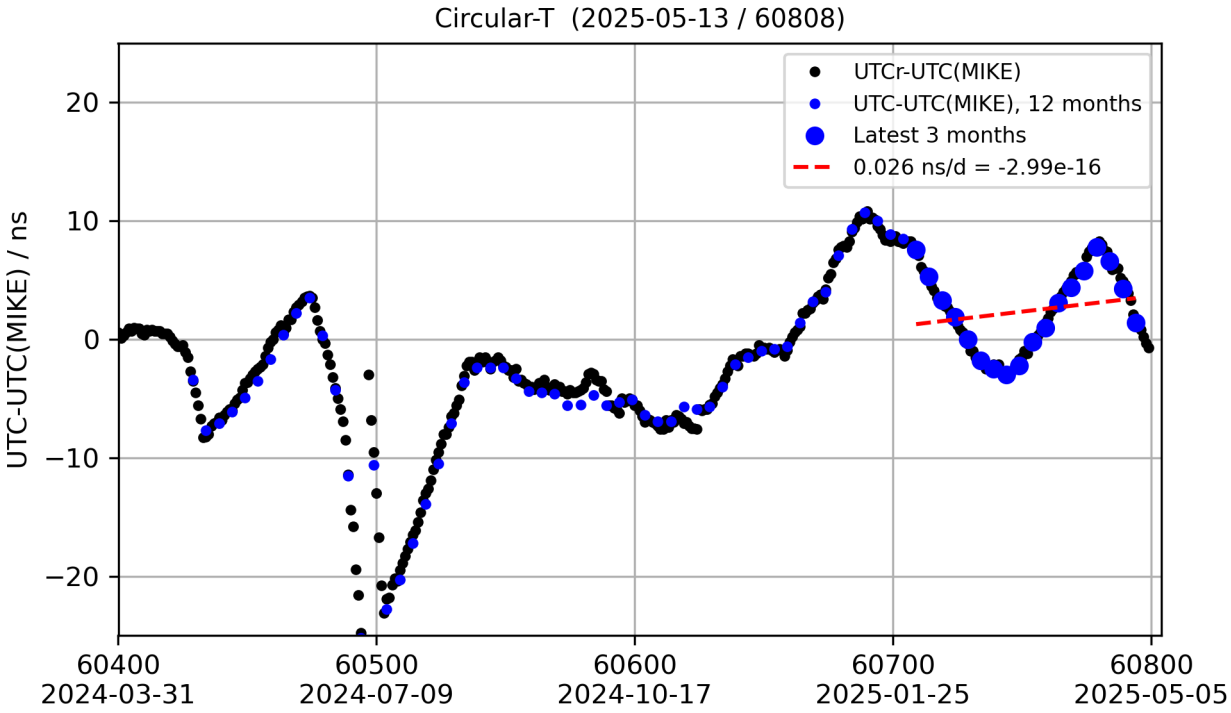
UTC(MIKE) Atomic Bulletin 2025-05

VTT MIKES Metrology monthly Time & Frequency bulletin.
Comments and questions to: time "at" vtt.fi
Date of publication: 2025-05-13 (60808)
Circular-T issues used for analysis: 446, 447, 448,
First day of analysis interval: 2025-02-03 (60709)
Last day of analysis interval: 2025-04-29 (60794)
ClockData for analysis: CDMI__25.02_, CDMI__25.03_, CDMI__25.04_,
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.

