

# UTC(MIKE) Atomic Bulletin 2021-12

VTT MIKES Metrology monthly Time & Frequency bulletin.

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

Date of publication: 2021-12-13 (59561)

Circular-T issues used for analysis: [405](#), [406](#), [407](#),

First day of analysis interval: 2021-09-02 (59459)

Last day of analysis interval: 2021-11-26 (59544)

ClockData for analysis: [CDMI 21.09](#), [CDMI 21.10](#), [CDMI 21.11](#),

The Atomic Bulletin is archived at: <ftp://monitor.mikes.fi/time-scale/>

## Notes

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.

59225 (2021-01-11) AB2021-01, Add remote clock AHM5. Add steering correction +7.2ns/60d = +1.4e-15

59257 (2021-02-12) AB2021-02, Keep steering correction +7.2ns/60d = +1.4e-15

59285 (2021-03-12) AB2021-03, Set steering correction to zero.

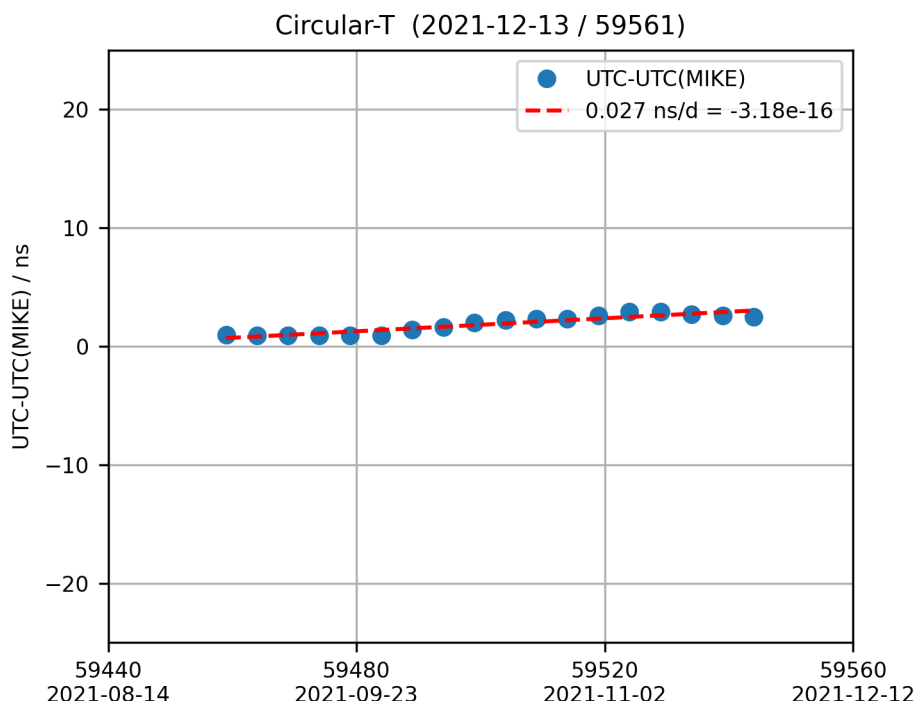
(2021-08-24) AHM3 OCXO-voltage at limit, maser re-started, DDS adjustment

SETFSREL=+4.47E-12 giving DDS\_old = 1420405750.291768, DDS\_new =

1420405750.298116. set DRIFTCOMP=+3.93E-15;

(2021-11-11) add AHM3 analysis (input data only partial, not full 3 months of ClockData)

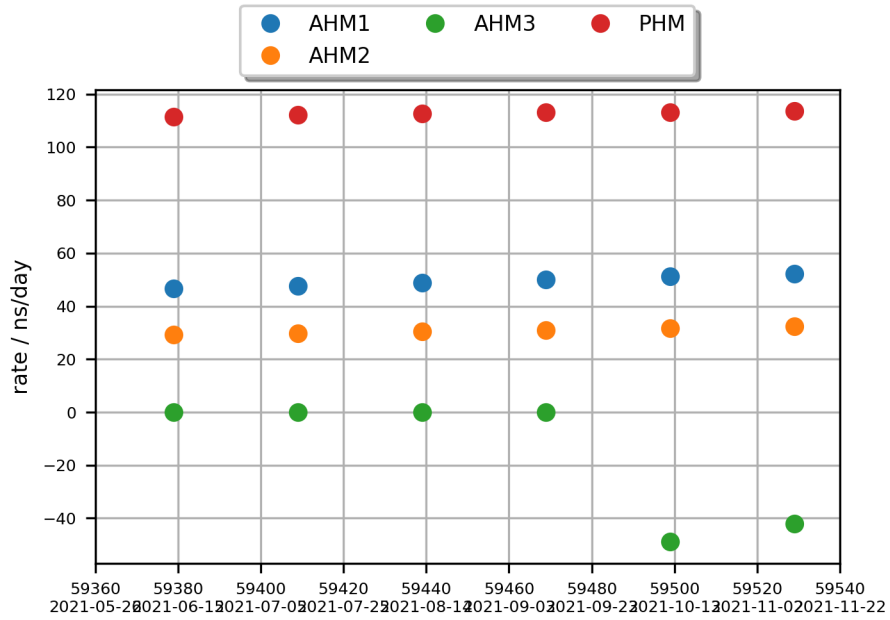
## UTC-UTC(MIKE) as reported in Circular-T



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.

