

# UTC(MIKE) Atomic Bulletin 2020-08

VTT MIKES Metrology monthly Time & Frequency bulletin.

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

Date of publication: 2020-08-10 (59071)

Circular-T issues used for analysis: [389](#), [390](#), [391](#),

First day of analysis interval: 2020-05-05 (58974)

Last day of analysis interval: 2020-07-29 (59059)

ClockData for analysis: [CDMI\\_20.05](#), [CDMI\\_20.06](#), [CDMI\\_20.07](#),

## Notes

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.

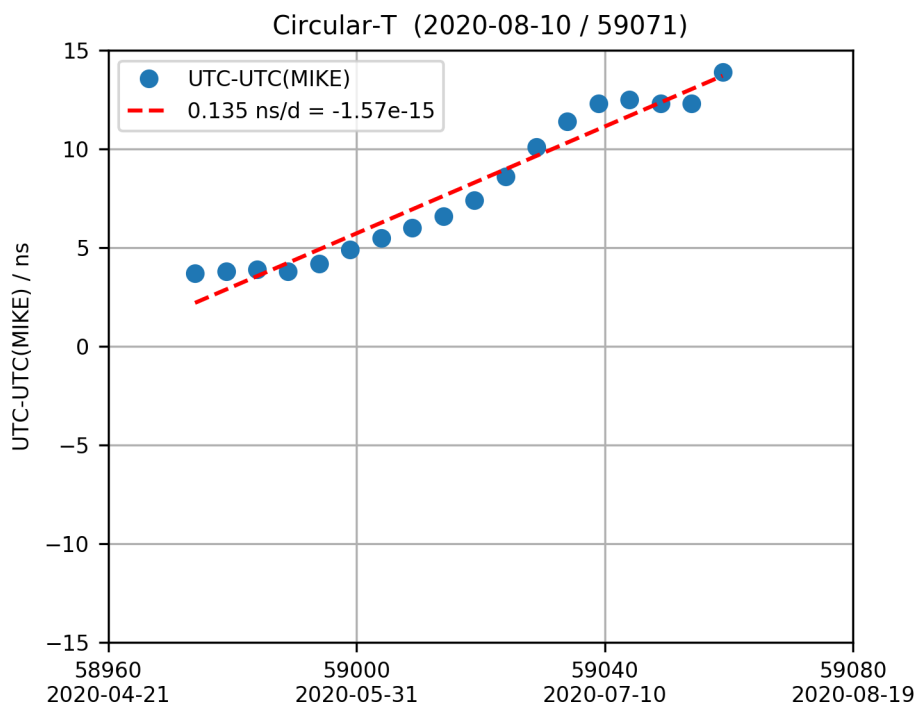
58919 (2020-03-11) AB2020-03 comments: Following MI04/MI05 calibration with PTBM in Dec19-Jan20 Circular-T uncertainty now record low 2.7 ns. MI04 is used as main receiver for now.

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  $y\_steer = 0.5*(+14ns/30d) = +2.7e-15$

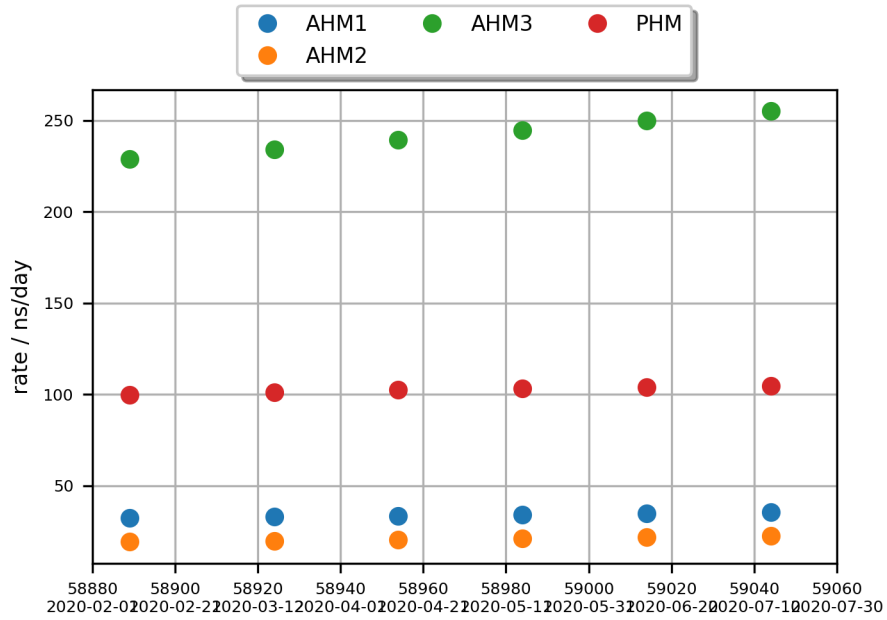
## UTC-UTC(MIKE) as reported in Circular-T



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.

