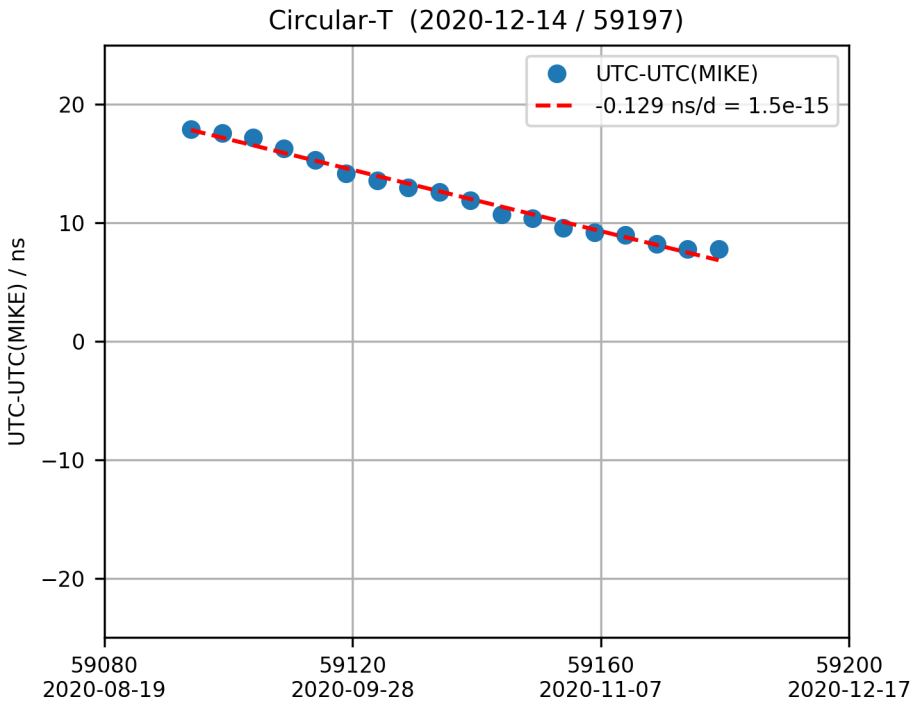
UTC(MIKE) Atomic Bulletin 2020-12

VTT MIKES Metrology monthly Time & Frequency bulletin.
Comments and questions to: time "at" vtt.fi
Date of publication: 2020-12-14 (59197)
Circular-T issues used for analysis: 393, 394, 395,
First day of analysis interval: 2020-09-02 (59094)
Last day of analysis interval: 2020-11-26 (59179)
ClockData for analysis: CDMI__20.09_, CDMI__20.10_, CDMI__20.11_,

Notes

58919 (2020-03-11) AB2020-03 comments: New 1PPS measurement system installed 2020-03-09. KAJA(CS2) WR-node had power-cut ca 2020-02-27.
58919 (2020-03-11) AB2020-03 comments: Following MI04/MI05 calibration with PTBM in Dec19-Jan20 Circular-T uncertainty now record low 2.7 ns. MI04 is used as main receiver for now.
58953 (2020-03-14) AB2020-04, set steering correction to zero.
58966 (2020-04-27) AHM1=MC 1PPS moved backwards ~20us.
59071 (2020-08-10) AB2020-08, add steering correction y_steer = 0.5*(+14ns/30d) = +2.7e-15
59082 (2020-08-21) AB2020-09, WR GM upgraded to FW 6.0, -100ns jump in WR timescale
59105 (2020-09-13) AB2020-10, Large temperature-swing down to +19.5C (from +22.25C) in clock room.
59165 (2020-11-12) Change of master clock to AHM2. y_steer set to zero.

