

ICON Data Product 1.1,1.2: MIGHTI Calibrated LOS Winds and Temperature Array

This document describes the data product for ICON MIGHTI-A Level 1.1, 1.2 Calibrated Science Image File, which is in NetCDF4 format.

This file contains MIGHTI phase deltas and IR brightnesses for temperature retrieval

NetCDF files contain **variables** and the **dimensions** over which those variables are defined. First, the dimensions are defined, then all variables in the file are described.

Dimensions

The dimensions used by the variables in this file are given below, along with nominal sizes. Note that the size may vary from file to file. For example, the "Epoch" dimension, which describes the number of time samples contained in this file, will likely have a varying size.

| Dimension Name | Nominal Size |
|--|--------------|
| ICON_L1_MIGHTI-A_Green_Array_OPD | 378 |
| ICON_L1_MIGHTI-A_Vector_XYZ | 3 |
| ICON_L0_MIGHTI-A_Image_ROI_Columns | 92 |
| ICON_L1_MIGHTI-A_Vector_Roll | 3 |
| ICON_L1_MIGHTI-A_IR_Channel | 5 |
| ICON_L1_MIGHTI-A_IR_Array_Altitudes | 20 |
| ICON_L1_MIGHTI-A_IR_Array_Pixel_Index | 429 |
| ICON_L1_MIGHTI-A_Red_Array_OPD | 340 |
| ICON_L1_MIGHTI-A_Green_Array_Altitudes | 82 |
| ICON_L1_MIGHTI-A_Time_Channel | 3 |
| Epoch | 1 |
| ICON_L0_MIGHTI-A_Image_ROI_Rows | 929 |
| ICON_L1_MIGHTI-A_Red_Array_Altitudes | 60 |
| ICON_L1_MIGHTI-A_Vector_LLA | 3 |

Variables

Variables in this file are listed below. First, "data" variables are described, followed by the "support_data" variables, and finally the "metadata" variables. The variables classified as "ignore_data" are not shown.

data

| Variable Name | Description | Units | Dimensions |
|---|--|----------------------|---|
| ICON_L1_MIGHTI-A_IR_Array | Brightnesses corresponding to the five IR filters Brightnesses corresponding to the five IR filters by OPD and altitude Raw data has been gain normalized and divided by integration time. | Rel. R (Counts/s) | Epoch, ICON_L1_MIGHTI-A_IR_Array_Altitudes, ICON_L1_MIGHTI-A_IR_Array_Pixel_Index |
| ICON_L1_MIGHTI-A_Green_Phase | Phase difference between the green atmospheric line and the associated calibration line minus the corresponding Zero Wind delta - by OPD and altitude Phase difference between the green atmospheric line and the associated calibration line minus the corresponding Zero Wind delta - by OPD and altitude | rad | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes, ICON_L1_MIGHTI-A_Green_Array_OPD |
| ICON_L1_MIGHTI-A_Green_Envelope | Envelopes of the green atmospheric fringes by OPD and altitude Envelopes of the green atmospheric fringes by OPD and altitude | Counts | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes, ICON_L1_MIGHTI-A_Green_Array_OPD |
| ICON_L1_MIGHTI-A_Green_Phase_Uncertainties | Uncertainties of the phases of the green atmospheric line by OPD and altitude Uncertainties of the phase deltas of the green atmospheric line by OPD and altitude Calculated from first principles based on assumption of shot noise dominance | rad | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes |
| ICON_L1_MIGHTI-A_Green_Envelope_Uncertainties | Uncertainties of the envelopes of the green atmospheric fringes by OPD and altitude Uncertainties of the envelopes of the green atmospheric fringes by OPD and altitude Calculated from first principles based on assumption of shot noise dominance | Counts | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes |
| ICON_L1_MIGHTI-A_Green_Tangent_LatLonAlt | Tangent point longitudes, latitudes, and altitudes for green side - middle of FoV, all altitudes Tangent point longitudes, latitudes, and altitudes for green side Taken at middle of FoV for all altitudes at start, middle, and end of integration. | Degrees, Degrees, km | Epoch, ICON_L1_MIGHTI-A_Time_Channel, ICON_L1_MIGHTI-A_Vector_LLA, ICON_L1_MIGHTI-A_Green_Array_Altitudes |

