

# USNO Station Report

- Wendy King
- George Luther
- Angela McKinley
- Eric Newman
- Ed Powers
- Al Smith
- Minh Tran
- Paul Wheeler

# TWSTT for TAI

- Automated Satre for Ku-band transatlantic
- Special X-band with PTB
- Special USNO to NIST data available
- Vandenberg, Ca to CRL 2 times/week
- Vandenberg , Ca to USNO hourly

# Calibrations

- Technique published in PTTI-02
  - Appendix to general USNO paper by Matsakis
- PTB calibration of Jan 03 consistent with that of May 02
- PTB calibration of June 03 unsuccessful so far. Modem is suspect.

# Software Improvements

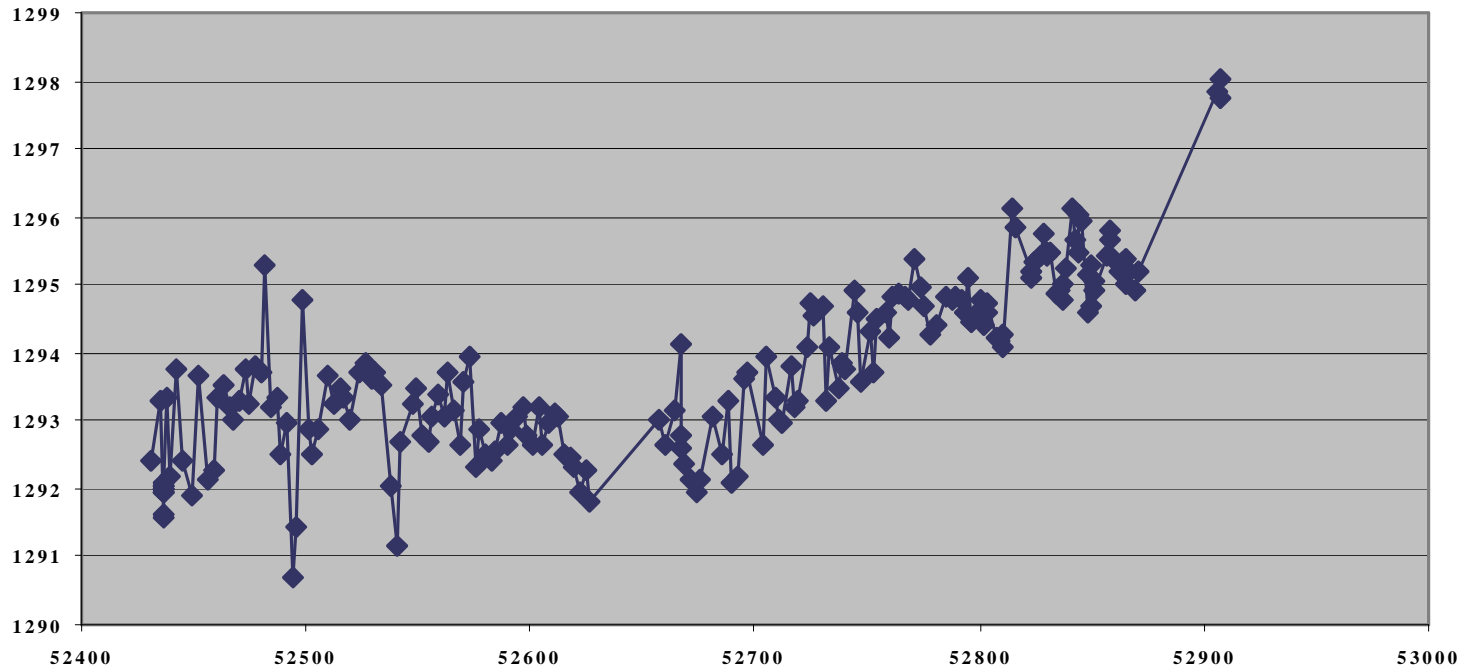
- Internal method based on differencing 1-sec points
- Too many ns-level differences noted in comparisons with ITU-format method
- Added 3-sigma rejection before fit in ITU-format
- Reran all data for USNO-NPL and USNO-PTB
- Discrepancies down to 100 ps peak-to-peak
- USNO plans to set up automated check against ITU-format method

