

# UTC(MIKE) Atomic Bulletin 2020-10

VTT MIKES Metrology monthly Time & Frequency bulletin.

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

Date of publication: 2020-10-12 (59134)

Circular-T issues used for analysis: [391](#), [392](#), [393](#),

First day of analysis interval: 2020-07-04 (59034)

Last day of analysis interval: 2020-09-27 (59119)

ClockData for analysis: [CDMI 20.07](#), [CDMI 20.08](#), [CDMI 20.09](#),

## Notes

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.

58953 (2020-03-14) AB2020-04, set steering correction to zero.

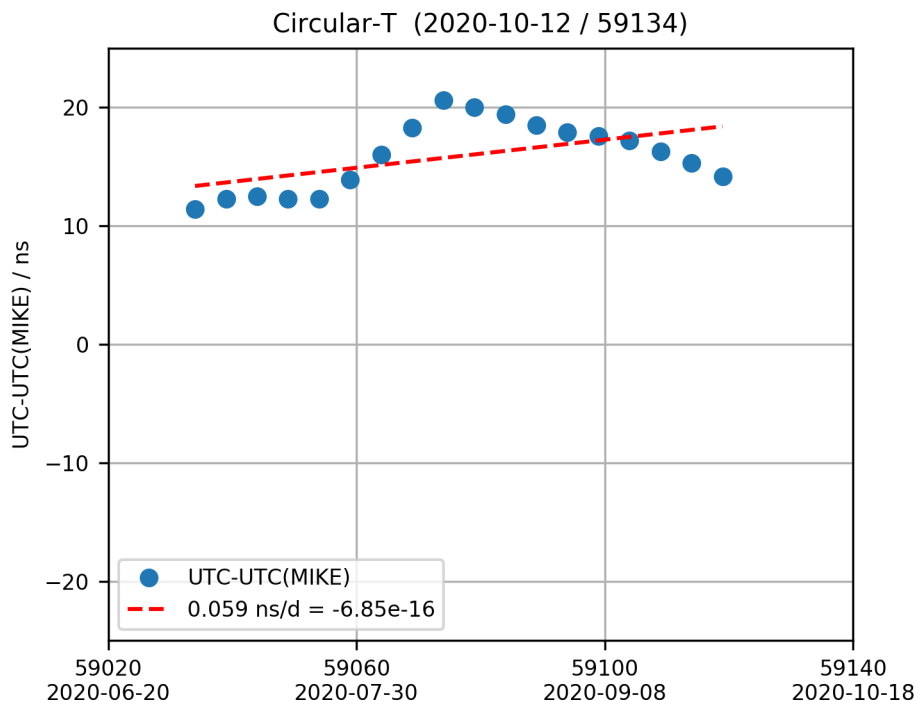
58966 (2020-04-27) AHM1=MC 1PPS moved backwards ~20us.

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.

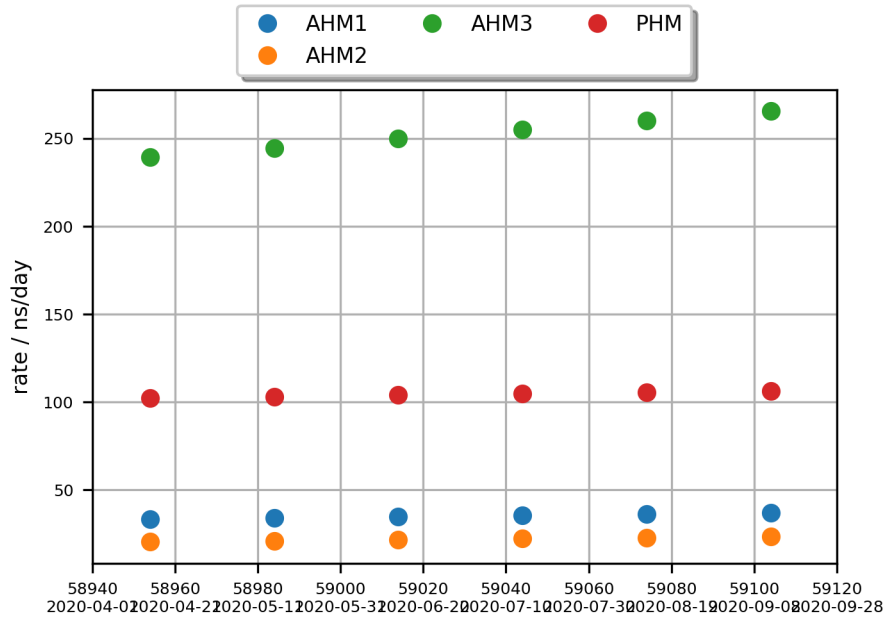
## UTC-UTC(MIKE) as reported in Circular-T



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.

