID	identifies the processing level of a data set; parameter must be updated after each processing step according to the program specification , DLR-Levels		int	0,1,2,3,4	FILE	1		3	HS
PRODUCT_ID	The product_id data element represents a permanent, unique identifier assigned to a data product by its producer.		string	same as file_name	FILE	1			HS
SAMPLE_FIRST_PIXEL	position of the first pixel on the CCD line that contributes to the first VICAR macropixel (may still be dark or dummy pixels for level 1 images); config bytes 3,4; bits 0-12; note: FIRST_PIXEL = start_pixel_number + 1		int		M94_CAMERAS	1		1	HS
SHUTDOWN_10	This flag indicates if input data stream contained any data from sensor 10, HRSC only.		string	Y,N	M94_CAMERAS	1	1	4	
SHUTDOWN_11	This flag indicates if input data stream contained any data from sensor 11, HRSC only.		string	Y,N	M94_CAMERAS	1	1	4	
SIGNAL_CHAIN_ID	The SIGNAL_CHAIN_ID element identifies the signal chain (electronic signal path) number selected for charge-coupled device (CCD) output. Note: For MARS EXPRESS the High-Resolution Stereo Colour Imager (HRSC) is composed of 10 channels, each consisting of		int	0,1,2,3	M94_CAMERAS	1		3	H
SOURCE_FILE_NAME	Name of the raw (level -1) data file distributed by ESOC, see DDID for filenaming convention.		string		H	1		4	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
SPACECRAFT_CLOCK_START_COUNT	provides the value of the spacecraft clock at the beginning of a time period of interest. This is the same for all line sensors and SRC images during one imaging sequence.		string		M94_ORBIT	1		2	HS
SPACECRAFT_CLOCK_STOP_COUNT	provides the value of the spacecraft clock at the end of a time period of interest. This is the same for all line sensors and SRC images during one imaging sequence.		string		M94_ORBIT	1		4	HS
SPACECRAFT_SOLAR_DISTANCE	the spacecraft's distance to the Sun measured from its position vector at periapsis (not to be used during test and cruise)	km	real		M94_ORBIT	1		3	HS
SPICE_FILE_ID	Provides an abbreviated name or acronym which identifies a particular SPICE file.		string		H	1		4	
SPICE_FILE_NAME	Provides the names of the SPICE files used in processing the data. The SPICE files are used to determine navigation and lighting information.		string		H	1		4	
START_BIT	In the case of 14bit to 8bit conversion used start bit, is 0 for 14bit, applies only to SRC 8-bit mode, see "BUFFER_MODE_ID" (SRC only)		int		M94_CAMERAS	1		2	S
START_TIME	date and time of recording of the first image line in UTC format "YYYY-MM-DDTHH:MM:SS.MMMZ" (corresponds to the ephemeris time prefix entry of that line)		string		M94_ORBIT	1		4	HS
STOP_TIME	date and time of recording of the last image line in UTC format "YYYY-MM-DDTHH:MM:SS.MMMZ" (corresponds to the ephemeris time prefix entry of that line)		string		M94_ORBIT	1		4	HS

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
TARGET_NAME	name of the target body, Used for the following types of map projections: ALBERS_ONE_PARALLEL, ALBERS_TWO_PARALLELS, LAMBERT_ONE_PARALLEL, LAMBERT_TWO_PARALLELS, CYLINDRICAL_EQUAL_AREA, EQUIDISTANT, LAMBERT_AZIMUTH, MERCATOR, MOLLWEIDE, ORTHOGRAPHIC, SIN		string	MARS,PHOBOS,DEIMOS,SKY	MAP	1		3	HS
ABSOLUTE_FLUX_CALIB_FLAG	The absolute_flux_calib_flag element indicates wether or not an absolute flux calibration was performed on a CCD (charge-coupled device). Note: For MEX, this indicates whether the keyword absolute_spectral_response is set correctly. Please see absolute_sp		string	Y,N	H	2		4	
ALGORITHM_DESC	The algorithm_desc element describes the data processing function performed by an algorithm and the data types to which the algorithm is applicable. This keyword was called QUANTUM_EFFICIENCY_FILE during Mars-96.		string		H	2		4	
BANDWIDTH	The bandwidth element provides a measure of the spectral width of a filter or channel. For a root-mean-square detector this is the effective bandwidth of the filter i.e., the full width having a flat response over the bandwidth and zero response elsewhere.For HRSC this value is for the whole sensor (CCD+Optics).	nm	real		H	2		4	HS
