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Notations

As presented in [Petit et al., 2001] for the Z12-T, the calibration of a geodetic system is divided in (up to) 6 different parts (Figure 1)

- X_P = Delay of the 1PPS-in with respect to the laboratory reference
- X_O = Delay of the "internal reference" with respect to the 1PPS-in

(X_P + X_o) = REFDLY.

- X_C = antenna cable delay
- [X_D = short cable + splitter delay]

(X_C + X_D) = CABDLY. In practice, X_D is generally not used.

- X_R = receiver internal delay, measured from the "internal reference"
- X_S = antenna delay

(X_R + X_S) = INTDLY.

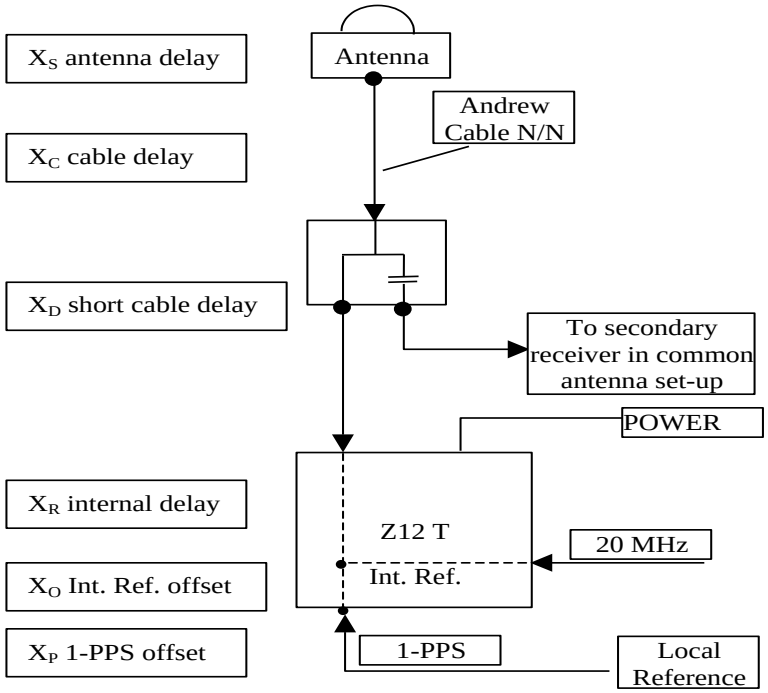


Figure 1: Definition of the different delays used in the most general set-up of a geodetic system (here shown for a Z12-T) from [Petit et al, 2001].

3/ phase 3

Laboratories: BIPM, USNO, NIST

3.1/ BIPM (23175)

Period

MJD 60119 to 60127

Delays

BP2D: (cf page 4)
REFDLY = 53.41 ns (68.42-15.01)
CABDLY = 176.85 ns (C210)

BP2G: (cf page 5)
REFDLY = 53.51 ns (68.52-15.01)
CABDLY = 176.38 ns (C211)

BP21: (cf page 4)
REFDLY = 43.41 ns (58.42-15.01)
CABDLY = 140.80 ns (C201)

Setup at the BIPM

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	BIPM
Date and hour of the beginning of measurements:	MJD 60119
Date and hour of the end of measurements:	MJD 60127

Information on the system

	Local:	**Travelling:**
4-character BIPM code	BP21	BP2D
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR 4701229	Mesit GTR55 2010001
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	LMR-195	HYLM195
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio SEPCHOKE B3E6 5253	Novatel GNSS-850 NMLK17440001C
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	43.41 ns	53.41 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	PPSin compensation enable	
• Antenna cable delay:	140.80 ns	176.85 ns
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	
Longitude or Y /m:	
Height or Z /m:	

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	
Set temperature value and uncertainty:	22 ± 1°C
Set humidity value and uncertainty:	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	BIPM
Date and hour of the beginning of measurements:	MJD 60119
Date and hour of the end of measurements:	MJD 60127

Information on the system

	Local:	Travelling:
4-character BIPM code	BP21	BP2G
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR 4701229	Septentrio PolaRx5TR 4701533
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	LMR-195	HYLM195
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio SEPCHOKE B3E6 5253	Septentrio SEPCHOKE B3E6 6023
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	43.41 ns	53.51 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	PPSin compensation enable	PPSin compensation enable
• Antenna cable delay:	140.80 ns	176.38 ns
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

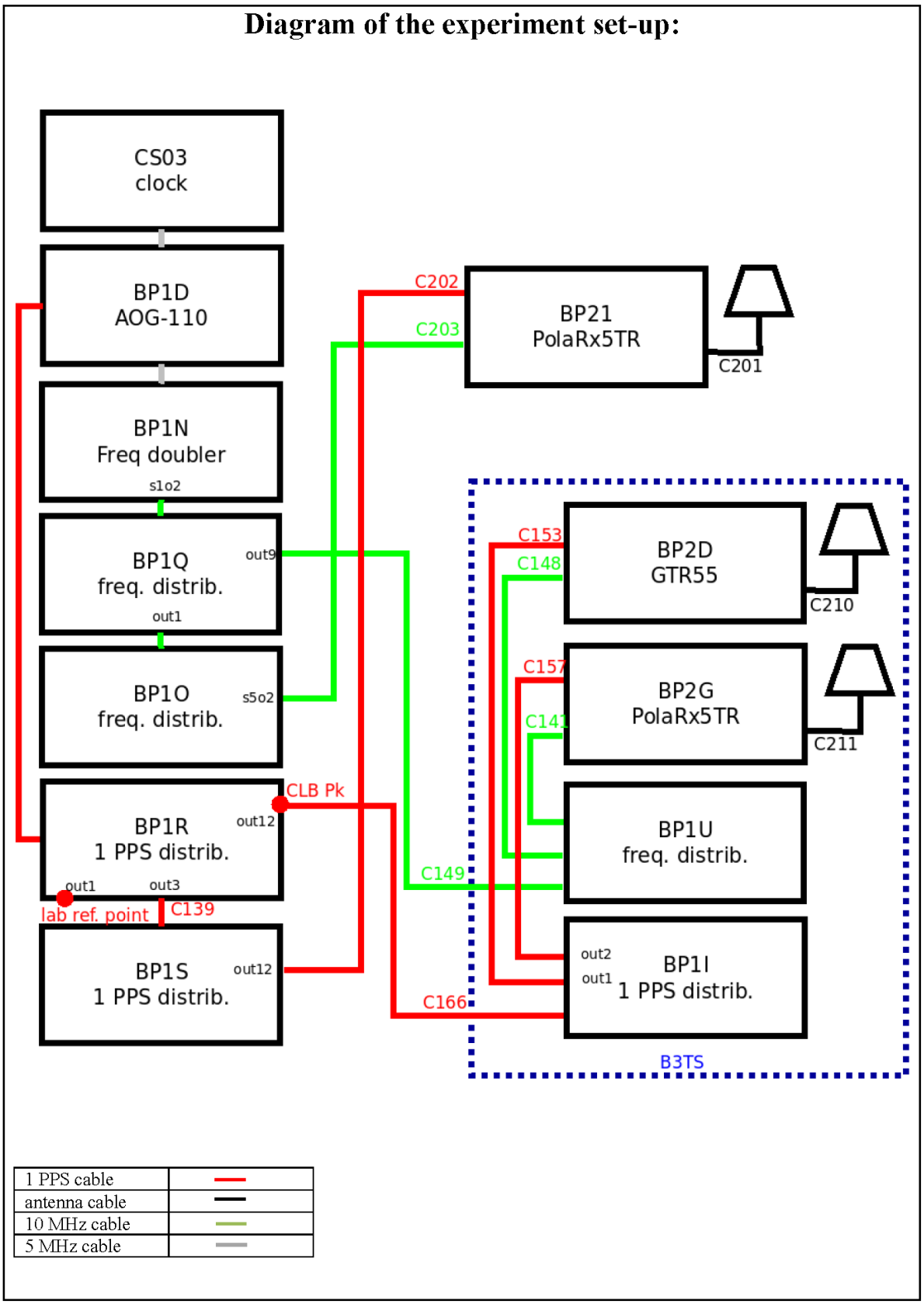
• INT DLY (GPS) /ns:	
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	
Longitude or Y /m:	
Height or Z /m:	

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	
Set temperature value and uncertainty:	22 ± 1°C
Set humidity value and uncertainty:	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

Diagram of the experiment set-up:



Log of Events / Additional Information :

All measurements at BIPM carried out by L. Tisserand.

Equipment used to measure delays is a Time Interval Counter (TIC), model 53230A, maker Keysight, S/N MY58390132, with measurement uncertainty typically less than 0.5 ns (using external reference frequency as timebase).

The delay between the laboratory reference point and the 1 PPS input connector of the B3TS (CLB P_k) is 0 ns.

BP2D-BP21

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 180840
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 36798 high elev obs : 2.997 4.442
Iteration 0: Obs used = 283986; Huge residuals = 11; Large residuals = 7104
Iteration 1: Obs used = 283975; Huge residuals = 0; Large residuals = 7102
Computed code bias (P1/P2)/m = 2.825 4.213
Computed baseline (X,Y,Z)/m = -1.346 -0.112 1.361
RMS of residuals /m = 0.602

Number of phase differences to fit baseline
L1/L2 = 175121
L5 = 100481
A priori baseline (X,Y,Z)/m = -1.346 -0.112 1.361
25886 clock jitters computed out of 25886 intervals
AVE jitter /ps = -0.4 RMS jitter /ps = 4.8

Iter 1 Large residuals L1= 4
Iter 1 Large residuals L2= 12
Iter 1 Large residuals L5= 4
Computed baseline L1 (X,Y,Z)/m = -0.033 -0.082 0.067
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.009 -0.071 0.087
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.015 -0.061 0.107
RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 4
Iter 2 Large residuals L2= 12
Iter 2 Large residuals L5= 4
Computed baseline L1 (X,Y,Z)/m = -0.033 -0.082 0.067
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.009 -0.071 0.087
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.015 -0.061 0.107
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = -1.367 -0.188 1.438
25886 clock jitters computed out of 25886 intervals
AVE jitter /ps = 0.3 RMS jitter /ps = 0.2

Iter 3 Large residuals L1= 4
Iter 3 Large residuals L2= 12
Iter 3 Large residuals L5= 4
Computed baseline L1 (X,Y,Z)/m = -0.001 -0.038 -0.006
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.023 -0.027 0.014
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = 0.023 -0.016 0.034
RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -1.368 -0.226 1.432
Final baseline L2 (X,Y,Z)/m = -1.344 -0.215 1.453

Final baseline L5 (X,Y,Z)/m = -1.345 -0.204 1.472

COMPUTATION OF CODE DIFFERENCES

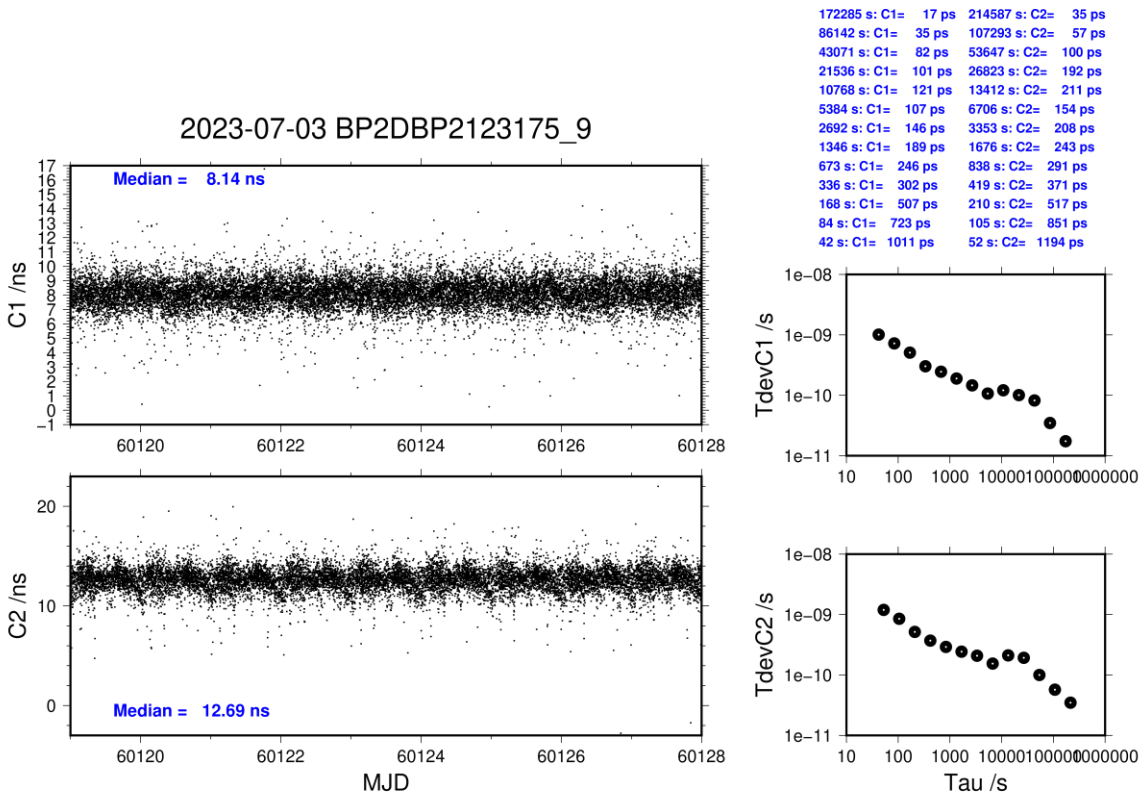
Total number of code differences = 709618

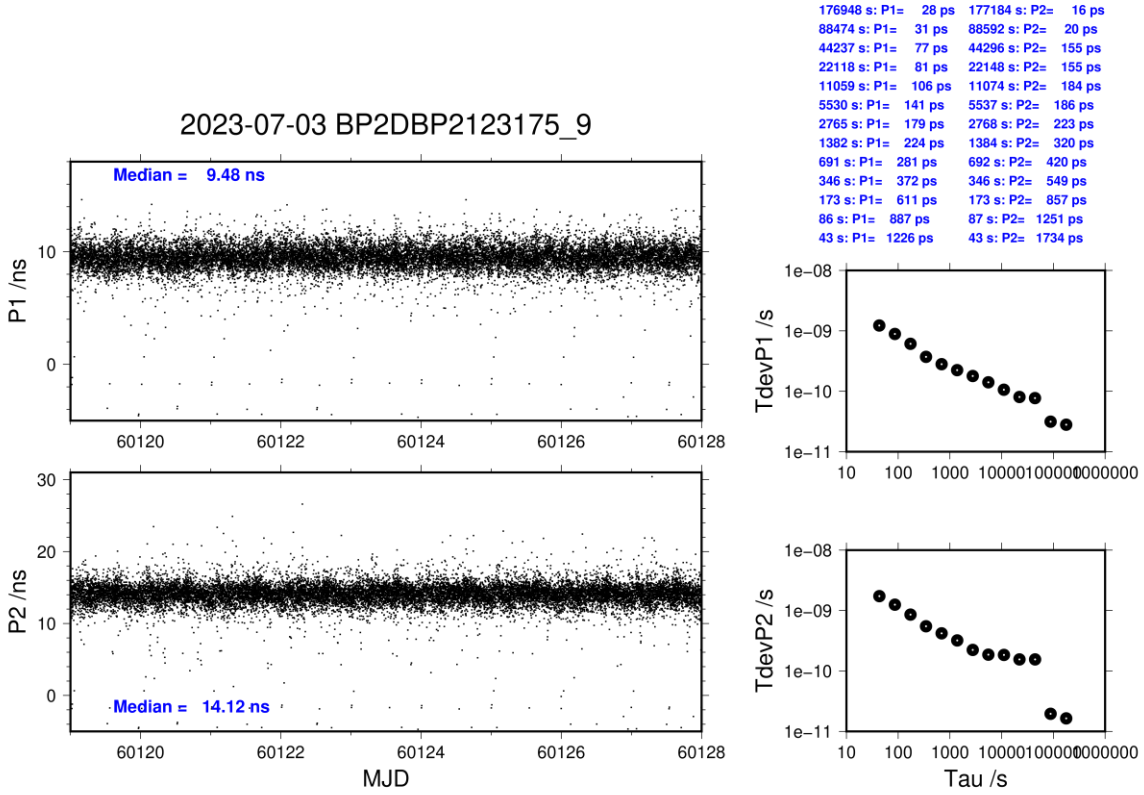
Global average of individual differences

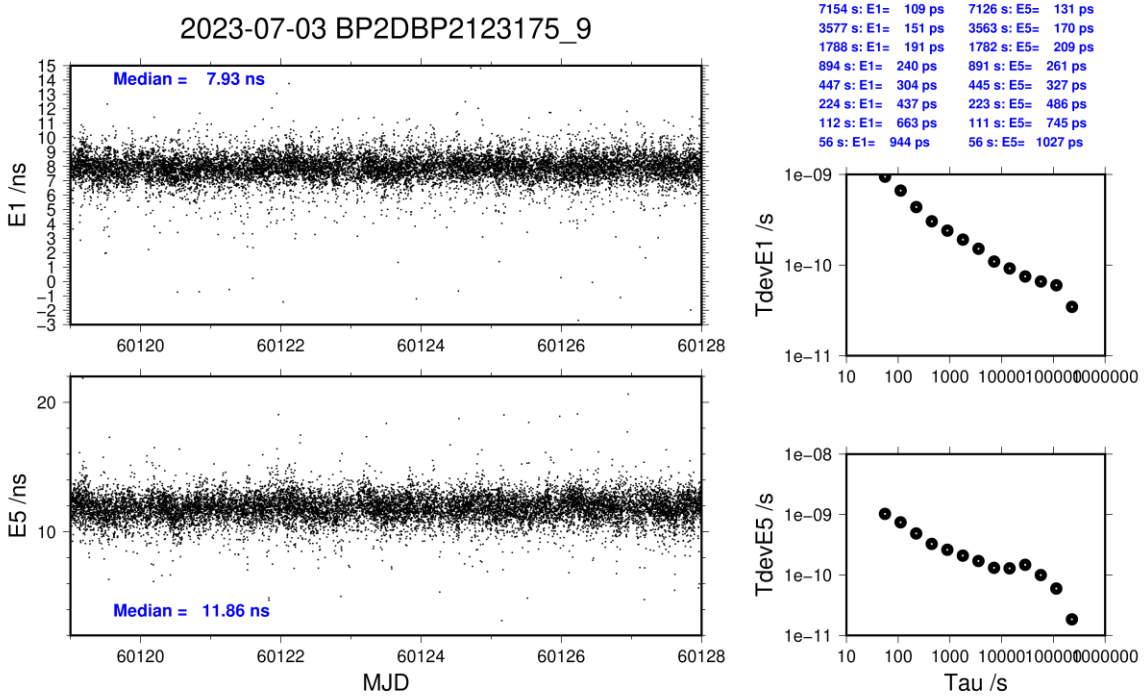
Code	#pts	ave/ns	rms/ns
C1	184844	8.105	1.953
C2	148462	12.636	2.014
P1	180773	9.395	1.957
P2	180571	13.974	2.776
E1	139651	7.921	1.676
E5	140298	11.840	1.621
BC	161430	7.365	1.985
B5	165079	11.473	1.912

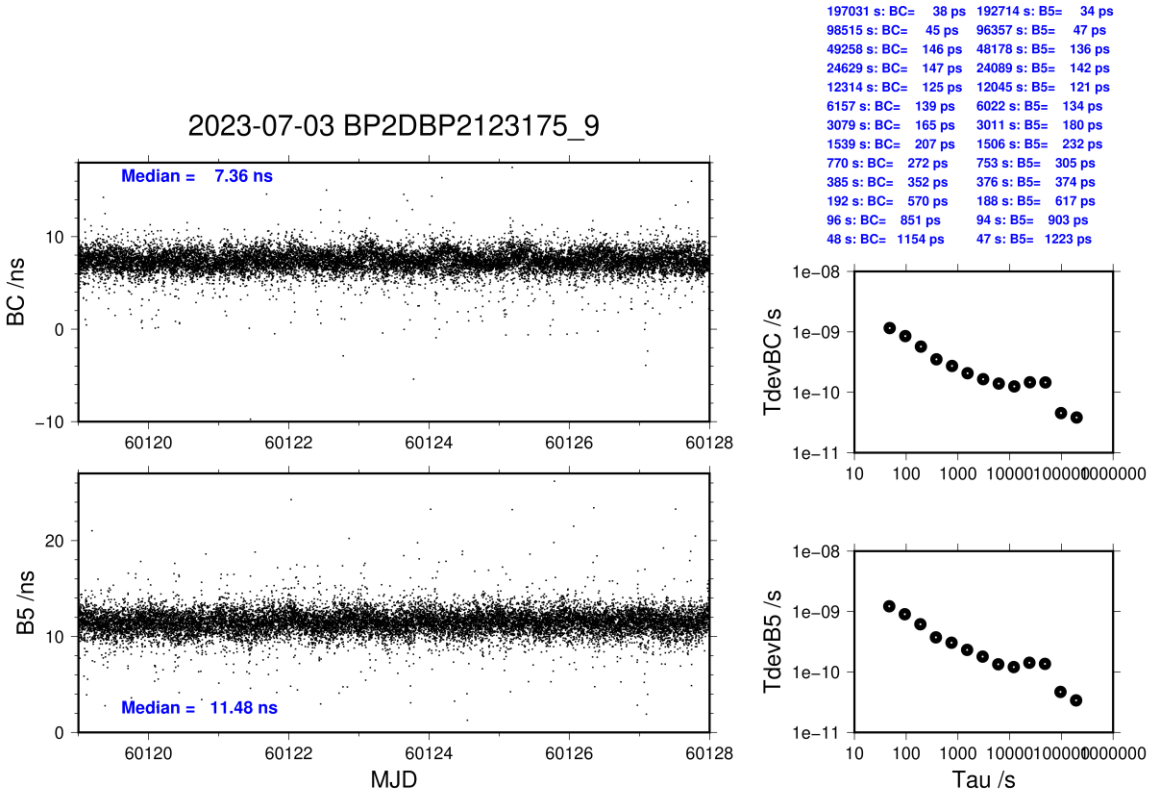
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	18481	8.138	8.126	1.015
C2	14838	12.693	12.630	1.199
P1	17994	9.478	9.453	1.228
P2	17970	14.115	14.025	1.742
E1	13909	7.934	7.918	0.941
E5	13963	11.864	11.836	1.047
BC	16160	7.360	7.358	1.172
B5	16522	11.477	11.469	1.248




2023-07-03 BP2DBP2123175_9
Median = 9.48 ns
Median = 14.12 ns
P1 /ns
P2 /ns
MJD
176948 s: P1= 28 ps 177184 s: P2= 16 ps
88474 s: P1= 31 ps 88592 s: P2= 20 ps
44237 s: P1= 77 ps 44296 s: P2= 155 ps
22118 s: P1= 81 ps 22148 s: P2= 155 ps
11059 s: P1= 106 ps 11074 s: P2= 184 ps
5530 s: P1= 141 ps 5537 s: P2= 186 ps
2765 s: P1= 179 ps 2768 s: P2= 223 ps
1382 s: P1= 224 ps 1384 s: P2= 320 ps
691 s: P1= 281 ps 692 s: P2= 420 ps
346 s: P1= 372 ps 346 s: P2= 549 ps
173 s: P1= 611 ps 173 s: P2= 857 ps
86 s: P1= 887 ps 87 s: P2= 1251 ps
43 s: P1= 1226 ps 43 s: P2= 1734 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-07-03 BP2DBP2123175_9
Median = 7.93 ns
Median = 11.86 ns
E1 /ns
E5 /ns
MJD
228920 s: E1= 35 ps 228035 s: E5= 18 ps
114460 s: E1= 60 ps 114017 s: E5= 60 ps
57230 s: E1= 66 ps 57009 s: E5= 100 ps
28615 s: E1= 75 ps 28504 s: E5= 147 ps
14308 s: E1= 92 ps 14252 s: E5= 129 ps
7154 s: E1= 109 ps 7126 s: E5= 131 ps
3577 s: E1= 151 ps 3563 s: E5= 170 ps
1788 s: E1= 191 ps 1782 s: E5= 209 ps
894 s: E1= 240 ps 891 s: E5= 261 ps
447 s: E1= 304 ps 445 s: E5= 327 ps
224 s: E1= 437 ps 223 s: E5= 486 ps
112 s: E1= 663 ps 111 s: E5= 745 ps
56 s: E1= 944 ps 56 s: E5= 1027 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-07-03 BP2DBP2123175_9
Median = 7.36 ns
Median = 11.48 ns
BC /ns
B5 /ns
MJD
197031 s: BC= 38 ps 192714 s: B5= 34 ps
98515 s: BC= 45 ps 96357 s: B5= 47 ps
49258 s: BC= 146 ps 48178 s: B5= 136 ps
24629 s: BC= 147 ps 24089 s: B5= 142 ps
12314 s: BC= 125 ps 12045 s: B5= 121 ps
6157 s: BC= 139 ps 6022 s: B5= 134 ps
3079 s: BC= 165 ps 3011 s: B5= 180 ps
1539 s: BC= 207 ps 1506 s: B5= 232 ps
770 s: BC= 272 ps 753 s: B5= 305 ps
385 s: BC= 352 ps 376 s: B5= 374 ps
192 s: BC= 570 ps 188 s: B5= 617 ps
96 s: BC= 851 ps 94 s: B5= 903 ps
48 s: BC= 1154 ps 47 s: B5= 1223 ps
TdevBC /s
TdevB5 /s
Tau /s

BP2G-BP21

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 188251
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 36831 high elev obs : 7.705 7.264
Iteration 0: Obs used = 278946; Huge residuals = 10; Large residuals = 26900
Iteration 1: Obs used = 278956; Huge residuals = 0; Large residuals = 26878
Computed code bias (P1/P2)/m = 6.798 6.347
Computed baseline (X,Y,Z)/m = -3.083 0.179 3.918
RMS of residuals /m = 0.748

Number of phase differences to fit baseline
L1/L2 = 177312
L5 = 100909
A priori baseline (X,Y,Z)/m = -3.083 0.179 3.918
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = -1.7 RMS jitter /ps = 4.0

Iter 1 Large residuals L1= 9
Iter 1 Large residuals L2= 5
Iter 1 Large residuals L5= 6
Computed baseline L1 (X,Y,Z)/m = -0.576 -0.562 -0.570
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.580 -0.551 -0.569
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.612 -0.545 -0.557
RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 9
Iter 2 Large residuals L2= 5
Iter 2 Large residuals L5= 6
Computed baseline L1 (X,Y,Z)/m = -0.576 -0.562 -0.570
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.581 -0.551 -0.570
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.612 -0.545 -0.557
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = -3.661 -0.378 3.348
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 1.1 RMS jitter /ps = 1.3

Iter 3 Large residuals L1= 9
Iter 3 Large residuals L2= 5
Iter 3 Large residuals L5= 6
Computed baseline L1 (X,Y,Z)/m = 0.023 -0.127 -0.011
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.019 -0.116 -0.012
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = 0.003 -0.105 -0.002
RMS of residuals L5 /m = 0.003
WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = -3.638 -0.505 3.337

Final baseline L2 (X,Y,Z)/m = -3.643 -0.494 3.337
Final baseline L5 (X,Y,Z)/m = -3.658 -0.483 3.347

COMPUTATION OF CODE DIFFERENCES

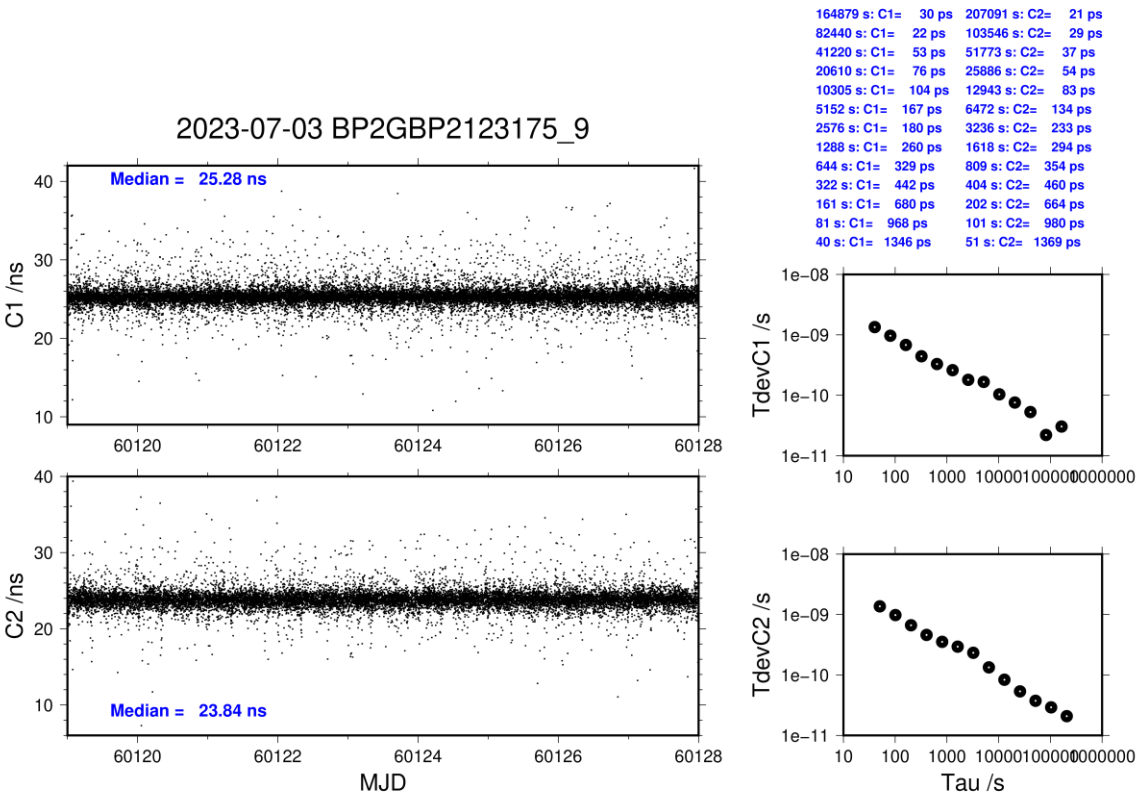
Total number of code differences = 757729

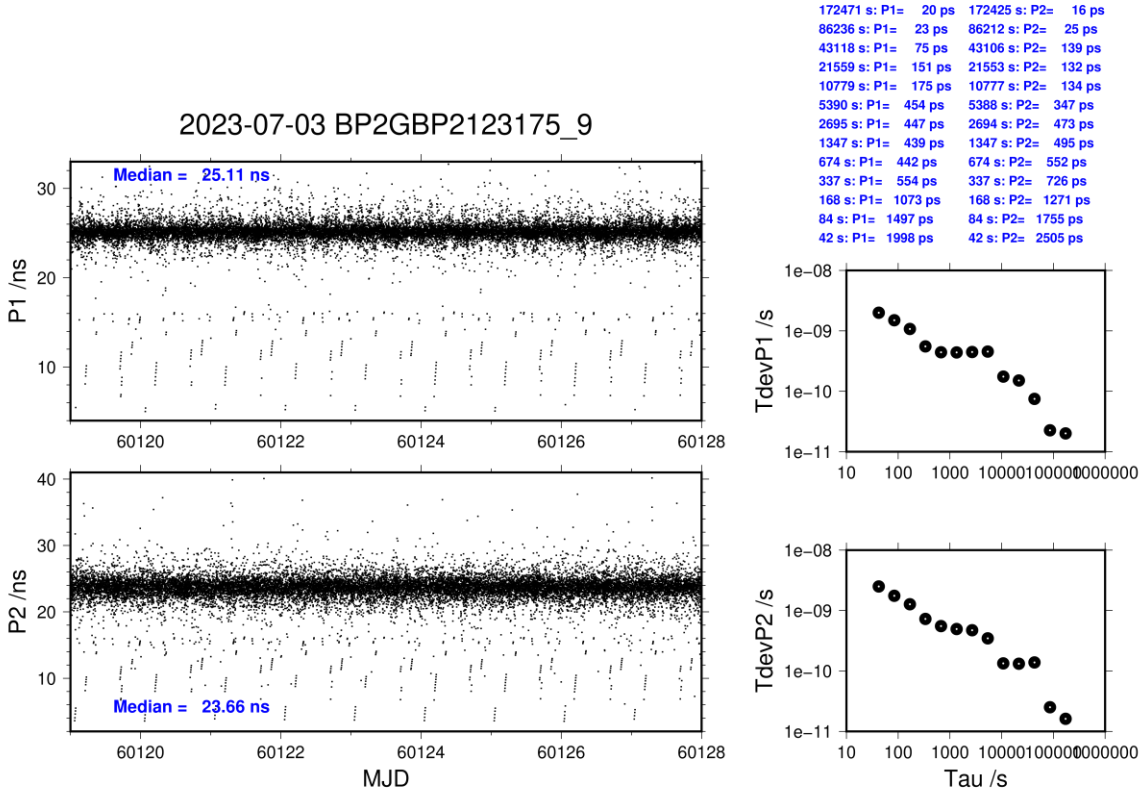
Global average of individual differences

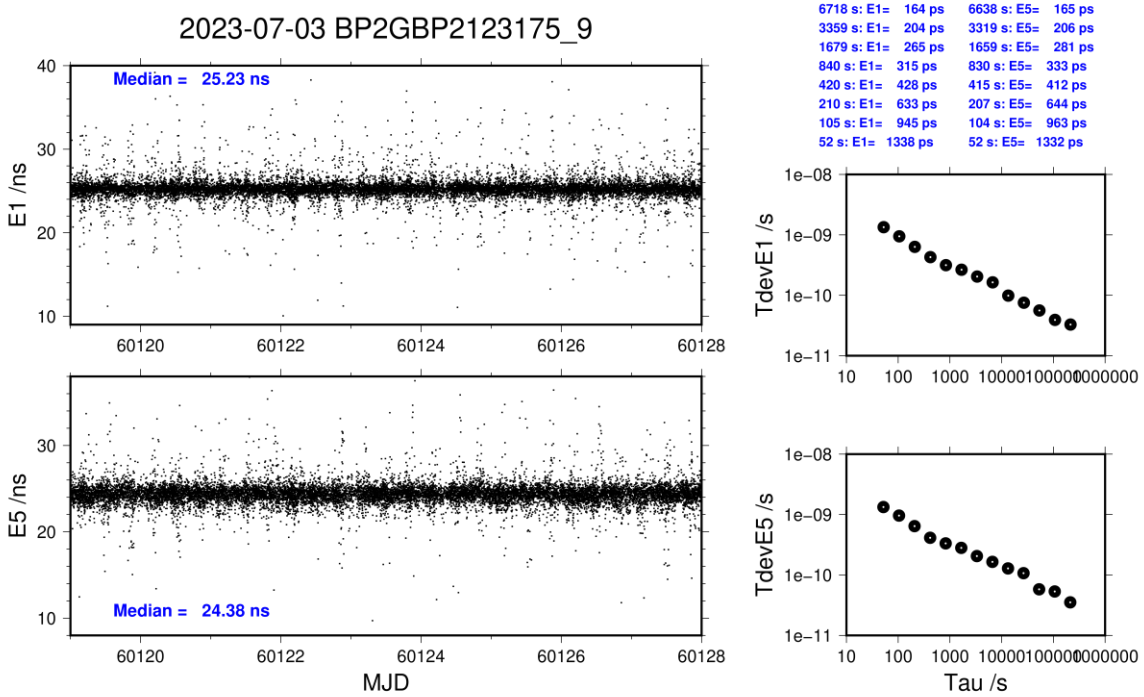
Code	#pts	ave/ns	rms/ns
C1	192383	25.341	2.792
C2	153541	23.867	2.578
P1	184990	24.901	2.769
P2	185062	23.388	3.592
E1	147510	25.259	2.476
E5	149647	24.360	2.248
BC	165939	25.198	2.440
B5	168547	24.390	2.275

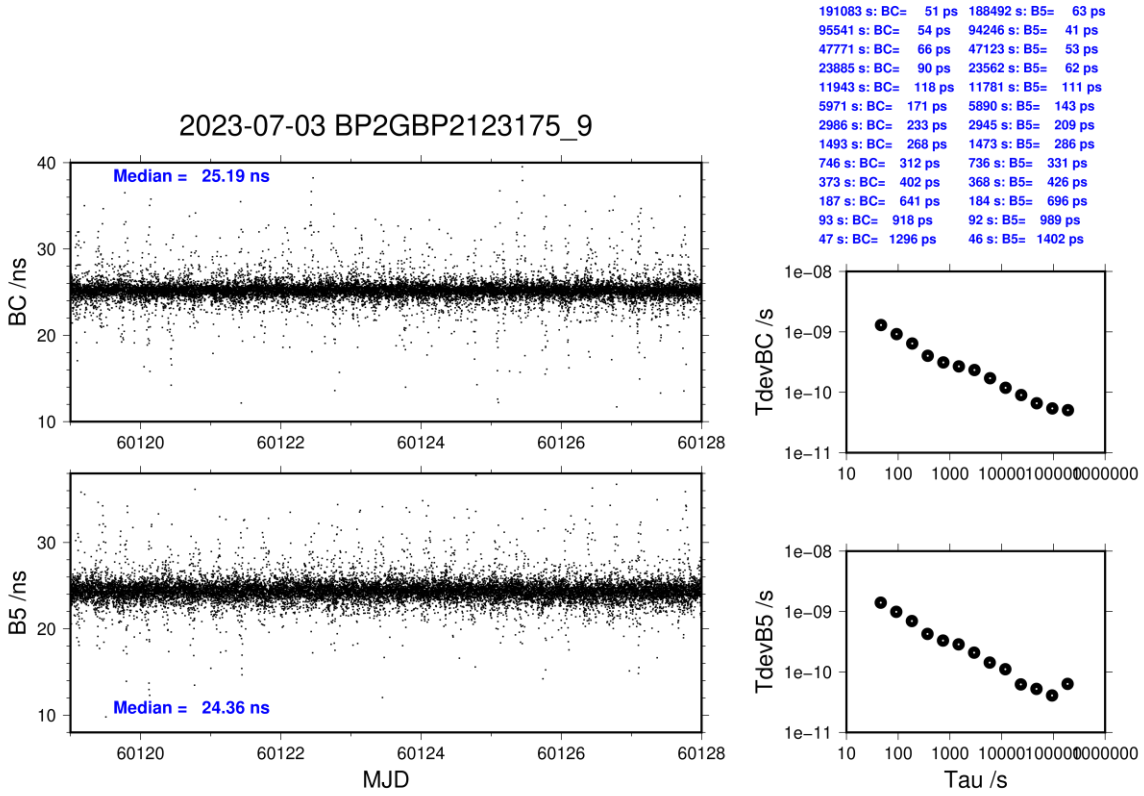
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	19311	25.284	25.351	1.355
C2	15375	23.839	23.864	1.378
P1	18461	25.112	24.910	2.081
P2	18466	23.656	23.402	2.494
E1	14812	25.232	25.265	1.326
E5	14990	24.376	24.366	1.340
BC	16663	25.186	25.206	1.301
B5	16892	24.362	24.398	1.394




2023-07-03 BP2GBP2123175_9
Median = 25.11 ns
Median = 23.66 ns
P1 /ns
P2 /ns
MJD
172471 s: P1= 20 ps 172425 s: P2= 16 ps
86236 s: P1= 23 ps 86212 s: P2= 25 ps
43118 s: P1= 75 ps 43106 s: P2= 139 ps
21559 s: P1= 151 ps 21553 s: P2= 132 ps
10779 s: P1= 175 ps 10777 s: P2= 134 ps
5390 s: P1= 454 ps 5388 s: P2= 347 ps
2695 s: P1= 447 ps 2694 s: P2= 473 ps
1347 s: P1= 439 ps 1347 s: P2= 495 ps
674 s: P1= 442 ps 674 s: P2= 552 ps
337 s: P1= 554 ps 337 s: P2= 726 ps
168 s: P1= 1073 ps 168 s: P2= 1271 ps
84 s: P1= 1497 ps 84 s: P2= 1755 ps
42 s: P1= 1998 ps 42 s: P2= 2505 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-07-03 BP2GBP2123175_9
Median = 25.23 ns
Median = 24.38 ns
E1 /ns
E5 /ns
MJD
214963 s: E1= 33 ps 212410 s: E5= 35 ps
107482 s: E1= 39 ps 106205 s: E5= 53 ps
53741 s: E1= 56 ps 53103 s: E5= 58 ps
26870 s: E1= 75 ps 26551 s: E5= 107 ps
13435 s: E1= 99 ps 13276 s: E5= 128 ps
6718 s: E1= 164 ps 6638 s: E5= 165 ps
3359 s: E1= 204 ps 3319 s: E5= 206 ps
1679 s: E1= 265 ps 1659 s: E5= 281 ps
840 s: E1= 315 ps 830 s: E5= 333 ps
420 s: E1= 428 ps 415 s: E5= 412 ps
210 s: E1= 633 ps 207 s: E5= 644 ps
105 s: E1= 945 ps 104 s: E5= 963 ps
52 s: E1= 1338 ps 52 s: E5= 1332 ps
TdevE1 /s
TdevE5 /s
Tau /s


191083 s: BC= 51 ps 188492 s: B5= 63 ps
95541 s: BC= 54 ps 94246 s: B5= 41 ps
47771 s: BC= 66 ps 47123 s: B5= 53 ps
23885 s: BC= 90 ps 23562 s: B5= 62 ps
11943 s: BC= 118 ps 11781 s: B5= 111 ps
5971 s: BC= 171 ps 5890 s: B5= 143 ps
2986 s: BC= 233 ps 2945 s: B5= 209 ps
1493 s: BC= 268 ps 1473 s: B5= 286 ps
746 s: BC= 312 ps 736 s: B5= 331 ps
373 s: BC= 402 ps 368 s: B5= 426 ps
187 s: BC= 641 ps 184 s: B5= 696 ps
93 s: BC= 918 ps 92 s: B5= 989 ps
47 s: BC= 1296 ps 46 s: B5= 1402 ps
2023-07-03 BP2GBP2123175_9
Median = 25.19 ns
BC /ns
Median = 24.36 ns
B5 /ns
MJD
TdevBC /s
TdevB5 /s
Tau /s

3.2/ USNO (23208)

Period

MJD 60152 to 60169

Delays

BP2D: (cf page 15 & 4)
REFDLY = 62.47 ns (9.06+53.41)
CABDLY = 176.85 ns (C210)

BP2G: (cf page 15 & 5)
REFDLY = 62.57 ns (9.06+53.51)
CABDLY = 176.38 ns (C211)

USN6 (US06): (cf page 15)
« delay from local UTC(k) to 1PPS-in » from Annex A is for informational purposes only
CGGTTS TOTDLY = -6.0 ns (GPS C1), -8.8 ns (GPS P2)

USN7 (US09): (cf page 18)
« delay from local UTC(k) to 1PPS-in » from Annex A is for informational purposes only
CGGTTS TOTDLY = 204.8 ns (GPS C1), 200.8 ns (GPS P2)

USN8 (US10): (cf page 21)
« delay from local UTC(k) to 1PPS-in » from Annex A is for informational purposes only
CGGTTS TOTDLY = 199.5 ns (GPS C1), 196.4 ns (GPS P2)

Setup at the USNO

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	USNO (Washington DC)
Date and hour of the beginning of measurements:	**Jul-27-2023 00:00:00 UTC**
Date and hour of the end of measurements:	**Aug-14-2023 15:00:00 UTC**

Information on the system

	Local:	**Travelling:**
4-character BIPM code	USN6	BP2D, BP2G
• Receiver maker and type: Receiver serial number:	NovAtel ProPak3 NOV1	(BP2D) Mesit, 201000 (BP2G) Septentrio 4701533
1 PPS trigger level /V:	1V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	FSJ1-50A Y	
Length outside the building /m:	>39m	
• Antenna maker and type: Antenna serial number:	TOPCON CRG5 762-7615	
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	0.231ns	(see diagram)
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	(see diagram)
• Antenna cable delay:		(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	P1= -6.0ns, P2= -8.8ns
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	1112162.141
Longitude or Y /m:	-4842854.681
Height or Z /m:	3985497.078