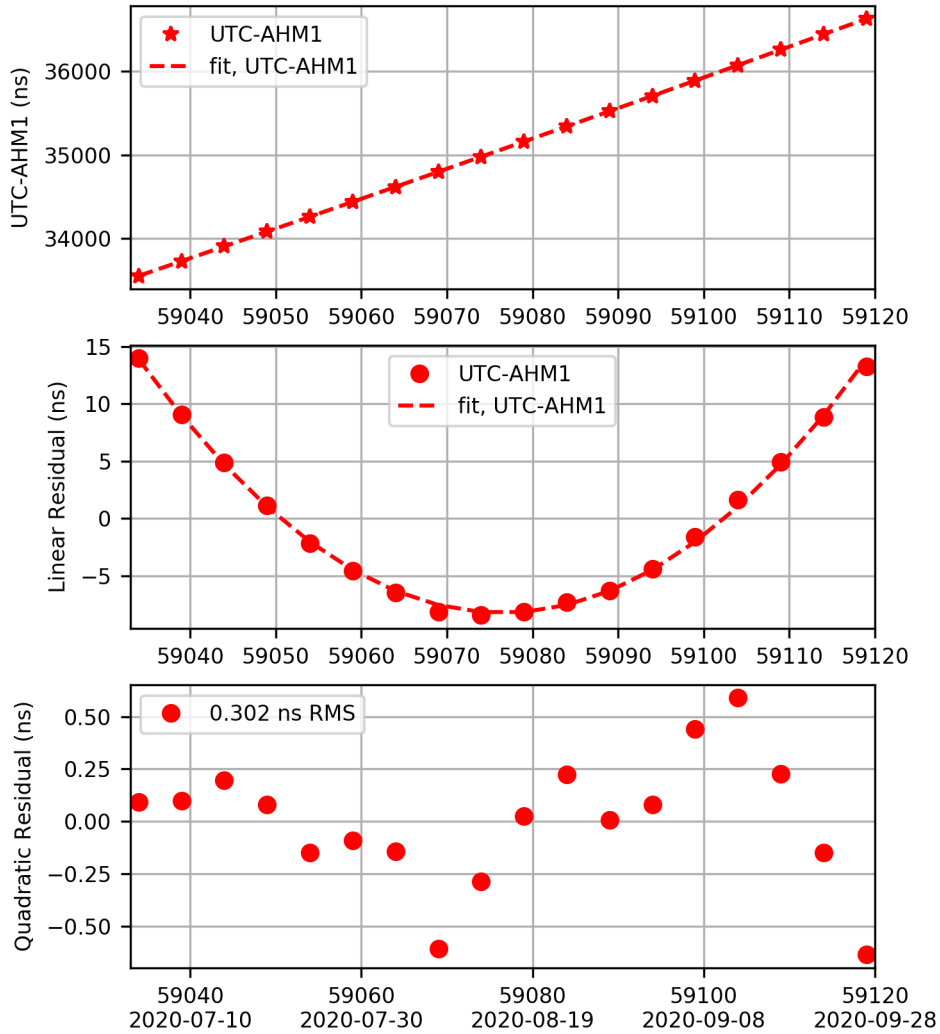
## Clock Rates - Summary

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

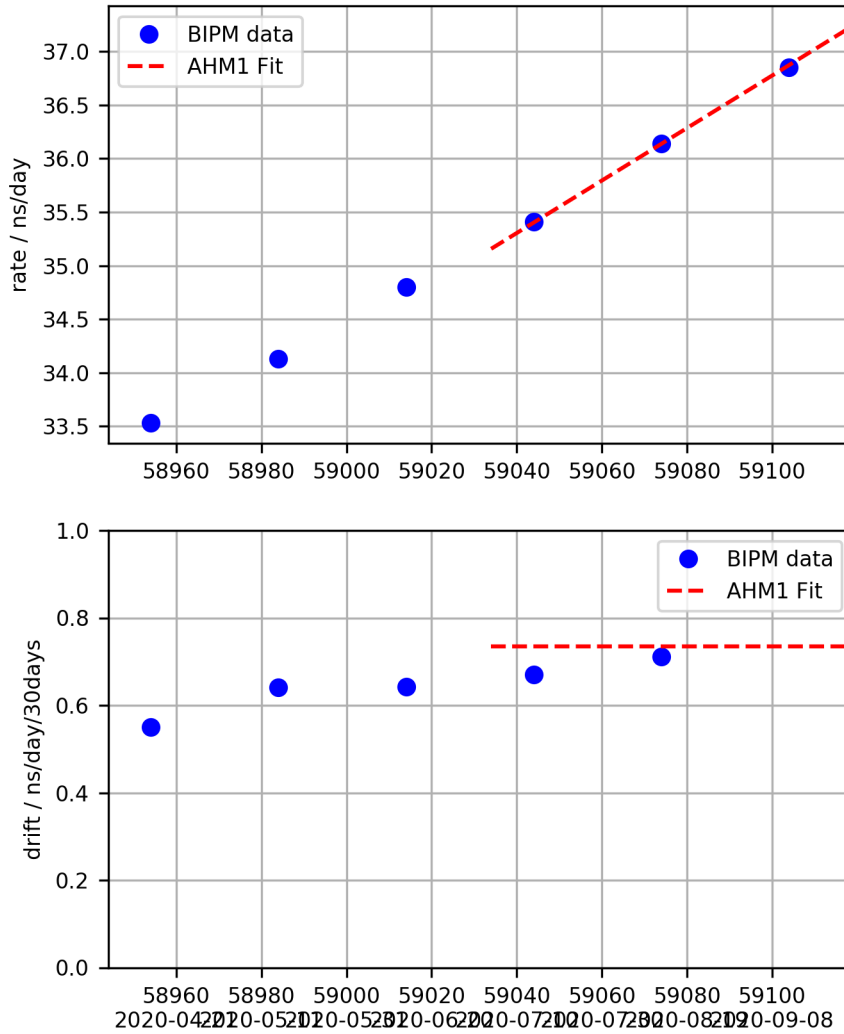


## UTC - AHM1 Fit

UTC-AHM1 (2020-10-12 / 59134)  
 $x \text{ (ns)} = 36629.437 + 37.239 *d + 0.0122 *d*d$   
 $y = -4.31005e-13 + -2.83463e-16 *d$   
 $d = (\text{mjd}-\text{mjd0})$  with  $\text{mjd0} = 59119$

