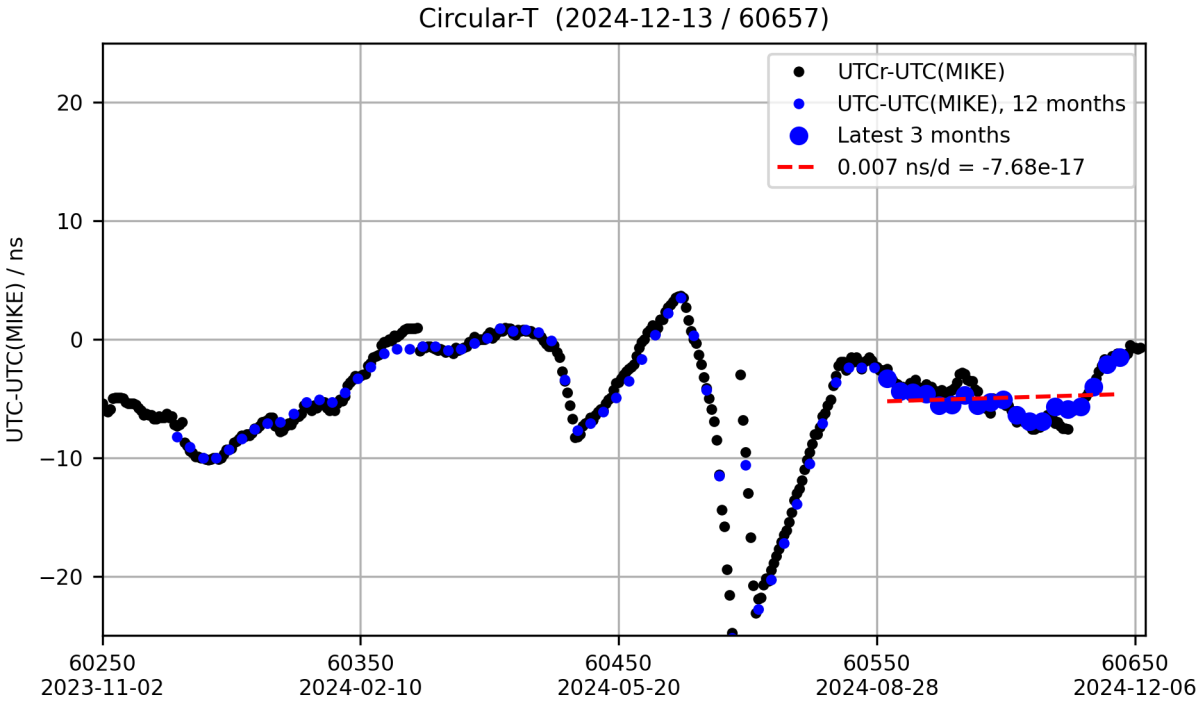
UTC(MIKE) Atomic Bulletin 2024-12

VTT MIKES Metrology monthly Time & Frequency bulletin.
Comments and questions to: time "at" vtt.fi
Date of publication: 2024-12-13 (60657)
Circular-T issues used for analysis: 441, 442, 443,
First day of analysis interval: 2024-09-01 (60554)
Last day of analysis interval: 2024-11-30 (60644)
ClockData for analysis: CDMI__24.09_, CDMI__24.10_, CDMI__24.11_,
The Atomic Bulletin is archived at: https://monitor.mikes.fi/ftp/atomic_bulletin/

Notes

60100 (2023-06-05) AHM1 maser stopped working (out of Hydrogen?).
60139 (2023-07-14) remove AHM1, add AHM2 to analysis.
60321 (2024-01-12) missing ClockData 60304-60309 due to database-issue.
60424 (2024-04-24) AHM3 ion pump failure, phase step -1428.2ns
60433 (2024-05-02) AHM2 to master clock, AHM2 phase step +48759.63 ns
60496 (2024-07-05) AHM3 to master clock.
60502 (2024-07-11) AB2024-07: AHM3 fit to to 60434->. Steering -7e-15 = +18 ns/30days.
60536 (2024-08-14) AB2024-08: set steering to zero.