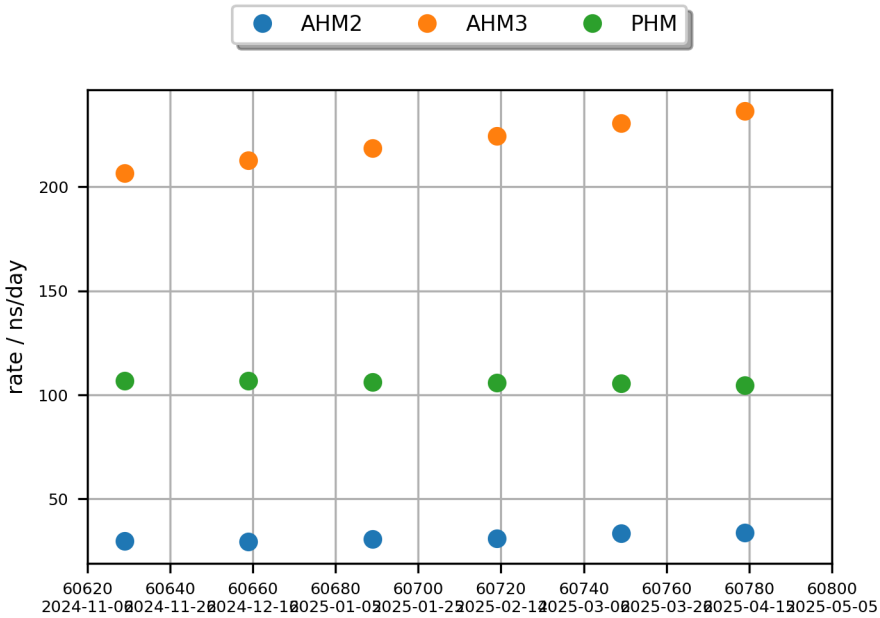
UTC-UTC(MIKE) as reported in Circular-T



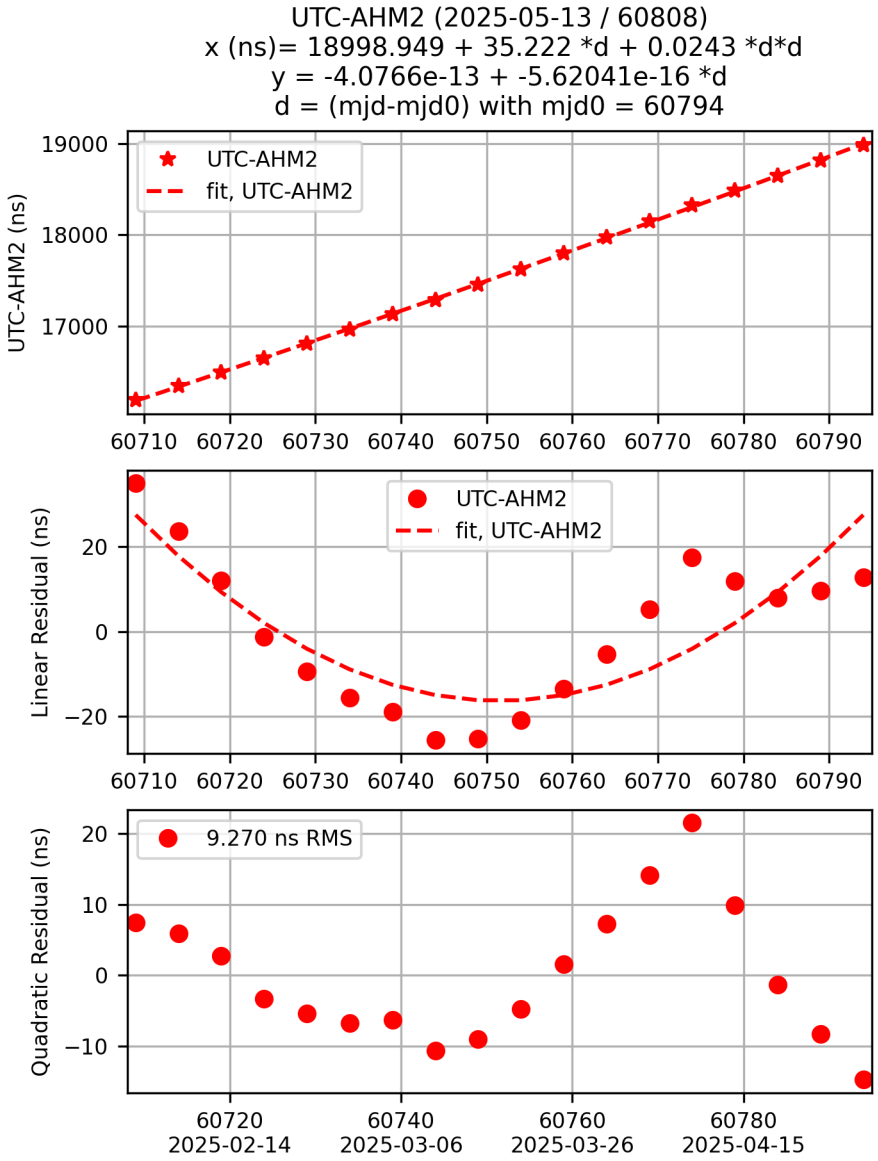
UTC-UTC(MIKE) is available on 5 day intervals on MJD dates ending with 4 or 9. Values are published monthly by the BIPM in Circular-T.