| Variable Name | Description | Units | Dimensions |
|---|--|----------------------|--|
| ICON_L1_MIGHTI_A_Red_Phase | Phase difference between the red atmospheric line and the associated calibration line minus the corresponding Zero Wind delta - by OPD and altitude Phase difference between the red atmospheric line and the associated calibration line minus the corresponding Zero Wind delta - by OPD and altitude | rad | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes, ICON_L1_MIGHTI-A_Red_Array_OPD |
| ICON_L1_MIGHTI_A_Red_Envelope | Envelopes of the red atmospheric fringes by OPD and altitude Envelopes of the red atmospheric fringes by OPD and altitude | Counts | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes, ICON_L1_MIGHTI-A_Red_Array_OPD |
| ICON_L1_MIGHTI_A_Red_Phase_Uncertainties | Uncertainties of the phase deltas of the red atmospheric line by OPD and altitude Uncertainties of the phase deltas of the red atmospheric line by OPD and altitude | rad | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes |
| ICON_L1_MIGHTI_A_Red_Envelope_Uncertainties | Uncertainties of the envelopes of the red atmospheric fringes by OPD and altitude Uncertainties of the envelopes of the red atmospheric fringes by OPD and altitude | Counts | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes |
| ICON_L1_MIGHTI_A_Red_Tangent_LatLonAlt | Tangent point longitudes, latitudes, and altitudes for red side - middle of FoV, all altitudes Tangent point longitudes, latitudes, and altitudes for red side Taken at middle of FoV for all altitudes at start, middle, and end of integration | Degrees, Degrees, km | Epoch, ICON_L1_MIGHTI-A_Time_Channel, ICON_L1_MIGHTI-A_Vector_LLA, ICON_L1_MIGHTI-A_Red_Array_Altitudes |
| ICON_L1_MIGHTI_A_Green_ECEF_Unit_Vectors | ECEF Unit Vectors per pixel representing the green lines of sight ECEF Unit Vectors per pixel representing the green lines of sight Calculated from vectors in ancillary file and measurements documented in the alignment report By OPD and altitude at start, middle and end of the integration | | Epoch, ICON_L1_MIGHTI-A_Vector_XYZ, ICON_L1_MIGHTI-A_Green_Array_Altitudes, ICON_L1_MIGHTI-A_Green_Array_OPD |
| ICON_L1_MIGHTI_A_Red_ECEF_Unit_Vectors | ECEF Unit Vectors per pixel representing the red lines of sight ECEF Unit Vectors per pixel representing the red lines of sight Calculated from vectors in ancillary file and measurements documented in the alignment report By OPD and altitude at start, middle and end of the integration | | Epoch, ICON_L1_MIGHTI-A_Vector_XYZ, ICON_L1_MIGHTI-A_Red_Array_Altitudes, ICON_L1_MIGHTI-A_Red_Array_OPD |

| Variable Name | Description | Units | Dimensions |
|-----------------------------------|--|-------|--|
| ICON_L0_MIGHTI_A_Image_ROI_Pixels | MIGHTI region of interest pixel values layed out [ROWS]x[COLUMNS]. | Count | Epoch, ICON_L0_MIGHTI_A_Image_ROI_Rows, ICON_L0_MIGHTI_A_Image_ROI_Columns |

support_data

| Variable Name | Description | Units | Dimensions |
|--|--|--------|---|
| Epoch | Milliseconds since 1970-01-01 00:00:00 UTC at middle of image integration Milliseconds since 1970-01-01 00:00:00 UTC at middle of image integration | ms | Epoch |
| ICON_L1_MIGHTI_A_IR_Array_Pixel_Index | Pixel indices corresponding to the IR filter mosaic Pixel (OPD) indices corresponding to the IR filter mosaic (1st dimension) | | Epoch, ICON_L1_MIGHTI-A_IR_Array_Pixel_Index |
| ICON_L1_MIGHTI_A_IR_Array_Altitudes | Altitudes corresponding to the five IR filters Altitudes corresponding to the rows of the IR filter mosaic (2nd dimension) | km | Epoch, ICON_L1_MIGHTI-A_IR_Array_Altitudes |
| ICON_L1_MIGHTI_A_Green_Relative_Brightness | Relative brightness of green emission by altitude Relative brightness of green emission by altitude Average of signal + DC for each altitude SDL calibration used to convert counts to brightness | Counts | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes |
| ICON_L1_MIGHTI_A_Green_Quality_Factor | Data quality Factor by altitude for 557nm Data quality Factor by altitude for green line. 0: untrusted data. 0.5: usable with care 1.0: good data | | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes |
| ICON_L1_MIGHTI_A_Green_Array_OPD | Optical path differences corresponding to the green fringes Optical path differences corresponding to the columns of the green fringes | cm | Epoch, ICON_L1_MIGHTI-A_Green_Array_OPD |
| ICON_L1_MIGHTI_A_Green_Array_Altitudes | Altitudes corresponding to the green fringes - middle of integration, middle of FoV Altitudes corresponding to the rows of the green fringes Taken from middle of integration, middle of FoV | km | Epoch, ICON_L1_MIGHTI-A_Green_Array_Altitudes |
| ICON_L1_MIGHTI_A_Red_Relative_Brightness | Relative brightness of the red emission by altitude Relative brightness of the red emission by altitude Average of signal + DC for each altitude SDL calibration used to convert counts to brightness | Counts | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes |