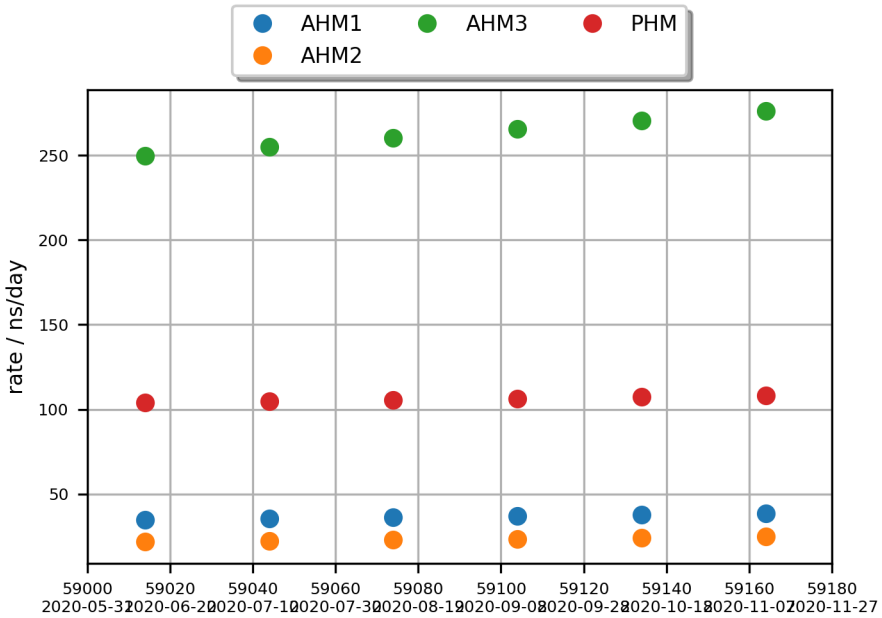
UTC-UTC(MIKE) as reported in Circular-T



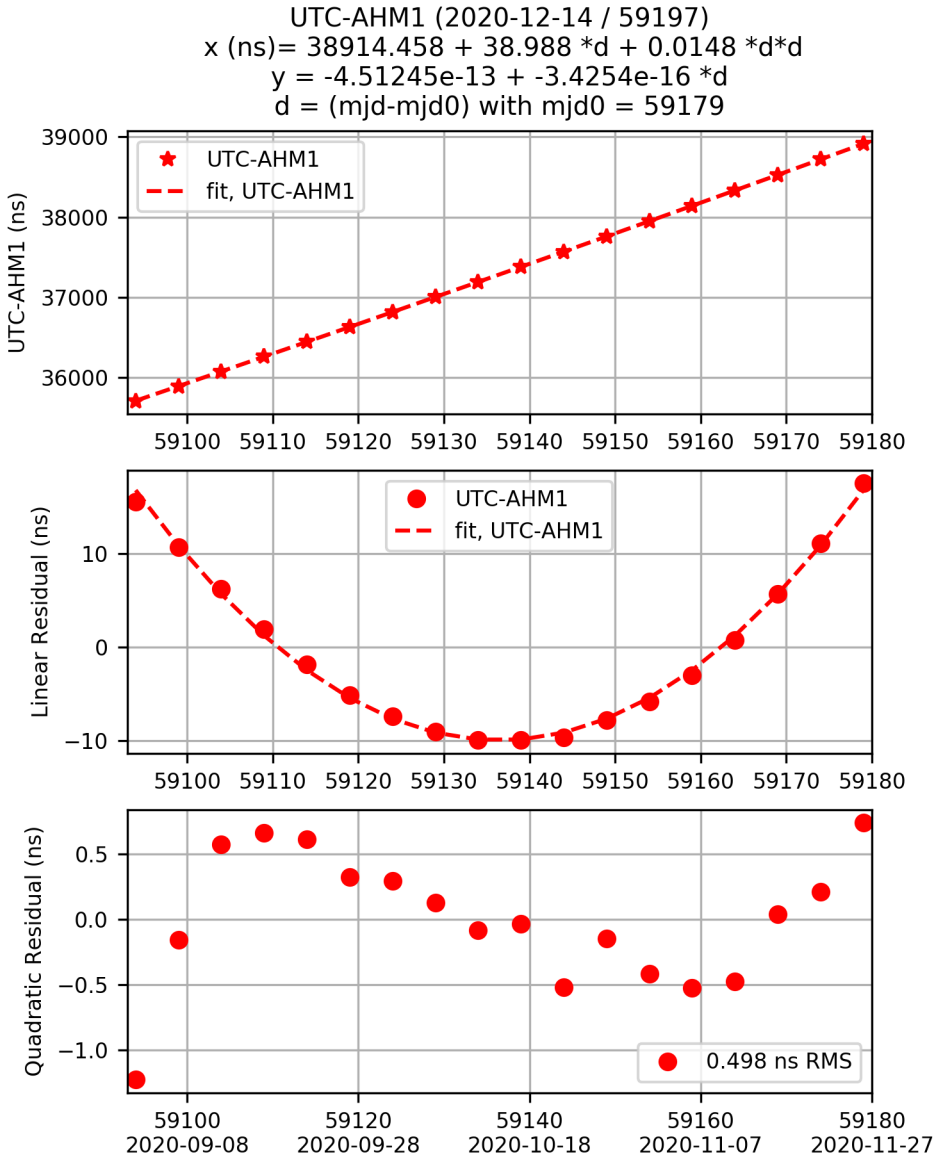
UTC-UTC(MIKE) is available on 5 day intervals on MJD dates ending with 4 or 9. Values are published monthly by the BIPM in Circular-T.

Clock Rates - Summary

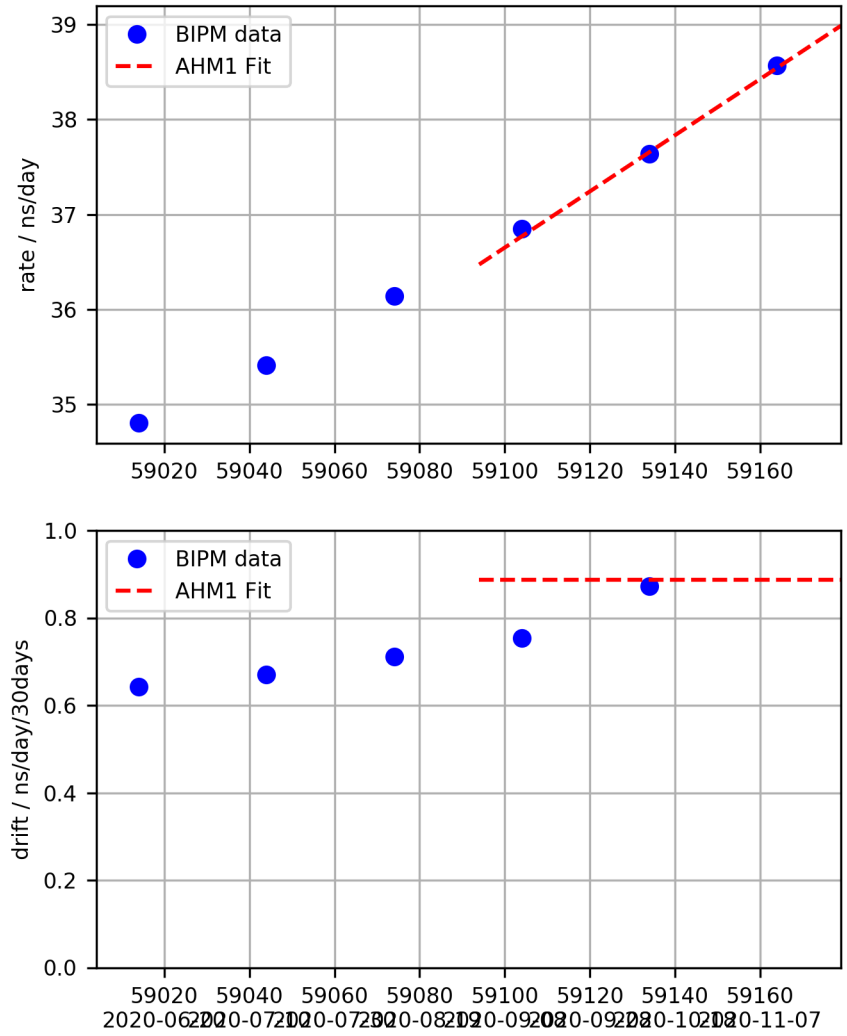
Clock rates as reported by the BIPM in the monthly r-report.