Clock Rates - Summary

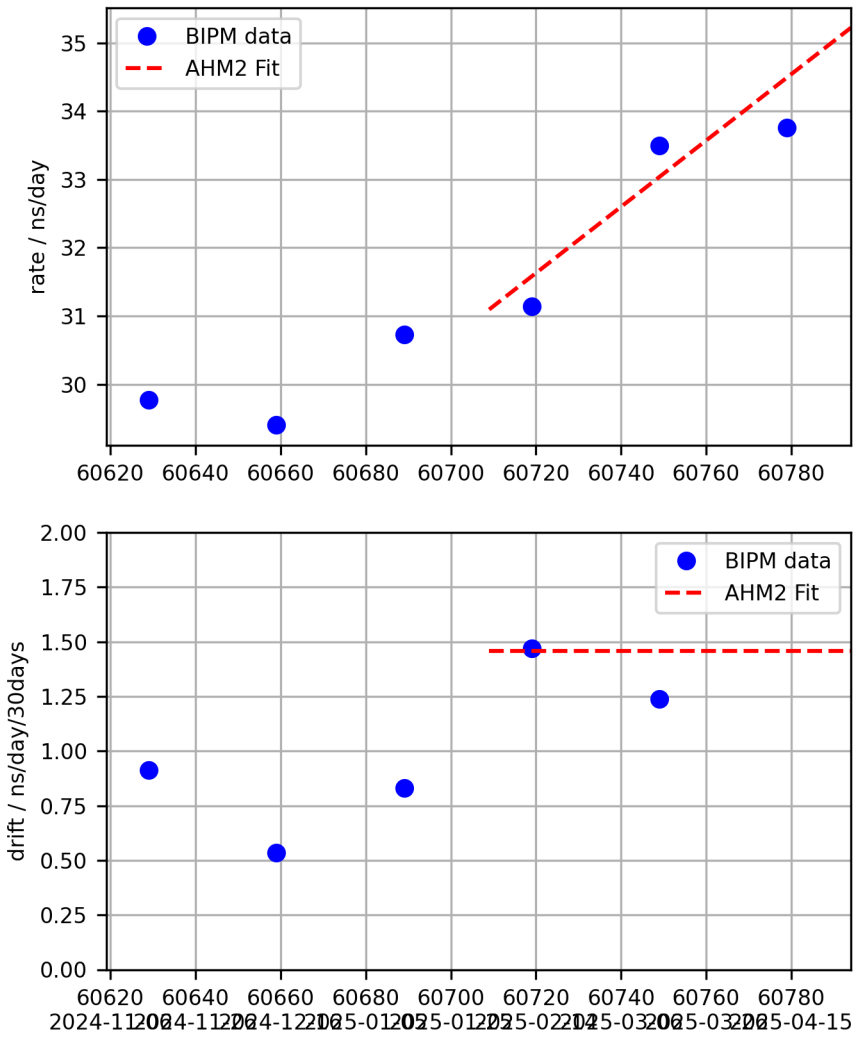
Clock rates as reported by the BIPM in the monthly r-report.



