

Abstract Submitted  
for the 4CF14 Meeting of  
The American Physical Society

**Ground to stratosphere *in situ* ozone measurements for determining ozone sinks and sources**<sup>1</sup> JOHNNY NIKOLOFF, ERIKA MUELLER, JEFFERY PAGE, Weber State Univ, IAN HARDY, Brigham Young Univ, JOHN E SOHL, Weber State Univ, HARBOR TEAM — The Weber State University HARBOR program has been conducting balloon launches to collect *in situ* atmospheric data from ground level to the lower stratosphere. A primary focus has been on improving the calibration process to meet the standards of the World Ozone and Ultraviolet Data Center. The results have allowed us to calibrate previous measurements and start the characterization of a solid state ozone sensor as part of a wide spectrum gas sensing package that is also under development. In an ideal atmosphere there would be no significant ozone concentrations except in the stratospheric ozone layer. In Utah's Uintah Basin we are detecting two additional layers. One at ground level and one near the tropopause. Ground level ozone is likely pollution from vehicle traffic, although extensive fracking activity might also be a contributor. The next layer is possibly due to commercial jet traffic, except that the layer is just above normal flight levels. This could be a shift caused by atmospheric turbulence. Utah's Salt Lake Basin has air quality problems involving ozone in the summer; some fraction of that ozone is related to Great Salt Lake (GSL). It is probable that a chemical process is taking place due to the high concentration above GSL of NaCl particles that may be reacting with UV light to create more ozone. Using the ozonesonde and/or the solid state ozone sensor might allow us to characterize the ozone source and sink behavior of GSL. Initial characterization of these sensors has been completed.

<sup>1</sup>Val A. Browning Family Foundation

John Sohl  
Weber State Univ

Date submitted: 12 Sep 2014

Electronic form version 1.4