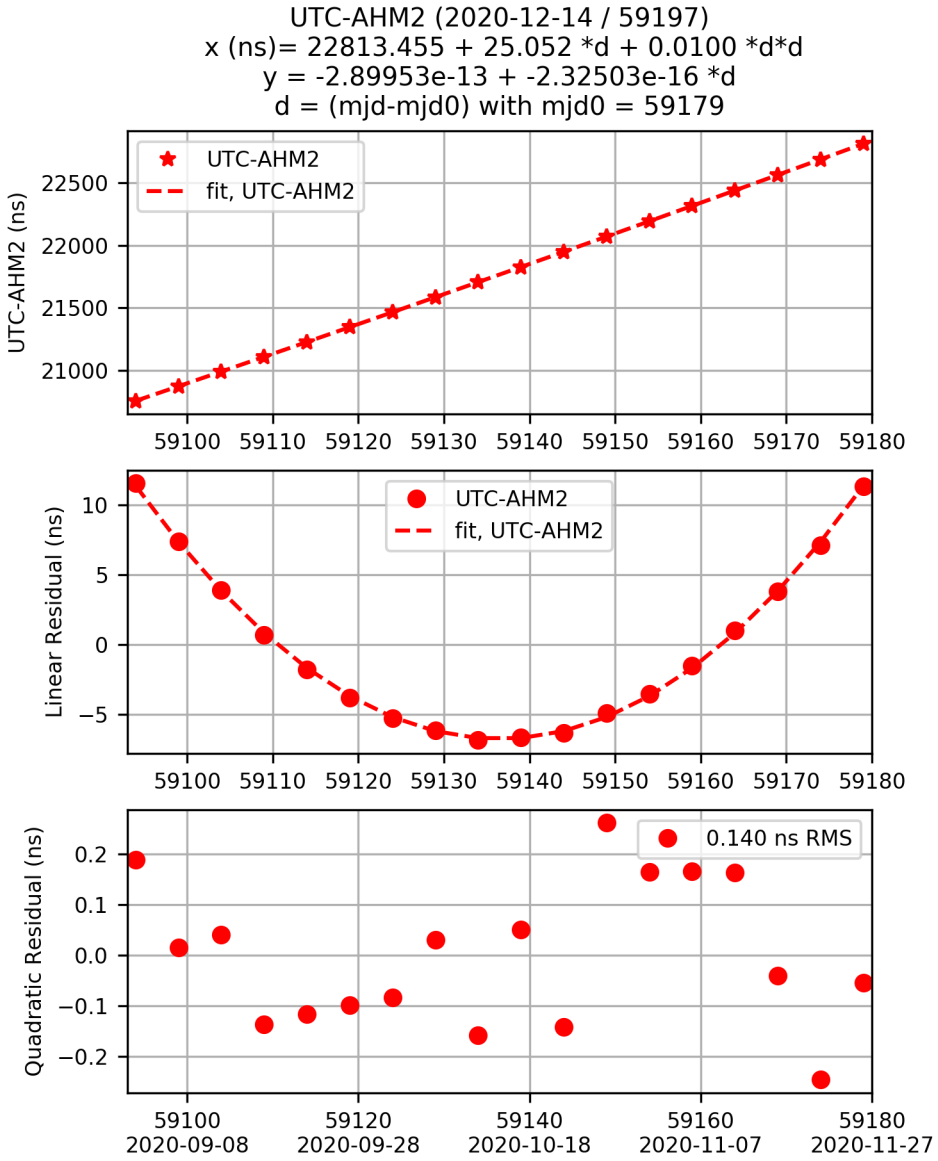
UTC - AHM1 Fit


UTC-AHM1 (2020-12-14 / 59197)
x (ns)= 38914.458 + 38.988 *d + 0.0148 *d*d
y = -4.51245e-13 + -3.4254e-16 *d
d = (mjd-mjd0) with mjd0 = 59179
UTC-AHM1 (ns)
UTC-AHM1
fit, UTC-AHM1
Linear Residual (ns)
Quadratic Residual (ns)
0.498 ns RMS
2020-09-08
2020-09-28
2020-10-18
2020-11-07
2020-11-27