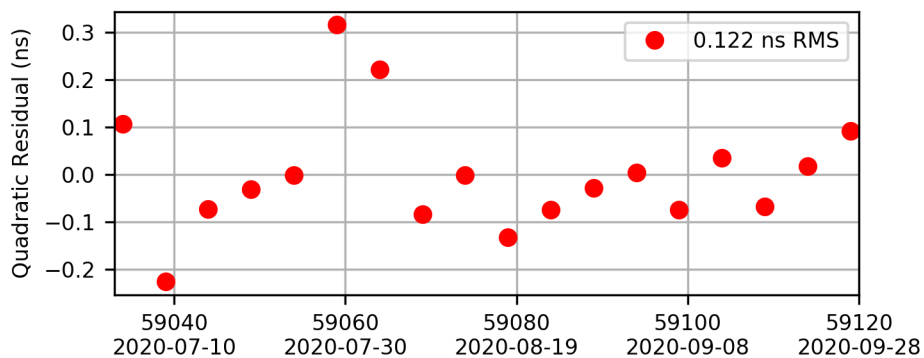
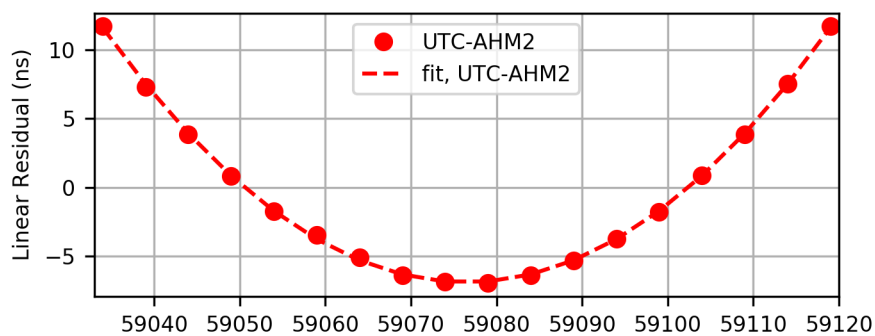
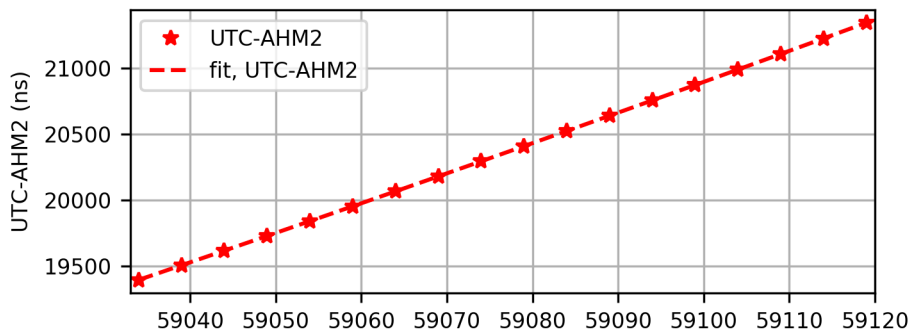


### AHM1 Rate and Drift

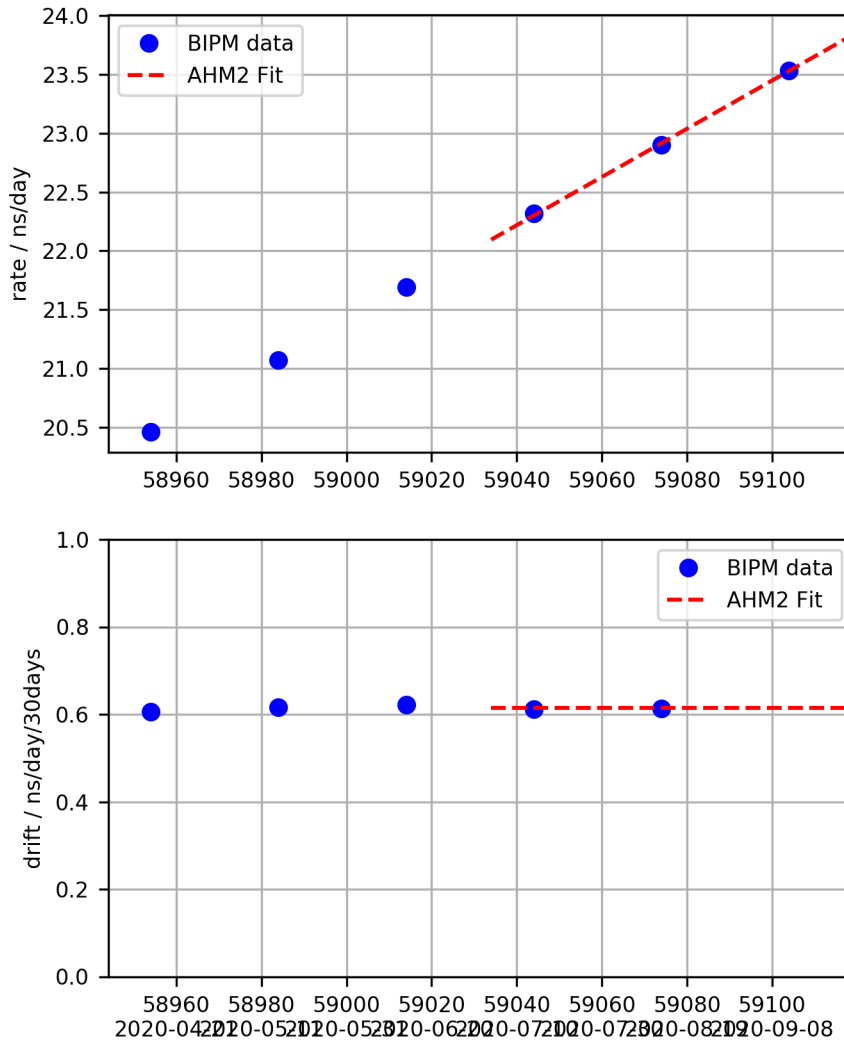


## UTC - AHM2 Fit

UTC-AHM2 (2020-10-12 / 59134)  
 $x \text{ (ns)} = 21346.309 + 23.837 *d + 0.0102 *d*d$   
 $y = -2.75886e-13 + -2.37059e-16 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59119$