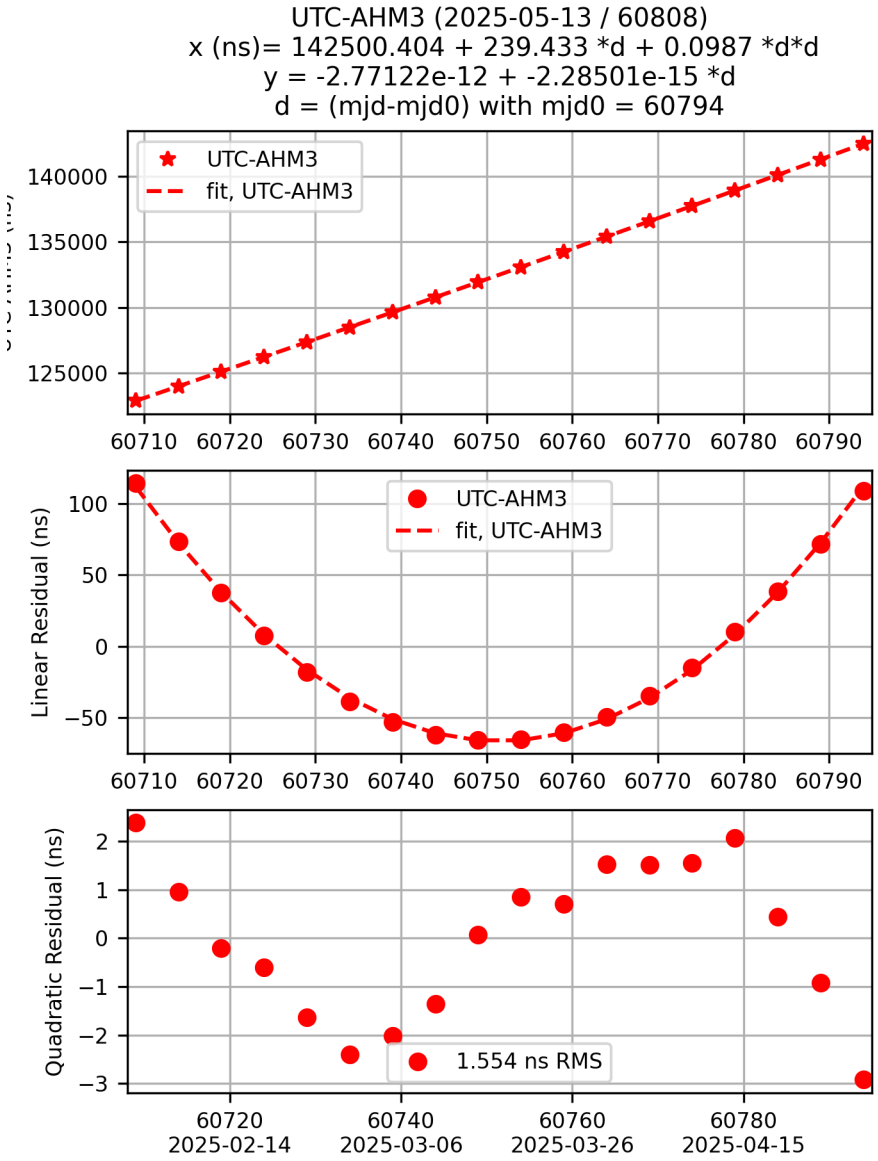
UTC - AHM2 Fit


UTC-AHM2 (2025-05-13 / 60808)
x (ns)= 18998.949 + 35.222 *d + 0.0243 *d*d
y = -4.0766e-13 + -5.62041e-16 *d
d = (mjd-mjd0) with mjd0 = 60794
UTC-AHM2 (ns)
UTC-AHM2
fit, UTC-AHM2
Linear Residual (ns)
Quadratic Residual (ns)
9.270 ns RMS
2025-02-14
2025-03-06
2025-03-26
2025-04-15