BEST_GROUND_SAMPLING_DISTANCE	best resolution inside an image, this keyowrd is used by following progrms hrortho and frameortho for automated processing	km	real		H	2		4	HS

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
BLEMISH_FILE_NAME	The blemish_file_name element indicates the file that provides corrections for blemishes (reseaus, dust spots, etc.) that affect the response of the sensor at specific locations. The blemish file is selected based on camera, filter, gain-state, camera mo		string		H	2		4	
CENTER_FILTER_WAVELENGTH	The center_filter_wavelength element provides the mid_point wavelength value between the minimum and maximum instrument filter wavelength values.For HRSC this value is for the whole sensor (CCD+Optics).	nm	real		H	2		4	HS
DARK_CURRENT_CORRECTION_FLAG	The dark_current_correction_flag element indicates whether or not a dark current correction was applied to an image. Note: For MEX, this indicates whether dark pixel subtraction was done during calibration.		string	Y,N	H	2		4	
DARK_CURRENT_FILE_NAME	The dark_current_file_name element provides the dark current image file (an image taken without opening the camera shutter) which should be used to perform radiometric calibration of the image. The dark current image provides a reference label of the bui		string		H	2		4	
FLAT_FIELD_CORRECTION_FLAG	The flat_field_correction_flag element indicates whether or not a flat field correction was applied to an image. Note: For MEX, this takes place during calibration.		string	Y,N	H	2		4	
FOOTPRINT_POINT_LATITUDE	The footprint_point_latitude element provides the latitude of a point within an array of points along the border of a footprint, described as a polygon, outlining an imaged area on the planet's surface. Latitude values are planetocentric.	deg	real (100)		FOOTPRINT	2		4	HS
FOOTPRINT_POINT_LONGITUDE	The footprint_point_longitude element provides the longitude of a point within an array of points along the border of a footprint, described as a polygon, outlining an imaged area on the planet's surface. Longitude values are planetocentric.	deg	real (100)		FOOTPRINT	2		4	HS

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
GEOMETRIC_CALIB_FILE_NAME	The geometric_calib_file_name element provides the name of the geometric calibration file which was used for the geometric correction of an image.		string		H	2		4	
LINE_FIRST_PIXEL	The line_first_pixel element provides the line index for the first pixel that was physically recorded at the beginning of the image array. Note: For MEX, this is the position of the first data line in the CCD		int		M94_CAMERAS	2		4	S
MAXIMUM	The maximum element indicates the largest value occurring in a given instance of the data object.		int		H	2		4	HS
MEAN	The mean element provides the average of the DN values in the image array.		real		H	2		4	HS
MINIMUM	The minimum element indicates the smallest value occurring in a given instance of the data object.		int		H	2		4	HS
RADIANCE_OFFSET	The radiance_offset element provides the constant value by which a stored radiance is added. Note: Expressed as an equation: true_radiance_value = radiance_offset + radiance_scaling_factor * stored_radiance_value.	W/cm2/steradian	real		H	2		4	HS
RADIANCE_SCALING_FACTOR	The radiance_scaling_factor element provides the constant value by which a stored radiance is multiplied. Note: Expressed as an equation: true_radiance_value = radiance_offset + radiance_scaling_factor * st	W/m2/steradian	real		H	2		4	HS
REFLECTANCE_SCALING_FACTOR	The reflectance_scaling_factor element identifies the conversion factor from DN to reflectance.		real		H	2		4	HS
RESPONSE_FILE_NAME	The response_file_name element provides the name of the file which describes the different pixel sensitivities on a CCD (charge-coupled device).		string		H	2		4	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
SATURATION_FILE_NAME	The saturation_file_name element provides the name of the file which describes at which DN value a pixel is saturated on a CCD (charge-coupled device).		string		H	2		4	