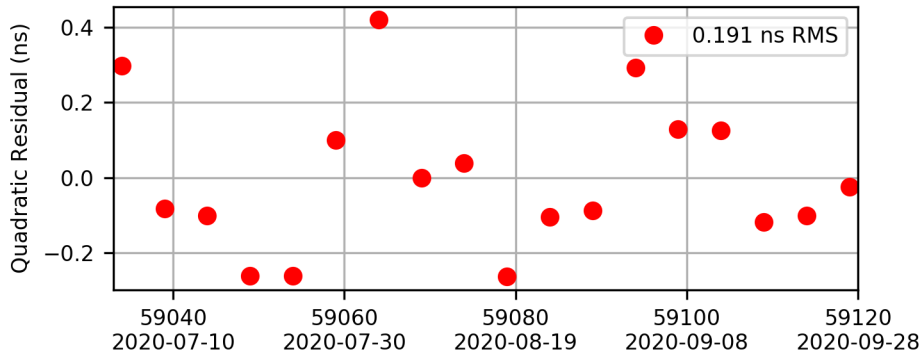
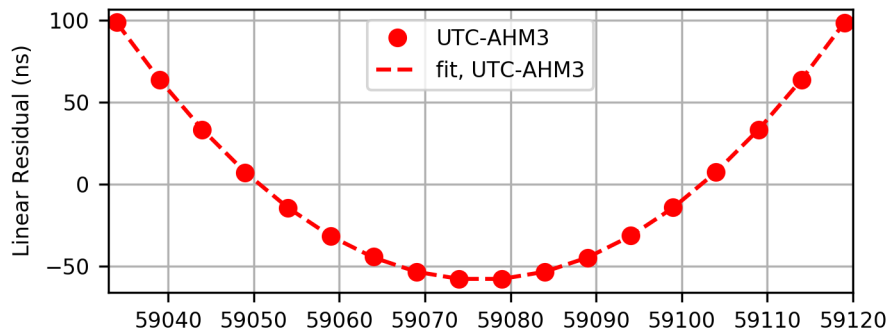
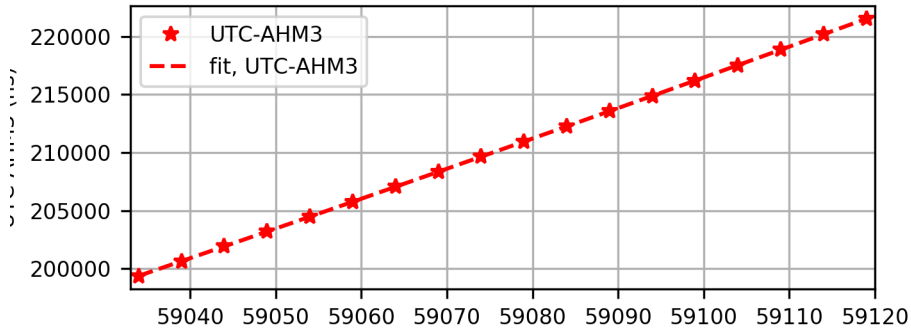


### AHM2 Rate and Drift

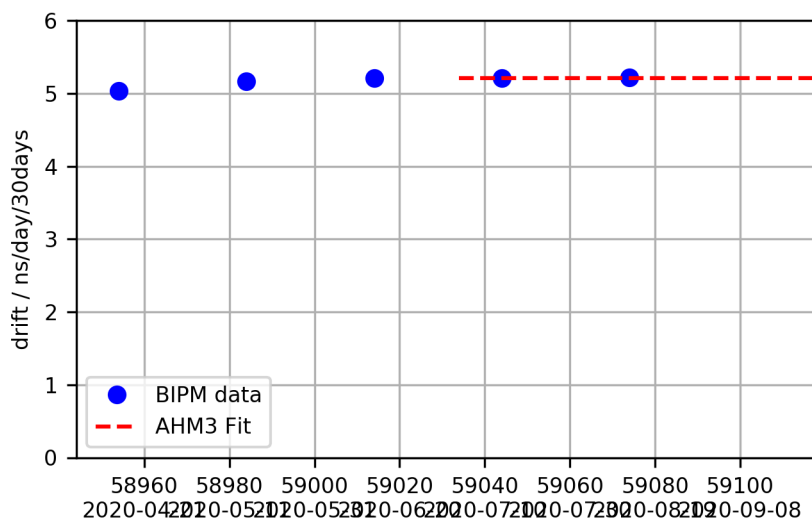
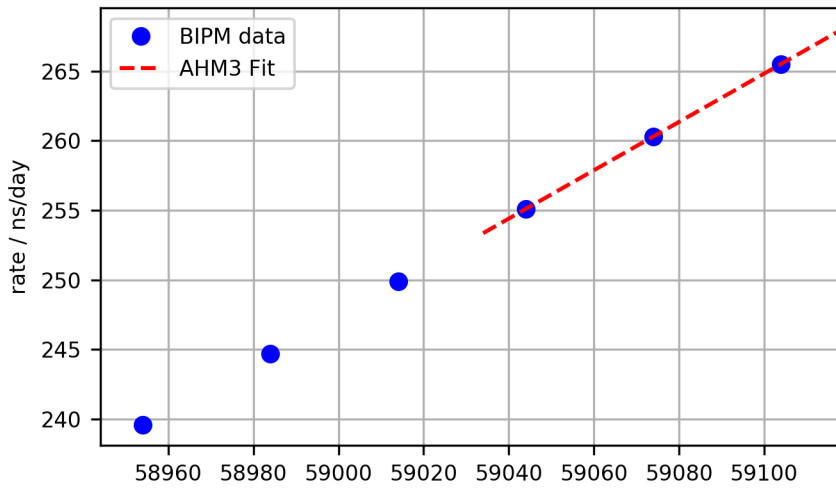