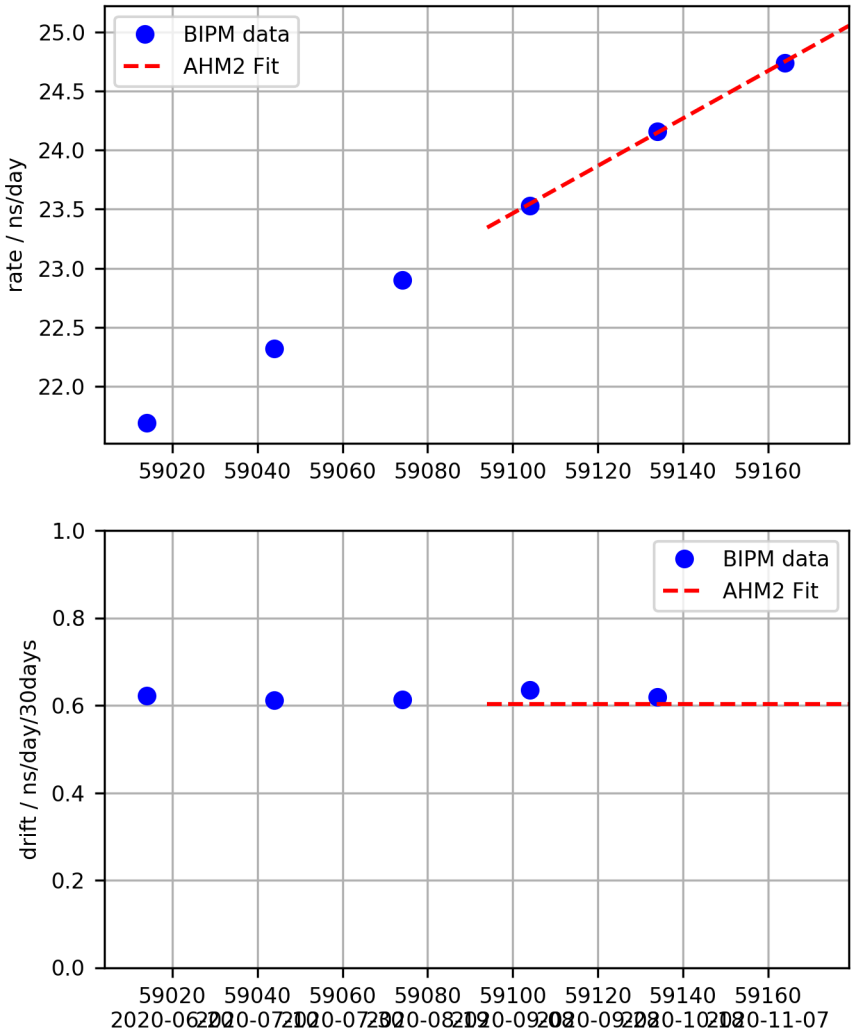
AHM1 Rate and Drift



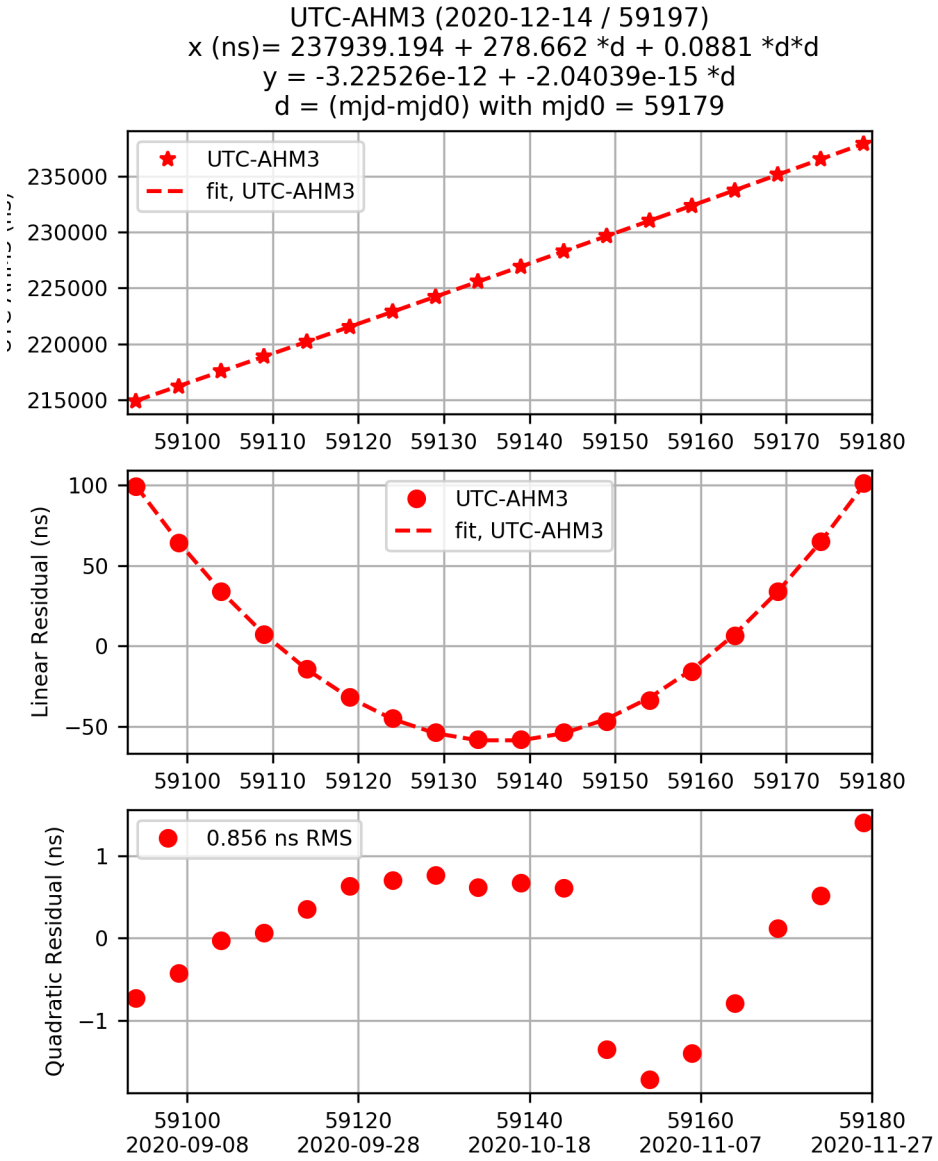
UTC - AHM2 Fit


UTC-AHM2 (2020-12-14 / 59197)
x (ns)= 22813.455 + 25.052 *d + 0.0100 *d*d
y = -2.89953e-13 + -2.32503e-16 *d
d = (mjd-mjd0) with mjd0 = 59179
UTC-AHM2
fit, UTC-AHM2
UTC-AHM2 (ns)
22500
22000
21500
21000
59100 59110 59120 59130 59140 59150 59160 59170 59180
UTC-AHM2
fit, UTC-AHM2
Linear Residual (ns)
10
5
0
−5
59100 59110 59120 59130 59140 59150 59160 59170 59180
0.140 ns RMS
Quadratic Residual (ns)
0.2
0.1
0.0
−0.1
−0.2
59100
2020-09-08
59120
2020-09-28
59140
2020-10-18
59160
2020-11-07
59180
2020-11-27