| Variable Name | Description | Units | Dimensions |
|---|--|-------|---|
| ICON_L1_MIGHTI_A_Red_Quality_Factor | Data quality Factor by altitude for 630nm Data quality Factor by altitude for red line 0.0: untrusted data 0.5: usable with care 1.0: good data. | | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes |
| ICON_L1_MIGHTI_A_Red_Array_OPD | Optical path differences corresponding to the red fringes Optical path differences corresponding to the columns for the red fringes | cm | Epoch, ICON_L1_MIGHTI-A_Red_Array_OPD |
| ICON_L1_MIGHTI_A_Red_Array_Altitudes | Altitudes corresponding to the red fringes Altitudes corresponding to the rows for the red fringes | km | Epoch, ICON_L1_MIGHTI-A_Red_Array_Altitudes |
| ICON_L1_MIGHTI_A_SC_Position_ECEF | Spacecraft Position Vector in ECEF Spacecraft Position Vector in ECEF. Calculated from vectors in ancillary file. | km | Epoch, ICON_L1_MIGHTI-A_Time_Channel, ICON_L1_MIGHTI-A_Vector_XYZ |
| ICON_L1_MIGHTI_A_SC_Velocity_ECEF | ECEF Vector for spacecraft velocity ECEF Vector for spacecraft velocity. Calculated from vectors in ancillary file. | m/s | Epoch, ICON_L1_MIGHTI-A_Time_Channel, ICON_L1_MIGHTI-A_Vector_XYZ |
| ICON_L1_MIGHTI_A_Image_Times | Epochs corresponding to the Start, Middle, and Stop of the integration Epochs corresponding to the Start, Middle, and Stop of the integration. | ms | Epoch, ICON_L1_MIGHTI-A_Time_Channel |
| ICON_L1_MIGHTI_A_Roll_Angles | Roll angles of the field of view Roll angles of the field of view. Dimensions: Boresight, CCD_Limb, CCD_Altitudes | deg | Epoch, ICON_L1_MIGHTI-A_Vector_Roll |
| ICON_L1_MIGHTI_A_Quality_Flag_Near_Terminator | Quality Flag indicating that terminator is within field of view Quality Flag indicating that terminator is within field of view | | Epoch |
| ICON_L1_MIGHTI_A_Quality_Flag_Low_Signal_To_Noise | Quality Flag indicating low signal to noise Quality Flag indicating low signal to noise | | Epoch |
| ICON_L1_MIGHTI_A_Quality_Flag_SAA | Quality Flag indicating that the spacecraft is within the South Atlantic Anomaly Quality Flag indicating that the spacecraft is within the South Atlantic Anomaly | | Epoch |
| ICON_L1_MIGHTI_A_Quality_Flag_Bad_Calibration | Quality Flag indicating an inappropriate calibration file has been used or was missing Quality Flag indicating an inappropriate calibration file has been used or was missing | | Epoch |

| Variable Name | Description | Units | Dimensions |
|---|---|-------|------------|
| ICON_L1_MIGHTI_A_SC_Attitude_Control_Register | <p>Spacecraft Attitude Control Register</p> <p>Spacecraft Attitude Control Register</p> <p>Bit 0: LVLH NORMAL</p> <p>Bit 1: LVLH Reverse Mode</p> <p>Bit 2: Earth Limb Pointing</p> <p>Bit 3: Inertial Pointing</p> <p>Bit 4: Stellar Pointing</p> <p>Bit 5: Attitude Slew</p> <p>Bit 6: Conjugate Maneuver</p> <p>Bit 7: Nadir Calibration</p> <p>Bit 8: Lunar Calibration</p> <p>Bit 9: Stellar Calibration</p> | | Epoch |
| ICON_L0_MIGHTI_A_Time.UTC | <p>ISO 9601 formatted UTC timestamp (at middle of image integration).</p> <p>ISO 9601 formatted UTC timestamp (at middle of image integration).</p> <p>Derived from original GPS values reported from spacecraft (Time_GPS_Seconds and Time_GPS_Subseconds).</p> <p>Time calculation is offset by 615ms (flush time) for the first image in the series and for all other images are adjusted by subtracting (integration time + 308 milliseconds) from the reported GPS time then adding the difference between the readout FRT and the header FRT.</p> <p>Time may be delayed by up to 10 ms due to FSW polling delay.</p> <p>Maximum time is ~2150 UTC and minimum time is ~1970 UTC.</p> <p>All character arrays are NULL terminated (size includes NULL).</p> | | Epoch |