### UTC - AHM3 Fit

UTC-AHM3 (2020-10-12 / 59134)  
 $x \text{ (ns)} = 221537.425 + 268.119 *d + 0.0868 *d*d$   
 $y = -3.10323e-12 + -2.00941e-15 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59119$



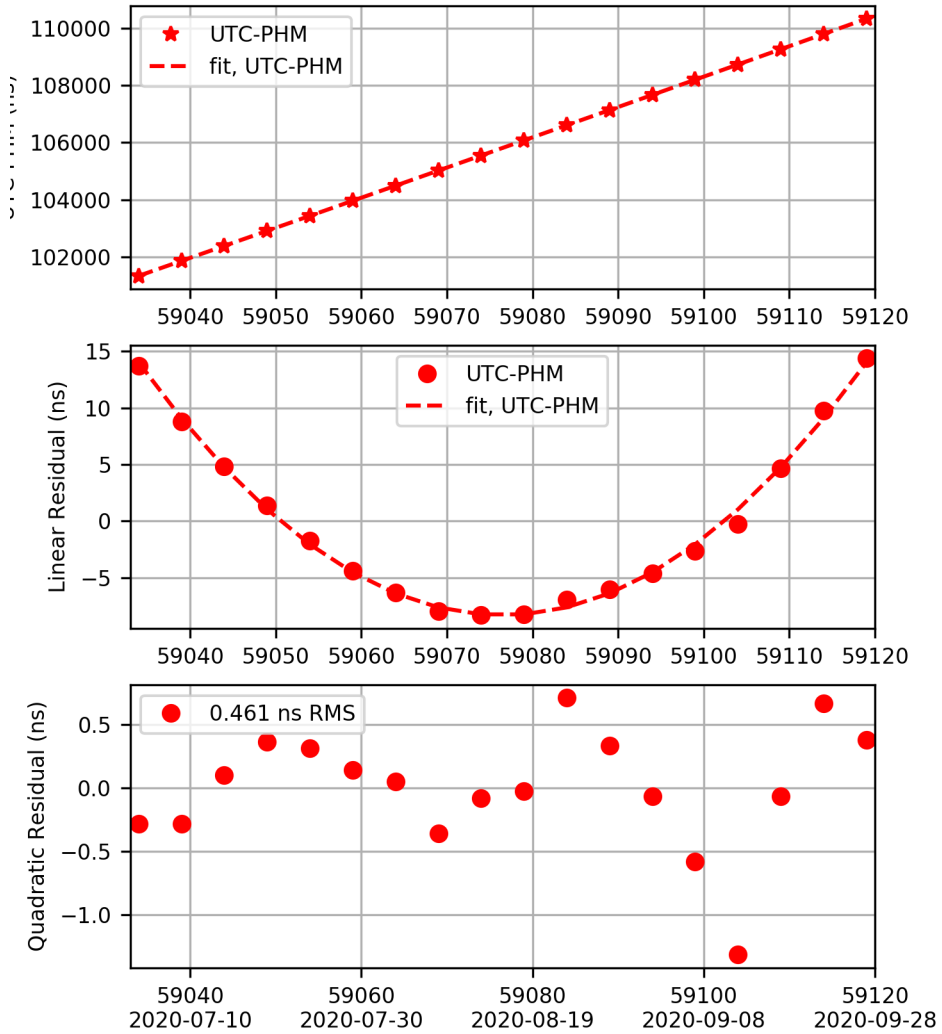
### AHM3 Rate and Drift



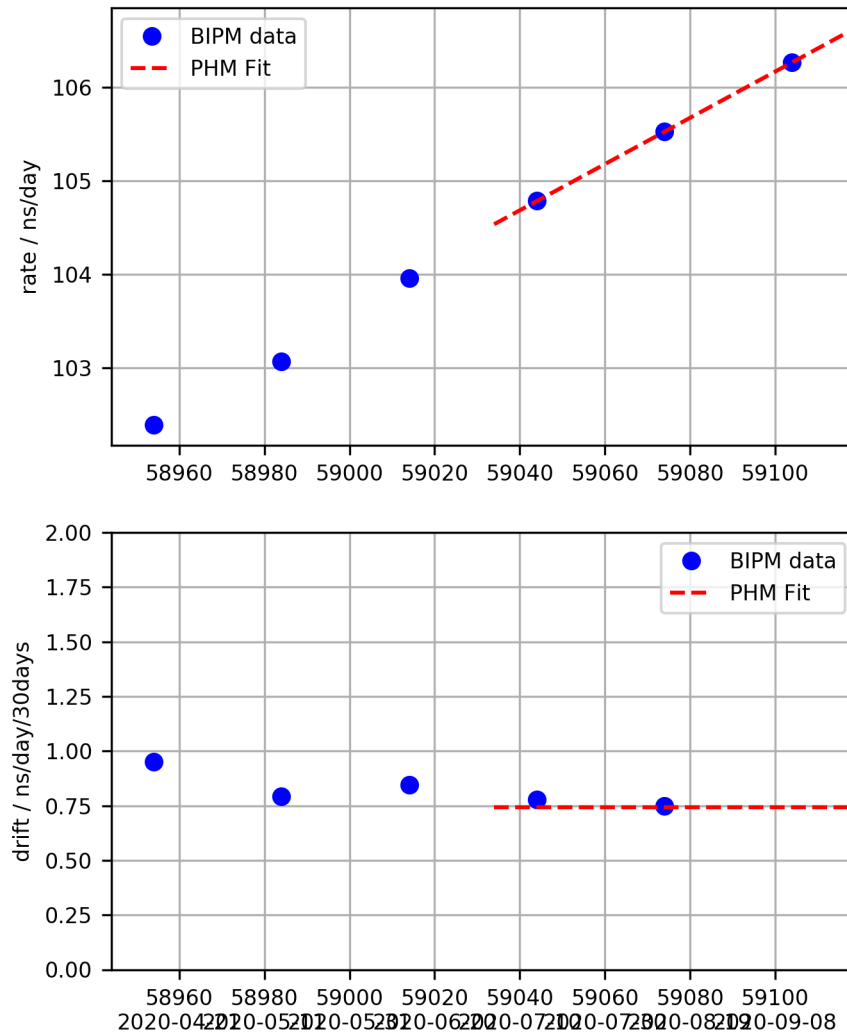


## UTC - PHM Fit

UTC-PHM (2020-10-12 / 59134)  
 $x \text{ (ns)} = 110323.322 + 106.639 *d + 0.0124 *d*d$   
 $y = -1.23425e-12 + -2.86097e-16 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with } \text{mjd0} = 59119$

