

**HASP 2014**  
**UND-UNF Payload**  
**Monthly Status Report for November 2014**

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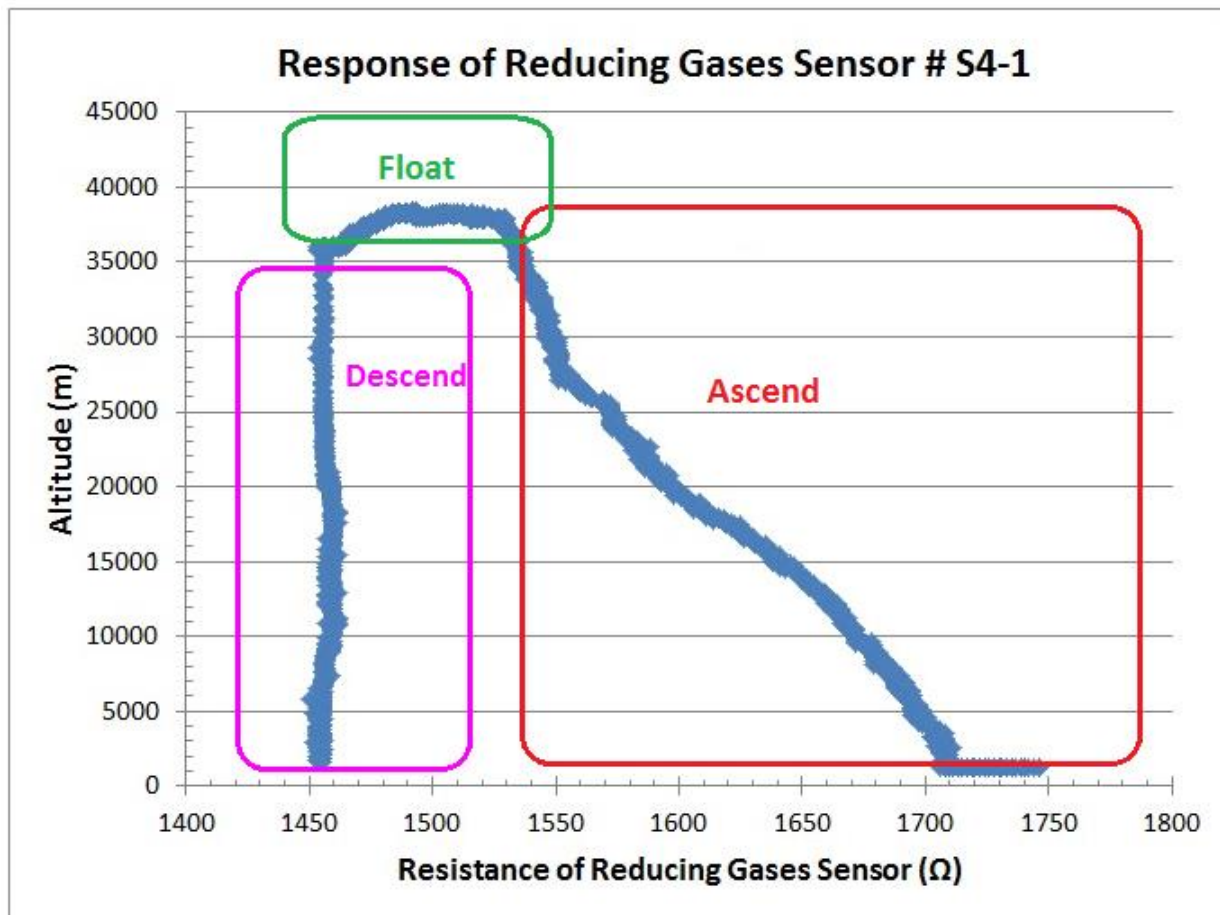
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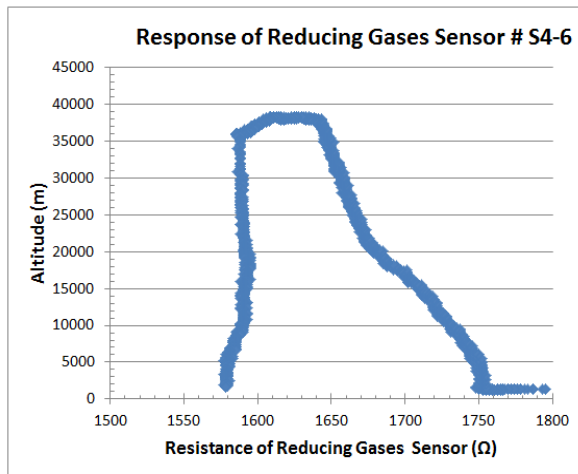
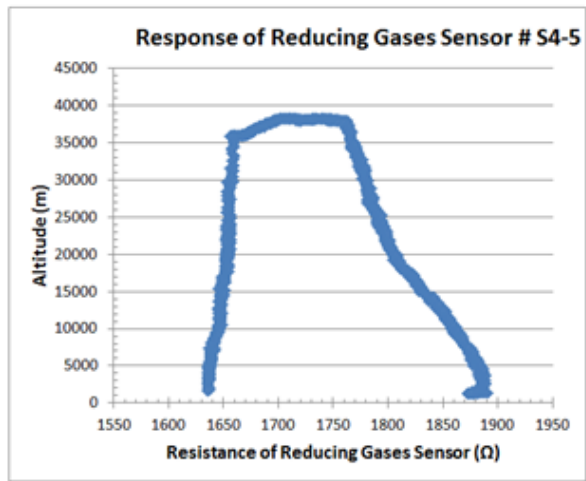
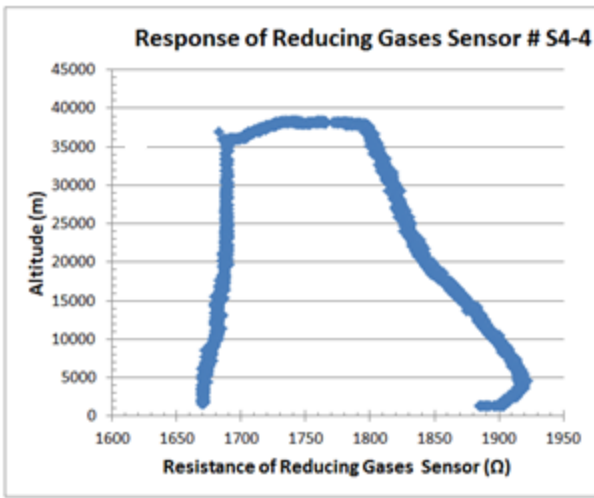
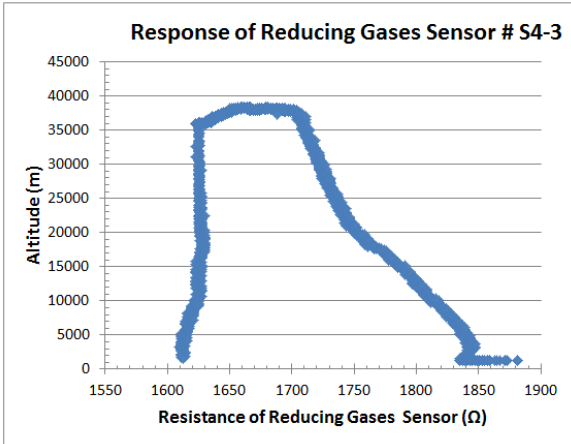
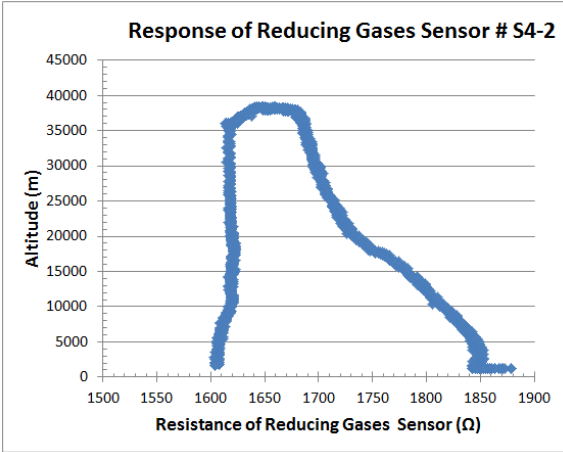
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**UND-UNF team did the following work during November 2014:**

- (1) UNF team got three new students for the HASP2015 balloon flight.**
- (2) Team is about to complete the science report. We are hopeful to submit our science report in the second week of December 2014.**
- (3) We are highlighting some of our results by following plots of **reducing gases** measured by sensor box #4. Attention may be drawn to the fact that these sensors were not for detection of ozone gas. It is to get preliminary information about the behavior of reducing gases.**

Fig.1 shows the plots of response of reducing gases sensors # S4-1 to # S4-8. Sensor array was made of  $\text{WO}_3$ +ITO nanocrystalline thin film. These sensors are n-type semiconductor. In the presence of reducing gases, its resistance should be decreased. It was observed that resistance of sensor decreases as the altitude increases. There is no observation of peak of oxidizing ozone gas in the stratosphere range. Resistance of sensor shows very small variation during the float journey. This may be due to the presence of very low pressure at the higher altitude. The resistance of sensor was nearly same during descend. The response of reducing gases sensor was measured first time. All 8 sensors (S4-1 to S4-8) have shown the similar nature of response. Reducing gases consist of mixture of more than one or two gases. Calibration of each gas may not correctly apply to the measured data because of the continuous variation of mixing ratio and pressure and hence require further study.





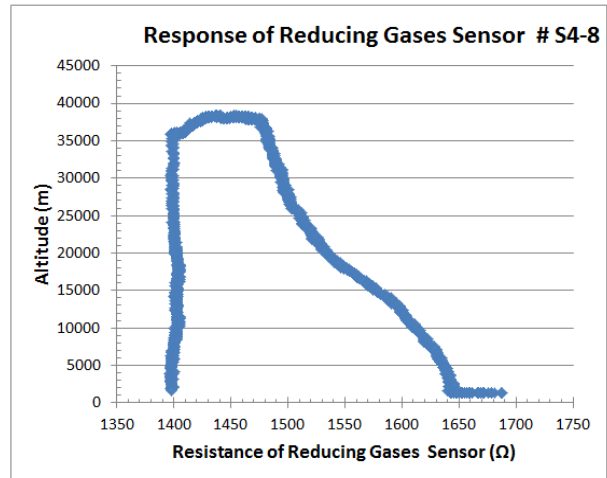
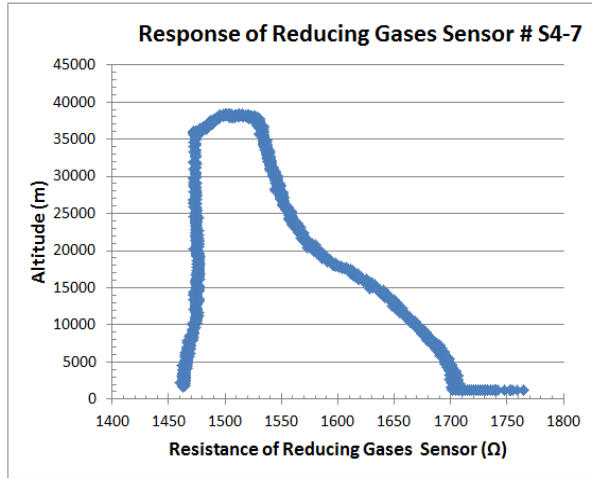


Fig.1 Response of reducing gases sensors # S4-1 to # S4-8