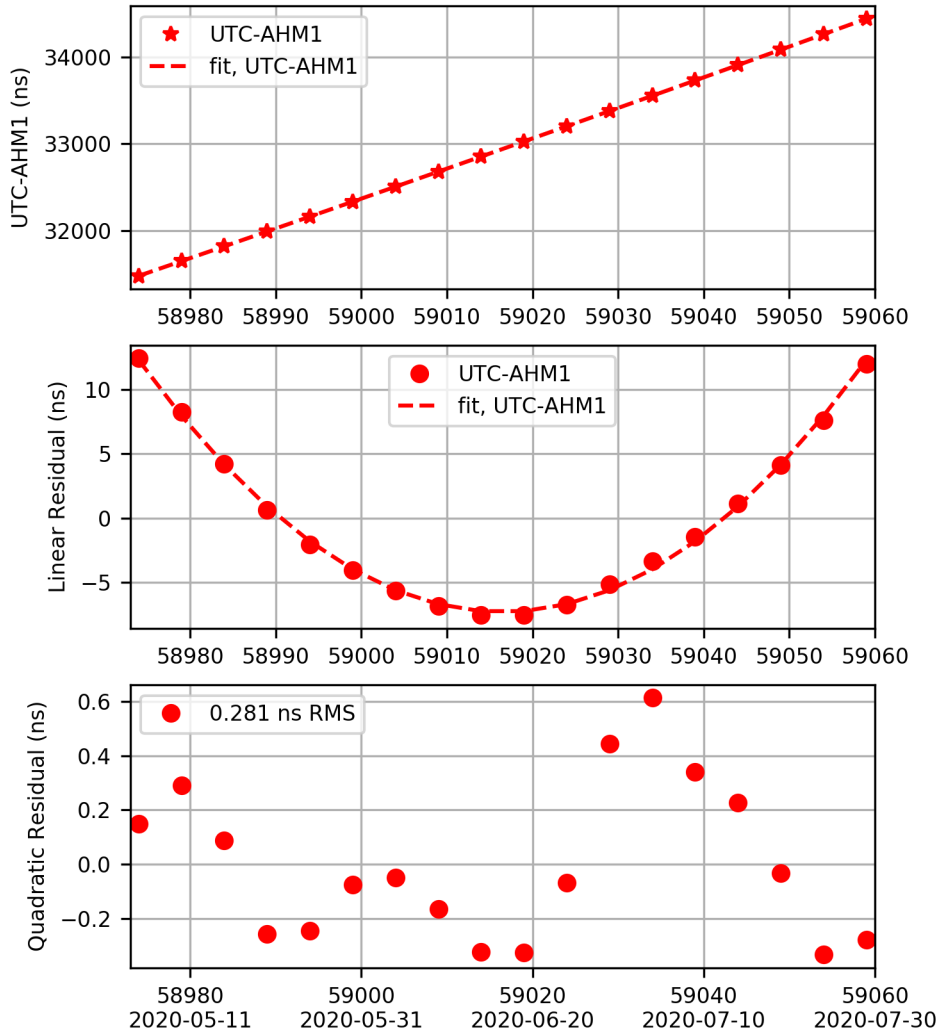
## Clock Rates - Summary

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

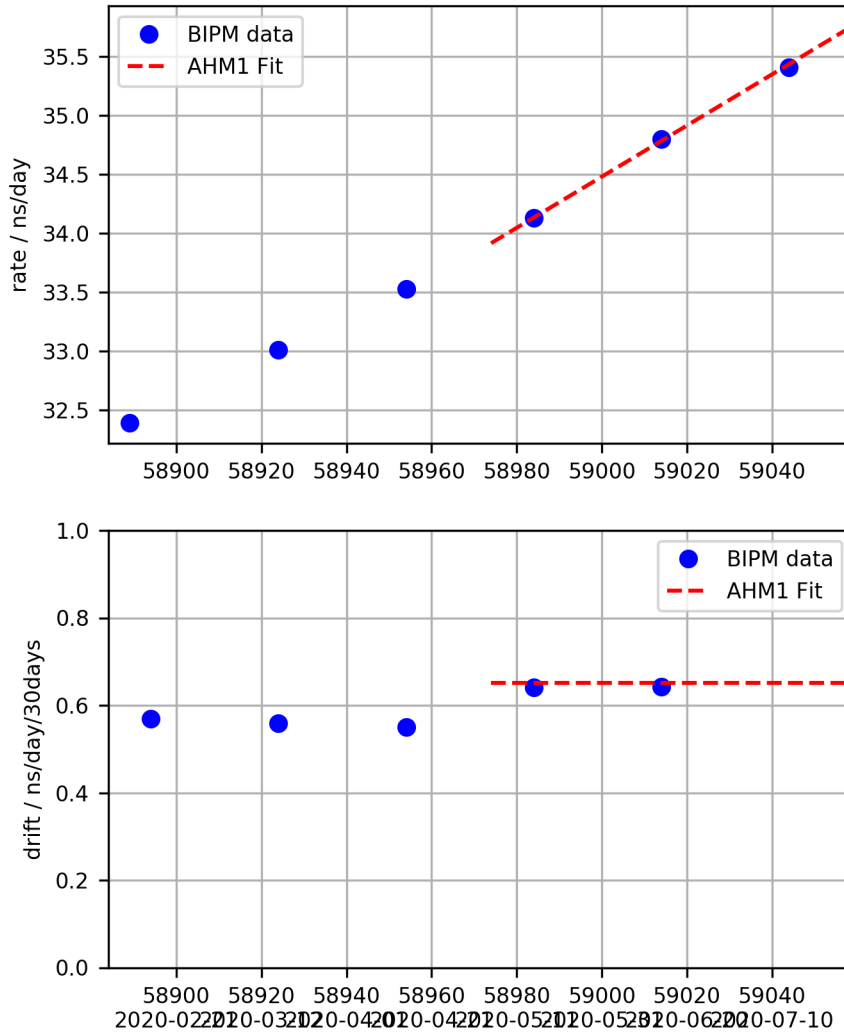


## UTC - AHM1 Fit

UTC-AHM1 (2020-08-10 / 59071)  
 $x \text{ (ns)} = 34439.377 + 35.763 *d + 0.0109 *d*d$   
 $y = -4.13924e-13 + -2.51285e-16 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59059$