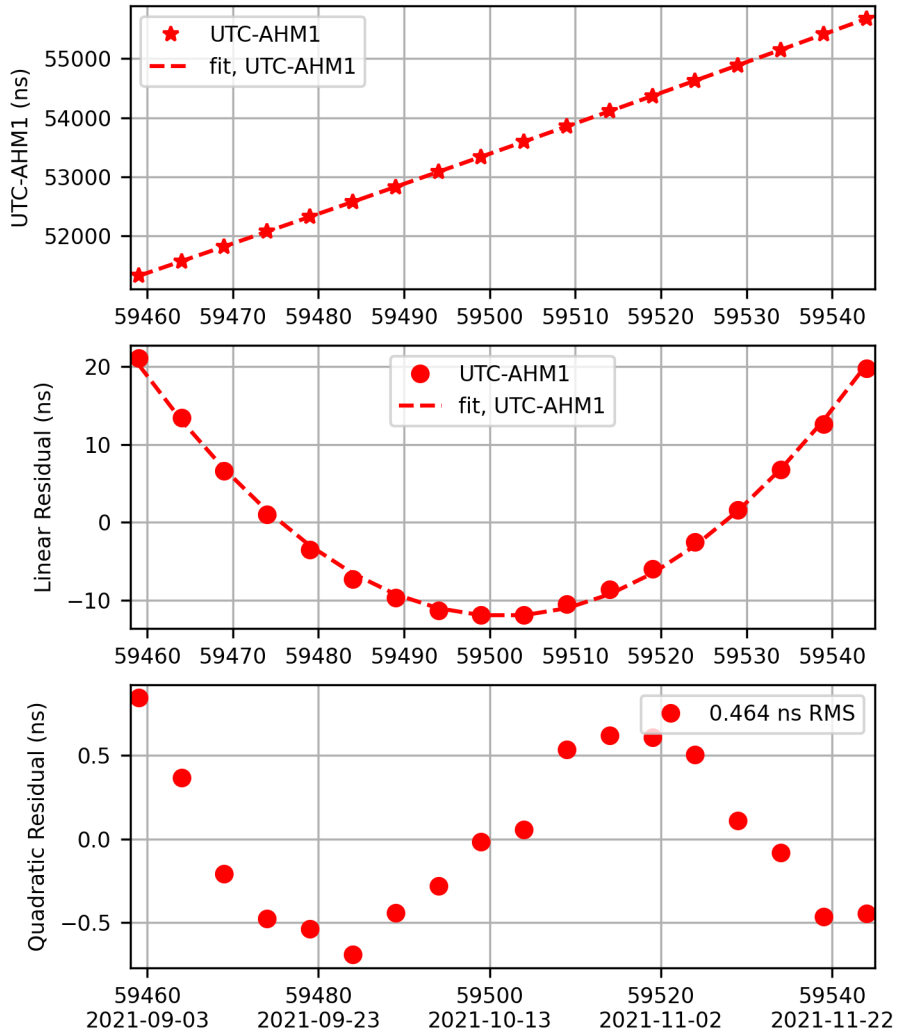
## Clock Rates - Summary

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

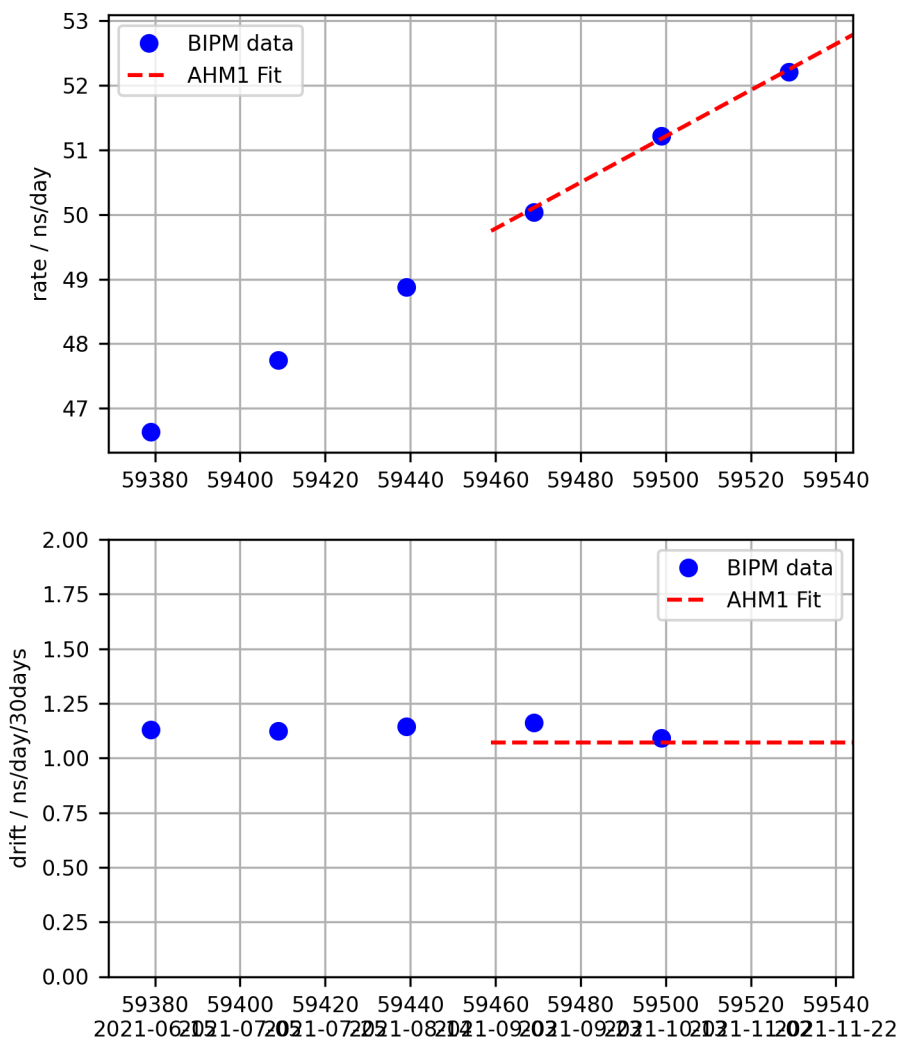


## UTC - AHM1 Fit

UTC-AHM1 (2021-12-13 / 59561)  
 $x \text{ (ns)} = 55676.343 + 52.785 *d + 0.0179 *d*d$   
 $y = -6.10936e-13 + -4.13698e-16 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59544$