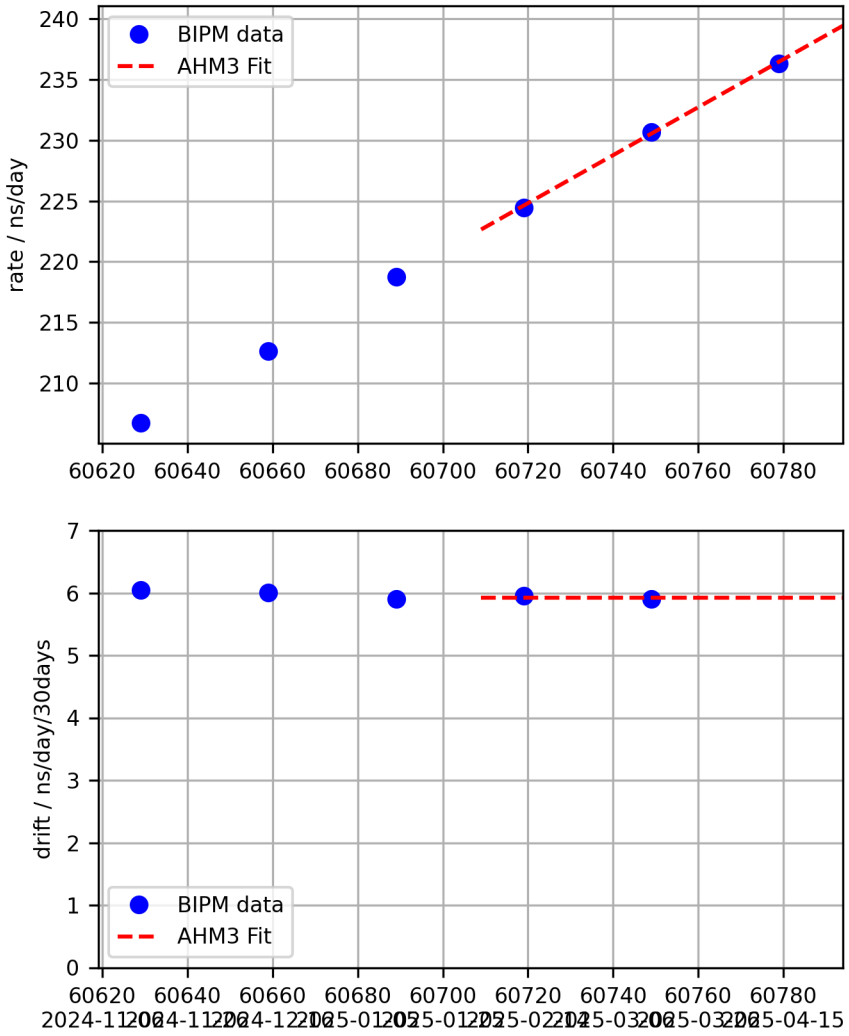
AHM2 Rate and Drift



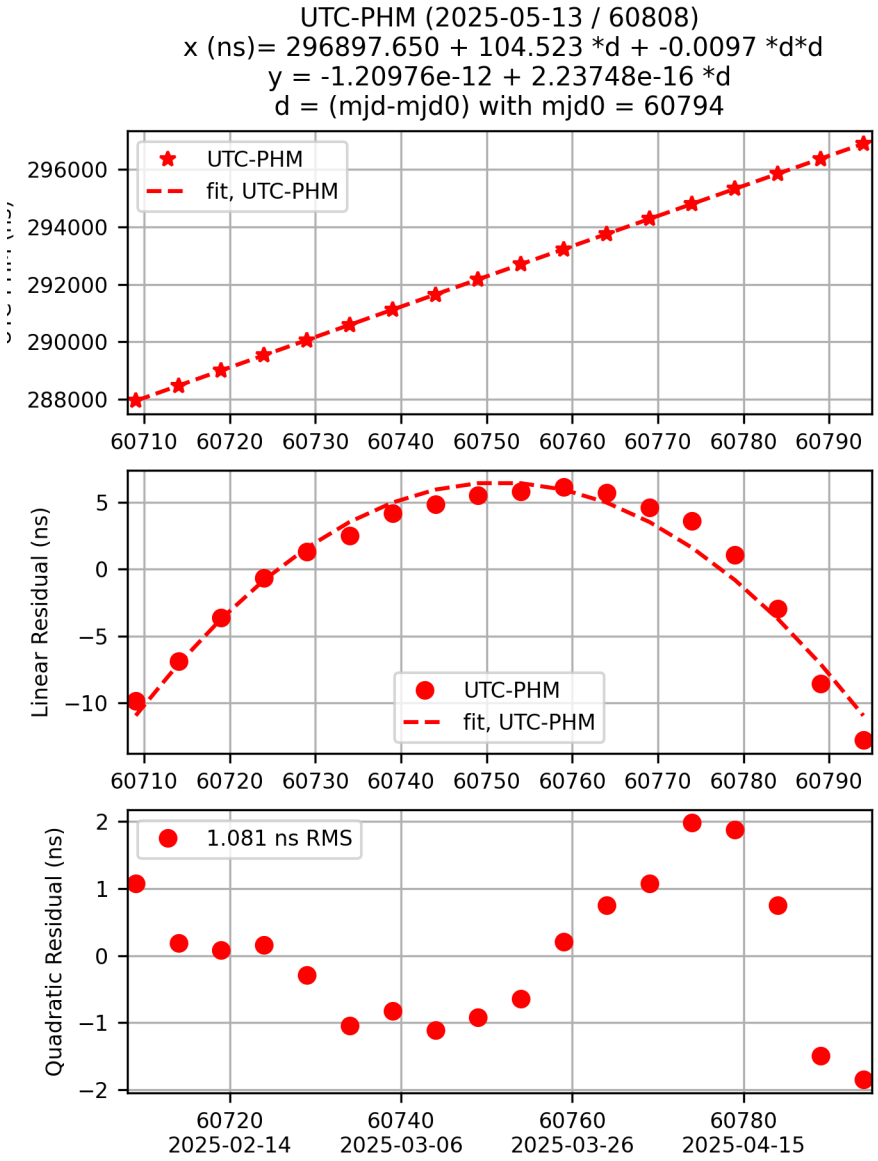
UTC - AHM3 Fit


UTC-AHM3 (2025-05-13 / 60808)
x (ns)= 142500.404 + 239.433 *d + 0.0987 *d*d
y = -2.77122e-12 + -2.28501e-15 *d
d = (mjd-mjd0) with mjd0 = 60794
UTC-AHM3
fit, UTC-AHM3
140000
135000
130000
125000
60710 60720 60730 60740 60750 60760 60770 60780 60790
Linear Residual (ns)
100
50
0
−50
Quadratic Residual (ns)
2
1
0
−1
−2
−3
1.554 ns RMS
60720
2025-02-14
60740
2025-03-06
60760
2025-03-26
60780
2025-04-15