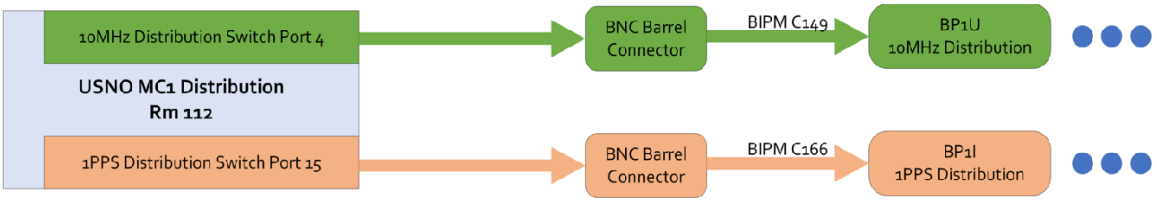
General information

• Rise time of the local UTC pulse:	0.300 ns (0V to 1V)
• Is the laboratory air conditioned:	Y
Set temperature value and uncertainty:	20.78 ± 0.7 °C
Set humidity value and uncertainty:	46.79 ± 8.1 %RH

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

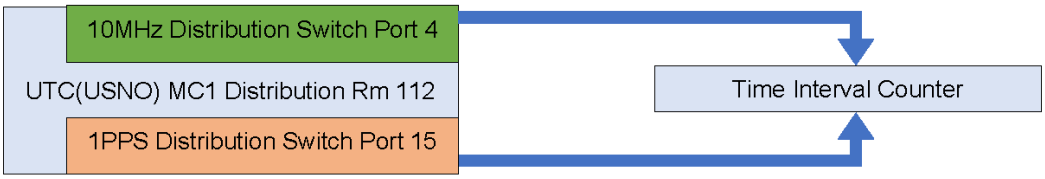
Diagram of the experiment set-up:

Diagram Below: UTC P_{USNO} – CLB P_{USNO}



UTC P_{USNO} – CLB P_{USNO}	July-27-2023	August-14-2023
Mean	+9.06ns	+9.064ns
Std. Dev.	0.013ns	0.016ns
Number of Samples	650	500

Diagram Below: CLB P_{USNO} 1PPS – CLB USNO 10MHz



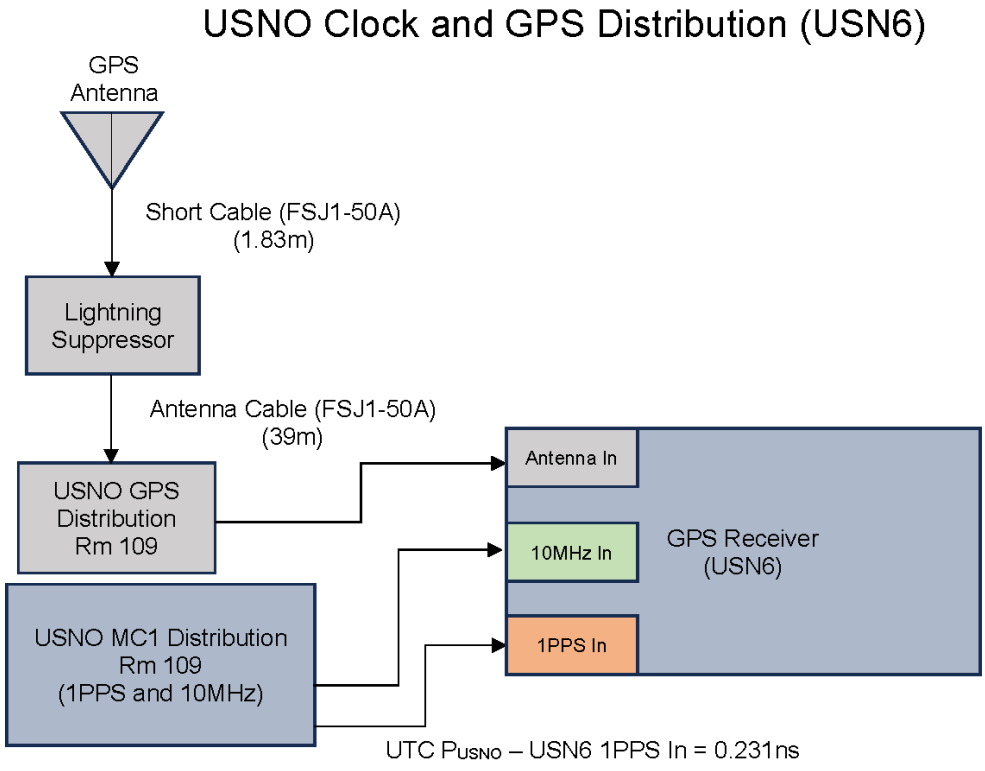
CLB P_{USNO} 1PPS – CLB USNO 10MHz	July-27-2023	August-14-2023
Mean	+67.019ns	+67.222ns
Std. Dev.	0.106ns	0.106ns
Number of Samples	397	500

Diagram Below: UTC P_{USNO} – BIPM Receiver 1PPS IN

BIPM REFDLY Measurements	UTC P_{USNO} – BP2D 1PPS IN (aka C153)	UTC P_{USNO} – BP2G 1PPS IN (aka C157)
Start: July-27-2023		
Mean	N/A	N/A
Std. Dev.	N/A	N/A
Number of Samples	N/A	N/A
End: August-14-2023		
Mean	+62.533ns	+62.649ns
Std. Dev.	0.015ns	0.016ns
Number of Samples	500	500

Log of Events / Additional Information :

BIPM Measurement	BP2D Tare Measurement	BP2D Operation Measurement
Start: July-27-2023		
Mean	+15.601ns	+61.015ns
Std. Dev.	0.026ns	0.062ns
Number of Samples	100	100
End: August-14-2023		
Mean	+15.679ns	+61.124ns
Std. Dev.	0.026ns	0.066ns
Number of Samples	500	1000



Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	USNO (Washington DC)
Date and hour of the beginning of measurements:	**Jul-27-2023 00:00:00 UTC**
Date and hour of the end of measurements:	**Aug-14-2023 15:00:00 UTC**

Information on the system

	Local:	**Travelling:**
4-character BIPM code	USN7	BP2D, BP2G
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR USN7	(BP2D) Mesit, 201000 (BP2G) Septentrio 4701533
1 PPS trigger level /V:	1V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	FSJ1-50A Y	
Length outside the building /m:	>39m	
• Antenna maker and type: Antenna serial number:	TOPCON/CRG5 762-7615	
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	0.3 ns	(see diagram)
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	(see diagram)
• Antenna cable delay:	N/A	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	P1= 204.8ns, P2=200.8ns
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	1112162.141
Longitude or Y /m:	-4842854.681
Height or Z /m:	3985497.078

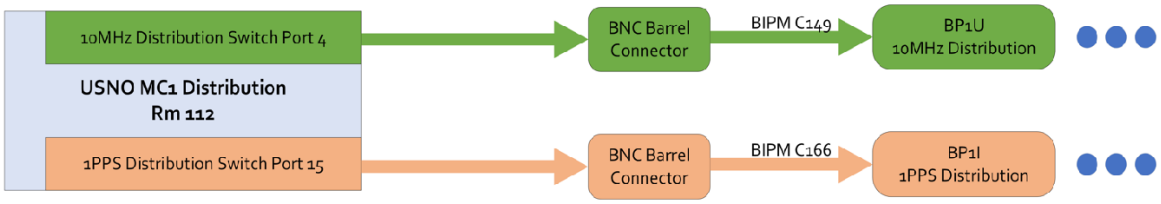
General information

• Rise time of the local UTC pulse:	0.210 ns (0V to 1V)
• Is the laboratory air conditioned:	Y
Set temperature value and uncertainty:	20.78 ± 0.7 °C
Set humidity value and uncertainty:	46.79 ± 8.1 %RH

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

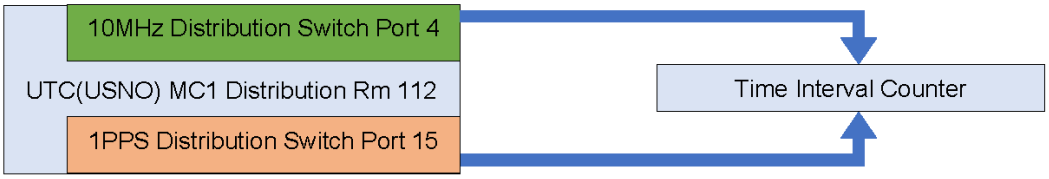
Diagram of the experiment set-up:

Diagram Below: UTC P_{USNO} – CLB P_{USNO}



UTC P_{USNO} – CLB P_{USNO}	July-27-2023	August-14-2023
Mean	+9.06ns	+9.064ns
Std. Dev.	0.013ns	0.016ns
Number of Samples	650	500

Diagram Below: CLB P_{USNO} 1PPS – CLB USNO 10MHz



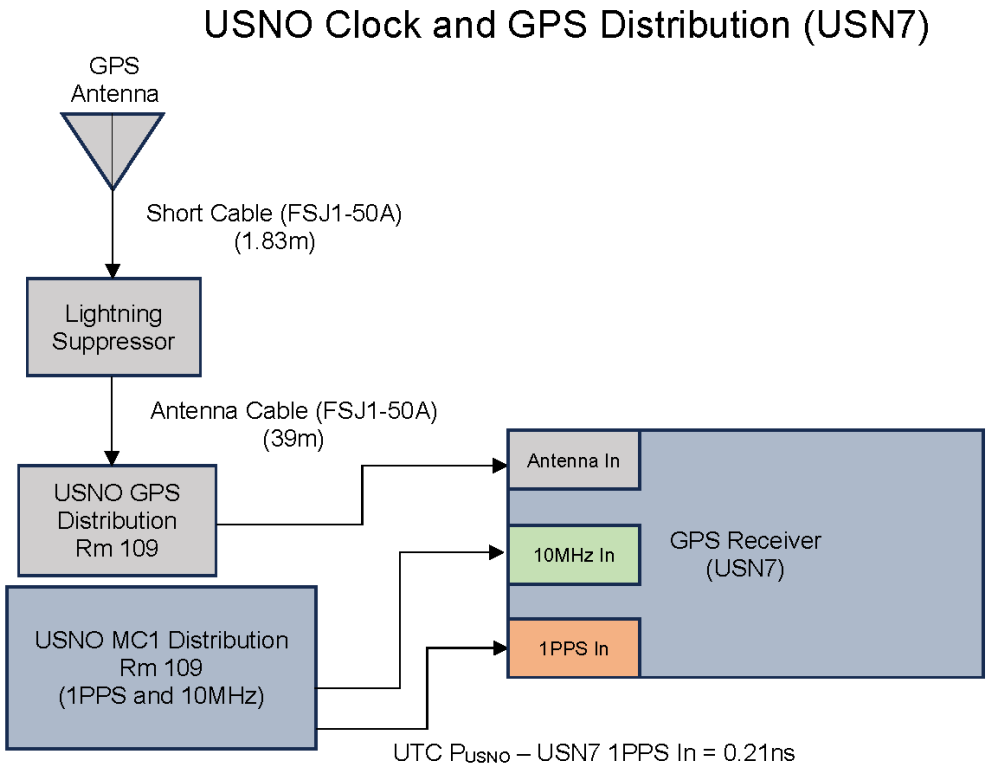
CLB P_{USNO} 1PPS – CLB USNO 10MHz	July-27-2023	August-14-2023
Mean	+67.019ns	+67.222ns
Std. Dev.	0.106ns	0.106ns
Number of Samples	397	500

Diagram Below: UTC P_{USNO} – BIPM Receiver 1PPS IN

BIPM REFDLY Measurements	UTC P_{USNO} – BP2D 1PPS IN (aka C153)	UTC P_{USNO} – BP2G 1PPS IN (aka C157)
Start: July-27-2023		
Mean	N/A	N/A
Std. Dev.	N/A	N/A
Number of Samples	N/A	N/A
End: August-14-2023		
Mean	+62.533ns	+62.649ns
Std. Dev.	0.015ns	0.016ns
Number of Samples	500	500

Log of Events / Additional Information :

BIPM Measurement	BP2D Tare Measurement	BP2D Operation Measurement
Start: July-27-2023		
Mean	+15.601ns	+61.015ns
Std. Dev.	0.026ns	0.062ns
Number of Samples	100	100
End: August-14-2023		
Mean	+15.679ns	+61.124ns
Std. Dev.	0.026ns	0.066ns
Number of Samples	500	1000



Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	USNO (Washington DC)
Date and hour of the beginning of measurements:	**Jul-27-2023 00:00:00 UTC**
Date and hour of the end of measurements:	**Aug-14-2023 15:00:00 UTC**

Information on the system

	Local:	**Travelling:**
4-character BIPM code	USN8	BP2D, BP2G
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR 4701171 (SP10)	(BP2D) Mesit, 201000 (BP2G) Septentrio 4701533
1 PPS trigger level /V:	1V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	FSJ1-50A Y	
Length outside the building /m:	>39m	
• Antenna maker and type: Antenna serial number:	TOPCON/CRG5 762-7615	
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	-0.226ns	(see diagram)
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	(see diagram)
• Antenna cable delay:		(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	P1= 199.5ns, P2= 196.4ns
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	1112162.141
Longitude or Y /m:	-4842854.681
Height or Z /m:	3985497.078

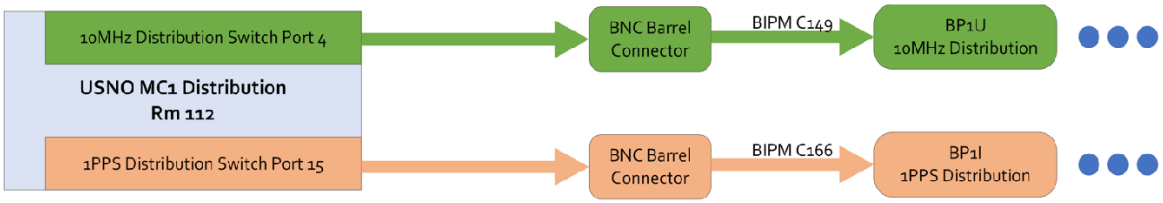
General information

• Rise time of the local UTC pulse:	0.300 ns (0V to 1V)
• Is the laboratory air conditioned:	Y
Set temperature value and uncertainty:	20.78 ± 0.7 °C
Set humidity value and uncertainty:	46.79 ± 8.1 %RH

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

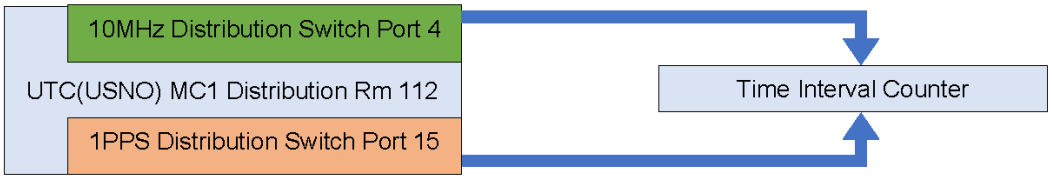
Diagram of the experiment set-up:

Diagram Below: UTC P_{USNO} – CLB P_{USNO}



UTC P_{USNO} – CLB P_{USNO}	July-27-2023	August-14-2023
Mean	+9.06ns	+9.064ns
Std. Dev.	0.013ns	0.016ns
Number of Samples	650	500

Diagram Below: CLB P_{USNO} 1PPS – CLB USNO 10MHz



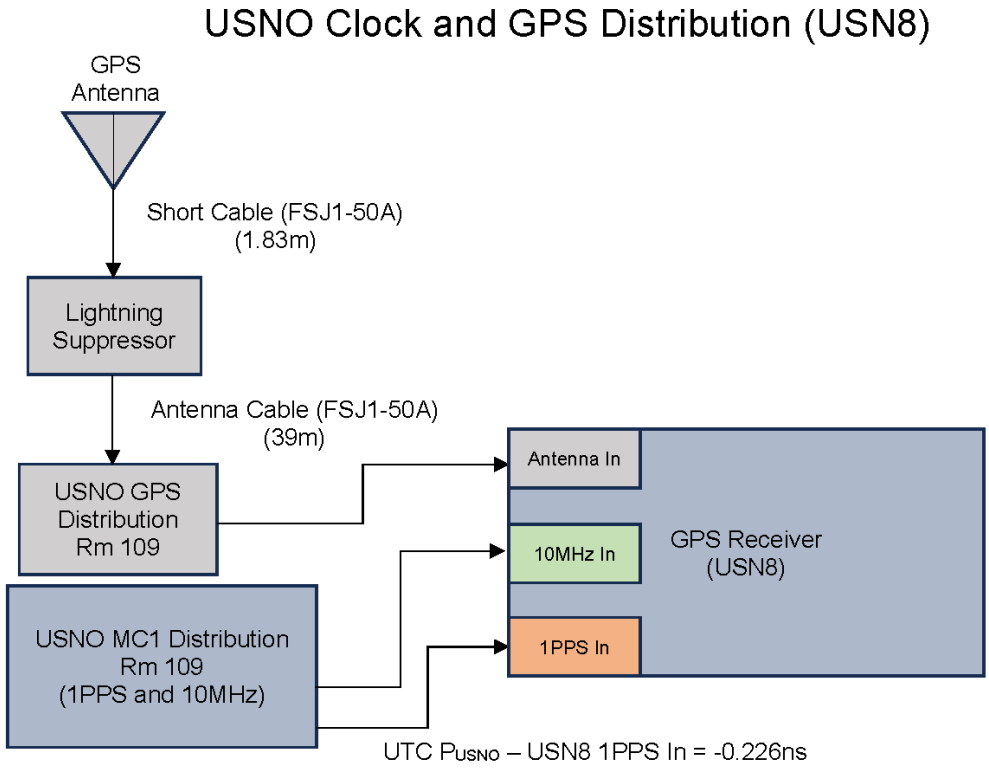
CLB P_{USNO} 1PPS – CLB USNO 10MHz	July-27-2023	August-14-2023
Mean	+67.019ns	+67.222ns
Std. Dev.	0.106ns	0.106ns
Number of Samples	397	500

Diagram Below: UTC P_{USNO} – BIPM Receiver 1PPS IN

BIPM REFDLY Measurements	UTC P_{USNO} – BP2D 1PPS IN (aka C153)	UTC P_{USNO} – BP2G 1PPS IN (aka C157)
Start: July-27-2023		
Mean	N/A	N/A
Std. Dev.	N/A	N/A
Number of Samples	N/A	N/A
End: August-14-2023		
Mean	+62.533ns	+62.649ns
Std. Dev.	0.015ns	0.016ns
Number of Samples	500	500

Log of Events / Additional Information :

BIPM Measurement	BP2D Tare Measurement	BP2D Operation Measurement
Start: July-27-2023		
Mean	+15.601ns	+61.015ns
Std. Dev.	0.026ns	0.062ns
Number of Samples	100	100
End: August-14-2023		
Mean	+15.679ns	+61.124ns
Std. Dev.	0.026ns	0.066ns
Number of Samples	500	1000



USN6-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 426648
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 66664 high elev obs : -40.110 -41.620
Iteration 0: Obs used = 726298; Huge residuals = 0; Large residuals = 1106
Iteration 1: Obs used = 726298; Huge residuals = 0; Large residuals = 1106
Computed code bias (P1/P2)/m = -40.208 -41.872
Computed baseline (X,Y,Z)/m = 4.272 0.960 0.261
RMS of residuals /m = 0.476

Number of phase differences to fit baseline
L1/L2 = 424877
L5 = 0
A priori baseline (X,Y,Z)/m = 4.272 0.960 0.261
51749 clock jitters computed out of 51751 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 5.1

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.010 -0.082 0.038
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.005 -0.067 0.029
RMS of residuals L2 /m = 0.004
No computed baseline L5, will use L1/L2

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 4.280 0.885 0.294
51749 clock jitters computed out of 51751 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 0.1

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.001 -0.011 0.005
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.006 0.005 -0.003
RMS of residuals L2 /m = 0.004
No computed baseline L5, will use L1/L2

Final baseline L1 (X,Y,Z)/m = 4.278 0.875 0.299
Final baseline L2 (X,Y,Z)/m = 4.273 0.890 0.291
Final baseline L5 (X,Y,Z)/m = 4.276 0.882 0.295

COMPUTATION OF CODE DIFFERENCES

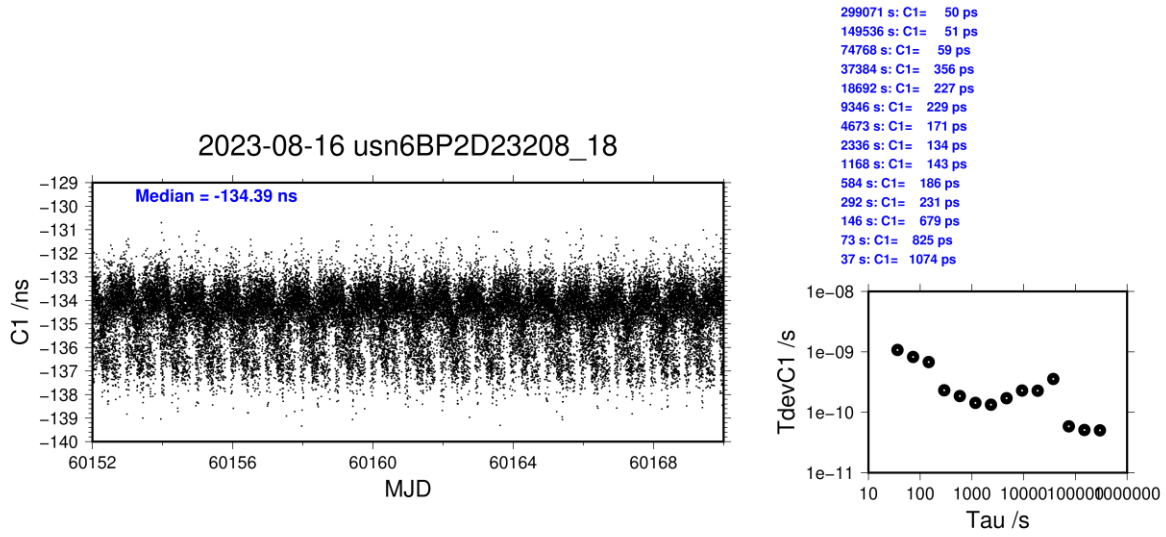
Total number of code differences = 772405

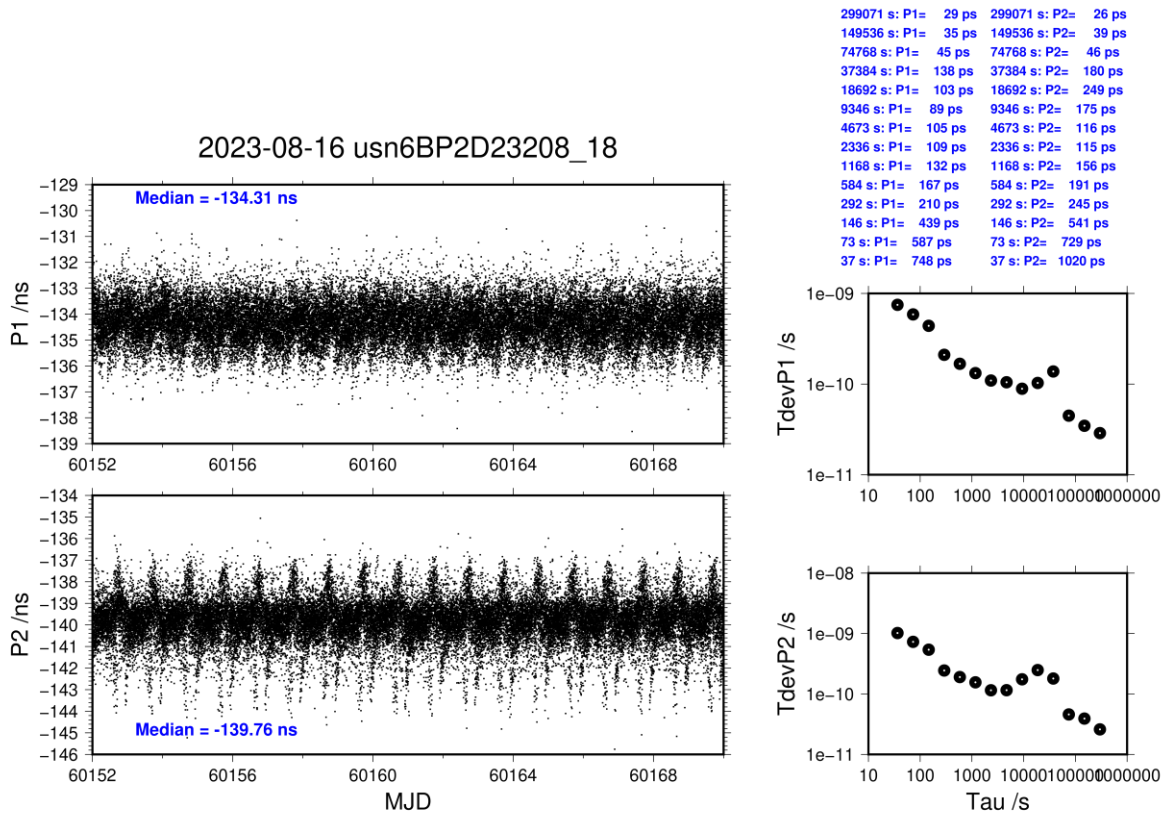
Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	426612	-134.634	1.629
P1	426578	-134.333	1.394
P2	426574	-139.824	1.657

Number of 300s epochs in out file = 5178

Code	#pts	median/ns	ave/ns	rms/ns
C1	42592	-134.388	-134.621	1.173
P1	42592	-134.315	-134.320	0.796
P2	42592	-139.760	-139.805	1.035




2023-08-16 usn6BP2D23208_18
Median = -134.31 ns
Median = -139.76 ns
P1 /ns
P2 /ns
MJD
299071 s: P1= 29 ps 299071 s: P2= 26 ps
149536 s: P1= 35 ps 149536 s: P2= 39 ps
74768 s: P1= 45 ps 74768 s: P2= 46 ps
37384 s: P1= 138 ps 37384 s: P2= 180 ps
18692 s: P1= 103 ps 18692 s: P2= 249 ps
9346 s: P1= 89 ps 9346 s: P2= 175 ps
4673 s: P1= 105 ps 4673 s: P2= 116 ps
2336 s: P1= 109 ps 2336 s: P2= 115 ps
1168 s: P1= 132 ps 1168 s: P2= 156 ps
584 s: P1= 167 ps 584 s: P2= 191 ps
292 s: P1= 210 ps 292 s: P2= 245 ps
146 s: P1= 439 ps 146 s: P2= 541 ps
73 s: P1= 587 ps 73 s: P2= 729 ps
37 s: P1= 748 ps 37 s: P2= 1020 ps
TdevP1 /s
TdevP2 /s
Tau /s

USN6-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 472509
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 65674 high elev obs : -44.574 -44.416
Iteration 0: Obs used = 816496; Huge residuals = 0; Large residuals = 4502
Iteration 1: Obs used = 816496; Huge residuals = 0; Large residuals = 4502
Computed code bias (P1/P2)/m = -44.746 -44.636
Computed baseline (X,Y,Z)/m = 4.729 1.078 0.328
RMS of residuals /m = 0.533

Number of phase differences to fit baseline
L1/L2 = 469903
L5 = 0
A priori baseline (X,Y,Z)/m = 4.729 1.078 0.328
50904 clock jitters computed out of 50905 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 4.3

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 1
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.048 -0.139 0.053
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.047 -0.142 0.056
RMS of residuals L2 /m = 0.004
No computed baseline L5, will use L1/L2

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 1
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.048 -0.139 0.053
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.047 -0.142 0.056
RMS of residuals L2 /m = 0.004
No computed baseline L5, will use L1/L2

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 4.776 0.938 0.382
50904 clock jitters computed out of 50905 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 0.2

Iter 3 Large residuals L1= 0
Iter 3 Large residuals L2= 1
Iter 3 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.003 -0.002 -0.000
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.003 -0.004 0.003
RMS of residuals L2 /m = 0.004
No computed baseline L5, will use L1/L2

Final baseline L1 (X,Y,Z)/m = 4.779 0.936 0.382
Final baseline L2 (X,Y,Z)/m = 4.779 0.933 0.385
Final baseline L5 (X,Y,Z)/m = 4.779 0.935 0.383

COMPUTATION OF CODE DIFFERENCES

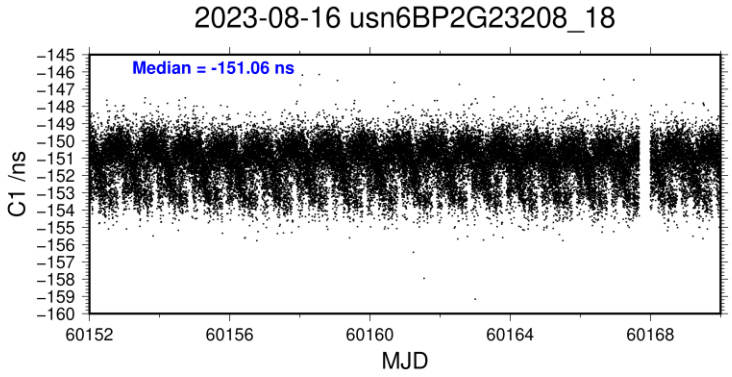
Total number of code differences = 860494

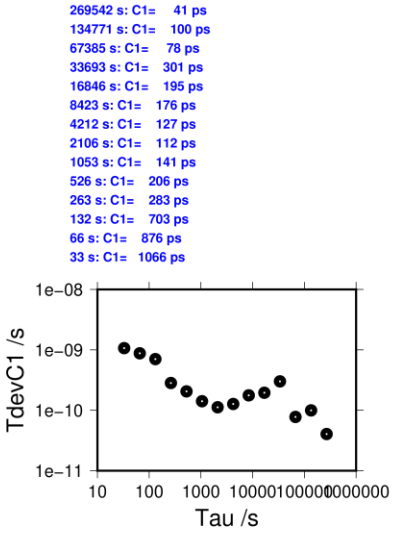
Global average of individual differences

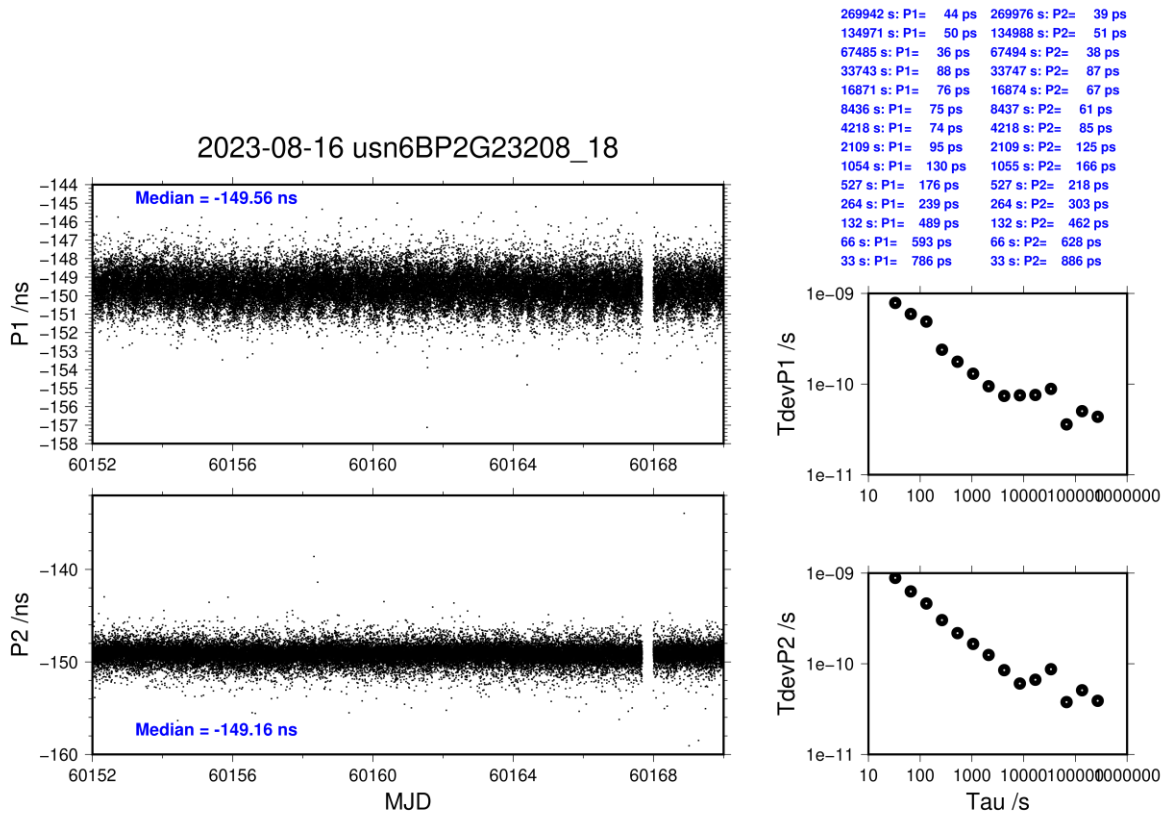
Code	#pts	ave/ns	rms/ns
C1	473258	-151.272	1.823
P1	472482	-149.577	1.606
P2	472415	-149.197	1.926

Number of 300s epochs in out file = 5093

Code	#pts	median/ns	ave/ns	rms/ns
C1	47258	-151.065	-151.257	1.190
P1	47188	-149.564	-149.561	0.828
P2	47182	-149.155	-149.187	0.898






2023-08-16 usn6BP2G23208_18
Median = -149.56 ns
Median = -149.16 ns
P1 /ns
P2 /ns
MJD
269942 s: P1= 44 ps
269976 s: P2= 39 ps
134971 s: P1= 50 ps
134988 s: P2= 51 ps
67485 s: P1= 36 ps
67494 s: P2= 38 ps
33743 s: P1= 88 ps
33747 s: P2= 87 ps
16871 s: P1= 76 ps
16874 s: P2= 67 ps
8436 s: P1= 75 ps
8437 s: P2= 61 ps
4218 s: P1= 74 ps
4218 s: P2= 85 ps
2109 s: P1= 95 ps
2109 s: P2= 125 ps
1054 s: P1= 130 ps
1055 s: P2= 166 ps
527 s: P1= 176 ps
527 s: P2= 218 ps
264 s: P1= 239 ps
264 s: P2= 303 ps
132 s: P1= 489 ps
132 s: P2= 462 ps
66 s: P1= 593 ps
66 s: P2= 628 ps
33 s: P1= 786 ps
33 s: P2= 886 ps
TdevP1 /s
TdevP2 /s
Tau /s

USN7-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 403556
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 63133 high elev obs : 23.601 21.542
Iteration 0: Obs used = 687439; Huge residuals = 0; Large residuals = 435
Iteration 1: Obs used = 687439; Huge residuals = 0; Large residuals = 435
Computed code bias (P1/P2)/m = 23.479 21.310
Computed baseline (X,Y,Z)/m = 4.266 0.956 0.253
RMS of residuals /m = 0.441

Number of phase differences to fit baseline
L1/L2 = 401943
L5 = 224604
A priori baseline (X,Y,Z)/m = 4.266 0.956 0.253
48871 clock jitters computed out of 48871 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 4.4

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.011 -0.079 0.045
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.007 -0.064 0.037
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.004 -0.061 0.033
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 4.275 0.885 0.294
48871 clock jitters computed out of 48871 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 0.1

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.000 -0.010 0.005
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.004 0.005 -0.003
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.008 0.008 -0.006
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.275 0.874 0.299
Final baseline L2 (X,Y,Z)/m = 4.271 0.890 0.291
Final baseline L5 (X,Y,Z)/m = 4.267 0.892 0.287

COMPUTATION OF CODE DIFFERENCES

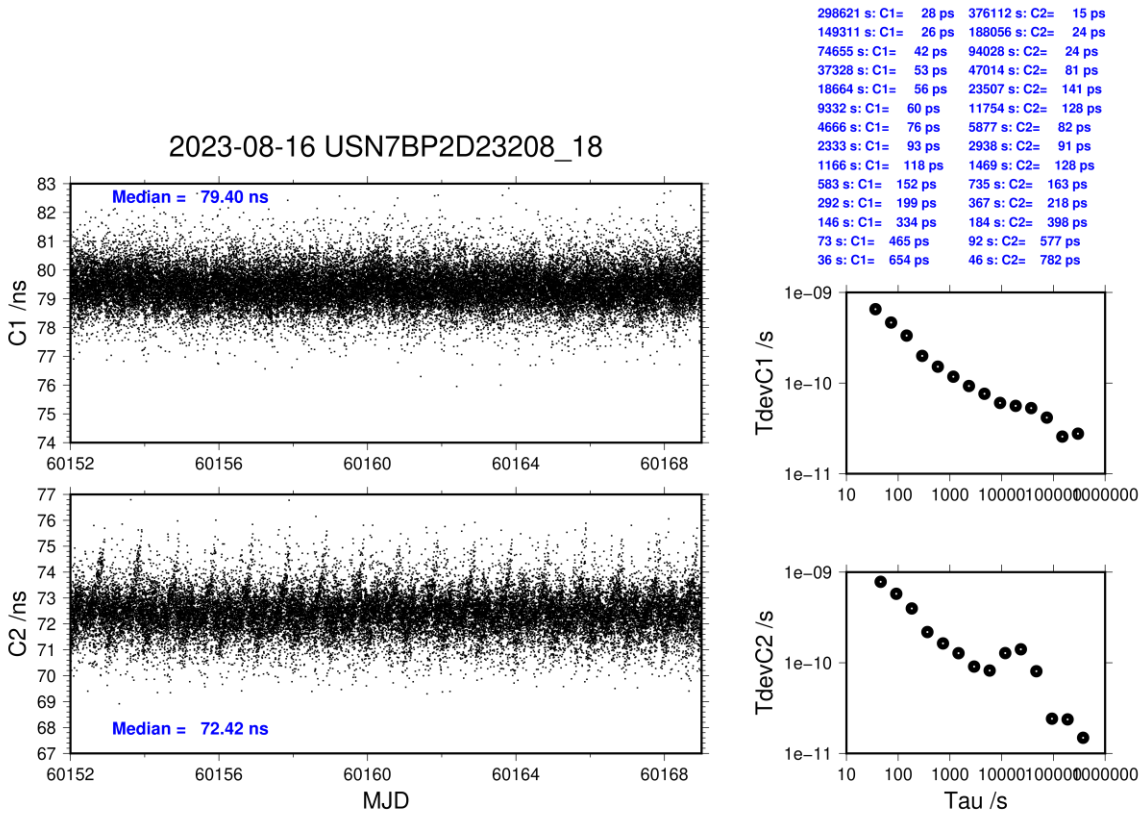
Total number of code differences = ******

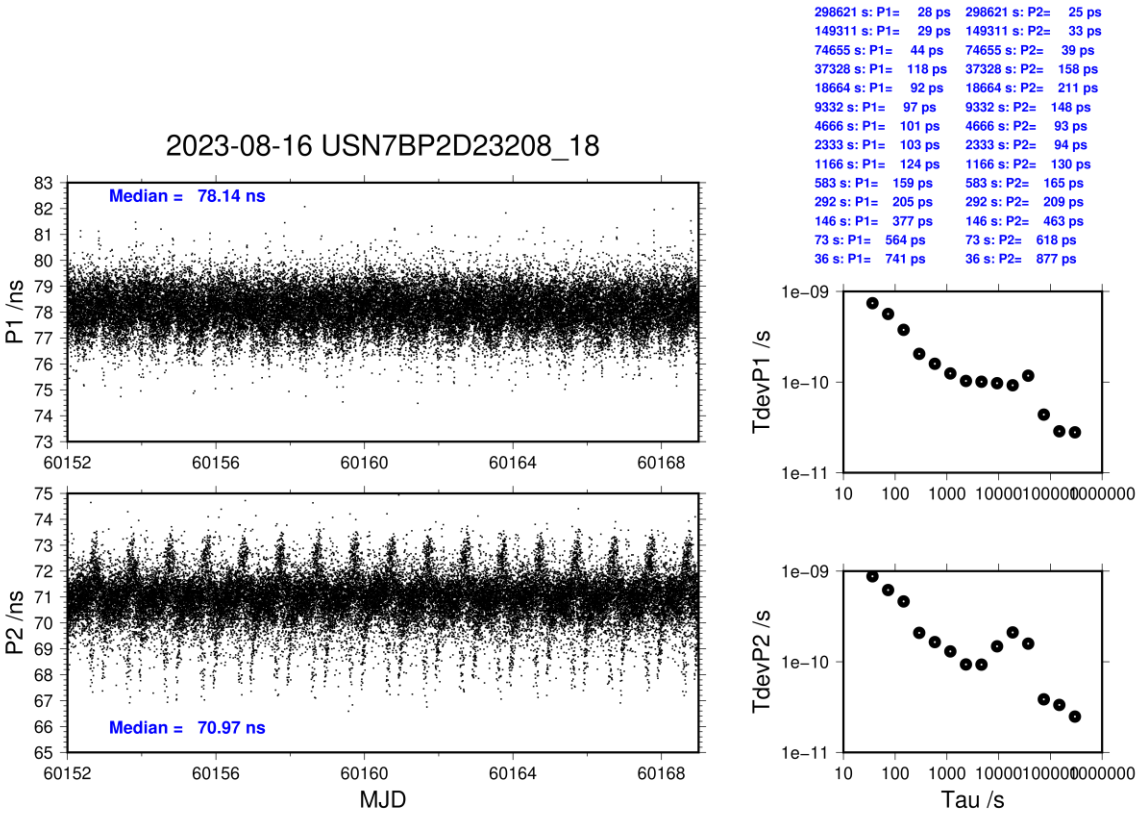
Global average of individual differences

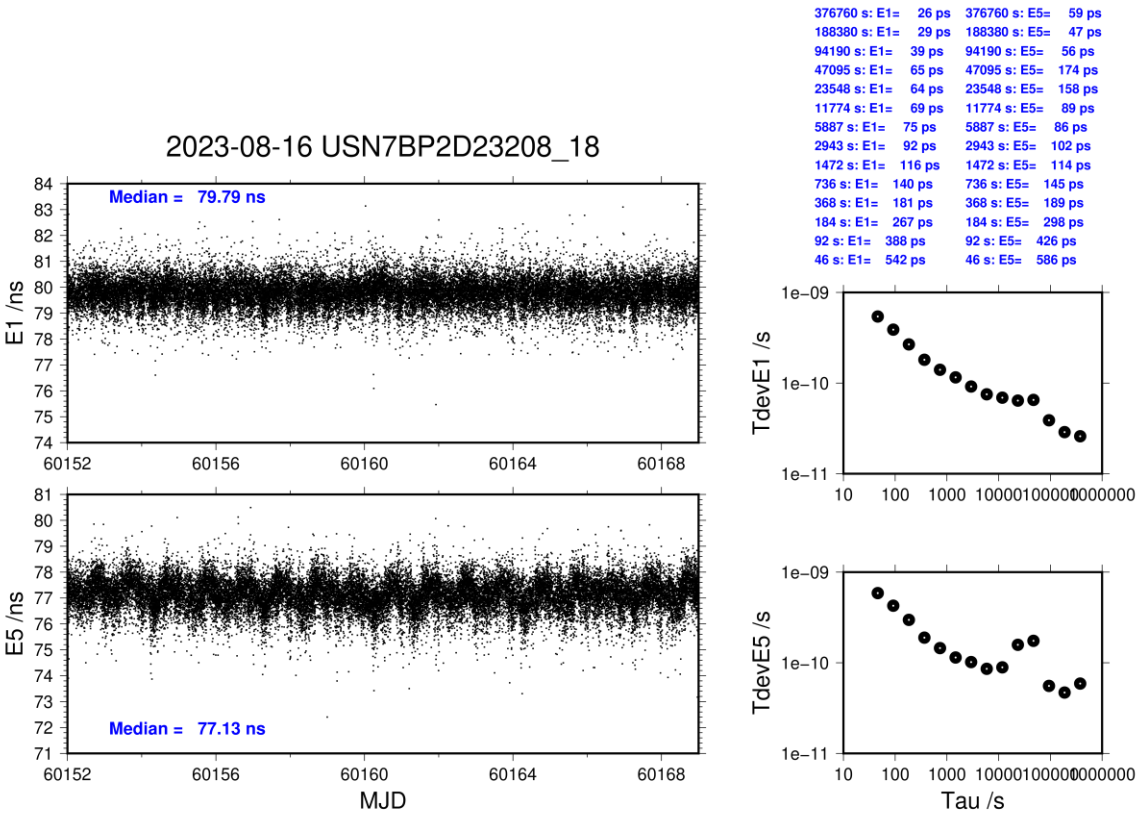
Code	#pts	ave/ns	rms/ns
C1	403518	79.407	1.357
C2	320379	72.418	1.420
P1	403485	78.112	1.422
P2	403482	70.926	1.383
E1	319801	79.777	1.151
E5	319801	77.106	1.127
BC	328815	80.373	1.381
B5	329998	77.514	1.158