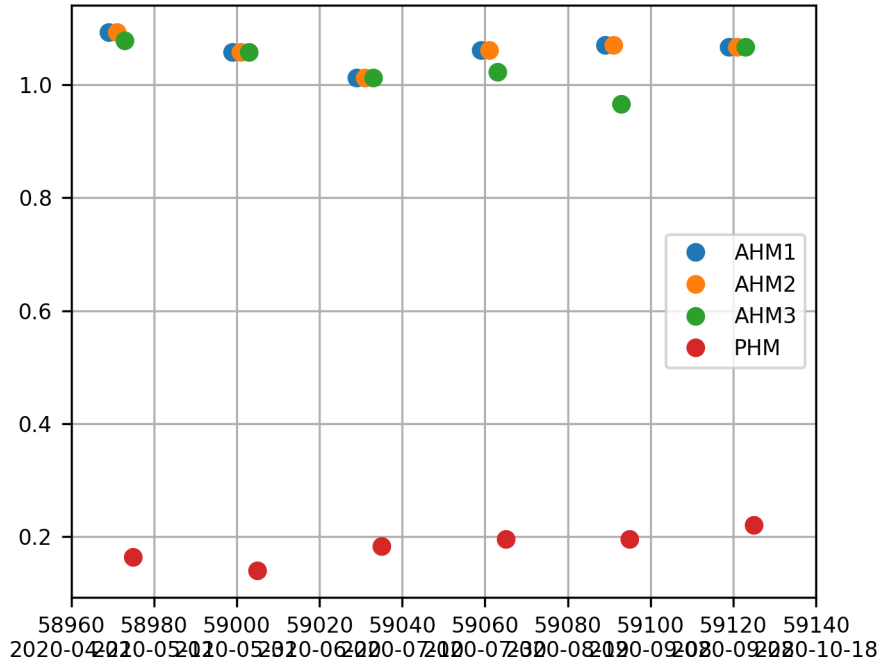


## PHM Rate and Drift



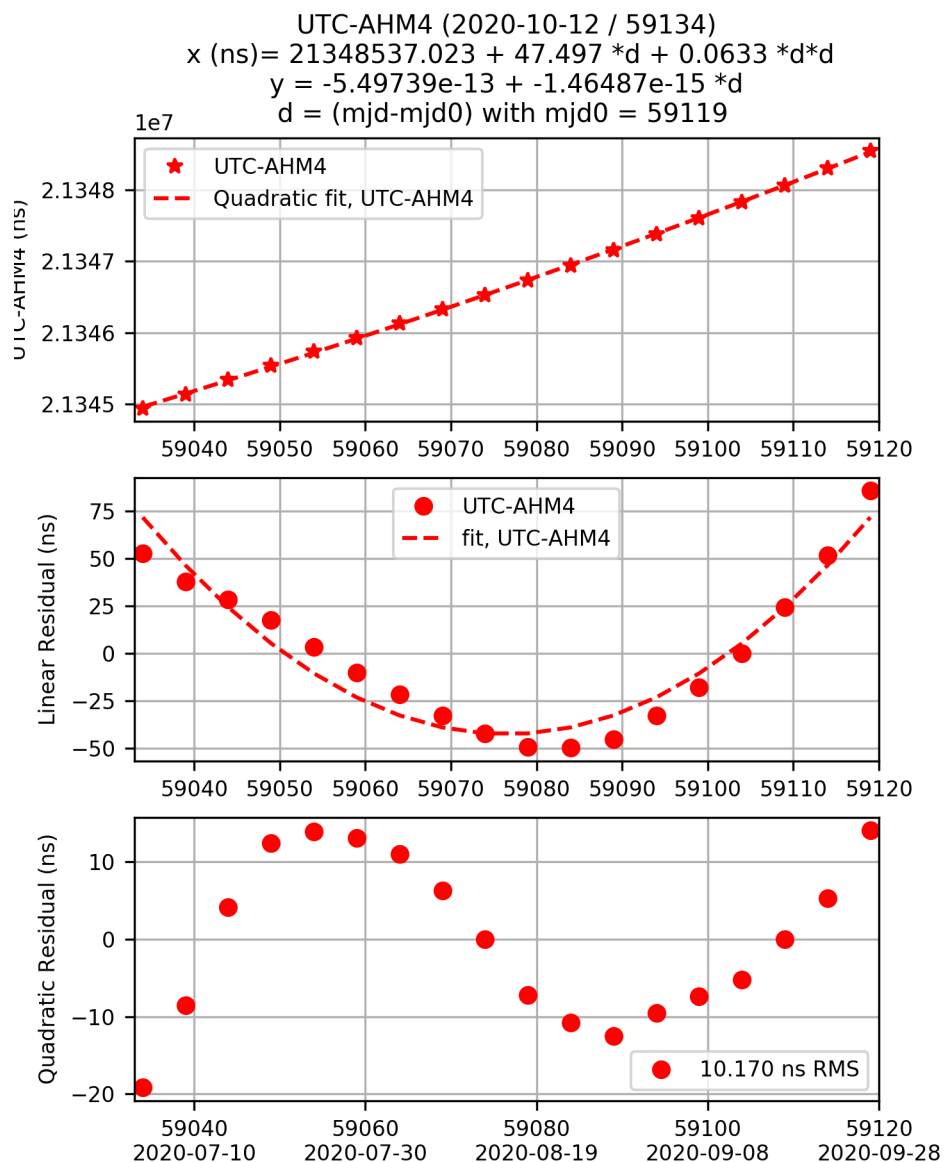
### Clock Weights

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