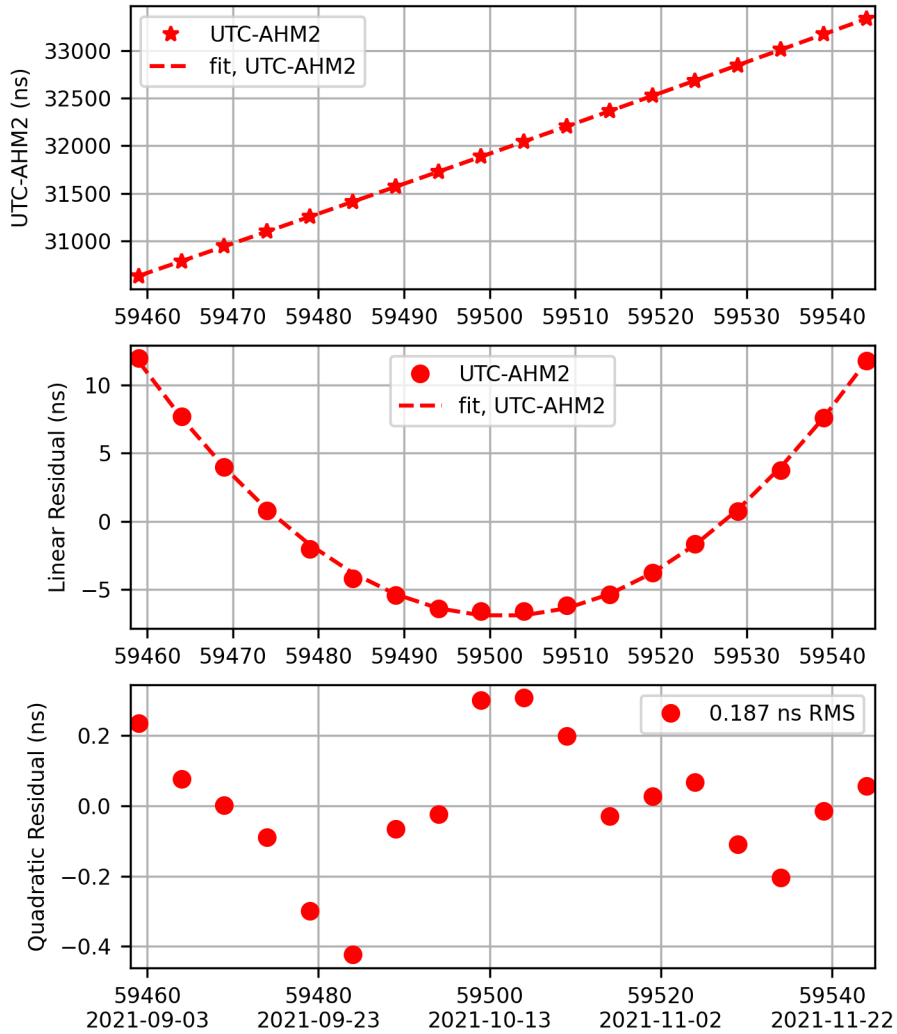


### AHM1 Rate and Drift

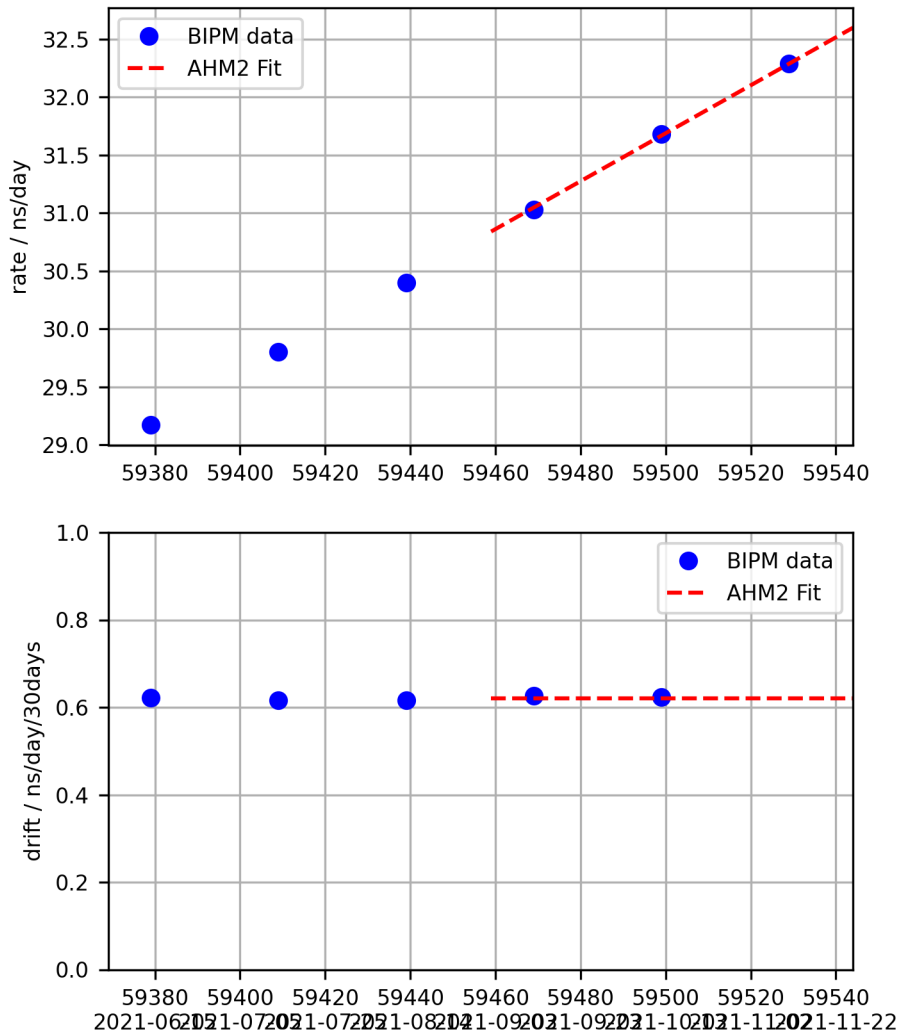


## UTC - AHM2 Fit

UTC-AHM2 (2021-12-13 / 59561)  
 $x \text{ (ns)} = 33331.944 + 32.597 *d + 0.0103 *d*d$   
 $y = -3.77283e-13 + -2.39305e-16 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59544$