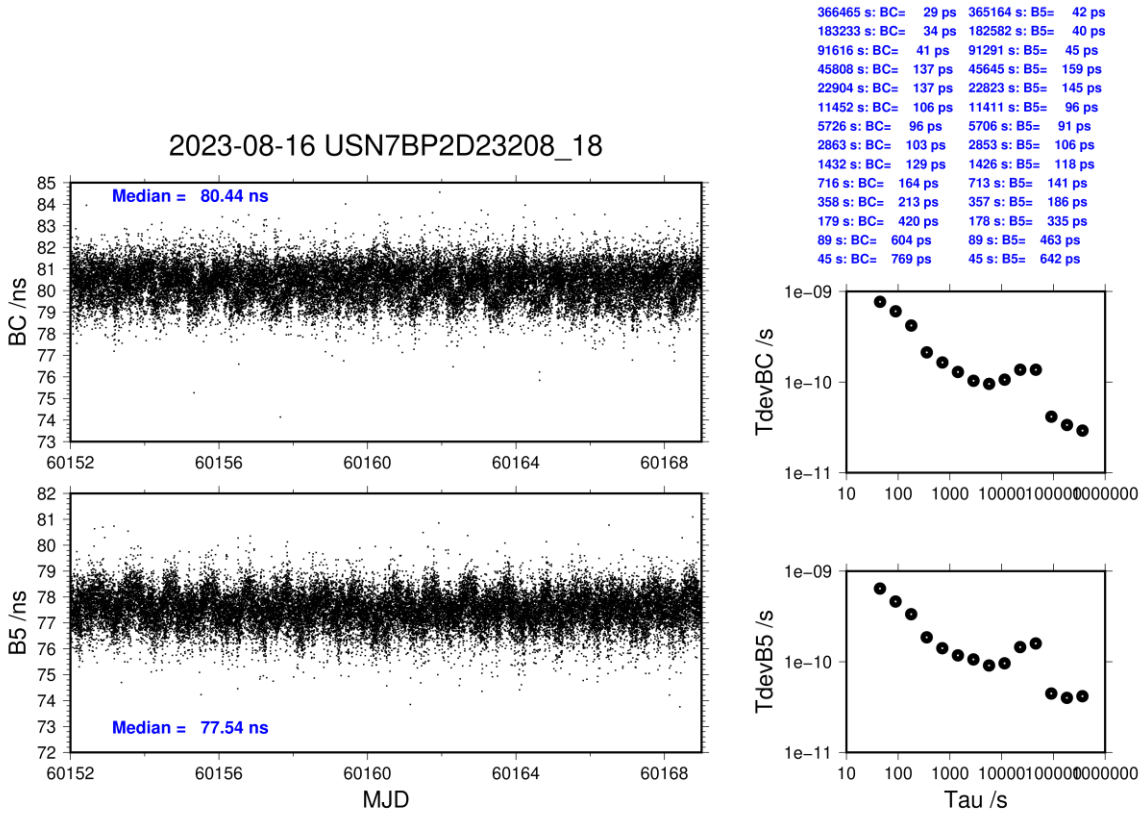
Number of 300s epochs in out file = 4890

Code	#pts	median/ns	ave/ns	rms/ns
C1	40286	79.401	79.420	0.655
C2	31986	72.422	72.424	0.795
P1	40286	78.135	78.125	0.759
P2	40286	70.971	70.935	0.884
E1	31931	79.790	79.783	0.555
E5	31931	77.133	77.113	0.632
BC	32828	80.438	80.382	0.812
B5	32945	77.536	77.520	0.674




298621 s: P1= 28 ps 298621 s: P2= 25 ps
149311 s: P1= 29 ps 149311 s: P2= 33 ps
74655 s: P1= 44 ps 74655 s: P2= 39 ps
37328 s: P1= 118 ps 37328 s: P2= 158 ps
18664 s: P1= 92 ps 18664 s: P2= 211 ps
9332 s: P1= 97 ps 9332 s: P2= 148 ps
4666 s: P1= 101 ps 4666 s: P2= 93 ps
2333 s: P1= 103 ps 2333 s: P2= 94 ps
1166 s: P1= 124 ps 1166 s: P2= 130 ps
583 s: P1= 159 ps 583 s: P2= 165 ps
292 s: P1= 205 ps 292 s: P2= 209 ps
146 s: P1= 377 ps 146 s: P2= 463 ps
73 s: P1= 564 ps 73 s: P2= 618 ps
36 s: P1= 741 ps 36 s: P2= 877 ps
2023-08-16 USN7BP2D23208_18
Median = 78.14 ns
P1 /ns
Median = 70.97 ns
P2 /ns
MJD
TdevP1 /s
TdevP2 /s
Tau /s


376760 s: E1= 26 ps 376760 s: E5= 59 ps
188380 s: E1= 29 ps 188380 s: E5= 47 ps
94190 s: E1= 39 ps 94190 s: E5= 56 ps
47095 s: E1= 65 ps 47095 s: E5= 174 ps
23548 s: E1= 64 ps 23548 s: E5= 158 ps
11774 s: E1= 69 ps 11774 s: E5= 89 ps
5887 s: E1= 75 ps 5887 s: E5= 86 ps
2943 s: E1= 92 ps 2943 s: E5= 102 ps
1472 s: E1= 116 ps 1472 s: E5= 114 ps
736 s: E1= 140 ps 736 s: E5= 145 ps
368 s: E1= 181 ps 368 s: E5= 189 ps
184 s: E1= 267 ps 184 s: E5= 298 ps
92 s: E1= 388 ps 92 s: E5= 426 ps
46 s: E1= 542 ps 46 s: E5= 586 ps
2023-08-16 USN7BP2D23208_18
Median = 79.79 ns
E1 /ns
Median = 77.13 ns
E5 /ns
MJD
TdevE1 /s
TdevE5 /s
Tau /s


366465 s: BC= 29 ps
183233 s: BC= 34 ps
91616 s: BC= 41 ps
45808 s: BC= 137 ps
22904 s: BC= 137 ps
11452 s: BC= 106 ps
5726 s: BC= 96 ps
2863 s: BC= 103 ps
1432 s: BC= 129 ps
716 s: BC= 164 ps
358 s: BC= 213 ps
179 s: BC= 420 ps
89 s: BC= 604 ps
45 s: BC= 769 ps
365164 s: B5= 42 ps
182582 s: B5= 40 ps
91291 s: B5= 45 ps
45645 s: B5= 159 ps
22823 s: B5= 145 ps
11411 s: B5= 96 ps
5706 s: B5= 91 ps
2853 s: B5= 106 ps
1426 s: B5= 118 ps
713 s: B5= 141 ps
357 s: B5= 186 ps
178 s: B5= 335 ps
89 s: B5= 463 ps
45 s: B5= 642 ps
2023-08-16 USN7BP2D23208_18
Median = 80.44 ns
BC /ns
Median = 77.54 ns
B5 /ns
MJD
TdevBC /s
TdevB5 /s
Tau /s

USN7-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 447317
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 62143 high elev obs : 19.154 18.752
Iteration 0: Obs used = 774606; Huge residuals = 342; Large residuals = 2662
Iteration 1: Obs used = 774593; Huge residuals = 0; Large residuals = 2333
Computed code bias (P1/P2)/m = 18.931 18.536
Computed baseline (X,Y,Z)/m = 4.740 1.061 0.323
RMS of residuals /m = 0.494

Number of phase differences to fit baseline
L1/L2 = 445314
L5 = 255511
A priori baseline (X,Y,Z)/m = 4.740 1.061 0.323
48025 clock jitters computed out of 48025 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 3.1

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.037 -0.120 0.056
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.037 -0.122 0.059
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.006 -0.192 0.043
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 4.777 0.939 0.380
48025 clock jitters computed out of 48025 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 0.1

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.002 -0.001 -0.001
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.002 -0.003 0.003
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.040 -0.073 -0.013
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.779 0.938 0.380
Final baseline L2 (X,Y,Z)/m = 4.780 0.936 0.383
Final baseline L5 (X,Y,Z)/m = 4.737 0.866 0.367

COMPUTATION OF CODE DIFFERENCES

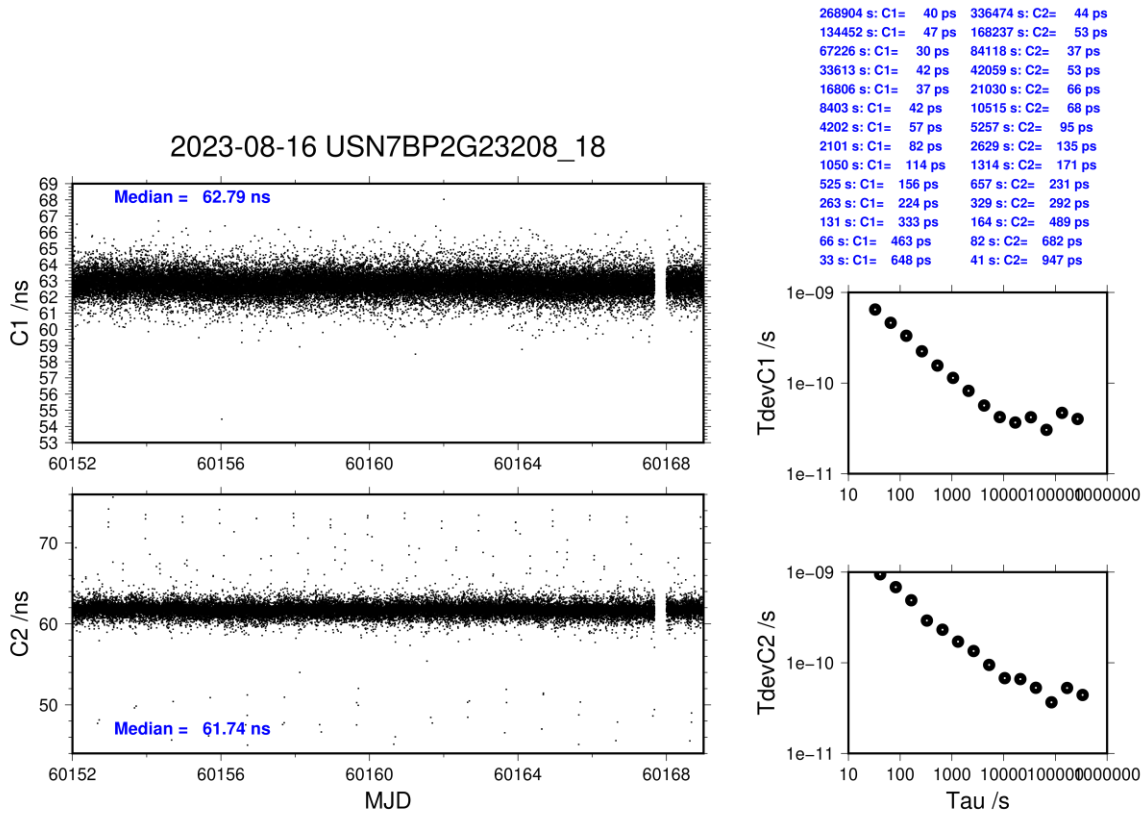
Total number of code differences = ******

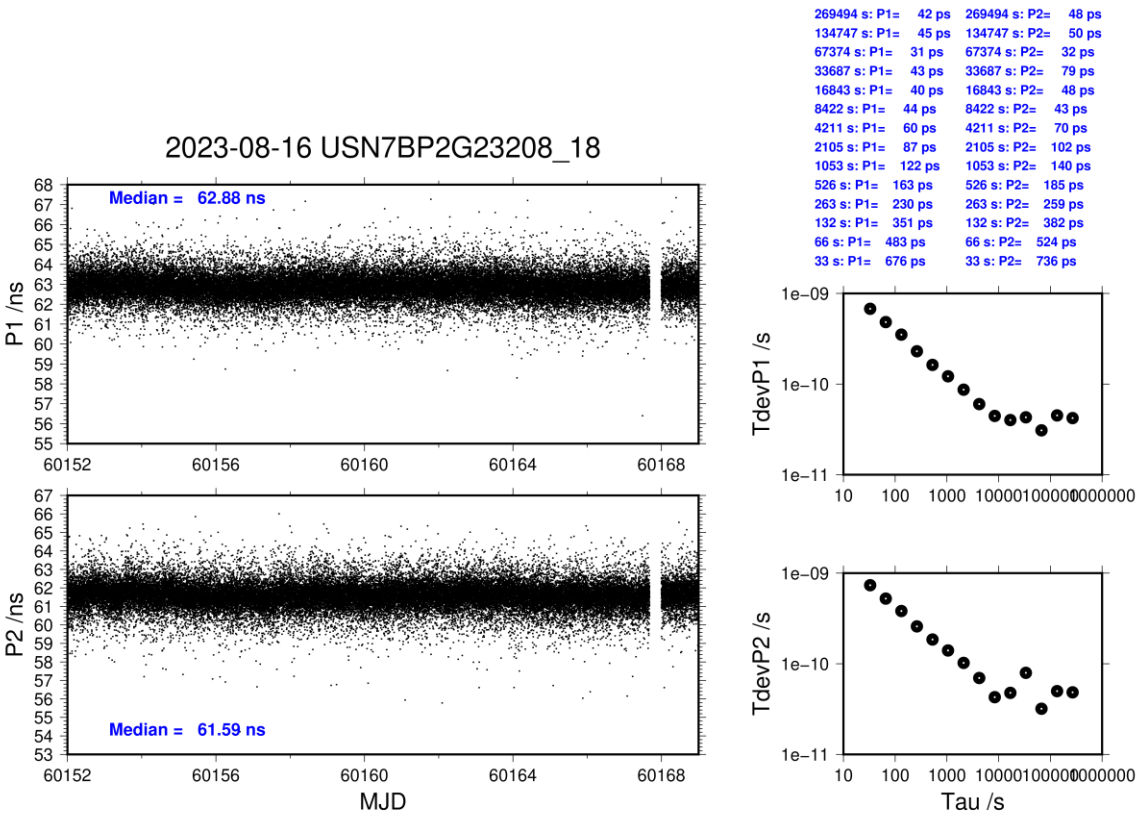
Global average of individual differences

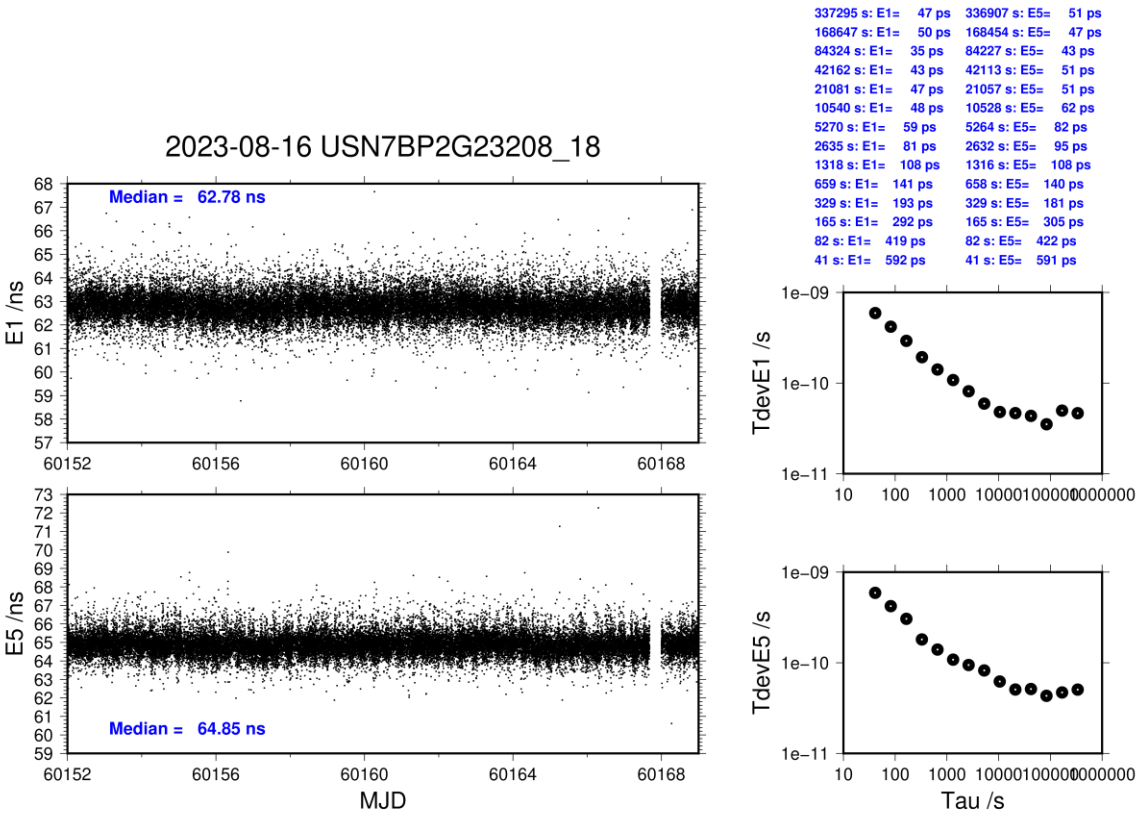
Code	#pts	ave/ns	rms/ns
C1	447928	62.792	1.604
C2	358284	61.728	1.819
P1	446895	62.875	1.608
P2	446895	61.568	1.584
E1	357001	62.790	1.325
E5	357510	64.863	1.157
BC	366311	62.873	1.447
B5	368667	64.872	1.160

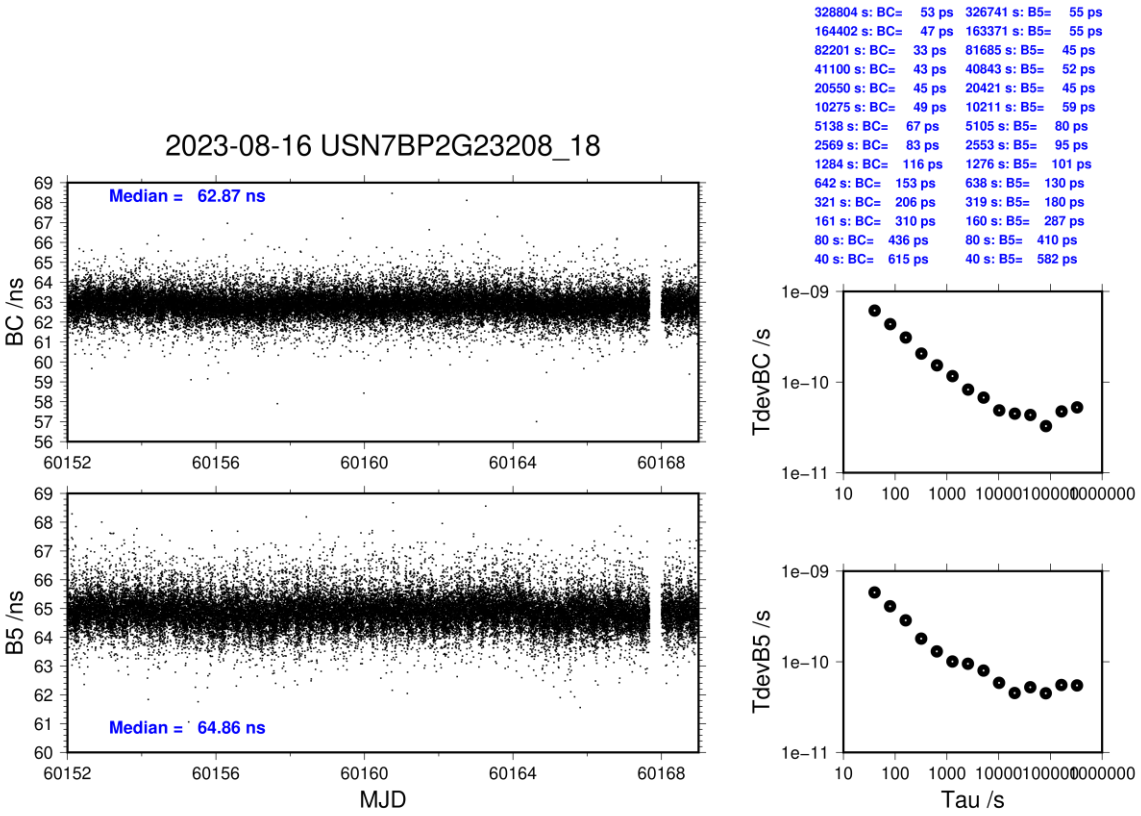
Number of 300s epochs in out file = 4805

Code	#pts	median/ns	ave/ns	rms/ns
C1	44738	62.794	62.805	0.654
C2	35754	61.736	61.735	0.953
P1	44640	62.879	62.889	0.683
P2	44640	61.590	61.573	0.750
E1	35667	62.783	62.797	0.593
E5	35708	64.848	64.872	0.599
BC	36588	62.868	62.881	0.621
B5	36819	64.858	64.878	0.583




269494 s: P1= 42 ps 269494 s: P2= 48 ps
134747 s: P1= 45 ps 134747 s: P2= 50 ps
67374 s: P1= 31 ps 67374 s: P2= 32 ps
33687 s: P1= 43 ps 33687 s: P2= 79 ps
16843 s: P1= 40 ps 16843 s: P2= 48 ps
8422 s: P1= 44 ps 8422 s: P2= 43 ps
4211 s: P1= 60 ps 4211 s: P2= 70 ps
2105 s: P1= 87 ps 2105 s: P2= 102 ps
1053 s: P1= 122 ps 1053 s: P2= 140 ps
526 s: P1= 163 ps 526 s: P2= 185 ps
263 s: P1= 230 ps 263 s: P2= 259 ps
132 s: P1= 351 ps 132 s: P2= 382 ps
66 s: P1= 483 ps 66 s: P2= 524 ps
33 s: P1= 676 ps 33 s: P2= 736 ps
2023-08-16 USN7BP2G23208_18
Median = 62.88 ns
P1 /ns
Median = 61.59 ns
P2 /ns
MJD
TdevP1 /s
TdevP2 /s
Tau /s


337295 s: E1= 47 ps 336907 s: E5= 51 ps
168647 s: E1= 50 ps 168454 s: E5= 47 ps
84324 s: E1= 35 ps 84227 s: E5= 43 ps
42162 s: E1= 43 ps 42113 s: E5= 51 ps
21081 s: E1= 47 ps 21057 s: E5= 51 ps
10540 s: E1= 48 ps 10528 s: E5= 62 ps
5270 s: E1= 59 ps 5264 s: E5= 82 ps
2635 s: E1= 81 ps 2632 s: E5= 95 ps
1318 s: E1= 108 ps 1316 s: E5= 108 ps
659 s: E1= 141 ps 658 s: E5= 140 ps
329 s: E1= 193 ps 329 s: E5= 181 ps
165 s: E1= 292 ps 165 s: E5= 305 ps
82 s: E1= 419 ps 82 s: E5= 422 ps
41 s: E1= 592 ps 41 s: E5= 591 ps
2023-08-16 USN7BP2G23208_18
Median = 62.78 ns
E1 /ns
Median = 64.85 ns
E5 /ns
MJD
TdevE1 /s
TdevE5 /s
Tau /s


328804 s: BC= 53 ps 326741 s: B5= 55 ps
164402 s: BC= 47 ps 163371 s: B5= 55 ps
82201 s: BC= 33 ps 81685 s: B5= 45 ps
41100 s: BC= 43 ps 40843 s: B5= 52 ps
20550 s: BC= 45 ps 20421 s: B5= 45 ps
10275 s: BC= 49 ps 10211 s: B5= 59 ps
5138 s: BC= 67 ps 5105 s: B5= 80 ps
2569 s: BC= 83 ps 2553 s: B5= 95 ps
1284 s: BC= 116 ps 1276 s: B5= 101 ps
642 s: BC= 153 ps 638 s: B5= 130 ps
321 s: BC= 206 ps 319 s: B5= 180 ps
161 s: BC= 310 ps 160 s: B5= 287 ps
80 s: BC= 436 ps 80 s: B5= 410 ps
40 s: BC= 615 ps 40 s: B5= 582 ps
2023-08-16 USN7BP2G23208_18
Median = 62.87 ns
BC /ns
Median = 64.86 ns
B5 /ns
MJD
TdevBC /s
TdevB5 /s
Tau /s

USN8-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 426646
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 66664 high elev obs : 21.963 20.241
Iteration 0: Obs used = 727150; Huge residuals = 0; Large residuals = 250
Iteration 1: Obs used = 727150; Huge residuals = 0; Large residuals = 250
Computed code bias (P1/P2)/m = 21.852 20.002
Computed baseline (X,Y,Z)/m = 4.270 0.948 0.252
RMS of residuals /m = 0.382

Number of phase differences to fit baseline
L1/L2 = 424946
L5 = 237157
A priori baseline (X,Y,Z)/m = 4.270 0.948 0.252
51751 clock jitters computed out of 51751 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 4.3

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.008 -0.072 0.046
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.004 -0.056 0.038
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.001 -0.053 0.034
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 4.276 0.885 0.294
51751 clock jitters computed out of 51751 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 0.1

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.001 -0.010 0.005
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.005 0.005 -0.003
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.008 0.008 -0.007
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.276 0.875 0.299
Final baseline L2 (X,Y,Z)/m = 4.271 0.890 0.291
Final baseline L5 (X,Y,Z)/m = 4.268 0.893 0.287

COMPUTATION OF CODE DIFFERENCES

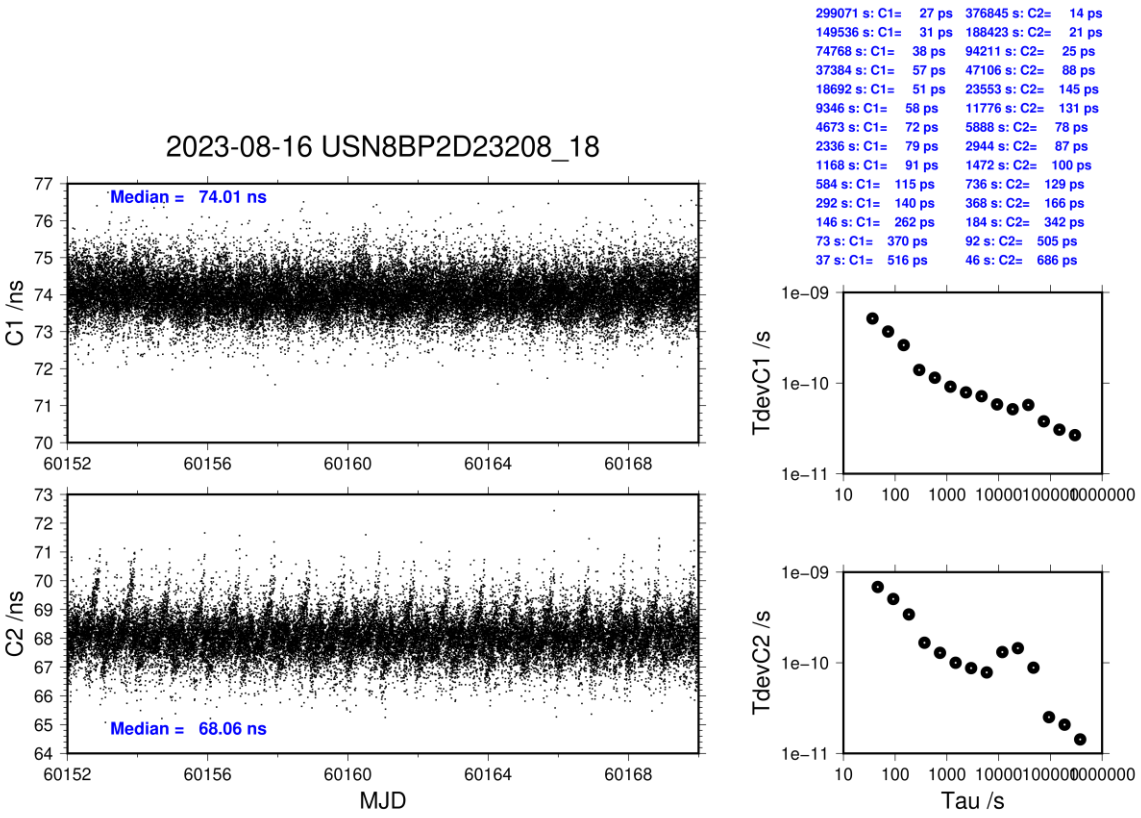
Total number of code differences = ******

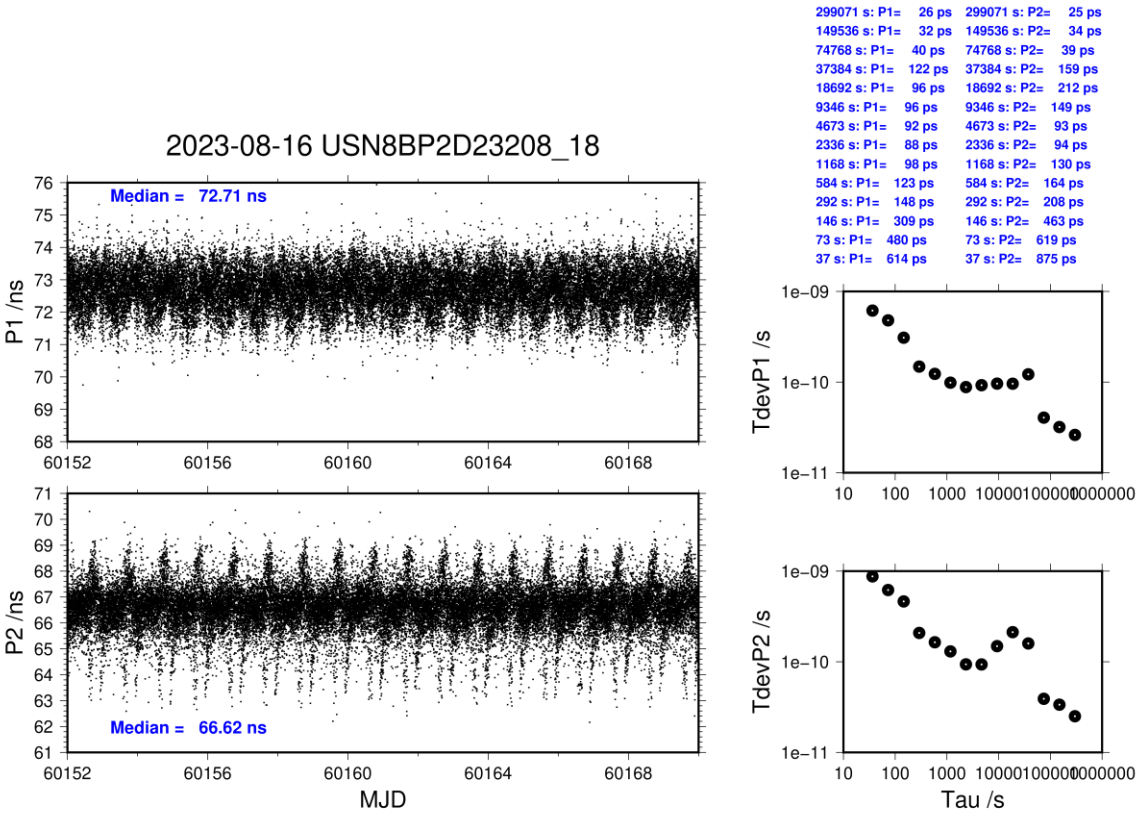
Global average of individual differences

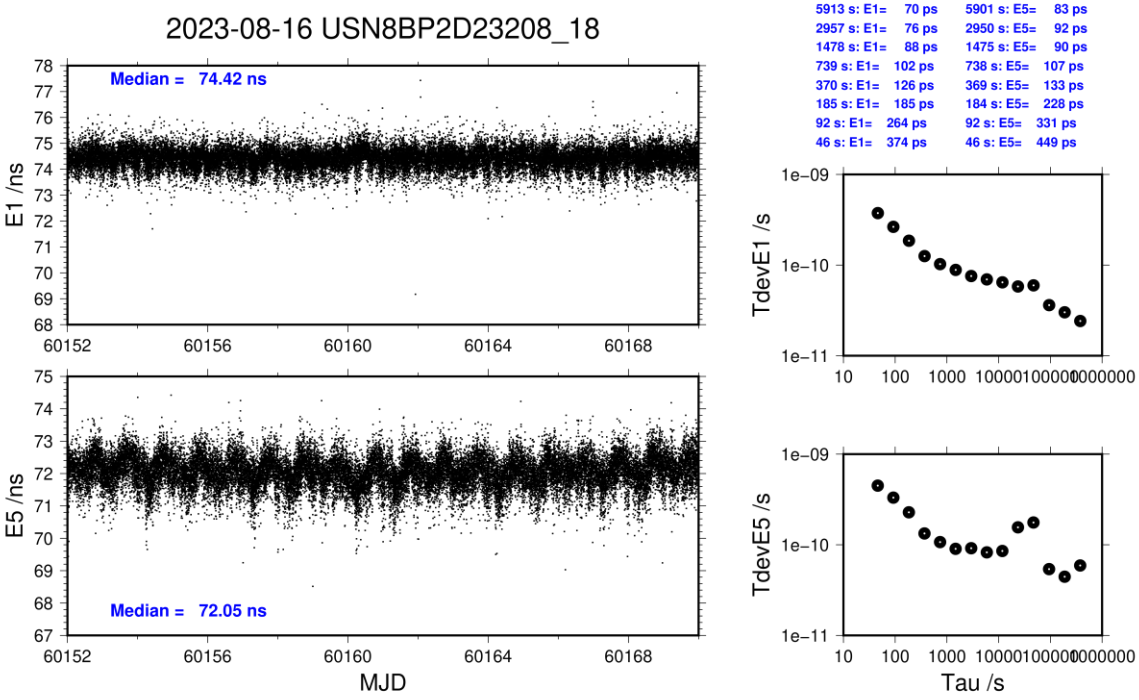
Code	#pts	ave/ns	rms/ns
C1	426609	74.035	0.937
C2	338565	68.062	1.073
P1	426575	72.696	1.022
P2	426572	66.573	1.381
E1	337112	74.411	0.752
E5	337829	72.034	0.792

Number of 300s epochs in out file = 5178

Code	#pts	median/ns	ave/ns	rms/ns
C1	42592	74.011	74.028	0.518
C2	33802	68.058	68.065	0.695
P1	42592	72.709	72.690	0.635
P2	42592	66.619	66.582	0.884
E1	33658	74.423	74.410	0.392
E5	33730	72.050	72.033	0.505




2023-08-16 USN8BP2D23208_18
Median = 72.71 ns
Median = 66.62 ns
P1 /ns
P2 /ns
MJD
299071 s: P1= 26 ps 299071 s: P2= 25 ps
149536 s: P1= 32 ps 149536 s: P2= 34 ps
74768 s: P1= 40 ps 74768 s: P2= 39 ps
37384 s: P1= 122 ps 37384 s: P2= 159 ps
18692 s: P1= 96 ps 18692 s: P2= 212 ps
9346 s: P1= 96 ps 9346 s: P2= 149 ps
4673 s: P1= 92 ps 4673 s: P2= 93 ps
2336 s: P1= 88 ps 2336 s: P2= 94 ps
1168 s: P1= 98 ps 1168 s: P2= 130 ps
584 s: P1= 123 ps 584 s: P2= 164 ps
292 s: P1= 148 ps 292 s: P2= 208 ps
146 s: P1= 309 ps 146 s: P2= 463 ps
73 s: P1= 480 ps 73 s: P2= 619 ps
37 s: P1= 614 ps 37 s: P2= 875 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-08-16 USN8BP2D23208_18
Median = 74.42 ns
Median = 72.05 ns
E1 /ns
E5 /ns
MJD
378457 s: E1= 24 ps 377650 s: E5= 59 ps
189229 s: E1= 30 ps 188825 s: E5= 44 ps
94614 s: E1= 36 ps 94412 s: E5= 54 ps
47307 s: E1= 60 ps 47206 s: E5= 176 ps
23654 s: E1= 58 ps 23603 s: E5= 156 ps
11827 s: E1= 65 ps 11802 s: E5= 85 ps
5913 s: E1= 70 ps 5901 s: E5= 83 ps
2957 s: E1= 76 ps 2950 s: E5= 92 ps
1478 s: E1= 88 ps 1475 s: E5= 90 ps
739 s: E1= 102 ps 738 s: E5= 107 ps
370 s: E1= 126 ps 369 s: E5= 133 ps
185 s: E1= 185 ps 184 s: E5= 228 ps
92 s: E1= 264 ps 92 s: E5= 331 ps
46 s: E1= 374 ps 46 s: E5= 449 ps
TdevE1 /s
TdevE5 /s
Tau /s

USN8-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 473365
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 65674 high elev obs : 17.513 17.450
Iteration 0: Obs used = 820738; Huge residuals = 0; Large residuals = 1972
Iteration 1: Obs used = 820738; Huge residuals = 0; Large residuals = 1972
Computed code bias (P1/P2)/m = 17.283 17.208
Computed baseline (X,Y,Z)/m = 4.736 1.043 0.363
RMS of residuals /m = 0.438

Number of phase differences to fit baseline
L1/L2 = 471259
L5 = 270127
A priori baseline (X,Y,Z)/m = 4.736 1.043 0.363
50905 clock jitters computed out of 50905 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 2.9

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.037 -0.104 0.016
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = 0.039 -0.106 0.020
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.007 -0.175 0.003
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 4.774 0.938 0.381
50905 clock jitters computed out of 50905 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 0.1

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.003 -0.000 -0.001
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = 0.004 -0.002 0.002
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.041 -0.072 -0.014
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.777 0.937 0.380
Final baseline L2 (X,Y,Z)/m = 4.778 0.935 0.383
Final baseline L5 (X,Y,Z)/m = 4.733 0.865 0.367

COMPUTATION OF CODE DIFFERENCES

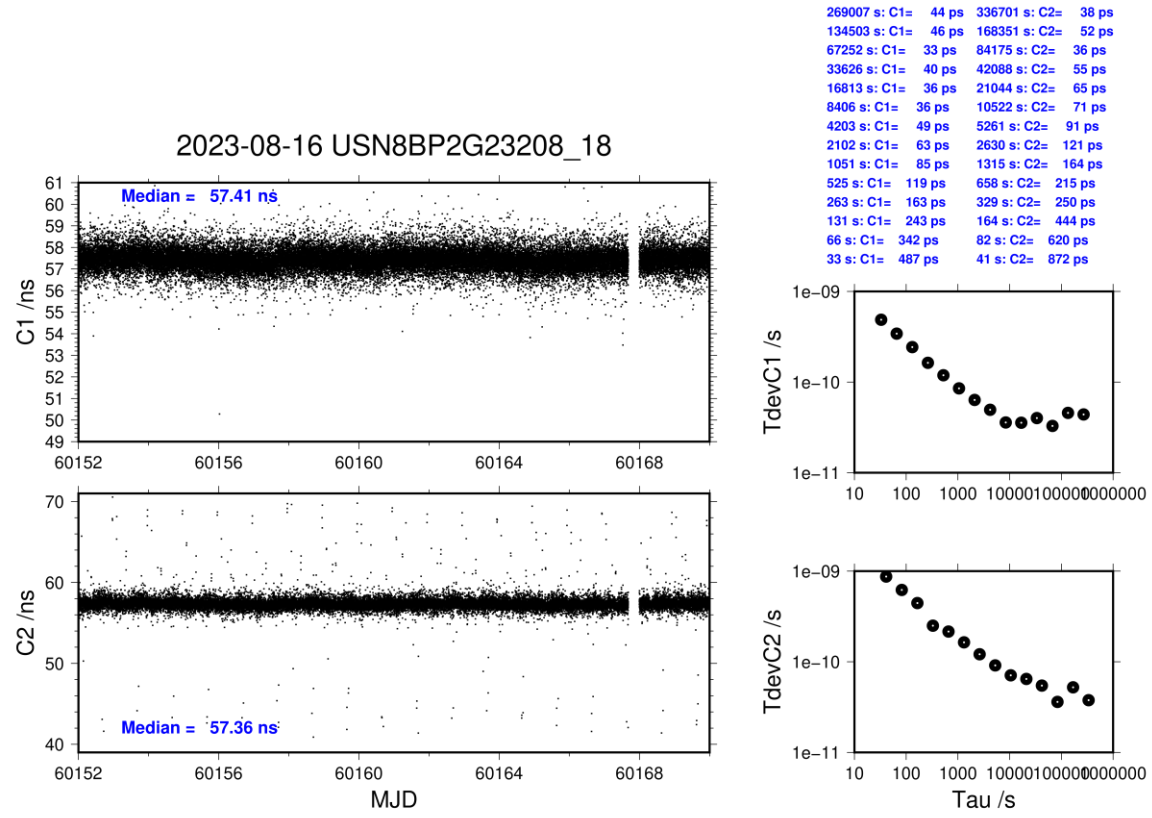
Total number of code differences = ******

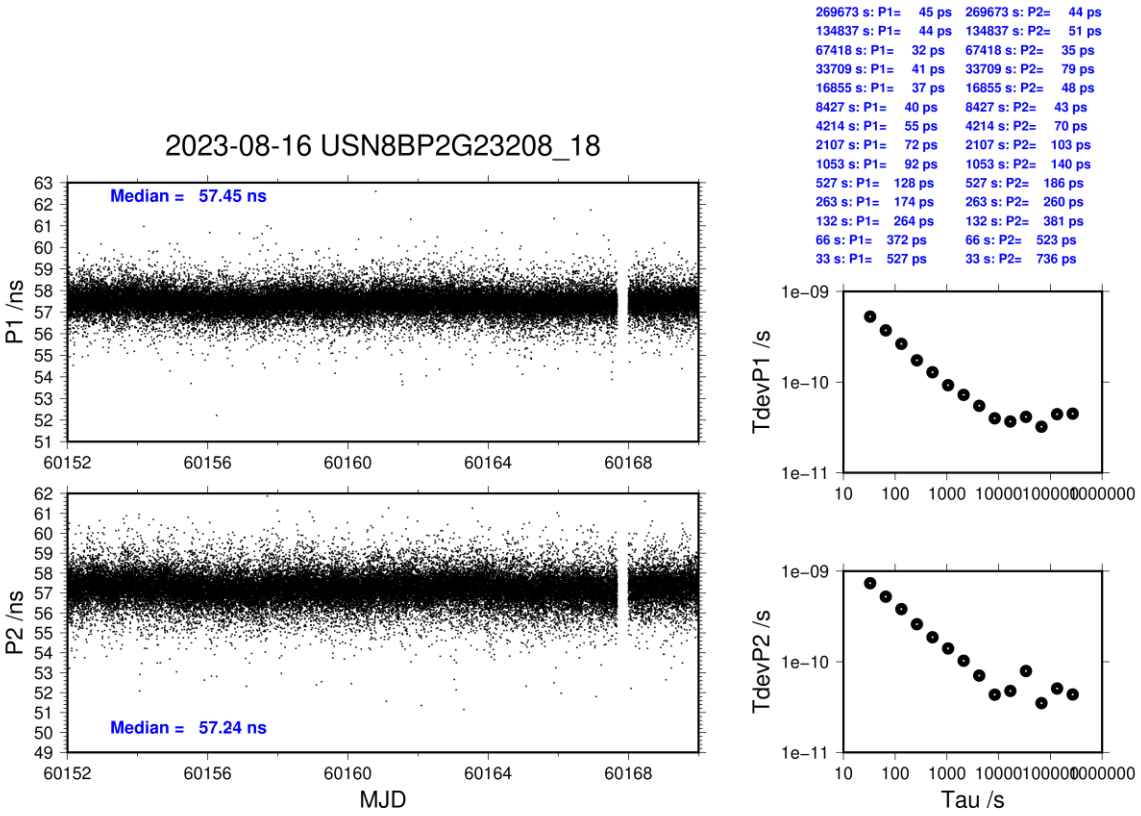
Global average of individual differences

