

UTC(MIKE) Atomic Bulletin 2020-03

VTT MIKES Metrology monthly Time & Frequency bulletin.

Comments and questions to: time "at" vtt.fi

Date of publication: 2020-03-11 (58919)

Circular-T issues used for analysis: [384](#), [385](#), [386](#),

First day of analysis interval: 2019-12-02 (58819)

Last day of analysis interval: 2020-02-25 (58904)

ClockData for analysis: [CDMI 19.12](#), [CDMI 20.01](#), [CDMI 20.02](#),

Notes

58617 (2019-05-14) Power-outage and temperature fluctuations in MIKES building.

58623, 58624 M3 clock data missing

58707 (2019-08-12) AHM2 autotuner failure, change MC to AHM1

58739 OTA-KAJA link asymmetry change (CS2)

58760 (2019-10-04) AHM4 frequency adjustment. Approximate model is $y = -4.0497e-14 - 1.18953e-15*(mjd-58766)$

58891 (2020-02-12) Apply steering correction to UTC(MIKE). +5ns over 2 months,

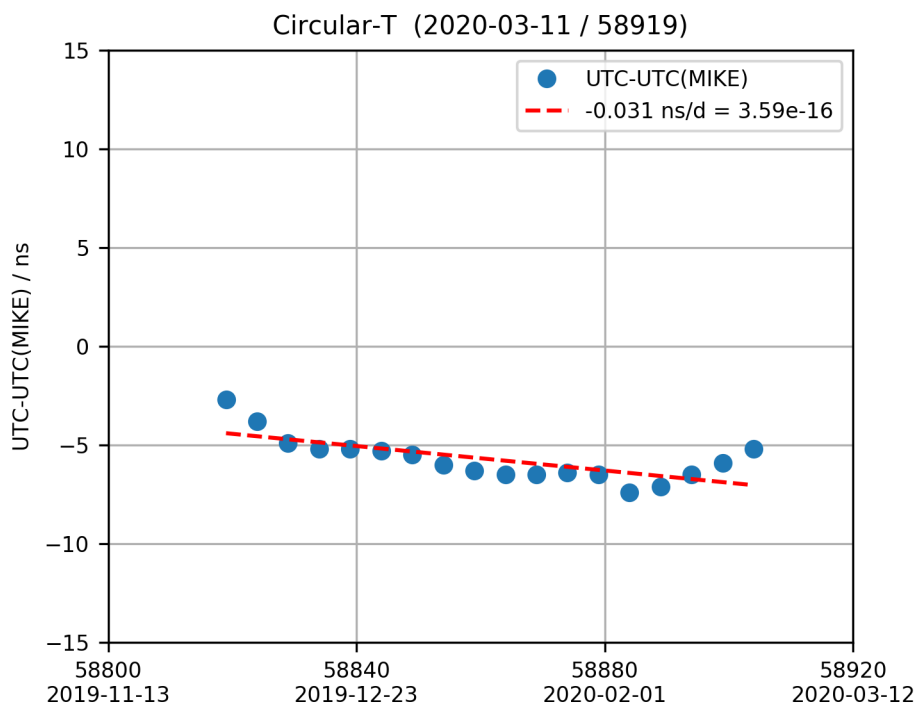
$y_steer = -5ns/60d = -9.6e-16$

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.

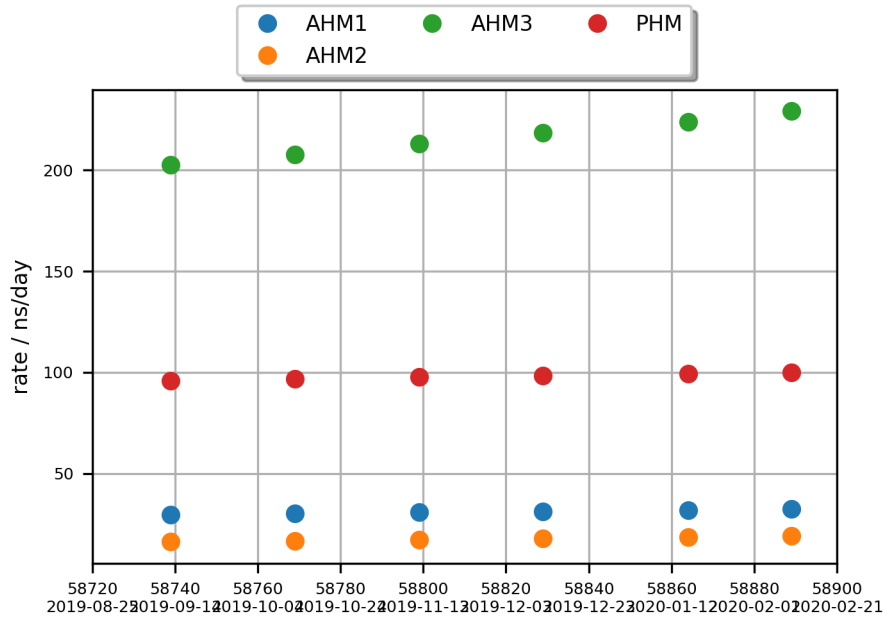
UTC-UTC(MIKE) as reported in Circular-T



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.

