Notes for CCTF Report:

- USNO currently maintains an ensemble of a large number of atomic clocks including Hmasers, Cs Beam, and 6 Rb Fountains
    - 4 Rb Fountains have been in full-time operations or 5.5 years
    - 2 Rb Fountains are under evaluation for full-time operations
    - Very little maintenance has been necessary on the Rb fountains
- USNO has ordered three closed-loop refrigeration cycle liquid He cooled Sapphire oscillator sources to provide low phase noise, high stability reference signals to test new clocks and clock components at 5 MHz, 100 MHz, and 10 GHz.
- The USNO Clock Development Group is working on Hot Ca+ and Cold Ca+ in parallel efforts for an Optical Clock
- Three GNSS simulators have been purchased including a substantial investment in one system capable of simulating 12 channels for each of the GNSS system signals. The GNSS simulators will help with the absolute calibration and validation of various GNSS receivers to produce the GNSS to GPS Time Offset (GGTO) parameters that are to be implemented in the CNAV message of GPSIII. This allows users to receive the GPS signal, pull out the CNAV message, retrieve the GGTO parameters from the CNAV message and use the corrections to leverage GPS and other GNSS systems