Sample $\Delta_{47}$ values are most commonly placed into the absolute reference frame (ARF) using a suite of heated and water equilibrated gases to track and correct for changes in the negative pressure baseline using the methods described in Dennis et al. (2011). An additional correction scheme described in He, Olack and Colman (2012) suggested that the negative pressure baseline could be better corrected for by physically measuring its value using off-peak measurements and retroactively adding it back onto on-peak measurements. This process came to be known as the PBL correction and was shown to reduce the dependency of processed $\Delta_{47}$ values on the results of heated and water equilibrated gases, however the method often required extending the length of time to measure a sample and produce similar statistical accuracy.

In order to compare the two processing techniques, clumped isotope data has been collected over the course of 12 months using the measurement techniques required to perform the PBL correction and all data post-processed with and without its application. On a subset of this dataset, we have shown that the two techniques produce nearly identical $\Delta_{47}$ values with a slight tendency for the PBL value to give more positive values ($\approx 0.01 \pm 0.05\%$). The standard error associated with each $\Delta_{47}$ measurement is also often indistinguishable between the two techniques. However, when examining the measurements of a Carrara marble which is measured almost daily in the UM laboratory, it was found that the PBL tended to produce more stable measurements over time. In periods where Carrara $\Delta_{47}$ values would go to extreme deviations from the mean using only the ARF, the PBL tended to yield $\Delta_{47}$ values closer to the mean. This resulted in standard deviations for the PBL processed Carrara samples that were almost 50% of the ARF processed values (0.029% vs. 0.045%).