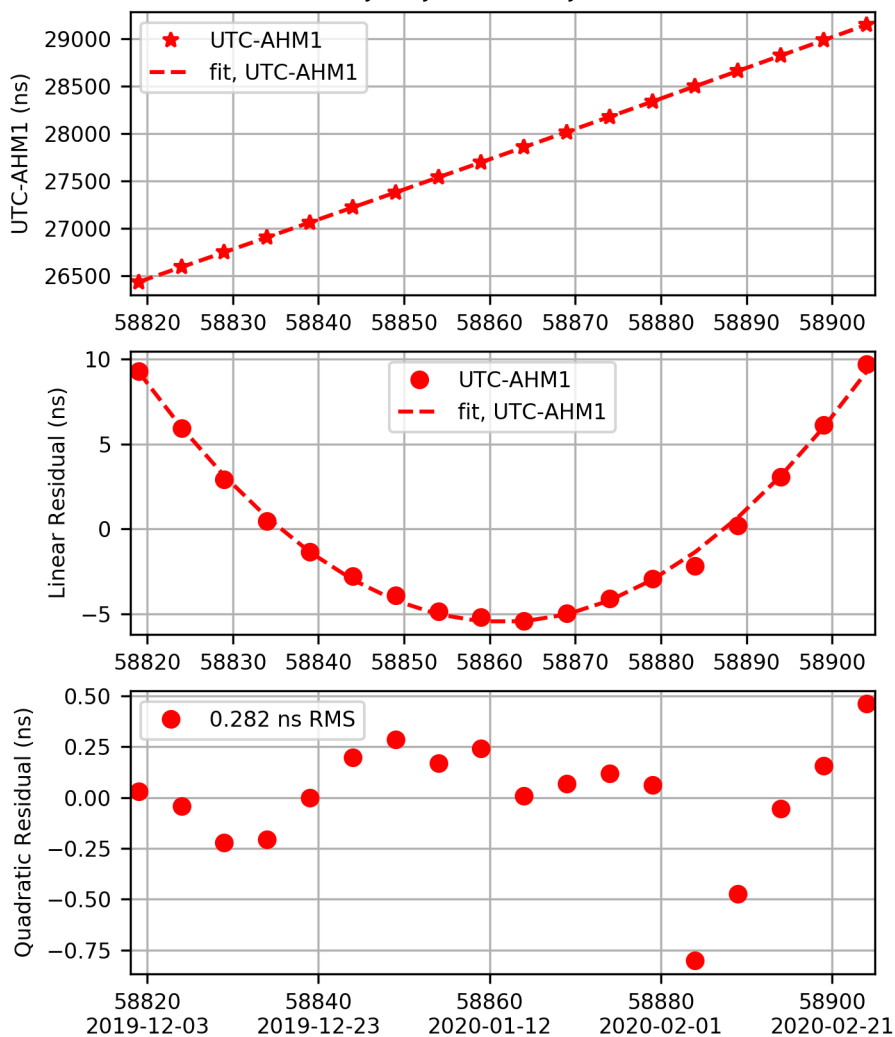
Clock Rates - Summary

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

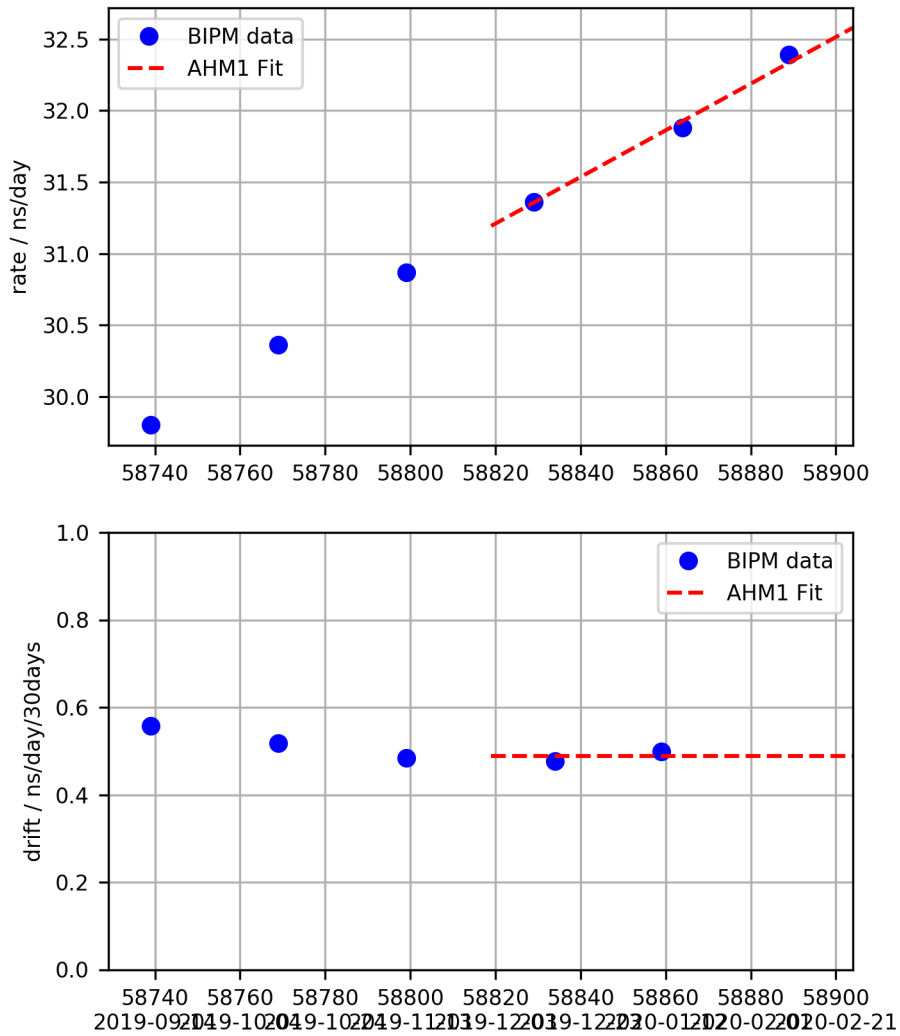


UTC - AHM1 Fit

UTC-AHM1 (2020-03-11 / 58919)
 $x \text{ (ns)} = 29146.738 + 32.580 *d + 0.0082 *d*d$
 $y = -3.77082e-13 + -1.88774e-16 *d$
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 58904$