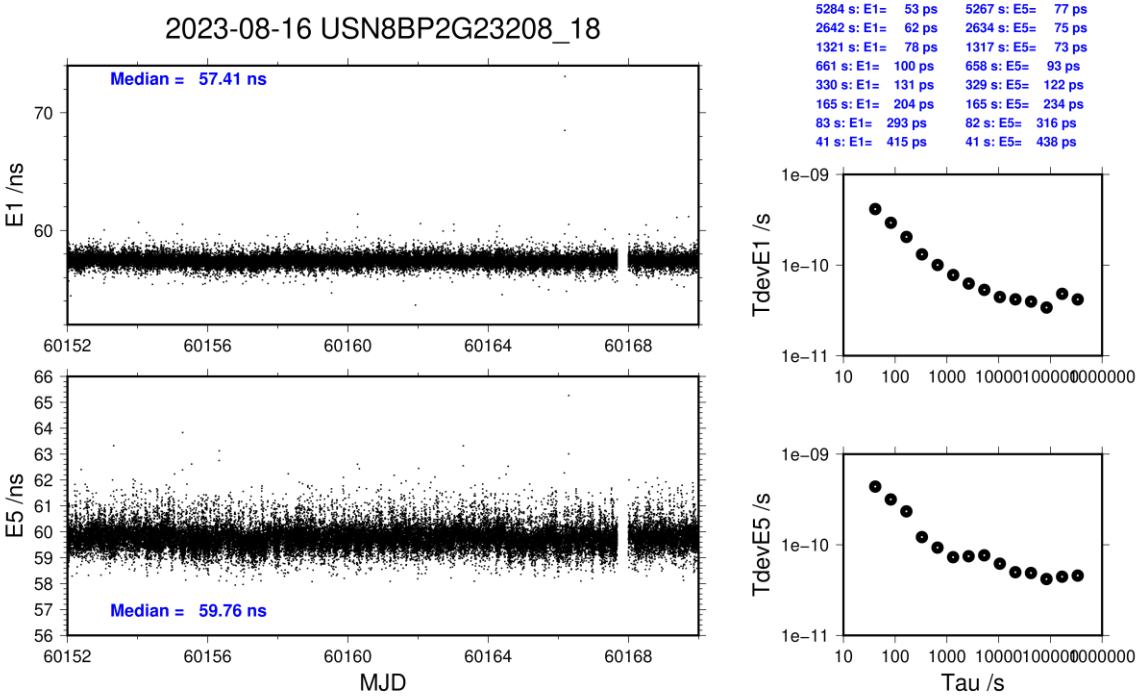
Code	#pts	ave/ns	rms/ns
C1	474083	57.418	1.197
C2	379075	57.369	1.499
P1	472913	57.458	1.206
P2	472913	57.217	1.583
E1	377037	57.428	0.917
E5	378301	59.787	0.814

Number of 300s epochs in out file = 5093

Code	#pts	median/ns	ave/ns	rms/ns
C1	47352	57.405	57.415	0.490
C2	37832	57.363	57.366	0.871
P1	47235	57.449	57.455	0.529
P2	47235	57.238	57.221	0.750
E1	37666	57.411	57.428	0.420
E5	37786	59.764	59.785	0.449




2023-08-16 USN8BP2G23208_18
Median = 57.45 ns
Median = 57.24 ns
P1 /ns
P2 /ns
MJD
269673 s: P1= 45 ps 269673 s: P2= 44 ps
134837 s: P1= 44 ps 134837 s: P2= 51 ps
67418 s: P1= 32 ps 67418 s: P2= 35 ps
33709 s: P1= 41 ps 33709 s: P2= 79 ps
16855 s: P1= 37 ps 16855 s: P2= 48 ps
8427 s: P1= 40 ps 8427 s: P2= 43 ps
4214 s: P1= 55 ps 4214 s: P2= 70 ps
2107 s: P1= 72 ps 2107 s: P2= 103 ps
1053 s: P1= 92 ps 1053 s: P2= 140 ps
527 s: P1= 128 ps 527 s: P2= 186 ps
263 s: P1= 174 ps 263 s: P2= 260 ps
132 s: P1= 264 ps 132 s: P2= 381 ps
66 s: P1= 372 ps 66 s: P2= 523 ps
33 s: P1= 527 ps 33 s: P2= 736 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-08-16 USN8BP2G23208_18
Median = 57.41 ns
Median = 59.76 ns
E1 /ns
E5 /ns
MJD
338185 s: E1= 42 ps 337111 s: E5= 46 ps
169093 s: E1= 48 ps 168556 s: E5= 44 ps
84546 s: E1= 34 ps 84278 s: E5= 42 ps
42273 s: E1= 40 ps 42139 s: E5= 49 ps
21137 s: E1= 42 ps 21069 s: E5= 50 ps
10568 s: E1= 44 ps 10535 s: E5= 62 ps
5284 s: E1= 53 ps 5267 s: E5= 77 ps
2642 s: E1= 62 ps 2634 s: E5= 75 ps
1321 s: E1= 78 ps 1317 s: E5= 73 ps
661 s: E1= 100 ps 658 s: E5= 93 ps
330 s: E1= 131 ps 329 s: E5= 122 ps
165 s: E1= 204 ps 165 s: E5= 234 ps
83 s: E1= 293 ps 82 s: E5= 316 ps
41 s: E1= 415 ps 41 s: E5= 438 ps
TdevE1 /s
TdevE5 /s
Tau /s

3.3/ NIST (23293)

Period

MJD 60237 to 60245

Delays

BP2D: (cf page 3 & 47)
REFDLY = 467.01 ns (413.60+53.41)
CABDLY = 176.85 ns (C210)

BP2G: (cf page 3 & 47)
REFDLY = 467.11 ns (413.60+53.51)
CABDLY = 176.38 ns (C211)

NISG: (cf page 47)
REFDLY = 1622.32 ns (1561.69+60.63)
CABDLY = 298.50 ns

NISQ: (cf page 48)
REFDLY = 466.20 ns
CABDLY = 199.60 ns

NIST (NISX): (cf page 49)
REFDLY = 121.60 ns (66.70+54.90)
CABDLY = 275.50 ns

Setup at the NIST

Annex A - Information Sheet

Laboratory:	NIST
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	NISG	
Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR Full S/N 3034704	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	Andrew LDF2-50 (white) N	
Length outside the building /m:	5.0	
Antenna maker and type: Antenna serial number:	Novatel 750 NEG10500001	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	1488.82+72.87=1561.69	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	60.63 (auto comp. off)	32.2 (BP2G)
Antenna cable delay: (X_C)	298.5	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS) /ns:	29.47 (P1), 27.89(P2)
• INT DLY (or X_R+X_S) (GAL) /ns:	31.83 (E1), 31.52 (E5a)
• CAB DLY (or X_C) /ns:	298.5
• REF DLY (or X_P+X_O) /ns:	1621.5
• Coordinates reference frame:	WGS84
X /m:	-1288547.201
Y /m:	-4721701.166
Z /m	4078586.530

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty: (°C)	22(.1)
Set humidity value and uncertainty: (%)	45 (.1)

Annex A - Information Sheet

Laboratory:	**NIST, Boulder, USA**
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	**NISQ**	
Receiver maker and type: Receiver serial number:	PolaRxTR 5 S/N	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	LMR 400 N	
Length outside the building /m:	50	
Antenna maker and type: Antenna serial number:	Septentrio PolaNt-x MFv2	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	327.8+138.4= 466.2	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	56.3 (auto comp. on)	32.2 (BP2G)
Antenna cable delay: (X_C)	199.6	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS)† /ns:	
• INT DLY (or X_R+X_S) (GLONASS) /ns:	
• CAB DLY (or X_C) /ns:	
• REF DLY (or X_P+X_O) /ns:	
• Coordinates reference frame:	
X /m:	
Y /m:	
Z /m	

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	
Set humidity value and uncertainty:	

† Based on Cal_Id 1001-2018, but still not implemented

Annex A - Information Sheet

Laboratory:	**NIST, Boulder, USA**
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	**NISX**	
Receiver maker and type: Receiver serial number:	PolaRxTR 5 S/N	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	Andrew FSJ-50A N	
Length outside the building /m:	65	
Antenna maker and type: Antenna serial number:	Novatel 702	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	66.7	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	54.9	32.2 (BP2G)
Antenna cable delay: (X_C)	275.5	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS)† /ns:	
• INT DLY (or X_R+X_S) (GLONASS) /ns:	
• CAB DLY (or X_C) /ns:	275.5
• REF DLY (or X_P+X_O) /ns:	120.0
• Coordinates reference frame:	WGS84
X /m:	-1288398.60
Y /m:	-4721697.05
Z /m	4078625.45

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	
Set humidity value and uncertainty:	

† Based on Cal_Id 1001-2018, but still not implemented

NISG-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 93372
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 17244 high elev obs :-259.580-261.074
Iteration 0: Obs used = 59935; Huge residuals = 18; Large residuals = 93487
Iteration 1: Obs used = 62038; Huge residuals = 0; Large residuals = 91366
Computed code bias (P1/P2)/m = -263.009 -264.451
Computed baseline (X,Y,Z)/m = 182.244 64.126 72.966
RMS of residuals /m = 1.116

Number of phase differences to fit baseline
L1/L2 = 218803
L5 = 120254
A priori baseline (X,Y,Z)/m = 182.244 64.126 72.966
23884 clock jitters computed out of 25833 intervals
AVE jitter /ps = -12.4 RMS jitter /ps = 61.4

Iter 1 Large residuals L1=67677
Iter 1 Large residuals L2=68547
Iter 1 Large residuals L5=42441
Computed baseline L1 (X,Y,Z)/m = 18.058 -16.117 11.660
RMS of residuals L1 /m = 0.008
Computed baseline L2 (X,Y,Z)/m = 17.983 -16.009 11.575
RMS of residuals L2 /m = 0.008
Computed baseline L5 (X,Y,Z)/m = 16.400 -15.384 11.339
RMS of residuals L5 /m = 0.014

Iter 2 Large residuals L1= 7793
Iter 2 Large residuals L2= 8141
Iter 2 Large residuals L5= 8008
Computed baseline L1 (X,Y,Z)/m = 27.260 -24.505 17.450
RMS of residuals L1 /m = 0.016
Computed baseline L2 (X,Y,Z)/m = 27.192 -24.405 17.381
RMS of residuals L2 /m = 0.016
Computed baseline L5 (X,Y,Z)/m = 25.671 -23.919 16.962
RMS of residuals L5 /m = 0.023

Iter 3 Large residuals L1= 1958
Iter 3 Large residuals L2= 2212
Iter 3 Large residuals L5= 1385
Computed baseline L1 (X,Y,Z)/m = 31.390 -28.317 19.750
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 31.375 -28.291 19.720
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 30.715 -27.972 19.422
RMS of residuals L5 /m = 0.019

Iter 4 Large residuals L1= 2050
Iter 4 Large residuals L2= 2319
Iter 4 Large residuals L5= 1336
Computed baseline L1 (X,Y,Z)/m = 32.077 -28.827 20.042
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 32.082 -28.821 20.029
RMS of residuals L2 /m = 0.019

Computed baseline L5 (X,Y,Z)/m = 32.000 -28.863 19.831
RMS of residuals L5 /m = 0.020

Iter 5 Large residuals L1= 2074
Iter 5 Large residuals L2= 2361
Iter 5 Large residuals L5= 1359
Computed baseline L1 (X,Y,Z)/m = 32.134 -28.864 20.072
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 32.156 -28.871 20.059
RMS of residuals L2 /m = 0.019
Computed baseline L5 (X,Y,Z)/m = 32.163 -28.978 19.868
RMS of residuals L5 /m = 0.020

Iter 6 Large residuals L1= 2073
Iter 6 Large residuals L2= 2369
Iter 6 Large residuals L5= 1364
Computed baseline L1 (X,Y,Z)/m = 32.139 -28.867 20.075
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 32.164 -28.878 20.062
RMS of residuals L2 /m = 0.019
Computed baseline L5 (X,Y,Z)/m = 32.176 -28.988 19.874
RMS of residuals L5 /m = 0.020

Iter 7 Large residuals L1= 2073
Iter 7 Large residuals L2= 2369
Iter 7 Large residuals L5= 1364
Computed baseline L1 (X,Y,Z)/m = 32.139 -28.867 20.075
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 32.165 -28.878 20.063
RMS of residuals L2 /m = 0.019
Computed baseline L5 (X,Y,Z)/m = 32.178 -28.990 19.874
RMS of residuals L5 /m = 0.020

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 214.396 35.253 93.035
25721 clock jitters computed out of 25833 intervals
AVE jitter /ps = 8.9 RMS jitter /ps = 61.1

Iter 8 Large residuals L1= 886
Iter 8 Large residuals L2= 886
Iter 8 Large residuals L5= 577
Computed baseline L1 (X,Y,Z)/m = -0.661 0.123 -0.045
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.653 0.130 -0.056
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.644 0.139 -0.064
RMS of residuals L5 /m = 0.004

Iter 9 Large residuals L1= 886
Iter 9 Large residuals L2= 886
Iter 9 Large residuals L5= 577
Computed baseline L1 (X,Y,Z)/m = -0.661 0.123 -0.045
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.653 0.130 -0.056
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.644 0.139 -0.064
RMS of residuals L5 /m = 0.004

WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 213.735 35.376 92.989
Final baseline L2 (X,Y,Z)/m = 213.743 35.383 92.978
Final baseline L5 (X,Y,Z)/m = 213.753 35.392 92.970

COMPUTATION OF CODE DIFFERENCES

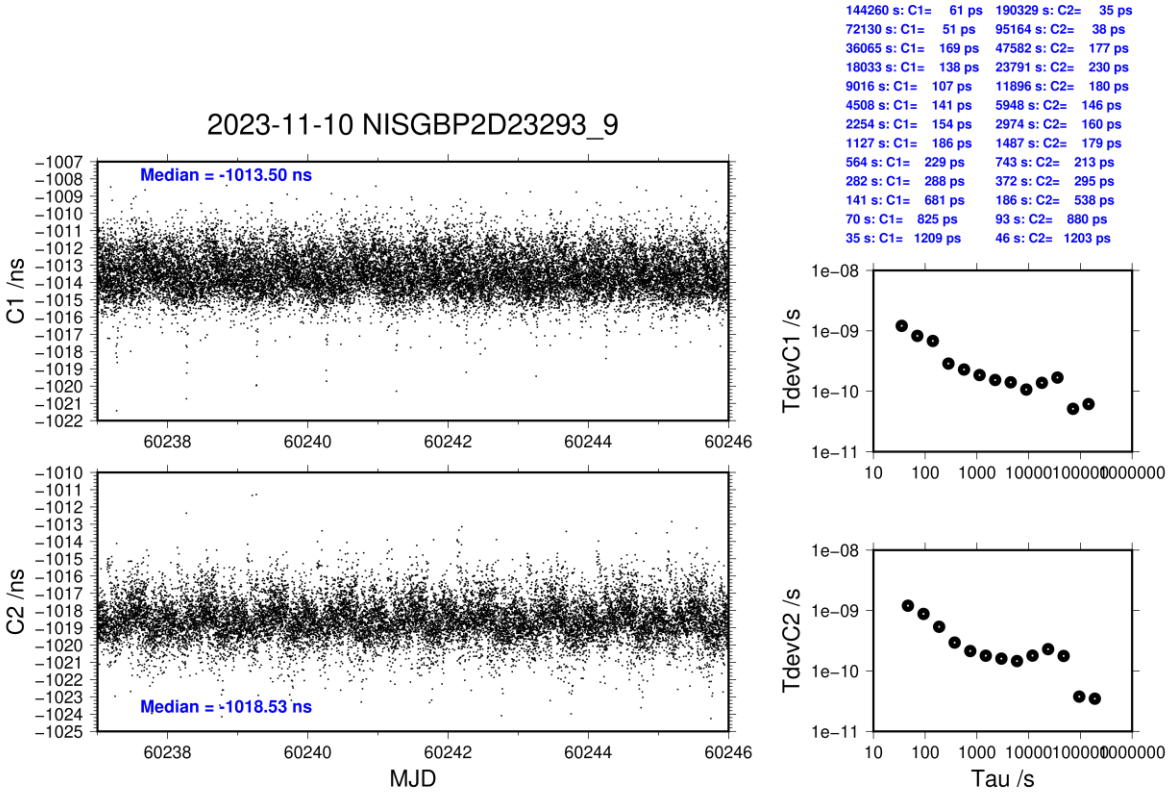
Total number of code differences = 759316

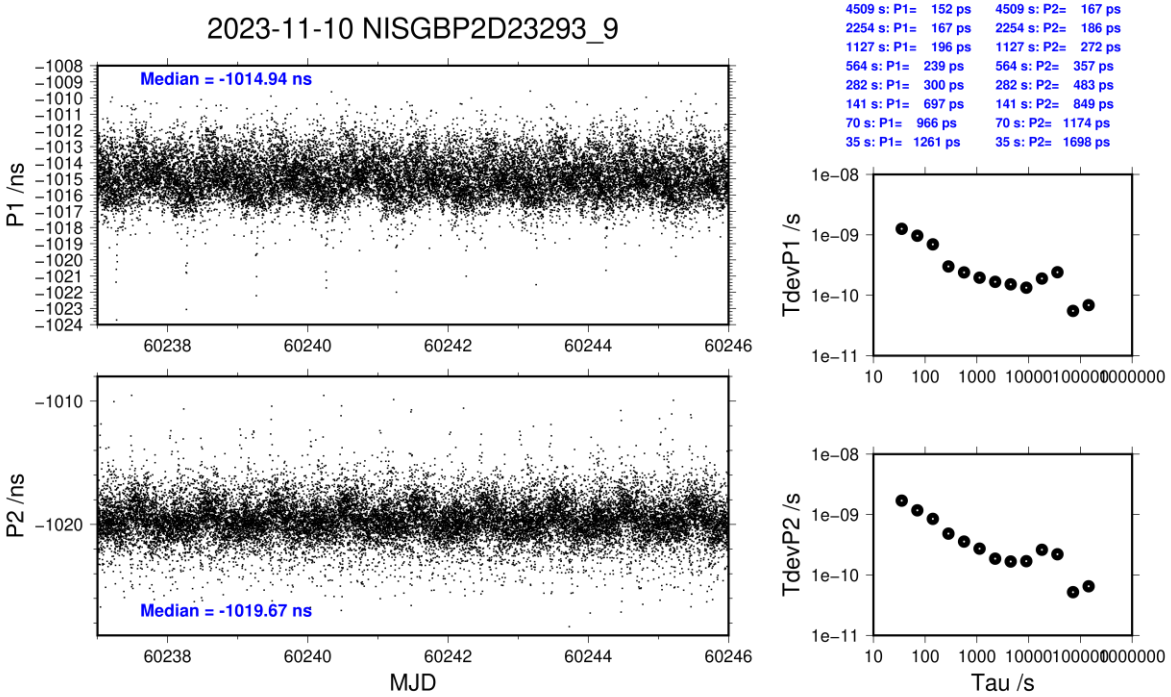
Global average of individual differences

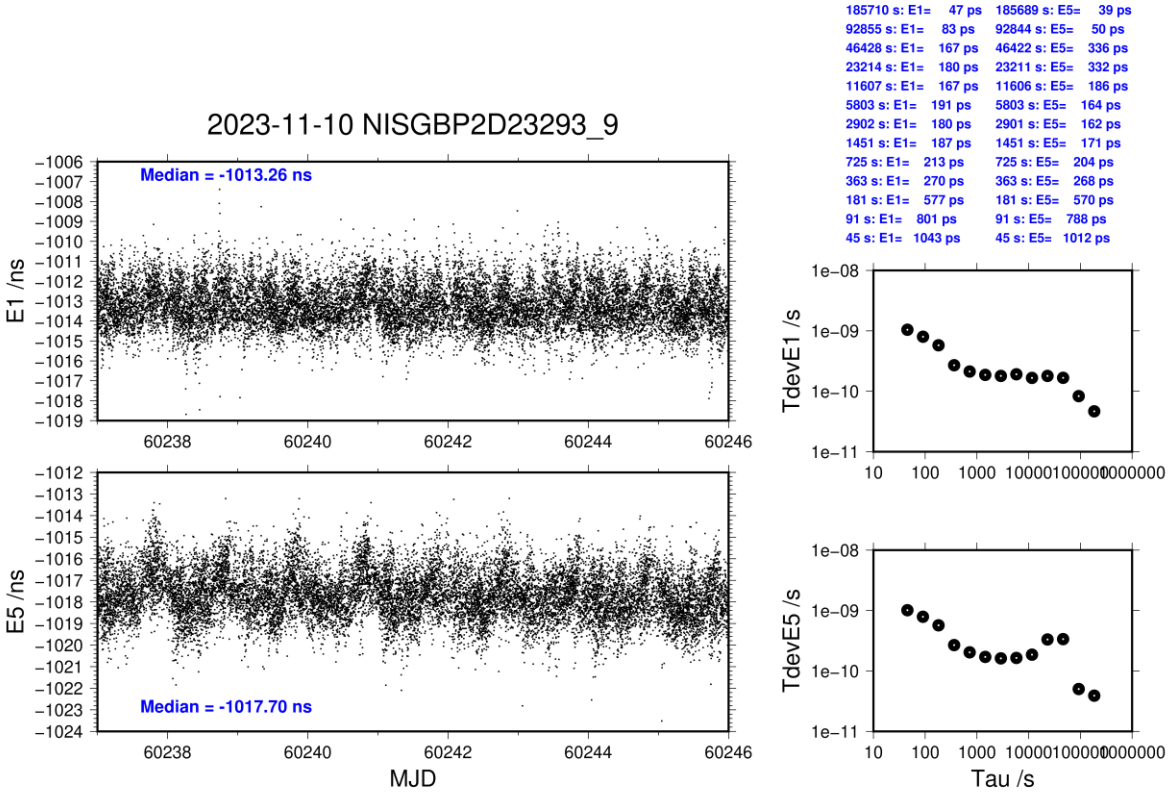
Code	#pts	ave/ns	rms/ns
C1	220976	-1013.407	1.663
C2	167460	-1018.486	1.592
P1	220925	-1014.816	1.747
P2	220924	-1019.648	2.329
E1	171279	-1013.181	1.444
E5	171283	-1017.653	1.344
BC	174318	-1012.727	1.772
B5	174333	-1017.491	1.564

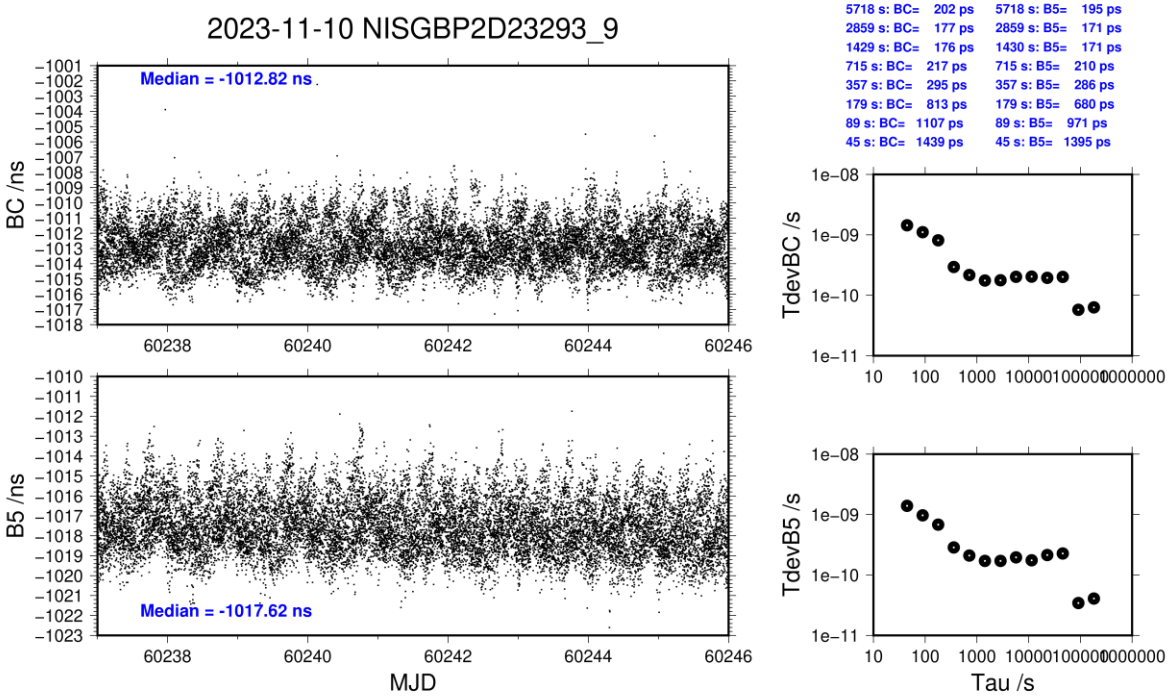
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	22071	-1013.505	-1013.429	1.195
C2	16729	-1018.534	-1018.488	1.191
P1	22067	-1014.939	-1014.839	1.295
P2	22067	-1019.674	-1019.621	1.671
E1	17145	-1013.262	-1013.178	1.099
E5	17147	-1017.702	-1017.658	1.129
BC	17402	-1012.819	-1012.717	1.473
B5	17401	-1017.618	-1017.498	1.364


2023-11-10 NISGBP2D23293_9
Median = -1013.50 ns
Median = -1018.53 ns
C1 /ns
C2 /ns
MJD
144260 s: C1= 61 ps 190329 s: C2= 35 ps
72130 s: C1= 51 ps 95164 s: C2= 38 ps
36065 s: C1= 169 ps 47582 s: C2= 177 ps
18033 s: C1= 138 ps 23791 s: C2= 230 ps
9016 s: C1= 107 ps 11896 s: C2= 180 ps
4508 s: C1= 141 ps 5948 s: C2= 146 ps
2254 s: C1= 154 ps 2974 s: C2= 160 ps
1127 s: C1= 186 ps 1487 s: C2= 179 ps
564 s: C1= 229 ps 743 s: C2= 213 ps
282 s: C1= 288 ps 372 s: C2= 295 ps
141 s: C1= 681 ps 186 s: C2= 538 ps
70 s: C1= 825 ps 93 s: C2= 880 ps
35 s: C1= 1209 ps 46 s: C2= 1203 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISGBP2D23293_9
Median = -1014.94 ns
Median = -1019.67 ns
P1 /ns
P2 /ns
MJD
144286 s: P1= 69 ps 144286 s: P2= 65 ps
72143 s: P1= 55 ps 72143 s: P2= 52 ps
36072 s: P1= 241 ps 36072 s: P2= 221 ps
18036 s: P1= 189 ps 18036 s: P2= 261 ps
9018 s: P1= 134 ps 9018 s: P2= 169 ps
4509 s: P1= 152 ps 4509 s: P2= 167 ps
2254 s: P1= 167 ps 2254 s: P2= 186 ps
1127 s: P1= 196 ps 1127 s: P2= 272 ps
564 s: P1= 239 ps 564 s: P2= 357 ps
282 s: P1= 300 ps 282 s: P2= 483 ps
141 s: P1= 697 ps 141 s: P2= 849 ps
70 s: P1= 966 ps 70 s: P2= 1174 ps
35 s: P1= 1261 ps 35 s: P2= 1698 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISGBP2D23293_9
Median = -1013.26 ns
Median = -1017.70 ns
E1 /ns
E5 /ns
MJD
185710 s: E1= 47 ps 185689 s: E5= 39 ps
92855 s: E1= 83 ps 92844 s: E5= 50 ps
46428 s: E1= 167 ps 46422 s: E5= 336 ps
23214 s: E1= 180 ps 23211 s: E5= 332 ps
11607 s: E1= 167 ps 11606 s: E5= 186 ps
5803 s: E1= 191 ps 5803 s: E5= 164 ps
2902 s: E1= 180 ps 2901 s: E5= 162 ps
1451 s: E1= 187 ps 1451 s: E5= 171 ps
725 s: E1= 213 ps 725 s: E5= 204 ps
363 s: E1= 270 ps 363 s: E5= 268 ps
181 s: E1= 577 ps 181 s: E5= 570 ps
91 s: E1= 801 ps 91 s: E5= 788 ps
45 s: E1= 1043 ps 45 s: E5= 1012 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISGBP2D23293_9
Median = -1012.82 ns
Median = -1017.62 ns
BC /ns
B5 /ns
MJD
182968 s: BC= 63 ps 182978 s: B5= 41 ps
91484 s: BC= 57 ps 91489 s: B5= 34 ps
45742 s: BC= 202 ps 45745 s: B5= 227 ps
22871 s: BC= 194 ps 22872 s: B5= 214 ps
11435 s: BC= 203 ps 11436 s: B5= 175 ps
5718 s: BC= 202 ps 5718 s: B5= 195 ps
2859 s: BC= 177 ps 2859 s: B5= 171 ps
1429 s: BC= 176 ps 1430 s: B5= 171 ps
715 s: BC= 217 ps 715 s: B5= 210 ps
357 s: BC= 295 ps 357 s: B5= 286 ps
179 s: BC= 813 ps 179 s: B5= 680 ps
89 s: BC= 1107 ps 89 s: B5= 971 ps
45 s: BC= 1439 ps 45 s: B5= 1395 ps
TdevBC /s
TdevB5 /s
Tau /s

NISG-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 103643
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 16451 high elev obs :-262.538-262.186
Iteration 0: Obs used = 46037; Huge residuals = 434; Large residuals = 129513
Iteration 1: Obs used = 63775; Huge residuals = 0; Large residuals = 111334
Computed code bias (P1/P2)/m = -267.415 -267.113
Computed baseline (X,Y,Z)/m = 179.281 62.901 74.312
RMS of residuals /m = 1.096

Number of phase differences to fit baseline
L1/L2 = 245089
L5 = 135910
A priori baseline (X,Y,Z)/m = 179.281 62.901 74.312
23587 clock jitters computed out of 25851 intervals
AVE jitter /ps = -17.8 RMS jitter /ps = 55.8

Iter 1 Large residuals L1=79755
Iter 1 Large residuals L2=80787
Iter 1 Large residuals L5=53223
Computed baseline L1 (X,Y,Z)/m = 19.839 -14.934 10.665
RMS of residuals L1 /m = 0.009
Computed baseline L2 (X,Y,Z)/m = 19.767 -14.874 10.619
RMS of residuals L2 /m = 0.009
Computed baseline L5 (X,Y,Z)/m = 17.863 -14.268 10.335
RMS of residuals L5 /m = 0.015

Iter 2 Large residuals L1= 9104
Iter 2 Large residuals L2= 9695
Iter 2 Large residuals L5=10479
Computed baseline L1 (X,Y,Z)/m = 30.811 -23.772 16.675
RMS of residuals L1 /m = 0.015
Computed baseline L2 (X,Y,Z)/m = 30.665 -23.607 16.570
RMS of residuals L2 /m = 0.015
Computed baseline L5 (X,Y,Z)/m = 29.227 -23.051 16.076
RMS of residuals L5 /m = 0.026

Iter 3 Large residuals L1= 4400
Iter 3 Large residuals L2= 4686
Iter 3 Large residuals L5= 5217
Computed baseline L1 (X,Y,Z)/m = 35.084 -27.252 18.858
RMS of residuals L1 /m = 0.017
Computed baseline L2 (X,Y,Z)/m = 35.046 -27.207 18.832
RMS of residuals L2 /m = 0.017
Computed baseline L5 (X,Y,Z)/m = 34.706 -26.912 18.581
RMS of residuals L5 /m = 0.018

Iter 4 Large residuals L1= 4550
Iter 4 Large residuals L2= 4816
Iter 4 Large residuals L5= 5273
Computed baseline L1 (X,Y,Z)/m = 35.667 -27.633 19.064
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.663 -27.621 19.058
RMS of residuals L2 /m = 0.018

Computed baseline L5 (X,Y,Z)/m = 35.722 -27.550 18.863
RMS of residuals L5 /m = 0.018

Iter 5 Large residuals L1= 4560
Iter 5 Large residuals L2= 4823
Iter 5 Large residuals L5= 5291
Computed baseline L1 (X,Y,Z)/m = 35.703 -27.665 19.082
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.702 -27.658 19.076
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.791 -27.609 18.884
RMS of residuals L5 /m = 0.018

Iter 6 Large residuals L1= 4562
Iter 6 Large residuals L2= 4828
Iter 6 Large residuals L5= 5293
Computed baseline L1 (X,Y,Z)/m = 35.706 -27.668 19.083
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.704 -27.663 19.078
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.798 -27.614 18.885
RMS of residuals L5 /m = 0.018

Iter 7 Large residuals L1= 4562
Iter 7 Large residuals L2= 4828
Iter 7 Large residuals L5= 5293
Computed baseline L1 (X,Y,Z)/m = 35.706 -27.668 19.083
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.704 -27.663 19.078
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.799 -27.615 18.885
RMS of residuals L5 /m = 0.018

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 214.986 35.235 93.392
25456 clock jitters computed out of 25851 intervals
AVE jitter /ps = 13.2 RMS jitter /ps = 56.1

Iter 8 Large residuals L1= 3520
Iter 8 Large residuals L2= 3519
Iter 8 Large residuals L5= 4677
Computed baseline L1 (X,Y,Z)/m = -0.936 0.225 -0.001
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.936 0.225 0.000
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.924 0.220 -0.008
RMS of residuals L5 /m = 0.004

Iter 9 Large residuals L1= 3520
Iter 9 Large residuals L2= 3519
Iter 9 Large residuals L5= 4677
Computed baseline L1 (X,Y,Z)/m = -0.936 0.225 -0.000
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.936 0.225 0.000
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.924 0.220 -0.008
RMS of residuals L5 /m = 0.004

WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 214.050 35.460 93.392
Final baseline L2 (X,Y,Z)/m = 214.049 35.459 93.393
Final baseline L5 (X,Y,Z)/m = 214.061 35.455 93.384

COMPUTATION OF CODE DIFFERENCES

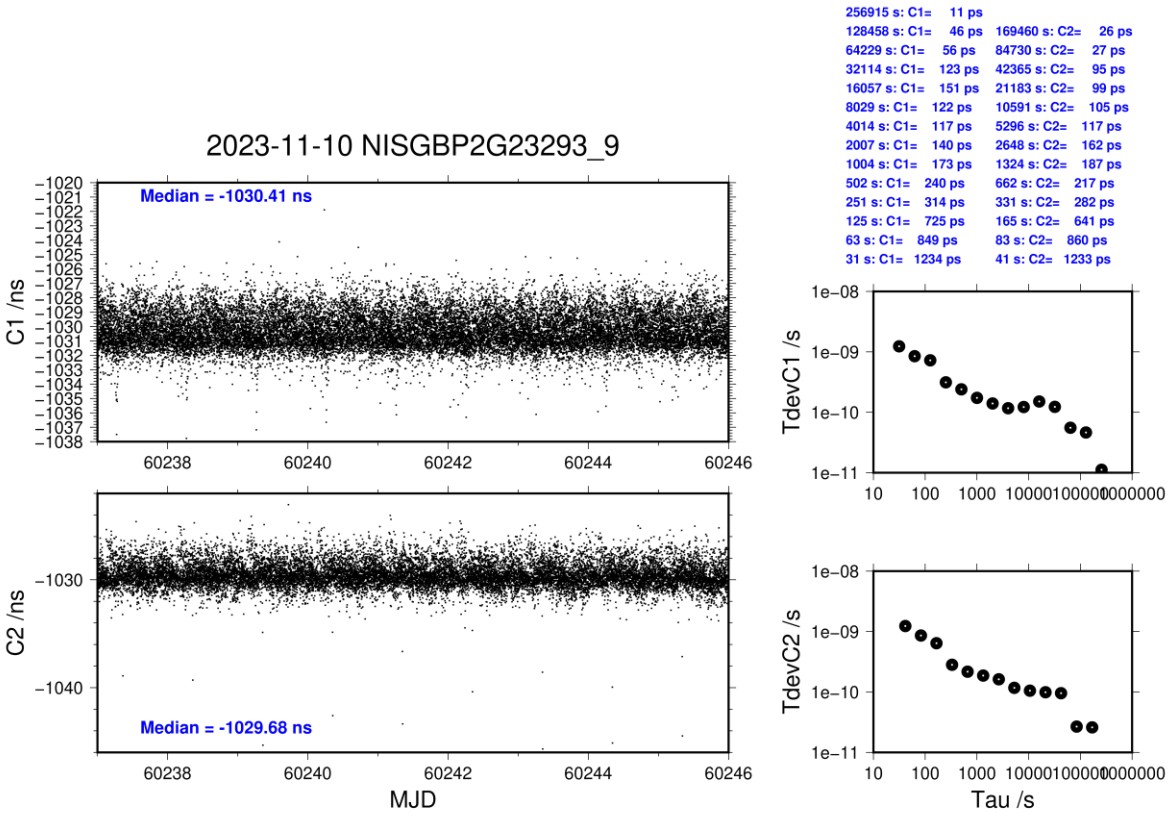
Total number of code differences = 860111

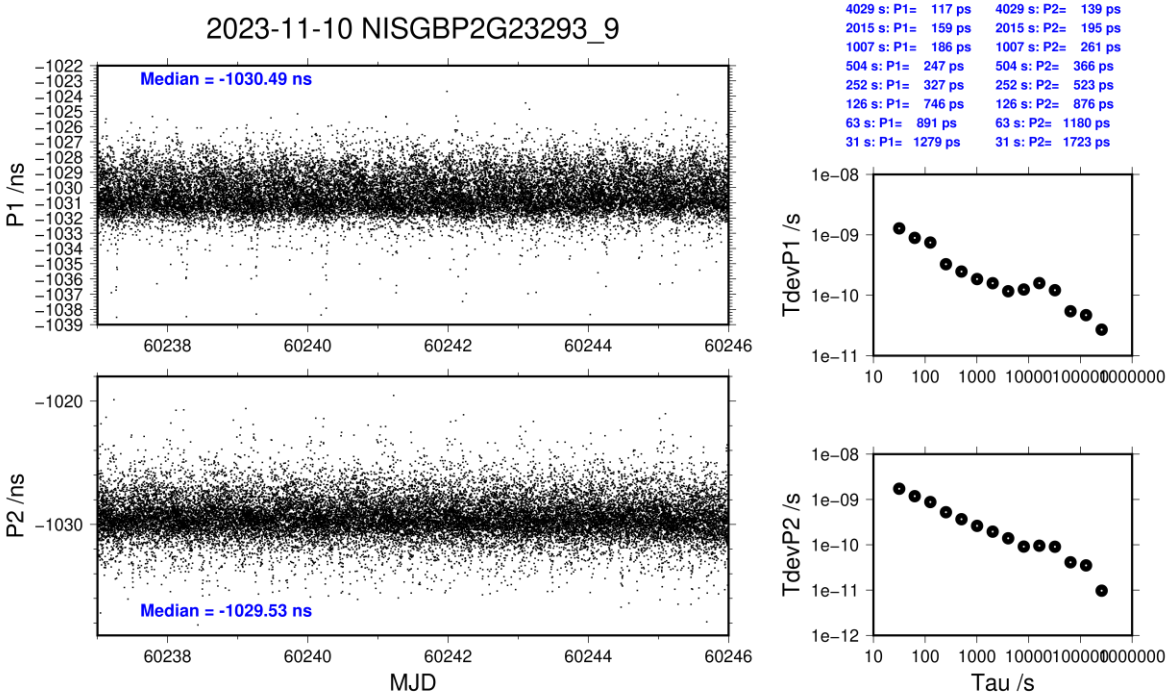
Global average of individual differences

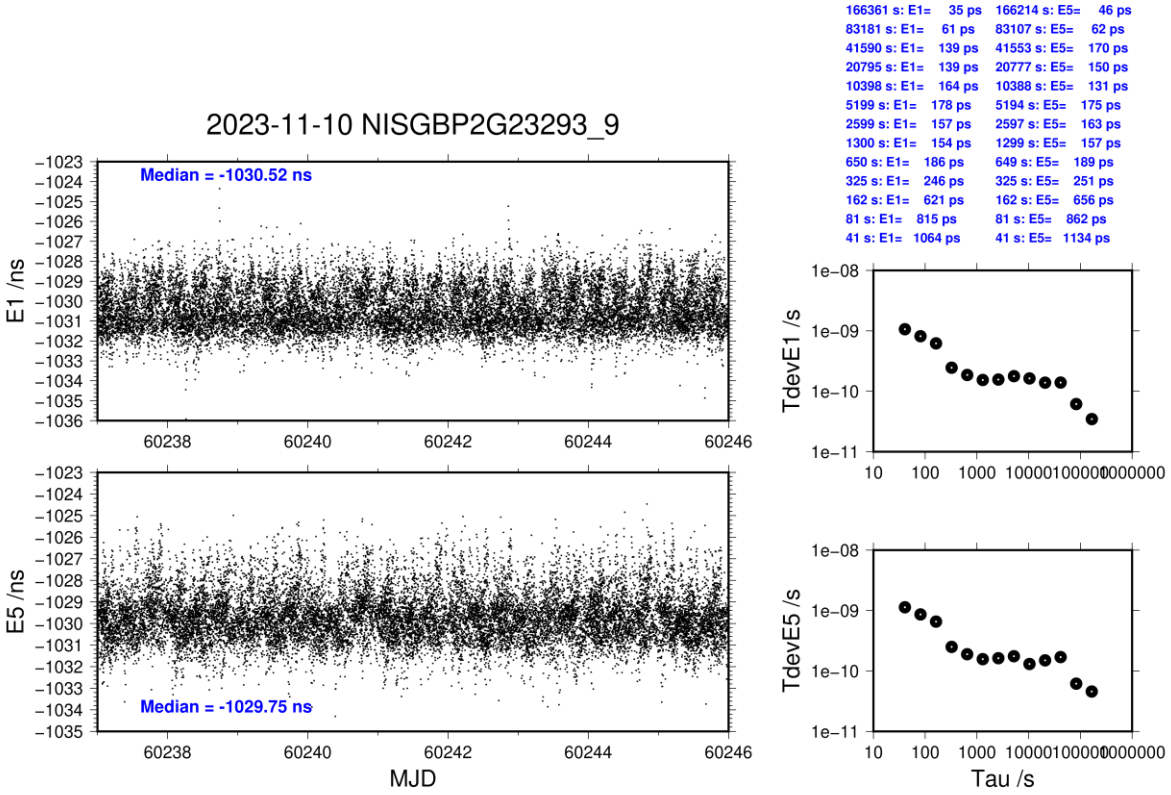
Code	#pts	ave/ns	rms/ns
C1	248121	-1030.235	1.863
C2	188146	-1029.539	1.848
P1	247266	-1030.306	1.887
P2	247263	-1029.425	2.578
E1	191650	-1030.372	1.518
E5	191813	-1029.653	1.450
BC	198584	-1030.337	1.810
B5	198785	-1029.792	1.764

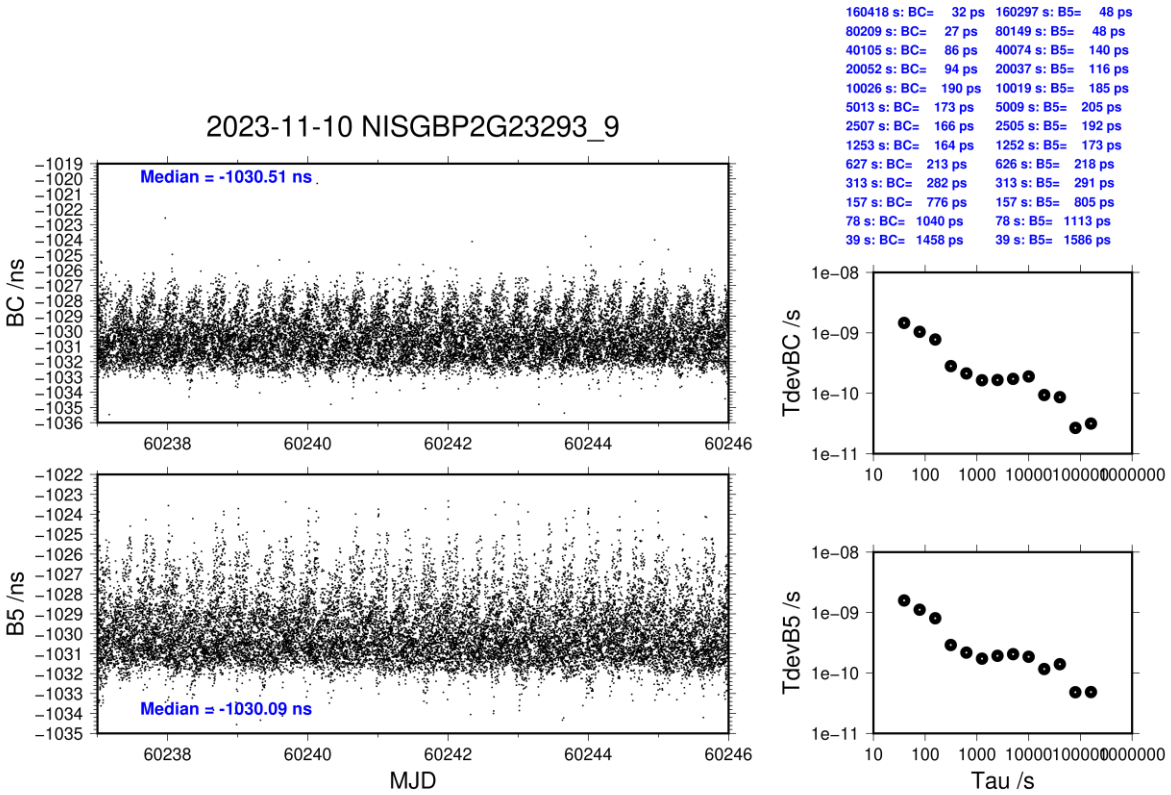
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	24786	-1030.410	-1030.256	1.231
C2	18789	-1029.676	-1029.545	1.199
P1	24694	-1030.492	-1030.327	1.280
P2	24694	-1029.533	-1029.409	1.677
E1	19139	-1030.517	-1030.366	1.106
E5	19156	-1029.748	-1029.662	1.168
BC	19848	-1030.514	-1030.329	1.419
B5	19863	-1030.090	-1029.802	1.523