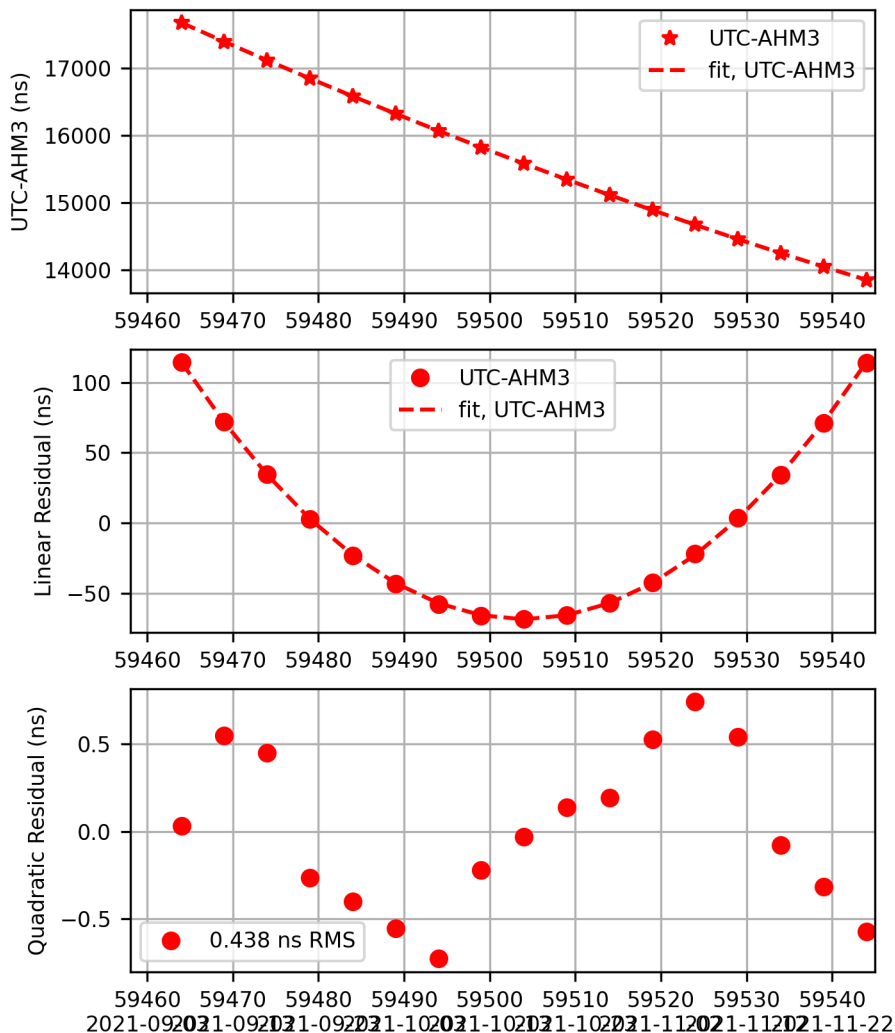


### AHM2 Rate and Drift

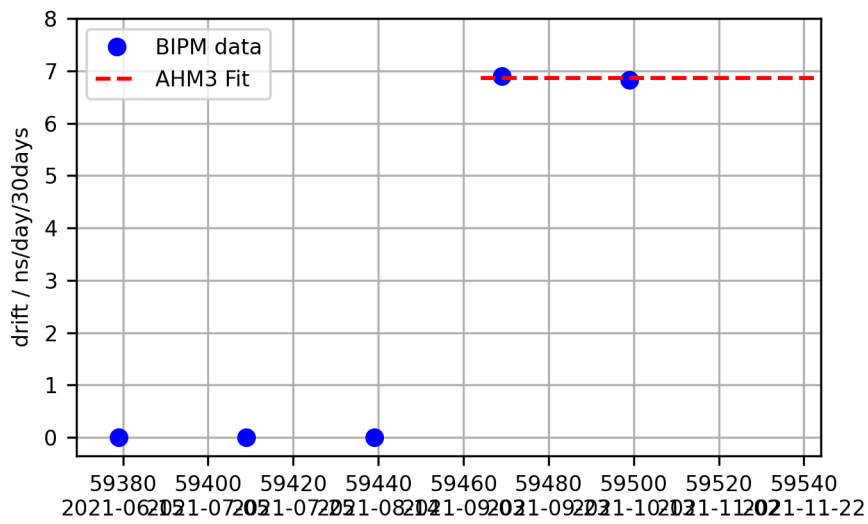
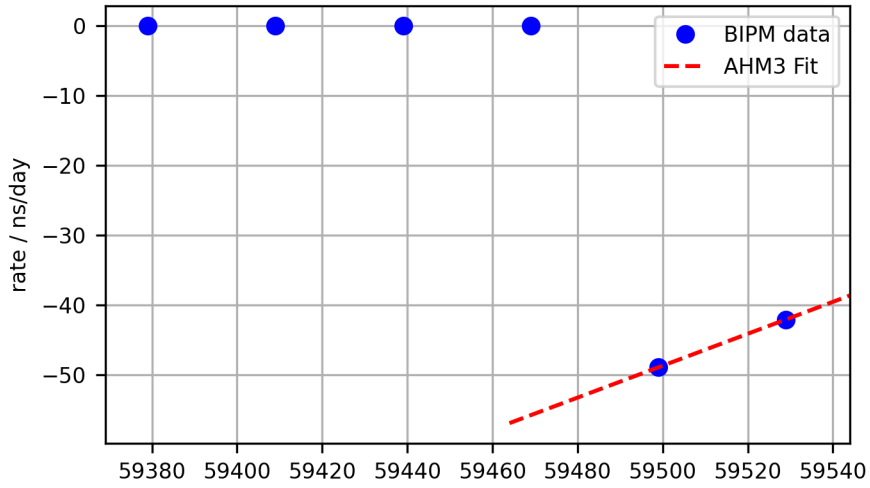


## UTC - AHM3 Fit

UTC-AHM3 (2021-12-13 / 59561)  
 $x \text{ (ns)} = 13852.674 + -38.657 *d + 0.1144 *d*d$   
 $y = 4.47416e-13 + -2.64742e-15 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59544$