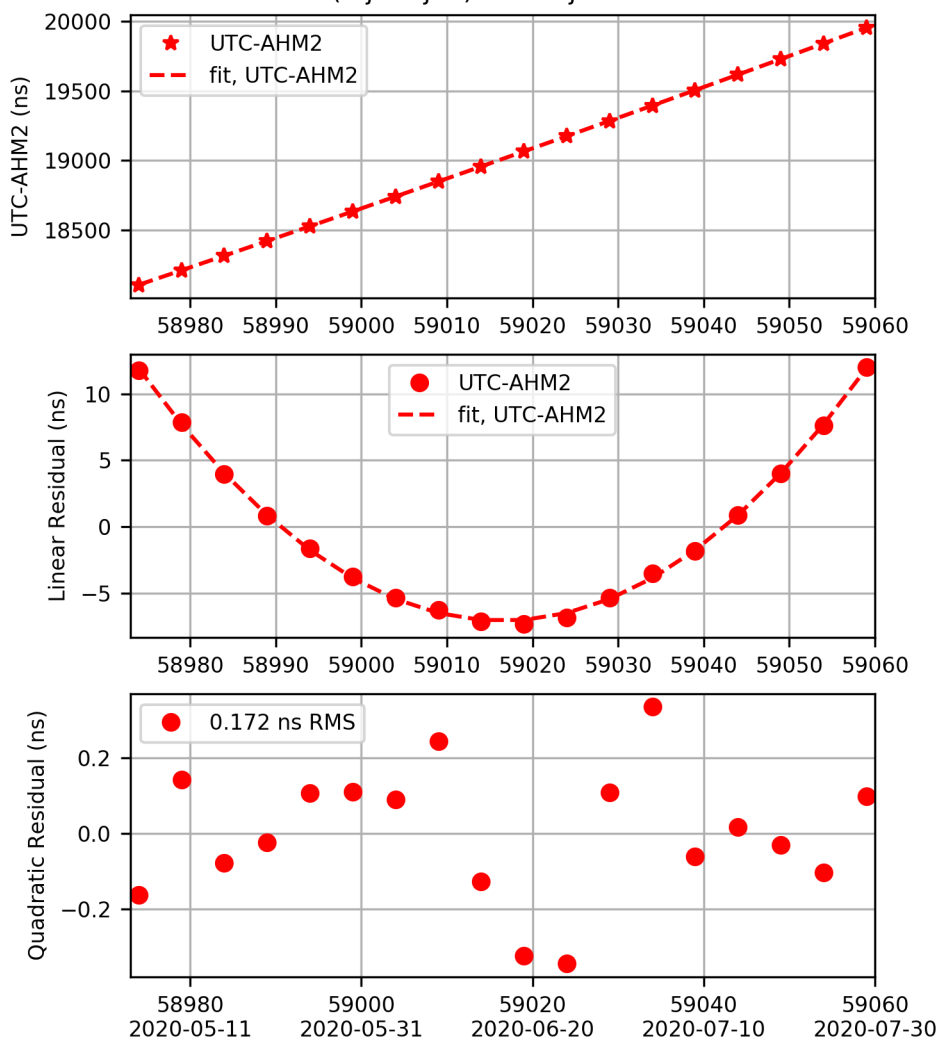


### AHM1 Rate and Drift

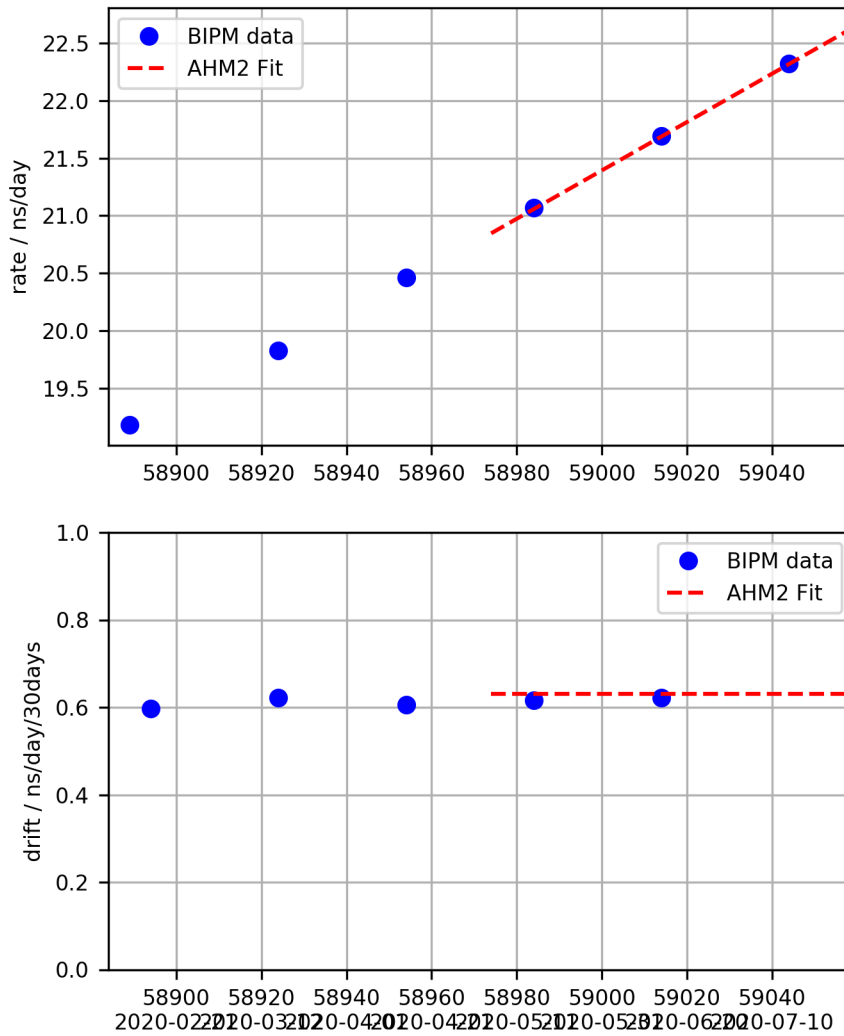


## UTC - AHM2 Fit

UTC-AHM2 (2020-08-10 / 59071)  
 $x \text{ (ns)} = 19953.202 + 22.632 *d + 0.0105 *d*d$   
 $y = -2.61946e-13 + -2.43151e-16 *d$   
 $d = (\text{mjd}-\text{mjd0})$  with  $\text{mjd0} = 59059$