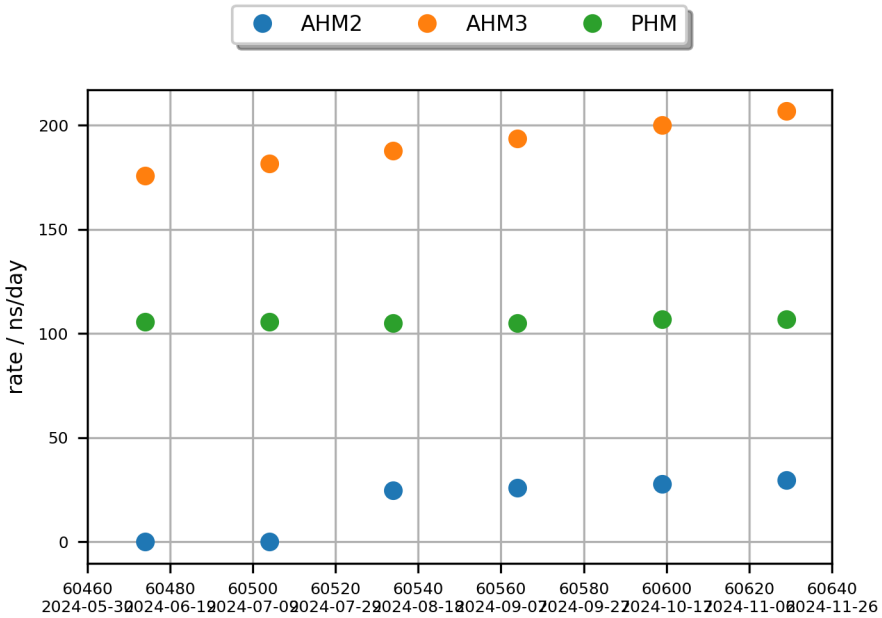
UTC-UTC(MIKE) as reported in Circular-T



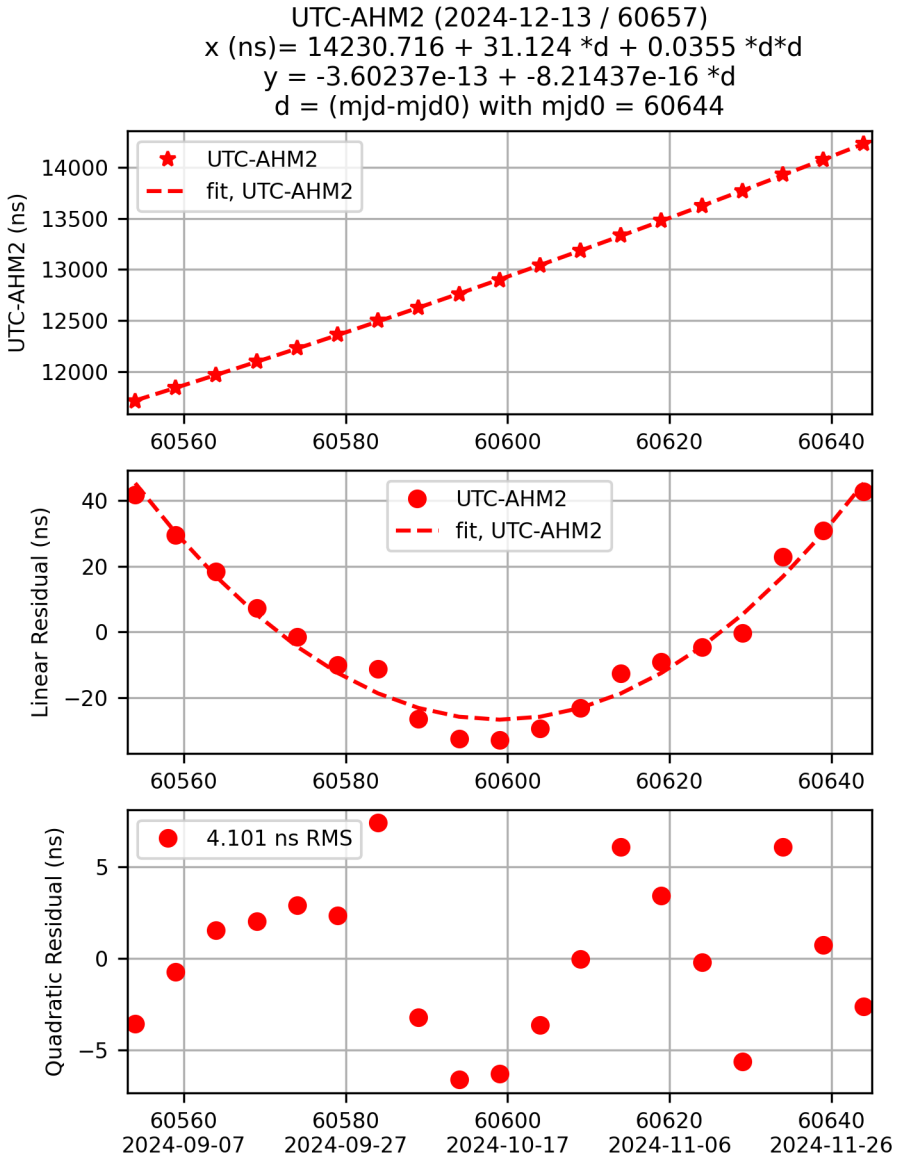
UTC-UTC(MIKE) is available on 5 day intervals on MJD dates ending with 4 or 9. Values are published monthly by the BIPM in Circular-T.

