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Global studies of ozone, water vapor, and carbon dioxide using active remote sensing

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Table A. Examples of significant contributions of airborne O_3 DIAL systems to the understanding of tropospheric and stratospheric O_3.

Measurements	References
Troposphere:	
Tropopause fold event	Browell et al., 1987
Air mass characterizations	Browell et al., 1996a,b, 2001; Fenn et al., 1997, 1999
Biomass burn plumes	Browell et al., 1988, 1994, 1995, 1996b; Grant et al., 1997
Continental pollution plumes	Browell et al., 1994, 1996a; Alvarez et al. 1998
Convective outflow	Browell et al., 1996a
Stratospheric intrusions and stratospherically-influenced air	Browell et al., 1987, 1992, 1996a,b, 2001; Ancellet, 2001
Cirrus cloud investigations	Newell et al., 1996; Pfister et al., 2001
Effect of biomass burning on tropospheric O_3 production	Browell et al., 1996b
Absorbing aerosol interference with TOMS O_3 measurements	Fishman et al., 1996
Power plant plume studies	Banta et al., 1998; Senff et al., 1998; Valente et al., 1998
Warm conveyor belt transport	Grant et al., 2000
Decay of a cutoff low	Ravetta and Ancellet, 2000
Pollution capping by stratospheric intrusion	Cho et al., 2001

Table A. (cont.)

Measurements	References
Stratosphere:	
Chemical explanation of behavior of Antarctic O_3	Ko et al., 1989
Intercomparison of O_3 measurements over Antarctica	Margitan et al., 1989
Quantification of O_3 depletion in the Arctic	Browell et al., 1990a, 1993
Polar stratospheric cloud particle characterizations	Browell et al., 1990b; Toon et al., 2000; Butler et al., 2001
Cross-vortex boundary transport	Flentje et al., 2000
Ozone reduction in tropical strat. after Mt. Pinatubo and reservoir edge char.	Grant et al., 1994; 1996
Intercomparison with ground- and space-based instruments	Grant et al., 1998

Table B. Examples of significant contributions of airborne H_2O DIAL systems to the understanding of H_2O distributions.

Measurements	References
Marine boundary layer over Gulf Stream	Browell et al., 1984
H_2O transport at a land/sea edge	Higdon et al., 1994
Large-scale H_2O distributions across troposphere	Browell and Ismail, 1995
Correlative in situ and remote measurements	Browell et al., 1997a
Boundary layer humidity fluxes	Kiemle et al., 1997
Boundary layer development	Ismail et al., 1998
Cirrus cloud measurements	Browell et al., 1998b
Hurricane studies	Ferrare et al., 1999; Browell et al. 2000a; Ismail et al., 2001
Lower-stratospheric H_2O studies	Ehret et al., 1999
Relative humidity effects on aerosol sizes	Ferrare et al., 2000b
Ice supersaturation in the upper troposphere	Ferrare et al., 2001a
Stratospheric intrusions	Clayton et al., 2001
H_2O distributions over remote Pacific Ocean	Browell et al., 2000b, 2001

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