VirES - Aeolus: netCDF output format

Service version 1.2

This document describes the internal layout and available fields of the netCDF output files as available from the download feature of the VirES for Aeolus online application.

General Properties

Though each of the specific product types (L1B, L2A, L2B, L2C, AUX) differ slightly regarding their structure, several common traits are shared:

- **netCDF 4**: When requested with the outputformat mime-type `application/netcdf` then the resulting file will be of the format netCDF 4 (HDF5)
- **Output fields**: Only requested fields are included in the output file
- **Input files**: When the search request spans multiple data files, then the data for each field is appended into the output variable in a linearized fashion
- **DSD**: When DSD information is requested, then this information structure is the same for all product types. For the specific layout of this structure please refer to the section in this document
- **Array dimensions**: Depending on the requested fields, additional dimensions may be added under the root netCDF group. These dimensions are named after their respective size (e.g: ‘array_24’). Dimensions are always put in the root group of the file
- **File history**: for each created product a metadata attribute is added to the root group containing the used time interval, bounding box, filters and processed files. This metadata attribute is JSON encoded.

Level 1B/2A product extraction process outputs

As Level 1B and 2A are both based upon measurements and observations, the output format is structured like that as-well.

The two distinct types of data, observation and measurements, are separated into a netCDF groups ‘observations’ or ‘measurements’, where each requested field is its own netCDF variable using the field name as its identifier.

Under the root group the dimension for measurements and/or observations are added. Each group and dimension is only present when at least one field of each type of data is requested.

The overlap period for outputs that span two consecutive products is cut off with the preference of the later product. This is true for both measurements and observations.

Level 2B/2C product extraction process outputs

These accumulated products have data of seven kinds: Mie grouping data, Rayleigh grouping data, Mie profile data, Rayleigh profile data, Mie wind data, Rayleigh wind data and measurement data.

For each kind of data a netCDF group is used where the associated fields are stored. Additionally, each kind of data uses its own dimension of the same name. The dimension is also stored under the root group. For outputs of accumulated data products, no additional dimensions are used.

Auxiliary product extraction process outputs

For AUX ISR, AUX MRC, AUX RRC and AUX ZWC there are two distinct granularities of data: calibrations and frequencies.

Calibrations contain both scalar and array data taken from the XML tags:

- AUX ISR:
    - First_Start_of_Observation_Time
    - Freq_Mie_USR_Closest_to_Rayleigh_Filter_Centre
    - Freq_Rayleigh_Filter_Centre
- AUX MRC, RRC:
    - Measurement_Response_Calibration
    - Reference_Pulse_Response_Calibration
    - Calibration_Validity_Indicators
- AUX ZWC:
    - Start_of_Observation_Time
    - Observation_Info
    - ZWC_Result_Type
    - Mie_Ground_Correction_Velocity
    - Rayleigh_Ground_Correction_Velocity
    - Number_of_Mie_Ground_Bins
    - Mie_Average_Ground_Echo_Bin_Thickness
    - Rayleigh_Average_Ground_Echo_Bin_Thickness
    - Mie_Average_Ground_Echo_Bin_Thickness_Above_DEM
    - Rayleigh_Average_Ground_Echo_Bin_Thickness_Above_DEM
    - Mie_Min_Top_Ground_Bin
    - Rayleigh_Min_Top_Ground_Bin
    - Mie_Max_Bottom_Ground_Bin
    - Rayleigh_Max_Bottom_Ground_Bin
    - Measurement_Info

Frequencies contain data taken from the XML tags:

- AUX ISR
    - List_of_ISR_Results
- AUX MRC, RRC:
    - List_of_Frequency_Step_Geolocations

    - List_of_Frequency_Step_Results
- AUX ZWC:
    - List_of_Mie_Measurement_Validity_Indicators
    - List_of_Rayleigh_Measurement_Validity_Indicators

For each of these granularities a netCDF group is created when at least one field of that type is requested. Fields are put in the respective groups as variables.

Both kinds of data are linearized, similarly to the measurement/observation data of Level 1B/2A.

AUX MET product extraction process outputs

As AUX MET files are structured differently than the other AUX products, also the netCDF output is handled in a different fashion.

AUX MET data are split into nadir and off nadir data types, which have different granularities.

For these outputs, all output fields are put directly in the root group, as the respective field names already contain the nadir/off nadir name suffix.

Additionally, a netCDF for each requested field is added.

DSD information

When requested (i.e: the `Download data set descriptors (DSD)` parameter is set to `true`) then DSD structure is added to the output file.

For each input product a sub-group is created in the root level group `dsd`. Each group itself has the following string fields: ‘ds_name’, ‘ds_type’, ‘filename’, ‘ds_offset’, ‘ds_size’, ‘num_dsr’, ‘dsr_size’, and ‘byte_order’ extracted from the product files themselves.

Annex 1: Fields and locations

netCDF variable name	**CODA path (DBL)**
time	/geolocation/observation_aocs/observation_centroid_time
longitude_of_DEM_intersection	/geolocation/observation_geolocation/geolocation_of_dem_intersection/longitude_of_dem_intersection
latitude_of_DEM_intersection	/geolocation/observation_geolocation/geolocation_of_dem_intersection/latitude_of_dem_intersection
altitude_of_DEM_intersection	/geolocation/observation_geolocation/geolocation_of_dem_int

	ersection/altitude_of_dem_intersection
mie_longitude	/geolocation/observation_geolocation/observation_mie_geolocation/longitude_of_height_bin
mie_latitude	/geolocation/observation_geolocation/observation_mie_geolocation/latitude_of_height_bin
rayleigh_longitude	/geolocation/observation_geolocation/observation_rayleigh_geolocation/longitude_of_height_bin
rayleigh_latitude	/geolocation/observation_geolocation/observation_rayleigh_geolocation/latitude_of_height_bin
mie_altitude	/geolocation/observation_geolocation/observation_mie_geolocation/altitude_of_height_bin
rayleigh_altitude	/geolocation/observation_geolocation/observation_rayleigh_geolocation/altitude_of_height_bin
mie_range	/geolocation/observation_geolocation/observation_mie_geolocation/satellite_range_of_height_bin
rayleigh_range	/geolocation/observation_geolocation/observation_rayleigh_geolocation/satellite_range_of_height_bin
geoid_separation	/geolocation/observation_geolocation/geoid_separation
velocity_at_DEM_intersection	/geolocation/observation_geolocation/line_of_sight_velocity
AOCS_pitch_angle	/geolocation/observation_aocs/pitch_angle
AOCS_roll_angle	/geolocation/observation_aocs/roll_angle
AOCS_yaw_angle	/geolocation/observation_aocs/yaw_angle
mie_HLOS_wind_speed	/wind_velocity/observation_wind_profile/mie_altitude_bin_wind_info/wind_velocity
rayleigh_HLOS_wind_speed	/wind_velocity/observation_wind_profile/rayleigh_altitude_bin_wind_info/wind_velocity
mie_signal_intensity	/useful_signal/observation_useful_signals/mie_altitude_bin_useful_signal_info/useful_signal
rayleigh_signal_channel_A_intensity	/useful_signal/observation_useful_signals/rayleigh_altitude_bin_useful_signal_info/useful_signal_channel_a
rayleigh_signal_channel_B_intensity	/useful_signal/observation_useful_signals/rayleigh_altitude_bin_useful_signal_info/useful_signal_channel_b
rayleigh_signal_intensity	
mie_ground_velocity	/ground_wind_detection/mie_ground_correction_velocity
rayleigh_ground_velocity	/ground_wind_detection/rayleigh_ground_correction_velocity
mie_HBE_ground_velocity	/ground_wind_detection/hbe_mie_ground_correction_velocity
rayleigh_HBE_ground_velocity	/ground_wind_detection/hbe_rayleigh_ground_correction_velocity
mie_total_ZWC	/ground_wind_detection/mie_channel_total_zero_wind_correction
rayleigh_total_ZWC	/ground_wind_detection/rayleigh_channel_total_zero_wind_correction