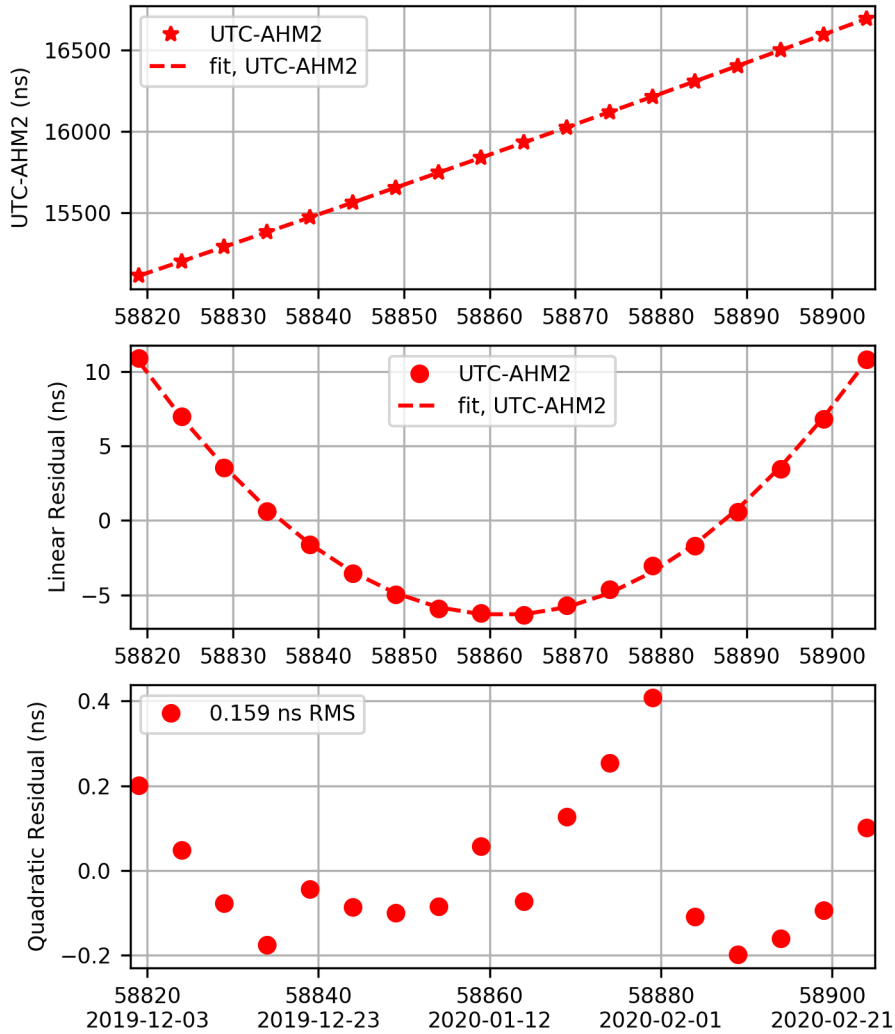


AHM1 Rate and Drift

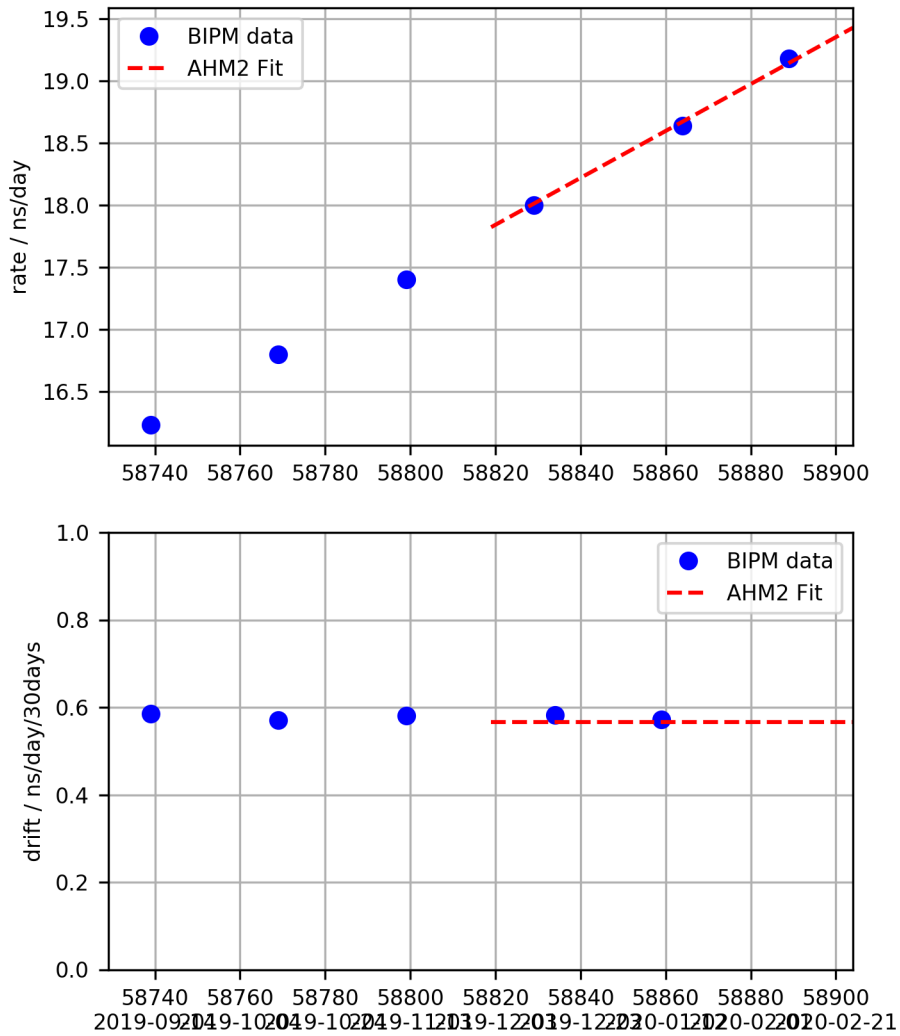


UTC - AHM2 Fit

UTC-AHM2 (2020-03-11 / 58919)
 $x \text{ (ns)} = 16693.198 + 19.428 *d + 0.0094 *d*d$
 $y = -2.24864e-13 + -2.1851e-16 *d$
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 58904$

