

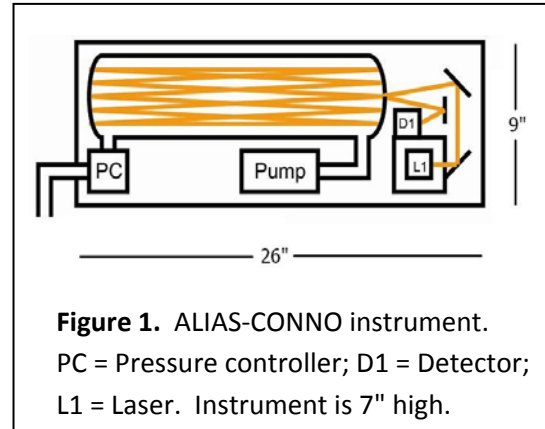
## Aircraft Laser Infrared Absorption Spectrometer (ALIAS - CONNO)

PI: Lance Christensen

Inst: Jet Propulsion Laboratory, Pasadena, CA

Email: Lance.E.Christensen@jpl.nasa.gov

The ALIAS-CONNO instrument is part of the overall ALIAS instrument and is shown in Figure 1. ALIAS-CONNO measures carbon monoxide (CO) and nitrous oxide (N<sub>2</sub>O) in situ. Measurements are at 1 Hz with ppb precision and accuracy. During SEAC4RS, in-flight calibration from a NOAA standard will be used. ALIAS-CONNO utilizes room-temperature operating quantum-cascade lasers emitting at 4.6 μm. Instrument specifications are in Table 1.



ALIAS-CONNO flew during the 2011 MACPEX mission aboard the NASA WB57. Figure 2 is flight data taken on April 20, 2011 over Texas and Oklahoma showing enhanced layers of carbon monoxide in the upper troposphere. The lower enhancement layer at 7-8 km is likely convected from a storm that occurred several hours before flight just west of Houston. The upper enhancement layer occurs just beneath the tropopause and extends from northern Texas to central Oklahoma. It likely arose from forest fires occurring in western Texas during this time period.

**Table 1.** ALIAS-CONNO Specifications

Volume	26 × 9 × 7"
Weight	10 kg
Power	100 W
Precision	1 ppb
Accuracy	1 ppb
Data Rate	1 Hz