| Variable Name | Description | Units | Dimensions |
|---------------------------------|---|--------------|------------|
| ICON_L0_MIGHTI_A_Time_GPS | <p>Milliseconds since 1980-01-06 00:00:00 TAI (coincident with UTC) at middle of image integration.</p> <p>Milliseconds since 1980-01-06 00:00:00 TAI (coincident with UTC) at middle of image integration.</p> <p>Derived from original GPS values reported from spacecraft (Time_GPS_Seconds and Time_GPS_Subseconds).</p> <p>Time calculation is offset by 615ms (flush time) for the first image in the series and for all other images are adjusted by subtracting (integration time + 308 milliseconds) from the reported GPS time then adding the difference between the readout FRT and the header FRT.</p> <p>Time may be delayed by up to 10 ms due to FSW polling delay.</p> <p>Maximum time is ~2150 UTC and minimum time is ~1970 UTC.</p> | milliseconds | Epoch |
| ICON_L0_MIGHTI_A_Time_UTC_Start | <p>Milliseconds since 1970-01-01 00:00:00 UTC at start of image integration.</p> <p>Milliseconds since 1970-01-01 00:00:00 UTC at start of image integration.</p> <p>Derived from original GPS values reported from spacecraft (Time_GPS_Seconds and Time_GPS_Subseconds).</p> <p>Time calculation is offset by 615ms (flush time) for the first image in the series and for all other images are adjusted by subtracting (integration time + 308 milliseconds) from the reported GPS time then adding the difference between the readout FRT and the header FRT.</p> <p>Time may be delayed by up to 10 ms due to FSW polling delay.</p> <p>Maximum time is ~2150 UTC and minimum time is ~1970 UTC.</p> | milliseconds | Epoch |
| ICON_L0_MIGHTI_A_Time_UTC_Stop | <p>Milliseconds since 1970-01-01 00:00:00 UTC at end of image integration.</p> <p>Milliseconds since 1970-01-01 00:00:00 UTC at end of image integration.</p> <p>Derived from original GPS values reported from spacecraft (Time_GPS_Seconds and Time_GPS_Subseconds).</p> <p>Time calculation is offset by 615ms (flush time) for the first image in the series and for all other images are adjusted by subtracting (integration time + 308 milliseconds) from the reported GPS time then adding the difference between the readout FRT and the header FRT.</p> <p>Time may be delayed by up to 10 ms due to FSW polling delay.</p> <p>Maximum time is ~2150 UTC and minimum time is ~1970 UTC.</p> | milliseconds | Epoch |

| Variable Name | Description | Units | Dimensions |
|--|---|----------------|------------|
| ICON_L0_MIGHTI_A_Time_GPS_Seconds | <p>GPS seconds count when FSW received image packet header.</p> <p>GPS seconds count when FSW received image packet header.</p> <p>The FSW received the header of the first image in a series 615ms after start of image processing. Following headers are adjusted by subtracting (integration time + 308 milliseconds) from the reported GPS time then adding the difference between the readout FRT and the header FRT.</p> <p>Time may be delayed by up to 10 ms due to FSW polling delay.</p> | Seconds | Epoch |
| ICON_L0_MIGHTI_A_Time_GPS_Subseconds | <p>FSW 20MHz clock (50 nanosecond) offset from GPS seconds.</p> <p>FSW 20MHz clock (50 nanosecond) offset from GPS seconds.</p> <p>The FSW received the header of the first image in a series 615ms after start of image processing. Following headers are adjusted by subtracting (integration time + 308 milliseconds) from the reported GPS time then adding the difference between the readout FRT and the header FRT.</p> <p>The offset may be more than 1 second but never 2 or more seconds.</p> <p>Time may be delayed by up to 10 ms due to FSW polling delay.</p> | 50 Nanoseconds | Epoch |
| ICON_L0_MIGHTI_A_Time_Integration | Time to integrate MIGHTI-A region of interest (ROI) image. | milliseconds | Epoch |
| ICON_L0_MIGHTI_A_Time_Header_Free_Running_Timer | <p>Free running timer reading for MIGHTI image header.</p> <p>The FRTs are millisecond free running timers used to calculate the time offset for this image's integration from the observatory GPS time tag. This is only used when it is not the first image in the integration sequence. When the prior image FRT is not known a timing error is generated as a calculation cannot be performed. The base GPS time is used as the start time.</p> | milliseconds | Epoch |
| ICON_L0_MIGHTI_A_Time_Readout_Free_Running_Timer | <p>Free running timer reading for MIGHTI image data readout start.</p> <p>The FRTs are millisecond free running timers used to calculate the time offset for this image's integration from the observatory GPS time tag. This is only used when it is not the first image in the integration sequence. When the prior image FRT is not known a timing error is generated as a calculation cannot be performed. The base GPS time is used as the start time.</p> | milliseconds | Epoch |