mie_scattering_ratio	/product_confidence_data/observation_pcd/observation_alt_bin_pcd/refined_scattering_ratio_mie
mie_SNR	/product_confidence_data/observation_pcd/observation_alt_bin_pcd/mie_signal_to_noise_ratio
rayleigh_channel_A_SNR	/product_confidence_data/observation_pcd/observation_alt_bin_pcd/rayleigh_signal_to_noise_ratio_channel_a
rayleigh_channel_B_SNR	/product_confidence_data/observation_pcd/observation_alt_bin_pcd/rayleigh_signal_to_noise_ratio_channel_b
rayleigh_SNR	
mie_error_quantifier	/product_confidence_data/observation_pcd/observation_alt_bin_pcd/error_quantifier_mie
rayleigh_error_quantifier	/product_confidence_data/observation_pcd/observation_alt_bin_pcd/error_quantifier_rayleigh
average_laser_energy	/product_confidence_data/observation_pcd/avg_uv_energy
laser_frequency	/product_confidence_data/observation_pcd/avg_laser_frequency_offset
rayleigh_bin_quality_flag	/wind_velocity/observation_wind_profile/rayleigh_altitude_bin_wind_info/bin_quality_flag
mie_bin_quality_flag	/wind_velocity/observation_wind_profile/mie_altitude_bin_wind_info/bin_quality_flag
rayleigh_reference_pulse_quality_flag	/wind_velocity/observation_wind_profile/rayleigh_reference_pulse_quality_flag
mie_reference_pulse_quality_flag	/wind_velocity/observation_wind_profile/mie_reference_pulse_quality_flag
albedo_off_nadir	
Level 1B - observation fields and locations	

netCDF variable name	**CODA path (DBL)**
time	/geolocation/measurement_aocs/measurement_centroid_time
longitude_of_DEM_intersection	/geolocation/measurement_geolocation/geolocation_of_dem_intersection/longitude_of_dem_intersection
latitude_of_DEM_intersection	/geolocation/measurement_geolocation/geolocation_of_dem_intersection/latitude_of_dem_intersection
altitude_of_DEM_intersection	/geolocation/measurement_geolocation/geolocation_of_dem_intersection/altitude_of_dem_intersection
mie_longitude	/geolocation/measurement_geolocation/mie_geolocation/longitude_of_height_bin
mie_latitude	/geolocation/measurement_geolocation/mie_geolocation/latitude_of_height_bin
rayleigh_longitude	/geolocation/measurement_geolocation/rayleigh_geolocation/longitude_of_height_bin

rayleigh_latitude	/geolocation/measurement_geolocation/rayleigh_geolocation/latitude_of_height_bin
mie_altitude	/geolocation/measurement_geolocation/mie_geolocation/altitude_of_height_bin
rayleigh_altitude	/geolocation/measurement_geolocation/rayleigh_geolocation/altitude_of_height_bin
velocity_at_DEM_intersection	/geolocation/measurement_geolocation/aocs_los_velocity
AOCS_pitch_angle	/geolocation/measurement_aocs/pitch_angle
AOCS_roll_angle	/geolocation/measurement_aocs/roll_angle
AOCS_yaw_angle	/geolocation/measurement_aocs/yaw_angle
mie_HLOS_wind_speed	/wind_velocity/measurement_wind_profile/mie_altitude_bin_wind_info/wind_velocity
rayleigh_HLOS_wind_speed	/wind_velocity/measurement_wind_profile/rayleigh_altitude_bin_wind_info/wind_velocity
mie_signal_intensity	/useful_signal/measurement_useful_signal/mie_altitude_bin_useful_signal_info/useful_signal
rayleigh_signal_channel_A_intensity	/useful_signal/measurement_useful_signal/rayleigh_altitude_bin_useful_signal_info/useful_signal_channel_a
rayleigh_signal_channel_B_intensity	/useful_signal/measurement_useful_signal/rayleigh_altitude_bin_useful_signal_info/useful_signal_channel_b
rayleigh_signal_intensity	
mie_ground_velocity	/wind_velocity/measurement_wind_profile/mie_ground_wind_velocity
rayleigh_ground_velocity	/wind_velocity/measurement_wind_profile/rayleigh_ground_wind_velocity
mie_mean_emitted_frequency	/product_confidence_data/measurement_pcd/mie_mean_emitted_frequency
rayleigh_mean_emitted_frequency	/product_confidence_data/measurement_pcd/rayleigh_mean_emitted_frequency
mie_emitted_frequency_std_dev	/product_confidence_data/measurement_pcd/mie_emitted_frequency_std_dev
rayleigh_emitted_frequency_std_dev	/product_confidence_data/measurement_pcd/rayleigh_emitted_frequency_std_dev
mie_scattering_ratio	/product_confidence_data/measurement_pcd/meas_alt_bin_pcd/refined_scattering_ratio_mie
mie_SNR	/product_confidence_data/measurement_pcd/meas_alt_bin_pcd/mie_signal_to_noise_ratio
rayleigh_channel_A_SNR	/product_confidence_data/measurement_pcd/meas_alt_bin_pcd/rayleigh_signal_to_noise_ratio_channel_a
rayleigh_channel_B_SNR	/product_confidence_data/measurement_pcd/meas_alt_bin_pcd/rayleigh_signal_to_noise_ratio_channel_b
rayleigh_SNR	

average_laser_energy	/product_confidence_data/measurement_pcd/avg_uv_energy
laser_frequency	/product_confidence_data/measurement_pcd/avg_laser_frequency_offset
rayleigh_bin_quality_flag	/wind_velocity/measurement_wind_profile/rayleigh_altitude_bin_wind_info/bin_quality_flag
mie_bin_quality_flag	/wind_velocity/measurement_wind_profile/mie_altitude_bin_wind_info/bin_quality_flag
rayleigh_reference_pulse_quality_flag	/wind_velocity/measurement_wind_profile/rayleigh_reference_pulse_quality_flag
mie_reference_pulse_quality_flag	/wind_velocity/measurement_wind_profile/mie_reference_pulse_quality_flag
albedo_off_nadir	
Level 1B - measurement fields and locations	

netCDF variable name	**CODA path (DBL)**
L1B_start_time_obs	/geolocation/start_of_obs_time
L1B_centroid_time_obs	
SCA_time_obs	/sca_optical_properties/starttime
ICA_time_obs	/ica_optical_properties/starttime
MCA_time_obs	/mca_optical_properties/starttime
longitude_of_DEM_intersection_obs	
latitude_of_DEM_intersection_obs	
altitude_of_DEM_intersection_obs	
geoid_separation_obs	/geolocation/geoid_separation
mie_altitude_obs	
rayleigh_altitude_obs	
SCA_middle_bin_altitude_obs	/sca_optical_properties/geolocation_middle_bins/altitude
L1B_num_of_meas_per_obs	/geolocation/num_meas_eff
SCA_QC_flag	/sca_pcd/qc_flag
SCA_extinction_variance	/sca_pcd/profile_pcd_bins/extinction_variance
SCA_backscatter_variance	/sca_pcd/profile_pcd_bins/backscatter_variance
SCA_LOD_variance	/sca_pcd/profile_pcd_bins/lod_variance
SCA_middle_bin_extinction_variance	/sca_pcd/profile_pcd_mid_bins/extinction_variance
SCA_middle_bin_backscatter_variance	/sca_pcd/profile_pcd_mid_bins/backscatter_variance
SCA_middle_bin_LOD_variance	/sca_pcd/profile_pcd_mid_bins/lod_variance
SCA_middle_bin_BER_variance	/sca_pcd/profile_pcd_mid_bins/ber_variance