# USNO-PTB Link

- Ku band
- X band
- GPS Carrier Phase
- Single-frequency GPS

# Ku-X band TWSTT, USNO-PTB

Ku - X band TWSTT, USNO-PTB, all calibrations and satellite change ignored



Uncalibrated GPS carrier-phase tends to agree with X-band

# Diurnal Signatures

- USNO-AMC Matsakis et al, PTTI-99,00,01
- USNO-NIST Parker et al, PTTI-02
- Stronger in most summers than winter
  - Exception: last month
- Summer of 2002 was particularly bad

# USNO-NIST 2002 diurnals

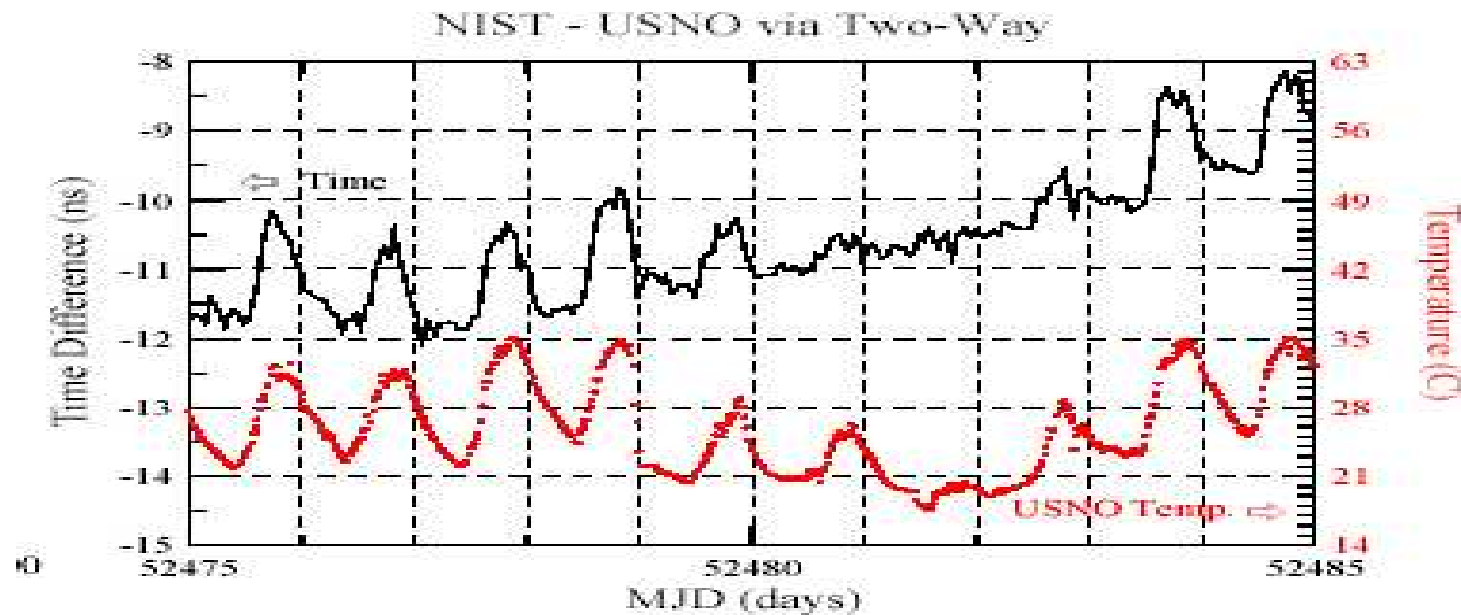


Figure 7. Correlation of diurnal with outside temperature.