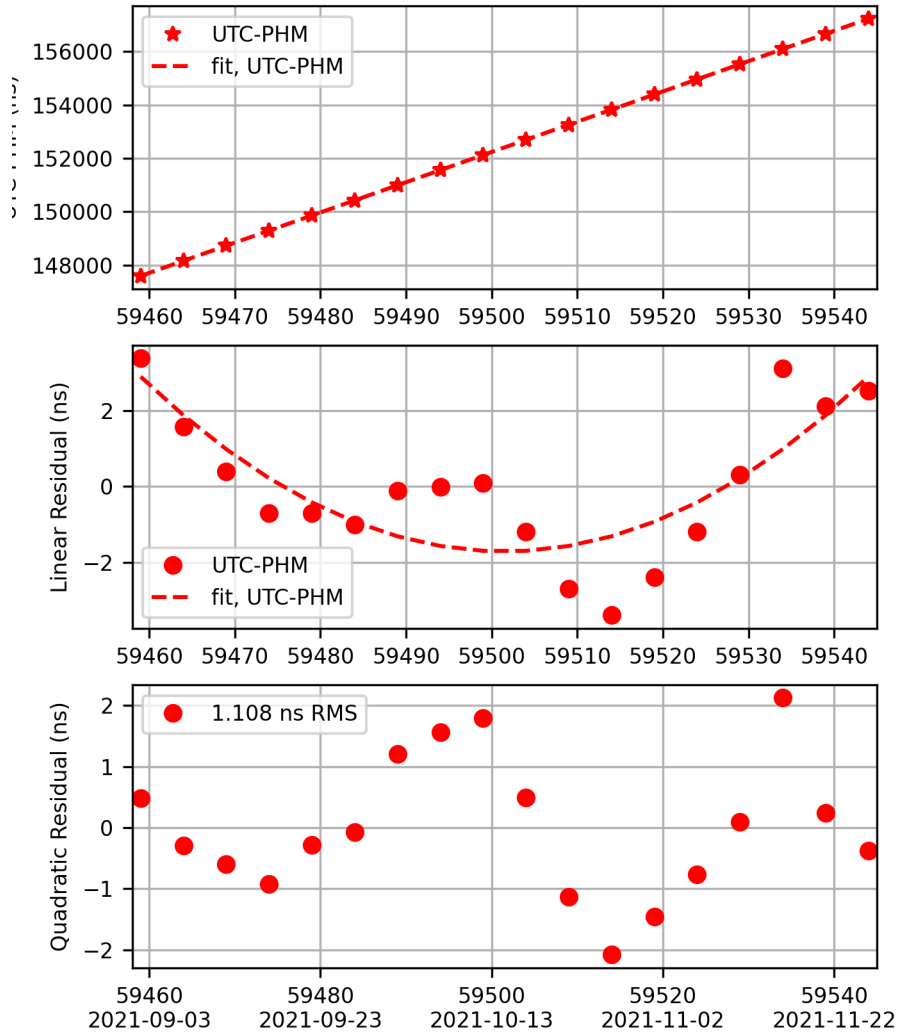
### AHM3 Rate and Drift



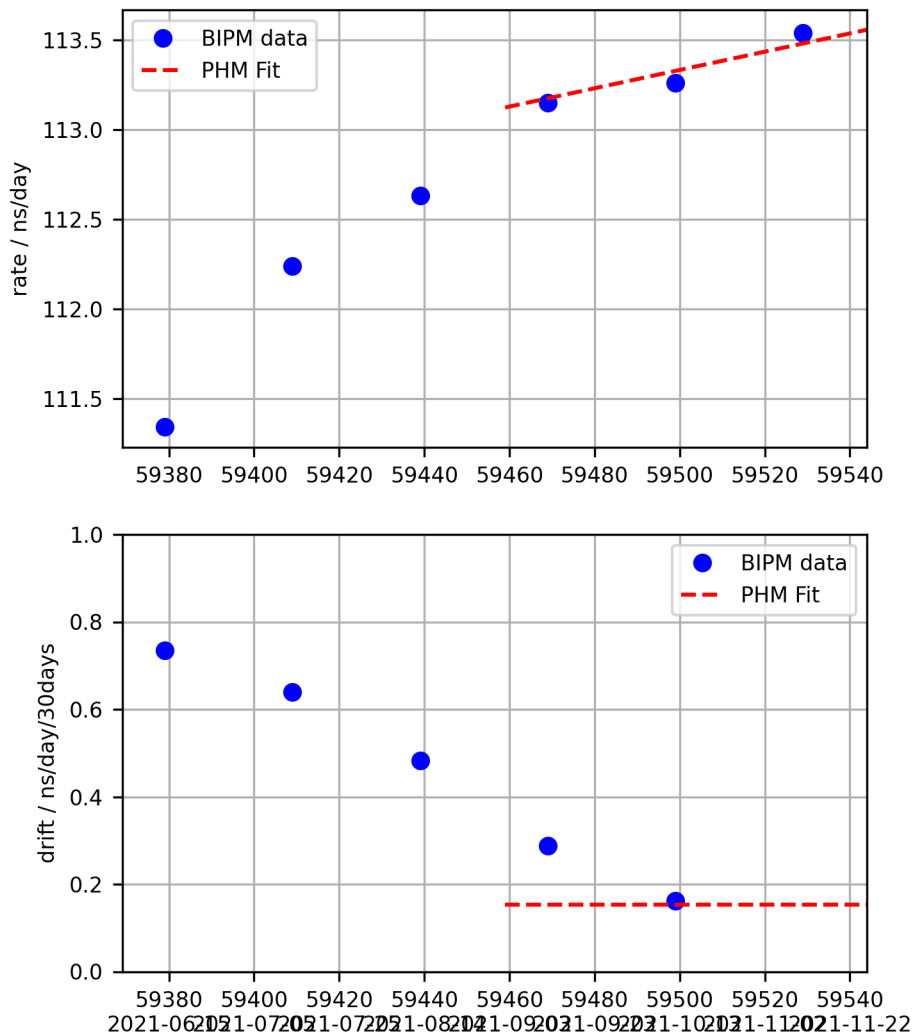


## UTC - PHM Fit

UTC-PHM (2021-12-13 / 59561)  
 $x \text{ (ns)} = 157226.280 + 113.556 *d + 0.0026 *d*d$   
 $y = -1.31431e-12 + -5.90469e-17 *d$   
 $d = (\text{mjd}-\text{mjd0}) \text{ with mjd0} = 59544$