2023-11-10 NISGBP2G23293_9
Median = -1030.41 ns
Median = -1029.68 ns
C1 /ns
C2 /ns
MJD
256915 s: C1= 11 ps
128458 s: C1= 46 ps
64229 s: C1= 56 ps
32114 s: C1= 123 ps
16057 s: C1= 151 ps
8029 s: C1= 122 ps
4014 s: C1= 117 ps
2007 s: C1= 140 ps
1004 s: C1= 173 ps
502 s: C1= 240 ps
251 s: C1= 314 ps
125 s: C1= 725 ps
63 s: C1= 849 ps
31 s: C1= 1234 ps
169460 s: C2= 26 ps
84730 s: C2= 27 ps
42365 s: C2= 95 ps
21183 s: C2= 99 ps
10591 s: C2= 105 ps
5296 s: C2= 117 ps
2648 s: C2= 162 ps
1324 s: C2= 187 ps
662 s: C2= 217 ps
331 s: C2= 282 ps
165 s: C2= 641 ps
83 s: C2= 860 ps
41 s: C2= 1233 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISGBP2G23293_9
Median = -1030.49 ns
Median = -1029.53 ns
P1 /ns
P2 /ns
MJD
257872 s: P1= 27 ps
128936 s: P1= 47 ps
64468 s: P1= 54 ps
32234 s: P1= 122 ps
16117 s: P1= 159 ps
8059 s: P1= 125 ps
4029 s: P1= 117 ps
2015 s: P1= 159 ps
1007 s: P1= 186 ps
504 s: P1= 247 ps
252 s: P1= 327 ps
126 s: P1= 746 ps
63 s: P1= 891 ps
31 s: P1= 1279 ps
257872 s: P2= 10 ps
128936 s: P2= 35 ps
64468 s: P2= 41 ps
32234 s: P2= 90 ps
16117 s: P2= 95 ps
8059 s: P2= 91 ps
4029 s: P2= 139 ps
2015 s: P2= 195 ps
1007 s: P2= 261 ps
504 s: P2= 366 ps
252 s: P2= 523 ps
126 s: P2= 876 ps
63 s: P2= 1180 ps
31 s: P2= 1723 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISGBP2G23293_9
Median = -1030.52 ns
Median = -1029.75 ns
E1 /ns
E5 /ns
MJD
166361 s: E1= 35 ps 166214 s: E5= 46 ps
83181 s: E1= 61 ps 83107 s: E5= 62 ps
41590 s: E1= 139 ps 41553 s: E5= 170 ps
20795 s: E1= 139 ps 20777 s: E5= 150 ps
10398 s: E1= 164 ps 10388 s: E5= 131 ps
5199 s: E1= 178 ps 5194 s: E5= 175 ps
2599 s: E1= 157 ps 2597 s: E5= 163 ps
1300 s: E1= 154 ps 1299 s: E5= 157 ps
650 s: E1= 186 ps 649 s: E5= 189 ps
325 s: E1= 246 ps 325 s: E5= 251 ps
162 s: E1= 621 ps 162 s: E5= 656 ps
81 s: E1= 815 ps 81 s: E5= 862 ps
41 s: E1= 1064 ps 41 s: E5= 1134 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISGBP2G23293_9
Median = -1030.51 ns
Median = -1030.09 ns
BC /ns
B5 /ns
MJD
160418 s: BC= 32 ps 160297 s: B5= 48 ps
80209 s: BC= 27 ps 80149 s: B5= 48 ps
40105 s: BC= 86 ps 40074 s: B5= 140 ps
20052 s: BC= 94 ps 20037 s: B5= 116 ps
10026 s: BC= 190 ps 10019 s: B5= 185 ps
5013 s: BC= 173 ps 5009 s: B5= 205 ps
2507 s: BC= 166 ps 2505 s: B5= 192 ps
1253 s: BC= 164 ps 1252 s: B5= 173 ps
627 s: BC= 213 ps 626 s: B5= 218 ps
313 s: BC= 282 ps 313 s: B5= 291 ps
157 s: BC= 776 ps 157 s: B5= 805 ps
78 s: BC= 1040 ps 78 s: B5= 1113 ps
39 s: BC= 1458 ps 39 s: B5= 1586 ps
TdevBC /s
TdevB5 /s
Tau /s

NISQ-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 220936
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 35516 high elev obs : 12.414 8.897
Iteration 0: Obs used = 372033; Huge residuals = 0; Large residuals = 1593
Iteration 1: Obs used = 372033; Huge residuals = 0; Large residuals = 1593
Computed code bias (P1/P2)/m = 12.644 9.086
Computed baseline (X,Y,Z)/m = 3.404 -3.251 -2.464
RMS of residuals /m = 0.522

Number of phase differences to fit baseline
L1/L2 = 219290
L5 = 120493
A priori baseline (X,Y,Z)/m = 3.404 -3.251 -2.464
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 4.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.100 0.209 -0.183
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.108 0.213 -0.192
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.111 0.214 -0.189
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 3.508 -3.040 -2.651
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = -0.2 RMS jitter /ps = 0.4

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.014 -0.001 -0.000
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.023 0.003 -0.010
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.022 0.005 -0.007
RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 3.522 -3.041 -2.652
Final baseline L2 (X,Y,Z)/m = 3.531 -3.037 -2.661
Final baseline L5 (X,Y,Z)/m = 3.531 -3.035 -2.659

COMPUTATION OF CODE DIFFERENCES

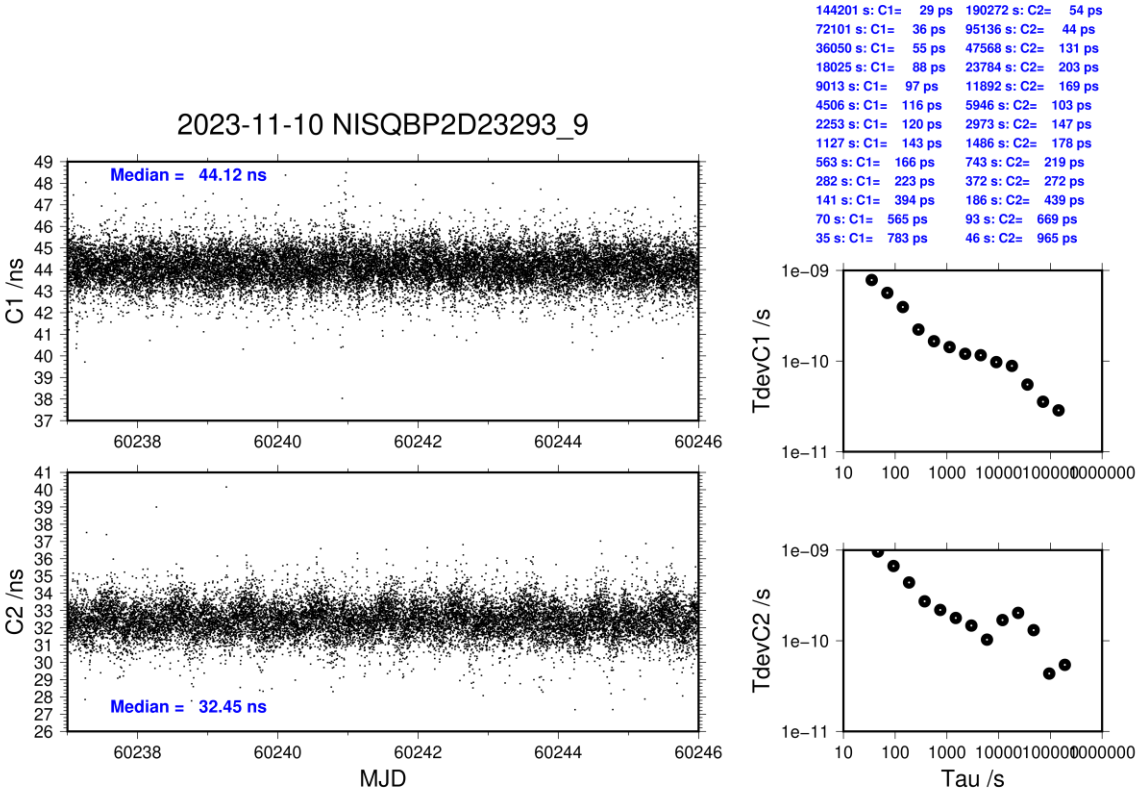
Total number of code differences = 759632

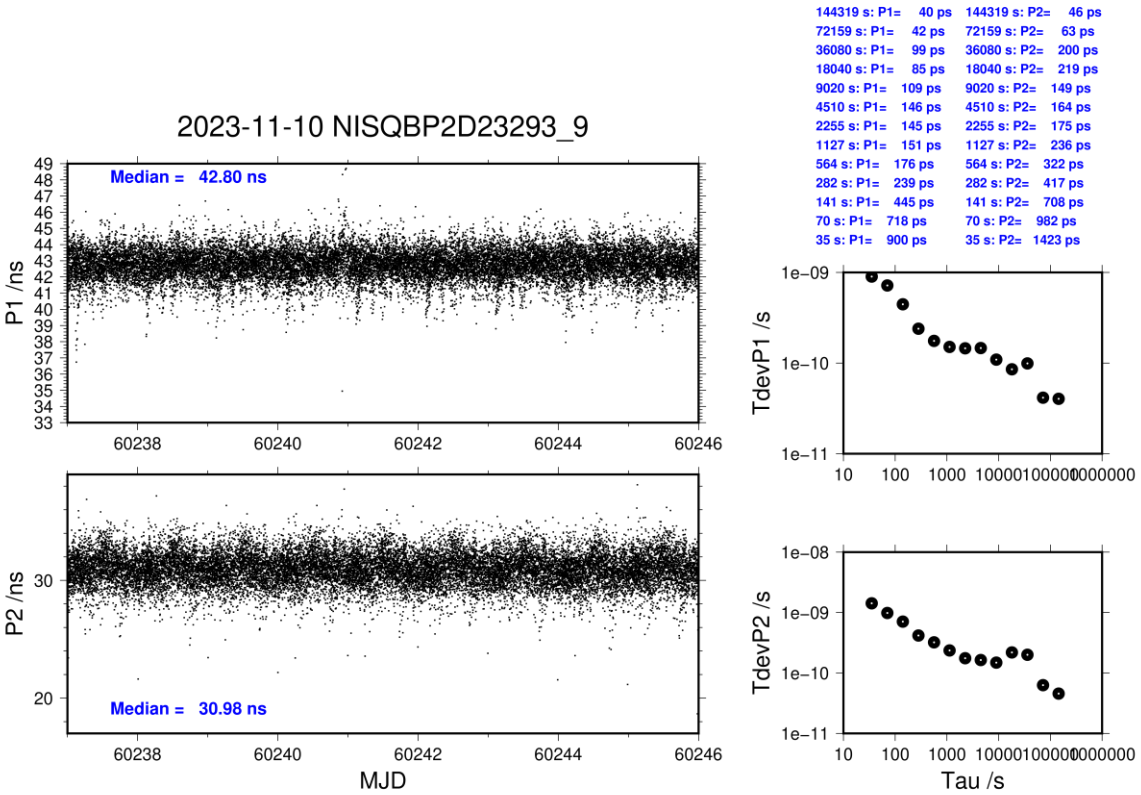
Global average of individual differences

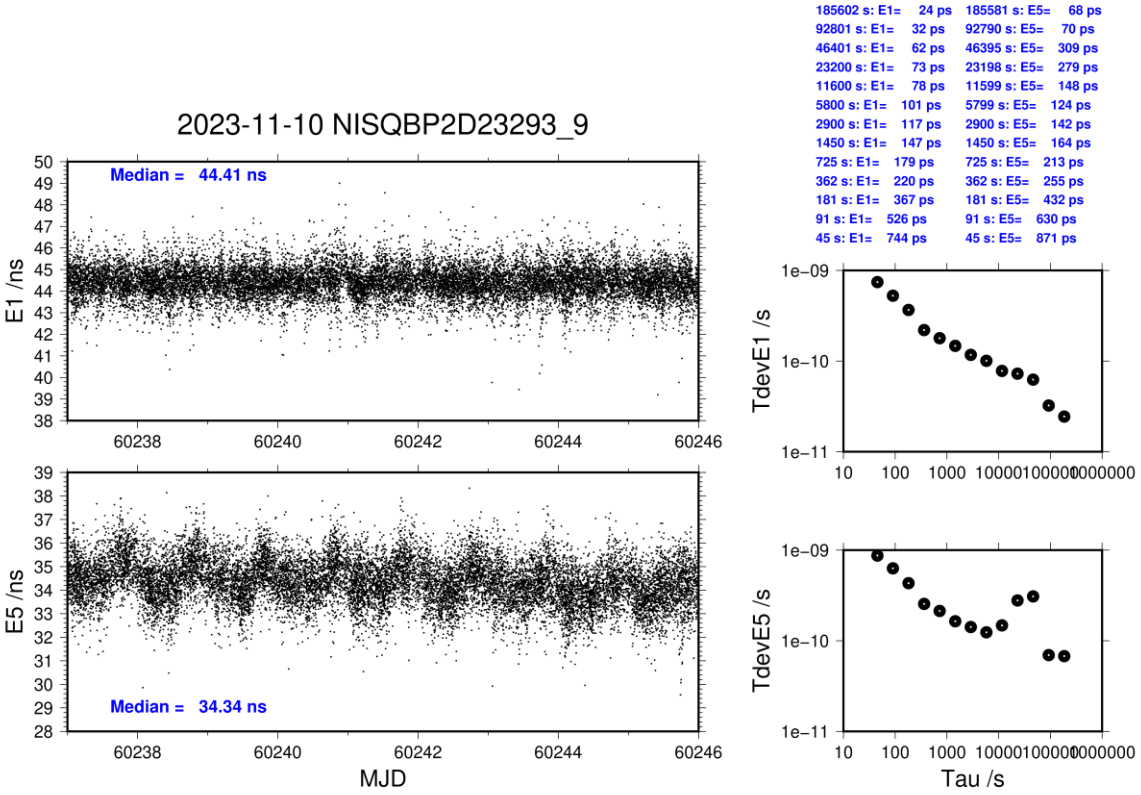
Code	**#pts**	**ave/ns**	**rms/ns**
C1	221066	44.125	1.278
C2	167524	32.456	1.484
P1	220867	42.779	1.379
P2	220867	30.938	2.009
E1	171357	44.413	1.149
E5	171383	34.341	1.269
BC	174371	45.237	1.325
B5	174458	34.752	1.291

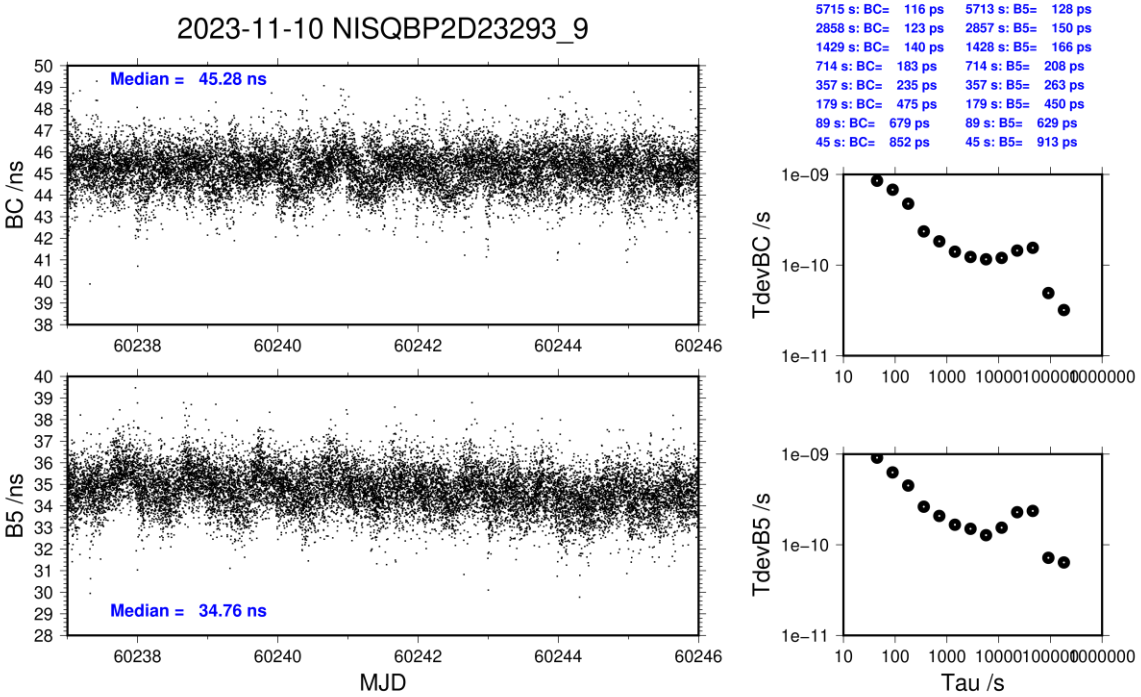
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	22080	44.118	44.126	0.785
C2	16734	32.452	32.459	0.961
P1	22062	42.803	42.780	0.924
P2	22062	30.980	30.959	1.411
E1	17155	44.412	44.416	0.744
E5	17157	34.341	34.343	0.961
BC	17409	45.276	45.244	0.905
B5	17416	34.757	34.751	0.968


144201 s: C1= 29 ps 190272 s: C2= 54 ps
72101 s: C1= 36 ps 95136 s: C2= 44 ps
36050 s: C1= 55 ps 47568 s: C2= 131 ps
18025 s: C1= 88 ps 23784 s: C2= 203 ps
9013 s: C1= 97 ps 11892 s: C2= 169 ps
4506 s: C1= 116 ps 5946 s: C2= 103 ps
2253 s: C1= 120 ps 2973 s: C2= 147 ps
1127 s: C1= 143 ps 1486 s: C2= 178 ps
563 s: C1= 166 ps 743 s: C2= 219 ps
282 s: C1= 223 ps 372 s: C2= 272 ps
141 s: C1= 394 ps 186 s: C2= 439 ps
70 s: C1= 565 ps 93 s: C2= 669 ps
35 s: C1= 783 ps 46 s: C2= 965 ps
2023-11-10 NISQBP2D23293_9
Median = 44.12 ns
C1 /ns
Median = 32.45 ns
C2 /ns
MJD
TdevC1 /s
TdevC2 /s
Tau /s


144319 s: P1= 40 ps 144319 s: P2= 46 ps
72159 s: P1= 42 ps 72159 s: P2= 63 ps
36080 s: P1= 99 ps 36080 s: P2= 200 ps
18040 s: P1= 85 ps 18040 s: P2= 219 ps
9020 s: P1= 109 ps 9020 s: P2= 149 ps
4510 s: P1= 146 ps 4510 s: P2= 164 ps
2255 s: P1= 145 ps 2255 s: P2= 175 ps
1127 s: P1= 151 ps 1127 s: P2= 236 ps
564 s: P1= 176 ps 564 s: P2= 322 ps
282 s: P1= 239 ps 282 s: P2= 417 ps
141 s: P1= 445 ps 141 s: P2= 708 ps
70 s: P1= 718 ps 70 s: P2= 982 ps
35 s: P1= 900 ps 35 s: P2= 1423 ps
2023-11-10 NISQBP2D23293_9
Median = 42.80 ns
P1 /ns
Median = 30.98 ns
P2 /ns
MJD
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISQBP2D23293_9
Median = 44.41 ns
Median = 34.34 ns
E1 /ns
E5 /ns
MJD
185602 s: E1= 24 ps
92801 s: E1= 32 ps
46401 s: E1= 62 ps
23200 s: E1= 73 ps
11600 s: E1= 78 ps
5800 s: E1= 101 ps
2900 s: E1= 117 ps
1450 s: E1= 147 ps
725 s: E1= 179 ps
362 s: E1= 220 ps
181 s: E1= 367 ps
91 s: E1= 526 ps
45 s: E1= 744 ps
185581 s: E5= 68 ps
92790 s: E5= 70 ps
46395 s: E5= 309 ps
23198 s: E5= 279 ps
11599 s: E5= 148 ps
5799 s: E5= 124 ps
2900 s: E5= 142 ps
1450 s: E5= 164 ps
725 s: E5= 213 ps
362 s: E5= 255 ps
181 s: E5= 432 ps
91 s: E5= 630 ps
45 s: E5= 871 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISQBP2D23293_9
Median = 45.28 ns
Median = 34.76 ns
BC /ns
B5 /ns
MJD
182894 s: BC= 32 ps
91447 s: BC= 49 ps
45724 s: BC= 155 ps
22862 s: BC= 144 ps
11431 s: BC= 120 ps
5715 s: BC= 116 ps
2858 s: BC= 123 ps
1429 s: BC= 140 ps
714 s: BC= 183 ps
357 s: BC= 235 ps
179 s: BC= 475 ps
89 s: BC= 679 ps
45 s: BC= 852 ps
182821 s: B5= 64 ps
91410 s: B5= 72 ps
45705 s: B5= 236 ps
22853 s: B5= 228 ps
11426 s: B5= 154 ps
5713 s: B5= 128 ps
2857 s: B5= 150 ps
1428 s: B5= 166 ps
714 s: B5= 208 ps
357 s: B5= 263 ps
179 s: B5= 450 ps
89 s: B5= 629 ps
45 s: B5= 913 ps
TdevBC /s
TdevB5 /s
Tau /s

NISQ-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 248008
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 35516 high elev obs : 7.947 6.125
Iteration 0: Obs used = 423955; Huge residuals = 0; Large residuals = 3815
Iteration 1: Obs used = 423955; Huge residuals = 0; Large residuals = 3815
Computed code bias (P1/P2)/m = 8.094 6.267
Computed baseline (X,Y,Z)/m = 3.756 -3.013 -2.175
RMS of residuals /m = 0.548

Number of phase differences to fit baseline
L1/L2 = 246119
L5 = 135417
A priori baseline (X,Y,Z)/m = 3.756 -3.013 -2.175
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 3.0

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 1
Iter 1 Large residuals L5= 2
Computed baseline L1 (X,Y,Z)/m = 0.043 0.070 -0.064
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.043 0.060 -0.057
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.011 0.082 -0.038
RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 1
Iter 2 Large residuals L5= 2
Computed baseline L1 (X,Y,Z)/m = 0.043 0.070 -0.064
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.044 0.060 -0.057
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.011 0.082 -0.038
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 3.799 -2.948 -2.236
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 0.1

Iter 3 Large residuals L1= 0
Iter 3 Large residuals L2= 1
Iter 3 Large residuals L5= 2
Computed baseline L1 (X,Y,Z)/m = 0.007 0.004 -0.005
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.008 -0.006 0.002
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.025 0.016 0.021
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 3.806 -2.943 -2.240

Final baseline L2 (X,Y,Z)/m = 3.807 -2.954 -2.234
Final baseline L5 (X,Y,Z)/m = 3.774 -2.932 -2.215

COMPUTATION OF CODE DIFFERENCES

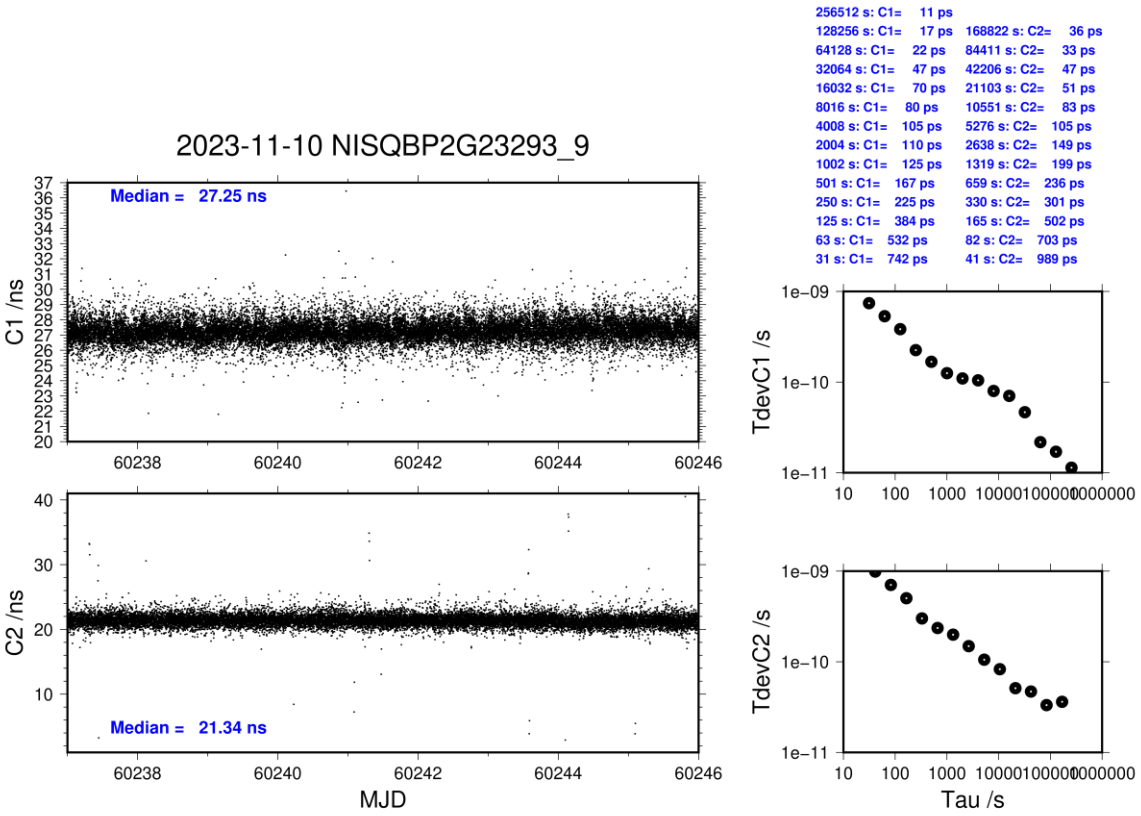
Total number of code differences = 861781

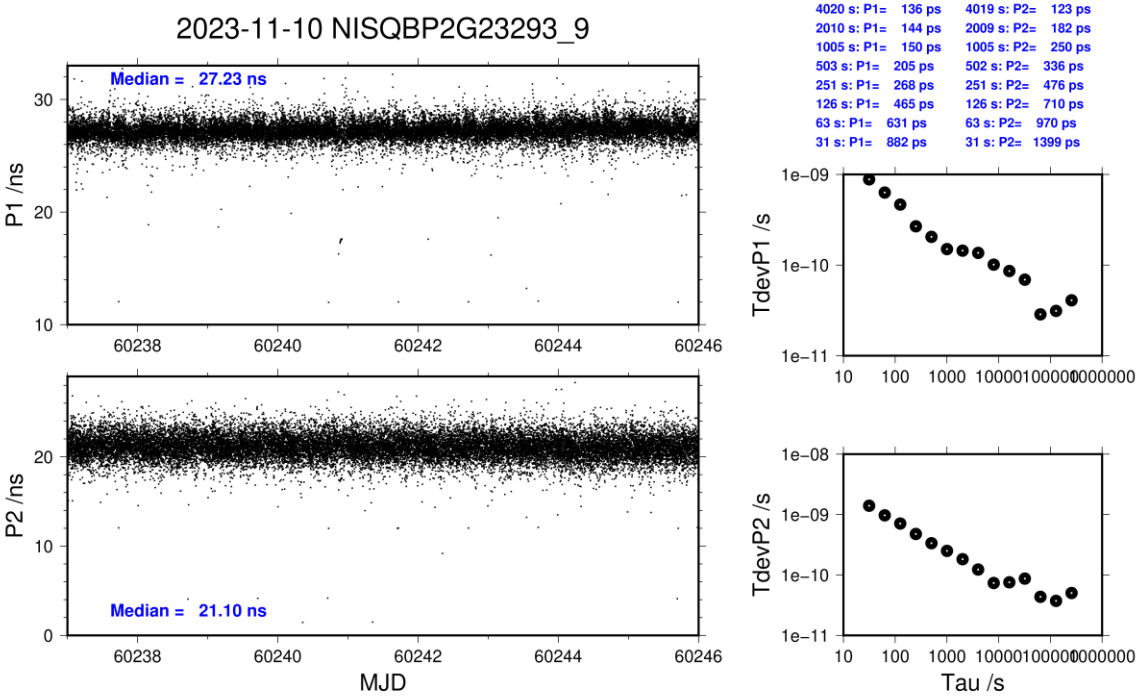
Global average of individual differences

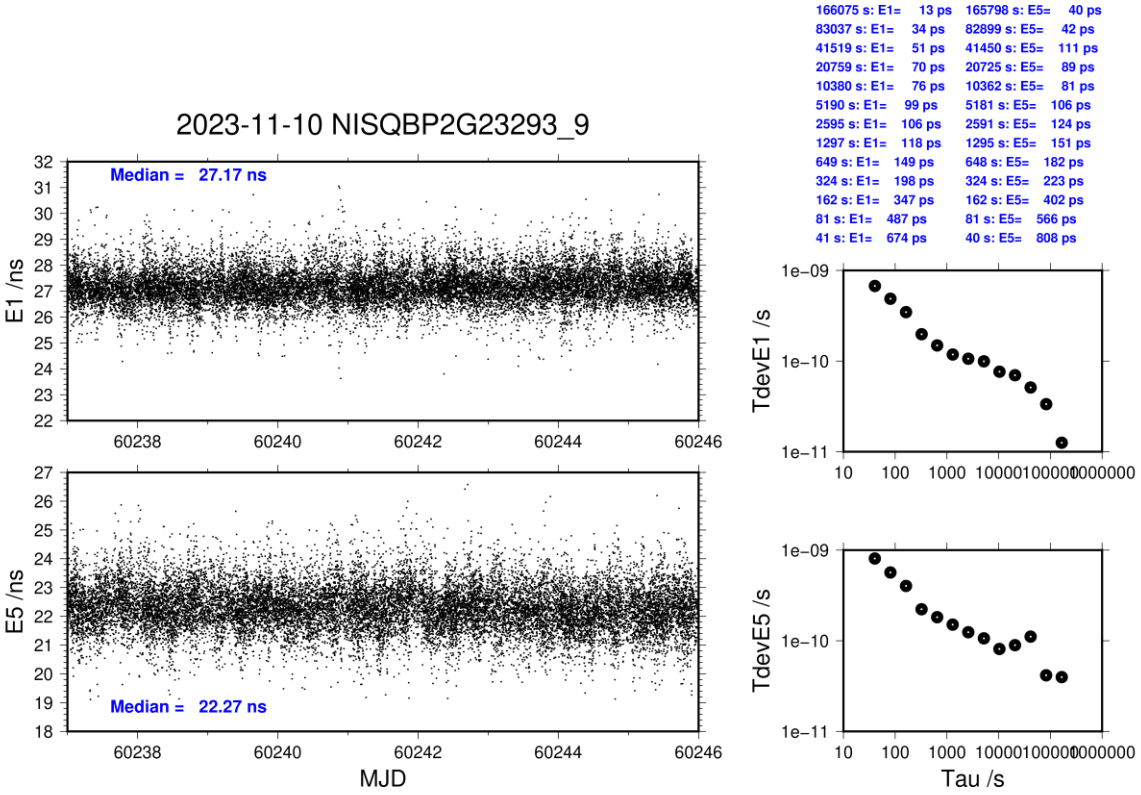
Code	#pts	ave/ns	rms/ns
C1	248559	27.263	1.473
C2	188888	21.369	1.710
P1	247774	27.225	1.547
P2	247907	21.094	2.196
E1	192016	27.194	1.184
E5	192335	22.287	1.174
BC	199443	27.526	1.446
B5	199937	22.309	1.352

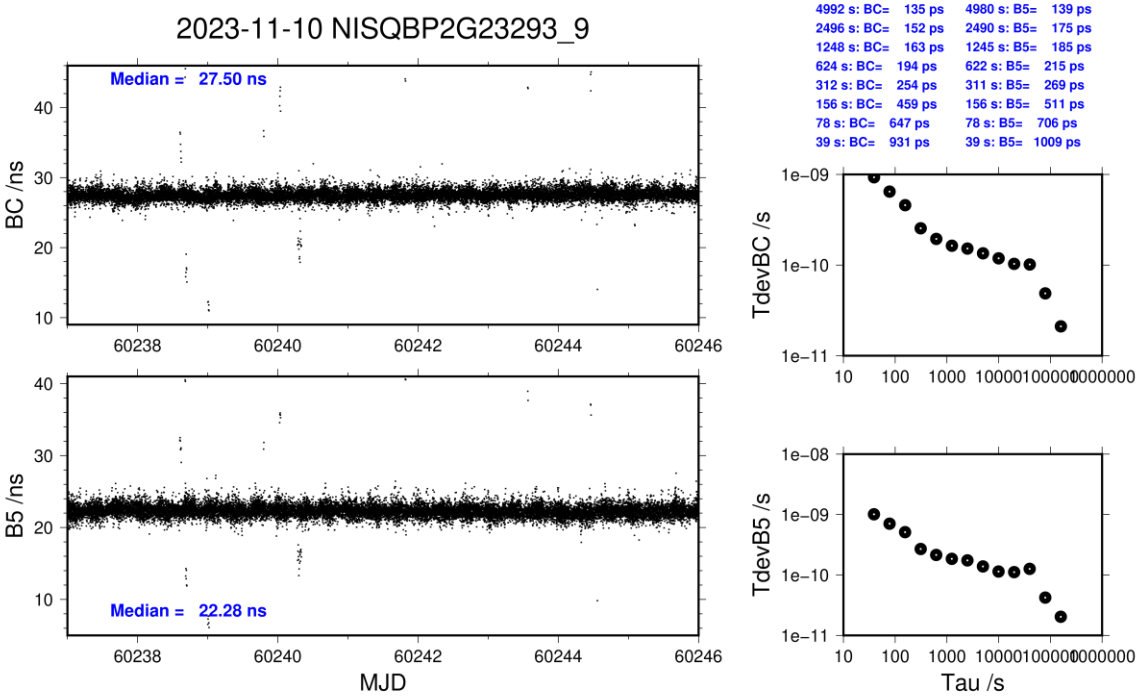
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	24825	27.245	27.269	0.749
C2	18860	21.336	21.371	0.992
P1	24748	27.235	27.235	0.899
P2	24759	21.098	21.111	1.395
E1	19172	27.172	27.203	0.683
E5	19204	22.268	22.290	0.807
BC	19932	27.499	27.535	0.926
B5	19980	22.284	22.312	1.008


2023-11-10 NISQBP2G23293_9
Median = 27.25 ns
Median = 21.34 ns
C1 /ns
C2 /ns
MJD
256512 s: C1= 11 ps
128256 s: C1= 17 ps
64128 s: C1= 22 ps
32064 s: C1= 47 ps
16032 s: C1= 70 ps
8016 s: C1= 80 ps
4008 s: C1= 105 ps
2004 s: C1= 110 ps
1002 s: C1= 125 ps
501 s: C1= 167 ps
250 s: C1= 225 ps
125 s: C1= 384 ps
63 s: C1= 532 ps
31 s: C1= 742 ps
168822 s: C2= 36 ps
84411 s: C2= 33 ps
42206 s: C2= 47 ps
21103 s: C2= 51 ps
10551 s: C2= 83 ps
5276 s: C2= 105 ps
2638 s: C2= 149 ps
1319 s: C2= 199 ps
659 s: C2= 236 ps
330 s: C2= 301 ps
165 s: C2= 502 ps
82 s: C2= 703 ps
41 s: C2= 989 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISQBP2G23293_9
Median = 27.23 ns
Median = 21.10 ns
P1 /ns
P2 /ns
MJD
257310 s: P1= 41 ps
128655 s: P1= 31 ps
64327 s: P1= 29 ps
32164 s: P1= 69 ps
16082 s: P1= 86 ps
8041 s: P1= 101 ps
4020 s: P1= 136 ps
2010 s: P1= 144 ps
1005 s: P1= 150 ps
503 s: P1= 205 ps
251 s: P1= 268 ps
126 s: P1= 465 ps
63 s: P1= 631 ps
31 s: P1= 882 ps
257195 s: P2= 50 ps
128598 s: P2= 37 ps
64299 s: P2= 44 ps
32149 s: P2= 87 ps
16075 s: P2= 76 ps
8037 s: P2= 74 ps
4019 s: P2= 123 ps
2009 s: P2= 182 ps
1005 s: P2= 250 ps
502 s: P2= 336 ps
251 s: P2= 476 ps
126 s: P2= 710 ps
63 s: P2= 970 ps
31 s: P2= 1399 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISQBP2G23293_9
Median = 27.17 ns
Median = 22.27 ns
E1 /ns
E5 /ns
MJD
166075 s: E1= 13 ps
83037 s: E1= 34 ps
41519 s: E1= 51 ps
20759 s: E1= 70 ps
10380 s: E1= 76 ps
5190 s: E1= 99 ps
2595 s: E1= 106 ps
1297 s: E1= 118 ps
649 s: E1= 149 ps
324 s: E1= 198 ps
162 s: E1= 347 ps
81 s: E1= 487 ps
41 s: E1= 674 ps
165798 s: E5= 40 ps
82899 s: E5= 42 ps
41450 s: E5= 111 ps
20725 s: E5= 89 ps
10362 s: E5= 81 ps
5181 s: E5= 106 ps
2591 s: E5= 124 ps
1295 s: E5= 151 ps
648 s: E5= 182 ps
324 s: E5= 223 ps
162 s: E5= 402 ps
81 s: E5= 566 ps
40 s: E5= 808 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISQBP2G23293_9
Median = 27.50 ns
Median = 22.28 ns
BC /ns
B5 /ns
MJD
159742 s: BC= 21 ps
79871 s: BC= 49 ps
39936 s: BC= 102 ps
19968 s: BC= 103 ps
9984 s: BC= 119 ps
4992 s: BC= 135 ps
2496 s: BC= 152 ps
1248 s: BC= 163 ps
624 s: BC= 194 ps
312 s: BC= 254 ps
156 s: BC= 459 ps
78 s: BC= 647 ps
39 s: BC= 931 ps
159358 s: B5= 20 ps
79679 s: B5= 42 ps
39840 s: B5= 126 ps
19920 s: B5= 111 ps
9960 s: B5= 114 ps
4980 s: B5= 139 ps
2490 s: B5= 175 ps
1245 s: B5= 185 ps
622 s: B5= 215 ps
311 s: B5= 269 ps
156 s: B5= 511 ps
78 s: B5= 706 ps
39 s: B5= 1009 ps
TdevBC /s
TdevB5 /s
Tau /s

NIST-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 221059
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 35517 high elev obs : 144.440 142.853
Iteration 0: Obs used = 352617; Huge residuals = 0; Large residuals = 21253
Iteration 1: Obs used = 352617; Huge residuals = 0; Large residuals = 21253
Computed code bias (P1/P2)/m = 140.812 139.148
Computed baseline (X,Y,Z)/m = 65.761 34.853 51.344
RMS of residuals /m = 0.933

Number of phase differences to fit baseline
L1/L2 = 219785
L5 = 120870
A priori baseline (X,Y,Z)/m = 65.761 34.853 51.344
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 6.8

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.881 -3.195 2.558
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.875 -3.188 2.546
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.911 -3.170 2.530
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 64.883 31.661 53.896
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 5.2

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.048 -0.069 0.079
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.042 -0.062 0.067
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.040 -0.052 0.061
RMS of residuals L5 /m = 0.004
WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 64.835 31.593 53.975
Final baseline L2 (X,Y,Z)/m = 64.841 31.599 53.963
Final baseline L5 (X,Y,Z)/m = 64.843 31.610 53.957

COMPUTATION OF CODE DIFFERENCES

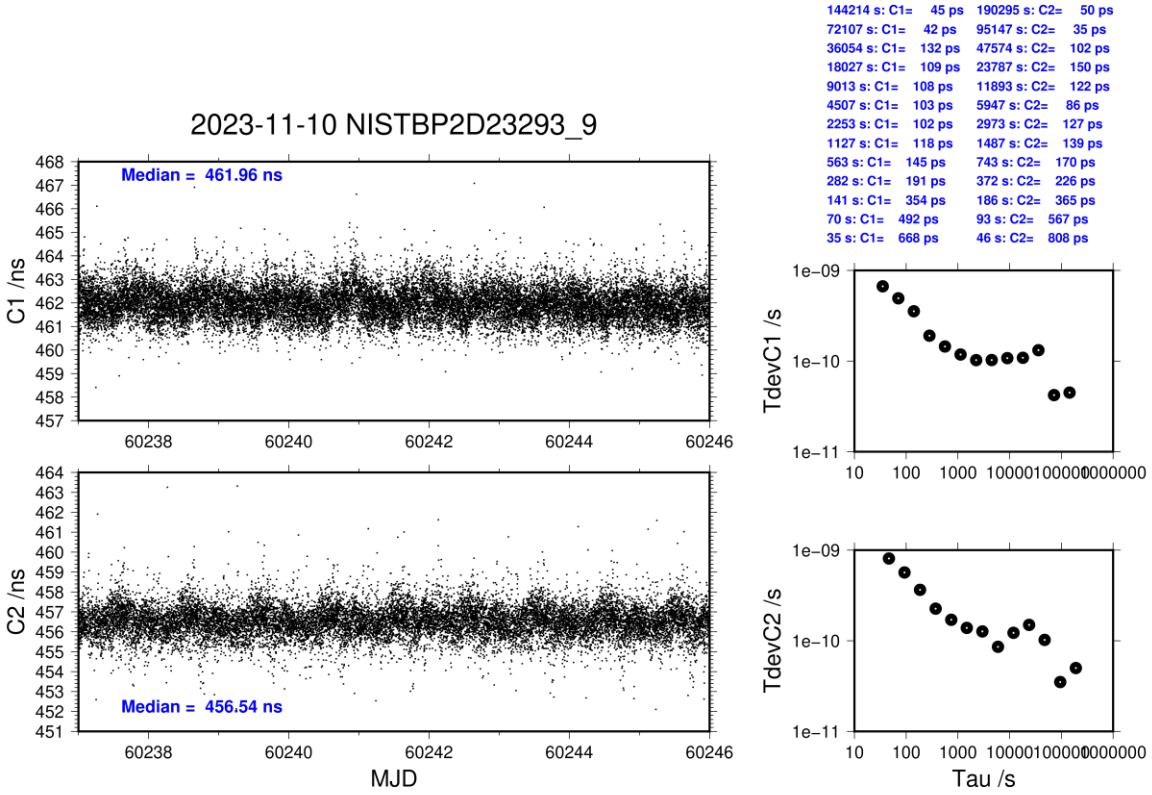
Total number of code differences = 759467