SPACECRAFT_ORIENTATION	The spacecraft orientation element provides the orientation of a spacecraft in orbit or cruise in respect to a given frame. E.g. a non-spinning spacecraft might be flown in +Y or -Y direction in respect to the spacecraft mechanical build frame. This elementshall be used in combination with the keyword spacecraft_orientation_desc that describes the convention used to describe the spacecraft orientation.The spacecraft orientation shall be given as a 3-tuple, one value for the x,y and z axes		real	{(0,1,0), (0,-1,0)}	H	2		4	HS
SPACECRAFT_ORIENTATION_DESCRIPTION	The spacecraft orientation description element provides the definition, meaning and standard values for the spacecraft_orientation element. It is advised to used this element always together with the spacecraft_orientation element. The information given given shall cover at least reference frame used for the spacecraft orientation and the standard values that are used with the data set.		string		H	2		4	HS
SPACECRAFT_POINTING_MODE	The spacecraft pointing element provides information on the pointing mode of the spacecraft. The definition of the modes and the standard values are given in the s/c pointing mode description element, that shall always accompany the keyword		string	{"NADIR", "ALONGTRACK", "ACROSSTRACK", "TRACKING"	H	2		4	HS
STANDARD_DEVIATION	The standard_deviation element provides the standard deviation of the DN values in the image array.		real		H	2		4	HS
A_AXIS_RADIUS	The a_axis_radius element provides the value of the semimajor axis of the ellipsoid that defines the approximate shape of a target body. 'A' is usually in the equitorial plane.	km	real		MAP	3		3	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
ANCHORPOINT_DISTANCE	distance between neighboring points on the anchor point grid, measured in CCD pixels (macropixel format = 1)	px	int		H	3		1	
B_AXIS_RADIUS	The b_axis_radius element provides the value of the intermediate axis of the ellipsoid that defines the approximate shape of a target body.'B' is usually in the equatorial plane.	km	real		MAP	3		3	
BODY_LONG_AXIS_LONGITUDE PDS recommends A_AXIS_LONGITUDE	The BODY_LONG_AXIS_LONGITUDE element represents the offset between the longest axis of the triaxial ellipsoid used to model a body and the prime meridian of the body. It's value is the sum of the offset added to the prime meridian. This term is the positi	deg	real		MAP	3		4	
C_AXIS_RADIUS	The c_axis_radius element provides the value of the c_axis of a solar system body. For tri-axial ellipsoidal objects, the c_axis is the semiminor axis of the ellipsoid which defines the approximate shape of the body. For oblate spheroid objects, this el	km	real		MAP	3		3	
CARTESIAN_AZIMUTH	The cartesian_azimuth element provides the clockwise rotation, in degrees, of the line and sample coordinates with respect to the center of the pixel at the map projection origin (ie. where line_projection_offset and sample_projection_offset are measured	deg	real	(0->360)	MAP	3		3	
CENTER_LATITUDE	The center_latitude element provides a reference latitude for certain map projections. In many projections, the center_latitude along with the center_longitude defines the point or tangency between the sphere of the planet and the plane of the projection.	deg	real	(-90->90)	MAP	3		3	
CENTER_LONGITUDE	The center_longitude element provides a reference longitude for certain map projections. In many projections, the center_longitude along with the center_latitude defines the point or tangency between the sphere of the planet and the plane of the projectio	deg	real	(0->360)	MAP	3		3	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
COORDINATE_SYSTEM_NAME	defines, wether the CENTER_LATITUDE is centric or detic		string	PLANETODETIC, PLANETOCENTRIC	MAP	3		3	
FIRST_STANDARD_PARALLEL	The first_standard_parallel element is used in certain projections, e.g. Lambert Conic and Albers. If a Conic projection has a single standard parallel, then the first_standard_parallel is the point of tangency between the sphere of the planet and the co	deg	real	(-90->90)	MAP	3		3	
FOCAL_LENGTH	The camera focal length in millimeters.Used for the following type of map projections: PERSPECTIVE.	mm	real		MAP	3		4	