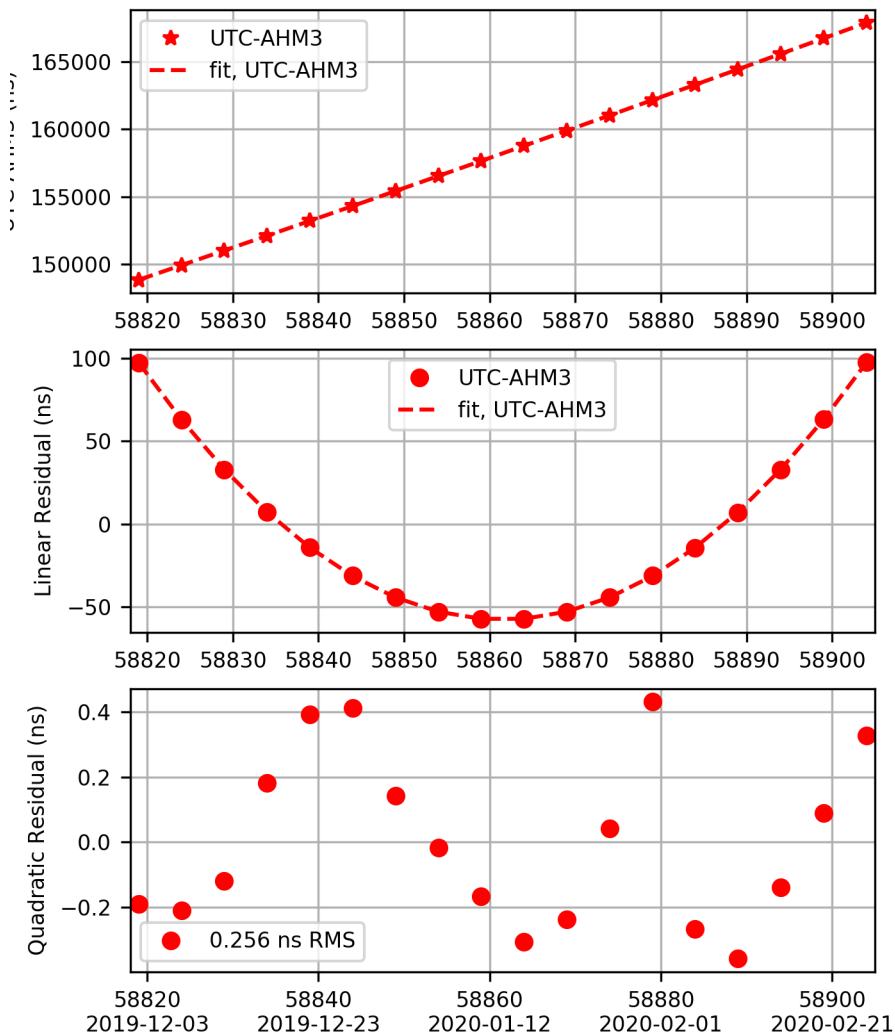


AHM2 Rate and Drift

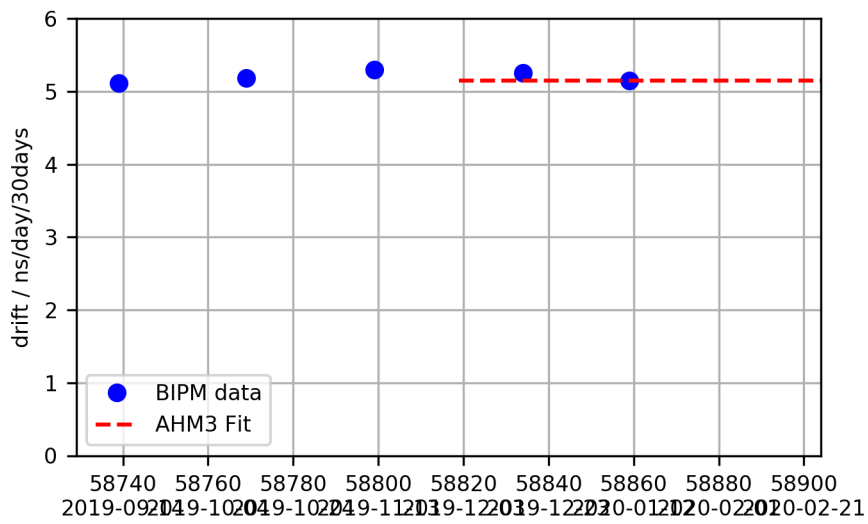
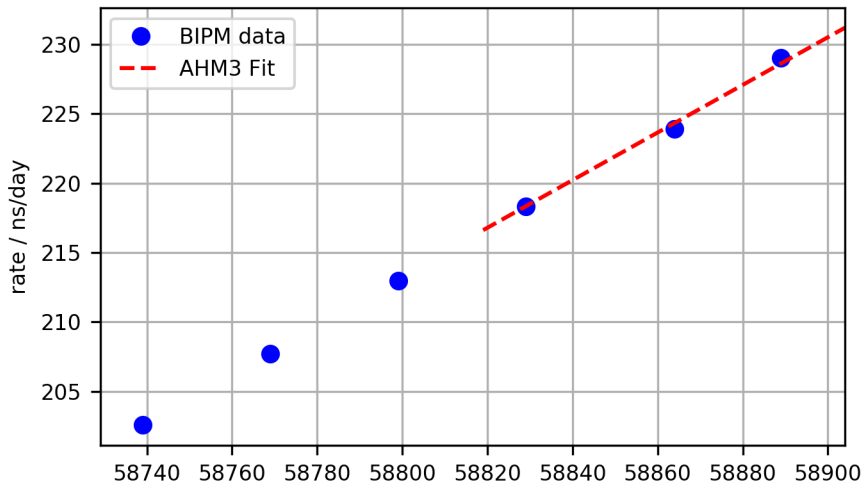


