An Overview of the Fires, Asian, and Stratospheric Transport-Las Vegas Ozone Study (FAST-LVOS)

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The Fires, Asian, and Stratospheric Transport-Las Vegas Ozone Study (FAST-LVOS) was conducted in Southern Nevada and California over a 6-week period from May 17 to June 30, 2017. The primary goal of the study was to assess the impact of transport from outside sources including wildfires, Asian pollution, and stratospheric intrusions on surface ozone (O_3) in Clark County, NV during late spring and early summer. The study combined ground-based lidar, aircraft, ozonesonde, and *in situ* measurements, and was funded by the Clark County (NV) Department of Air Quality with additional support from NOAA and the NASA-sponsored Tropospheric Ozone Lidar Network. The 45-day field campaign produced more than 500 hours of O_3 and aerosol backscatter lidar profiles and continuous Doppler lidar measurements of mixed layer heights and vertical velocities at the North Las Vegas Airport, with nearly-continuous *in situ* sampling of O_3, carbon monixide (CO), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), nitric oxide (NO), nitrogen dioxide (NO_2), and total reactive nitrogen (NOy) at the summit of Angel Peak in the nearby Spring Mountains. These measurements were augmented by ozonesonde launches on 12 days, and by aircraft profiles of O_3, NO_2, CH_4, and CO_2 above southern Nevada and California on 16 days. In this talk, I will describe the FAST-LVOS campaign and present a summary of the measurements and preliminary findings.

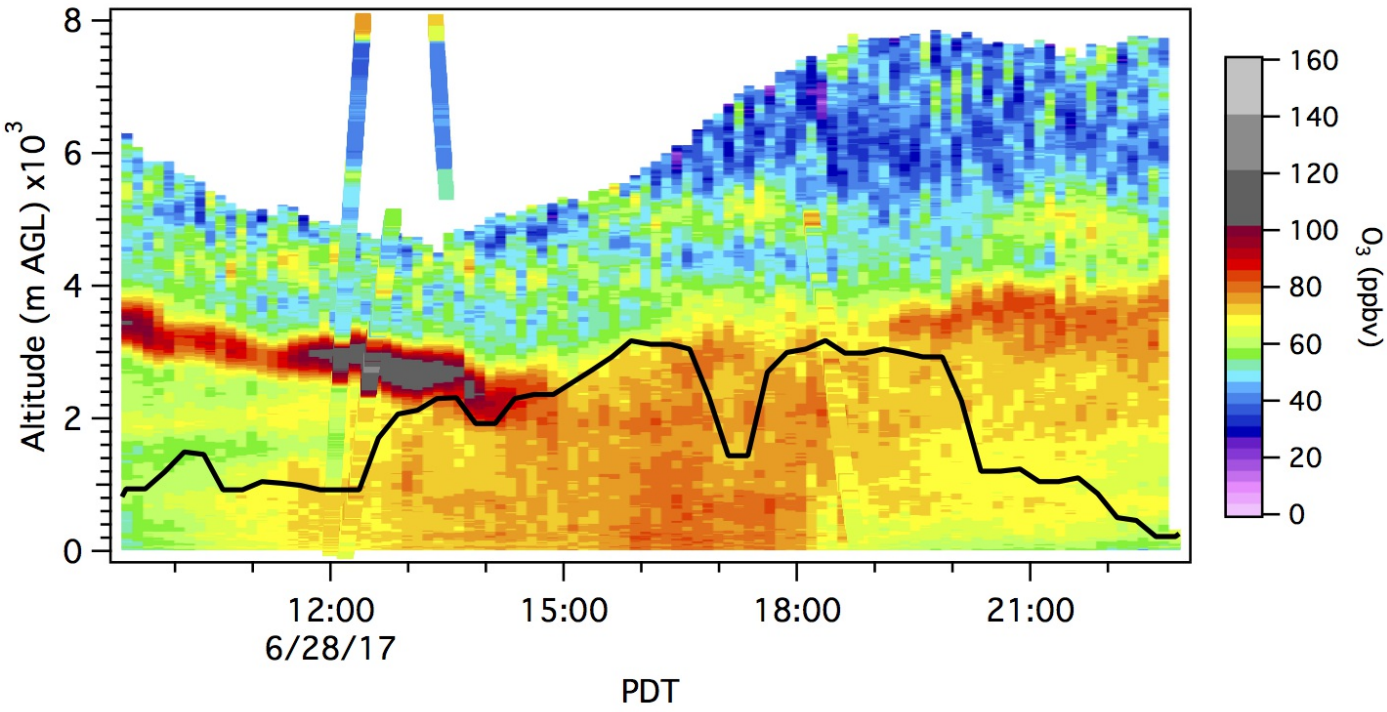

Figure 1. Time-height curtain plot of ozone concentrations measured by the Tunable Optical Profiler for Aerosol and oZone (TOPAZ) lidar during the FAST-LVOS field campaign showing the entrainment of an Asian pollution plume on June 28, 2017. Note the ozonesonde and aircraft measurements superimposed on the plot.