## Remote Clocks

### Remote Clock: AHM4

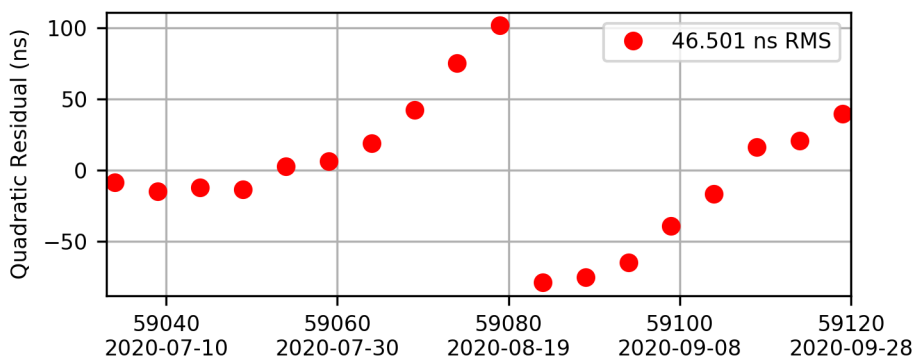
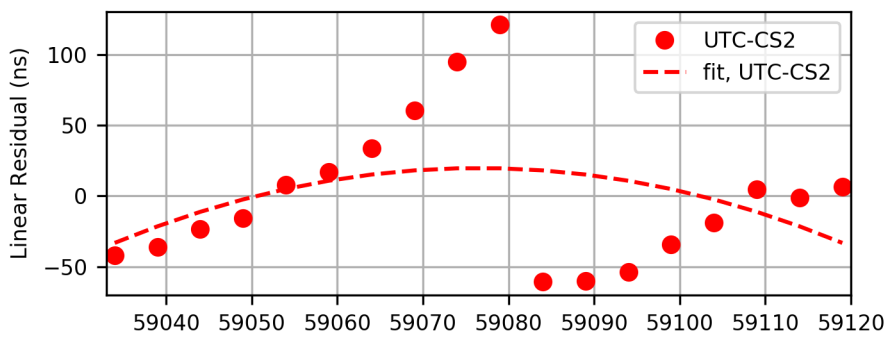
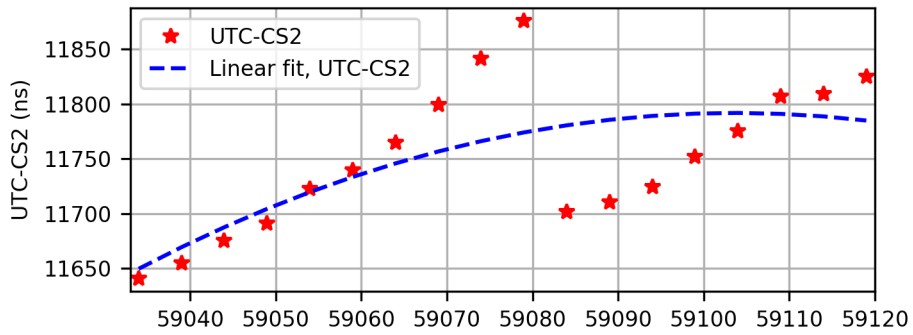