UTC - AHM3 Fit

UTC-AHM3 (2020-03-11 / 58919)
 $x \text{ (ns)} = 167888.972 + 231.201 * d + 0.0858 * d*d$
 $y = -2.67594e-12 + -1.98617e-15 * d$
 $d = (\text{mjd} - \text{mjd0}) \text{ with } \text{mjd0} = 58904$

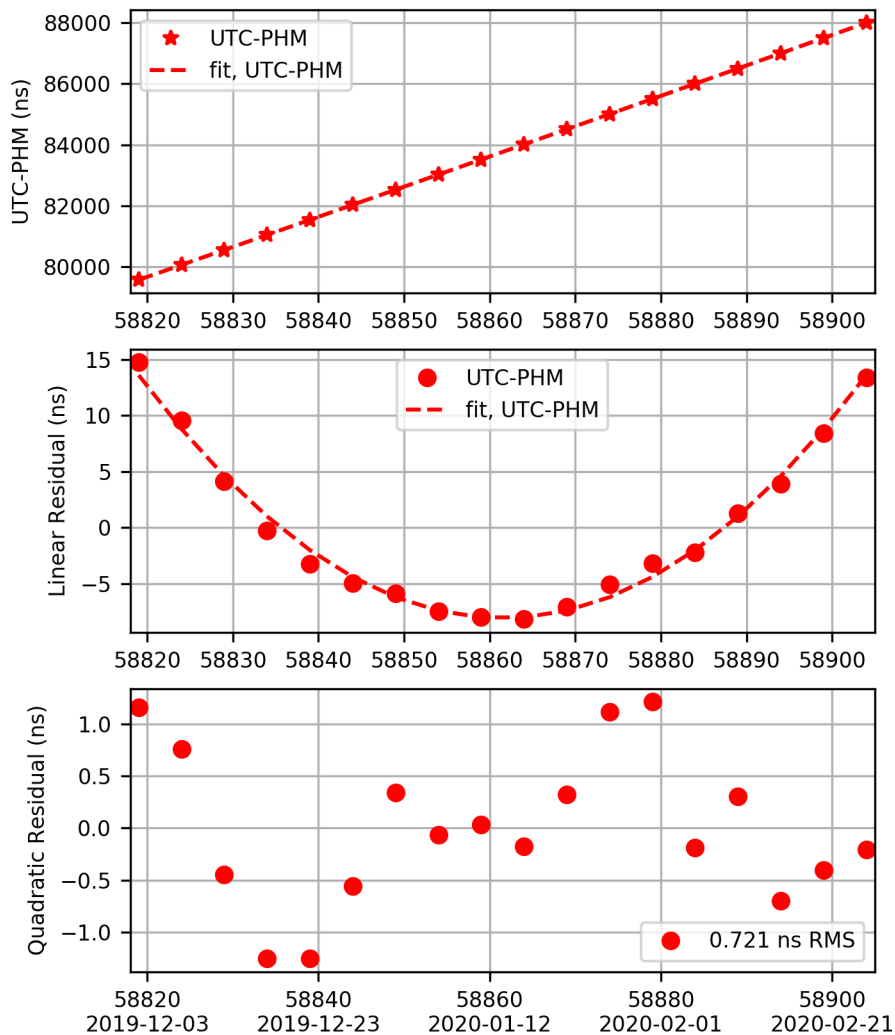


AHM3 Rate and Drift

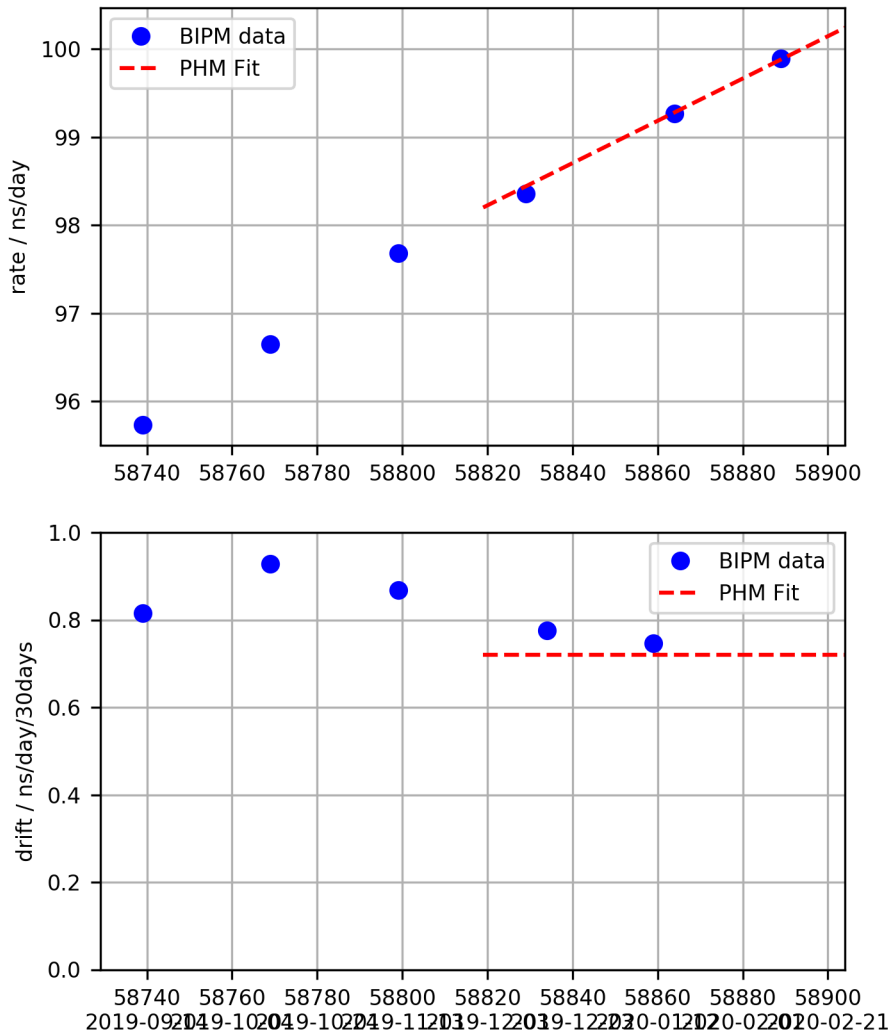


UTC - PHM Fit

UTC-PHM (2020-03-11 / 58919)
 $x \text{ (ns)} = 88002.109 + 100.241 * d + 0.0120 * d * d$
 $y = -1.1602e-12 + -2.77826e-16 * d$
 $d = (\text{mjd} - \text{mjd0}) \text{ with mjd0} = 58904$