Clock Rates - Summary

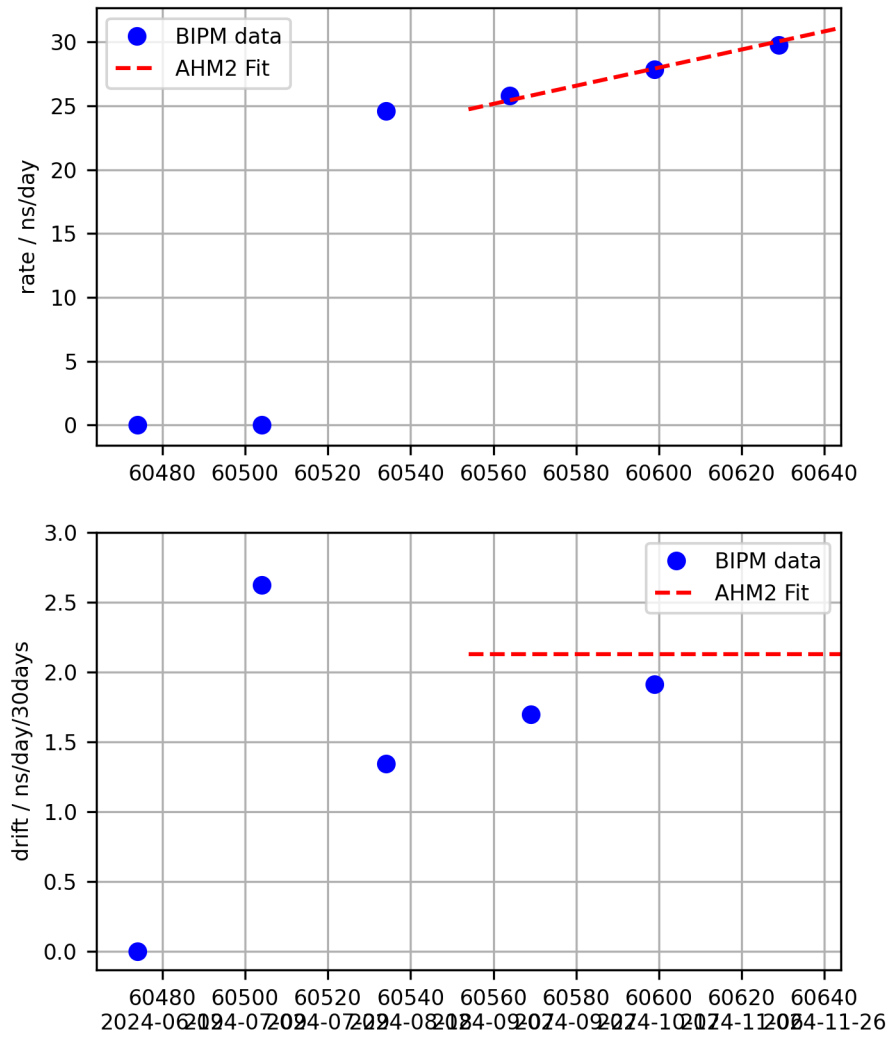
Clock rates as reported by the BIPM in the monthly r-report.