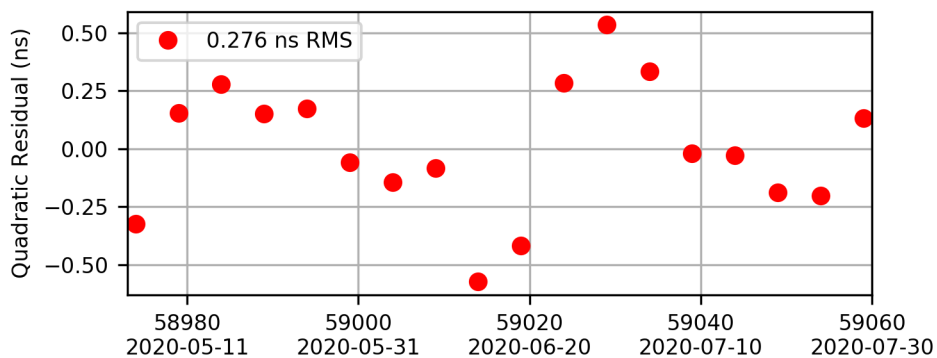
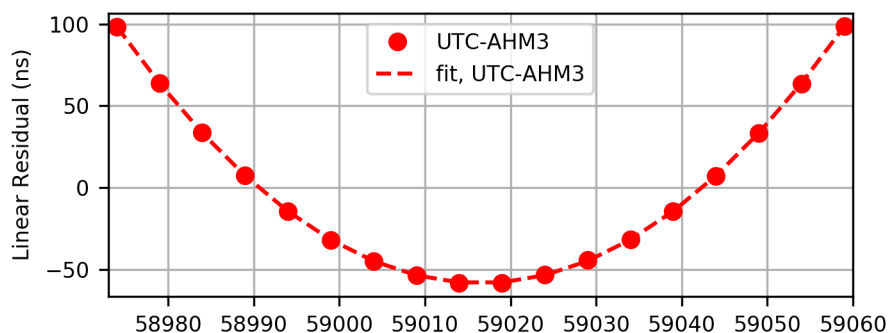
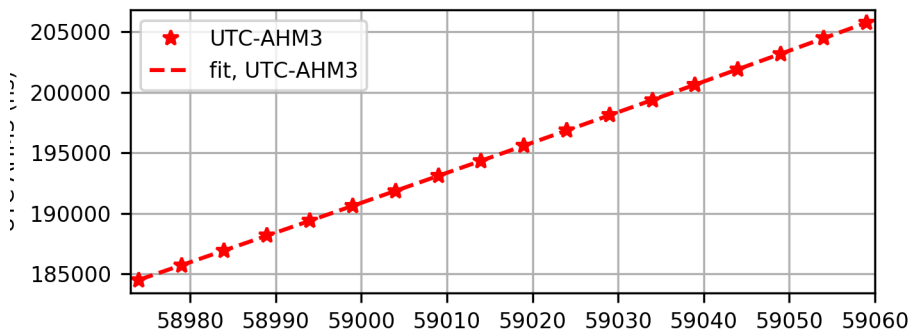


### AHM2 Rate and Drift

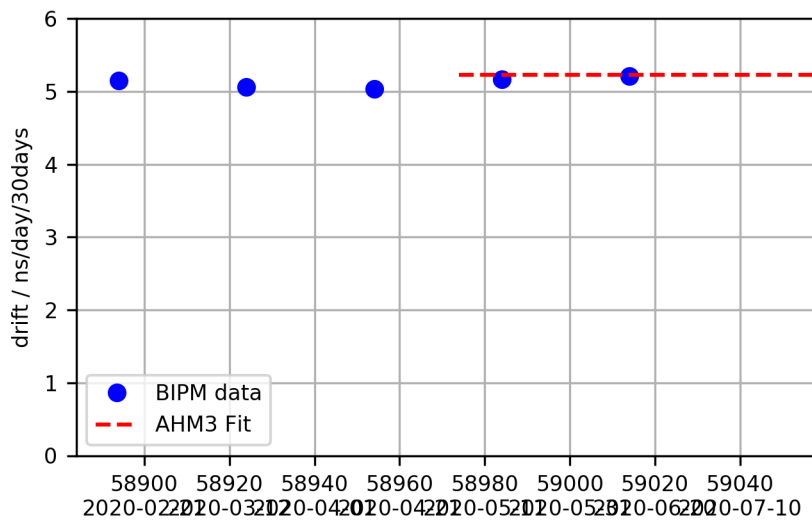
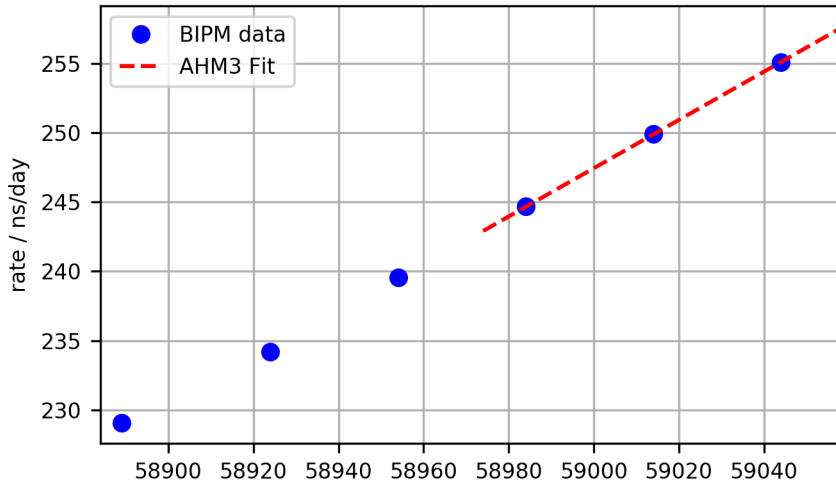


