

CAMP2Ex NO_{xy} and SO₂ ReadMe

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Mission: CAMP2Ex

Platform: NASA P3B

Associated Data: Additional file information used to process and locate the trace gas data product include the following

CAMP2EX-MetNav_P3B: flight GPS coordinate and altitude

Latitude, degrees, latitude N from GPS

Longitude, degrees, longitude E from GPS

GPS_Altitude, meter, aircraft altitude from GPS

CAMP2EX-DLH-H2O_P3B: water vapor data used for NO, NO_x, and NO_y correction

H2O_DLH, ppmv, water vapor mixing ratio

NO_{xy}

Instrument: NO and O₃ chemiluminescence instrument with a NO₂ converter for NO_x measurement. Heated molybdenum converter for NO_y measurement

Time resolution: 1 second measurement

Corrections: baseline and water correction

Uncertainties/LOD (3 sigma):

NO = 12% / 0.30 ppbv

NO_x = 14% / 0.27 ppbv

NO_y = 12% / 0.22 ppbv

Data Info: NO_y is continuous while NO and NO_x sampled serially every 30s using a single detector. NO measurement was interpolated and subtracted from NO_x mode to correct NO₂ fraction for photocell conversion efficiency, NO_x then calculated by adding back NO.

SO₂

Instrument: Thermo 43i-TLE pulsed fluorescence

Time resolution: 2 second measurements

Corrections: baseline

Uncertainties/LOD (3 sigma): for both high and low altitude settings

SO₂ (high alt) = 16% / 3.0 ppbv

SO₂ (low alt) = 12% / 2.1 ppbv

Data Info: SO₂ measurement is continuous, measurement was operational at two atmospheric altitude settings for pressure and flow controls.