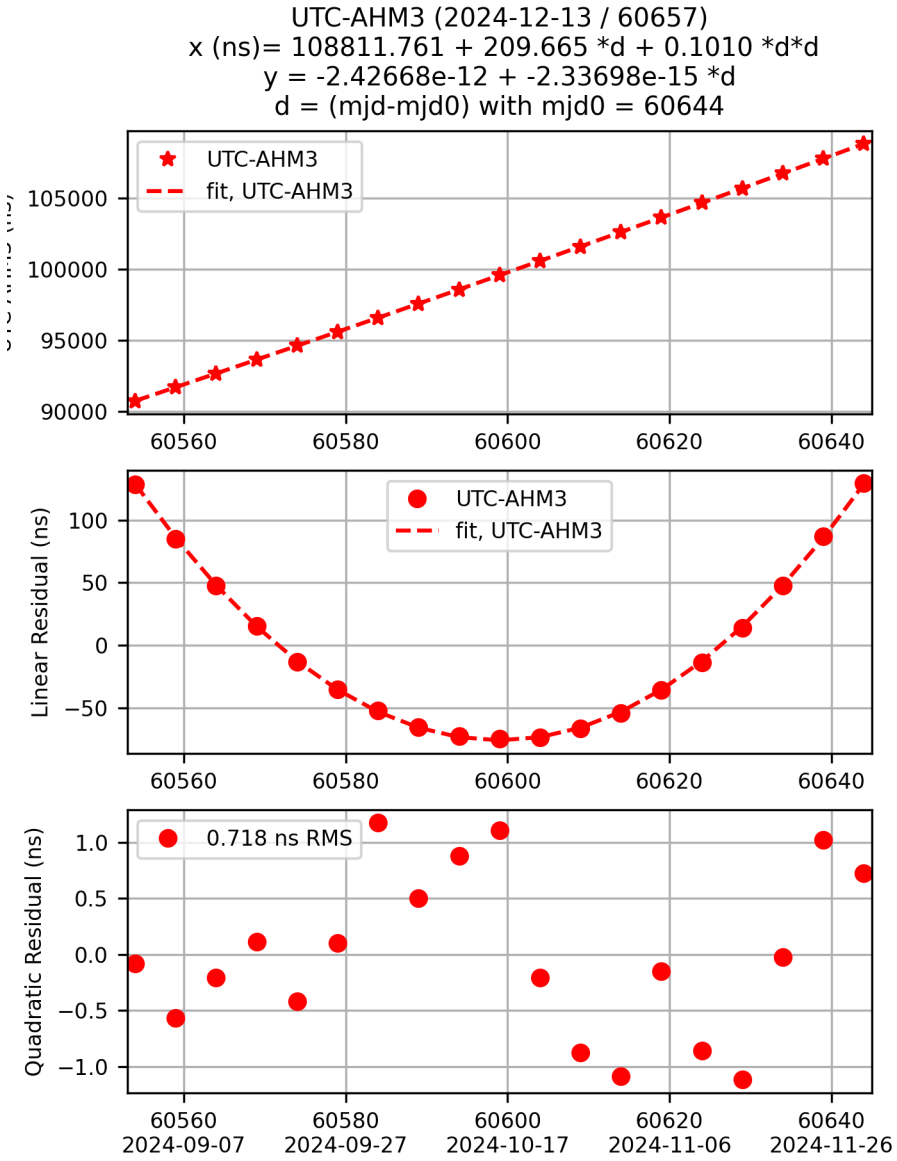
UTC - AHM2 Fit


UTC-AHM2 (2024-12-13 / 60657)
x (ns)= 14230.716 + 31.124 *d + 0.0355 *d*d
y = -3.60237e-13 + -8.21437e-16 *d
d = (mjd-mjd0) with mjd0 = 60644
UTC-AHM2
fit, UTC-AHM2
UTC-AHM2 (ns)
14000
13500
13000
12500
12000
60560
60580
60600
60620
60640
Linear Residual (ns)
40
20
0
−20
4.101 ns RMS
Quadratic Residual (ns)
5
0
−5
2024-09-07
2024-09-27
2024-10-17
2024-11-06
2024-11-26