ICA_QC_flag	/ica_pcd/qc_flag
SCA_extinction	/sca_optical_properties/sca_optical_properties/extinction
SCA_backscatter	/sca_optical_properties/sca_optical_properties/backscatter
SCA_LOD	/sca_optical_properties/sca_optical_properties/lod
SCA_SR	/sca_optical_properties/sca_optical_properties/sr
SCA_middle_bin_extinction	/sca_optical_properties/sca_optical_properties_mid_bins/extinction
SCA_middle_bin_backscatter	/sca_optical_properties/sca_optical_properties_mid_bins/backscatter
SCA_middle_bin_LOD	/sca_optical_properties/sca_optical_properties_mid_bins/lod
SCA_middle_bin_BER	/sca_optical_properties/sca_optical_properties_mid_bins/ber
ICA_filling_case	/ica_optical_properties/ica_optical_properties/case
ICA_extinction	/ica_optical_properties/ica_optical_properties/extinction
ICA_backscatter	/ica_optical_properties/ica_optical_properties/backscatter
ICA_LOD	/ica_optical_properties/ica_optical_properties/lod
MCA_clim_BER	/mca_optical_properties/mca_optical_properties/climber
MCA_extinction	/mca_optical_properties/mca_optical_properties/extinction
MCA_LOD	/mca_optical_properties/mca_optical_properties/lod
albedo_off_nadir	
Level 2A - observation fields and locations	

netCDF variable name	**CODA path (DBL)**
L1B_time_meas	/geolocation/measurement_geolocation/centroid_time
longitude_of_DEM_intersection_meas	/geolocation/measurement_geolocation/longitude_of_dem_intersection
latitude_of_DEM_intersection_meas	/geolocation/measurement_geolocation/latitude_of_dem_intersection
altitude_of_DEM_intersection_meas	/geolocation/measurement_geolocation/altitude_of_dem_intersection
mie_altitude_meas	/geolocation/measurement_geolocation/mie_geolocation_height_bin/altitude_of_height_bin
rayleigh_altitude_meas	/geolocation/measurement_geolocation/rayleigh_geolocation_height_bin/altitude_of_height_bin
albedo_off_nadir	
Level 2A - measurement fields and locations	

netCDF variable name	CODA path (DBL)
group_start_time	/group_pcd/starttime
group_end_time	
group_centroid_time	
group_middle_bin_start_altitude	/group_optical_properties/group_geolocation_middle_bins/start_altitude
group_middle_bin_stop_altitude	/group_optical_properties/group_geolocation_middle_bins/stop_altitude
group_start_obs	/group_pcd/brc_start
group_start_meas_obs	/group_pcd/measurement_start
group_end_obs	/group_pcd/brc_end
group_end_meas_obs	/group_pcd/measurement_end
group_height_bin_index	/group_pcd/height_bin_index
group_extinction_variance	/group_pcd/particle_extinction_variance
group_backscatter_variance	/group_pcd/particle_backscatter_variance
group_LOD_variance	/group_pcd/particle_lod_variance
group_middle_bin_extinction_variance_top	/group_pcd/mid_particle_extinction_variance_top
group_middle_bin_backscatter_variance_top	/group_pcd/mid_particle_backscatter_variance_top
group_middle_bin_LOD_variance_top	/group_pcd/mid_particle_lod_variance_top
group_middle_bin_BER_variance_top	/group_pcd/mid_particle_ber_variance_top
group_middle_bin_extinction_variance_bottom	/group_pcd/mid_particle_extinction_variance_bot
group_middle_bin_backscatter_variance_bottom	/group_pcd/mid_particle_backscatter_variance_bot
group_middle_bin_LOD_variance_bottom	/group_pcd/mid_particle_lod_variance_bot
group_middle_bin_BER_variance_bottom	/group_pcd/mid_particle_ber_variance_bot
group_extinction	/group_optical_properties/group_optical_property/group_extinction
group_backscatter	/group_optical_properties/group_optical_property/group_backscatter
group_LOD	/group_optical_properties/group_optical_property/group_lod
group_SR	/group_optical_properties/group_optical_property/group_sr
group_middle_bin_extinction_top	/group_optical_properties/group_optical_property_middle_bins/mid_extinction_top
group_middle_bin_backscatter_top	/group_optical_properties/group_optical_property_middle_bins/mid_backscatter_top

group_middle_bin_LOD_top	/group_optical_properties/group_optical_property_middle_bins/mid_lod_top
group_middle_bin_BER_top	/group_optical_properties/group_optical_property_middle_bins/mid_ber_top
group_middle_bin_extinction_bottom	/group_optical_properties/group_optical_property_middle_bins/mid_extinction_bot
group_middle_bin_backscatter_bottom	/group_optical_properties/group_optical_property_middle_bins/mid_backscatter_bot
group_middle_bin_LOD_bottom	/group_optical_properties/group_optical_property_middle_bins/mid_lod_bot
group_middle_bin_BER_bottom	/group_optical_properties/group_optical_property_middle_bins/mid_ber_bot
scene_classification_NWP_cloud_flag	/scene_classification/nwp_cloud_flag
scene_classification_group_class_reliability	/scene_classification/l2a_group_class_reliability
Level 2A - group fields and locations	

netCDF variable name	**CODA path (DBL)**
mie_measurement_map	/meas_map/mie_map_of_l1b_meas_used/which_l2b_wind_id
rayleigh_measurement_map	/meas_map/rayleigh_map_of_l1b_meas_used/which_l2b_wind_id
mie_measurement_weight	/meas_map/mie_map_of_l1b_meas_used/weight
rayleigh_measurement_weight	/meas_map/rayleigh_map_of_l1b_meas_used/weight
mie_grouping_id	/mie_grouping/grouping_result_id
mie_grouping_time	/mie_grouping/start_of_obs_datetime
mie_grouping_start_obs	/mie_grouping/which_l1b_brc1
mie_grouping_start_meas_per_obs	/mie_grouping/which_l1b_meas_within_this_brc1
mie_grouping_end_obs	/mie_grouping/which_l1b_brc2
mie_grouping_end_meas_per_obs	/mie_grouping/which_l1b_meas_within_this_brc2
rayleigh_grouping_id	/rayleigh_grouping/grouping_result_id
rayleigh_grouping_time	/rayleigh_grouping/start_of_obs_datetime
rayleigh_grouping_start_obs	/rayleigh_grouping/which_l1b_brc1
rayleigh_grouping_start_meas_per_obs	/rayleigh_grouping/which_l1b_meas_within_this_brc1
rayleigh_grouping_end_obs	/rayleigh_grouping/which_l1b_brc2
rayleigh_grouping_end_meas_per_obs	/rayleigh_grouping/which_l1b_meas_within_this_brc2
l1B_num_of_measurements_per_obs	/meas_product_confid_data/l1b_meas_number
l1B_obs_number	/meas_product_confid_data/l1b_brc_number