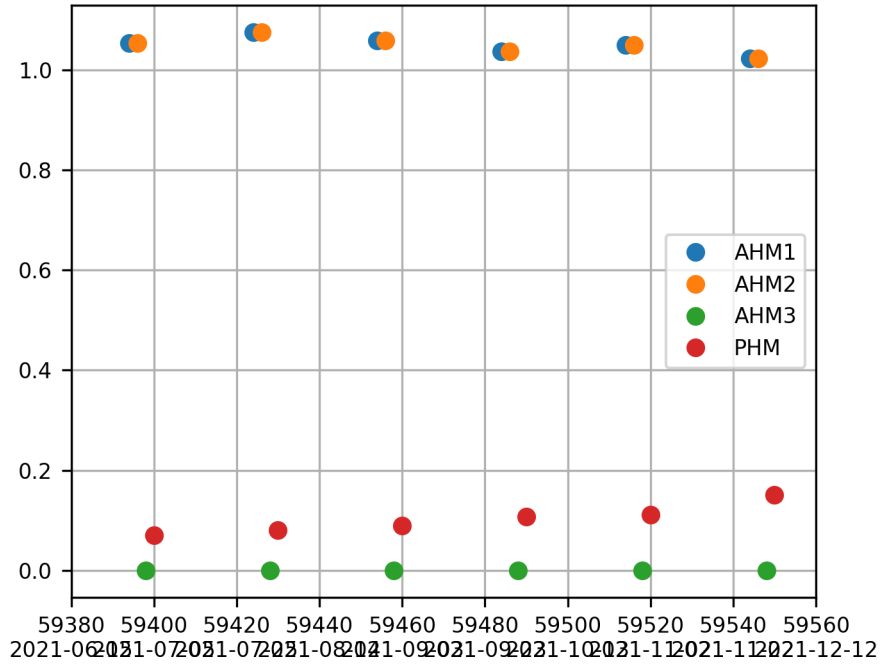


### PHM Rate and Drift



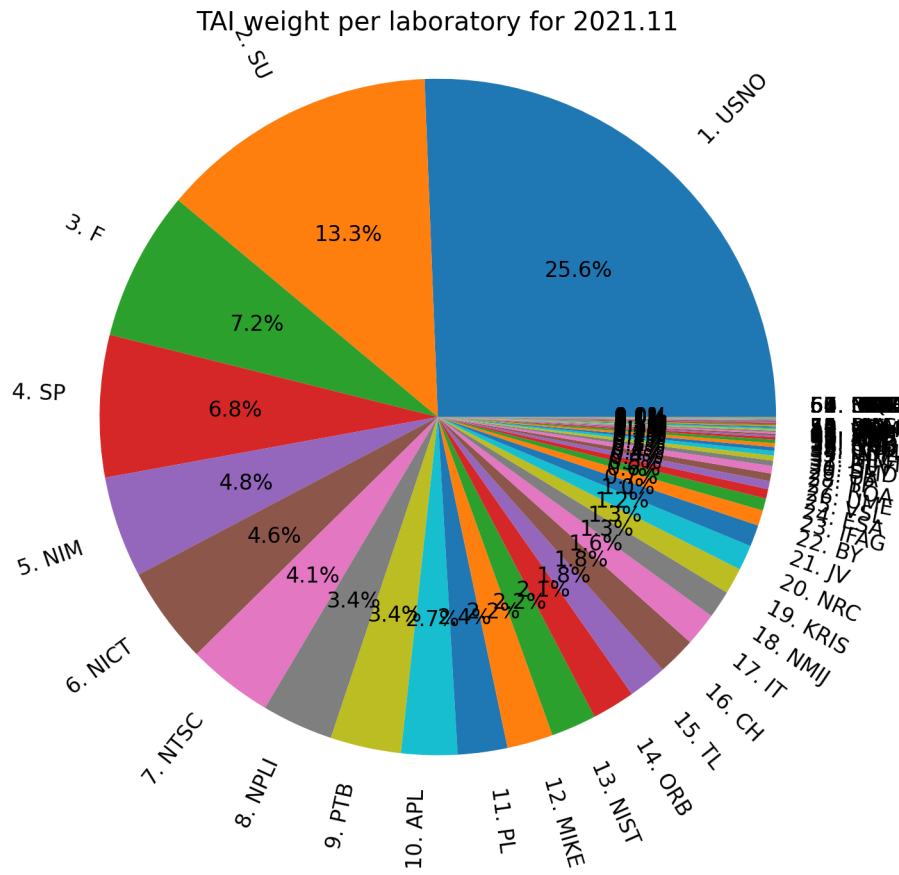
### VTT MIKES Clock Weights

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



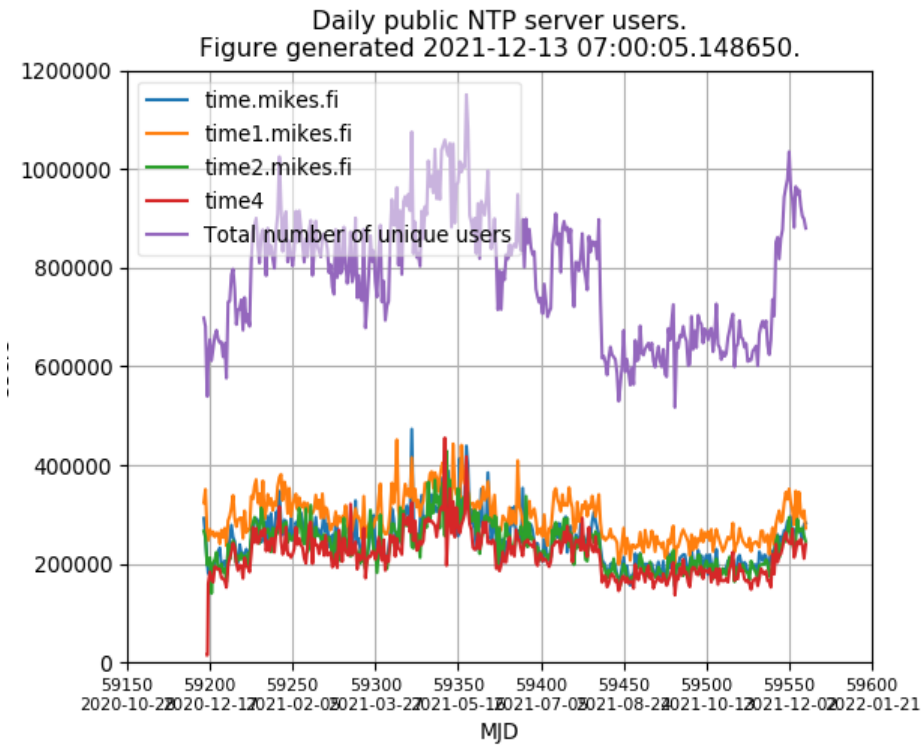
# Clock Weights per Laboratory

Relative TAI Weight per laboratory



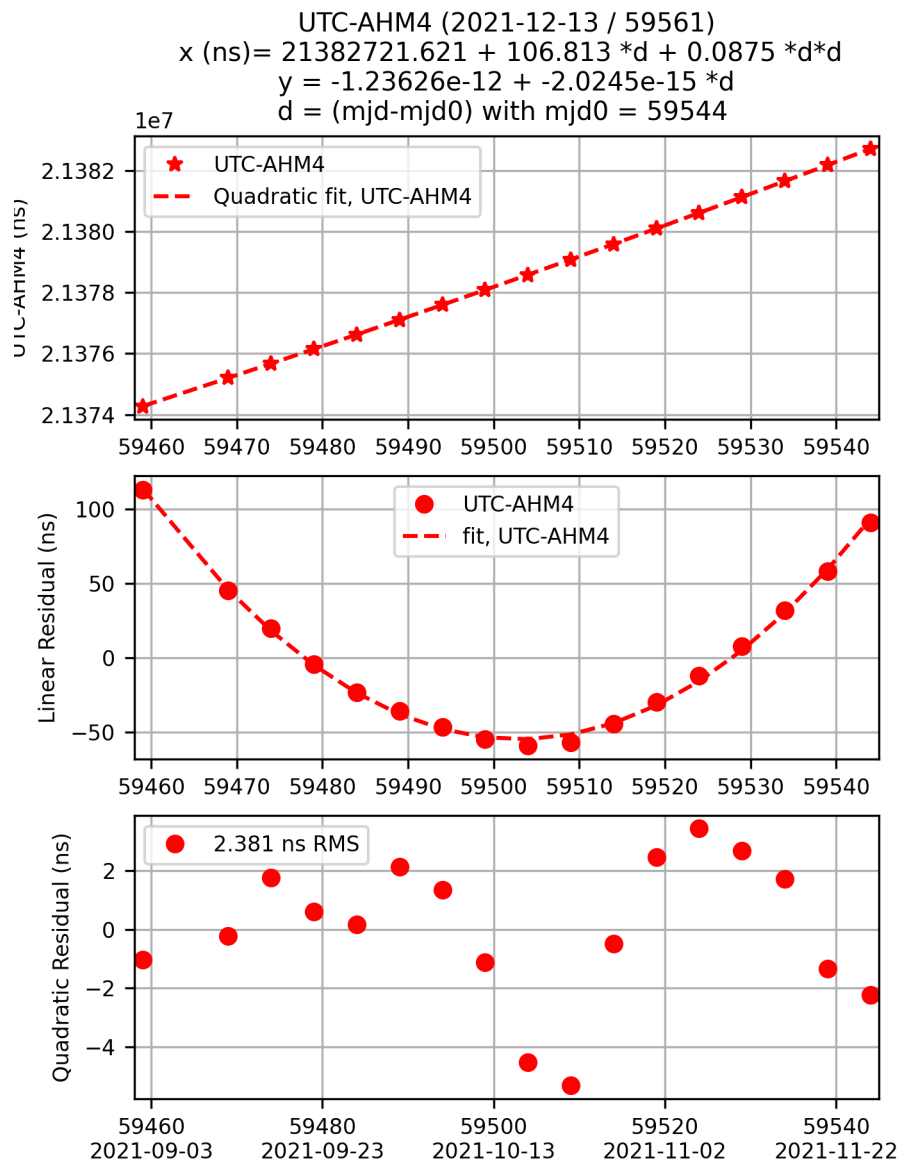
## NTP Usage Statistics

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