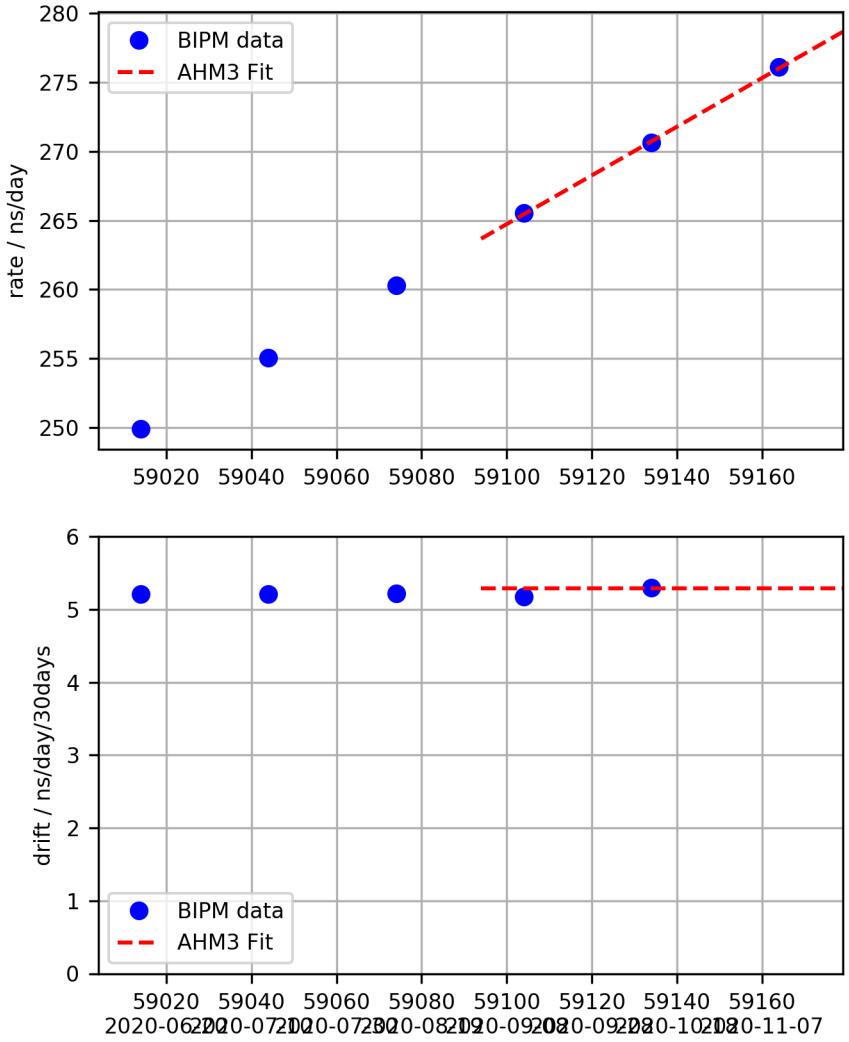
AHM2 Rate and Drift



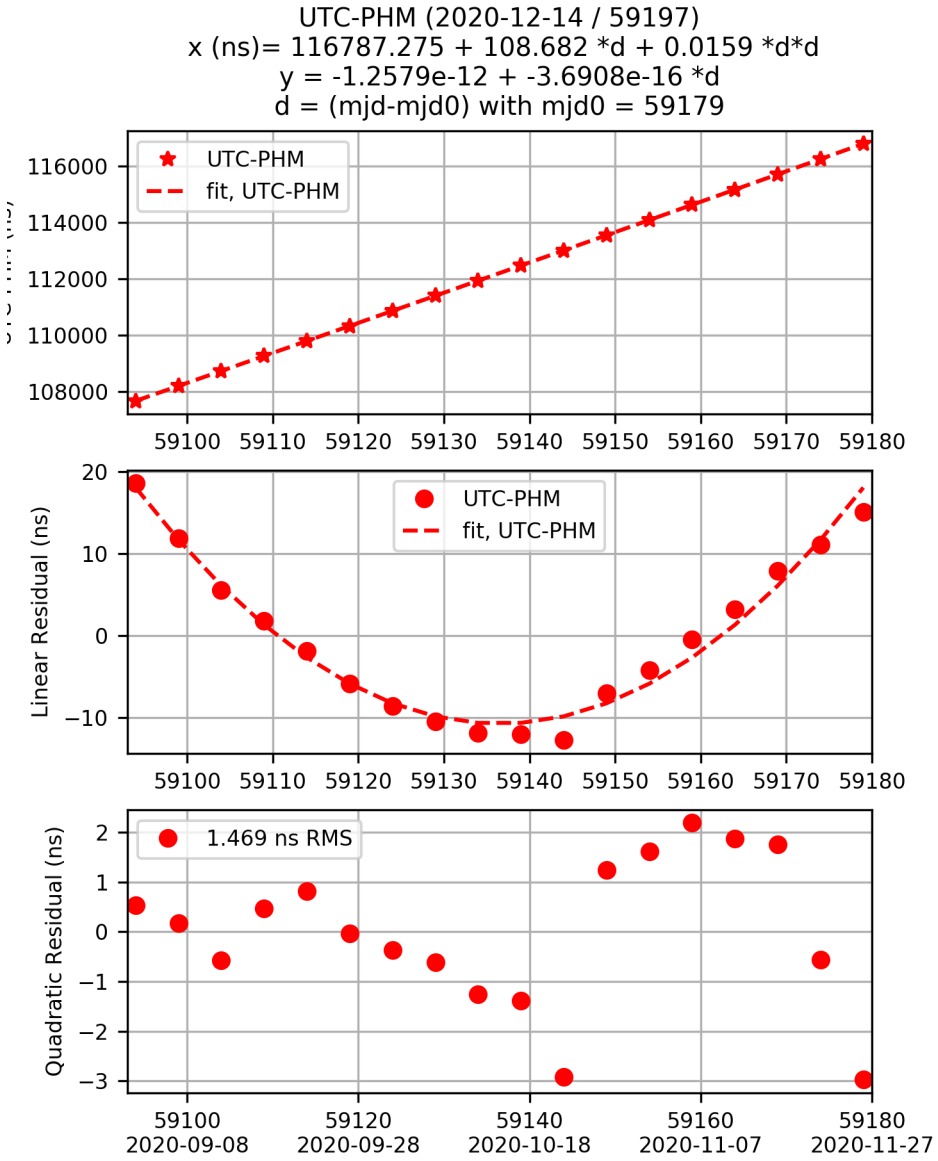
UTC - AHM3 Fit


UTC-AHM3 (2020-12-14 / 59197)
x (ns)= 237939.194 + 278.662 *d + 0.0881 *d*d
y = -3.22526e-12 + -2.04039e-15 *d
d = (mjd-mjd0) with mjd0 = 59179
UTC-AHM3
fit, UTC-AHM3
235000
230000
225000
220000
215000
59100 59110 59120 59130 59140 59150 59160 59170 59180
Linear Residual (ns)
100
50
0
−50
0.856 ns RMS
Quadratic Residual (ns)
1
0
−1
59100
2020-09-08
59120
2020-09-28
59140
2020-10-18
59160
2020-11-07
59180
2020-11-27

