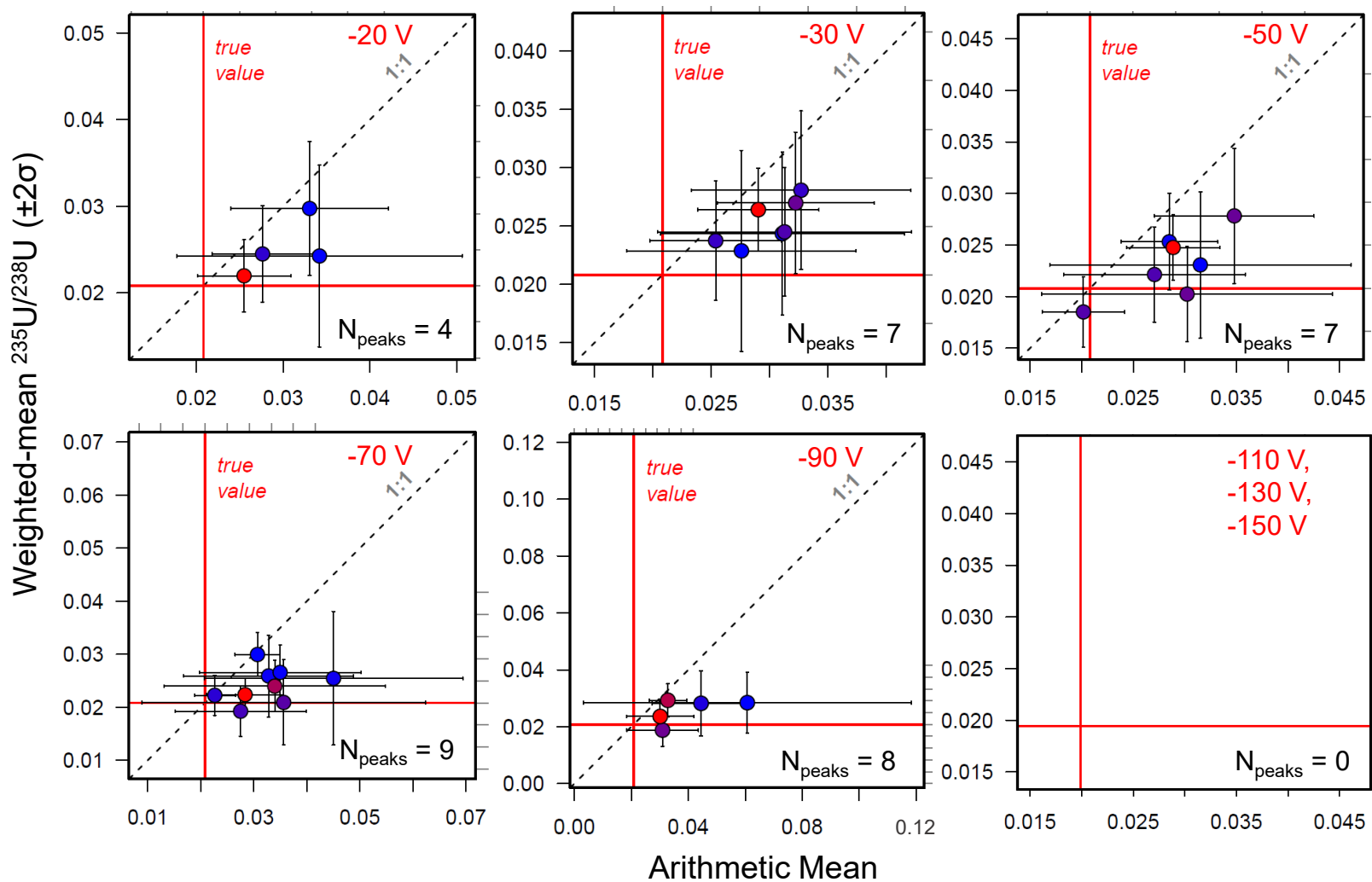
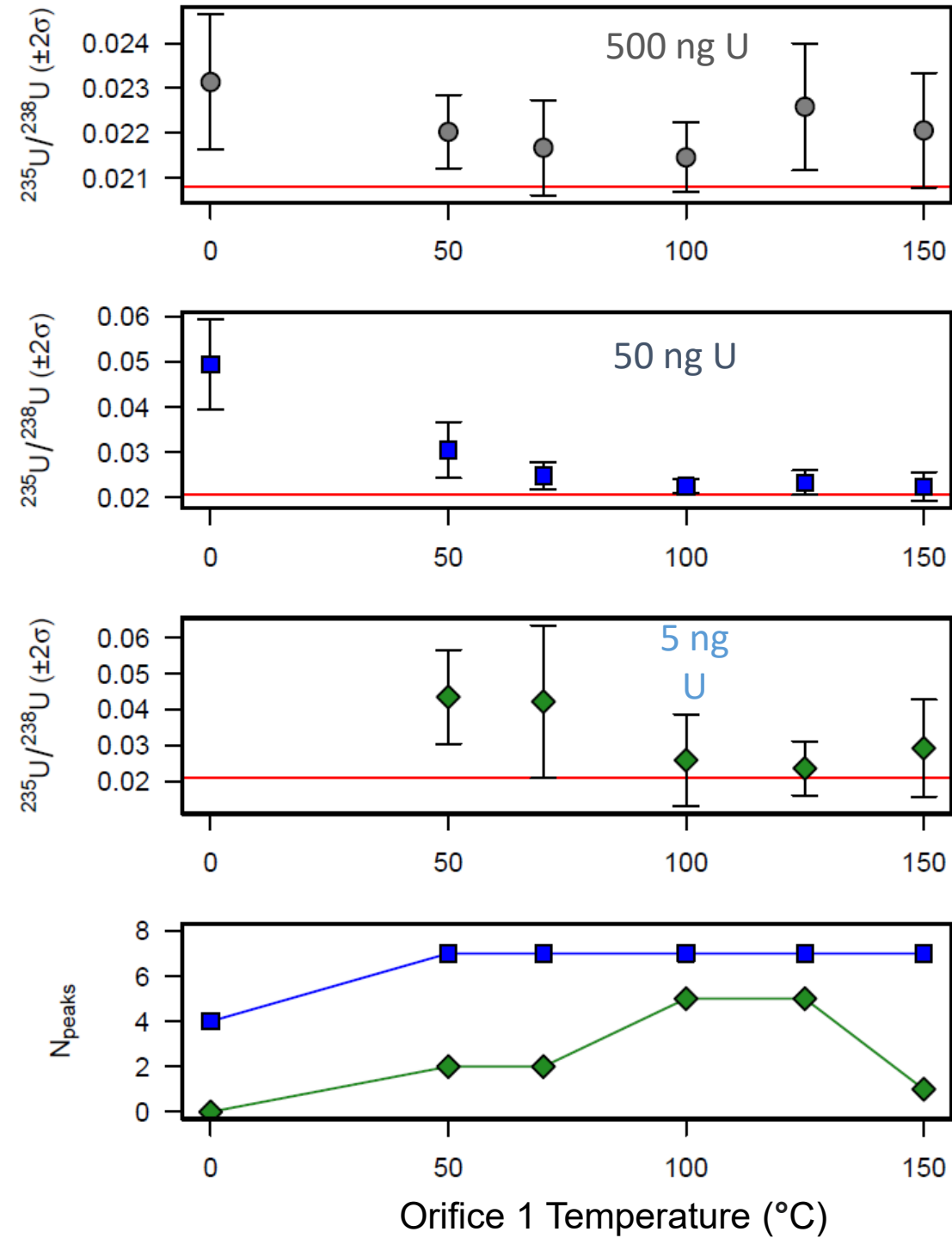


Supplementary Figure 1: Examples of sample introduction methods into the JEOL AccuToF orifice. A) The best performing method is to introduce the capillary at an angle slightly off the vertical and horizontal, but the lack of consistency in manual introductions presented a challenge in reproducibility. Other methods using custom made capillary mounts to create a more consistent sample introduction method (B and C) explored direct introduction into the orifice (B), and a fixed vertical and horizontal offset method (C) which performed best in our trials.



Supplementary Figure 2: Triplicate testing of orifice 1 voltage across a range of U020 concentrations revealed that the greatest number of sample aspirations resulting in a measurable isotopic ratio were recovered at -70V.



Supplementary Figure 3: Triplicate testing of orifice 1 temperatures across a range of U020 concentrations revealed that the greatest number of sample aspirations resulting in a measurable isotopic ratio were recovered between 100-125°C.