### UTC - AHM3 Fit

UTC-AHM3 (2020-08-10 / 59071)  
 $x \text{ (ns)} = 205762.768 + 257.708 *d + 0.0871 *d*d$   
 $y = -2.98274e-12 + -2.01518e-15 *d$   
 $d = (\text{mjd}-\text{mjd0})$  with  $\text{mjd0} = 59059$



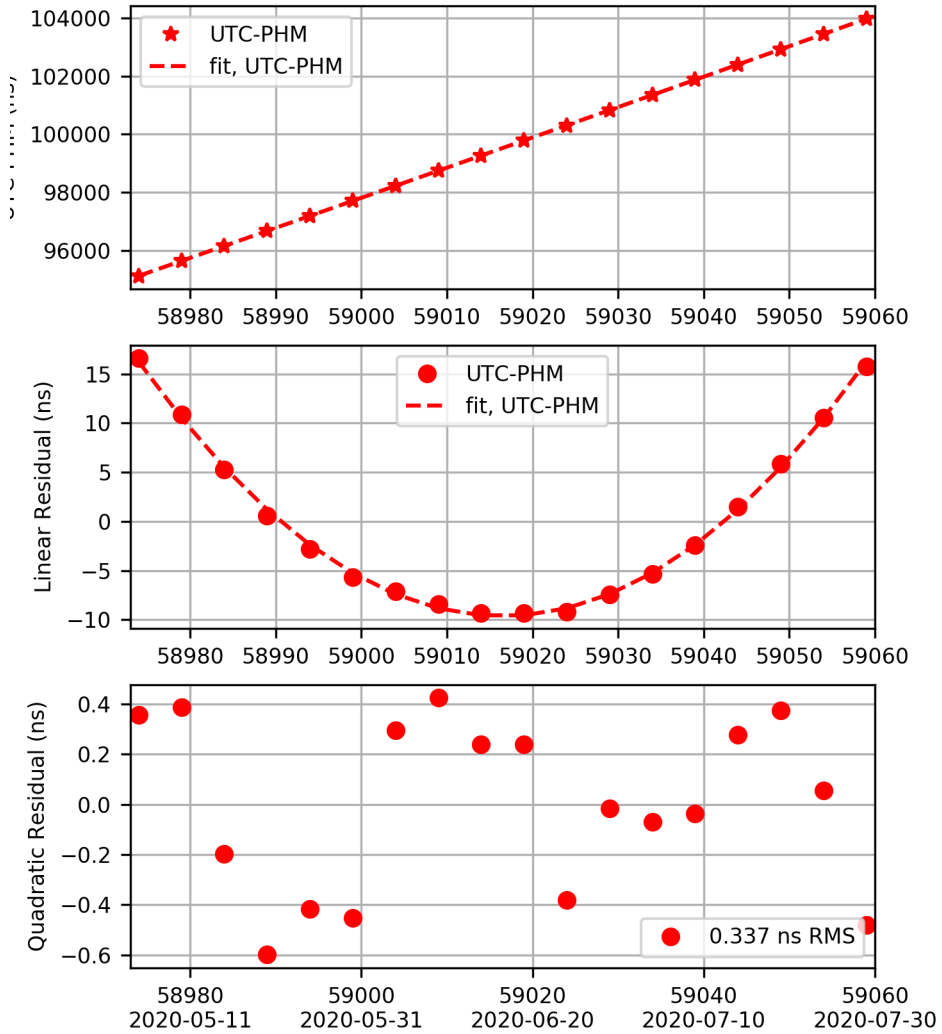
### AHM3 Rate and Drift



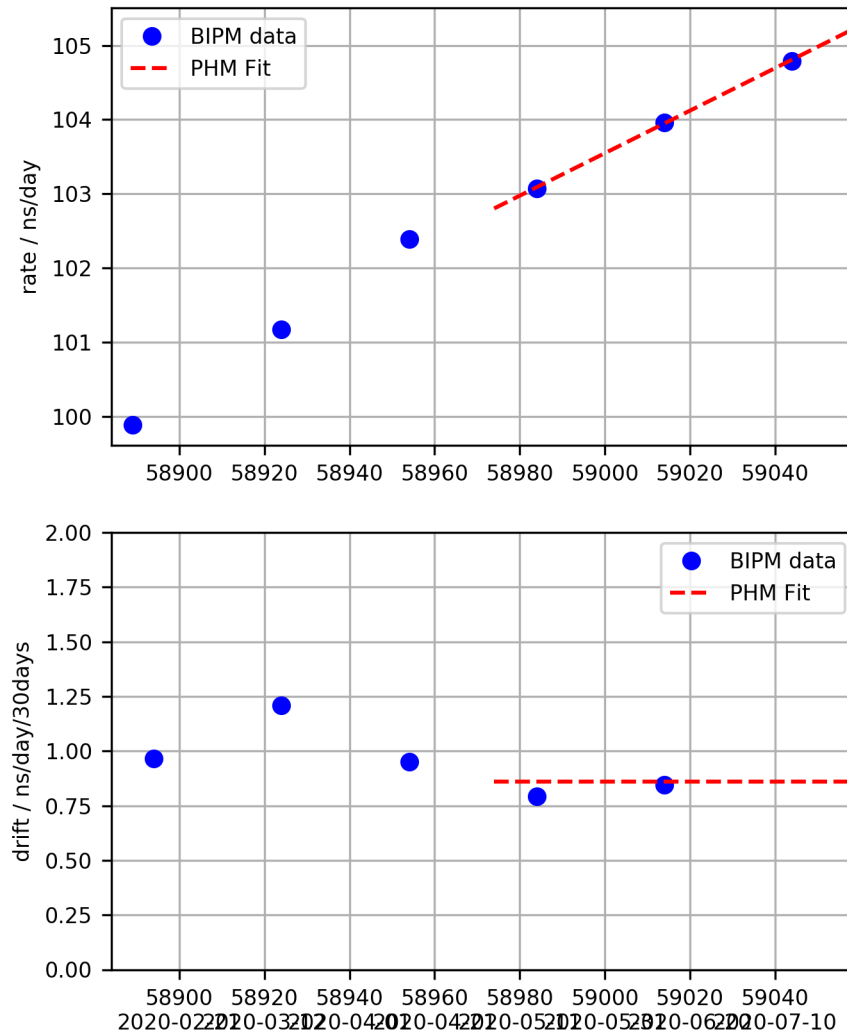


## UTC - PHM Fit

UTC-PHM (2020-08-10 / 59071)  
 $x \text{ (ns)} = 103970.081 + 105.239 *d + 0.0143 *d*d$   
 $y = -1.21804e-12 + -3.31814e-16 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59059$