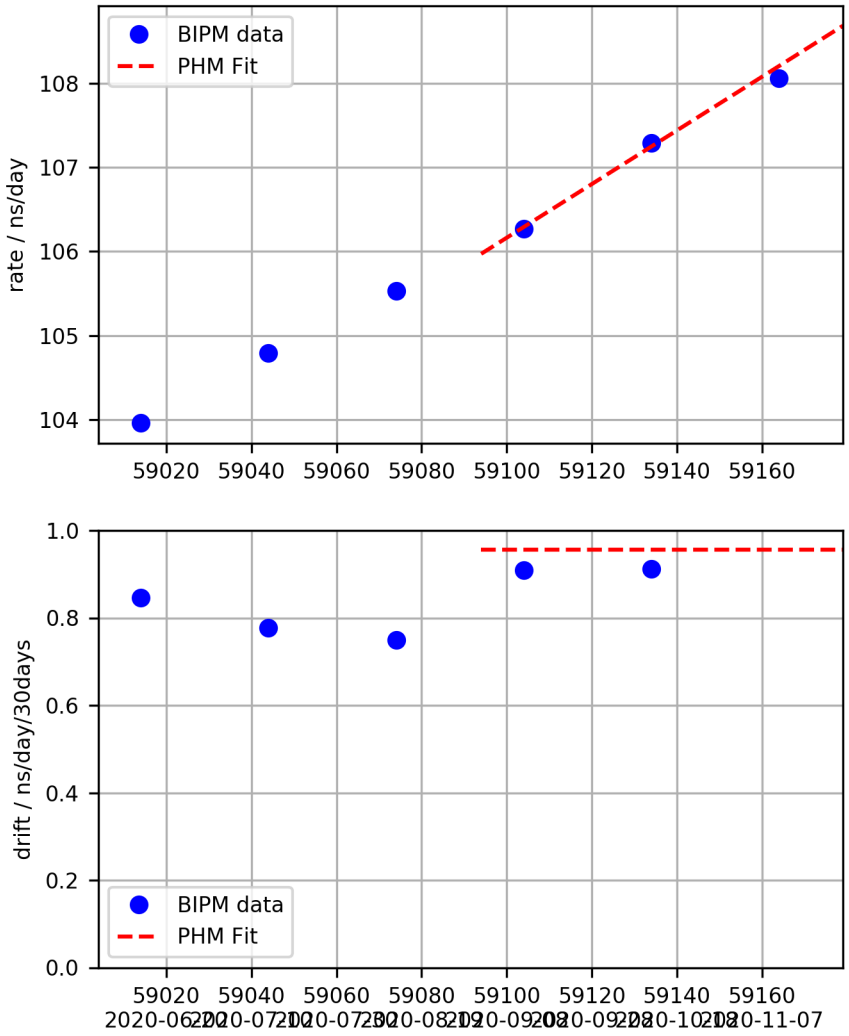
AHM3 Rate and Drift



UTC - PHM Fit

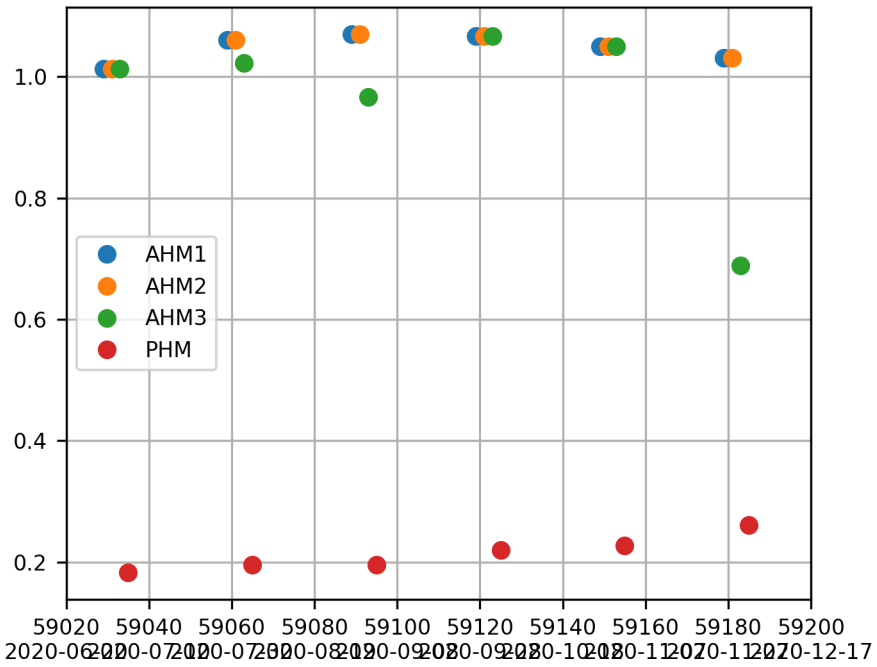

UTC-PHM (2020-12-14 / 59197)
x (ns)= 116787.275 + 108.682 *d + 0.0159 *d*d
y = -1.2579e-12 + -3.6908e-16 *d
d = (mjd-mjd0) with mjd0 = 59179
UTC-PHM
fit, UTC-PHM
116000
114000
112000
110000
108000
59100 59110 59120 59130 59140 59150 59160 59170 59180
Linear Residual (ns)
20
10
0
−10
1.469 ns RMS
Quadratic Residual (ns)
2
1
0
−1
−2
−3
59100
2020-09-08
59120
2020-09-28
59140
2020-10-18
59160
2020-11-07
59180
2020-11-27