mie_wind_result_id	/mie_geolocation/wind_result_id
mie_wind_profile_wind_result_id	/mie_profile/l2b_wind_profiles/wind_result_id_number' -1]
mie_wind_result_range_bin_number	/mie_hloswind/windresult/which_range_bin
mie_wind_result_start_time	/mie_geolocation/windresult_geolocation/datetime_start
mie_wind_result_COG_time	/mie_geolocation/windresult_geolocation/datetime_cog
mie_wind_result_stop_time	/mie_geolocation/windresult_geolocation/datetime_stop
mie_wind_result_bottom_altitude	/mie_geolocation/windresult_geolocation/altitude_bottom
mie_wind_result_COG_altitude	/mie_geolocation/windresult_geolocation/altitude_vcog
mie_wind_result_top_altitude	/mie_geolocation/windresult_geolocation/altitude_top
mie_wind_result_bottom_range	/mie_geolocation/windresult_geolocation/satrange_bottom
mie_wind_result_COG_range	/mie_geolocation/windresult_geolocation/satrange_vcog
mie_wind_result_top_range	/mie_geolocation/windresult_geolocation/satrange_top
mie_wind_result_start_latitude	/mie_geolocation/windresult_geolocation/latitude_start
mie_wind_result_COG_latitude	/mie_geolocation/windresult_geolocation/latitude_cog
mie_wind_result_stop_latitude	/mie_geolocation/windresult_geolocation/latitude_stop
mie_wind_result_start_longitude	/mie_geolocation/windresult_geolocation/longitude_start
mie_wind_result_COG_longitude	/mie_geolocation/windresult_geolocation/longitude_cog
mie_wind_result_stop_longitude	/mie_geolocation/windresult_geolocation/longitude_stop
mie_wind_result_lat_of_DEM_intersection	/mie_geolocation/windresult_geolocation/lat_of_dem_intersection
mie_profile_lat_of_DEM_intersection	
mie_wind_result_lon_of_DEM_intersection	/mie_geolocation/windresult_geolocation/lon_of_dem_intersection
mie_profile_lon_of_DEM_intersection	
mie_wind_result_geoid_separation	/mie_geolocation/windresult_geolocation/wgs84_to_geoid_altitude
mie_profile_geoid_separation	
mie_wind_result_alt_of_DEM_intersection	/mie_geolocation/windresult_geolocation/alt_of_dem_intersection
mie_profile_alt_of_DEM_intersection	
rayleigh_wind_result_id	/rayleigh_geolocation/wind_result_id
rayleigh_wind_profile_wind_result_id	/rayleigh_profile/l2b_wind_profiles/wind_result_id_number
rayleigh_wind_result_range_bin_number	/rayleigh_hloswind/windresult/which_range_bin
rayleigh_wind_result_start_time	/rayleigh_geolocation/windresult_geolocation/datetime_start
rayleigh_wind_result_COG_time	/rayleigh_geolocation/windresult_geolocation/datetime_cog
rayleigh_wind_result_stop_time	/rayleigh_geolocation/windresult_geolocation/datetime_stop

rayleigh_wind_result_bottom_altitude	/rayleigh_geolocation/windresult_geolocation/altitude_bottom
rayleigh_wind_result_COG_altitude	/rayleigh_geolocation/windresult_geolocation/altitude_vcog
rayleigh_wind_result_top_altitude	/rayleigh_geolocation/windresult_geolocation/altitude_top
rayleigh_wind_result_bottom_range	/rayleigh_geolocation/windresult_geolocation/satrange_bottom
rayleigh_wind_result_COG_range	/rayleigh_geolocation/windresult_geolocation/satrange_vcog
rayleigh_wind_result_top_range	/rayleigh_geolocation/windresult_geolocation/satrange_top
rayleigh_wind_result_start_latitude	/rayleigh_geolocation/windresult_geolocation/latitude_start
rayleigh_wind_result_COG_latitude	/rayleigh_geolocation/windresult_geolocation/latitude_cog
rayleigh_wind_result_stop_latitude	/rayleigh_geolocation/windresult_geolocation/latitude_stop
rayleigh_wind_result_start_longitude	/rayleigh_geolocation/windresult_geolocation/longitude_start
rayleigh_wind_result_COG_longitude	/rayleigh_geolocation/windresult_geolocation/longitude_cog
rayleigh_wind_result_stop_longitude	/rayleigh_geolocation/windresult_geolocation/longitude_stop
rayleigh_wind_result_lat_of_DEM_intersection	/rayleigh_geolocation/windresult_geolocation/lat_of_dem_intersection
rayleigh_profile_lat_of_DEM_intersection	
rayleigh_wind_result_lon_of_DEM_intersection	/rayleigh_geolocation/windresult_geolocation/lon_of_dem_intersection
rayleigh_profile_lon_of_DEM_intersection	
rayleigh_wind_result_geoid_separation	/rayleigh_geolocation/windresult_geolocation/wgs84_to_geoid_altitude
rayleigh_profile_geoid_separation	
rayleigh_wind_result_alt_of_DEM_intersection	/rayleigh_geolocation/windresult_geolocation/alt_of_dem_intersection
rayleigh_profile_alt_of_DEM_intersection	
optical_prop_algo_extinction	/meas_product_confid_data/opt_prop_result/opt_prop_meas_result/extinction_iterative
optical_prop_algo_scattering_ratio	/meas_product_confid_data/opt_prop_result/opt_prop_meas_result/scattering_ratio_iterative
optical_prop_crosstalk_detected	/meas_product_confid_data/opt_prop_result/opt_prop_meas_result/xtalk_detected
mie_wind_result_HLOS_error	/mie_wind_prod_conf_data/mie_wind_qc/hlos_error_estimate
mie_wind_result_QC_flags_1	/mie_wind_prod_conf_data/mie_wind_qc/flags1
mie_wind_result_QC_flags_2	/mie_wind_prod_conf_data/mie_wind_qc/flags2
mie_wind_result_QC_flags_3	/mie_wind_prod_conf_data/mie_wind_qc/flags3
mie_wind_result_SNR	/mie_wind_prod_conf_data/mie_wind_qc/mie_snr
mie_wind_result_scattering_ratio	/mie_wind_prod_conf_data/mie_wind_qc/scattering_ratio

rayleigh_wind_result_HLOS_error	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/hlos_error_estimate
rayleigh_wind_result_QC_flags_1	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/flags1
rayleigh_wind_result_QC_flags_2	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/flags2
rayleigh_wind_result_QC_flags_3	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/flags3
rayleigh_wind_result_scattering_ratio	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/scattering_ratio
mie_wind_result_observation_type	/mie_hloswind/windresult/observation_type
mie_wind_result_validity_flag	/mie_hloswind/windresult/validity_flag
mie_wind_result_wind_velocity	/mie_hloswind/windresult/mie_wind_velocity
mie_wind_result_integration_length	/mie_hloswind/windresult/integration_length
mie_wind_result_num_of_measurements	/mie_hloswind/windresult/n_meas_in_class
rayleigh_wind_result_observation_type	/rayleigh_hloswind/windresult/observation_type
rayleigh_wind_result_validity_flag	/rayleigh_hloswind/windresult/validity_flag
rayleigh_wind_result_wind_velocity	/rayleigh_hloswind/windresult/rayleigh_wind_velocity
rayleigh_wind_result_integration_length	/rayleigh_hloswind/windresult/integration_length
rayleigh_wind_result_num_of_measurements	/rayleigh_hloswind/windresult/n_meas_in_class
rayleigh_wind_result_reference_pressure	/rayleigh_hloswind/windresult/reference_pressure
rayleigh_wind_result_reference_temperature	/rayleigh_hloswind/windresult/reference_temperature
rayleigh_wind_result_reference_backscatter_ratio	/rayleigh_hloswind/windresult/reference_backscatter_ratio
mie_wind_profile_observation_type	/mie_profile/l2b_wind_profiles/obs_type
rayleigh_wind_profile_observation_type	/rayleigh_profile/l2b_wind_profiles/obs_type
mie_profile_datetime_start	/mie_profile/profile_datetime_start
mie_profile_datetime_average	/mie_profile/profile_datetime_average
mie_profile_datetime_stop	/mie_profile/profile_datetime_stop
rayleigh_profile_datetime_start	/rayleigh_profile/profile_datetime_start
rayleigh_profile_datetime_average	/rayleigh_profile/profile_datetime_average
rayleigh_profile_datetime_stop	/rayleigh_profile/profile_datetime_stop
mie_wind_result_albedo_off_nadir	
rayleigh_wind_result_albedo_off_nadir	
mie_profile_albedo_off_nadir	
rayleigh_profile_albedo_off_nadir	