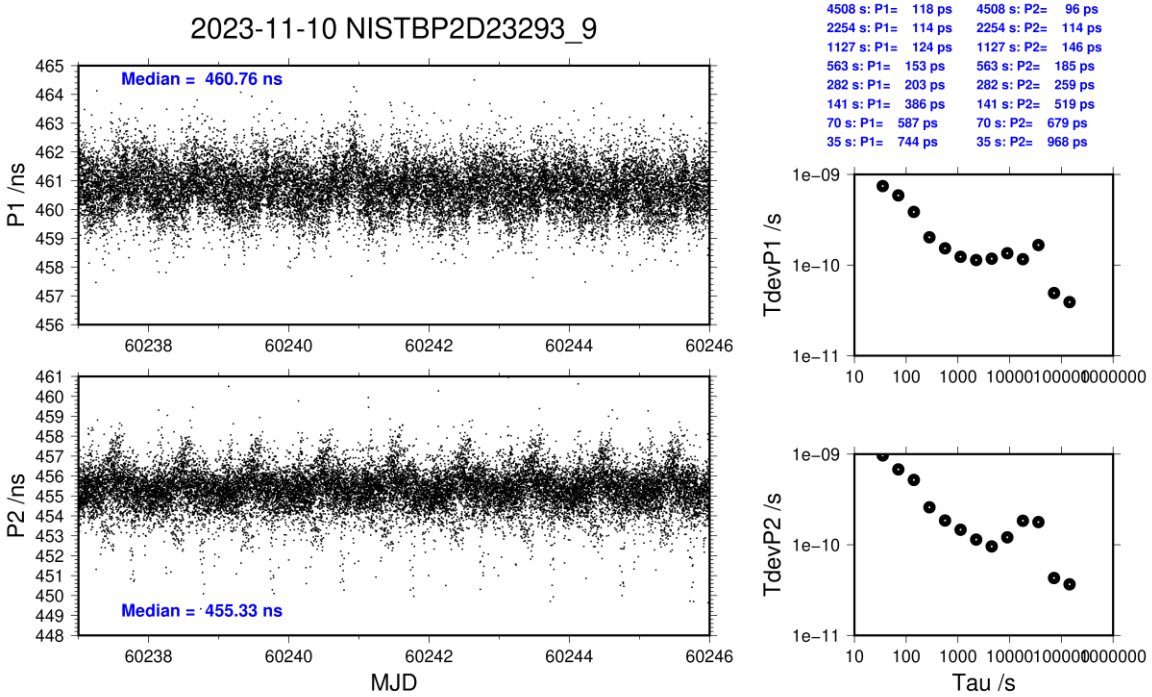
Global average of individual differences

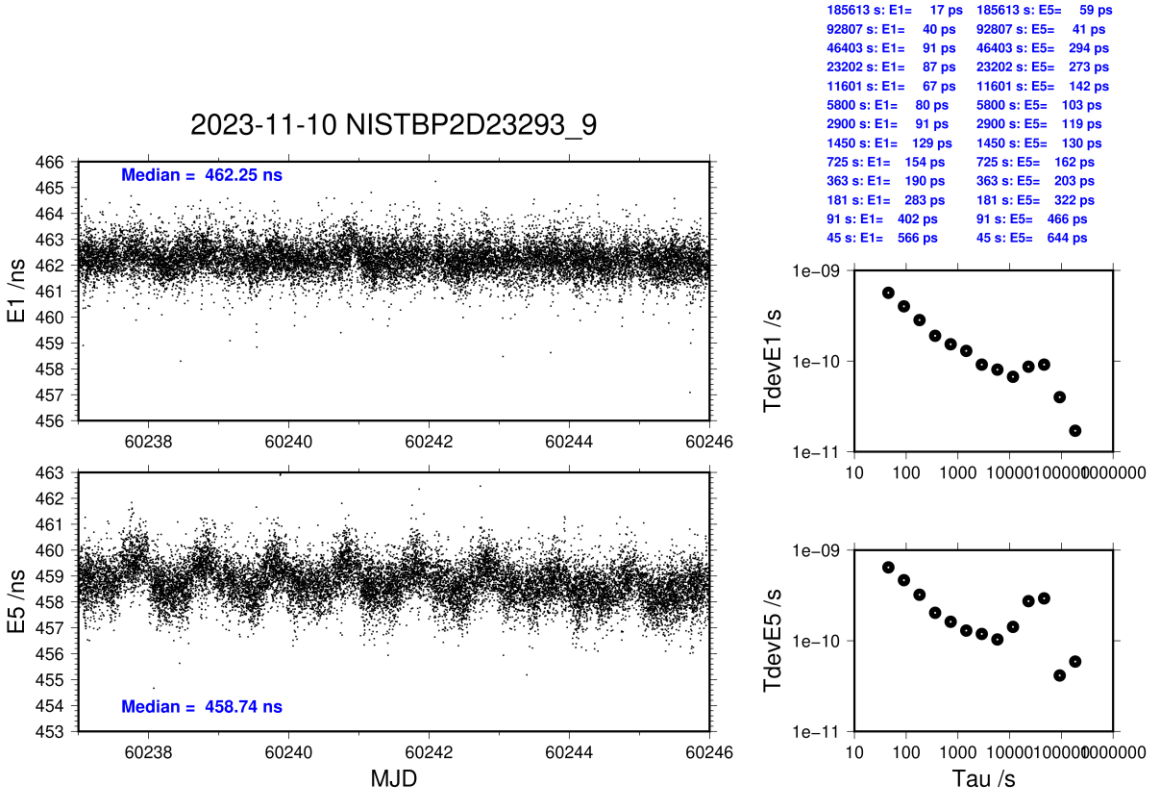
Code	#pts	ave/ns	rms/ns
C1	221042	461.980	1.165
C2	167499	456.539	1.284
P1	220996	460.782	1.244
P2	220996	455.307	1.498
E1	171350	462.262	1.009
E5	171351	458.760	1.017
BC	174394	462.819	1.258
B5	174425	459.092	1.093

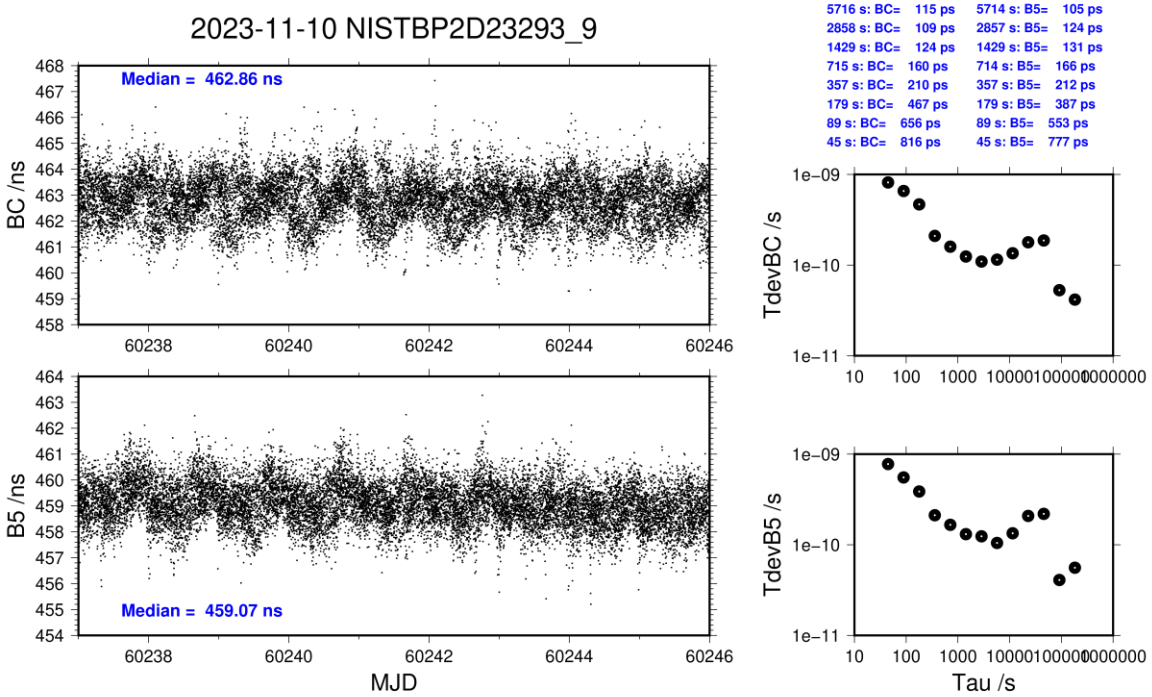
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	22078	461.956	461.972	0.693
C2	16732	456.540	456.534	0.799
P1	22074	460.763	460.774	0.784
P2	22074	455.334	455.314	0.974
E1	17154	462.247	462.259	0.586
E5	17154	458.744	458.754	0.748
BC	17407	462.855	462.823	0.880
B5	17412	459.075	459.084	0.824


2023-11-10 NISTBP2D23293_9
Median = 461.96 ns
Median = 456.54 ns
C1 /ns
C2 /ns
MJD
144214 s: C1= 45 ps 190295 s: C2= 50 ps
72107 s: C1= 42 ps 95147 s: C2= 35 ps
36054 s: C1= 132 ps 47574 s: C2= 102 ps
18027 s: C1= 109 ps 23787 s: C2= 150 ps
9013 s: C1= 108 ps 11893 s: C2= 122 ps
4507 s: C1= 103 ps 5947 s: C2= 86 ps
2253 s: C1= 102 ps 2973 s: C2= 127 ps
1127 s: C1= 118 ps 1487 s: C2= 139 ps
563 s: C1= 145 ps 743 s: C2= 170 ps
282 s: C1= 191 ps 372 s: C2= 226 ps
141 s: C1= 354 ps 186 s: C2= 365 ps
70 s: C1= 492 ps 93 s: C2= 567 ps
35 s: C1= 668 ps 46 s: C2= 808 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISTBP2D23293_9
Median = 460.76 ns
Median = 455.33 ns
P1 /ns
P2 /ns
MJD
144241 s: P1= 39 ps 144241 s: P2= 37 ps
72120 s: P1= 49 ps 72120 s: P2= 43 ps
36060 s: P1= 166 ps 36060 s: P2= 178 ps
18030 s: P1= 116 ps 18030 s: P2= 184 ps
9015 s: P1= 135 ps 9015 s: P2= 121 ps
4508 s: P1= 118 ps 4508 s: P2= 96 ps
2254 s: P1= 114 ps 2254 s: P2= 114 ps
1127 s: P1= 124 ps 1127 s: P2= 146 ps
563 s: P1= 153 ps 563 s: P2= 185 ps
282 s: P1= 203 ps 282 s: P2= 259 ps
141 s: P1= 386 ps 141 s: P2= 519 ps
70 s: P1= 587 ps 70 s: P2= 679 ps
35 s: P1= 744 ps 35 s: P2= 968 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISTBP2D23293_9
Median = 462.25 ns
Median = 458.74 ns
E1 /ns
E5 /ns
MJD
185613 s: E1= 17 ps
92807 s: E1= 40 ps
46403 s: E1= 91 ps
23202 s: E1= 87 ps
11601 s: E1= 67 ps
5800 s: E1= 80 ps
2900 s: E1= 91 ps
1450 s: E1= 129 ps
725 s: E1= 154 ps
363 s: E1= 190 ps
181 s: E1= 283 ps
91 s: E1= 402 ps
45 s: E1= 566 ps
185613 s: E5= 59 ps
92807 s: E5= 41 ps
46403 s: E5= 294 ps
23202 s: E5= 273 ps
11601 s: E5= 142 ps
5800 s: E5= 103 ps
2900 s: E5= 119 ps
1450 s: E5= 130 ps
725 s: E5= 162 ps
363 s: E5= 203 ps
181 s: E5= 322 ps
91 s: E5= 466 ps
45 s: E5= 644 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISTBP2D23293_9
Median = 462.86 ns
Median = 459.07 ns
BC /ns
B5 /ns
MJD
182915 s: BC= 42 ps
91458 s: BC= 53 ps
45729 s: BC= 187 ps
22864 s: BC= 178 ps
11432 s: BC= 135 ps
5716 s: BC= 115 ps
2858 s: BC= 109 ps
1429 s: BC= 124 ps
715 s: BC= 160 ps
357 s: BC= 210 ps
179 s: BC= 467 ps
89 s: BC= 656 ps
45 s: BC= 816 ps
182863 s: B5= 56 ps
91431 s: B5= 41 ps
45716 s: B5= 219 ps
22858 s: B5= 208 ps
11429 s: B5= 134 ps
5714 s: B5= 105 ps
2857 s: B5= 124 ps
1429 s: B5= 131 ps
714 s: B5= 166 ps
357 s: B5= 212 ps
179 s: B5= 387 ps
89 s: B5= 553 ps
45 s: B5= 777 ps
TdevBC /s
TdevB5 /s
Tau /s

NIST-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 248077
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 35517 high elev obs : 139.880 140.027
Iteration 0: Obs used = 404652; Huge residuals = 612; Large residuals = 23254
Iteration 1: Obs used = 397868; Huge residuals = 0; Large residuals = 29426
Computed code bias (P1/P2)/m = 135.689 135.761
Computed baseline (X,Y,Z)/m = 65.872 34.428 52.072
RMS of residuals /m = 0.885

Number of phase differences to fit baseline
L1/L2 = 246000
L5 = 136619
A priori baseline (X,Y,Z)/m = 65.872 34.428 52.072
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 5.3

Iter 1 Large residuals L1= 13
Iter 1 Large residuals L2= 18
Iter 1 Large residuals L5= 2494
Computed baseline L1 (X,Y,Z)/m = -0.710 -2.703 2.256
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.714 -2.710 2.261
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.732 -2.709 2.246
RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 13
Iter 2 Large residuals L2= 18
Iter 2 Large residuals L5= 2494
Computed baseline L1 (X,Y,Z)/m = -0.710 -2.703 2.256
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.714 -2.710 2.261
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.734 -2.709 2.247
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 65.160 31.722 54.331
25916 clock jitters computed out of 25916 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 4.1

Iter 3 Large residuals L1= 14
Iter 3 Large residuals L2= 18
Iter 3 Large residuals L5= 2494
Computed baseline L1 (X,Y,Z)/m = -0.030 -0.030 0.049
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.034 -0.037 0.054
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.017 -0.048 0.050
RMS of residuals L5 /m = 0.004

Iter 4 Large residuals L1= 14
Iter 4 Large residuals L2= 18

Iter 4 Large residuals L5= 2494
Computed baseline L1 (X,Y,Z)/m = -0.030 -0.030 0.049
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.034 -0.037 0.054
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.017 -0.048 0.050
RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 65.130 31.692 54.380
Final baseline L2 (X,Y,Z)/m = 65.126 31.684 54.385
Final baseline L5 (X,Y,Z)/m = 65.143 31.673 54.381

COMPUTATION OF CODE DIFFERENCES

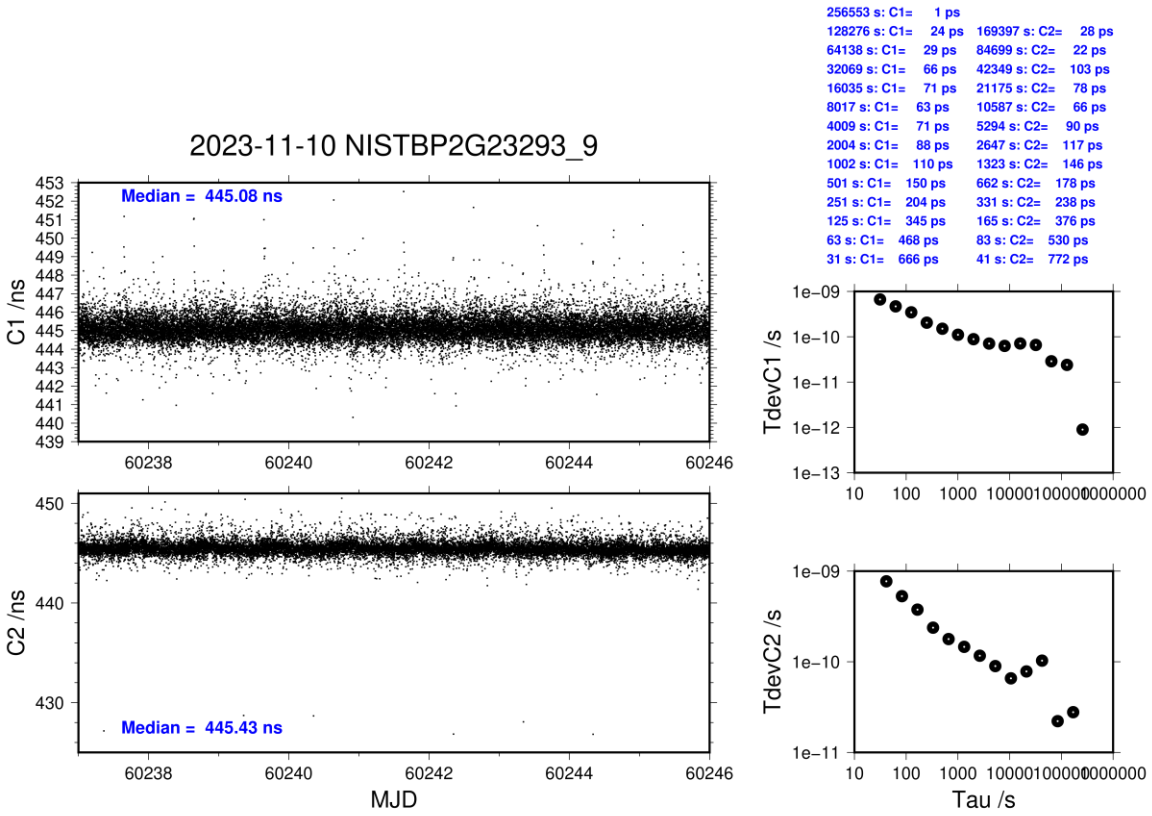
Total number of code differences = 861271

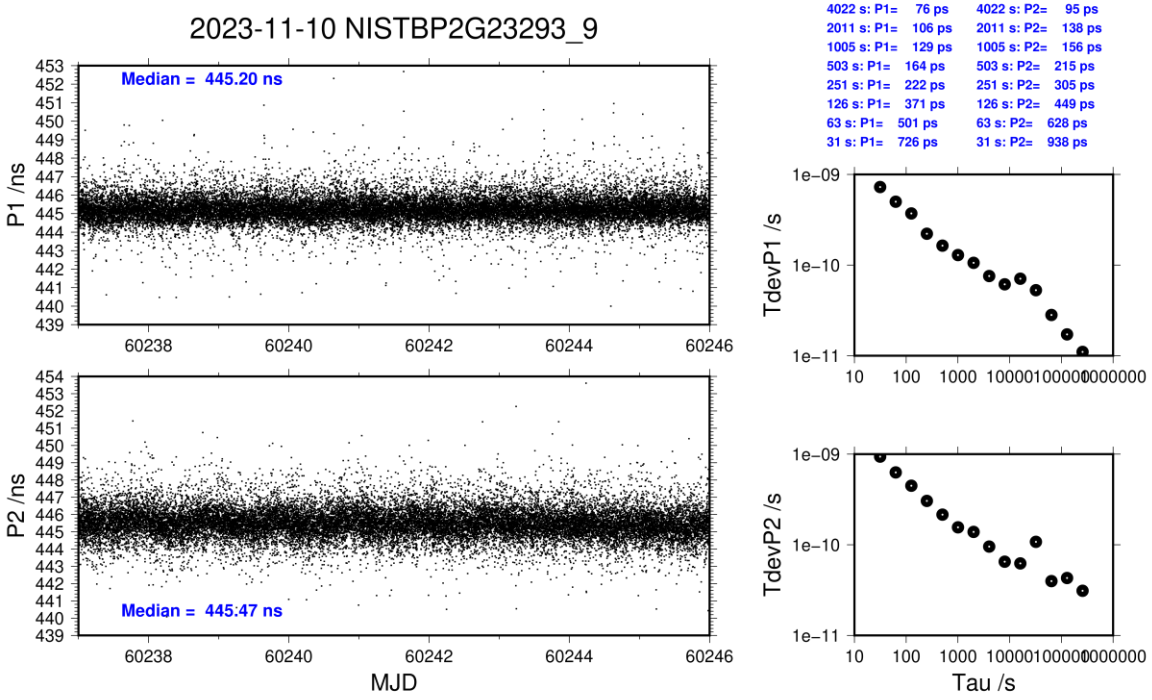
Global average of individual differences

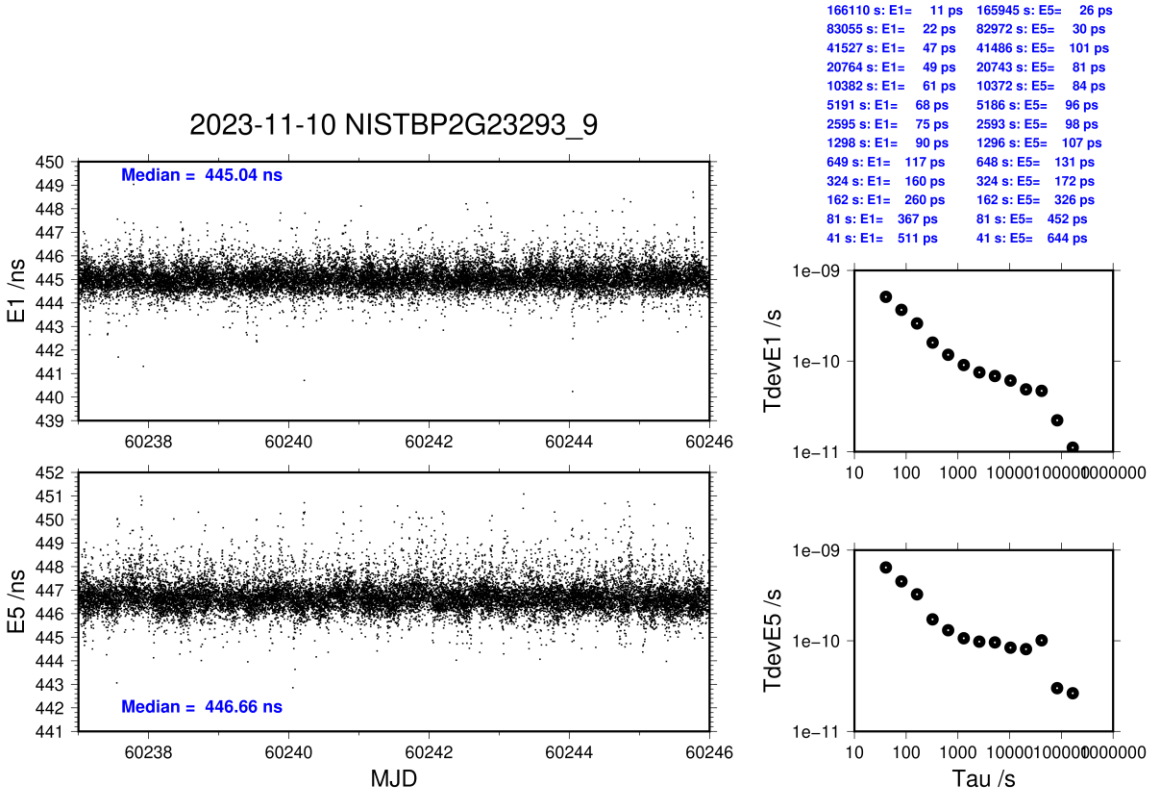
Code	#pts	ave/ns	rms/ns
C1	248490	445.138	1.412
C2	188265	445.463	1.602
P1	247705	445.257	1.430
P2	247705	445.502	1.786
E1	191954	445.067	1.102
E5	192162	446.725	1.054
BC	198858	445.147	1.278
B5	199117	446.688	1.153

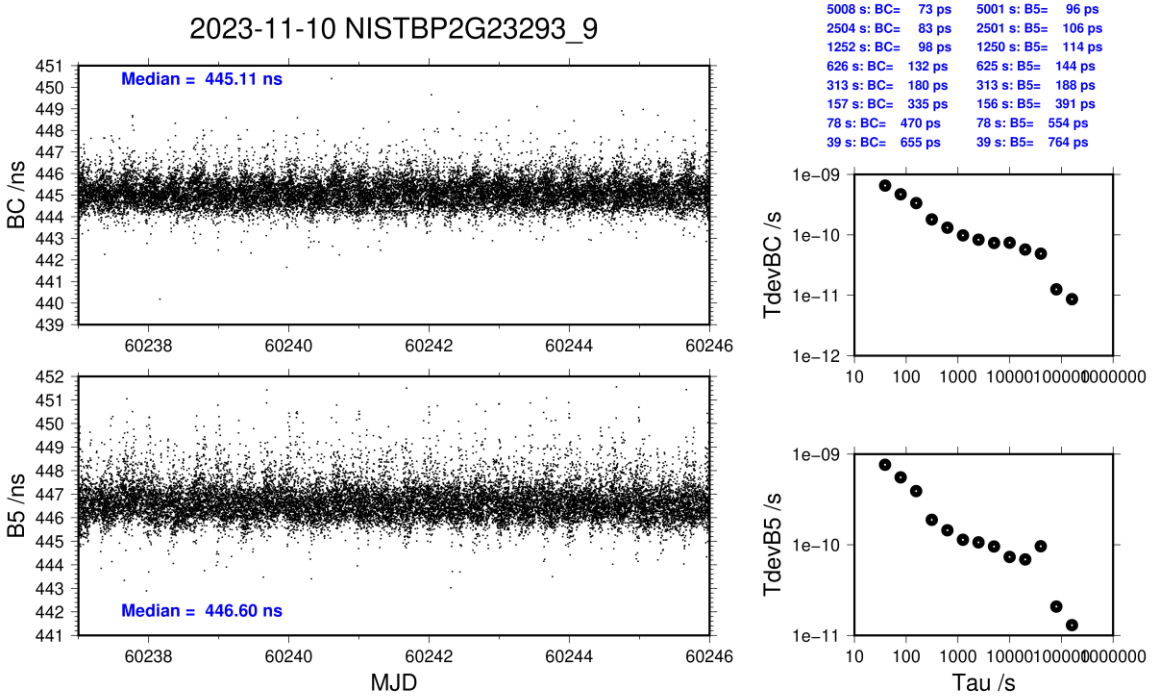
Number of 300s epochs in out file = 2592

Code	#pts	median/ns	ave/ns	rms/ns
C1	24821	445.080	445.130	0.665
C2	18796	445.432	445.467	0.766
P1	24739	445.204	445.250	0.719
P2	24739	445.471	445.501	0.917
E1	19168	445.039	445.072	0.517
E5	19187	446.663	446.719	0.643
BC	19867	445.110	445.154	0.650
B5	19894	446.599	446.681	0.759


2023-11-10 NISTBP2G23293_9
Median = 445.08 ns
Median = 445.43 ns
C1 /ns
C2 /ns
MJD
256553 s: C1= 1 ps
128276 s: C1= 24 ps
64138 s: C1= 29 ps
32069 s: C1= 66 ps
16035 s: C1= 71 ps
8017 s: C1= 63 ps
4009 s: C1= 71 ps
2004 s: C1= 88 ps
1002 s: C1= 110 ps
501 s: C1= 150 ps
251 s: C1= 204 ps
125 s: C1= 345 ps
63 s: C1= 468 ps
31 s: C1= 666 ps
169397 s: C2= 28 ps
84699 s: C2= 22 ps
42349 s: C2= 103 ps
21175 s: C2= 78 ps
10587 s: C2= 66 ps
5294 s: C2= 90 ps
2647 s: C2= 117 ps
1323 s: C2= 146 ps
662 s: C2= 178 ps
331 s: C2= 238 ps
165 s: C2= 376 ps
83 s: C2= 530 ps
41 s: C2= 772 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISTBP2G23293_9
Median = 445.20 ns
Median = 445.47 ns
P1 /ns
P2 /ns
MJD
257403 s: P1= 11 ps
128702 s: P1= 17 ps
64351 s: P1= 28 ps
32175 s: P1= 53 ps
16088 s: P1= 71 ps
8044 s: P1= 61 ps
4022 s: P1= 76 ps
2011 s: P1= 106 ps
1005 s: P1= 129 ps
503 s: P1= 164 ps
251 s: P1= 222 ps
126 s: P1= 371 ps
63 s: P1= 501 ps
31 s: P1= 726 ps
257403 s: P2= 31 ps
128702 s: P2= 43 ps
64351 s: P2= 40 ps
32175 s: P2= 108 ps
16088 s: P2= 62 ps
8044 s: P2= 65 ps
4022 s: P2= 95 ps
2011 s: P2= 138 ps
1005 s: P2= 156 ps
503 s: P2= 215 ps
251 s: P2= 305 ps
126 s: P2= 449 ps
63 s: P2= 628 ps
31 s: P2= 938 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISTBP2G23293_9
Median = 445.04 ns
Median = 446.66 ns
E1 /ns
E5 /ns
MJD
166110 s: E1= 11 ps
83055 s: E1= 22 ps
41527 s: E1= 47 ps
20764 s: E1= 49 ps
10382 s: E1= 61 ps
5191 s: E1= 68 ps
2595 s: E1= 75 ps
1298 s: E1= 90 ps
649 s: E1= 117 ps
324 s: E1= 160 ps
162 s: E1= 260 ps
81 s: E1= 367 ps
41 s: E1= 511 ps
165945 s: E5= 26 ps
82972 s: E5= 30 ps
41486 s: E5= 101 ps
20743 s: E5= 81 ps
10372 s: E5= 84 ps
5186 s: E5= 96 ps
2593 s: E5= 98 ps
1296 s: E5= 107 ps
648 s: E5= 131 ps
324 s: E5= 172 ps
162 s: E5= 326 ps
81 s: E5= 452 ps
41 s: E5= 644 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISTBP2G23293_9
Median = 445.11 ns
Median = 446.60 ns
BC /ns
B5 /ns
MJD
160265 s: BC= 9 ps
80132 s: BC= 13 ps
40066 s: BC= 49 ps
20033 s: BC= 57 ps
10017 s: BC= 74 ps
5008 s: BC= 73 ps
2504 s: BC= 83 ps
1252 s: BC= 98 ps
626 s: BC= 132 ps
313 s: BC= 180 ps
157 s: BC= 335 ps
78 s: BC= 470 ps
39 s: BC= 655 ps
160047 s: B5= 13 ps
80024 s: B5= 21 ps
40012 s: B5= 96 ps
20006 s: B5= 69 ps
10003 s: B5= 73 ps
5001 s: B5= 96 ps
2501 s: B5= 106 ps
1250 s: B5= 114 ps
625 s: B5= 144 ps
313 s: B5= 188 ps
156 s: B5= 391 ps
78 s: B5= 554 ps
39 s: B5= 764 ps
TdevBC /s
TdevB5 /s
Tau /s

3.4/ NIST (23307)

Period

MJD 60251 to 60255

Delays

BP2D: (cf page 3 & 77)
REFDLY = 467.01 ns (413.60+53.41)
CABDLY = 176.85 ns (C210)

BP2G: (cf page 3 & 77)
REFDLY = 467.11 ns (413.60+53.51)
CABDLY = 176.38 ns (C211)

NISG: (cf page 77)
REFDLY = 1622.32 ns (1561.69+60.63)
CABDLY = 298.50 ns

NISK: (cf page 78)
REFDLY = 1535.30 ns
CABDLY = 298.90 ns

NISP: (cf page 79)
REFDLY = 466.20 ns
CABDLY = 199.60 ns

NIST (NISX): (cf page 80)
REFDLY = 121.60 ns (66.70+54.90)
CABDLY = 275.50 ns

Setup at the NIST

Annex A - Information Sheet

Laboratory:	NIST
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	NISG	
Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR Full S/N 3034704	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	Andrew LDF2-50 (white) N	
Length outside the building /m:	5.0	
Antenna maker and type: Antenna serial number:	Novatel 750 NEG10500001	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	1488.82+72.87=1561.69	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	60.63 (auto comp. off)	32.2 (BP2G)
Antenna cable delay: (X_C)	298.5	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS) /ns:	29.47 (P1), 27.89(P2)
• INT DLY (or X_R+X_S) (GAL) /ns:	31.83 (E1), 31.52 (E5a)
• CAB DLY (or X_C) /ns:	298.5
• REF DLY (or X_P+X_O) /ns:	1621.5
• Coordinates reference frame:	WGS84
X /m:	-1288547.201
Y /m:	-4721701.166
Z /m	4078586.530

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty: (°C)	22(.1)
Set humidity value and uncertainty: (%)	45 (.1)

Annex A - Information Sheet

Laboratory:	NIST
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	NISK	
Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR Full S/N 3092942	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	Andrew LDF2-50 (white) N	
Length outside the building /m:	5.0	
Antenna maker and type: Antenna serial number:	Novatel 750 NEG10450005	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	1488.82+46.5=1535.3	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	36.63 (auto comp. on)	32.2 (BP2G)
Antenna cable delay: (X_C)	298.9	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS) /ns:	
• INT DLY (or X_R+X_S) (GAL) /ns:	
• CAB DLY (or X_C) /ns:	
• REF DLY (or X_P+X_O) /ns:	
• Coordinates reference frame:	WGS84
X /m:	-1288547.201
Y /m:	-4721701.166
Z /m	4078586.530

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty: (°C)	22(.1)
Set humidity value and uncertainty: (%)	45 (.1)

Annex A - Information Sheet

Laboratory:	**NIST, Boulder, USA**
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	**NISP**	
Receiver maker and type: Receiver serial number:	PolaRxTR 5 S/N	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	LMR 400 N	
Length outside the building /m:	50	
Antenna maker and type: Antenna serial number:	Septentrio PolaNt-x MFv2	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	327.8+138.4= 466.2	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	59.8 (auto comp. on)	32.2 (BP2G)
Antenna cable delay: (X_C)	199.6	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS)† /ns:	
• INT DLY (or X_R+X_S) (GLONASS) /ns:	
• CAB DLY (or X_C) /ns:	
• REF DLY (or X_P+X_O) /ns:	
• Coordinates reference frame:	
X /m:	
Y /m:	
Z /m	

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	
Set humidity value and uncertainty:	

† Based on Cal_Id 1001-2018, but still not implemented

Annex A - Information Sheet

Laboratory:	**NIST, Boulder, USA**
Date and hour of the beginning of measurements:	
Date and hour of the end of measurements:	

Information on the system		
	Local:	**Traveling:**
4-character BIPM code	**NISX**	
Receiver maker and type: Receiver serial number:	PolaRxTR 5 S/N	
1 PPS trigger level /V:	1	
Antenna cable maker and type: Phase stabilized cable (Y/N):	Andrew FSJ-50A N	
Length outside the building /m:	65	
Antenna maker and type: Antenna serial number:	Novatel 702	
Temperature (if stabilized) /°C		

Measured delays /ns		
	Local:	**Traveling:**
Delay from local UTC to receiver 1 PPS-in (X_P)	66.7	413.6 (PPS input to BP2G, BP2D)
Delay from 1 PPS-in to internal Reference (if different): (X_O)	54.9	32.2 (BP2G)
Antenna cable delay: (X_C)	275.5	
Splitter delay (if any):	N/A	
Additional cable delay (if any):	N/A	

Data used for the generation of CGGTTS files	
• INT DLY (or X_R+X_S) (GPS)† /ns:	
• INT DLY (or X_R+X_S) (GLONASS) /ns:	
• CAB DLY (or X_C) /ns:	275.5
• REF DLY (or X_P+X_O) /ns:	120.0
• Coordinates reference frame:	WGS84
X /m:	-1288398.60
Y /m:	-4721697.05
Z /m	4078625.45

General information	
• Rise time of the local UTC pulse:	3 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	
Set humidity value and uncertainty:	

† Based on Cal_Id 1001-2018, but still not implemented

NISG-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 51427
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 9612 high elev obs :-259.731-261.240
Iteration 0: Obs used = 33468; Huge residuals = 8; Large residuals = 50818
Iteration 1: Obs used = 34203; Huge residuals = 0; Large residuals = 50075
Computed code bias (P1/P2)/m = -263.119 -264.589
Computed baseline (X,Y,Z)/m = 182.414 64.090 72.990
RMS of residuals /m = 1.111

Number of phase differences to fit baseline
L1/L2 = 119996
L5 = 65878
A priori baseline (X,Y,Z)/m = 182.414 64.090 72.990
13154 clock jitters computed out of 14265 intervals
AVE jitter /ps = -12.3 RMS jitter /ps = 60.6

Iter 1 Large residuals L1=37665
Iter 1 Large residuals L2=38203
Iter 1 Large residuals L5=23455
Computed baseline L1 (X,Y,Z)/m = 17.758 -15.966 11.550
RMS of residuals L1 /m = 0.009
Computed baseline L2 (X,Y,Z)/m = 17.634 -15.810 11.445
RMS of residuals L2 /m = 0.009
Computed baseline L5 (X,Y,Z)/m = 16.101 -15.190 11.247
RMS of residuals L5 /m = 0.015

Iter 2 Large residuals L1= 4522
Iter 2 Large residuals L2= 4739
Iter 2 Large residuals L5= 4578
Computed baseline L1 (X,Y,Z)/m = 27.048 -24.448 17.397
RMS of residuals L1 /m = 0.015
Computed baseline L2 (X,Y,Z)/m = 26.958 -24.334 17.327
RMS of residuals L2 /m = 0.016
Computed baseline L5 (X,Y,Z)/m = 25.399 -23.805 16.889
RMS of residuals L5 /m = 0.023

Iter 3 Large residuals L1= 1294
Iter 3 Large residuals L2= 1381
Iter 3 Large residuals L5= 889
Computed baseline L1 (X,Y,Z)/m = 31.196 -28.291 19.725
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 31.173 -28.258 19.696
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 30.475 -27.880 19.365
RMS of residuals L5 /m = 0.019

Iter 4 Large residuals L1= 1344
Iter 4 Large residuals L2= 1430
Iter 4 Large residuals L5= 844
Computed baseline L1 (X,Y,Z)/m = 31.899 -28.806 20.021
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 31.895 -28.802 20.005
RMS of residuals L2 /m = 0.019

Computed baseline L5 (X,Y,Z)/m = 31.792 -28.795 19.794
RMS of residuals L5 /m = 0.020

Iter 5 Large residuals L1= 1350
Iter 5 Large residuals L2= 1444
Iter 5 Large residuals L5= 862
Computed baseline L1 (X,Y,Z)/m = 31.956 -28.847 20.049
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 31.961 -28.845 20.033
RMS of residuals L2 /m = 0.019
Computed baseline L5 (X,Y,Z)/m = 31.947 -28.890 19.825
RMS of residuals L5 /m = 0.020

Iter 6 Large residuals L1= 1350
Iter 6 Large residuals L2= 1444
Iter 6 Large residuals L5= 861
Computed baseline L1 (X,Y,Z)/m = 31.961 -28.853 20.050
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 31.968 -28.848 20.037
RMS of residuals L2 /m = 0.019
Computed baseline L5 (X,Y,Z)/m = 31.964 -28.904 19.827
RMS of residuals L5 /m = 0.020

Iter 7 Large residuals L1= 1350
Iter 7 Large residuals L2= 1444
Iter 7 Large residuals L5= 861
Computed baseline L1 (X,Y,Z)/m = 31.961 -28.853 20.050
RMS of residuals L1 /m = 0.019
Computed baseline L2 (X,Y,Z)/m = 31.968 -28.849 20.037
RMS of residuals L2 /m = 0.019
Computed baseline L5 (X,Y,Z)/m = 31.965 -28.904 19.828
RMS of residuals L5 /m = 0.020

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 214.378 35.240 93.034
14175 clock jitters computed out of 14265 intervals
AVE jitter /ps = 8.7 RMS jitter /ps = 60.6

Iter 8 Large residuals L1= 695
Iter 8 Large residuals L2= 695
Iter 8 Large residuals L5= 433
Computed baseline L1 (X,Y,Z)/m = -0.645 0.137 -0.053
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.637 0.144 -0.062
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.626 0.154 -0.073
RMS of residuals L5 /m = 0.004

Iter 9 Large residuals L1= 695
Iter 9 Large residuals L2= 695
Iter 9 Large residuals L5= 433
Computed baseline L1 (X,Y,Z)/m = -0.645 0.137 -0.053
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.637 0.144 -0.062
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.626 0.154 -0.073
RMS of residuals L5 /m = 0.004

WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 213.733 35.377 92.980
Final baseline L2 (X,Y,Z)/m = 213.741 35.384 92.971
Final baseline L5 (X,Y,Z)/m = 213.753 35.393 92.960

COMPUTATION OF CODE DIFFERENCES

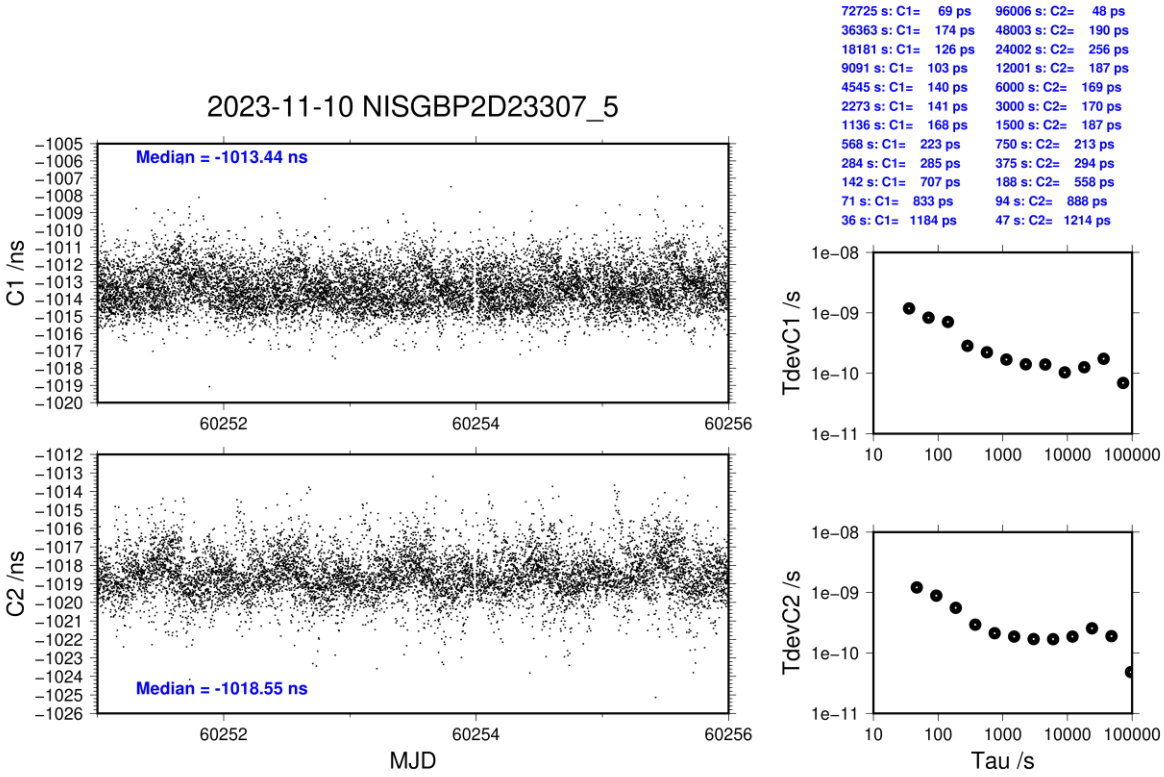
Total number of code differences = 418363

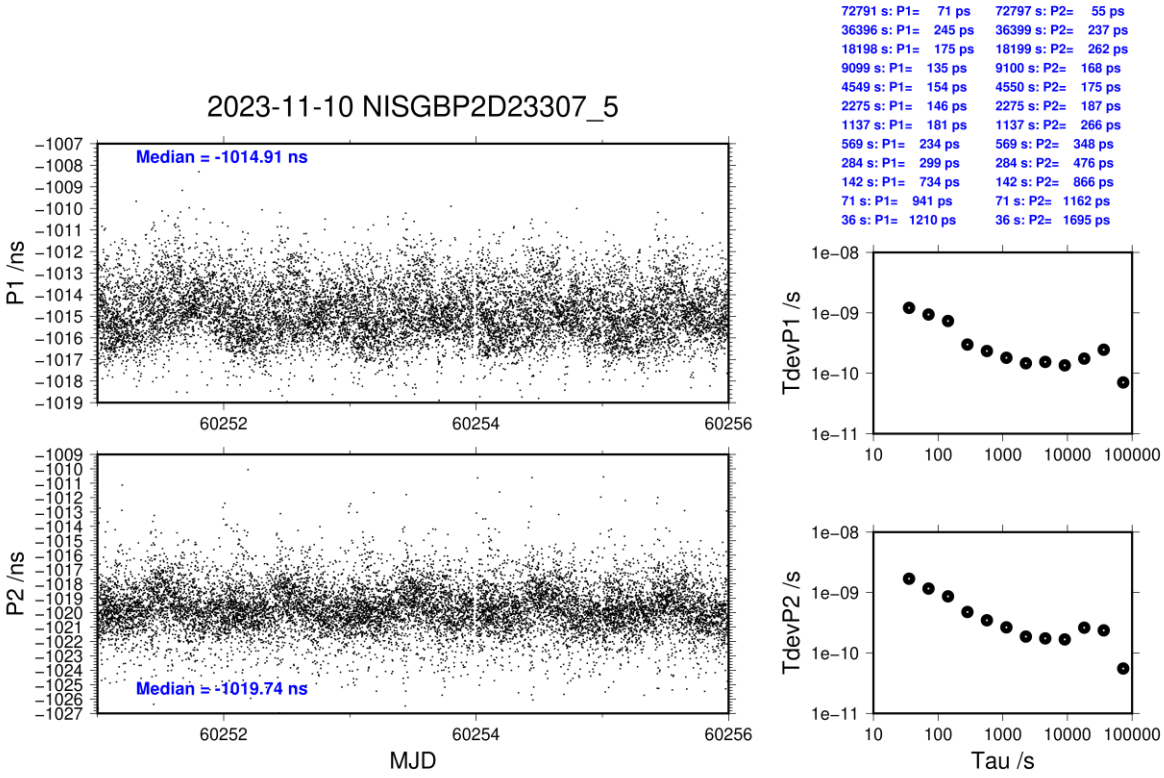
Global average of individual differences

