Recent upgrades in ytterbium optical lattice clocks at NIST

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We give updates on several recent developments in the ytterbium optical lattice clocks at NIST. First, we report on the transportable Yb clock. We detail the systematic uncertainty evaluation for this system, and early measurements of its reproducibility via frequency comparisons with laboratory-based optical clocks. We then describe two efforts focused on the laboratory-based clocks. First, we report on recent progress of a cryogenically-cooled sapphire optical cavity for laser stabilization with improved thermal noise. This includes a full noise budget, and measurements of frequency stability derived from multiple room-temperature reference cavities. Finally, we also give an update on a cryogenically-cooled, in-vacuum atom shield for suppressing blackbody Stark shift uncertainty at $\leq 10^{-19}$ fractional frequency.