Level 2B - fields and locations

netCDF variable name	CODA path (DBL)
mie_measurement_map	/meas_map/mie_map_of_l1b_meas_used/which_l2b_wind_id
rayleigh_measurement_map	/meas_map/rayleigh_map_of_l1b_meas_used/which_l2b_wind_id
mie_measurement_weight	/meas_map/mie_map_of_l1b_meas_used/weight
rayleigh_measurement_weight	/meas_map/rayleigh_map_of_l1b_meas_used/weight
mie_grouping_id	/mie_grouping/grouping_result_id
mie_grouping_time	/mie_grouping/start_of_obs_datetime
mie_grouping_start_obs	/mie_grouping/which_l1b_brc1
mie_grouping_start_meas_obs	/mie_grouping/which_l1b_meas_within_this_brc1
mie_grouping_end_obs	/mie_grouping/which_l1b_brc2
mie_grouping_end_meas_obs	/mie_grouping/which_l1b_meas_within_this_brc2
rayleigh_grouping_id	/rayleigh_grouping/grouping_result_id
rayleigh_grouping_time	/rayleigh_grouping/start_of_obs_datetime
rayleigh_grouping_start_obs	/rayleigh_grouping/which_l1b_brc1
rayleigh_grouping_start_meas_obs	/rayleigh_grouping/which_l1b_meas_within_this_brc1
rayleigh_grouping_end_obs	/rayleigh_grouping/which_l1b_brc2
rayleigh_grouping_end_meas_obs	/rayleigh_grouping/which_l1b_meas_within_this_brc2
l1B_num_of_measurements_per_obs	/meas_product_confid_data/l1b_meas_number
l1B_obs_number	/meas_product_confid_data/l1b_brc_number
mie_wind_result_id	/mie_geolocation/wind_result_id
mie_wind_profile_wind_result_id	/mie_profile/l2b_wind_profiles/wind_result_id_number
mie_wind_result_range_bin_number	/mie_hloswind/windresult/which_range_bin
mie_wind_result_start_time	/mie_geolocation/windresult_geolocation/datetime_start
mie_wind_result_COG_time	/mie_geolocation/windresult_geolocation/datetime_cog
mie_wind_result_stop_time	/mie_geolocation/windresult_geolocation/datetime_stop
mie_wind_result_bottom_altitude	/mie_geolocation/windresult_geolocation/altitude_bottom
mie_wind_result_COG_altitude	/mie_geolocation/windresult_geolocation/altitude_vcog
mie_wind_result_top_altitude	/mie_geolocation/windresult_geolocation/altitude_top
mie_wind_result_bottom_range	/mie_geolocation/windresult_geolocation/satrange_bottom
mie_wind_result_COG_range	/mie_geolocation/windresult_geolocation/satrange_vcog
mie_wind_result_top_range	/mie_geolocation/windresult_geolocation/satrange_top
mie_wind_result_start_latitude	/mie_geolocation/windresult_geolocation/latitude_start

mie_wind_result_COG_latitude	/mie_geolocation/windresult_geolocation/latitude_cog
mie_wind_result_stop_latitude	/mie_geolocation/windresult_geolocation/latitude_stop
mie_wind_result_start_longitude	/mie_geolocation/windresult_geolocation/longitude_start
mie_wind_result_COG_longitude	/mie_geolocation/windresult_geolocation/longitude_cog
mie_wind_result_stop_longitude	/mie_geolocation/windresult_geolocation/longitude_stop
mie_wind_result_lat_of_DEM_intersection	/mie_geolocation/windresult_geolocation/lat_of_dem_intersection
mie_profile_lat_of_DEM_intersection	
mie_wind_result_lon_of_DEM_intersection	/mie_geolocation/windresult_geolocation/lon_of_dem_intersection
mie_profile_lon_of_DEM_intersection	
mie_wind_result_geoid_separation	/mie_geolocation/windresult_geolocation/wgs84_to_geoid_altitude
mie_profile_geoid_separation	
mie_wind_result_alt_of_DEM_intersection	/mie_geolocation/windresult_geolocation/alt_of_dem_intersection
mie_profile_alt_of_DEM_intersection	
rayleigh_wind_result_id	/rayleigh_geolocation/wind_result_id
rayleigh_wind_profile_wind_result_id	/rayleigh_profile/l2b_wind_profiles/wind_result_id_number
rayleigh_wind_result_range_bin_number	/rayleigh_hloswind/windresult/which_range_bin
rayleigh_wind_result_start_time	/rayleigh_geolocation/windresult_geolocation/datetime_start
rayleigh_wind_result_COG_time	/rayleigh_geolocation/windresult_geolocation/datetime_cog
rayleigh_wind_result_stop_time	/rayleigh_geolocation/windresult_geolocation/datetime_stop
rayleigh_wind_result_bottom_altitude	/rayleigh_geolocation/windresult_geolocation/altitude_bottom
rayleigh_wind_result_COG_altitude	/rayleigh_geolocation/windresult_geolocation/altitude_vcog
rayleigh_wind_result_top_altitude	/rayleigh_geolocation/windresult_geolocation/altitude_top
rayleigh_wind_result_bottom_range	/rayleigh_geolocation/windresult_geolocation/satrange_bottom
rayleigh_wind_result_COG_range	/rayleigh_geolocation/windresult_geolocation/satrange_vcog
rayleigh_wind_result_top_range	/rayleigh_geolocation/windresult_geolocation/satrange_top
rayleigh_wind_result_start_latitude	/rayleigh_geolocation/windresult_geolocation/latitude_start
rayleigh_wind_result_COG_latitude	/rayleigh_geolocation/windresult_geolocation/latitude_cog
rayleigh_wind_result_stop_latitude	/rayleigh_geolocation/windresult_geolocation/latitude_stop
rayleigh_wind_result_start_longitude	/rayleigh_geolocation/windresult_geolocation/longitude_start
rayleigh_wind_result_COG_longitude	/rayleigh_geolocation/windresult_geolocation/longitude_cog
rayleigh_wind_result_stop_longitude	/rayleigh_geolocation/windresult_geolocation/longitude_stop
rayleigh_wind_result_lat_of_DEM_inter	/rayleigh_geolocation/windresult_geolocation/lat_of_dem_inter

section	section
rayleigh_profile_lat_of_DEM_intersection	
rayleigh_wind_result_lon_of_DEM_intersection	/rayleigh_geolocation/windresult_geolocation/lon_of_dem_intersection
rayleigh_profile_lon_of_DEM_intersection	
rayleigh_wind_result_geoid_separation	/rayleigh_geolocation/windresult_geolocation/wgs84_to_geoid_altitude
rayleigh_profile_geoid_separation	
rayleigh_wind_result_alt_of_DEM_intersection	/rayleigh_geolocation/windresult_geolocation/alt_of_dem_intersection
rayleigh_profile_alt_of_DEM_intersection	
l1B_measurement_time	/meas_product_confid_data/start_of_obs_datetime
optical_prop_algo_extinction	/meas_product_confid_data/opt_prop_result/extinction_iterative
optical_prop_algo_scattering_ratio	/meas_product_confid_data/opt_prop_result/scattering_ratio_iterative
optical_prop_crosstalk_detected	/meas_product_confid_data/opt_prop_result/xtalk_detected
mie_wind_result_HLOS_error	/mie_wind_prod_conf_data/mie_wind_qc/hlos_error_estimate
mie_wind_result_QC_flags_1	/mie_wind_prod_conf_data/mie_wind_qc/flags1
mie_wind_result_QC_flags_2	/mie_wind_prod_conf_data/mie_wind_qc/flags2
mie_wind_result_QC_flags_3	/mie_wind_prod_conf_data/mie_wind_qc/flags3
mie_wind_result_SNR	/mie_wind_prod_conf_data/mie_wind_qc/mie_snr
mie_wind_result_scattering_ratio	/mie_wind_prod_conf_data/mie_wind_qc/scattering_ratio
rayleigh_wind_result_HLOS_error	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/hlos_error_estimate
rayleigh_wind_result_QC_flags_1	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/flags1
rayleigh_wind_result_QC_flags_2	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/flags2
rayleigh_wind_result_QC_flags_3	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/flags3
rayleigh_wind_result_scattering_ratio	/rayleigh_wind_prod_conf_data/rayleigh_wind_qc/scattering_ratio
mie_assimilation_L2B_QC	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/l2b_mie_obs_screening/l2b_mie_obs_qc
mie_assimilation_persistence_error	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/persistence_error
mie_assimilation_representativity_error	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/representativity_error