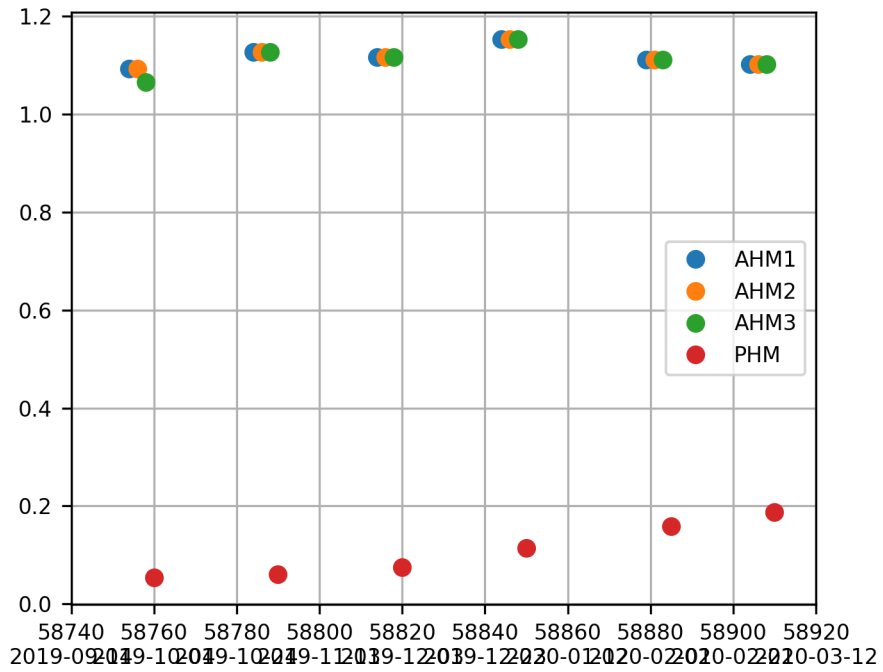


PHM Rate and Drift



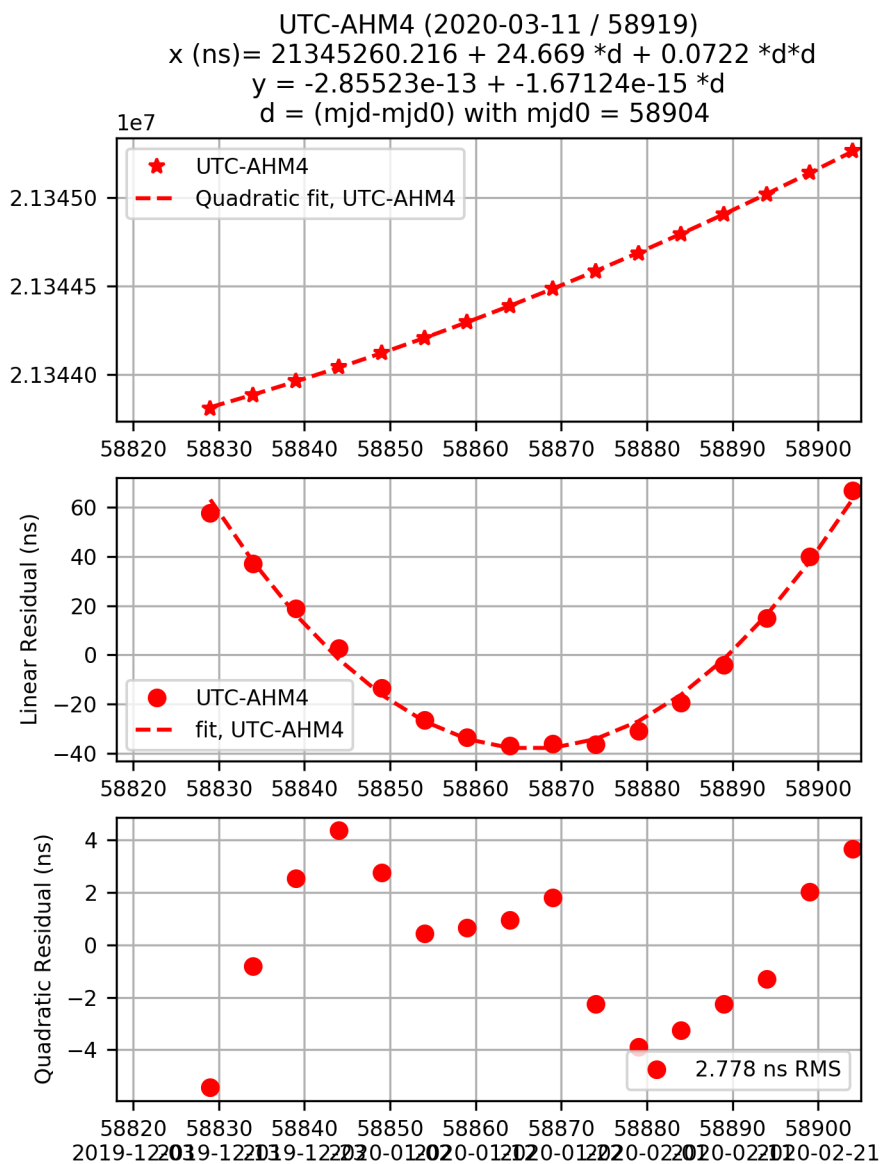
Clock Weights

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