**Remote Clock: CS2**

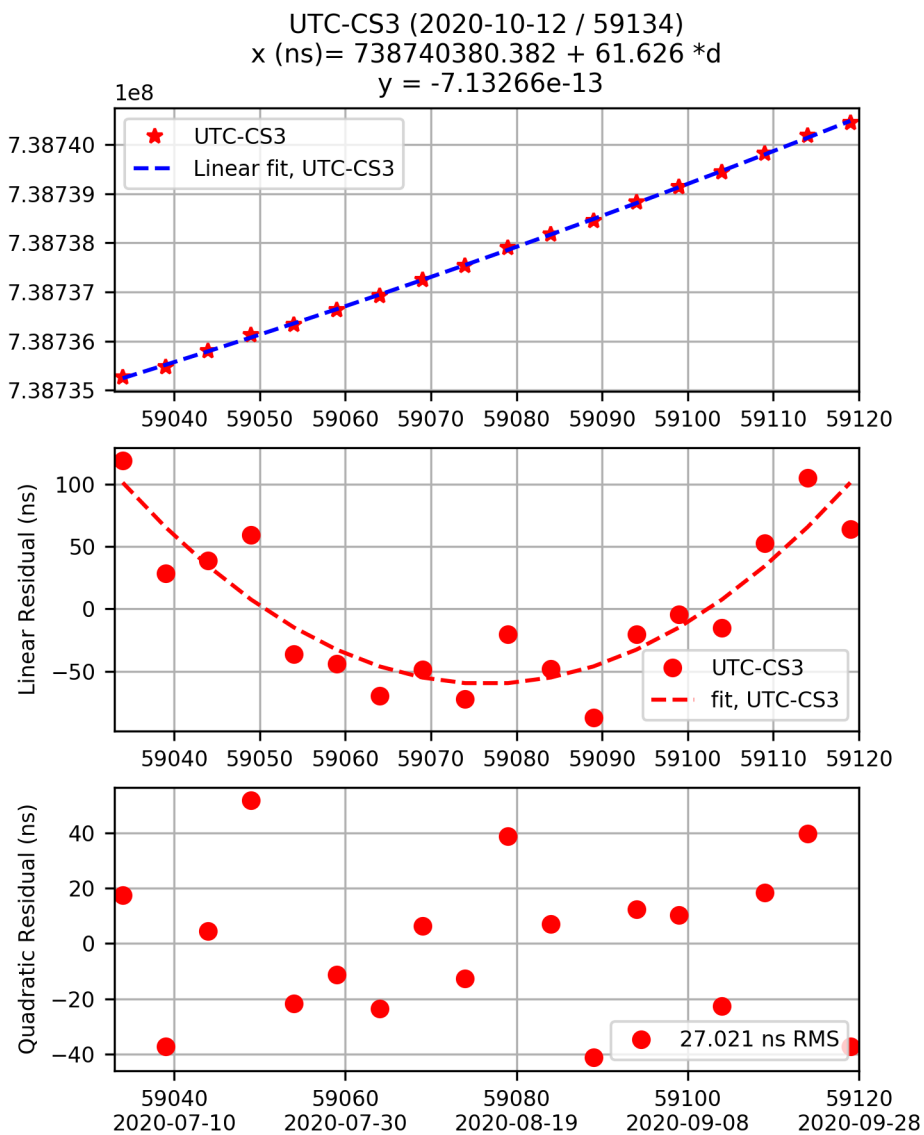
UTC-CS2 (2020-10-12 / 59134)

$$x \text{ (ns)} = 11818.043 + 1.590 * d$$

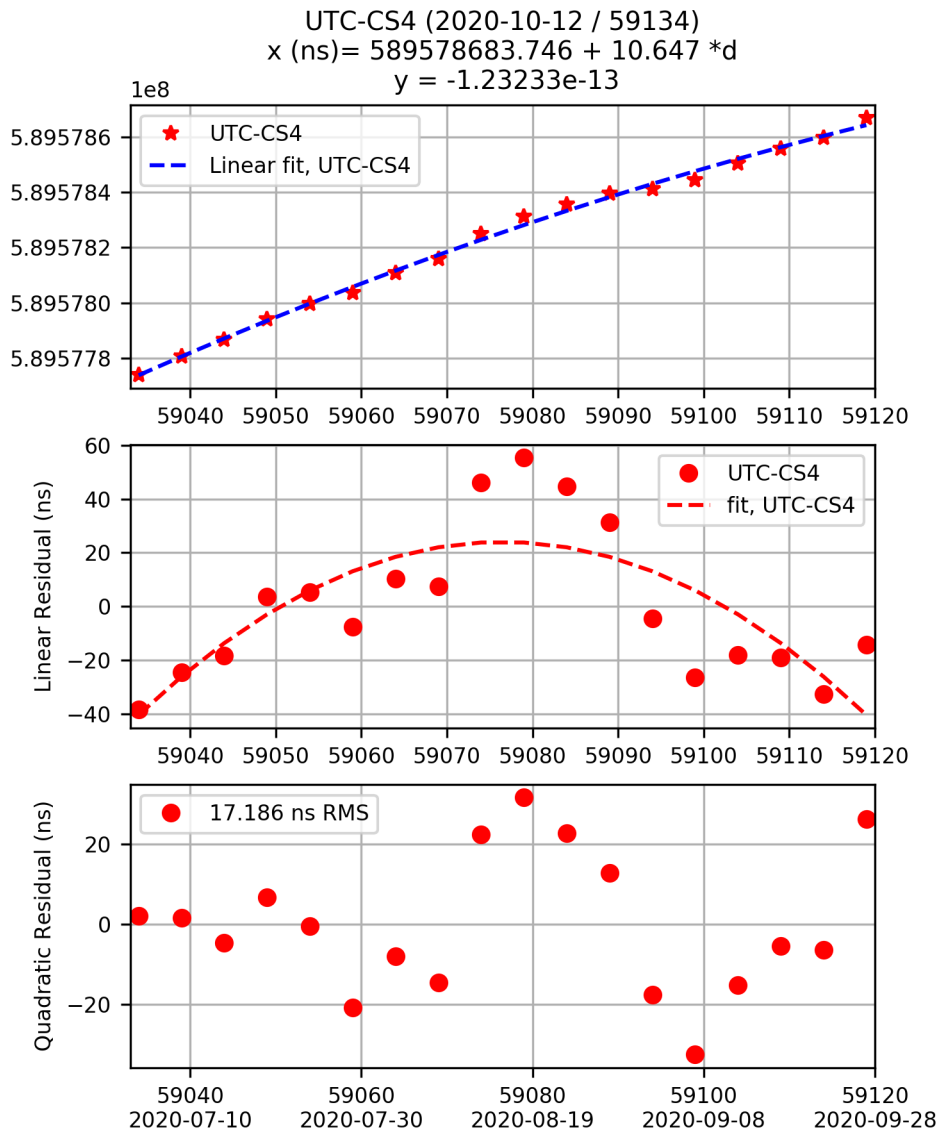
$$y = -1.83976e-14$$



**Remote Clock: CS3**



**Remote Clock: CS4**



**End of Bulletin.**