FOCAL_PLANE_SCALE	The scale in the camera focal plane in pixels per millimeter. The scale is measured on the geometrically corrected image.Used for the following type of map projections: PERSPECTIVE.	pix/mm	real		MAP	3		3	
INTERPOLATION_TYPE	name of the grayvalue interpolation type		string	NEAREST_NEIGHBOR,CUBIC CONVOLUTION	H	3		1	
LINE_PROJECTION_OFFSET	The line_projection_offset element provides the line offset value of the map projection origin position from the center of the pixel line and sample 1,1 (line and sample 1,1 is considered the upper left corner of the digital array). Note that the positive	pixel	real		MAP	3		3	
MAP_PROJECTION_DESC	The map_projection_description element describes the map_projection_type unambiguously. It shall contain the mathematical expressions (it may even contain the source code or pseudo code, with comments) and any assumptions (e.g. the planet is assumed spher		string		MAP	3		3	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
MAP_PROJECTION_TYPE	The map_projection_type element identifies the type of projection characteristic of a given map. In the current software, the following are allowed values:		string	CYLINDRICAL_EQUAL_AREA EQUIDISTANT,MERCATOR,LAMBERT_AZIMUTHAL,ORTHOGRAPHIC,STEREOGRAPHIC,POINT_PERSPECTIVE,ALBERS_ONE_PARALLEL,ALBERS_TWO_PARALLELS,LAMBERT_ONE_PARALLEL,LAMBERT_TWO_PARALLELS,MOLLWEIDE,SINUSOIDAL	MAP	3		1	
MAP_RESOLUTION	The map_resolution element identifies the scale of a given map. Please refer to the definition for map_scale for a more complete definition. Note that map_resolution and map_scale both define the scale of a map except that they are expressed in different	pix/ deg	real		MAP	3		3	
MAP_SCALE	The map_scale element identifies the scale of a given map. The scale is defined as the ratio of the actual distance between two points on the surface of the target body to the distance between the corresponding points on the map. The map_scale references	km/ pix	real		MAP	3		3	
NORTH_ANGLE PDS recommends NORTH_AZIMUTH (DD)	The angle measured clockwise from up, toward the direction of the planet spin axis, projected onto the image plane. Used for the following type of map projections: PERSPECTIVE.	deg	real		MAP	3		4	
OPT_AXIS_INTERCEPT_LINE PDS recommends OPTC_AXIS_INTERCEPT_LINE	The image line which intersects the optical axis in the camera focal plane after distortion correction. Used for the following type of map projections: PERSPECTIVE.		real		MAP	3		4	
OPT_AXIS_INTERCEPT_SAMPLE PDS recommends OPTC_AXIS_INTERCEPT_SAMPLE	The image sample which intersects the optical axis in the camera focal plane after distortion correction. Sample increases to the right. Used for the following type of map projections: PERSPECTIVE.		real		MAP	3		4	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
PLANET_CENTER_LINE	The picture line coincident with the center of the planet. This line is measured on the geometrically corrected image. Used for the following type of map projections: PERSPECTIVE.		real		MAP	3		4	
PLANET_CENTER_SAMPLE	The picture sample coincident with the center of the planet. This samp_routinesle is measured on the geometrically corrected image. Used for the following type of map projections: PERSPECTIVE.		real		MAP	3		4	
POSITIVE_LONGITUDE_DIRECTION	The positive_longitude_direction element identifies the direction of longitude (e.g. EAST, WEST) for a planet. The IAU definition for direction of positive longitude is adopted. Typically, for planets with prograde rotations, positive longitude direction		string		MAP	3		3	
SAMPLE_PROJECTION_OFFSET	The sample_projection_offset element provides the sample offset value of the map projection origin position from the center of the pixel line and sample 1,1 (line and sample 1,1 is considered the upper left corner of the digital array). Note that the posi	pixel	real		MAP	3		3	
SECOND_STANDARD_PARALLEL	Please refer to the definition for first_standard_parallel element to see how second_standard_parallel is defined. Used for the following types of map projections: ALBERS_ONE_PARALLEL, LAMBERT_ONE_PARALLEL, ALBERS_TWO_PARALLELS, LAMBERT_TWO_PARALLELS.	deg	real	(-90->90)	MAP	3		3	