Remote Clocks

Remote Clock: AHM4

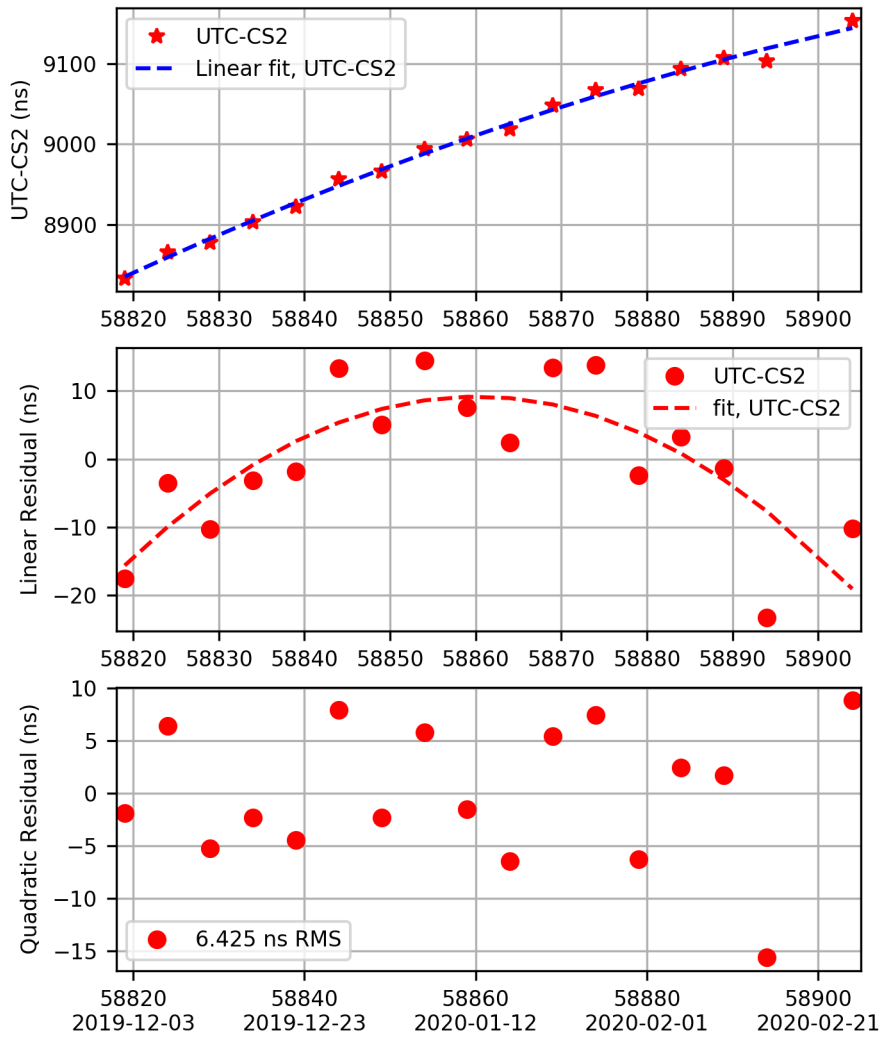


Remote Clock: CS2

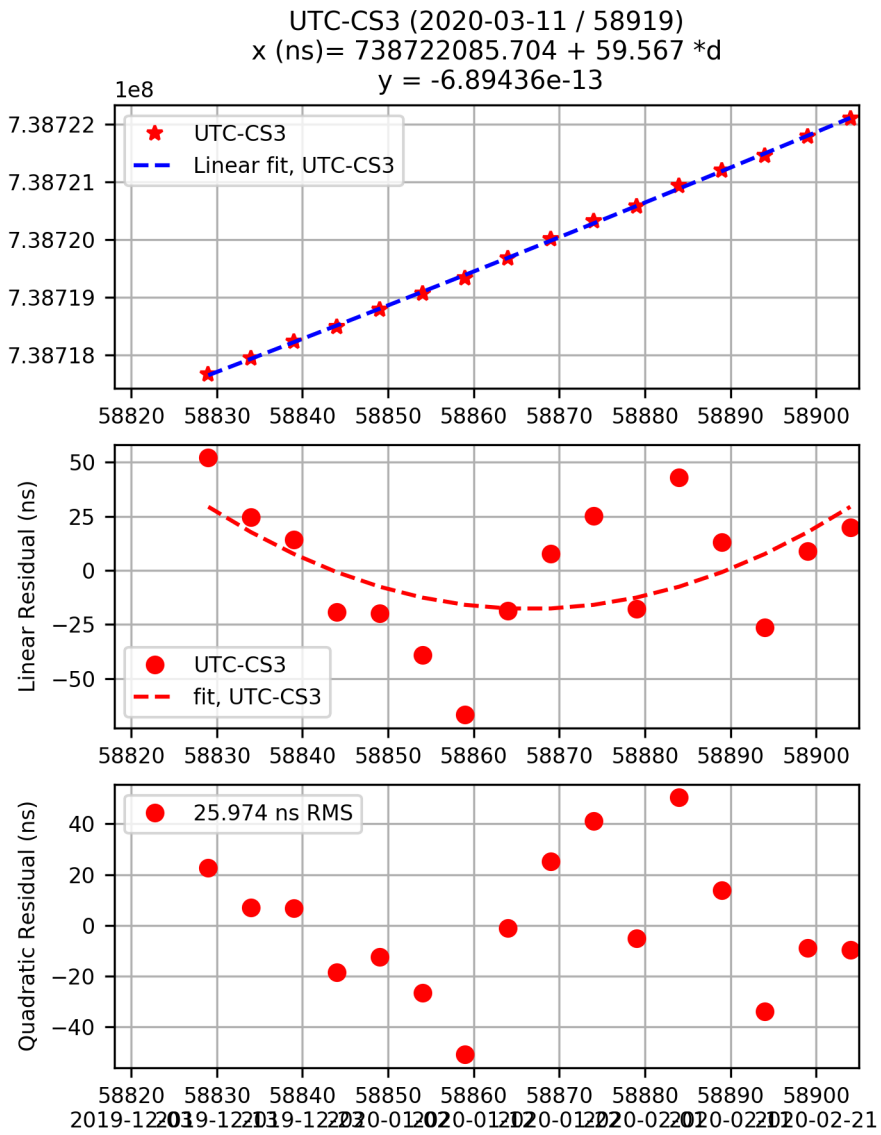
UTC-CS2 (2020-03-11 / 58919)