mie_assimilation_final_error	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/final_error
mie_assimilation_est_L2B_bias	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/estimated_obs_bias
mie_assimilation_background_HLOS_error	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/background_hlos_error
mie_assimilation_L2B_HLOS_reliability	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/l2b_hlos_reliability
mie_assimilation_u_wind_background_error	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/zonal_wind_background_error
mie_assimilation_v_wind_background_error	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/meridional_wind_background_error
rayleigh_assimilation_L2B_QC	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/l2b_rayleigh_obs_screening/l2b_rayleigh_obs_qc
rayleigh_assimilation_persistence_error	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/persistence_error
rayleigh_assimilation_representativity_error	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/representativity_error
rayleigh_assimilation_final_error	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/final_error
rayleigh_assimilation_est_L2B_bias	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/hlos_observation_errors/estimated_obs_bias
rayleigh_assimilation_background_HLOS_error	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/background_hlos_error
rayleigh_assimilation_L2B_HLOS_reliability	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/l2b_hlos_reliability
rayleigh_assimilation_u_wind_background_error	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/zonal_wind_background_error
rayleigh_assimilation_v_wind_background_error	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/meridional_wind_background_error
mie_wind_result_observation_type	/mie_hloswind/windresult/observation_type
mie_wind_result_validity_flag	/mie_hloswind/windresult/validity_flag

mie_wind_result_wind_velocity	/mie_hloswind/windresult/mie_wind_velocity
mie_wind_result_integration_length	/mie_hloswind/windresult/integration_length
mie_wind_result_num_of_measurements	/mie_hloswind/windresult/n_meas_in_class
rayleigh_wind_result_observation_type	/rayleigh_hloswind/windresult/observation_type
rayleigh_wind_result_validity_flag	/rayleigh_hloswind/windresult/validity_flag
rayleigh_wind_result_wind_velocity	/rayleigh_hloswind/windresult/rayleigh_wind_velocity
rayleigh_wind_result_integration_length	/rayleigh_hloswind/windresult/integration_length
rayleigh_wind_result_num_of_measurements	/rayleigh_hloswind/windresult/n_meas_in_class
rayleigh_wind_result_reference_pressure	/rayleigh_hloswind/windresult/reference_pressure
rayleigh_wind_result_reference_temperature	/rayleigh_hloswind/windresult/reference_temperature
rayleigh_wind_result_reference_backscatter_ratio	/rayleigh_hloswind/windresult/reference_backscatter_ratio
mie_wind_profile_observation_type	/mie_profile/l2b_wind_profiles/obs_type
rayleigh_wind_profile_observation_type	/rayleigh_profile/l2b_wind_profiles/obs_type
mie_assimilation_validity_flag	/mie_vecwind/height_bin_vecwind/validity_flag
mie_assimilation_background_HLOS	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/background_hlos
mie_assimilation_background_u_wind_velocity	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/zonal_wind_background_error
mie_assimilation_background_v_wind_velocity	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/meridional_wind_background_error
mie_assimilation_background_horizontal_wind_velocity	
mie_assimilation_background_wind_direction	
mie_assimilation_analysis_HLOS	/mie_assim_pcd/l2c_mie_quality_param/l2c_mie_height_bin_quality_param/assimilation_model_pcd/Analysis_hlos
mie_assimilation_analysis_u_wind_velocity	/mie_vecwind/height_bin_vecwind/analysis_zonal_wind_velocity
mie_assimilation_analysis_v_wind_velocity	/mie_vecwind/height_bin_vecwind/analysis_meridional_wind_velocity
mie_assimilation_analysis_horizontal_wind_velocity	
mie_assimilation_analysis_wind_direction	
rayleigh_assimilation_validity_flag	/rayleigh_vecwind/height_bin_vecwind/validity_flag

rayleigh_assimilation_background_HLOS	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/background_hlos
rayleigh_assimilation_background_u_wind_velocity	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/zonal_wind_background_error
rayleigh_assimilation_background_v_wind_velocity	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/meridional_wind_background_error
rayleigh_assimilation_background_horizontal_wind_velocity	
rayleigh_assimilation_background_wind_direction	
rayleigh_assimilation_analysis_HLOS	/rayleigh_assim_pcd/l2c_rayleigh_quality_param/l2c_rayleigh_height_bin_quality_param/assimilation_model_pcd/Analysis_hlos
rayleigh_assimilation_analysis_u_wind_velocity	/rayleigh_vecwind/height_bin_vecwind/analysis_zonal_wind_velocity
rayleigh_assimilation_analysis_v_wind_velocity	/rayleigh_vecwind/height_bin_vecwind/analysis_meridional_wind_velocity
rayleigh_assimilation_analysis_horizontal_wind_velocity	
rayleigh_assimilation_analysis_wind_direction	
mie_profile_datetime_start	/mie_profile/profile_datetime_start
mie_profile_datetime_average	/mie_profile/profile_datetime_average
mie_profile_datetime_stop	/mie_profile/profile_datetime_stop
rayleigh_profile_datetime_start	/rayleigh_profile/profile_datetime_start
rayleigh_profile_datetime_average	/rayleigh_profile/profile_datetime_average
rayleigh_profile_datetime_stop	/rayleigh_profile/profile_datetime_stop
mie_wind_result_albedo_off_nadir	
rayleigh_wind_result_albedo_off_nadir	
mie_profile_albedo_off_nadir	
rayleigh_profile_albedo_off_nadir	
Level 2C - fields and locations	

netCDF variable name	**CODA path (EEF)**
time	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/First_Start_of_Observation_Time
freq_mie_USR_closest_to_rayleigh_filt	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/Lis

er_centre	t_of_Data_Set_Records/Data_Set_Record/Freq_Mie_USR_Closest_to_Rayleigh_Filter_Centre
frequency_rayleigh_filter_centre	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/Freq_Rayleigh_Filter_Centre
num_of_valid_mie_results	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Stat/Num_Mie_Used
num_of_valid_rayleigh_results	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Stat/Num_Rayleigh_Used
laser_frequency_offset	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Laser_Freq_Offset
mie_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Mie_Valid
rayleigh_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Rayleigh_Valid
fizeau_transmission	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Fizeau_Transmission
mie_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Mie_Response
rayleigh_channel_A_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Rayleigh_A_Response
rayleigh_channel_B_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Rayleigh_B_Response
num_of_raw_reference_pulses	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Stat/Num_Raw_Data
num_of_mie_reference_pulses	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Stat/Num_Mie_Used
num_of_rayleigh_reference_pulses	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Stat/Num_Rayleigh_Used
accumulated_laser_energy_mie	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Accumulated_Laser_Energy_Mie
mean_laser_energy_mie	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Result

	s/ISR_Result/Data_Quality/Mean_Laser_Energy_Mie
accumulated_laser_energy_rayleigh	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Accumulated_Laser_Energy_Rayleigh
mean_laser_energy_rayleigh	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Mean_Laser_Energy_Rayleigh
laser_energy_drift	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Laser_Energy_Drift
downhill_simplex_used	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Downhill_Simplex_Used
num_of_iterations_mie_core_1	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Mie_Core_1/Num_Iterations_Core_1
last_peak_difference_mie_core_1	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Mie_Core_1/Last_Peak_Difference
FWHM_mie_core_2	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Mie_Core_2/Fwhm
num_of_iterations_mie_core_2	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Mie_Core_2/Num_Iterations_Core_2
downhill_simplex_quality_flag	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Data_Quality/Downhill_Simplex_Used
rayleigh_spectrometer_temperature_9	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Etalon_Average_Temperature/Ray_Spectrometer_Temp_9
rayleigh_spectrometer_temperature_10	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Etalon_Average_Temperature/Ray_Spectrometer_Temp_10
rayleigh_spectrometer_temperature_11	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Etalon_Average_Temperature/Ray_Spectrometer_Temp_11
rayleigh_thermal_hood_temperature_1	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/RSPT_Average_Temperature/Thermocouple_8_Ray_Spectrometer_Thermal_Hood_1