| Variable Name | Description | Units | Dimensions |
|--|---|--------------|------------|
| ICON_L0_MIGHTI_A_Time_Prior_Readout_Free_Running_Timer | <p>Free running timer reading for MIGHTI prior image data readout start.</p> <p>The FRTs are millisecond free running timers used to calculate the time offset for this image's integration from the observatory GPS time tag. This is only used when it is not the first image in the integration sequence. When the prior image FRT is not known a timing error is generated as a calculation cannot be performed. The base GPS time is used as the start time.</p> | milliseconds | Epoch |
| ICON_L0_MIGHTI_A_Time_Prior_Known | <p>Flag indicating prior image's free running timer known.</p> <p>The FRTs are millisecond free running timers used to calculate the time offset for this image's integration from the observatory GPS time tag. This is only used when it is not the first image in the integration sequence. When the prior image FRT is not known a timing error is generated as a calculation cannot be performed. The base GPS time is used as the start time.</p> | Flag | Epoch |
| ICON_L0_MIGHTI_A_MT_Device_ID | MIGHTI camera instrument ID (0=MIGHTI-A, 1=MIGHT-B). | Flag | |
| ICON_L0_MIGHTI_A_MT_Device_Current_Sense | MIGHTI camera current (power) monitor count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Calibration_Lamp_1 | MIGHTI camera calibration lamp 1 setting (0=OFF, 1=ON). | Flag | Epoch |
| ICON_L0_MIGHTI_A_Calibration_Lamp_2 | MIGHTI camera calibration lamp 2 setting (0=OFF, 1=ON). | Flag | Epoch |
| ICON_L0_MIGHTI_A_Calibration_Lamp_Current | MIGHTI camera calibration lamp combined current monitor sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Calibration_Lamp_Temperature | MIGHTI camera calibration lamp combined temperature monitor sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Interferometer_1_Temperature_Sense | MIGHTI interferometer 1 fine temperature sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Interferometer_2_Temperature_Sense | MIGHTI interferometer 2 fine temperature sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Optics_Bench_Temperature_Forward | MIGHTI optics bench forward temperature sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Optics_Bench_Temperature_Rear | MIGHTI optics bench rear temperature sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Optics_Temperature_Aft | MIGHTI optics aft temperature sense count. | Count | Epoch |