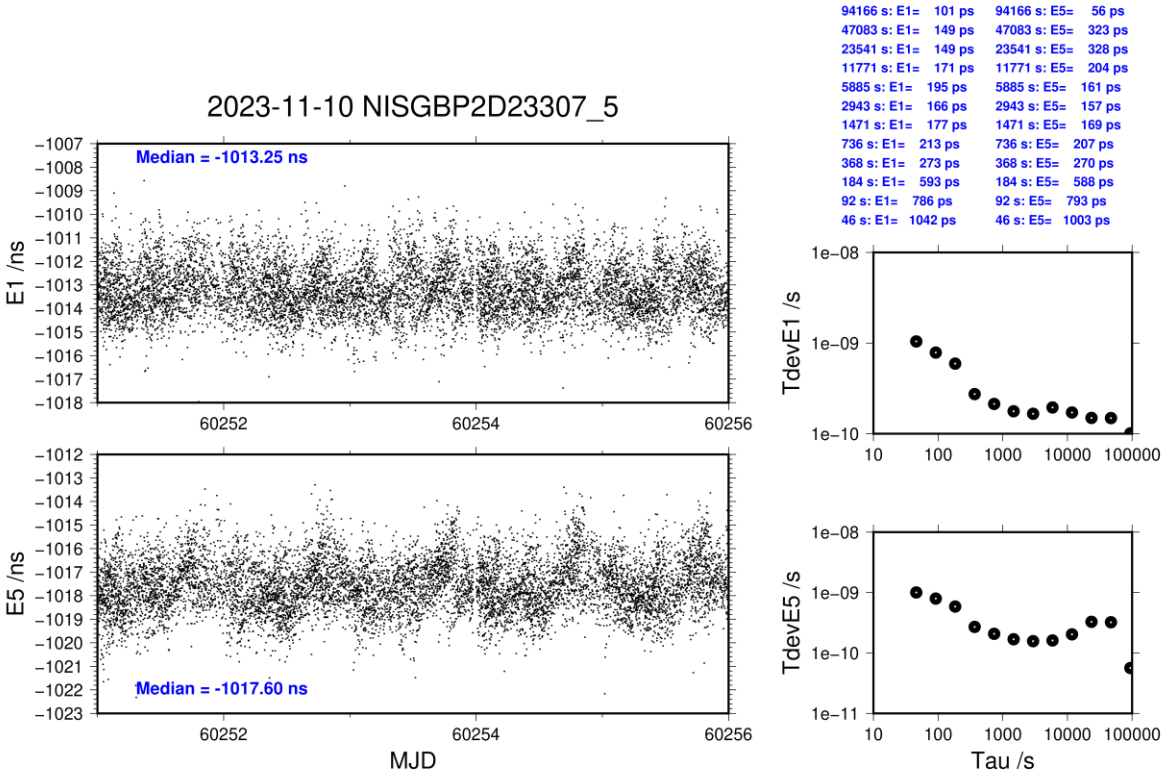
Code	#pts	ave/ns	rms/ns
C1	121605	-1013.319	1.684
C2	92120	-1018.482	1.622
P1	121479	-1014.772	1.760
P2	121475	-1019.704	2.336
E1	93775	-1013.173	1.452
E5	93779	-1017.554	1.344
BC	96318	-1012.672	1.820
B5	96386	-1017.370	1.587

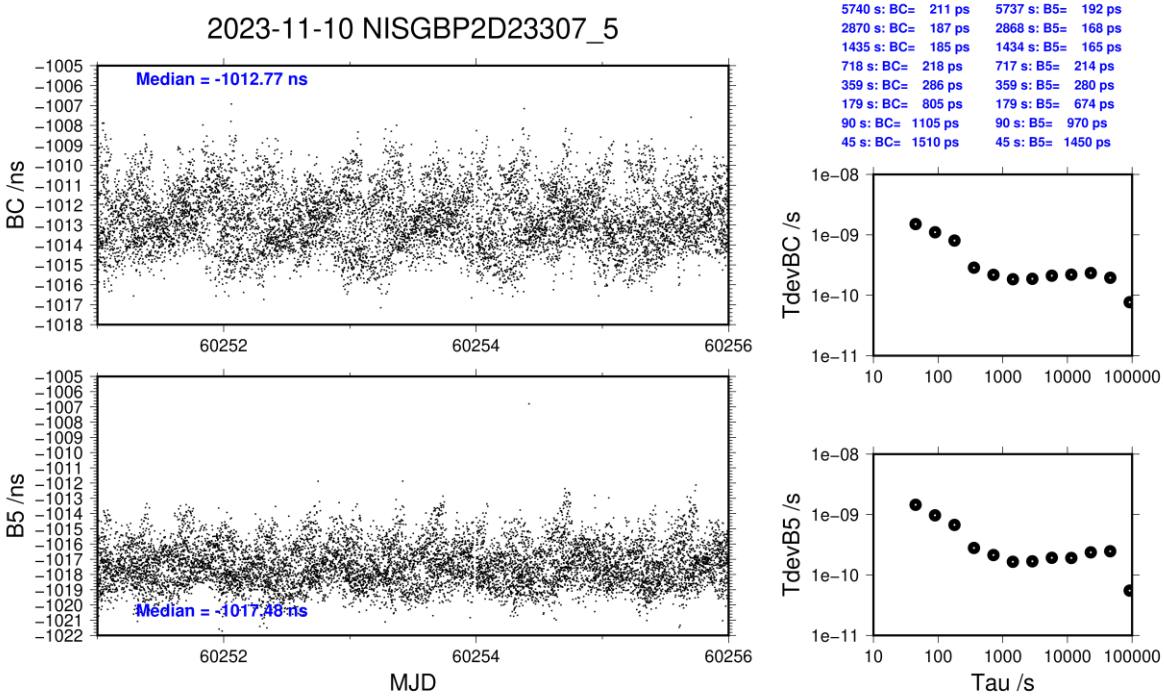
Number of 300s epochs in out file = 1433

Code	#pts	median/ns	ave/ns	rms/ns
C1	12158	-1013.439	-1013.346	1.196
C2	9210	-1018.548	-1018.482	1.216
P1	12147	-1014.911	-1014.795	1.277
P2	12146	-1019.742	-1019.684	1.670
E1	9390	-1013.245	-1013.166	1.093
E5	9390	-1017.604	-1017.561	1.124
BC	9627	-1012.768	-1012.667	1.506
B5	9633	-1017.482	-1017.376	1.379


2023-11-10 NISGBP2D23307_5
Median = -1013.44 ns
Median = -1018.55 ns
C1 /ns
C2 /ns
MJD
72725 s: C1= 69 ps
36363 s: C1= 174 ps
18181 s: C1= 126 ps
9091 s: C1= 103 ps
4545 s: C1= 140 ps
2273 s: C1= 141 ps
1136 s: C1= 168 ps
568 s: C1= 223 ps
284 s: C1= 285 ps
142 s: C1= 707 ps
71 s: C1= 833 ps
36 s: C1= 1184 ps
96006 s: C2= 48 ps
48003 s: C2= 190 ps
24002 s: C2= 256 ps
12001 s: C2= 187 ps
6000 s: C2= 169 ps
3000 s: C2= 170 ps
1500 s: C2= 187 ps
750 s: C2= 213 ps
375 s: C2= 294 ps
188 s: C2= 558 ps
94 s: C2= 888 ps
47 s: C2= 1214 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISGBP2D23307_5
Median = -1014.91 ns
Median = -1019.74 ns
P1 /ns
P2 /ns
MJD
72791 s: P1= 71 ps
36396 s: P1= 245 ps
18198 s: P1= 175 ps
9099 s: P1= 135 ps
4549 s: P1= 154 ps
2275 s: P1= 146 ps
1137 s: P1= 181 ps
569 s: P1= 234 ps
284 s: P1= 299 ps
142 s: P1= 734 ps
71 s: P1= 941 ps
36 s: P1= 1210 ps
72797 s: P2= 55 ps
36399 s: P2= 237 ps
18199 s: P2= 262 ps
9100 s: P2= 168 ps
4550 s: P2= 175 ps
2275 s: P2= 187 ps
1137 s: P2= 266 ps
569 s: P2= 348 ps
284 s: P2= 476 ps
142 s: P2= 866 ps
71 s: P2= 1162 ps
36 s: P2= 1695 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISGBP2D23307_5
Median = -1013.25 ns
Median = -1017.60 ns
E1 /ns
E5 /ns
MJD
94166 s: E1= 101 ps
47083 s: E1= 149 ps
23541 s: E1= 149 ps
11771 s: E1= 171 ps
5885 s: E1= 195 ps
2943 s: E1= 166 ps
1471 s: E1= 177 ps
736 s: E1= 213 ps
368 s: E1= 273 ps
184 s: E1= 593 ps
92 s: E1= 786 ps
46 s: E1= 1042 ps
94166 s: E5= 56 ps
47083 s: E5= 323 ps
23541 s: E5= 328 ps
11771 s: E5= 204 ps
5885 s: E5= 161 ps
2943 s: E5= 157 ps
1471 s: E5= 169 ps
736 s: E5= 207 ps
368 s: E5= 270 ps
184 s: E5= 588 ps
92 s: E5= 793 ps
46 s: E5= 1003 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISGBP2D23307_5
Median = -1012.77 ns
Median = -1017.48 ns
BC /ns
B5 /ns
MJD
91847 s: BC= 77 ps
45924 s: BC= 195 ps
22962 s: BC= 234 ps
11481 s: BC= 220 ps
5740 s: BC= 211 ps
2870 s: BC= 187 ps
1435 s: BC= 185 ps
718 s: BC= 218 ps
359 s: BC= 286 ps
179 s: BC= 805 ps
90 s: BC= 1105 ps
45 s: BC= 1510 ps
91790 s: B5= 55 ps
45895 s: B5= 247 ps
22948 s: B5= 237 ps
11474 s: B5= 191 ps
5737 s: B5= 192 ps
2868 s: B5= 168 ps
1434 s: B5= 165 ps
717 s: B5= 214 ps
359 s: B5= 280 ps
179 s: B5= 674 ps
90 s: B5= 970 ps
45 s: B5= 1450 ps
TdevBC /s
TdevB5 /s
Tau /s

NISG-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 56568
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 9190 high elev obs :-262.770-262.422
Iteration 0: Obs used = 24828; Huge residuals = 258; Large residuals = 70584
Iteration 1: Obs used = 35200; Huge residuals = 0; Large residuals = 59950
Computed code bias (P1/P2)/m = -267.596 -267.287
Computed baseline (X,Y,Z)/m = 179.615 62.906 74.440
RMS of residuals /m = 1.092

Number of phase differences to fit baseline
L1/L2 = 133591
L5 = 73892
A priori baseline (X,Y,Z)/m = 179.615 62.906 74.440
13066 clock jitters computed out of 14274 intervals
AVE jitter /ps = -17.4 RMS jitter /ps = 56.1

Iter 1 Large residuals L1=42954
Iter 1 Large residuals L2=43632
Iter 1 Large residuals L5=28387
Computed baseline L1 (X,Y,Z)/m = 19.704 -15.033 10.598
RMS of residuals L1 /m = 0.009
Computed baseline L2 (X,Y,Z)/m = 19.572 -14.942 10.527
RMS of residuals L2 /m = 0.009
Computed baseline L5 (X,Y,Z)/m = 17.871 -14.443 10.298
RMS of residuals L5 /m = 0.015

Iter 2 Large residuals L1= 4855
Iter 2 Large residuals L2= 5206
Iter 2 Large residuals L5= 5530
Computed baseline L1 (X,Y,Z)/m = 30.575 -23.833 16.554
RMS of residuals L1 /m = 0.015
Computed baseline L2 (X,Y,Z)/m = 30.418 -23.666 16.442
RMS of residuals L2 /m = 0.015
Computed baseline L5 (X,Y,Z)/m = 29.088 -23.171 15.976
RMS of residuals L5 /m = 0.025

Iter 3 Large residuals L1= 2437
Iter 3 Large residuals L2= 2584
Iter 3 Large residuals L5= 2863
Computed baseline L1 (X,Y,Z)/m = 34.785 -27.299 18.723
RMS of residuals L1 /m = 0.017
Computed baseline L2 (X,Y,Z)/m = 34.746 -27.252 18.692
RMS of residuals L2 /m = 0.017
Computed baseline L5 (X,Y,Z)/m = 34.368 -26.942 18.437
RMS of residuals L5 /m = 0.018

Iter 4 Large residuals L1= 2518
Iter 4 Large residuals L2= 2655
Iter 4 Large residuals L5= 2900
Computed baseline L1 (X,Y,Z)/m = 35.359 -27.646 18.928
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.356 -27.645 18.918
RMS of residuals L2 /m = 0.018

Computed baseline L5 (X,Y,Z)/m = 35.358 -27.522 18.696
RMS of residuals L5 /m = 0.018

Iter 5 Large residuals L1= 2525
Iter 5 Large residuals L2= 2662
Iter 5 Large residuals L5= 2906
Computed baseline L1 (X,Y,Z)/m = 35.400 -27.683 18.946
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.397 -27.676 18.941
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.427 -27.575 18.718
RMS of residuals L5 /m = 0.018

Iter 6 Large residuals L1= 2526
Iter 6 Large residuals L2= 2662
Iter 6 Large residuals L5= 2907
Computed baseline L1 (X,Y,Z)/m = 35.403 -27.686 18.948
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.398 -27.680 18.944
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.433 -27.581 18.719
RMS of residuals L5 /m = 0.018

Iter 7 Large residuals L1= 2526
Iter 7 Large residuals L2= 2663
Iter 7 Large residuals L5= 2908
Computed baseline L1 (X,Y,Z)/m = 35.403 -27.686 18.948
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.399 -27.680 18.944
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.434 -27.581 18.720
RMS of residuals L5 /m = 0.018

Iter 8 Large residuals L1= 2526
Iter 8 Large residuals L2= 2663
Iter 8 Large residuals L5= 2909
Computed baseline L1 (X,Y,Z)/m = 35.403 -27.686 18.948
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.399 -27.680 18.944
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.435 -27.581 18.720
RMS of residuals L5 /m = 0.018

Iter 9 Large residuals L1= 2526
Iter 9 Large residuals L2= 2663
Iter 9 Large residuals L5= 2909
Computed baseline L1 (X,Y,Z)/m = 35.403 -27.686 18.948
RMS of residuals L1 /m = 0.018
Computed baseline L2 (X,Y,Z)/m = 35.399 -27.680 18.944
RMS of residuals L2 /m = 0.018
Computed baseline L5 (X,Y,Z)/m = 35.435 -27.581 18.720
RMS of residuals L5 /m = 0.018

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 215.016 35.223 93.385
14064 clock jitters computed out of 14274 intervals
AVE jitter /ps = 13.0 RMS jitter /ps = 56.4

Iter 10 Large residuals L1= 1859
Iter 10 Large residuals L2= 1860
Iter 10 Large residuals L5= 2531
Computed baseline L1 (X,Y,Z)/m = -0.948 0.228 -0.001
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.948 0.228 0.000
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.932 0.224 -0.009
RMS of residuals L5 /m = 0.004

Iter 11 Large residuals L1= 1859
Iter 11 Large residuals L2= 1860
Iter 11 Large residuals L5= 2531
Computed baseline L1 (X,Y,Z)/m = -0.948 0.228 -0.001
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.948 0.228 0.001
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.932 0.224 -0.009
RMS of residuals L5 /m = 0.004
WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 214.068 35.451 93.384
Final baseline L2 (X,Y,Z)/m = 214.068 35.451 93.386
Final baseline L5 (X,Y,Z)/m = 214.084 35.446 93.377

COMPUTATION OF CODE DIFFERENCES

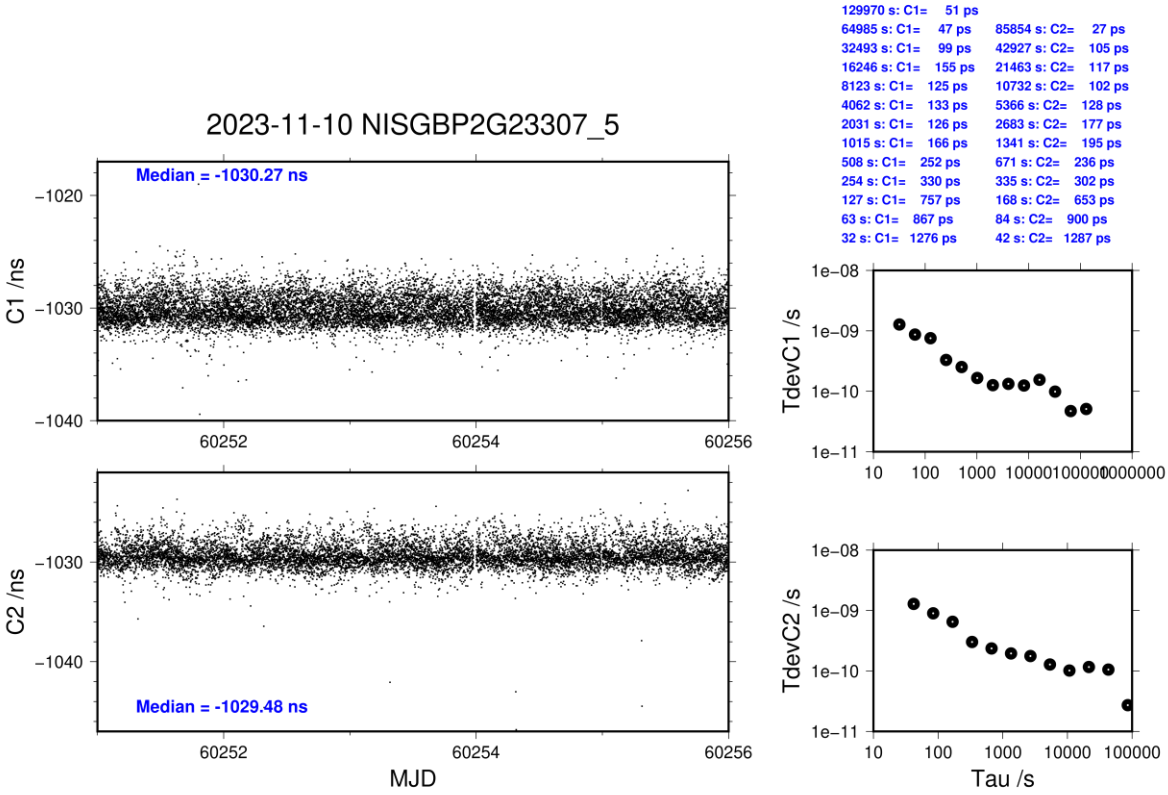
Total number of code differences = 474972

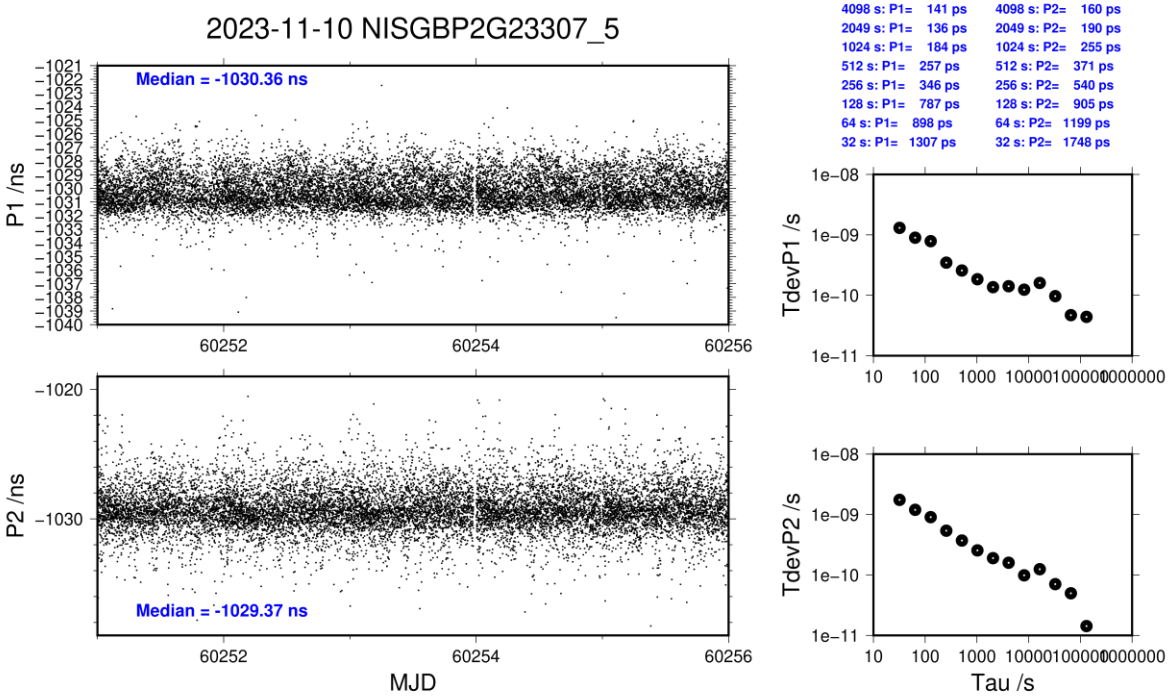
Global average of individual differences

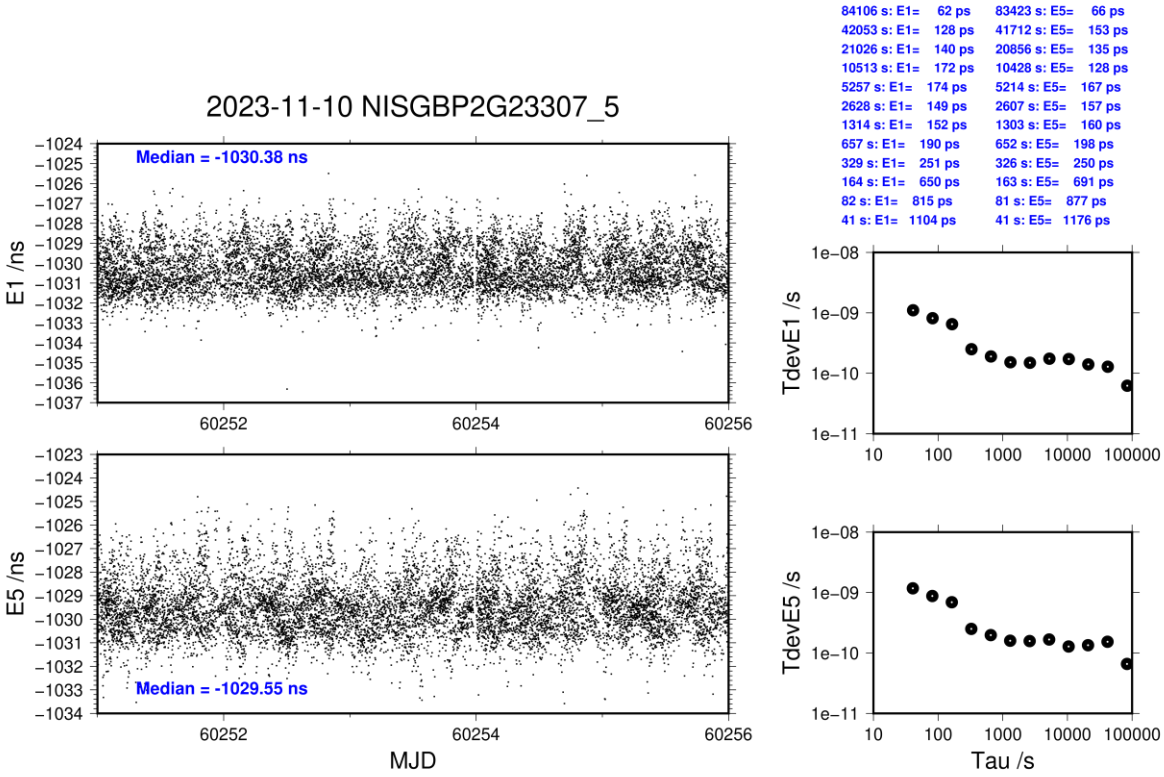
Code	#pts	ave/ns	rms/ns
C1	136126	-1030.065	1.961
C2	103063	-1029.349	1.917
P1	134974	-1030.143	1.961
P2	134974	-1029.246	2.601
E1	105158	-1030.224	1.580
E5	106031	-1029.444	1.495
BC	109133	-1030.181	1.891
B5	109725	-1029.596	1.783

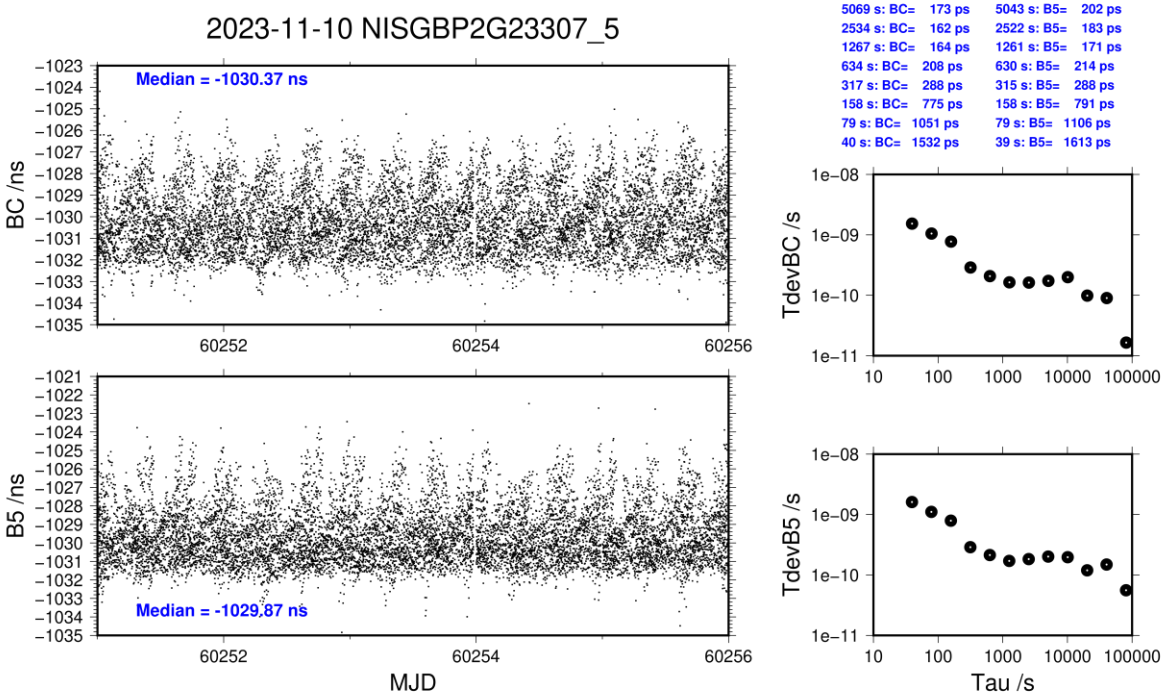
Number of 300s epochs in out file = 1433

Code	#pts	median/ns	ave/ns	rms/ns
C1	13606	-1030.266	-1030.085	1.270
C2	10299	-1029.483	-1029.350	1.249
P1	13485	-1030.357	-1030.166	1.311
P2	13485	-1029.367	-1029.243	1.710
E1	10513	-1030.376	-1030.224	1.132
E5	10599	-1029.548	-1029.454	1.200
BC	10903	-1030.371	-1030.179	1.457
B5	10958	-1029.873	-1029.609	1.526


2023-11-10 NISGBP2G23307_5
Median = -1030.27 ns
Median = -1029.48 ns
C1 /ns
C2 /ns
MJD
129970 s: C1= 51 ps
64985 s: C1= 47 ps
32493 s: C1= 99 ps
16246 s: C1= 155 ps
8123 s: C1= 125 ps
4062 s: C1= 133 ps
2031 s: C1= 126 ps
1015 s: C1= 166 ps
508 s: C1= 252 ps
254 s: C1= 330 ps
127 s: C1= 757 ps
63 s: C1= 867 ps
32 s: C1= 1276 ps
85854 s: C2= 27 ps
42927 s: C2= 105 ps
21463 s: C2= 117 ps
10732 s: C2= 102 ps
5366 s: C2= 128 ps
2683 s: C2= 177 ps
1341 s: C2= 195 ps
671 s: C2= 236 ps
335 s: C2= 302 ps
168 s: C2= 653 ps
84 s: C2= 900 ps
42 s: C2= 1287 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISGBP2G23307_5
Median = -1030.36 ns
Median = -1029.37 ns
P1 /ns
P2 /ns
MJD
131136 s: P1= 44 ps
65568 s: P1= 47 ps
32784 s: P1= 97 ps
16392 s: P1= 160 ps
8196 s: P1= 124 ps
4098 s: P1= 141 ps
2049 s: P1= 136 ps
1024 s: P1= 184 ps
512 s: P1= 257 ps
256 s: P1= 346 ps
128 s: P1= 787 ps
64 s: P1= 898 ps
32 s: P1= 1307 ps
131136 s: P2= 14 ps
65568 s: P2= 50 ps
32784 s: P2= 71 ps
16392 s: P2= 124 ps
8196 s: P2= 99 ps
4098 s: P2= 160 ps
2049 s: P2= 190 ps
1024 s: P2= 255 ps
512 s: P2= 371 ps
256 s: P2= 540 ps
128 s: P2= 905 ps
64 s: P2= 1199 ps
32 s: P2= 1748 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISGBP2G23307_5
Median = -1030.38 ns
Median = -1029.55 ns
E1 /ns
E5 /ns
MJD
84106 s: E1= 62 ps
42053 s: E1= 128 ps
21026 s: E1= 140 ps
10513 s: E1= 172 ps
5257 s: E1= 174 ps
2628 s: E1= 149 ps
1314 s: E1= 152 ps
657 s: E1= 190 ps
329 s: E1= 251 ps
164 s: E1= 650 ps
82 s: E1= 815 ps
41 s: E1= 1104 ps
83423 s: E5= 66 ps
41712 s: E5= 153 ps
20856 s: E5= 135 ps
10428 s: E5= 128 ps
5214 s: E5= 167 ps
2607 s: E5= 157 ps
1303 s: E5= 160 ps
652 s: E5= 198 ps
326 s: E5= 250 ps
163 s: E5= 691 ps
81 s: E5= 877 ps
41 s: E5= 1176 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISGBP2G23307_5
Median = -1030.37 ns
Median = -1029.87 ns
BC /ns
B5 /ns
MJD
81097 s: BC= 17 ps
40549 s: BC= 90 ps
20274 s: BC= 99 ps
10137 s: BC= 200 ps
5069 s: BC= 173 ps
2534 s: BC= 162 ps
1267 s: BC= 164 ps
634 s: BC= 208 ps
317 s: BC= 288 ps
158 s: BC= 775 ps
79 s: BC= 1051 ps
40 s: BC= 1532 ps
80690 s: B5= 56 ps
40345 s: B5= 149 ps
20173 s: B5= 120 ps
10086 s: B5= 197 ps
5043 s: B5= 202 ps
2522 s: B5= 183 ps
1261 s: B5= 171 ps
630 s: B5= 214 ps
315 s: B5= 288 ps
158 s: B5= 791 ps
79 s: B5= 1106 ps
39 s: B5= 1613 ps
TdevBC /s
TdevB5 /s
Tau /s

NISK-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 58200
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 13270 high elev obs :-252.575-253.589
Iteration 0: Obs used = 48972; Huge residuals = 12; Large residuals = 41788
Iteration 1: Obs used = 50181; Huge residuals = 0; Large residuals = 40567
Computed code bias (P1/P2)/m = -255.958 -256.987
Computed baseline (X,Y,Z)/m = 191.283 51.839 77.060
RMS of residuals /m = 1.092

Number of phase differences to fit baseline
L1/L2 = 120639
L5 = 66393
A priori baseline (X,Y,Z)/m = 191.283 51.839 77.060
14332 clock jitters computed out of 14337 intervals
AVE jitter /ps = -10.7 RMS jitter /ps = 41.2

Iter 1 Large residuals L1= 1067
Iter 1 Large residuals L2= 1270
Iter 1 Large residuals L5= 551
Computed baseline L1 (X,Y,Z)/m = 12.821 -13.730 8.720
RMS of residuals L1 /m = 0.008
Computed baseline L2 (X,Y,Z)/m = 12.777 -13.658 8.648
RMS of residuals L2 /m = 0.008
Computed baseline L5 (X,Y,Z)/m = 12.847 -14.032 8.566
RMS of residuals L5 /m = 0.011

Iter 2 Large residuals L1= 41
Iter 2 Large residuals L2= 60
Iter 2 Large residuals L5= 33
Computed baseline L1 (X,Y,Z)/m = 17.607 -18.577 11.372
RMS of residuals L1 /m = 0.013
Computed baseline L2 (X,Y,Z)/m = 17.576 -18.555 11.353
RMS of residuals L2 /m = 0.014
Computed baseline L5 (X,Y,Z)/m = 17.984 -18.846 11.222
RMS of residuals L5 /m = 0.013

Iter 3 Large residuals L1= 43
Iter 3 Large residuals L2= 59
Iter 3 Large residuals L5= 32
Computed baseline L1 (X,Y,Z)/m = 17.826 -18.719 11.421
RMS of residuals L1 /m = 0.014
Computed baseline L2 (X,Y,Z)/m = 17.825 -18.724 11.415
RMS of residuals L2 /m = 0.014
Computed baseline L5 (X,Y,Z)/m = 18.147 -18.981 11.264
RMS of residuals L5 /m = 0.013

Iter 4 Large residuals L1= 43
Iter 4 Large residuals L2= 59
Iter 4 Large residuals L5= 32
Computed baseline L1 (X,Y,Z)/m = 17.827 -18.718 11.421
RMS of residuals L1 /m = 0.014
Computed baseline L2 (X,Y,Z)/m = 17.825 -18.724 11.415
RMS of residuals L2 /m = 0.014
Computed baseline L5 (X,Y,Z)/m = 18.148 -18.981 11.265

RMS of residuals L5 /m = 0.013

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 209.109 33.117 88.478
14329 clock jitters computed out of 14337 intervals
AVE jitter /ps = 8.8 RMS jitter /ps = 41.9

Iter 5 Large residuals L1= 14
Iter 5 Large residuals L2= 14
Iter 5 Large residuals L5= 9
Computed baseline L1 (X,Y,Z)/m = -0.563 -0.188 0.163
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.562 -0.192 0.158
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.550 -0.180 0.152
RMS of residuals L5 /m = 0.004

Iter 6 Large residuals L1= 14
Iter 6 Large residuals L2= 14
Iter 6 Large residuals L5= 9
Computed baseline L1 (X,Y,Z)/m = -0.563 -0.188 0.163
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.562 -0.192 0.158
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.550 -0.180 0.152
RMS of residuals L5 /m = 0.004
WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 208.546 32.929 88.641
Final baseline L2 (X,Y,Z)/m = 208.548 32.925 88.636
Final baseline L5 (X,Y,Z)/m = 208.559 32.937 88.630

COMPUTATION OF CODE DIFFERENCES

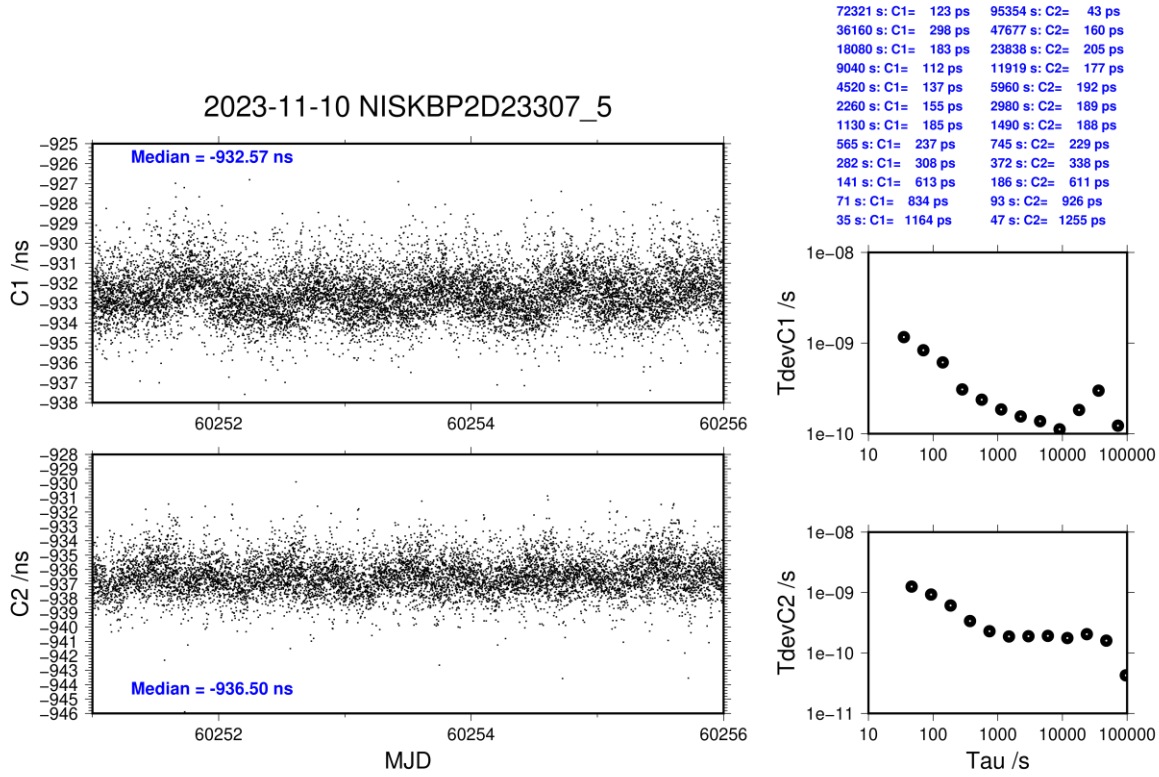
Total number of code differences = 420780

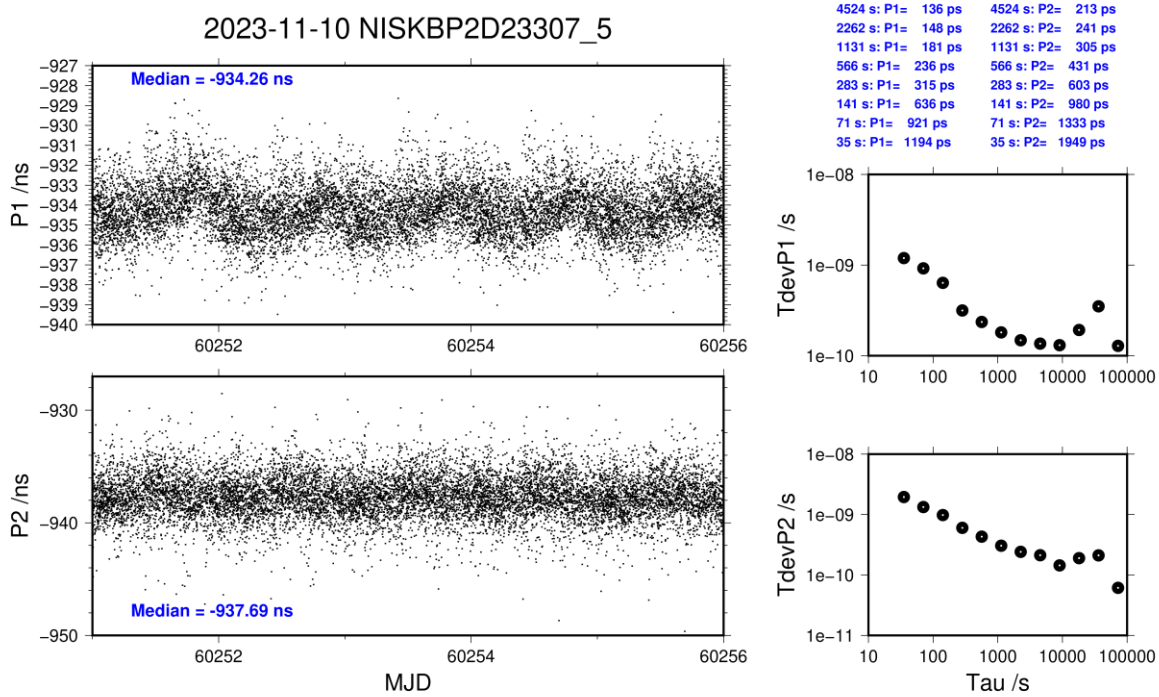
Global average of individual differences

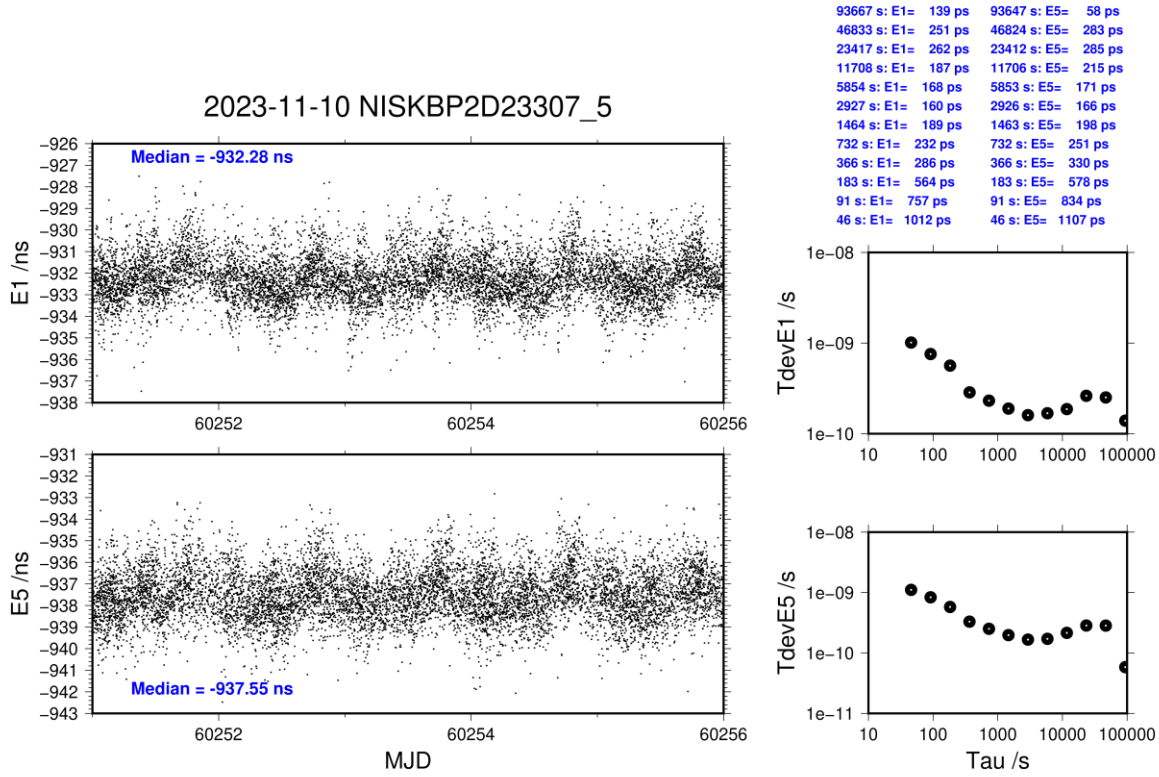
Code	#pts	ave/ns	rms/ns
C1	122279	-932.479	1.752
C2	92740	-936.445	1.773
P1	122142	-934.201	1.809
P2	122132	-937.693	2.764
E1	94263	-932.225	1.475
E5	94282	-937.521	1.479
BC	96989	-931.980	1.755
B5	97089	-937.357	1.695