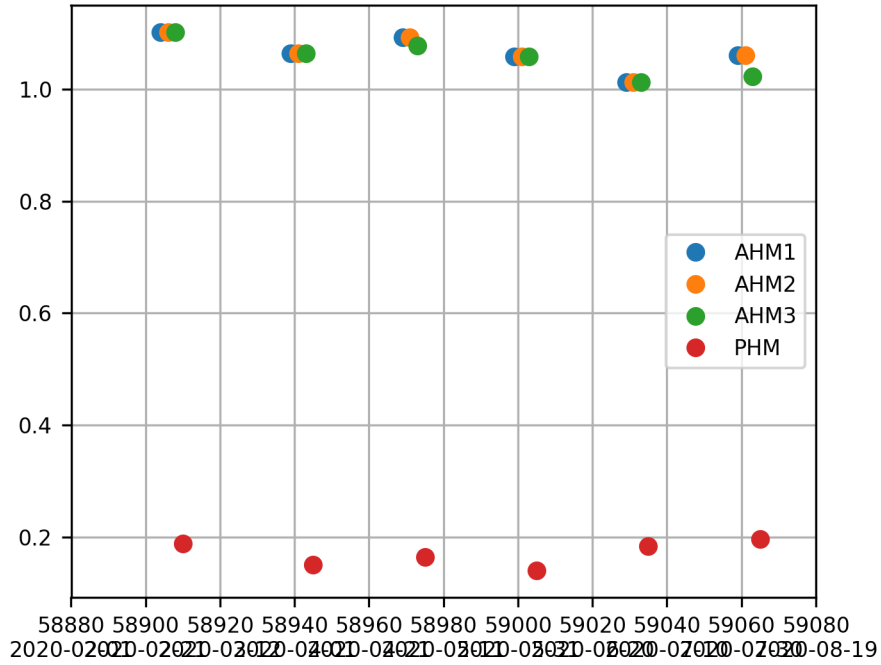


## PHM Rate and Drift



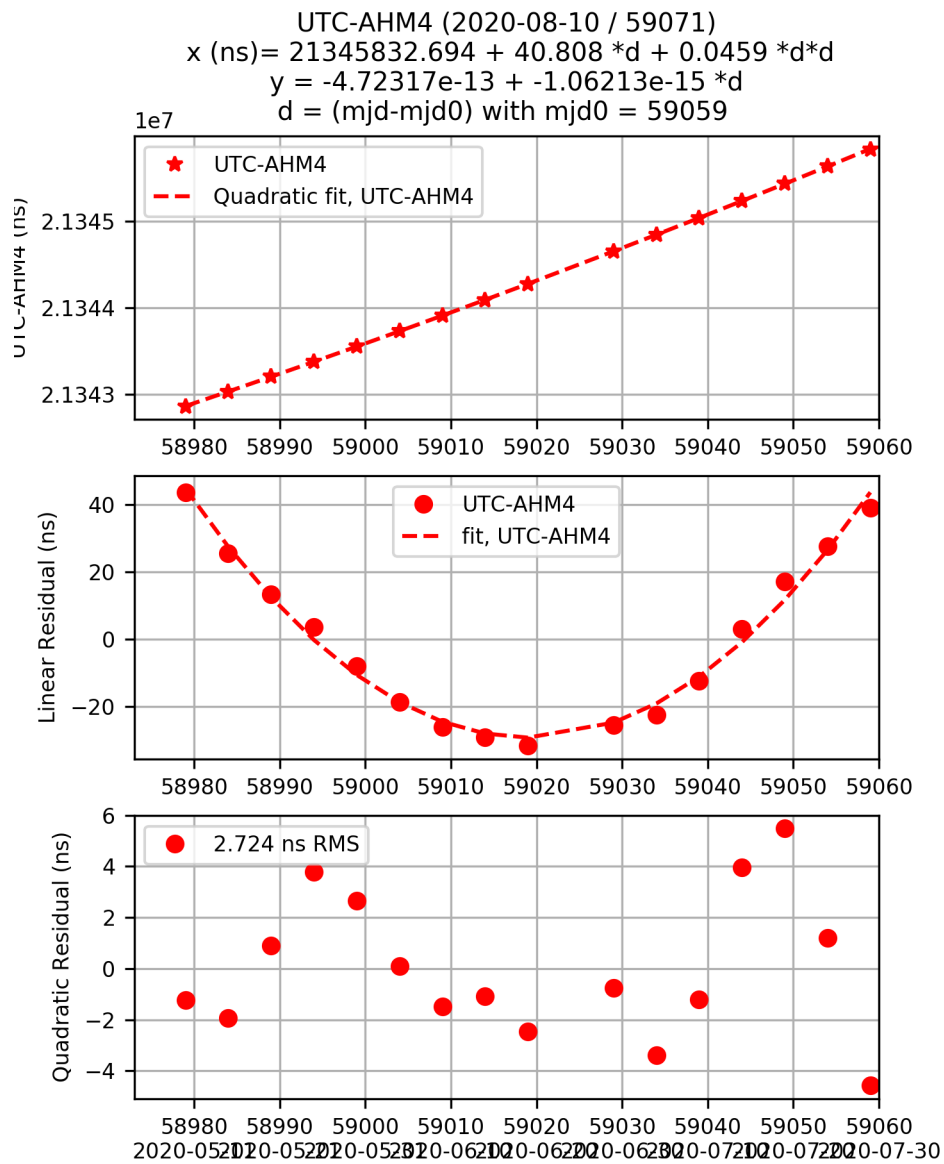
### Clock Weights

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