rayleigh_thermal_hood_temperature_2	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/RSPT_Average_Temperature/Thermocouple_9_Ray_Spectrometer_Thermal_Hood_2
rayleigh_thermal_hood_temperature_3	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/RSPT_Average_Temperature/Thermocouple_10_Ray_Spectrometer_Thermal_Hood_3
rayleigh_thermal_hood_temperature_4	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/RSPT_Average_Temperature/Thermocouple_11_Ray_Spectrometer_Thermal_Hood_4
rayleigh_optical_baseplate_avg_temperature	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ISR/List_of_Data_Set_Records/Data_Set_Record/List_of_ISR_Results/ISR_Result/Optical_Baseplate_Average_Temperature
AUX ISR fields and locations	

netCDF variable name	**CODA path (EEF)**
time_off_nadir	/geo_off_nadir/amd_datetime
time_nadir	/geo_nadir/amd_datetime
latitude_off_nadir	/geo_off_nadir/amd_latitude
latitude_nadir	/geo_nadir/amd_latitude
longitude_off_nadir	/geo_off_nadir/amd_longitude
longitude_nadir	/geo_nadir/amd_longitude
surface_wind_component_u_off_nadir	/met_off_nadir/amd_us
surface_wind_component_u_nadir	/met_nadir/amd_us
surface_wind_component_v_off_nadir	/met_off_nadir/amd_vs
surface_wind_component_v_nadir	/met_nadir/amd_vs
surface_pressure_off_nadir	/met_off_nadir/amd_ps
surface_pressure_nadir	/met_nadir/amd_ps
surface_altitude_off_nadir	/met_off_nadir/amd_zs
surface_altitude_nadir	/met_nadir/amd_zs
layer_validity_flag_off_nadir	/met_off_nadir/profile_data/amd_validity_flag
layer_validity_flag_nadir	/met_nadir/profile_data/amd_validity_flag
layer_pressure_off_nadir	/met_off_nadir/profile_data/amd_pnom
layer_pressure_nadir	/met_nadir/profile_data/amd_pnom
layer_altitude_off_nadir	/met_off_nadir/profile_data/amd_znom
layer_altitude_nadir	/met_nadir/profile_data/amd_znom

layer_temperature_off_nadir	/met_off_nadir/profile_data/amd_t
layer_temperature_nadir	/met_nadir/profile_data/amd_t
layer_wind_component_u_off_nadir	/met_off_nadir/profile_data/amd_u
layer_wind_component_u_nadir	/met_nadir/profile_data/amd_u
layer_wind_component_v_off_nadir	/met_off_nadir/profile_data/amd_v
layer_wind_component_v_nadir	/met_nadir/profile_data/amd_v
layer_rel_humidity_off_nadir	/met_off_nadir/profile_data/amd_rh
layer_rel_humidity_nadir	/met_nadir/profile_data/amd_rh
layer_spec_humidity_off_nadir	/met_off_nadir/profile_data/amd_q
layer_spec_humidity_nadir	/met_nadir/profile_data/amd_q
layer_cloud_cover_off_nadir	/met_off_nadir/profile_data/amd_cc
layer_cloud_cover_nadir	/met_nadir/profile_data/amd_cc
layer_cloud_liquid_water_content_off_nadir	/met_off_nadir/profile_data/amd_clwc
layer_cloud_liquid_water_content_nadir	/met_nadir/profile_data/amd_clwc
layer_cloud_ice_water_content_off_nadir	/met_off_nadir/profile_data/amd_ciwc
layer_cloud_ice_water_content_nadir	/met_nadir/profile_data/amd_ciwc
AUX MET fields and locations	

netCDF variable name	**CODA path (EEF)**
lat_of_DEM_intersection	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Latitude_of_DEM_Intersection
lon_of_DEM_intersection	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Longitude_of_DEM_Intersection
time_freq_step	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Start_of_Observation_Time_Last_BRC
altitude	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Altitude
satellite_range	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Satellite_Range

frequency_offset	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Offset
frequency_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Valid
measurement_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Measurement_Response
measurement_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Measurement_Response_Valid
measurement_error_mie_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Measurement_Error_Mie_Response
reference_pulse_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Reference_Pulse_Response
reference_pulse_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Reference_Pulse_Response_Valid
reference_pulse_error_mie_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Reference_Pulse_Error_Mie_Response
normalised_useful_signal	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Normalized_Useful_Signal
mie_scattering_ratio	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Mie_Scattering_Ratio
num_measurements_usable	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Measurements_Usable
num_valid_measurements	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Fr

	equency_Step_Data_Statistics/Num_Valid_Measurements
num_reference_pulses_usable	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Reference_Pulses_Usable
num_mie_core_algo_fails_measurements	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Mie_Core_Algo_Fails_Measurements
num_ground_echoes_not_detected_measurements	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Ground_Echo_Not_Detected_Measurements
measurement_mean_sensitivity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Mean_Sensitivity
measurement_zero_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Zero_Frequency
measurement_error_mie_response_std_dev	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Error_Mie_Response_Std_Dev
measurement_offset_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Offset_Frequency
reference_pulse_mean_sensitivity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Mean_Sensitivity
reference_pulse_zero_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Zero_Frequency
reference_pulse_error_mie_response_std_dev	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Error_Mie_Response_Std_Dev
reference_pulse_offset_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_O

	ffset_Frequency
satisfied_min_valid_freq_steps_per_cal	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Satisfied_Min_Valid_Freq_Per_Cal
freq_offset_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Freq_Offset_Data_Monotonic
num_of_valid_frequency_steps	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Num_Valid_Frequency_Steps
measurement_mean_sensitivity_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Mean_Sensitivity_Valid
measurement_error_response_std_dev_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Error_Response_Std_Dev_Valid
measurement_zero_frequency_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Zero_Freq_Response_Valid
measurement_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Data_Monotonic
reference_pulse_mean_sensitivity_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Mean_Sensitivity_Valid
reference_pulse_error_response_std_dev_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Error_Response_Std_Dev_Valid
reference_pulse_zero_frequency_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Zero_Freq_Response_Valid
reference_pulse_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Data_Monotonic
mie_core_measurement_FWHM	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/List_of_Calibration_MC_Res

	ults/Calibration_MC_Result/Frequency_Step_MC_Results/FWHM
mie_core_measurement_amplitude	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/List_of_Calibration_MC_Results/Calibration_MC_Result/Frequency_Step_MC_Results/Amplitude
mie_core_measurement_offset	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_MRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/List_of_Calibration_MC_Results/Calibration_MC_Result/Frequency_Step_MC_Results/Offset
AUX MRC fields and locations	

netCDF variable name	**CODA path (EEF)**
lat_of_DEM_intersection	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Latitude_of_DEM_Intersection
lon_of_DEM_intersection	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Longitude_of_DEM_Intersection
time_freq_step	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Start_of_Observation_Time_Last_BRC
altitude	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Altitude
satellite_range	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/Satellite_Range
geoid_separation_obs	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Geolocations/Frequency_Step_Geolocation/List_of_Geoid_Separations/Geoid_Separation
frequency_offset	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Offset
frequency_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Freq

	uency_Valid
ground_frequency_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Ground_Frequency_Valid
measurement_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Measurement_Response
measurement_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Measurement_Response_Valid
measurement_error_rayleigh_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Measurement_Error_Rayleigh_Response
reference_pulse_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Reference_Pulse_Response
reference_pulse_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Reference_Pulse_Response_Valid
reference_pulse_error_rayleigh_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Ground_Measurement_Error_Rayleigh_Response
ground_measurement_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Ground_Measurement_Response
ground_measurement_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Ground_Measurement_Response_Valid
ground_measurement_error_rayleigh_response	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Ground_Measurement_Error_Rayleigh_Response
normalised_useful_signal	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Normalized_Useful_Signal
num_measurements_usable	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of