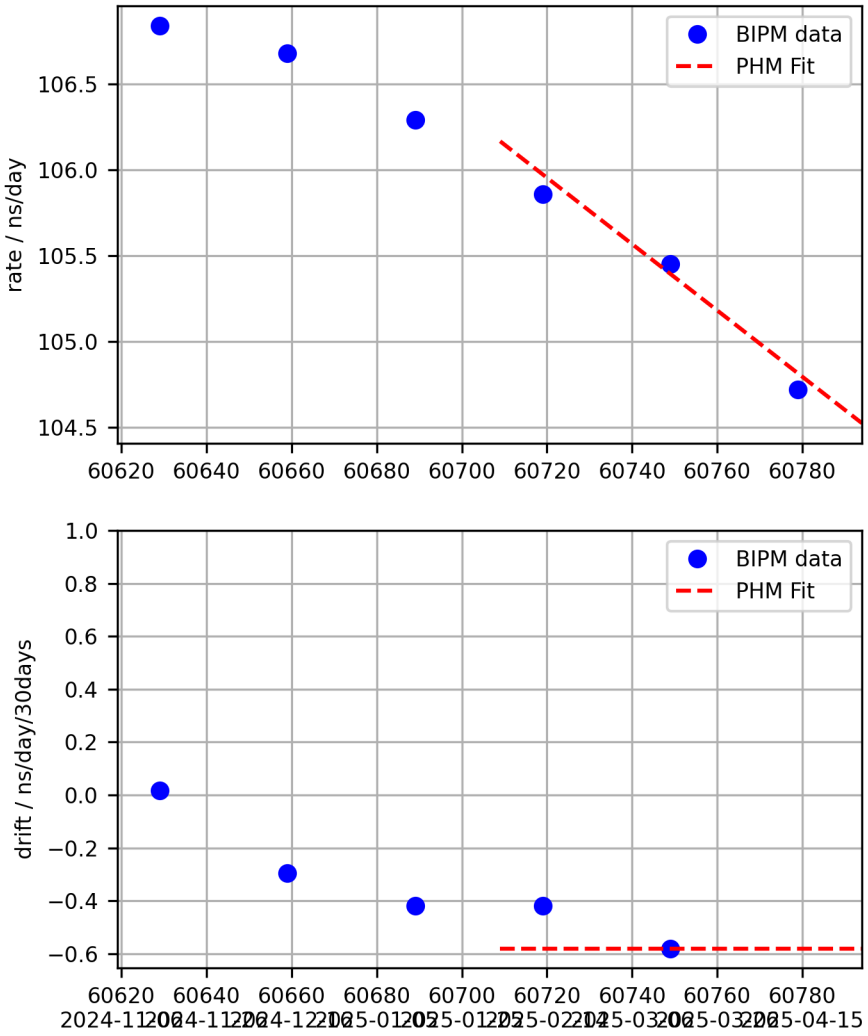
AHM3 Rate and Drift



UTC - PHM Fit

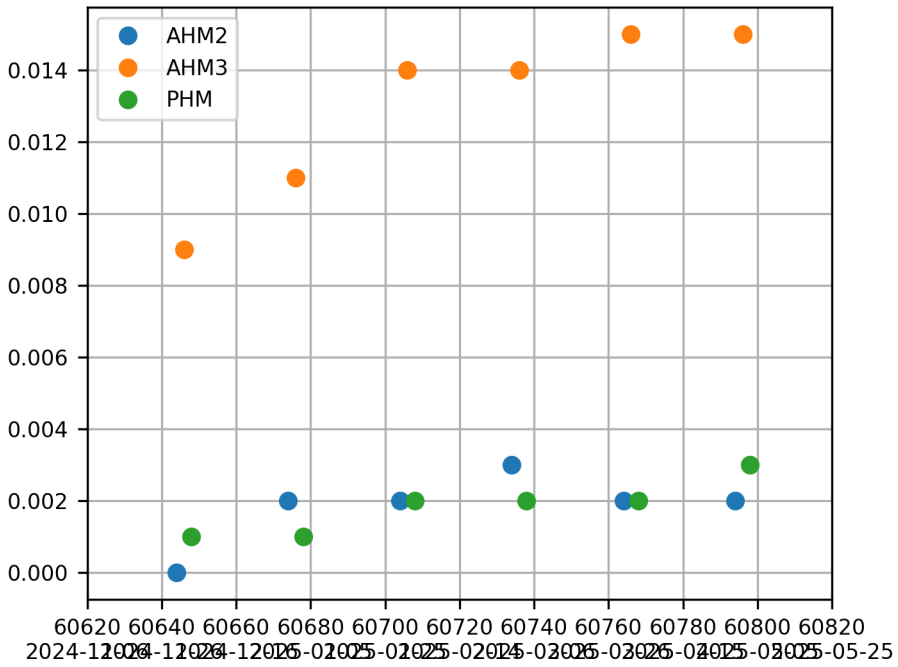

UTC-PHM (2025-05-13 / 60808)
x (ns)= 296897.650 + 104.523 *d + -0.0097 *d*d
y = -1.20976e-12 + 2.23748e-16 *d
d = (mjd-mjd0) with mjd0 = 60794
UTC-PHM
fit, UTC-PHM
296000
294000
292000
290000
288000
60710 60720 60730 60740 60750 60760 60770 60780 60790
Linear Residual (ns)
5
0
−5
−10
UTC-PHM
fit, UTC-PHM
60710 60720 60730 60740 60750 60760 60770 60780 60790
Quadratic Residual (ns)
1.081 ns RMS
2
1
0
−1
−2
60720
2025-02-14
60740
2025-03-06
60760
2025-03-26
60780
2025-04-15

