Biomass burning signatures in CO observed during CRYSTAL-FACE

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Abstract: Measurements of CO by the Argus laser spectrometer on the B-57 during the CRYSTAL-FACE (CF) campaign show clear biomass burning signatures on several flights. On July 7 and 9 we detected CO plumes (170-200 ppb near 15 km altitude) in the lower stratosphere at 380 K potential temperature. Trajectory analyses (Stohl et al.) indicate that the source of these plumes was probably forest fires over North America. Additional confirming evidence of the biomass burning source of the plumes is provided by the PALMS (Murphy et al.) instrument detecting enhanced K exactly coincident with the elevated CO plumes on those days. A multiple-layered CO plume seen on July 3 just above 7 km (400 mb) could be a biomass plume or enhanced CO transported upward from the nearby planetary boundary layer.

Figure 3

References:
