

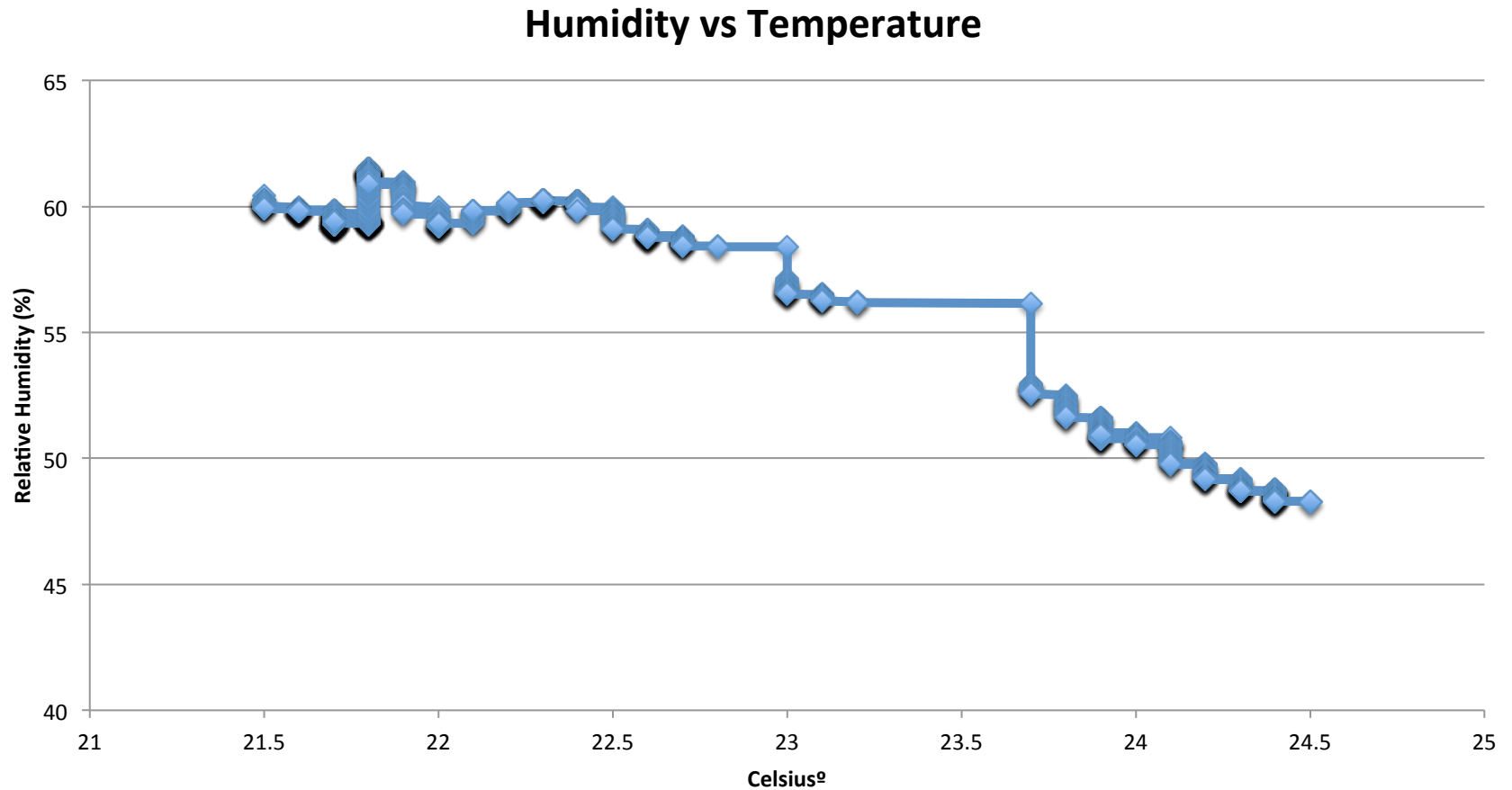
Temperature/Humidity Analysis

7/11/13

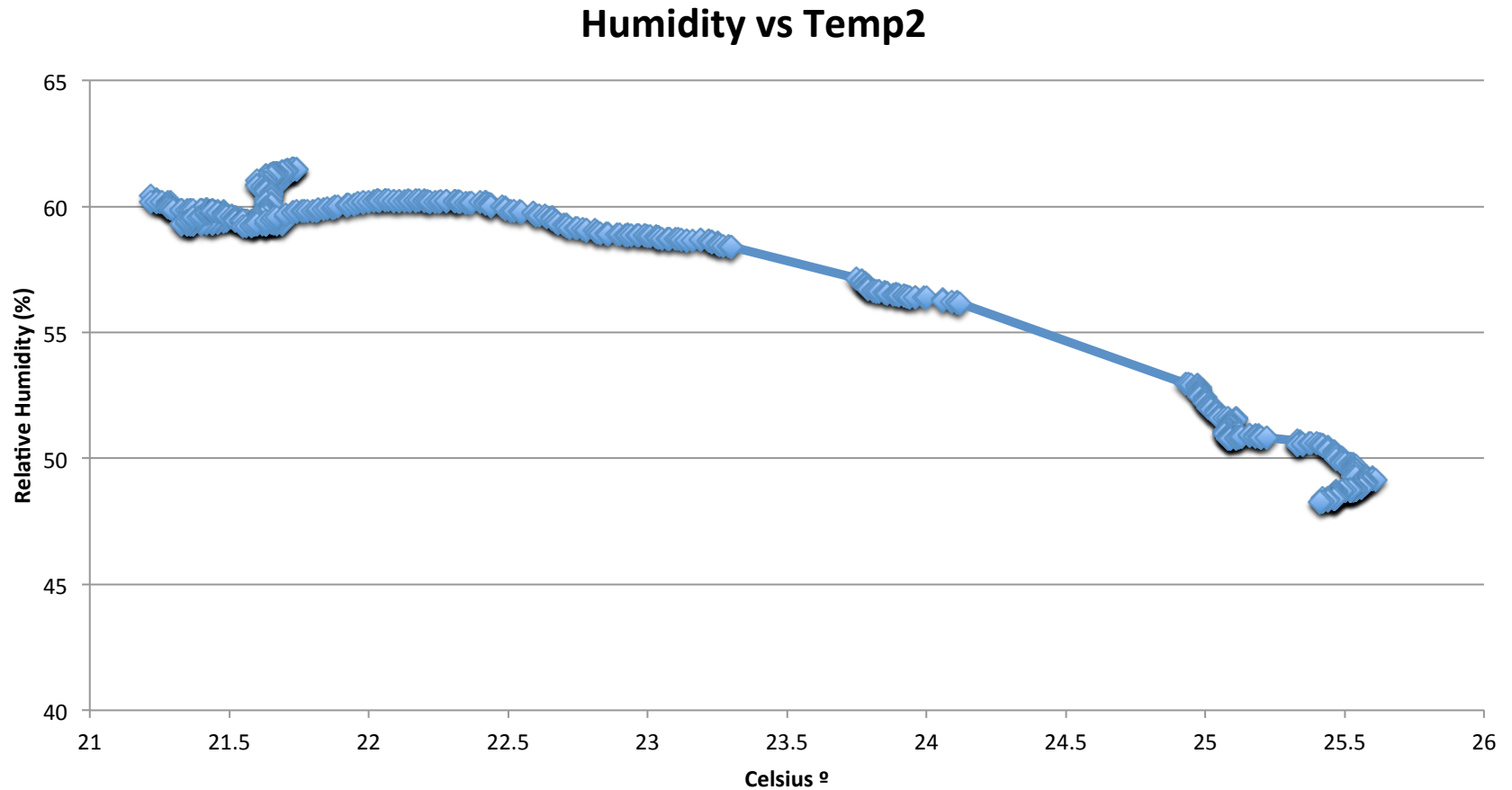
Roger Rocket



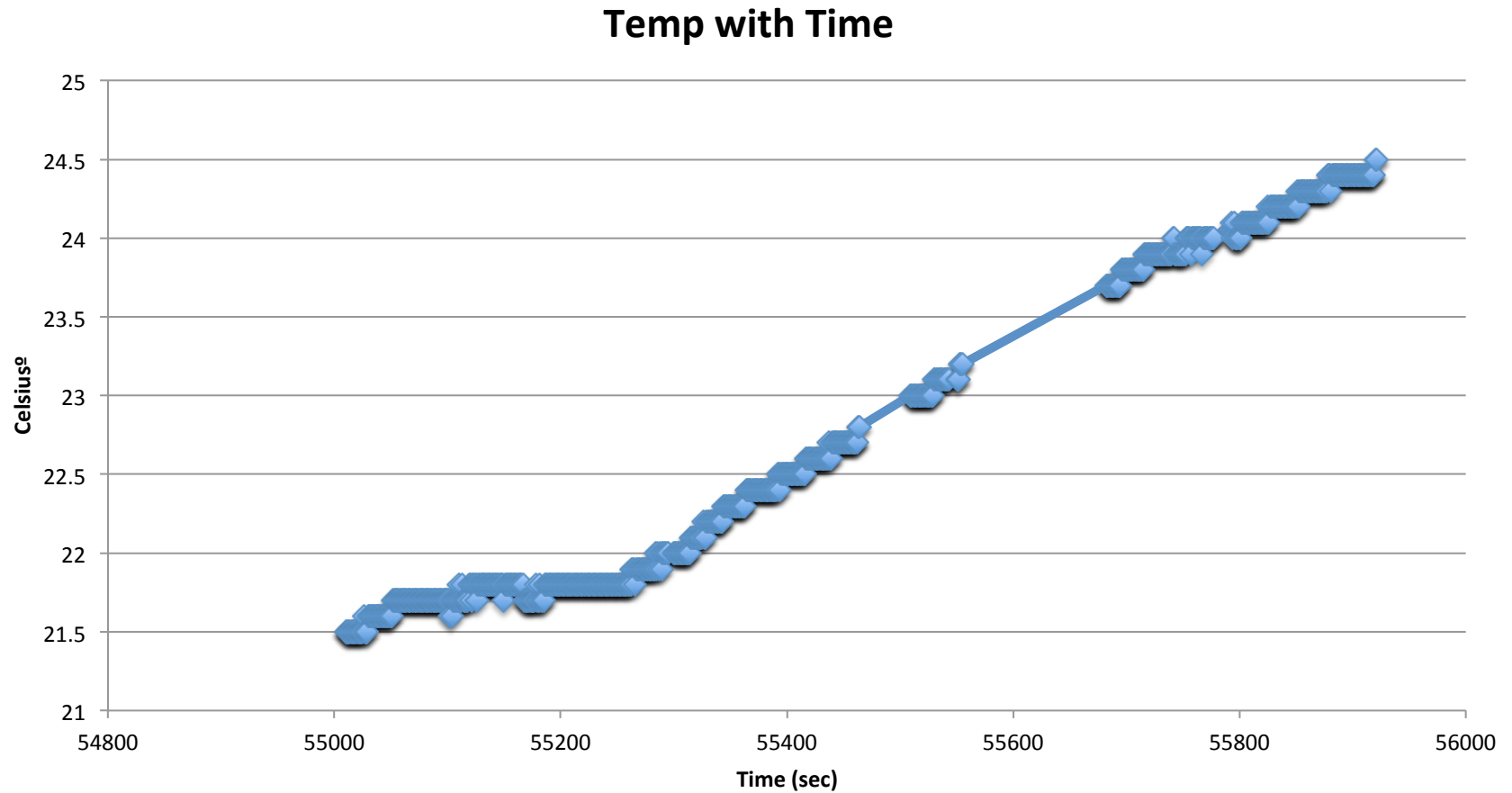
Humidity vs. Temperature1



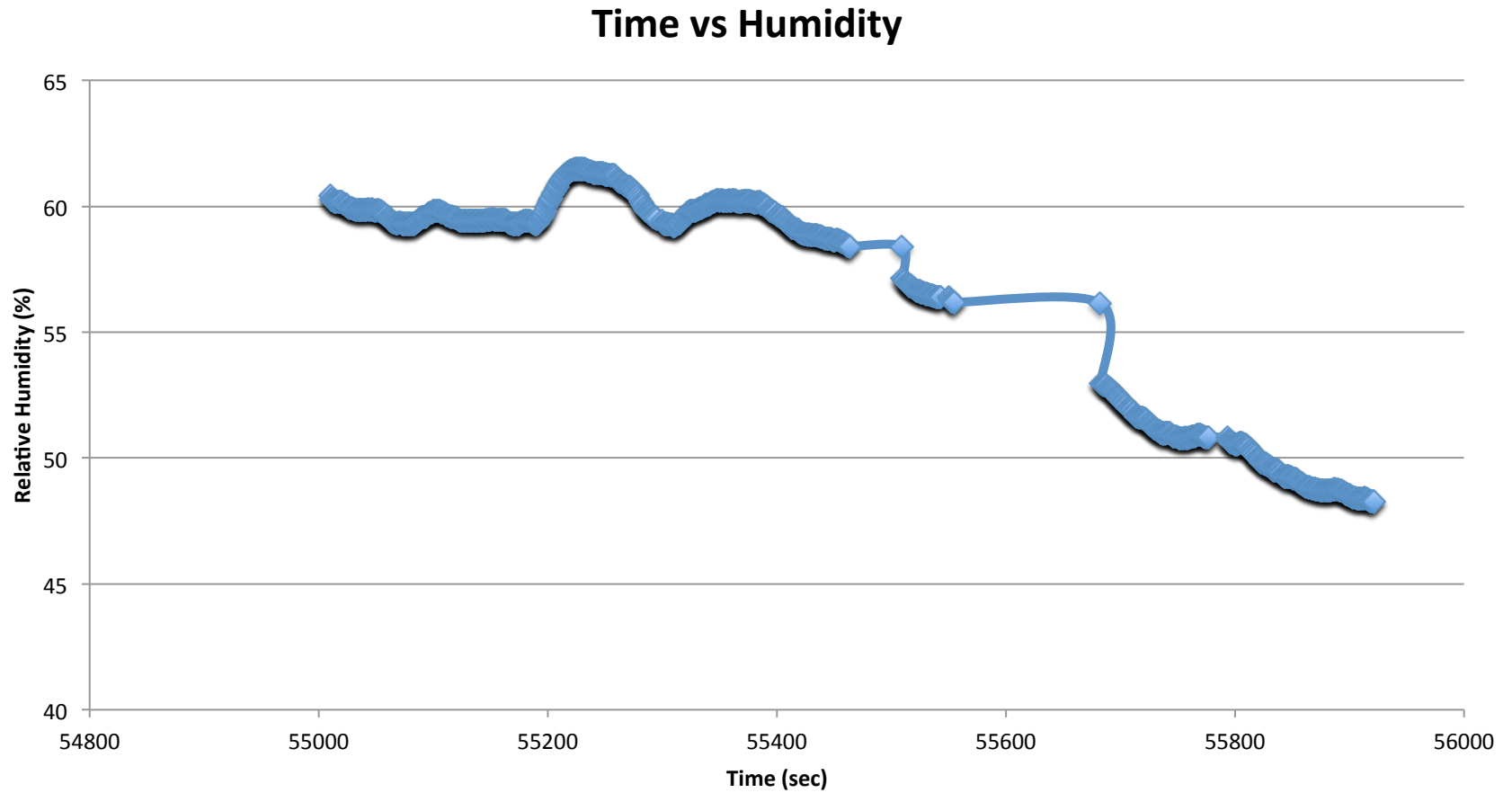