SPACECRAFT_DISTANCE PDS recommends CENTRAL_BODY_DISTANCE	The distance in kilometers between the planet center and the spacecraft at the time the image was obtained. Used for the following type of map projections: PERSPECTIVE.	km	real		MAP	3		4	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
SPHERICAL_AZIMUTH	One of three Euler angles (the others are center_latitude and center_longitude) that define the pre-mapping orientation of the planetary sphere for any spherical projection (one in which a_axis_radius, b_axis_radius, and c_axis_radius are equal to one ano		real		MAP	3		3	
SUB_SPACECRAFT_PT_LATITUDE PDS recommends SUB_SPACECRAFT_LATITUDE	The planetocentric latitude of the intersection of a vector drawn from the planet center to the spacecraft with the surface of the planet. Used for the following type of map projections: PERSPECTIVE.	deg	real		MAP	3		4	
SUB_SPACECRAFT_PT_LONGITUDE PDS recommends SUB_SPACECRAFT_LONGITUDE	The west longitude of the intersection of a vector drawn from the planet center to the spacecraft with the surface of the planet. Used for the following type of map projections: PERSPECTIVE.	deg	real		MAP	3		4	
A_AXIS_RADIUS	The a_axis_radius element provides the value of the semimajor axis of the ellipsoid that defines the approximate shape of a target body. 'A' is usually in the equitorial plane.	km	real		DIGITAL_TERRAIN_MODEL	4		4	
A_VEVER	parameter of the Veverka, Mosher, and Buratti photometric function		real		PHOT	4		1	
ALBEDO	Albedo		real		PHOT	4		1	
B_AXIS_RADIUS	The b_axis_radius element provides the value of the intermediate axis of the ellipsoid that defines the approximate shape of a target body. 'B' is usually in the equatorial plane.	km	real		DIGITAL_TERRAIN_MODEL	4		4	
B_CBOE	opposition magnitude coefficient of the coherent backscattering, due to multiple scattering (height of opposition surge due to backscatter)		real		PHOT	4		1	
B_SHOE	opposition magnitude coefficient (height of opposition surge due to shadowing); one of the classical Hapke parameter		real		PHOT	4		1	
B_VEVER	parameter of the Veverka, Mosher, and Buratti photometric function		real		PHOT	4		1	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
BLUE	the color look-up table (blue component); an entry of x at position y in the array implies that each pixel with a pixel value of y is supposed to have the (blue) color brightness x		int (256)		LOOKUP_TABLE	4		1	
C_AXIS_RADIUS	The c_axis_radius element provides the value of the semiminor axis of the ellipsoid that defines the approximate shape of a target body. 'C' is normal to the plane defined by 'A' and 'B'.	km	real		DIGITAL_TERRAIN_MODEL	4		4	
C_VEVER	parameter of the Veverka, Mosher, and Buratti photometric function		real		PHOT	4		1	
COOK	parameter of the Cook photometric function		real		PHOT	4		1	
D_VEVER	parameter of the Veverka, Mosher, and Buratti photometric function		real		PHOT	4		1	
DEN_SOIL	specific volume density of the soil		real		PHOT	4		1	
DESCRIPTION	The description element provides a free-form, unlimited-length character string that represents or gives an account of something.		string		DIGITAL_TERRAIN_MODEL	4		4	
DLRDTM_MODE	indicates in which mode DLRDTM has been operated		string	2D_2_3D,3D_2_GRID,2D_2_GRID	H	4		1	
DTM_FILE_NAME	Name of the DTM used to create an orthophoto		string		H	4		1	
DTM_LOC_PLANETOCENTRIC_LAT	an array of points outlining the area covered by a DTM on the planet's surface: planetocentric lat values	deg	real (100)		FOOTPRINT	4		1	
DTM_LOC_PLANETOCENTRIC_LONG	an array of points outlining the area covered by a DTM on the planet's surface: geocentric long values	deg	real (100)		FOOTPRINT	4		1	
DTM_RANGE	indicates at which minimum or maximum value the elevations in the DTM raster file have been cut-off		real (2)		H	4		1	
E_BURATTI	Buratti's parameter, added to the Veverka photometric function		real		PHOT	4		1	
EXPONENT	Exponent - the geometrical constant k of the Minnaert photometric function		real		PHOT	4		1	