PHM Rate and Drift

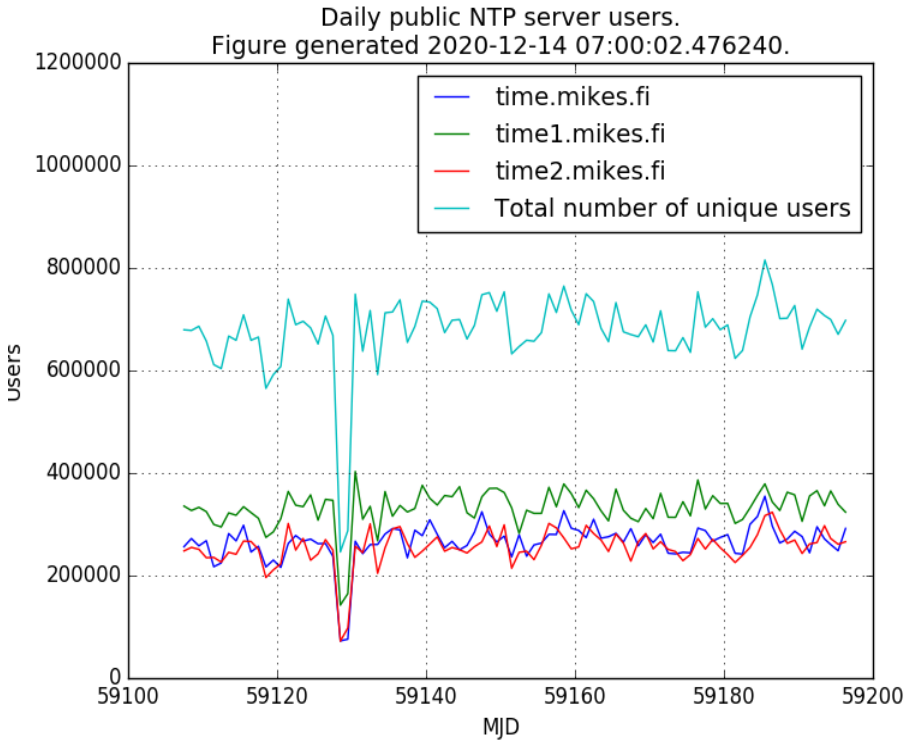


Clock Weights

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

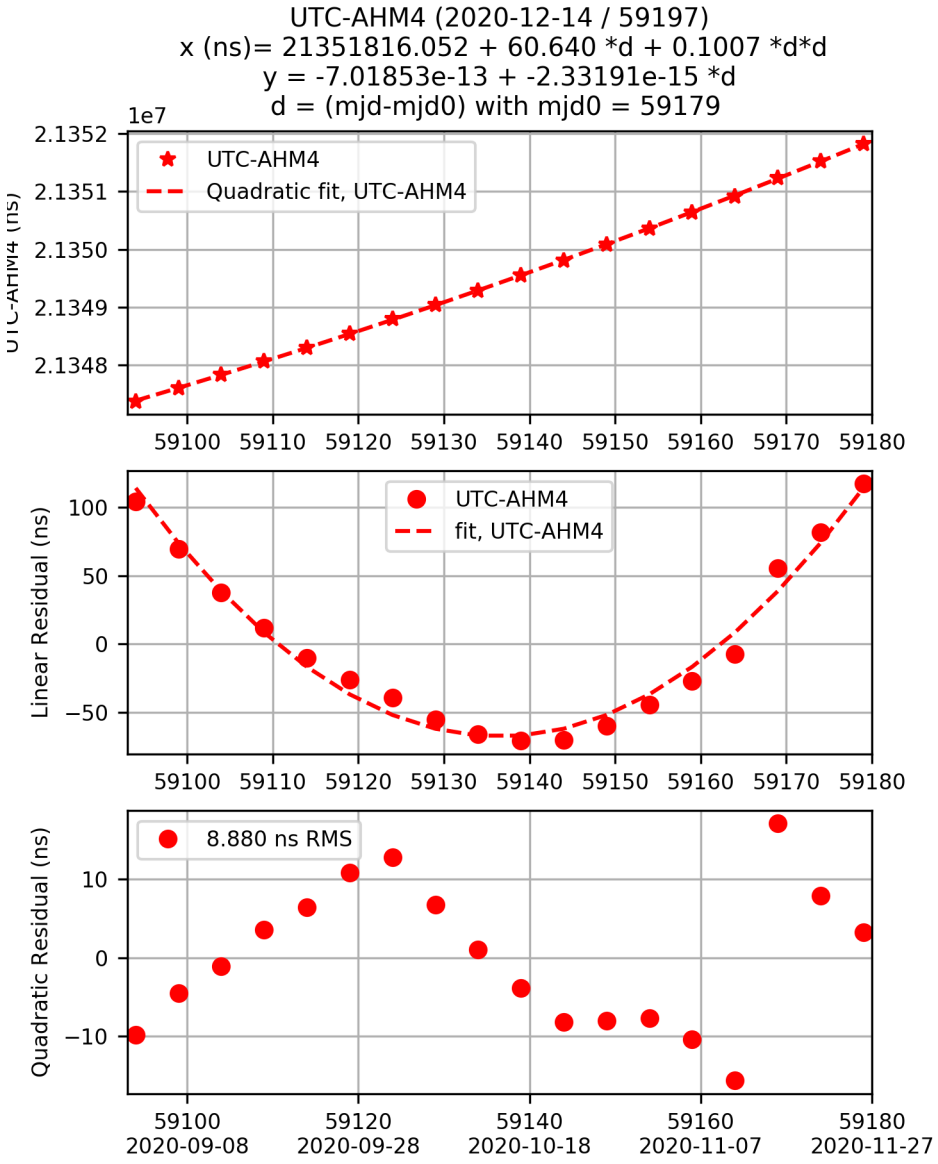


NTP Usage Statistics