$$x \text{ (ns)} = 9162.966 + 3.666 * d$$

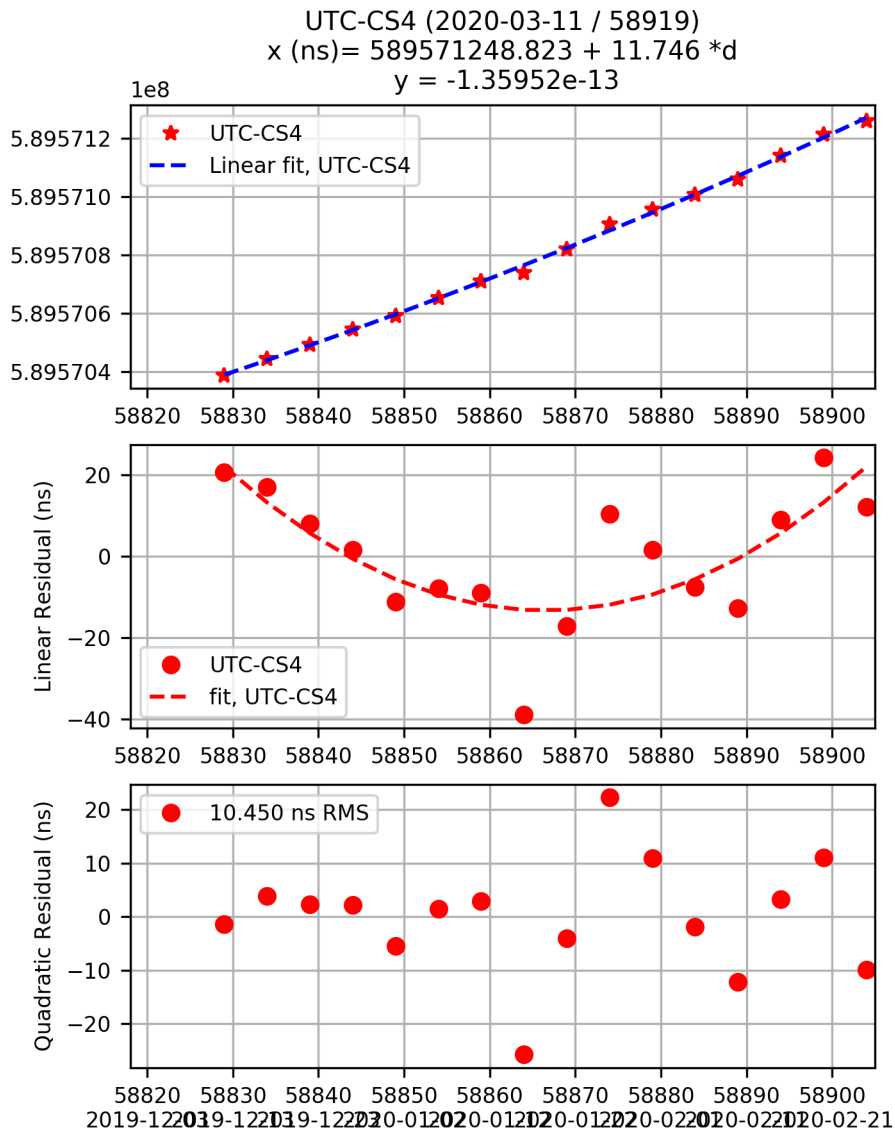
$$y = -4.2431e-14$$



Remote Clock: CS3



Remote Clock: CS4



End of Bulletin.