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The ultra-hot Jupiter WASP-76b took the world by storm at the turn of the decade with evidence of iron condensation occurring from its hot dayside to its colder nightside. This landmark discovery was inferred from a distinct asymmetry in the absorption signal of neutral iron throughout the transit and introduced a new realm of opportunities for studying the day-to-night dichotomy of exoplanet atmospheres. In this talk we will present the results of follow-up transit observations of this fascinating planet using the new ultra-stable high-resolution MAROON-X spectrograph. Our analysis of this data shows a plethora of species detected in WASP-76b's transmission spectrum, a multitude of which also show similarly distinct asymmetric absorption signals throughout the transits. We also report the first ever unambiguous detection of vanadium oxide (VO) at high-resolution on an exoplanet (confirmed with 2 different instruments). VO has long thought to be a driver for thermal inversions in ultra-hot Jupiter atmospheres, but has been notoriously difficult to detect. We will also present an unprecedentedly thorough analysis of WASP-76b's composition, precisely constraining the relative abundance of 15+ species in its atmosphere using a Bayesian high-resolution retrieval framework. We find that, while most elements are in agreement with equilibrium chemistry and a solar-like composition, a few species show clear deviations from model predictions. In particular, we measure V + VO abundances perfectly in line with expectations, but Ti + TiO abundances that are depleted by more than a factor of 100. This is a clear indication that titanium is missing from the terminator of WASP-76b, likely due to being cold-trapped on the nightside due to its lower condensation temperature relative to vanadium.