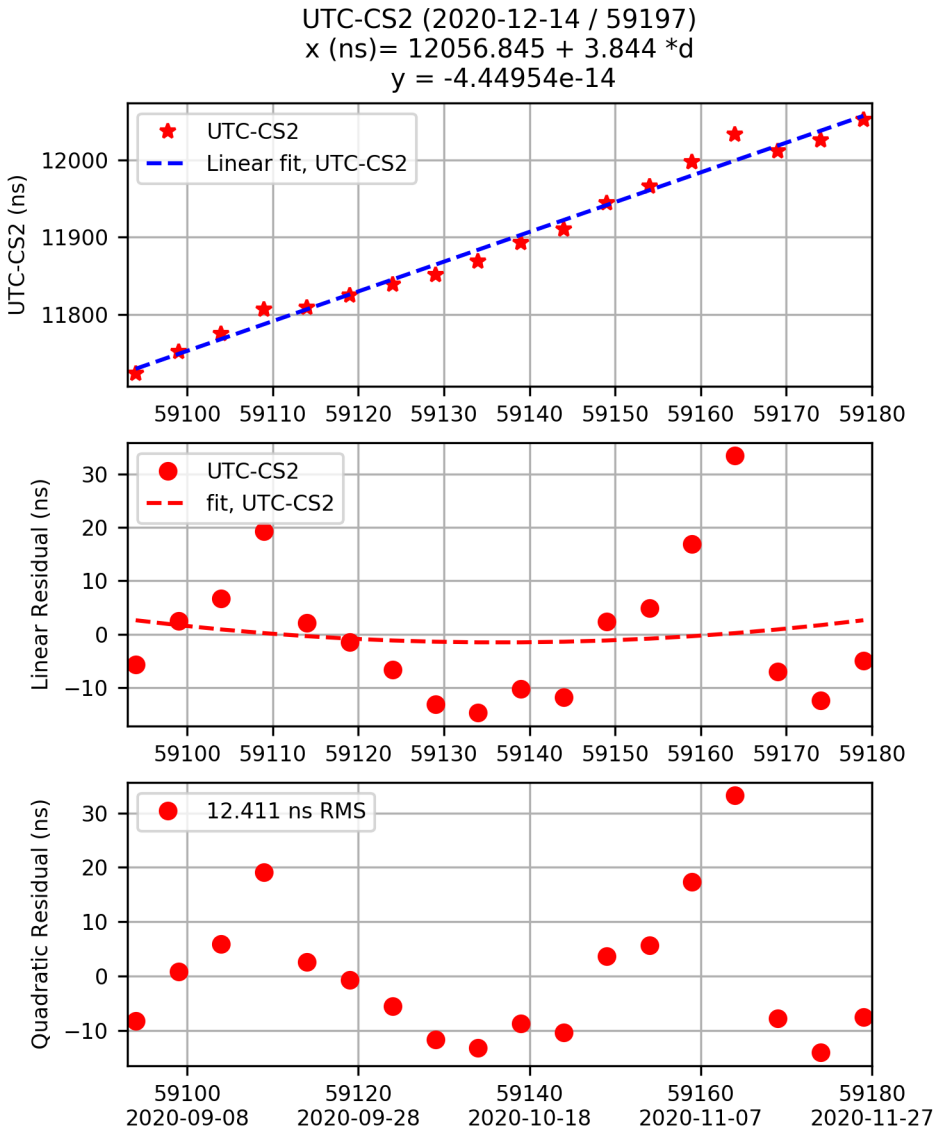


Remote Clocks

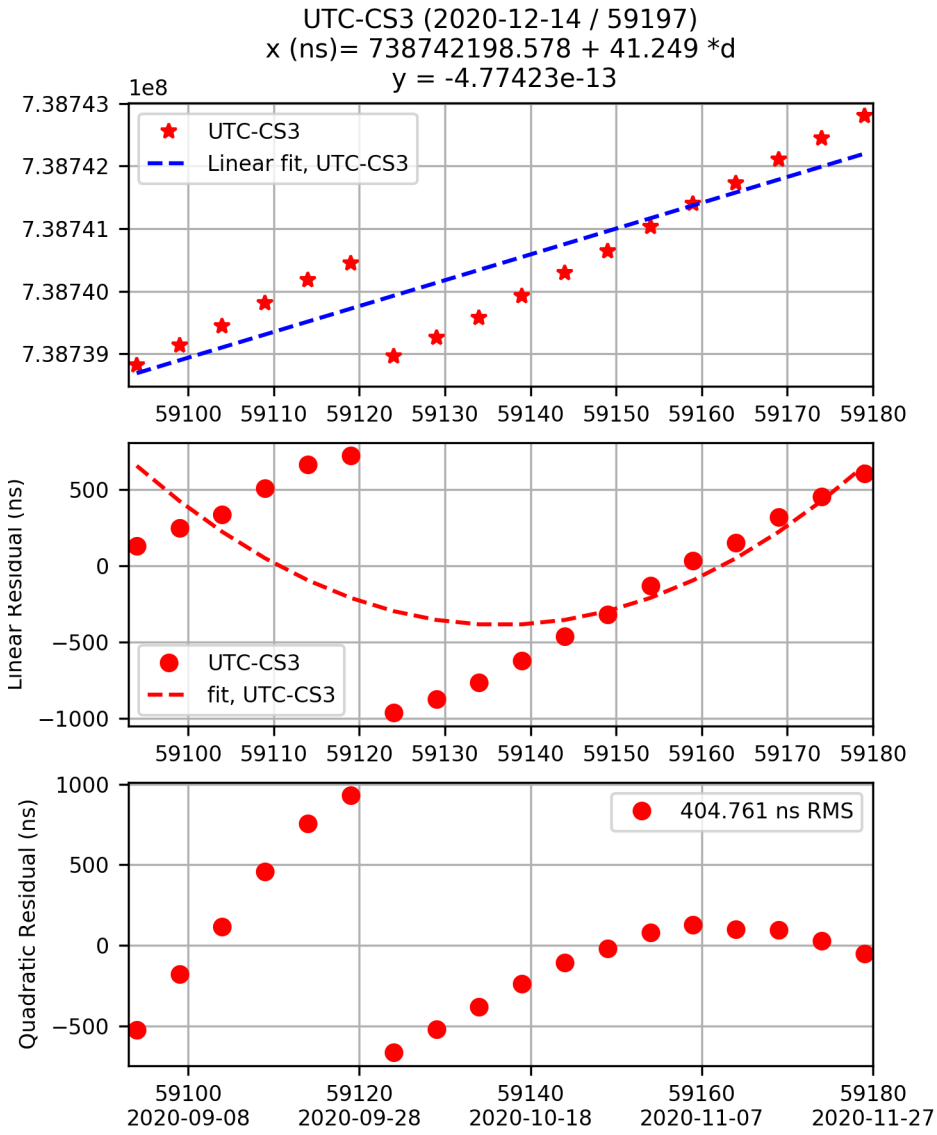
Remote Clock: AHM4



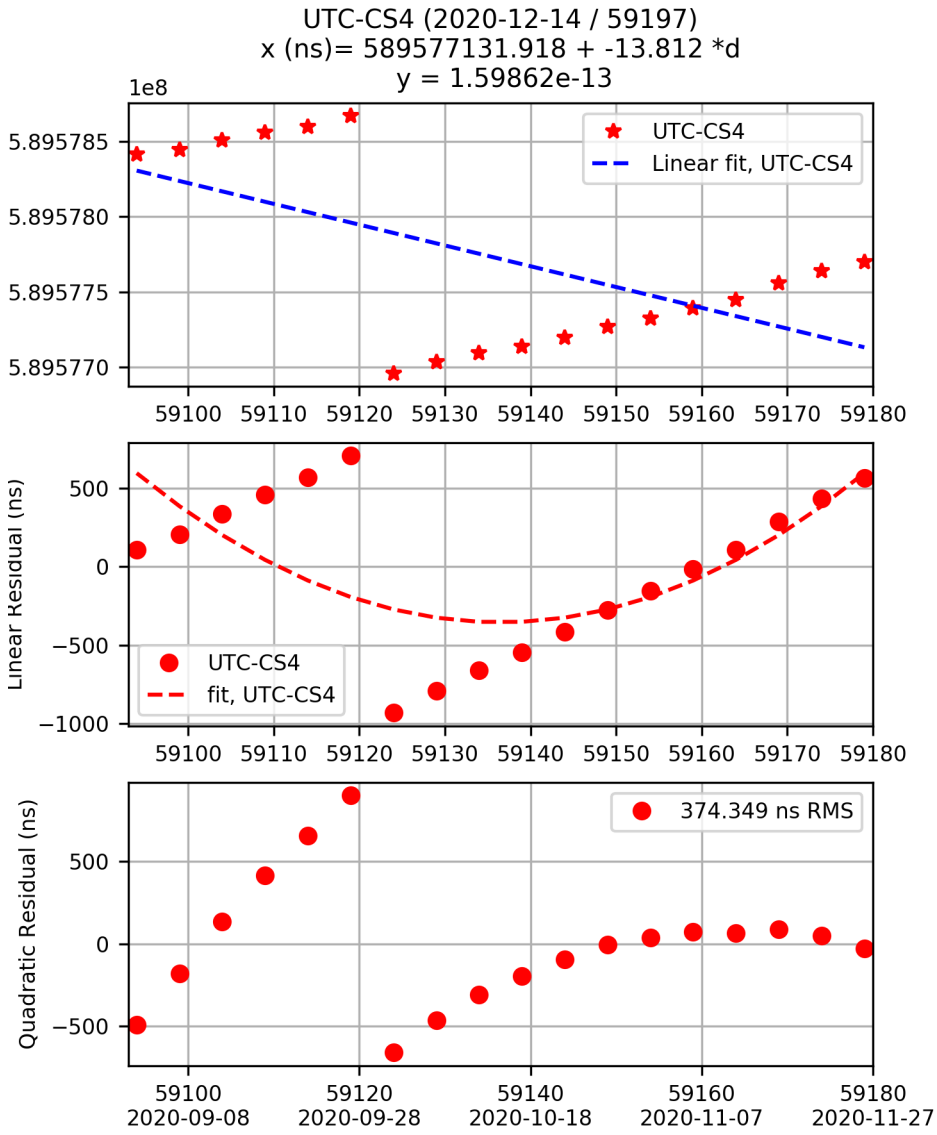
Remote Clock: CS2



Remote Clock: CS3



Remote Clock: CS4



End of Bulletin.