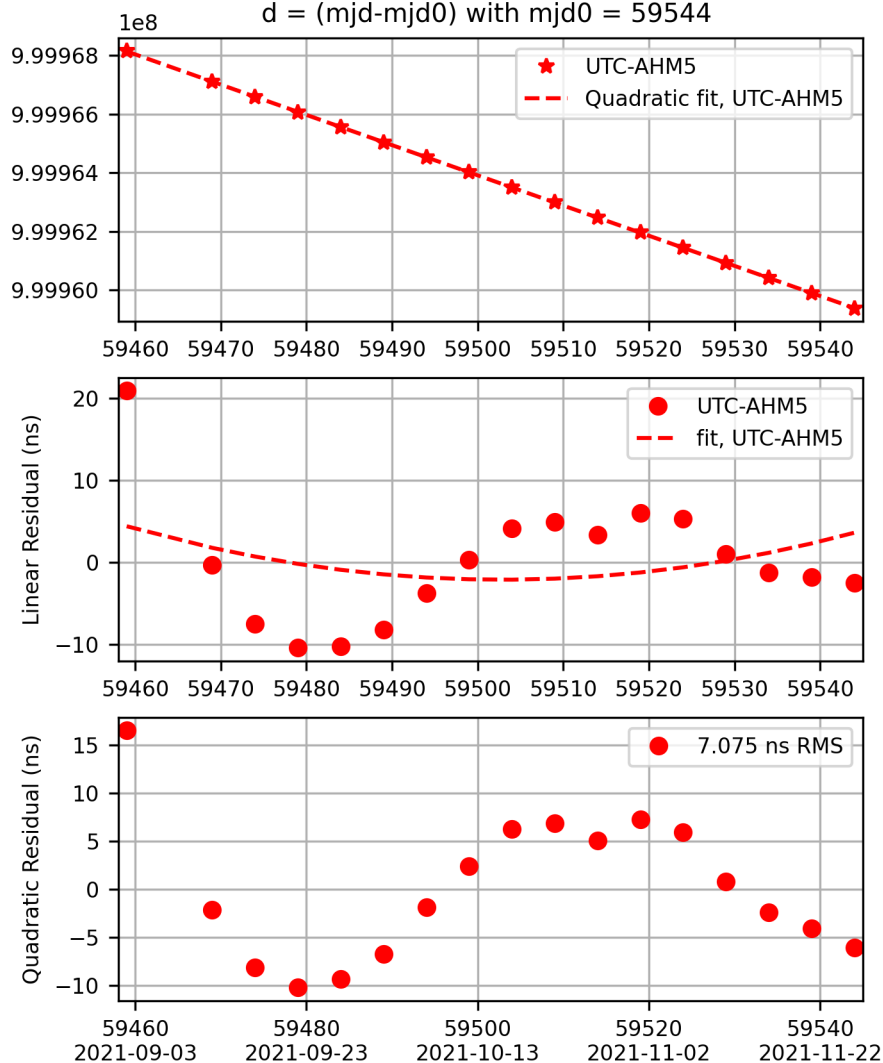
## Remote Clocks

### Remote Clock: AHM4



**Remote Clock: AHM5**

UTC-AHM5 (2021-12-13 / 59561)  
 $x \text{ (ns)} = 999959385.536 + -102.683 *d + 0.0034 *d*d$   
 $y = 1.18846e-12 + -7.83083e-17 *d$   
 $d = (\text{mjd}-\text{mjd0})$  with  $\text{mjd0} = 59544$

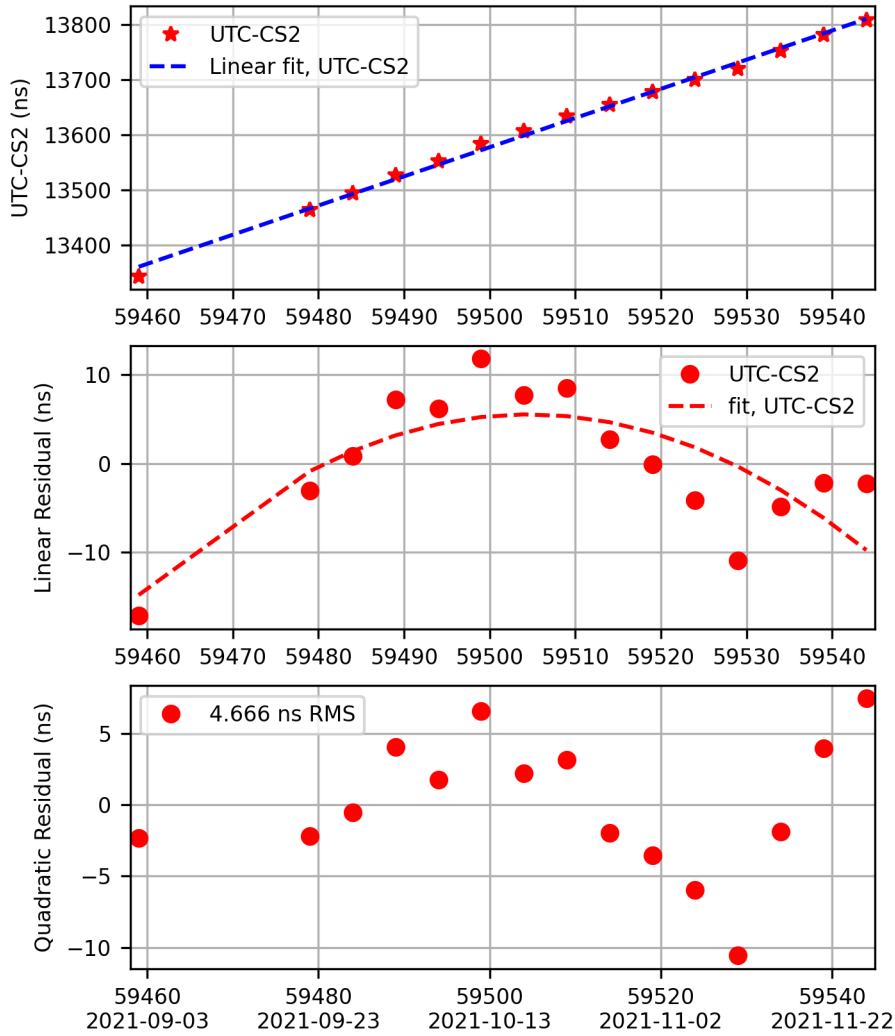


**Remote Clock: CS2**

UTC-CS2 (2021-12-13 / 59561)