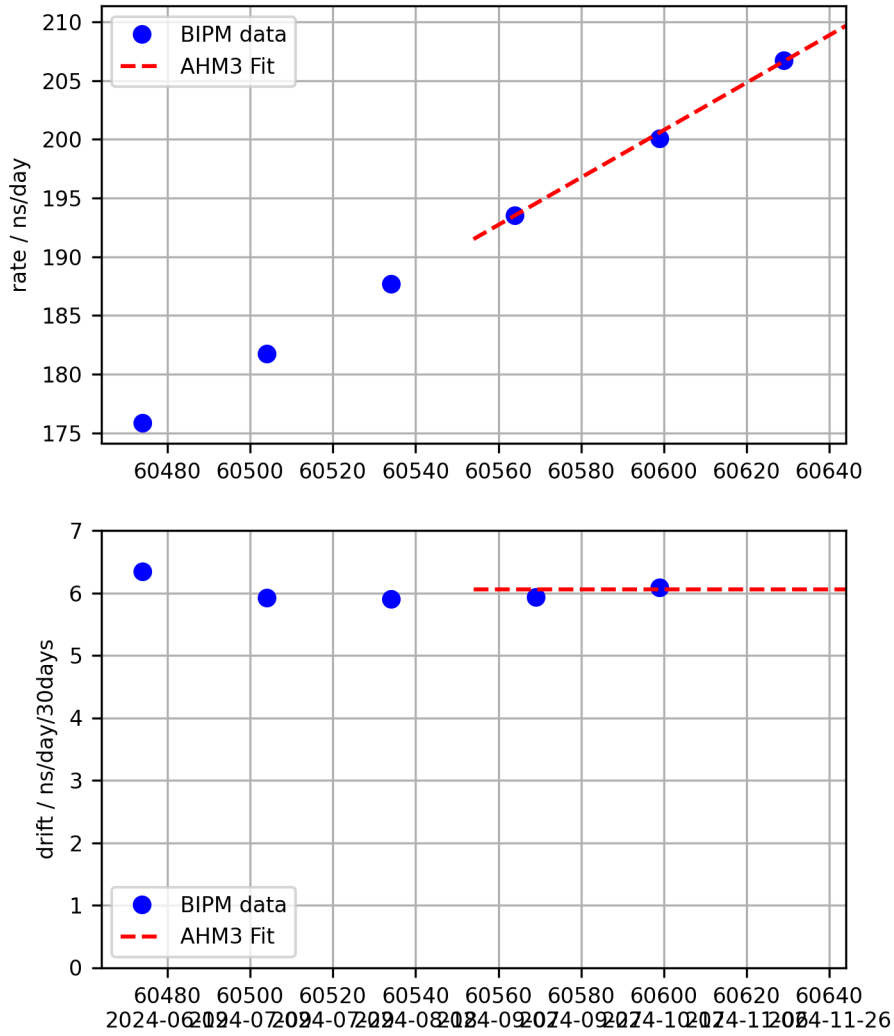
AHM2 Rate and Drift



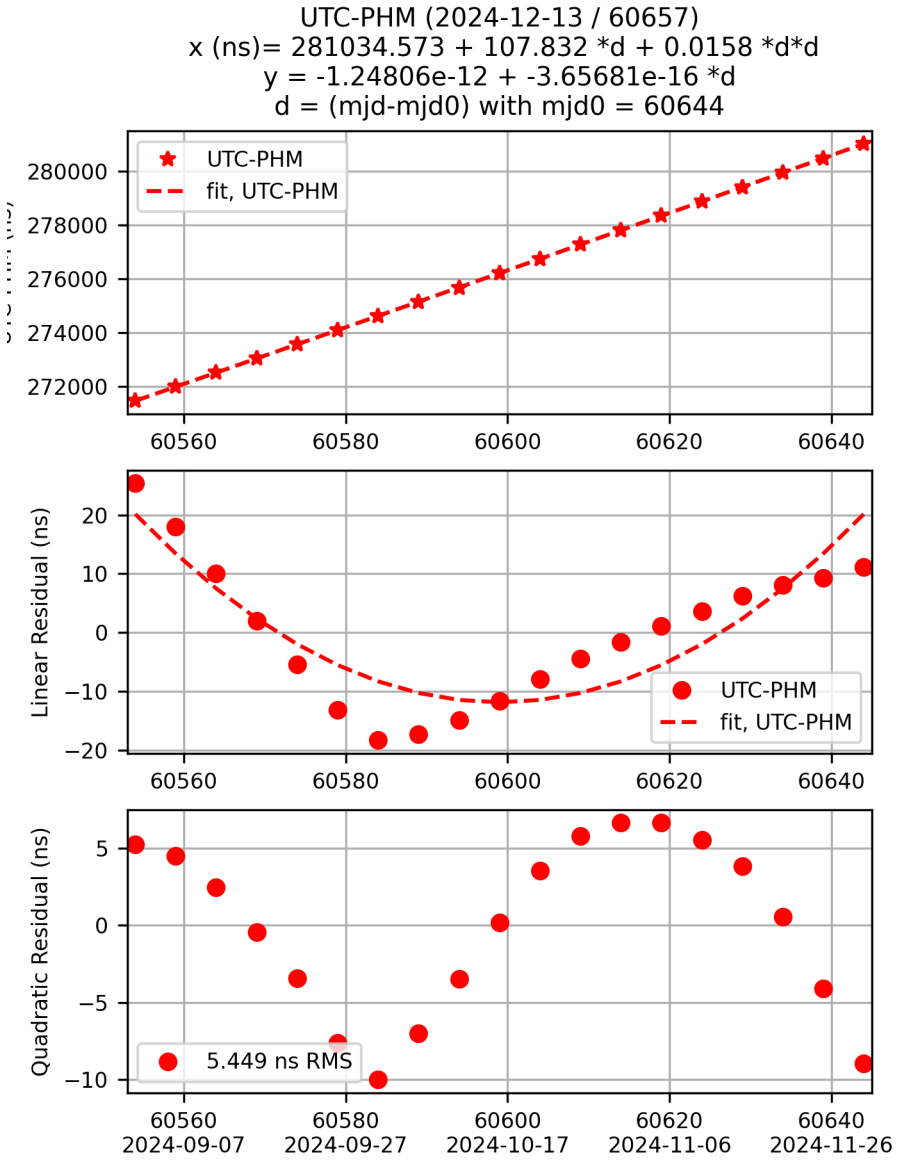
UTC - AHM3 Fit


UTC-AHM3 (2024-12-13 / 60657)
x (ns)= 108811.761 + 209.665 *d + 0.1010 *d*d
y = -2.42668e-12 + -2.33698e-15 *d
d = (mjd-mjd0) with mjd0 = 60644
UTC-AHM3
fit, UTC-AHM3
105000
100000
95000
90000
60560
60580
60600
60620
60640
Linear Residual (ns)
100
50
0
−50
0.718 ns RMS
Quadratic Residual (ns)
1.0
0.5
0.0
−0.5
−1.0
2024-09-07
2024-09-27
2024-10-17
2024-11-06
2024-11-26