GRAY	the stretch look-up table; an entry of x at position y in the array implies that each pixel with a pixel value of y is supposed to have the brightness x		int (256)		LOOKUP_TABLE	4		1	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
GREEN	the color look-up table (green component); an entry of x at position y in the array implies that each pixel with a pixel value of y is supposed to have the (green) color brightness x		int (256)		LOOKUP_TABLE	4		1	
H_CBOE	parameter of the coherent backscattering (width of opposition surge due to backscatter)		real		PHOT	4		1	
H_SHOE	parameter which characterizes the soil structure in terms of porosity or compaction (width of opposition surge due to shadowing); one of the classical Hapke parameter		real		PHOT	4		1	
HG_ASY_SOIL	asymmetry parameter (weights of the two terms in the Henyey-Greenstein soil phase function)		real		PHOT	4		1	
HG1_ATM	parameter of the single-term Henyey-Greenstein atmospheric phase function		real		PHOT	4		1	
HG1_SOIL	parameter of the single term Henyey-Greenstein soil particle phase function		real		PHOT	4		1	
HG2_SOIL	parameter of the second term of the Henyey-Greenstein soil particle function (in most cases: HG1_SOIL=HG2_SOIL)		real		PHOT	4		1	
IRV_EXP1	parameter of the Irvine photometric function		real		PHOT	4		1	
IRV_EXP2	parameter of the Irvine photometric function		real		PHOT	4		1	
LE1_SOIL	first term of the Legendre Polynomial soil phase function		real		PHOT	4		1	
LE2_SOIL	second term of the Legendre Polynomial soil phase function		real		PHOT	4		1	
MAXIMUM	The maximum element indicates the largest value occurring in a given instance of the data object. Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only withi	DN	int		DIGITAL_TERRAIN_MODEL	4		4	
MINIMUM	The minimum element indicates the smallest value occurring in a given instance of the data object. Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only with	DN	int		DIGITAL_TERRAIN_MODEL	4		4	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
MISSING_CONSTANT	The missing_constant element supplies the value used when no science data were available. Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only within an exp	DN	int		DIGITAL_TERRAIN_MODEL	4		4	
MO_EXP1	Mosher's modification of the coefficient k in the Minnaert photometric function (goes along with MO_EXP2)		real		PHOT	4		1	
MO_EXP2	Mosher's modification of the coefficient k in the Minnaert photometric function (goes along with MO_EXP1)		real		PHOT	4		1	
OFFSET	The offset element indicates a shift or displacement of a data value. See also: scaling_factor. Note: Expressed as an equation: true value = offset value + (scaling factor x stored value).	m	real		DIGITAL_TERRAIN_MODEL	4		4	
PHO_FUNC	the keyword indicates which photometric function was used for the photometric correction of the image		string	LAMBERT,MINNAERT,IRVINE,VEVERKA,BURATTI1,BURATTI2,BURATTI3,MOSHER,LUMME_BOWEL_HG1,HAPKE_81_LE2,HAPKE_81_COOK,HAPKE_86_HG1,HAPKE_86_HG2,HAPKE_86_LE2,HAPKE_HG1_DOM,REGNER_HAPKE_HG1,ATMO_CORR_REGNER	PHOT	4		1	
RED	the color look-up table (red component); an entry of x at position y in the array implies that each pixel with a pixel value of y is supposed to have the (red) color brightness x		int (256)		LOOKUP_TABLE	4		1	
SCALING_FACTOR	The scaling factor element provides the constant value by which the stored value is multiplied. See also: offset. Note: Expressed as an equation: true value = offset value + (scaling factor x stored value). In PDS Magellan altimetry and radiometry labels	m/DN	real		DIGITAL_TERRAIN_MODEL	4		4	

Name	Definition	Dimension	Type	Permitted Entries	Label Group	First Level	Last Level	Issue	PDS
TAU_ATM	optical depth of the atmosphere		real		PHOT	4		1	
THETA	average macroscopic slope angle; one of the classical Hapke parameter	deg	real		PHOT	4		1	
W_ATM	single-scattering albedo of the atmospheric aerosols		real		PHOT	4		1	
W_SOIL	single-scattering albedo of the soil particles; one of the classical Hapke parameter		real		PHOT	4		1	
PRODUCT_CREATION_TIME	The product_creation_time element defines the UTC system format time when a product was created.		string			P			