TWSTFT activity at AOS

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TWSTFT activity at AOS

1. Start of TW regular observations:
   2006-12-01 (MJD 54070)

2. Non stop work until
   2007-03-21 (MJD 54180)
   Calibration of the AOS-PTB link using GPS

3. Failure of the converter on 2007-03-21 – problems with electronics inside the unit.

4. Start of TW regular observations with new converter unit:
   2007-06-04 (MJD 54255)

5. Converter problem returns:
   2007-08-15 (MJD 54327)
   According to the maker: water leakage inside the converter.

6. System shutdown - converter sent to repair:
   2007-08-21 (MJD 54333)

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AOS TWSTFT Earth Station

Earth station configuration is as follow:

- KST-2000A 4W – Ku-Band Satellite Terminal (COMTECH EFDATA VSAT Transceiver)
- SATRE TWSTFT Modem, dual channel receiver (TimeTech)
- Antenna feed system and transmit reject filter (COMTECH EFDATA)
- 2.4m Offset Tx/Rx Antenna System (Channel Master)


TIMETECH
Frequency Distribution Amplifier
SATRE-TWSTFT
TIMETECH
14 04 05

Calibration of the link AOS-PTB -1

AOS - PTB Link

In December 2006, a TWSTFT link was established between AOS in Poland and PTB in Germany. Connections are made every even hour 43 m according to schedule of CTTF WG for TWSTFT.

Calibration Procedure

Calibration data came from TWSTFT and GPS measurements taken in January 2007.

GPS CV L1C data were corrected for ionosphere and precise ephemerides.

GPS Data UTC(AOS) - UTC(PTB) had been evaluated by linear regression for 4 hour data interval centered at TWSTFT observations epochs.

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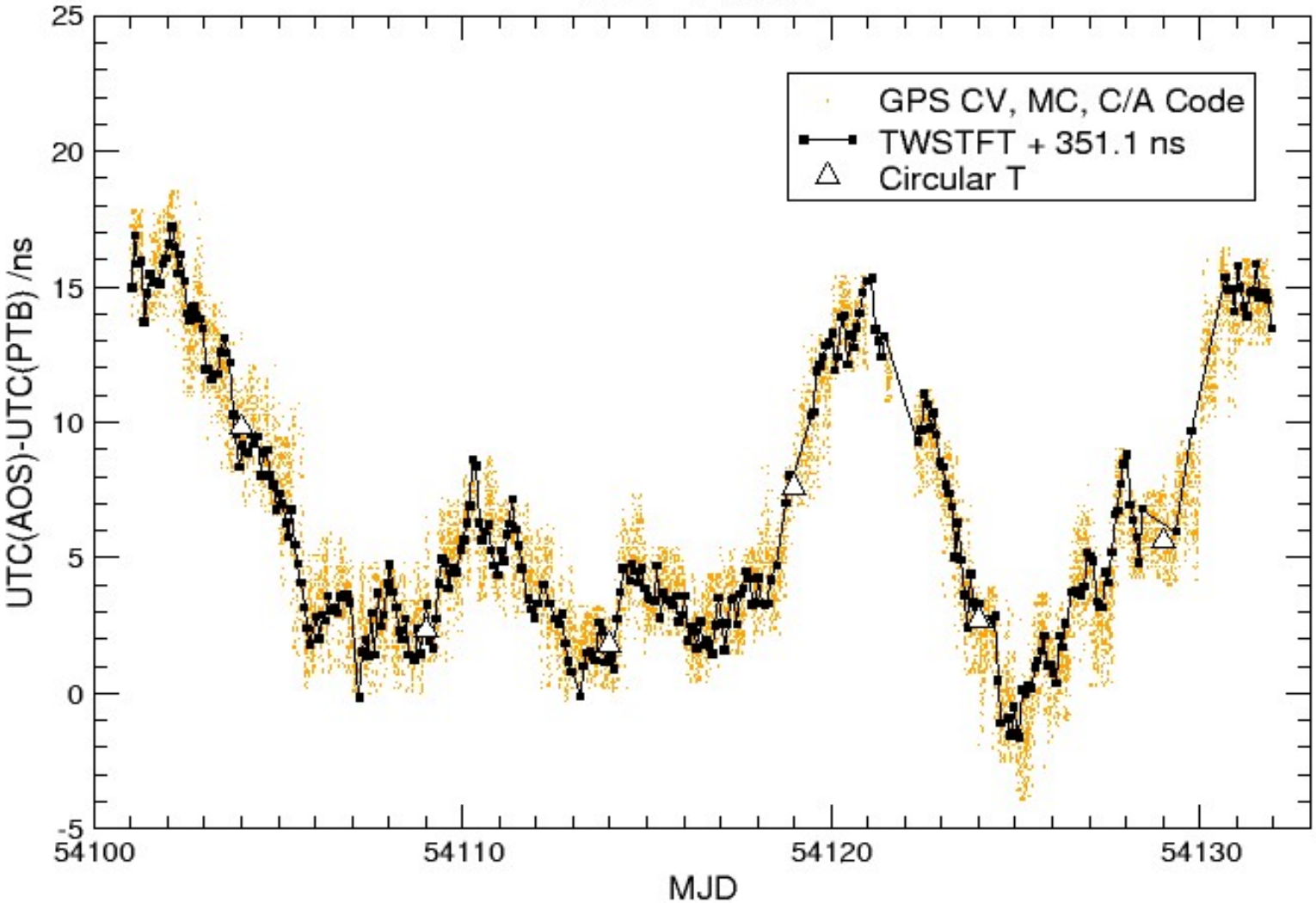
Time Scale Difference