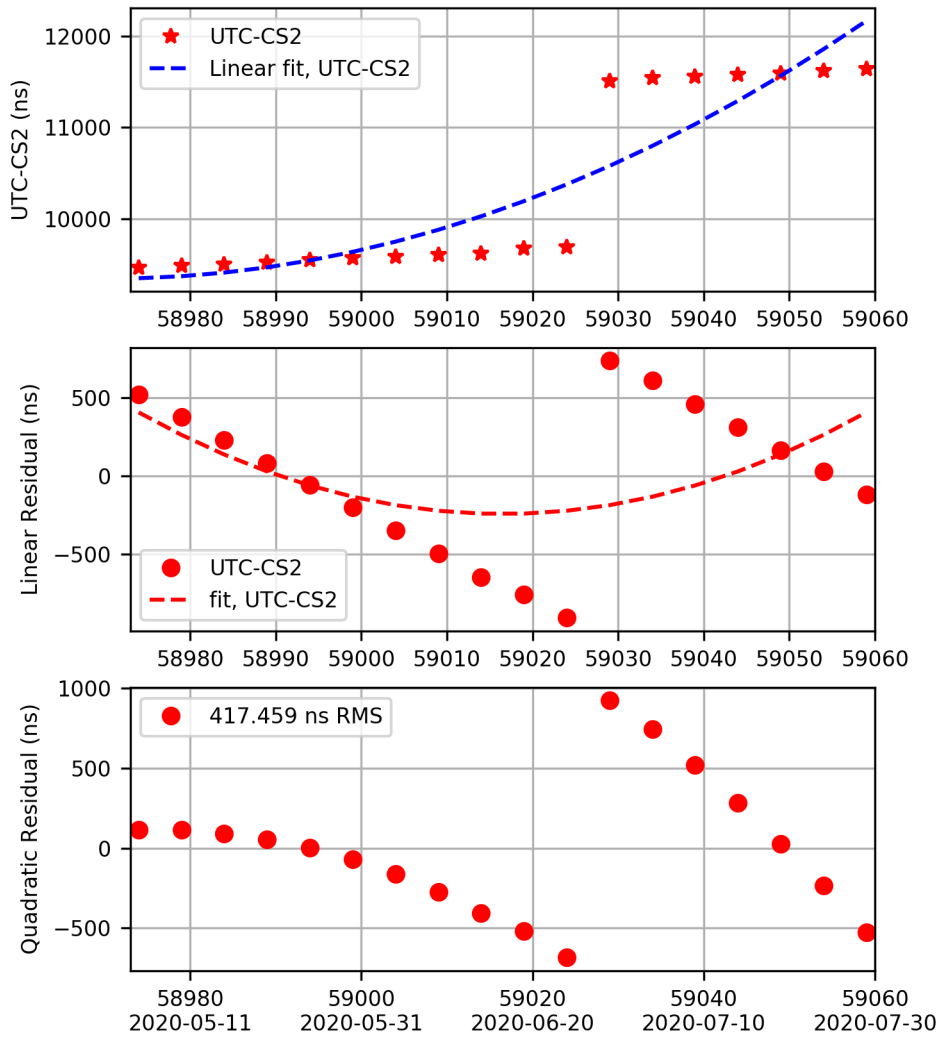
## Remote Clocks

### Remote Clock: AHM4

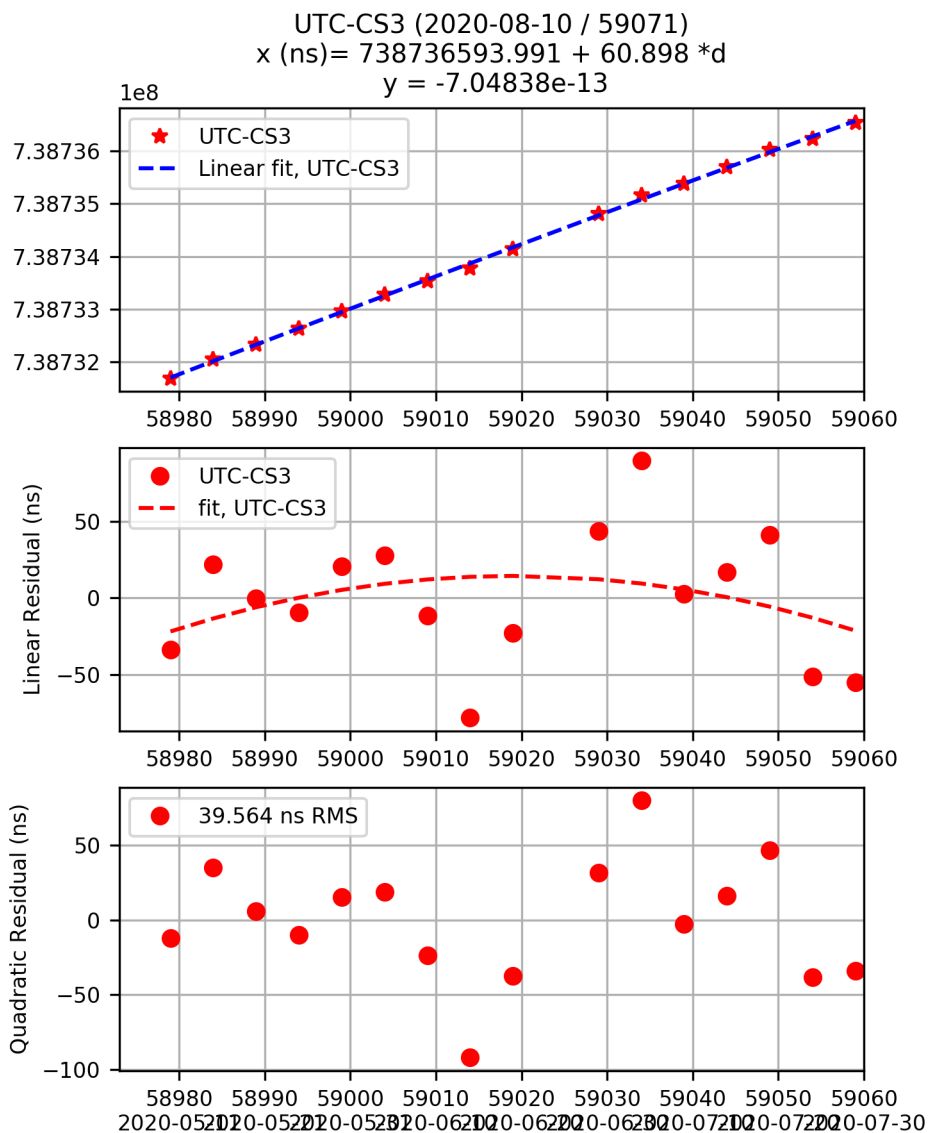


**Remote Clock: CS2**

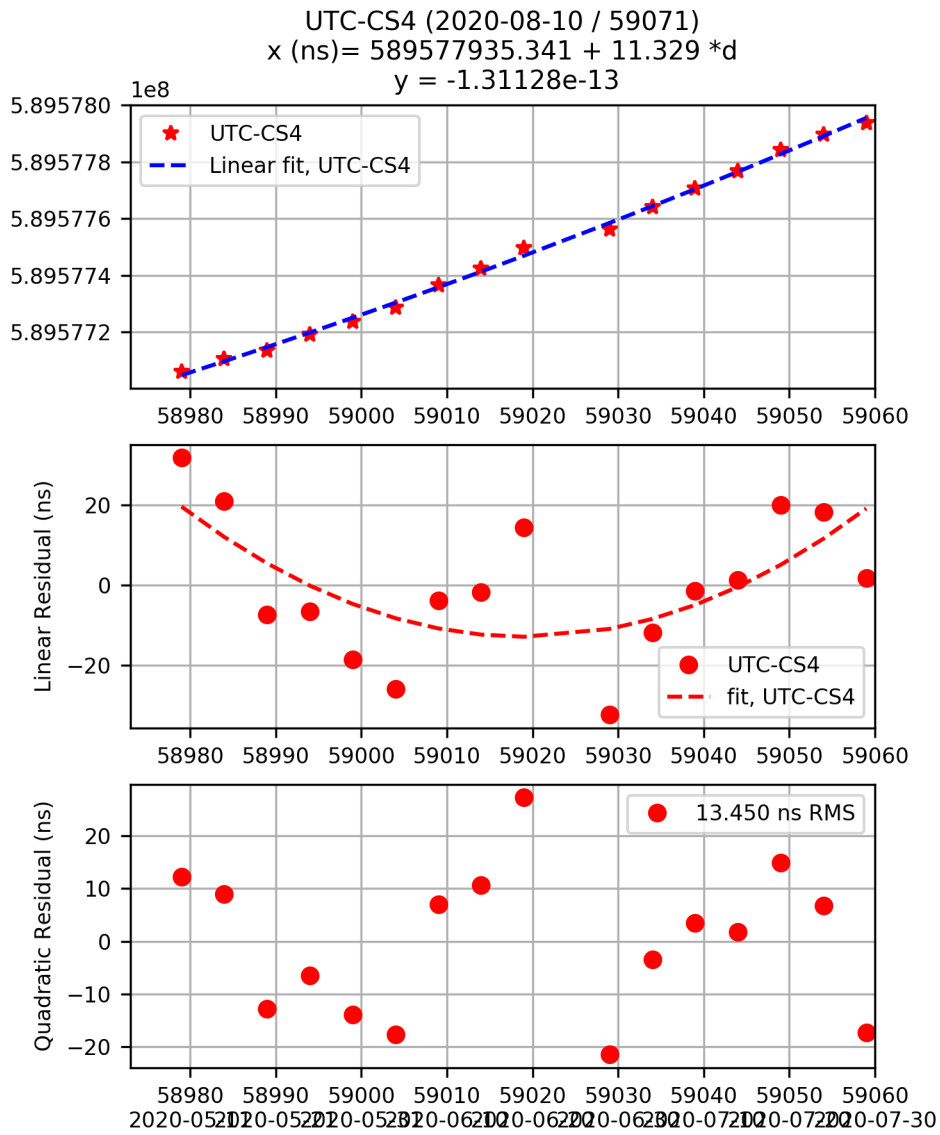
UTC-CS2 (2020-08-10 / 59071)  
 $x \text{ (ns)} = 11757.768 + 33.107 * d$   
 $y = -3.8318e-13$



**Remote Clock: CS3**



**Remote Clock: CS4**



**End of Bulletin.**