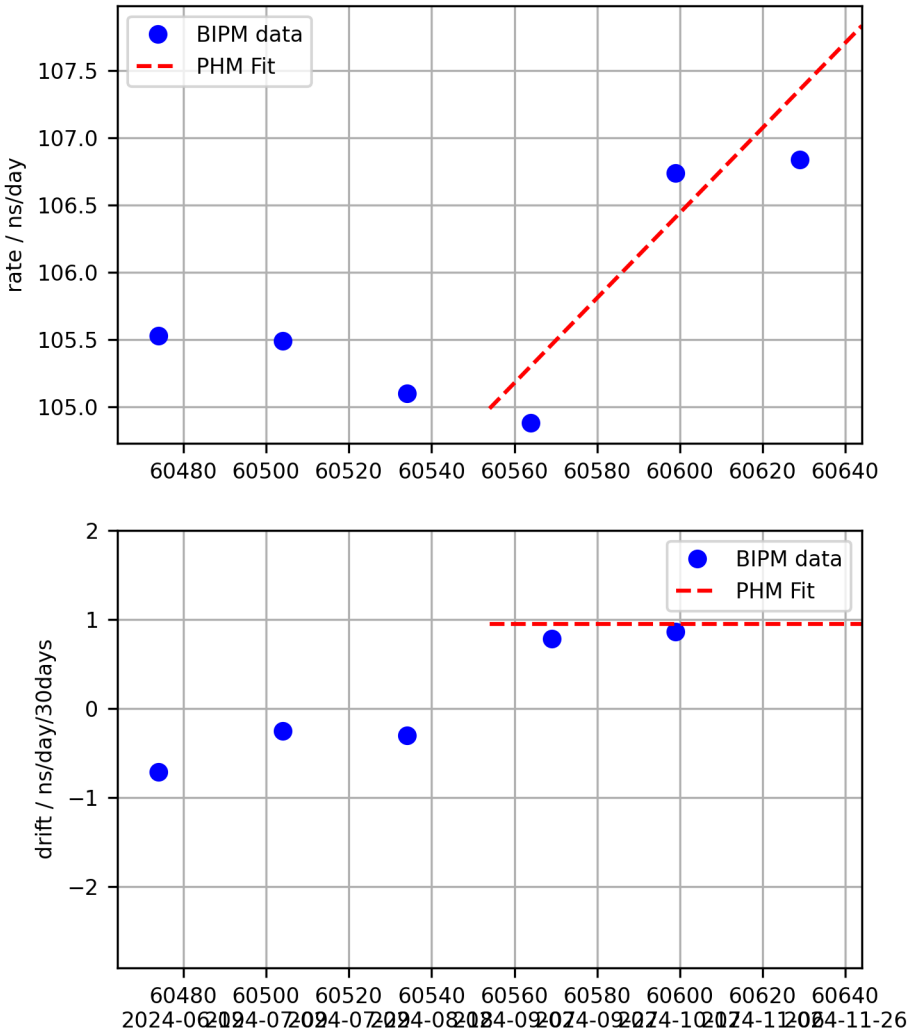
AHM3 Rate and Drift



UTC - PHM Fit

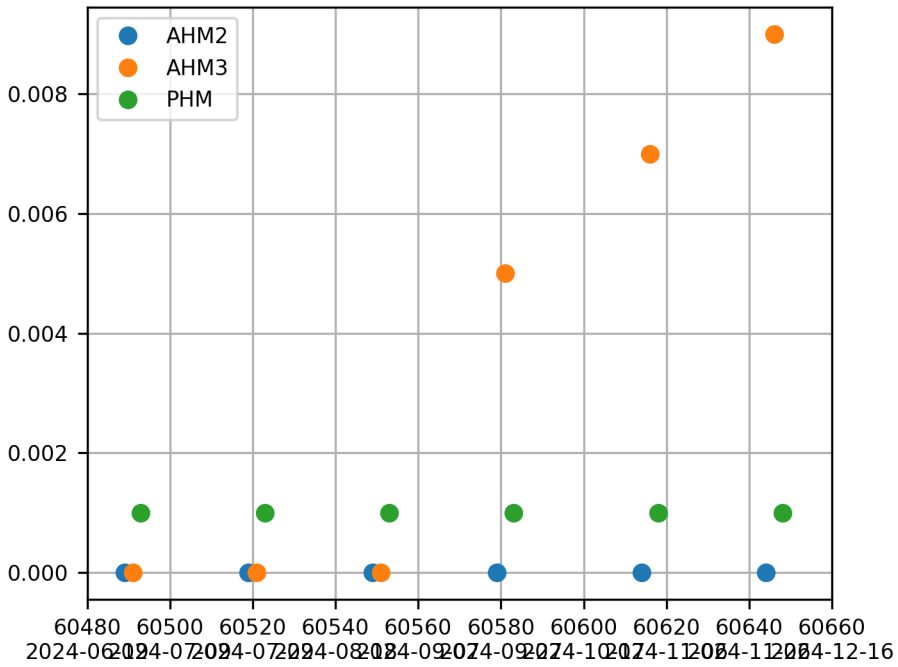

UTC-PHM (2024-12-13 / 60657)
x (ns)= 281034.573 + 107.832 *d + 0.0158 *d*d
y = -1.24806e-12 + -3.65681e-16 *d
d = (mjd-mjd0) with mjd0 = 60644
UTC-PHM
fit, UTC-PHM
280000
278000
276000
274000
272000
60560
60580
60600
60620
60640
Linear Residual (ns)
20
10
0
−10
−20
UTC-PHM
fit, UTC-PHM
Quadratic Residual (ns)
5
0
−5
−10
5.449 ns RMS
2024-09-07
2024-09-27
2024-10-17
2024-11-06
2024-11-26