AOS - PTB link



Date: 03/21/07 Time: 15:43:24 Data Points 1 thru 13153 of 13153 Tau=1.9700000e+02 File: d

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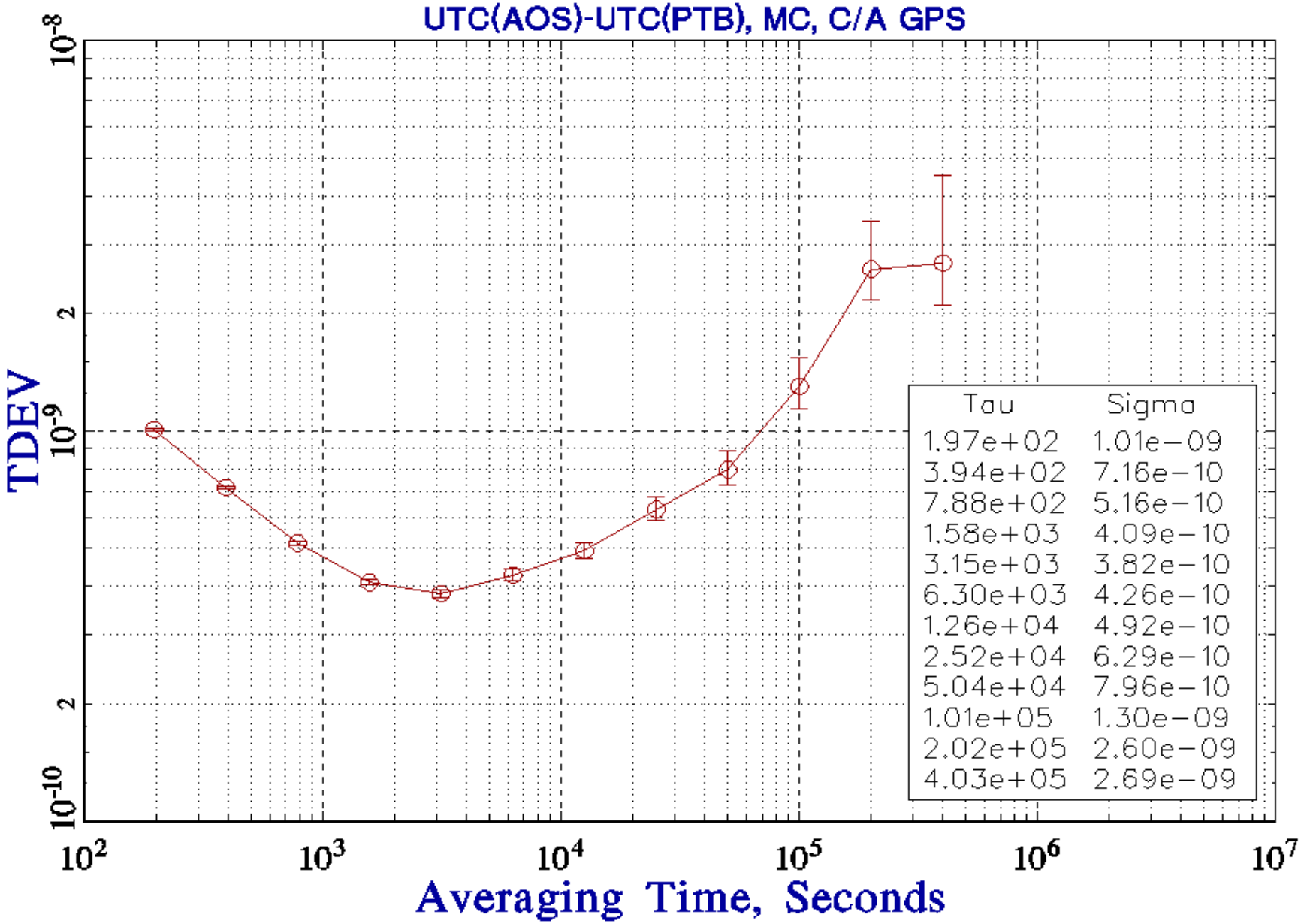
TIME STABILITY

UTC(AOS)-UTC(PTB), MC, C/A GPS



Tau	Sigma
1.97e+02	1.01e−09
3.94e+02	7.16e−10
7.88e+02	5.16e−10
1.58e+03	4.09e−10
3.15e+03	3.82e−10
6.30e+03	4.26e−10
1.26e+04	4.92e−10
2.52e+04	6.29e−10
5.04e+04	7.96e−10
1.01e+05	1.30e−09
2.02e+05	2.60e−09
4.03e+05	2.69e−09

Stable32

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Calibration of the link AOS-PTB - 2

The following results were obtained:

- CALR(AOS) = 351.1
- CALR(PTB) = -351.1
- RMS of the obtained results equals 0.8ns

Clock Chamber at AOS

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