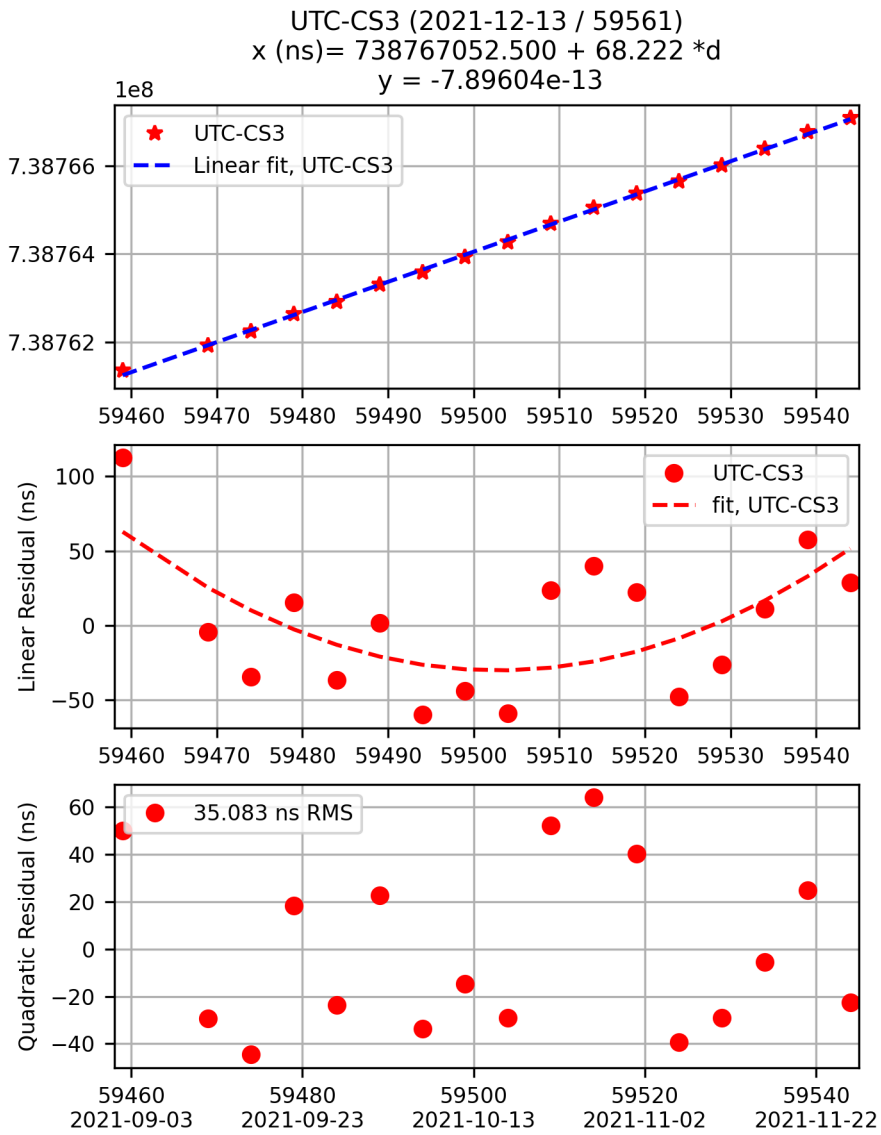
$$x \text{ (ns)} = 13810.316 + 5.294 * d$$

$$y = -6.12733e-14$$

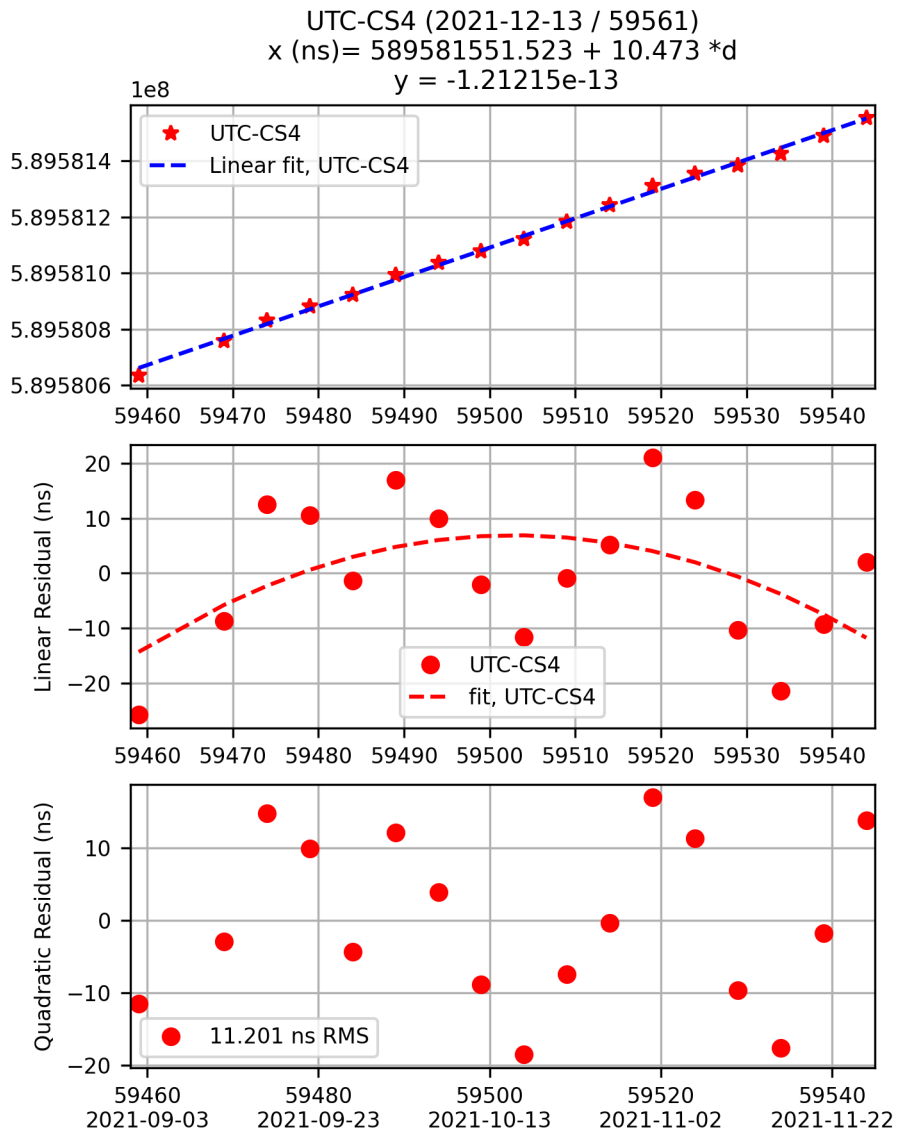




**Remote Clock: CS3**



**Remote Clock: CS4**



**End of Bulletin.**