PHM Rate and Drift



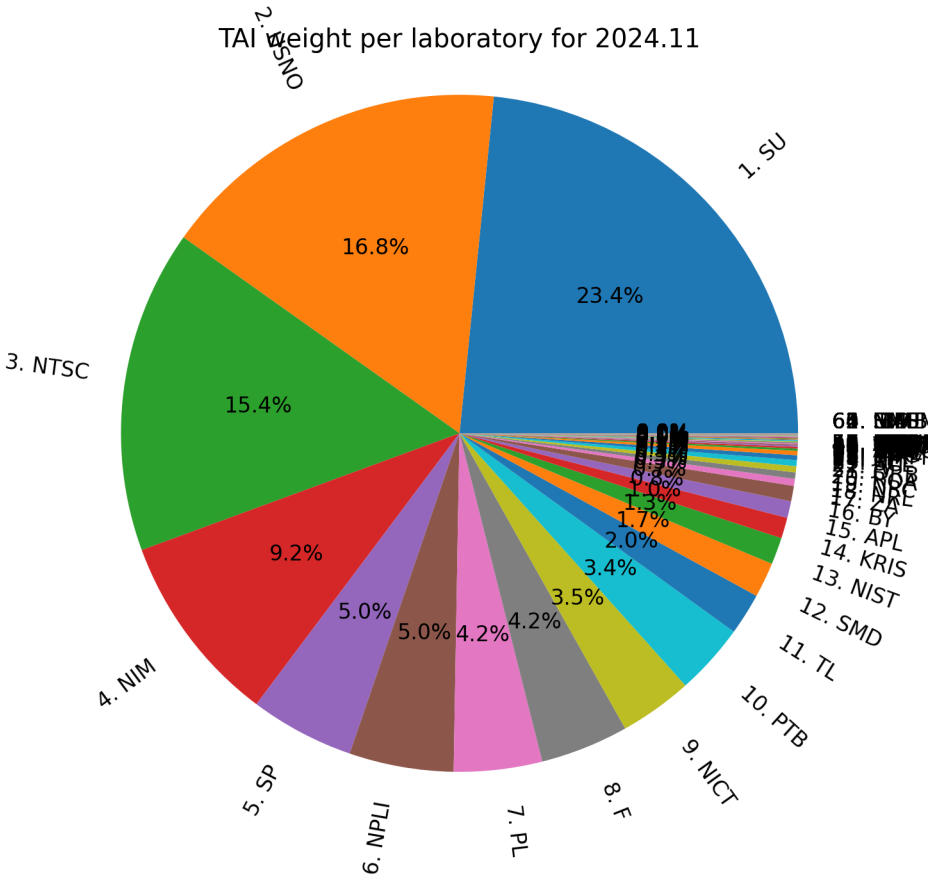
VTT MIKES Clock Weights

RELATIVE WEIGHTS (IN PERCENT) OF THE CLOCKS FOR INTERVALS OF ONE MONTH ENDING AT THE GIVEN DATES



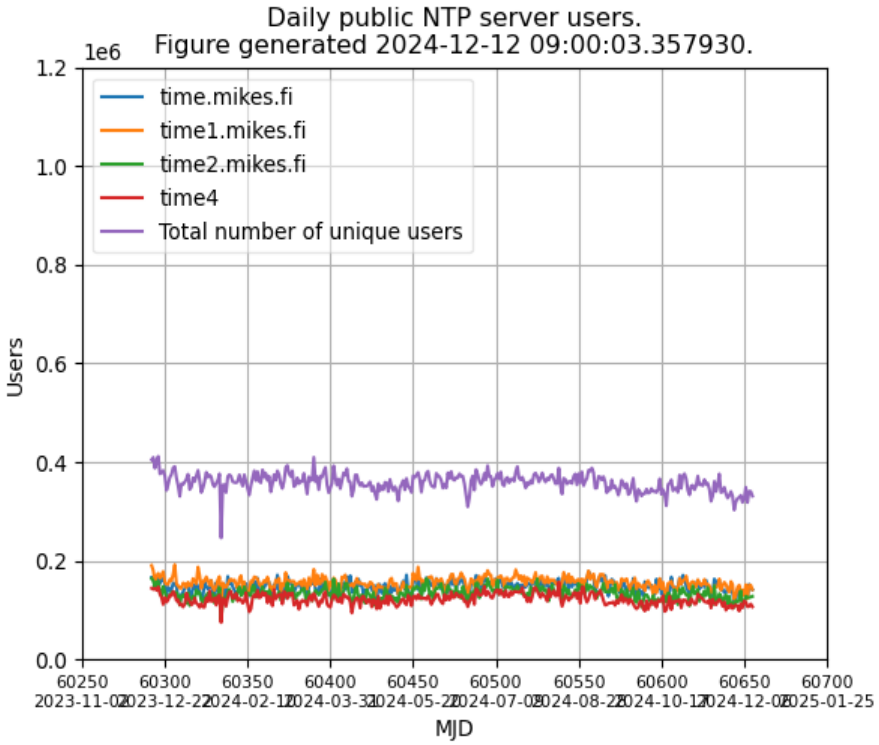
Clock Weights per Laboratory

Relative TAI Weight per laboratory



NTP Usage Statistics

Number of unique IPv4 addresses using our public NTP-servers.



End of Bulletin.