| Variable Name | Description | Units | Dimensions |
|---|--|-------|------------|
| ICON_L0_MIGHTI_A_TEC_Current_Input_Count | MIGHTI thermo-electric cooler combined (TEC-A + TEC-B) input current count. | Count | Epoch |
| ICON_L0_MIGHTI_A_TEC_Temperature_Cold_Count | MIGHTI thermo-electric cooler cold-side temperature sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_TEC_Temperature_Hot_Count | MIGHTI thermo-electric cooler hot-side temperature sense count. | Count | Epoch |
| ICON_L0_MIGHTI_A_MTA_Aperture1_Position | MIGHTI-A camera aperture 1 position sense flag. 0=OPEN, 1=CLOSED, 2=15% OPEN, 3=UNKNOWN | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTA_Aperture2_Position | MIGHTI-A camera aperture 2 position sense flag. 0=OPEN, 1=CLOSED, 2=15% OPEN, 3=UNKNOWN | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTA_Aperture1 | MIGHTI-A camera aperture 1 switch setting (0=OPEN, 1=CLOSED). | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTA_Aperture2 | MIGHTI-A camera aperture 2 switch setting (0=OPEN, 1=CLOSED). | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTB_Aperture1_Position | MIGHTI-B camera aperture 1 position sense flag. 0=OPEN, 1=CLOSED, 2=15% OPEN, 3=UNKNOWN | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTB_Aperture2_Position | MIGHTI-B camera aperture 2 position sense flag. 0=OPEN, 1=CLOSED, 2=15% OPEN, 3=UNKNOWN | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTB_Aperture1 | MIGHTI-B camera aperture 1 switch setting (0=OPEN, 1=CLOSED). | Flag | Epoch |
| ICON_L0_MIGHTI_A_MTB_Aperture2 | MIGHTI-B camera aperture 2 switch setting (0=OPEN, 1=CLOSED). | Flag | Epoch |
| ICON_L0_MIGHTI_A_Error_Compression | Error count during compression (per packet). Error count during compression (per packet). Should be zero (for no error) but if it is a non-zero number then the number indicates the number of packets that contained an overflow in the delta bit field during compression. | Count | Epoch |
| ICON_L0_MIGHTI_A_Error_Time | Error finding prior image readout FRT (0=GOOD, 1=ERROR). Error finding prior image readout FRT (0=GOOD, 1=ERROR). The prior image read out FRT was missing so proper time offset couldn't be calculated correctly. The time will indicate later then the actual time. This only occurs when not the first image of the series. | Flag | Epoch |

| Variable Name | Description | Units | Dimensions |
|--|---|-------|------------|
| ICON_L0_MIGHTI_A_CCD_CS_Register | <p>CCD CS register value from image header at end of integration.</p> <p>CCD CS register value from image header at end of integration.</p> <p>See ICN-ICD-002 (MIGHTI) for more details on this parameter.</p> | Flag | Epoch |
| ICON_L0_MIGHTI_A_Horizontal_Charge_Transfer_Efficiency_Count | <p>Horizontal charge transfer efficiency register count indicating the horizontal overscan pixel configuration per MIGHTI ICD.</p> <p>Horizontal charge transfer efficiency register count indicating the horizontal overscan pixel configuration per MIGHTI ICD.</p> <p>See ICN-ICD-002 (MIGHTI) for more details on this parameter.</p> | Count | Epoch |
| ICON_L0_MIGHTI_A_Image_BIN_Parameters | <p>MIGHTI binning parameters (BINCOUNTS).</p> <p>MIGHTI binning parameters (BINCOUNTS).</p> <p>See ICN-ICD-002 (MIGHTI) for more details on this parameter.</p> | Flag | Epoch |
| ICON_L0_MIGHTI_A_Image_First | First image in MIGHTI integration sequence (0=NOT FIRST, 1=FIRST). | Flag | Epoch |
| ICON_L0_MIGHTI_A_Image_ROI_Column_Count | MIGHTI region of interest (ROI) pixel column count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Image_ROI_Column_Start | MIGHTI region of interest (ROI) pixel starting column. | Count | Epoch |
| ICON_L0_MIGHTI_A_Image_ROI_Row_Count | MIGHTI region of interest (ROI) pixel row count. | Count | Epoch |
| ICON_L0_MIGHTI_A_Image_ROI_Row_Start | MIGHTI region of interest (ROI) pixel starting row. | Count | Epoch |

metadata

| Variable Name | Description | Units | Dimensions |
|------------------------------|---|-------|------------------------------|
| ICON_L1_MIGHTI_A_Vector_LLA | <p>Vector labels corresponding to the tangent lat, lon, and alt</p> <p>Vector labels corresponding to the tangent lat, lon, and alt</p> | | ICON_L1_MIGHTI-A_Vector_LLA |
| ICON_L1_MIGHTI_A_Vector_XYZ | <p>Vector labels corresponding to the ECEF lines of sight</p> <p>Vector labels corresponding to the ECEF lines of sight</p> | | ICON_L1_MIGHTI-A_Vector_XYZ |
| ICON_L1_MIGHTI_A_Vector_Roll | <p>Vector labels corresponding to the field of view roll angles</p> <p>Vector labels corresponding to the field of view roll angles</p> | | ICON_L1_MIGHTI-A_Vector_Roll |

| Variable Name | Description | Units | Dimensions |
|-------------------------------|--|-------|-------------------------------|
| ICON_L1_MIGHTI_A_Time_Channel | Vector labels corresponding to the time channels Vector labels corresponding to the time channels | | ICON_L1_MIGHTI-A_Time_Channel |

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