Humidity vs. Temperature 2



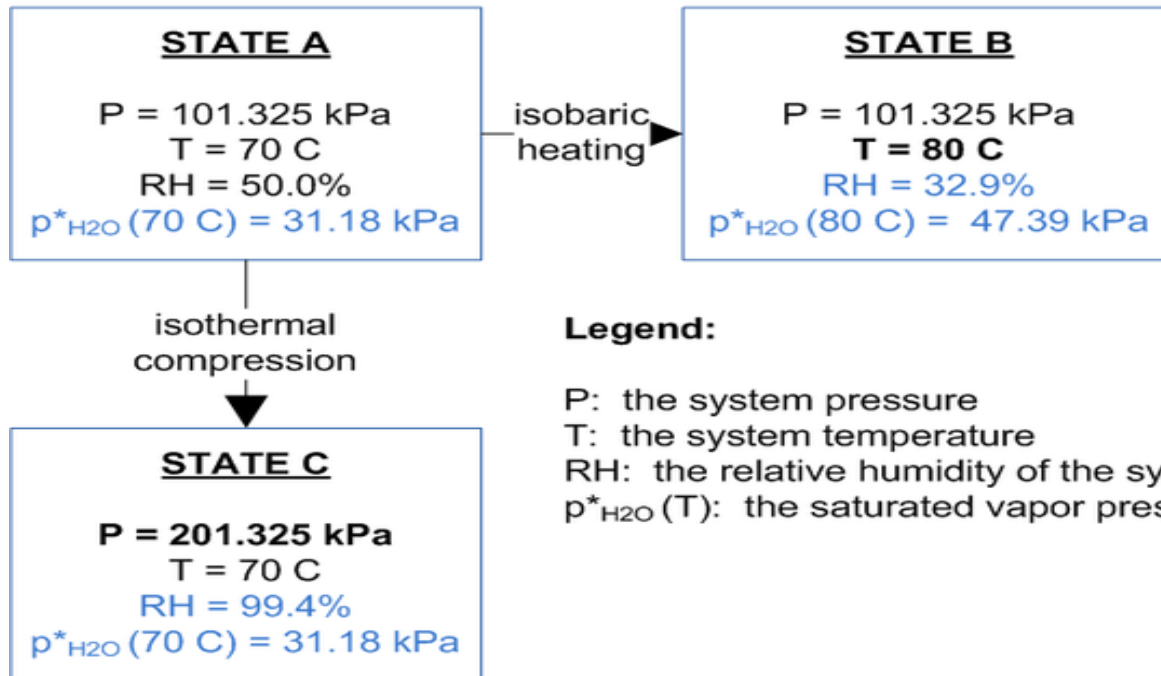
Temperature over Time



Humidity with Time



Relative Humidity



Legend:

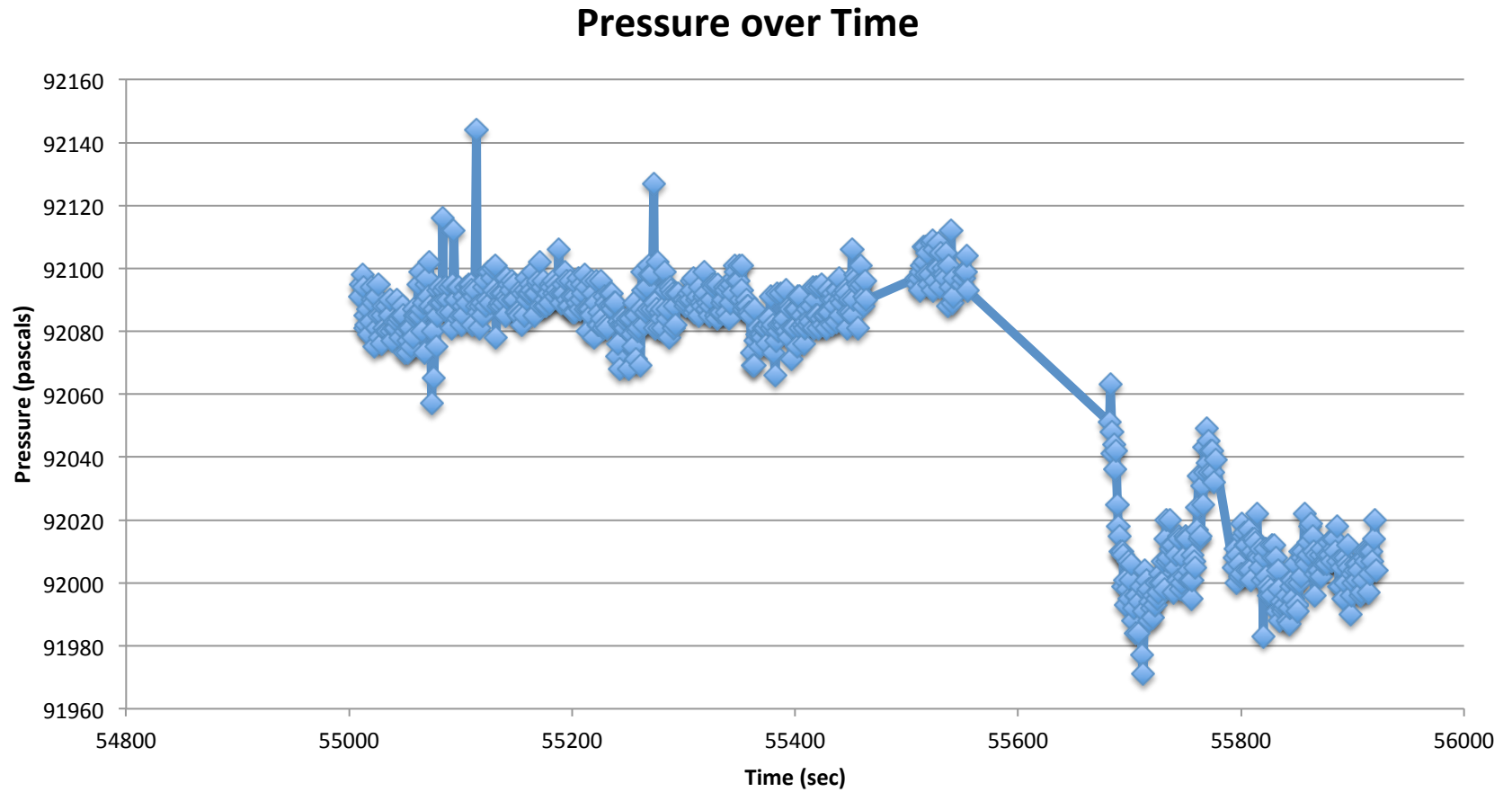
P: the system pressure

T: the system temperature

RH: the relative humidity of the system

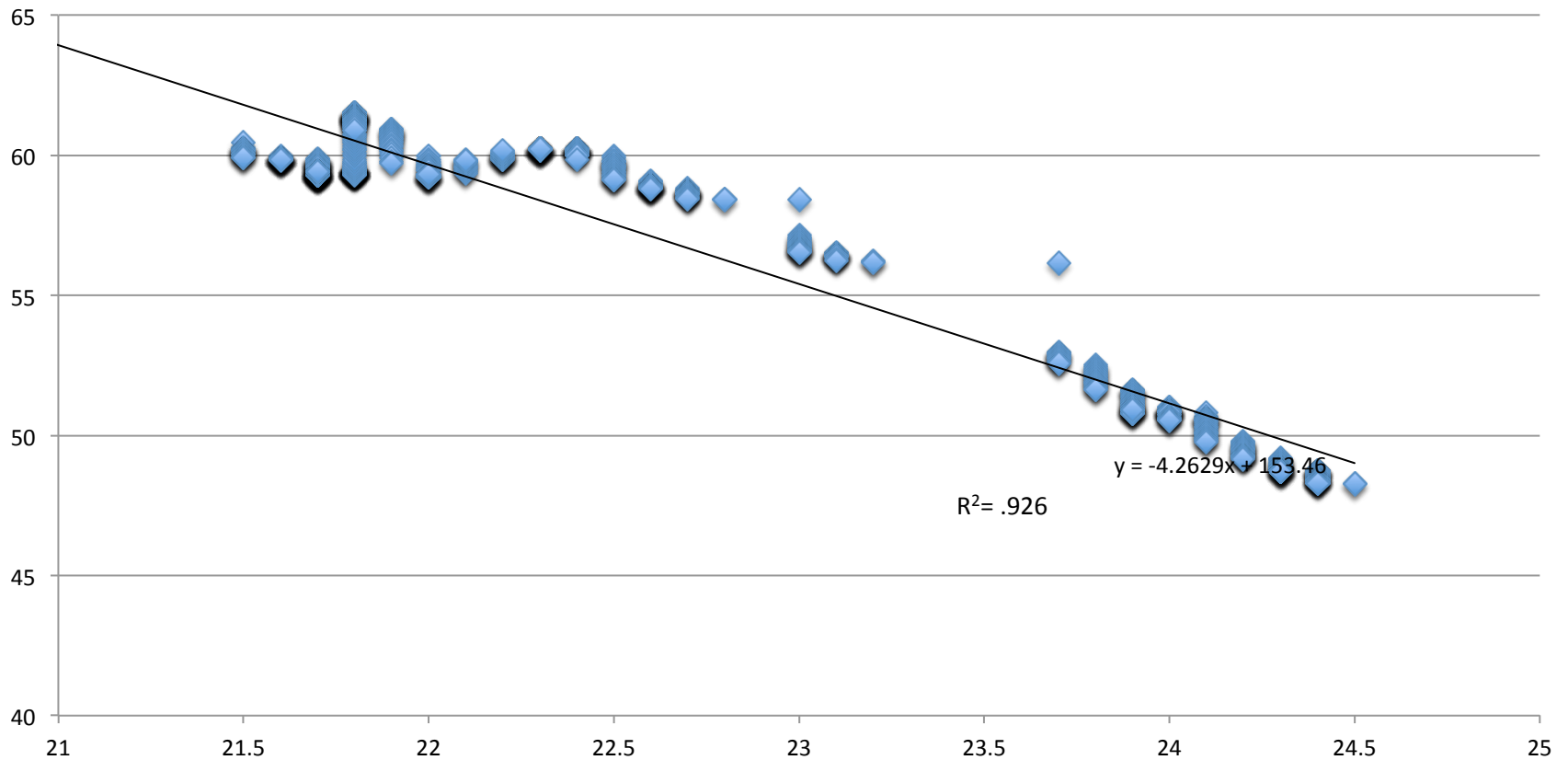
$p^*_{\text{H}_2\text{O}}(T)$: the saturated vapor pressure of water at temperature T

Pressure over Time



Regression Analysis

Humidity Regression



Dew Point Determination

When $RH=100\%$, $T=12.5^{\circ}\text{C}=54.0^{\circ}\text{F}$

The Weather Underground for Palmdale was
 54° at 9:00 AM!

Conclusions

- The relationship between relative humidity is inverse as hypothesized.
- When the linear line of best fit is determined from 719 data points using this payload, the dew point can be estimated by extrapolating to 100% RH.