PHM Rate and Drift



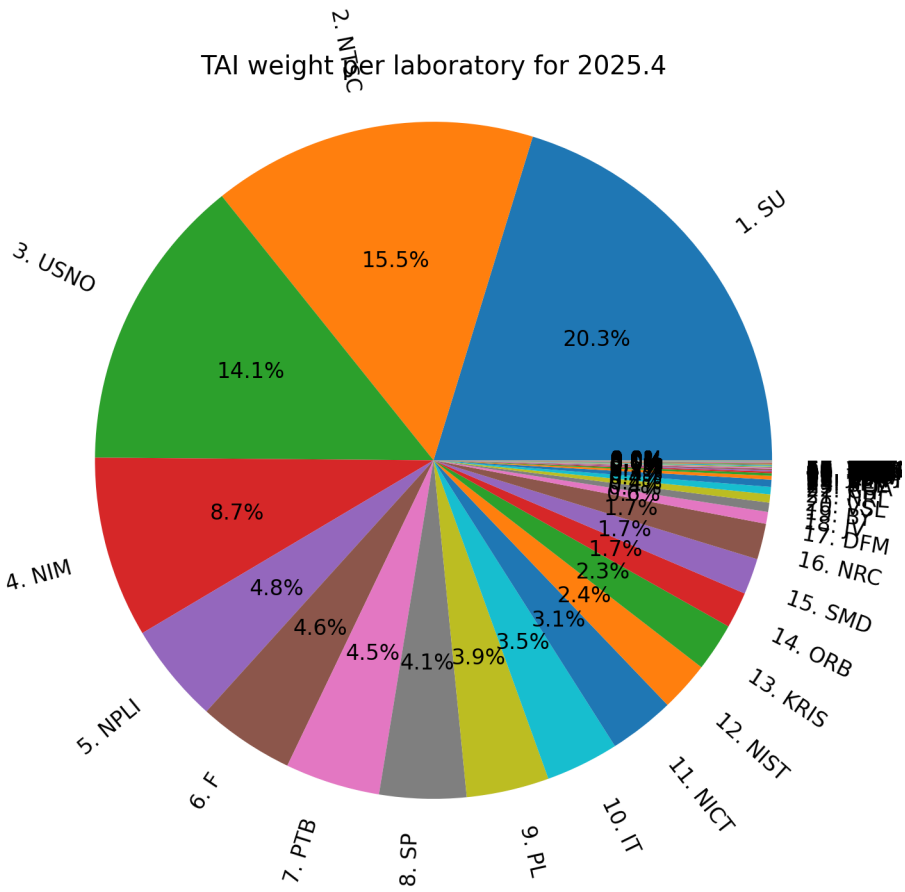
VTT MIKES Clock Weights

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

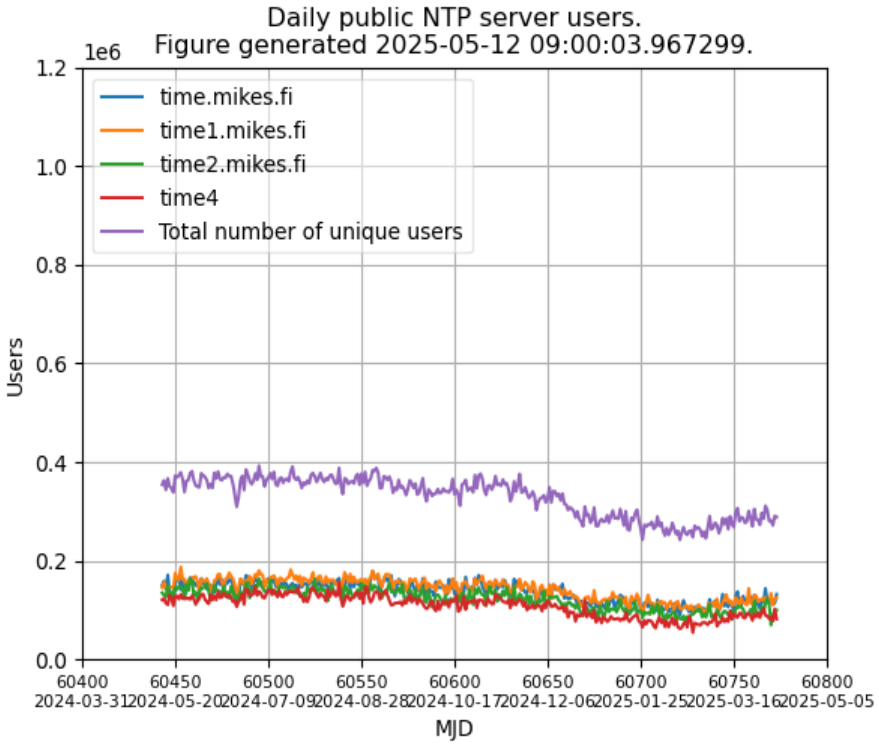


Weight-file for 2025.04
Number of clocks 410
Number of labs 66
Number of clock types 13
Sum of weights per lab 100.018, Sum of weights per clock type 100.018
Weight Clock Type
0.716 35 MICROSEMI 5071A HIGH PERFORMANCE TUBE.
62.051 40 UNSPECIFIED HYDROGEN MASER
0.052 36 MICROSEMI 5071A LOW/STANDARD PERFORMANCE TUBE
31.465 41 HYDROGEN MASER
0.000 18 MICROSEMI Cs 4000
0.009 37 OSCILLOQUARTZ OSA 3300
0.000 22 OSCILLOQUARTZ OSA 3230B/3235B
0.034 32 OSCILLOQUARTZ OSA 3300-SHP
0.000 44 Other clocks
0.044 42 Commercial Rubidium clock
0.005 38 Chengdu Spaceon Electronics Company TA1000