	_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Measurements_Usable
num_valid_measurements	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Valid_Measurements
num_reference_pulses_usable	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Reference_Pulses_Usable
num_measurements_valid_ground	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Results/Frequency_Step_Result/Frequency_Step_Data_Statistics/Num_Measurements_Valid_Ground
measurement_mean_sensitivity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Mean_Sensitivity
measurement_zero_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Zero_Frequency
measurement_error_rayleigh_response_std_dev	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Error_Rayleigh_Response_Std_Dev
measurement_offset_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/Measurement_Offset_Frequency
measurement_error_fit_coefficient	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Response_Calibration/List_of_Measurement_Error_Fit_Coefficients/Measurement_Error_Fit_Coefficient
reference_pulse_mean_sensitivity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Mean_Sensitivity
reference_pulse_zero_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Zero_Frequency
reference_pulse_error_rayleigh_response_std_dev	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Err

	or_Rayleigh_Response_Std_Dev
reference_pulse_offset_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/Reference_Pulse_Offset_Frequency
reference_pulse_error_fit_coefficient	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Reference_Pulse_Response_Calibration/List_of_Reference_Pulse_Error_Fit_Coefficients/Reference_Pulse_Error_Fit_Coefficient
ground_measurement_mean_sensitivity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Mean_Sensitivity
ground_measurement_zero_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Zero_Frequency
ground_measurement_error_rayleigh_response_std_dev	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Error_Rayleigh_Response_Std_Dev
ground_measurement_offset_frequency	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Offset_Frequency
ground_measurement_error_fit_coefficient	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/List_of_Ground_Measurement_Error_Fit_Coefficients/Ground_Measurement_Error_Fit_Coefficient
satisfied_min_valid_freq_steps_per_cal	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Satisfied_Min_Valid_Freq_Per_Cal
satisfied_min_valid_ground_freq_steps_per_cal	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Satisfied_Min_Valid_Ground_Freq_Per_Cal
freq_offset_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Freq_Offset_Data_Monotonic
num_of_valid_frequency_steps	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Num_Valid_Frequency_Steps
num_of_valid_ground_frequency_steps	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibr

	ation_Validity_Indicators/Num_Valid_Ground_Frequency_Steps
measurement_mean_sensitivity_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Mean_Sensitivity_Valid
measurement_error_response_std_dev_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Error_Response_Std_Dev_Valid
measurement_zero_frequency_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Zero_Freq_Response_Valid
measurement_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Measurement_Calibration_Validity/Data_Monotonic
reference_pulse_mean_sensitivity_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Mean_Sensitivity_Valid
reference_pulse_error_response_std_dev_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Error_Response_Std_Dev_Valid
reference_pulse_zero_frequency_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Zero_Freq_Response_Valid
reference_pulse_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibration_Validity_Indicators/Reference_Pulse_Calibration_Validity/Data_Monotonic
ground_measurement_mean_sensitivity_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Mean_Sensitivity
ground_measurement_error_response_std_dev_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Error_Rayleigh_Response_Std_Dev
ground_measurement_zero_frequency_response_valid	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Ground_Measurement_Response_Calibration/Ground_Measurement_Zero_Frequency
ground_measurement_data_monotonic	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/Calibr

	ation_Validity_Indicators/Ground_Measurement_Calibration_Validity/Data_Monotonic
rayleigh_spectrometer_temperature_9	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/Etalon_Average_Temperature/Ray_Spectrometer_Temp_9
rayleigh_spectrometer_temperature_10	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/Etalon_Average_Temperature/Ray_Spectrometer_Temp_10
rayleigh_spectrometer_temperature_11	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/Etalon_Average_Temperature/Ray_Spectrometer_Temp_11
rayleigh_thermal_hood_temperature_1	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/RSPT_Average_Temperature/Thermocouple_8_Ray_Spectrometer_Thermal_Hood_1
rayleigh_thermal_hood_temperature_2	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/RSPT_Average_Temperature/Thermocouple_9_Ray_Spectrometer_Thermal_Hood_2
rayleigh_thermal_hood_temperature_3	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/RSPT_Average_Temperature/Thermocouple_10_Ray_Spectrometer_Thermal_Hood_3
rayleigh_thermal_hood_temperature_4	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/RSPT_Average_Temperature/Thermocouple_11_Ray_Spectrometer_Thermal_Hood_4
rayleigh_optical_baseplate_avg_temperature	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_RRC/List_of_Data_Set_Records/Data_Set_Record/List_of_Frequency_Step_Temperatures/Frequency_Step_Temperature/Optical_Baseplate_Average
AUX RRC fields and locations	

netCDF variable name	**CODA path (EEF)**
time	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Start_of_Observation_Time

lat_of_DEM_intersection	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Latitude_of_DEM_Intersection
lon_of_DEM_intersection	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Longitude_of_DEM_Intersection
roll_angle	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Roll_Angle
pitch_angle	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Pitch_Angle
yaw_angle	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Yaw_Angle
mie_range	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Mie_Satellite_Range_to_Target
rayleigh_range	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Observation_Info/Rayleigh_Satellite_Range_to_Target
ZWC_result_type	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/ZWC_Result_Type
mie_ground_correction_velocity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Mie_Ground_Correction_Velocity
rayleigh_ground_correction_velocity	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Rayleigh_Ground_Correction_Velocity
num_of_mie_ground_bins	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Number_of_Mie_Ground_Bins
mie_avg_ground_echo_bin_thickness	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Mie_Average_Ground_Echo_Bin_Thickness
rayleigh_avg_ground_echo_bin_thickness	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Rayleigh_Average_Ground_Echo_Bin_Thickness
mie_avg_ground_echo_bin_thickness_above_DEM	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Mie_Average_Ground_Echo_Bin_Thickness_Above_DEM
rayleigh_avg_ground_echo_bin_thickness_above_DEM	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validit

	y_Indicators/Rayleigh_Average_Ground_Echo_Bin_Thickness_Above_DEM
mie_top_ground_bin_obs	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Mie_Min_Top_Ground_Bin
rayleigh_top_ground_bin_obs	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Rayleigh_Min_Top_Ground_Bin
mie_bottom_ground_bin_obs	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Mie_Max_Bottom_Ground_Bin
rayleigh_bottom_ground_bin_obs	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/Rayleigh_Max_Bottom_Ground_Bin
mie_measurements_used	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Mie_Measurement_Validity_Indicators/Mie_Measurement_Validity_Indicators/Measurement_Used
mie_top_ground_bin_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Mie_Measurement_Validity_Indicators/Mie_Measurement_Validity_Indicators/Top_Ground_Bin
mie_bottom_ground_bin_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Mie_Measurement_Validity_Indicators/Mie_Measurement_Validity_Indicators/Bottom_Ground_Bin
mie_DEM_ground_bin	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Mie_Measurement_Validity_Indicators/Mie_Measurement_Validity_Indicators/Expected_Ground_Bin_Index
mie_height_difference_top_to_DEM_ground_bin	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Mie_Measurement_Validity_Indicators/Mie_Measurement_Validity_Indicators/Height_Difference_Top_to_Expected
mie_ground_bin_SNR_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Mie_Measurement_Validity_Indicators/Mie_Measurement_Validity_Indicators/Mean_Ground_Bin_SNR
rayleigh_measurements_used	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Mea

	surement_Used
rayleigh_top_ground_bin_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Top_Ground_Bin
rayleigh_bottom_ground_bin_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Bottom_Ground_Bin
rayleigh_DEM_ground_bin	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Expected_Ground_Bin_Index
rayleigh_height_difference_top_to_DEM_ground_bin	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Height_Difference_Top_to_Expected
rayleigh_channel_A_ground_SNR_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Channel_A_Mean_Ground_Bin_SNR
rayleigh_channel_B_ground_SNR_meas	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Validity_Indicators/List_of_Rayleigh_Measurement_Validity_Indicators/Rayleigh_Measurement_Validity_Indicators/Channel_B_Mean_Ground_Bin_SNR
DEM_height	/Earth_Explorer_File/Data_Block/Auxiliary_Calibration_ZWC/List_of_Data_Set_Records/Data_Set_Record/Measurement_Info/DEM_Height
AUX ZWC fields and locations	