5.629 93 GROUND-STATE HYPERFINETRANSITION OF 87 Rb
0.013 92 GROUND-STATE HYPERFINE TRANSITION OF 133 Cs

Rank	Weight	Lab
1	20.266	SU
2	15.490	NTSC
3	14.126	USNO
4	8.653	NIM
5	4.778	NPLI
6	4.592	F
7	4.531	PTB
8	4.145	SP
9	3.944	PL
10	3.493	IT
11	3.143	NICT
12	2.387	NIST
13	2.305	KRIS
14	1.728	ORB
15	1.718	SMD
16	1.713	NRC
17	0.566	DFM
18	0.443	JV
19	0.390	BY
20	0.353	VSL
21	0.341	NRL
22	0.182	CH
23	0.125	ROA
24	0.077	SCL
25	0.068	TP
26	0.062	BEV
27	0.050	BIRM
28	0.035	ESA
29	0.034	TL
30	0.033	JATC
31	0.033	ONRJ
32	0.029	NPL
33	0.028	NAO
34	0.021	CAO
35	0.020	MIKE
36	0.012	IFAG
37	0.011	CNMP
38	0.011	UZ
39	0.011	ZA
40	0.010	AUS
41	0.010	INPL

NTP Usage Statistics

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



End of Bulletin.