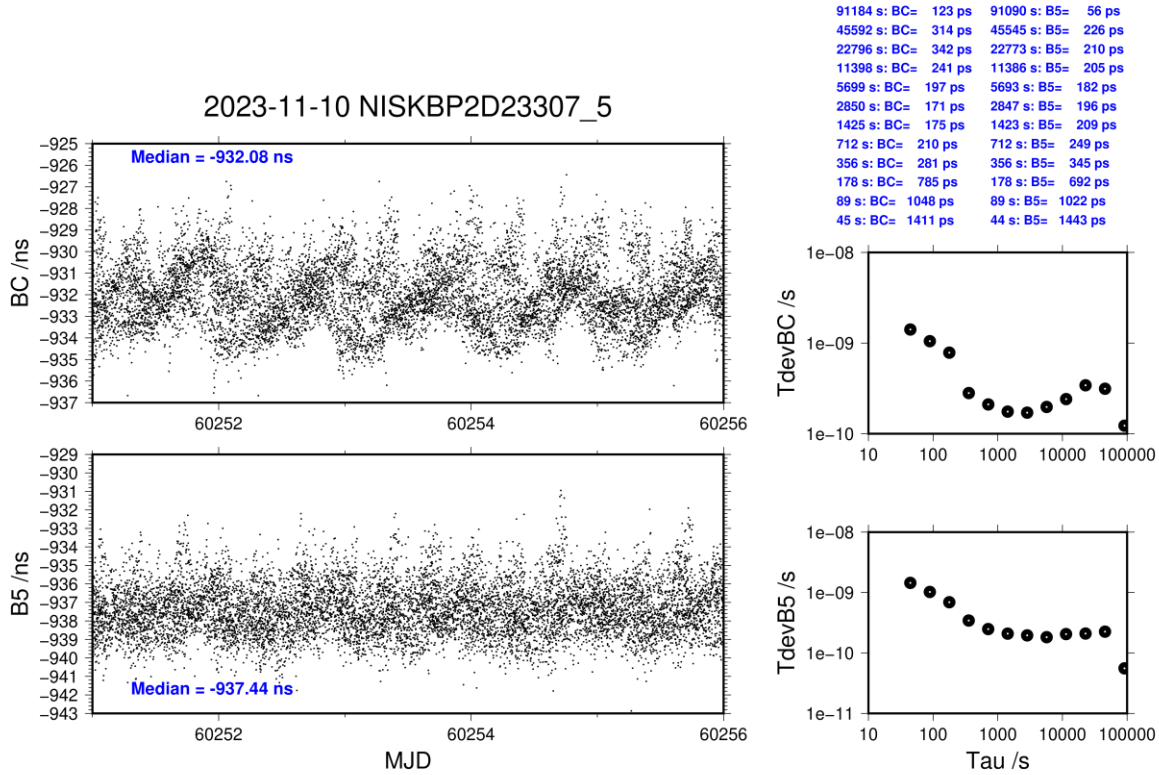
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	12226	-932.570	-932.498	1.189
C2	9273	-936.496	-936.435	1.269
P1	12215	-934.256	-934.220	1.251
P2	12214	-937.693	-937.656	1.919
E1	9440	-932.281	-932.227	1.093
E5	9442	-937.554	-937.512	1.180
BC	9697	-932.081	-931.969	1.461
B5	9707	-937.438	-937.347	1.419


2023-11-10 NISKBP2D23307_5
Median = -932.57 ns
Median = -936.50 ns
C1 /ns
C2 /ns
MJD
72321 s: C1= 123 ps
36160 s: C1= 298 ps
18080 s: C1= 183 ps
9040 s: C1= 112 ps
4520 s: C1= 137 ps
2260 s: C1= 155 ps
1130 s: C1= 185 ps
565 s: C1= 237 ps
282 s: C1= 308 ps
141 s: C1= 613 ps
71 s: C1= 834 ps
35 s: C1= 1164 ps
95354 s: C2= 43 ps
47677 s: C2= 160 ps
23838 s: C2= 205 ps
11919 s: C2= 177 ps
5960 s: C2= 192 ps
2980 s: C2= 189 ps
1490 s: C2= 188 ps
745 s: C2= 229 ps
372 s: C2= 338 ps
186 s: C2= 611 ps
93 s: C2= 926 ps
47 s: C2= 1255 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISKBP2D23307_5
Median = -934.26 ns
Median = -937.69 ns
P1 /ns
P2 /ns
MJD
72386 s: P1= 128 ps
36193 s: P1= 350 ps
18096 s: P1= 192 ps
9048 s: P1= 131 ps
4524 s: P1= 136 ps
2262 s: P1= 148 ps
1131 s: P1= 181 ps
566 s: P1= 236 ps
283 s: P1= 315 ps
141 s: P1= 636 ps
71 s: P1= 921 ps
35 s: P1= 1194 ps
72392 s: P2= 61 ps
36196 s: P2= 211 ps
18098 s: P2= 190 ps
9049 s: P2= 144 ps
4524 s: P2= 213 ps
2262 s: P2= 241 ps
1131 s: P2= 305 ps
566 s: P2= 431 ps
283 s: P2= 603 ps
141 s: P2= 980 ps
71 s: P2= 1333 ps
35 s: P2= 1949 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISKBP2D23307_5
Median = -932.28 ns
Median = -937.55 ns
E1 /ns
E5 /ns
MJD
93667 s: E1= 139 ps
46833 s: E1= 251 ps
23417 s: E1= 262 ps
11708 s: E1= 187 ps
5854 s: E1= 168 ps
2927 s: E1= 160 ps
1464 s: E1= 189 ps
732 s: E1= 232 ps
366 s: E1= 286 ps
183 s: E1= 564 ps
91 s: E1= 757 ps
46 s: E1= 1012 ps
93647 s: E5= 58 ps
46824 s: E5= 283 ps
23412 s: E5= 285 ps
11706 s: E5= 215 ps
5853 s: E5= 171 ps
2926 s: E5= 166 ps
1463 s: E5= 198 ps
732 s: E5= 251 ps
366 s: E5= 330 ps
183 s: E5= 578 ps
91 s: E5= 834 ps
46 s: E5= 1107 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISKBP2D23307_5
Median = -932.08 ns
Median = -937.44 ns
BC /ns
B5 /ns
MJD
91184 s: BC= 123 ps
45592 s: BC= 314 ps
22796 s: BC= 342 ps
11398 s: BC= 241 ps
5699 s: BC= 197 ps
2850 s: BC= 171 ps
1425 s: BC= 175 ps
712 s: BC= 210 ps
356 s: BC= 281 ps
178 s: BC= 785 ps
89 s: BC= 1048 ps
45 s: BC= 1411 ps
91090 s: B5= 56 ps
45545 s: B5= 226 ps
22773 s: B5= 210 ps
11386 s: B5= 205 ps
5693 s: B5= 182 ps
2847 s: B5= 196 ps
1423 s: B5= 209 ps
712 s: B5= 249 ps
356 s: B5= 345 ps
178 s: B5= 692 ps
89 s: B5= 1022 ps
44 s: B5= 1443 ps
TdevBC /s
TdevB5 /s
Tau /s

NISK-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 63317
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 12506 high elev obs :-253.398-252.827
Iteration 0: Obs used = 33844; Huge residuals = 1532; Large residuals = 68648
Iteration 1: Obs used = 47588; Huge residuals = 0; Large residuals = 53372
Computed code bias (P1/P2)/m = -257.550 -256.818
Computed baseline (X,Y,Z)/m = 186.389 52.767 77.420
RMS of residuals /m = 1.095

Number of phase differences to fit baseline
L1/L2 = 134325
L5 = 74375
A priori baseline (X,Y,Z)/m = 186.389 52.767 77.420
14335 clock jitters computed out of 14349 intervals
AVE jitter /ps = -14.3 RMS jitter /ps = 41.9

Iter 1 Large residuals L1= 3835
Iter 1 Large residuals L2= 4313
Iter 1 Large residuals L5= 3640
Computed baseline L1 (X,Y,Z)/m = 16.699 -14.228 8.534
RMS of residuals L1 /m = 0.008
Computed baseline L2 (X,Y,Z)/m = 16.550 -14.113 8.459
RMS of residuals L2 /m = 0.008
Computed baseline L5 (X,Y,Z)/m = 16.698 -14.427 8.453
RMS of residuals L5 /m = 0.011

Iter 2 Large residuals L1= 118
Iter 2 Large residuals L2= 213
Iter 2 Large residuals L5= 1462
Computed baseline L1 (X,Y,Z)/m = 22.545 -19.439 11.357
RMS of residuals L1 /m = 0.013
Computed baseline L2 (X,Y,Z)/m = 22.486 -19.401 11.328
RMS of residuals L2 /m = 0.013
Computed baseline L5 (X,Y,Z)/m = 23.116 -19.672 11.207
RMS of residuals L5 /m = 0.013

Iter 3 Large residuals L1= 123
Iter 3 Large residuals L2= 221
Iter 3 Large residuals L5= 1453
Computed baseline L1 (X,Y,Z)/m = 23.253 -19.855 11.506
RMS of residuals L1 /m = 0.014
Computed baseline L2 (X,Y,Z)/m = 23.249 -19.864 11.510
RMS of residuals L2 /m = 0.014
Computed baseline L5 (X,Y,Z)/m = 23.733 -20.127 11.342
RMS of residuals L5 /m = 0.014

Iter 4 Large residuals L1= 123
Iter 4 Large residuals L2= 222
Iter 4 Large residuals L5= 1453
Computed baseline L1 (X,Y,Z)/m = 23.254 -19.860 11.508
RMS of residuals L1 /m = 0.014
Computed baseline L2 (X,Y,Z)/m = 23.252 -19.872 11.513
RMS of residuals L2 /m = 0.014

Computed baseline L5 (X,Y,Z)/m = 23.733 -20.132 11.344
RMS of residuals L5 /m = 0.014

Iter 5 Large residuals L1= 123
Iter 5 Large residuals L2= 222
Iter 5 Large residuals L5= 1453
Computed baseline L1 (X,Y,Z)/m = 23.254 -19.860 11.508
RMS of residuals L1 /m = 0.014
Computed baseline L2 (X,Y,Z)/m = 23.252 -19.872 11.513
RMS of residuals L2 /m = 0.014
Computed baseline L5 (X,Y,Z)/m = 23.733 -20.132 11.344
RMS of residuals L5 /m = 0.014

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 209.642 32.901 88.930
14336 clock jitters computed out of 14349 intervals
AVE jitter /ps = 11.7 RMS jitter /ps = 42.5

Iter 6 Large residuals L1= 65
Iter 6 Large residuals L2= 66
Iter 6 Large residuals L5= 1424
Computed baseline L1 (X,Y,Z)/m = -0.766 0.096 0.120
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.770 0.083 0.126
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.758 0.088 0.119
RMS of residuals L5 /m = 0.004

Iter 7 Large residuals L1= 65
Iter 7 Large residuals L2= 66
Iter 7 Large residuals L5= 1424
Computed baseline L1 (X,Y,Z)/m = -0.766 0.096 0.120
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.770 0.083 0.127
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.758 0.088 0.119
RMS of residuals L5 /m = 0.004
WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 208.876 32.997 89.051
Final baseline L2 (X,Y,Z)/m = 208.872 32.984 89.057
Final baseline L5 (X,Y,Z)/m = 208.884 32.989 89.049

COMPUTATION OF CODE DIFFERENCES

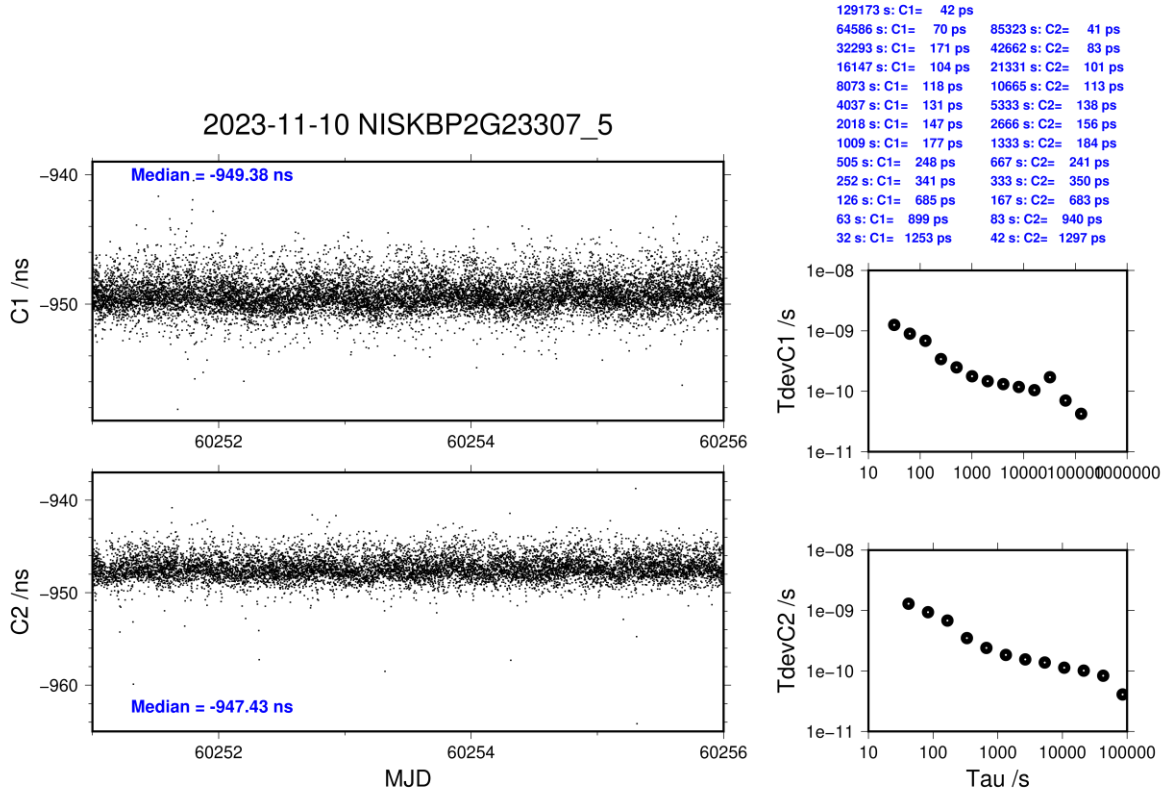
Total number of code differences = 477841

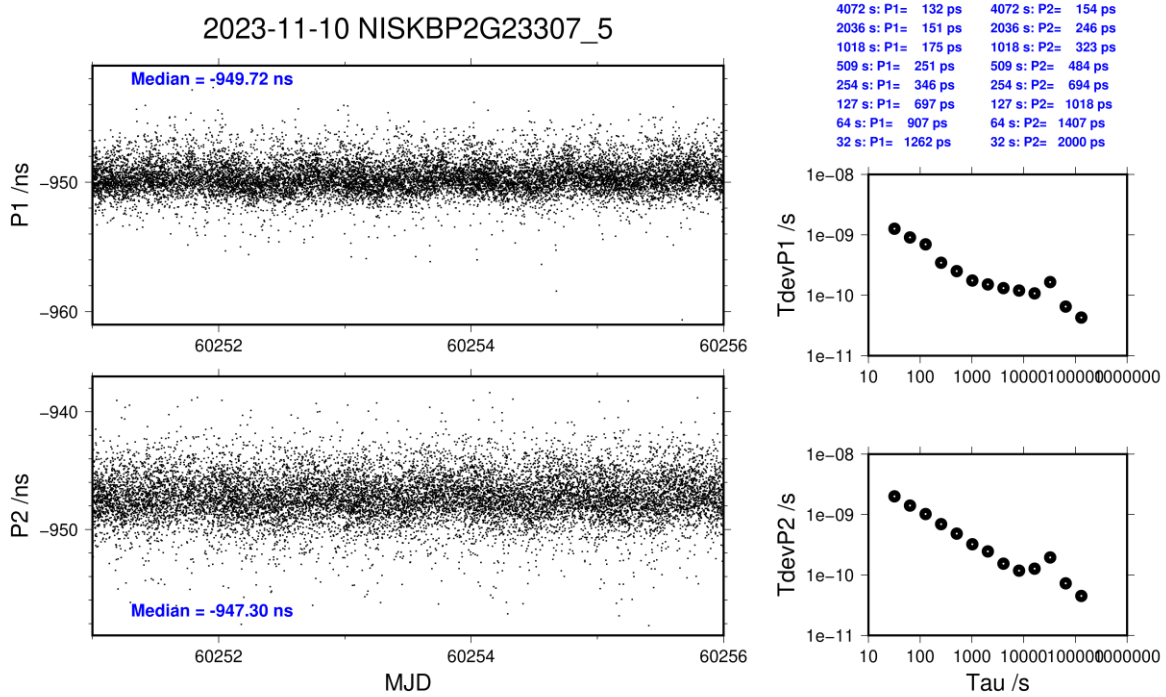
Global average of individual differences

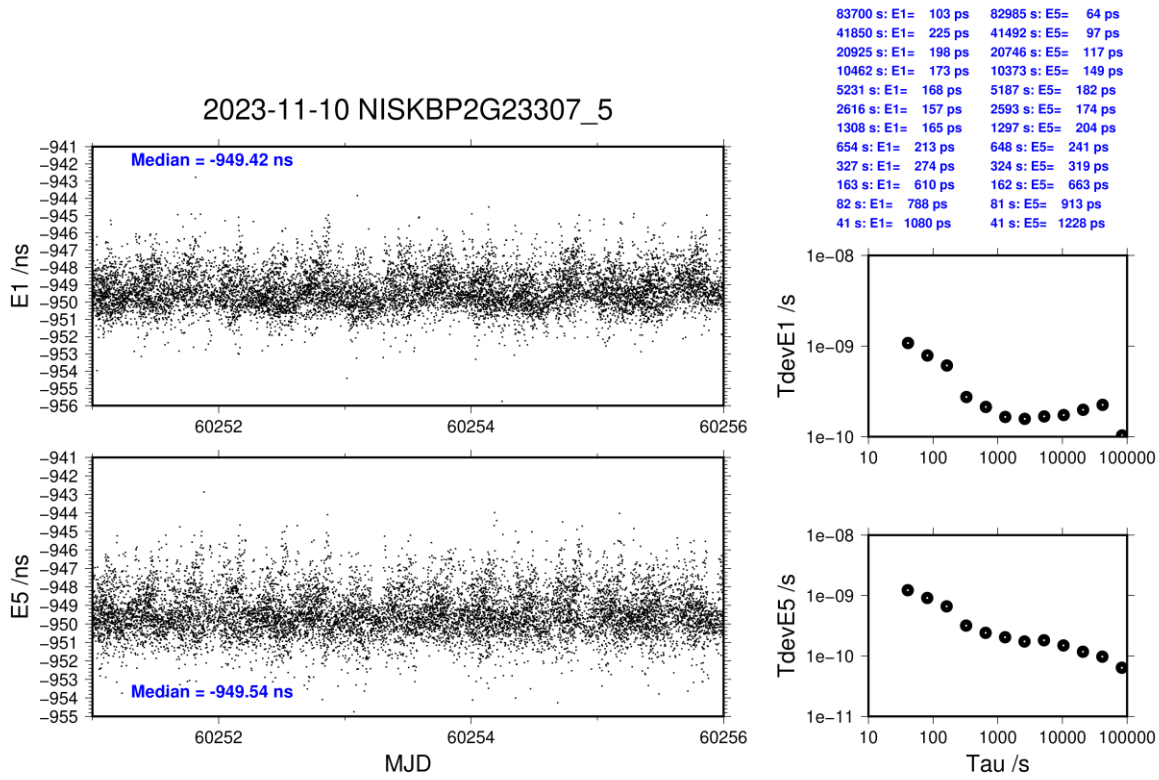
Code	#pts	ave/ns	rms/ns
C1	136955	-949.237	2.036
C2	103695	-947.315	2.057
P1	135797	-949.598	2.007
P2	135771	-947.254	3.031
E1	105648	-949.294	1.601
E5	106572	-949.411	1.626
BC	109758	-949.515	1.807
B5	110567	-949.588	1.864

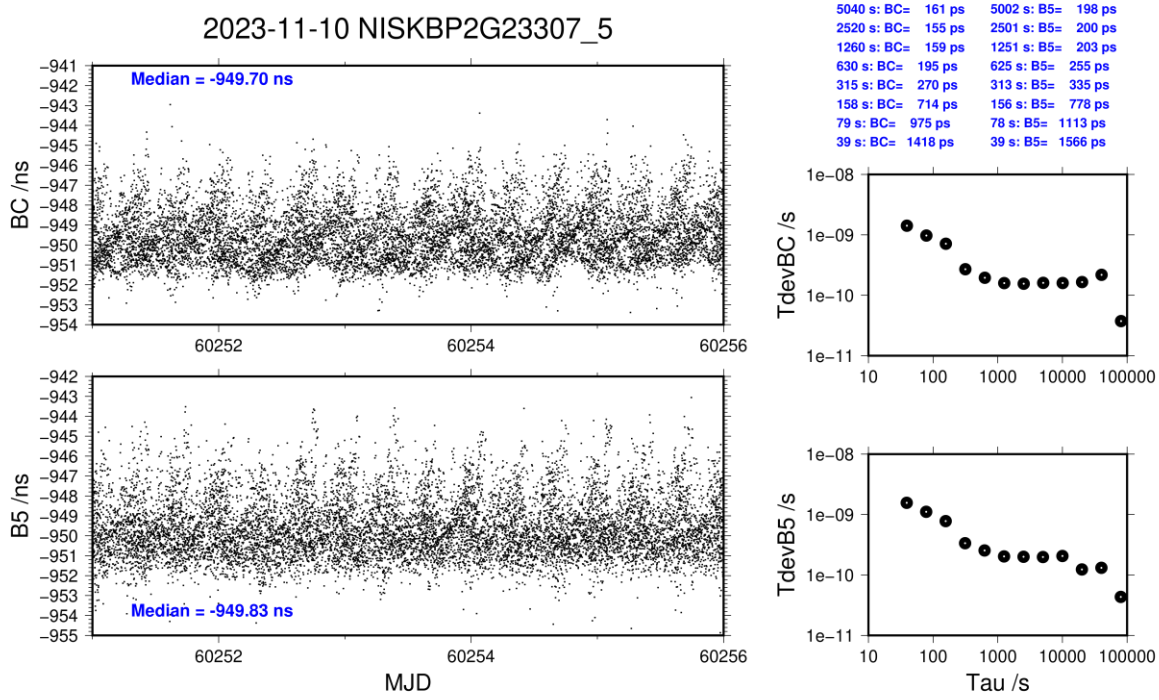
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	13690	-949.376	-949.250	1.255
C2	10363	-947.433	-947.309	1.287
P1	13571	-949.722	-949.611	1.268
P2	13571	-947.300	-947.226	2.000
E1	10564	-949.425	-949.295	1.123
E5	10655	-949.536	-949.405	1.246
BC	10965	-949.703	-949.512	1.362
B5	11047	-949.832	-949.590	1.519


2023-11-10 NISKBP2G23307_5
Median = -949.38 ns
Median = -947.43 ns
C1 /ns
C2 /ns
MJD
129173 s: C1= 42 ps
64586 s: C1= 70 ps
32293 s: C1= 171 ps
16147 s: C1= 104 ps
8073 s: C1= 118 ps
4037 s: C1= 131 ps
2018 s: C1= 147 ps
1009 s: C1= 177 ps
505 s: C1= 248 ps
252 s: C1= 341 ps
126 s: C1= 685 ps
63 s: C1= 899 ps
32 s: C1= 1253 ps
85323 s: C2= 41 ps
42662 s: C2= 83 ps
21331 s: C2= 101 ps
10665 s: C2= 113 ps
5333 s: C2= 138 ps
2666 s: C2= 156 ps
1333 s: C2= 184 ps
667 s: C2= 241 ps
333 s: C2= 350 ps
167 s: C2= 683 ps
83 s: C2= 940 ps
42 s: C2= 1297 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISKBP2G23307_5
Median = -949.72 ns
Median = -947.30 ns
P1 /ns
P2 /ns
MJD
130305 s: P1= 43 ps
65153 s: P1= 65 ps
32576 s: P1= 165 ps
16288 s: P1= 107 ps
8144 s: P1= 120 ps
4072 s: P1= 132 ps
2036 s: P1= 151 ps
1018 s: P1= 175 ps
509 s: P1= 251 ps
254 s: P1= 346 ps
127 s: P1= 697 ps
64 s: P1= 907 ps
32 s: P1= 1262 ps
130305 s: P2= 45 ps
65153 s: P2= 73 ps
32576 s: P2= 195 ps
16288 s: P2= 127 ps
8144 s: P2= 118 ps
4072 s: P2= 154 ps
2036 s: P2= 246 ps
1018 s: P2= 323 ps
509 s: P2= 484 ps
254 s: P2= 694 ps
127 s: P2= 1018 ps
64 s: P2= 1407 ps
32 s: P2= 2000 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISKBP2G23307_5
Median = -949.42 ns
Median = -949.54 ns
E1 /ns
E5 /ns
MJD
83700 s: E1= 103 ps
41850 s: E1= 225 ps
20925 s: E1= 198 ps
10462 s: E1= 173 ps
5231 s: E1= 168 ps
2616 s: E1= 157 ps
1308 s: E1= 165 ps
654 s: E1= 213 ps
327 s: E1= 274 ps
163 s: E1= 610 ps
82 s: E1= 788 ps
41 s: E1= 1080 ps
82985 s: E5= 64 ps
41492 s: E5= 97 ps
20746 s: E5= 117 ps
10373 s: E5= 149 ps
5187 s: E5= 182 ps
2593 s: E5= 174 ps
1297 s: E5= 204 ps
648 s: E5= 241 ps
324 s: E5= 319 ps
162 s: E5= 663 ps
81 s: E5= 913 ps
41 s: E5= 1228 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISKBP2G23307_5
Median = -949.70 ns
Median = -949.83 ns
BC /ns
B5 /ns
MJD
80639 s: BC= 37 ps
40319 s: BC= 218 ps
20160 s: BC= 165 ps
10080 s: BC= 160 ps
5040 s: BC= 161 ps
2520 s: BC= 155 ps
1260 s: BC= 159 ps
630 s: BC= 195 ps
315 s: BC= 270 ps
158 s: BC= 714 ps
79 s: BC= 975 ps
39 s: BC= 1418 ps
80040 s: B5= 43 ps
40020 s: B5= 131 ps
20010 s: B5= 123 ps
10005 s: B5= 206 ps
5002 s: B5= 198 ps
2501 s: B5= 200 ps
1251 s: B5= 203 ps
625 s: B5= 255 ps
313 s: B5= 335 ps
156 s: B5= 778 ps
78 s: B5= 1113 ps
39 s: B5= 1566 ps
TdevBC /s
TdevB5 /s
Tau /s

NISP-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 118565
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 19694 high elev obs : 12.864 9.680
Iteration 0: Obs used = 198036; Huge residuals = 0; Large residuals = 1262
Iteration 1: Obs used = 198036; Huge residuals = 0; Large residuals = 1262
Computed code bias (P1/P2)/m = 13.045 9.856
Computed baseline (X,Y,Z)/m = 3.428 -3.212 -2.358
RMS of residuals /m = 0.529

Number of phase differences to fit baseline
L1/L2 = 117309
L5 = 64132
A priori baseline (X,Y,Z)/m = 3.428 -3.212 -2.358
14392 clock jitters computed out of 14392 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 4.8

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 1
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.089 0.209 -0.248
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.098 0.214 -0.256
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.101 0.217 -0.255
RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 1
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.089 0.209 -0.248
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.098 0.214 -0.256
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.101 0.217 -0.255
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 3.522 -3.000 -2.609
14392 clock jitters computed out of 14392 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 0.5

Iter 3 Large residuals L1= 1
Iter 3 Large residuals L2= 1
Iter 3 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.011 -0.000 -0.004
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.019 0.005 -0.012
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.021 0.008 -0.013
RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 3.533 -3.000 -2.613
Final baseline L2 (X,Y,Z)/m = 3.541 -2.995 -2.621
Final baseline L5 (X,Y,Z)/m = 3.543 -2.992 -2.622

COMPUTATION OF CODE DIFFERENCES

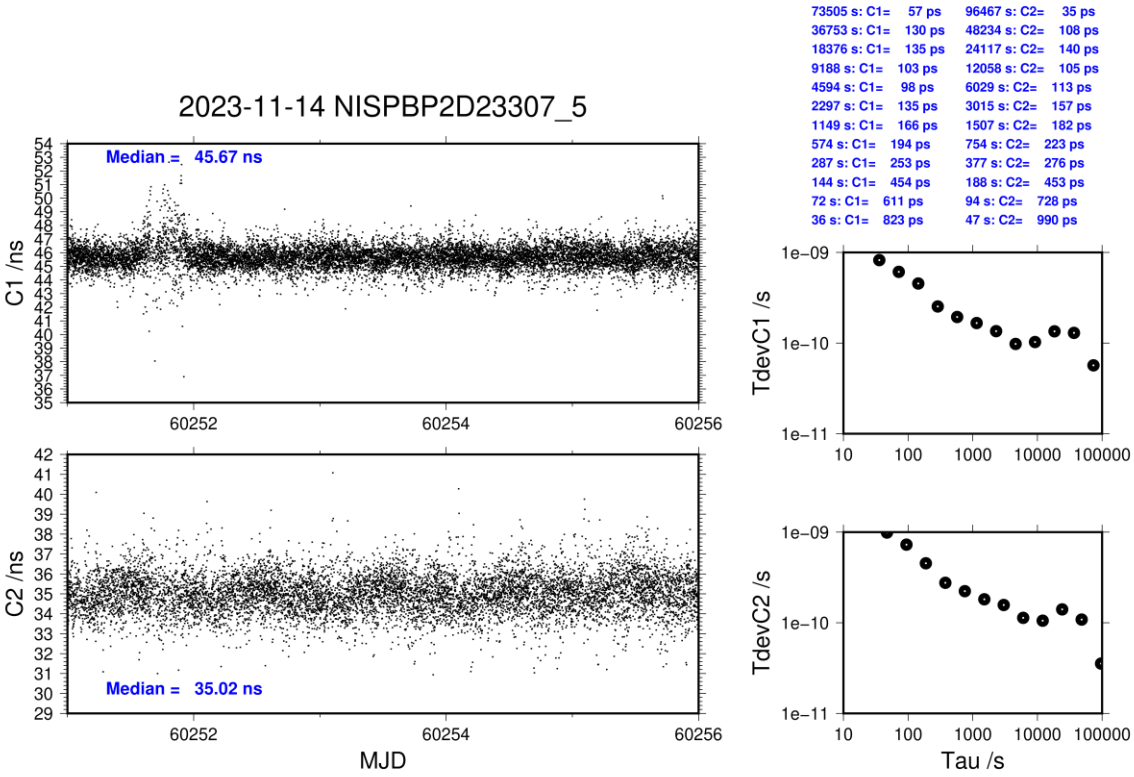
Total number of code differences = 419510

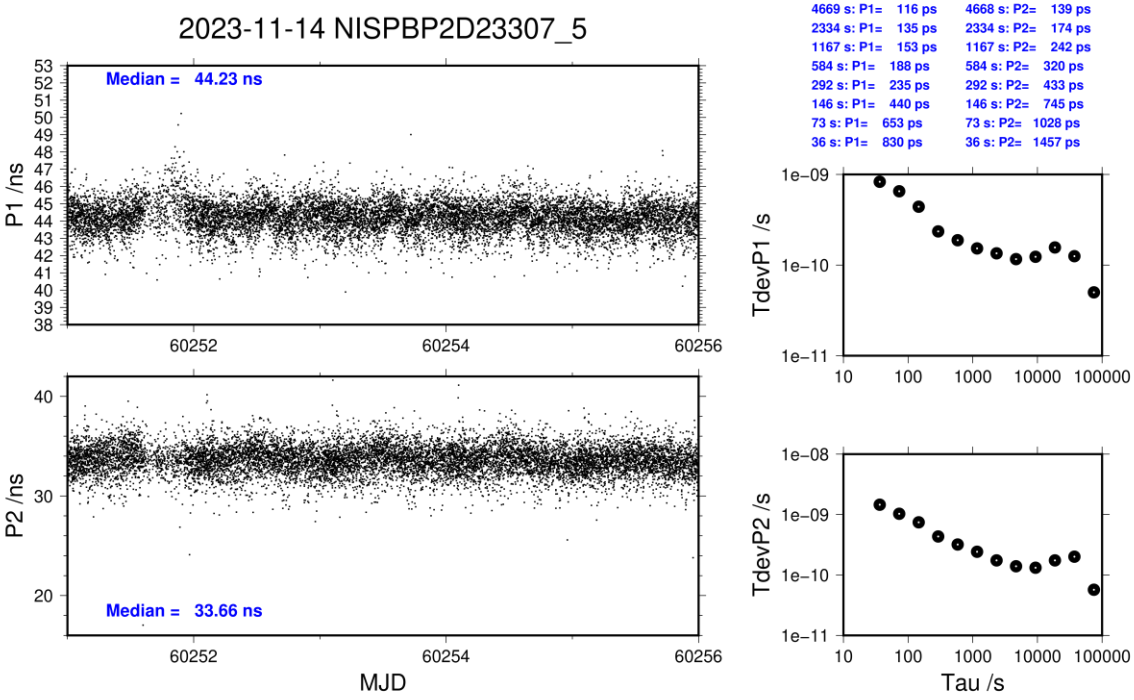
Global average of individual differences

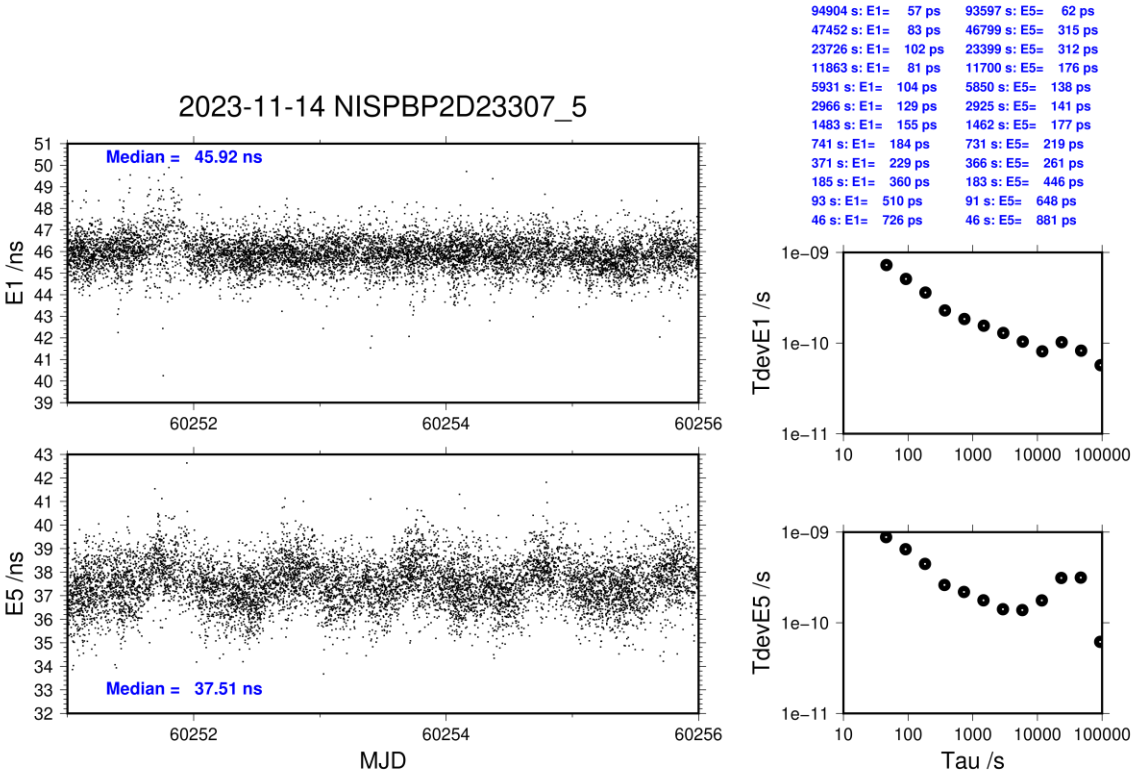
Code	#pts	ave/ns	rms/ns
C1	120299	45.681	1.537
C2	91677	35.015	1.534
P1	118436	44.215	1.442
P2	118440	33.594	2.046
E1	93110	45.912	1.213
E5	94335	37.510	1.293
BC	95417	46.852	1.410
B5	97137	37.936	1.321

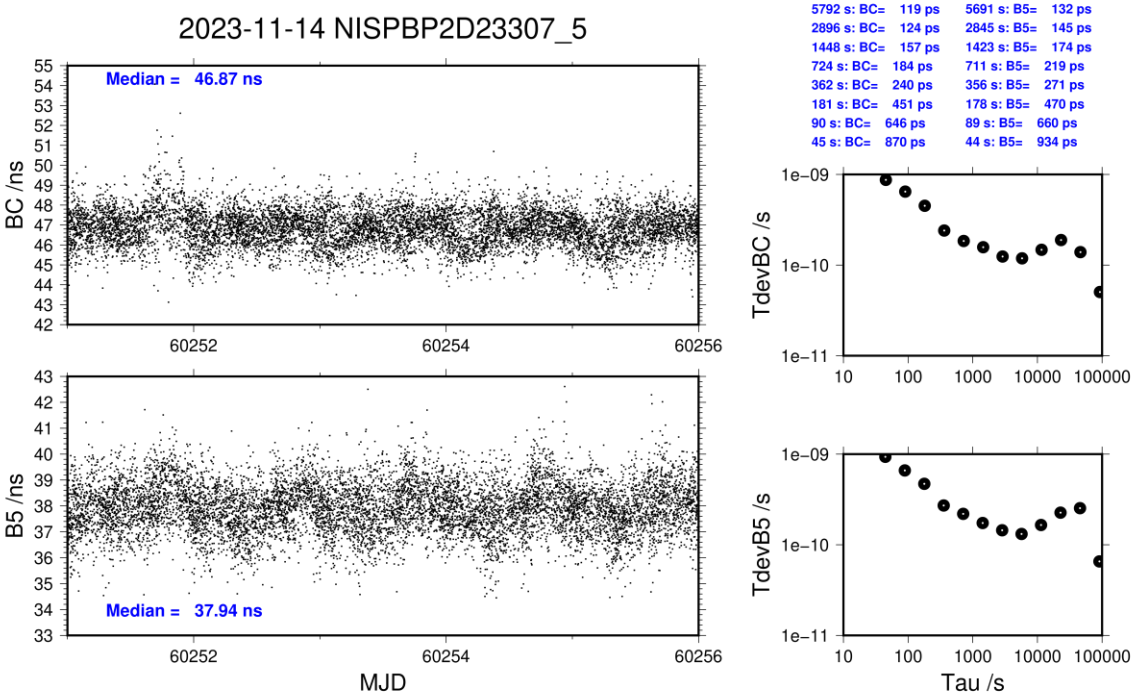
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	12029	45.670	45.687	0.863
C2	9166	35.019	35.022	0.991
P1	11837	44.233	44.216	0.880
P2	11838	33.657	33.624	1.452
E1	9317	45.917	45.917	0.743
E5	9447	37.508	37.512	0.969
BC	9542	46.871	46.860	0.903
B5	9711	37.938	37.935	0.973


2023-11-14 NISPBP2D23307_5
Median = 45.67 ns
Median = 35.02 ns
C1 /ns
C2 /ns
MJD
60252
60254
60256
73505 s: C1= 57 ps
36753 s: C1= 130 ps
18376 s: C1= 135 ps
9188 s: C1= 103 ps
4594 s: C1= 98 ps
2297 s: C1= 135 ps
1149 s: C1= 166 ps
574 s: C1= 194 ps
287 s: C1= 253 ps
144 s: C1= 454 ps
72 s: C1= 611 ps
36 s: C1= 823 ps
96467 s: C2= 35 ps
48234 s: C2= 108 ps
24117 s: C2= 140 ps
12058 s: C2= 105 ps
6029 s: C2= 113 ps
3015 s: C2= 157 ps
1507 s: C2= 182 ps
754 s: C2= 223 ps
377 s: C2= 276 ps
188 s: C2= 453 ps
94 s: C2= 728 ps
47 s: C2= 990 ps
TdevC1 /s
TdevC2 /s
Tau /s
1e−09
1e−10
1e−11
10
100
1000
10000
100000


2023-11-14 NISPBP2D23307_5
Median = 44.23 ns
Median = 33.66 ns
P1 /ns
P2 /ns
MJD
60252
60254
60256
74698 s: P1= 50 ps
37349 s: P1= 125 ps
18674 s: P1= 156 ps
9337 s: P1= 123 ps
4669 s: P1= 116 ps
2334 s: P1= 135 ps
1167 s: P1= 153 ps
584 s: P1= 188 ps
292 s: P1= 235 ps
146 s: P1= 440 ps
73 s: P1= 653 ps
36 s: P1= 830 ps
74691 s: P2= 57 ps
37346 s: P2= 201 ps
18673 s: P2= 174 ps
9336 s: P2= 132 ps
4668 s: P2= 139 ps
2334 s: P2= 174 ps
1167 s: P2= 242 ps
584 s: P2= 320 ps
292 s: P2= 433 ps
146 s: P2= 745 ps
73 s: P2= 1028 ps
36 s: P2= 1457 ps
TdevP1 /s
TdevP2 /s
Tau /s
1e−08
1e−09
1e−10
1e−11
10
100
1000
10000
100000


2023-11-14 NISPBP2D23307_5
Median = 45.92 ns
Median = 37.51 ns
E1 /ns
E5 /ns
MJD
94904 s: E1= 57 ps
47452 s: E1= 83 ps
23726 s: E1= 102 ps
11863 s: E1= 81 ps
5931 s: E1= 104 ps
2966 s: E1= 129 ps
1483 s: E1= 155 ps
741 s: E1= 184 ps
371 s: E1= 229 ps
185 s: E1= 360 ps
93 s: E1= 510 ps
46 s: E1= 726 ps
93597 s: E5= 62 ps
46799 s: E5= 315 ps
23399 s: E5= 312 ps
11700 s: E5= 176 ps
5850 s: E5= 138 ps
2925 s: E5= 141 ps
1462 s: E5= 177 ps
731 s: E5= 219 ps
366 s: E5= 261 ps
183 s: E5= 446 ps
91 s: E5= 648 ps
46 s: E5= 881 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-14 NISPBP2D23307_5
Median = 46.87 ns
Median = 37.94 ns
BC /ns
B5 /ns
MJD
92666 s: BC= 50 ps
46333 s: BC= 139 ps
23166 s: BC= 189 ps
11583 s: BC= 148 ps
5792 s: BC= 119 ps
2896 s: BC= 124 ps
1448 s: BC= 157 ps
724 s: BC= 184 ps
362 s: BC= 240 ps
181 s: BC= 451 ps
90 s: BC= 646 ps
45 s: BC= 870 ps
91053 s: B5= 66 ps
45526 s: B5= 253 ps
22763 s: B5= 226 ps
11382 s: B5= 165 ps
5691 s: B5= 132 ps
2845 s: B5= 145 ps
1423 s: B5= 174 ps
711 s: B5= 219 ps
356 s: B5= 271 ps
178 s: B5= 470 ps
89 s: B5= 660 ps
44 s: B5= 934 ps
TdevBC /s
TdevB5 /s
Tau /s

NISP-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 133294
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 19695 high elev obs : 8.434 6.987
Iteration 0: Obs used = 224774; Huge residuals = 0; Large residuals = 3980
Iteration 1: Obs used = 224774; Huge residuals = 0; Large residuals = 3980
Computed code bias (P1/P2)/m = 8.434 6.996
Computed baseline (X,Y,Z)/m = 3.684 -3.127 -2.039
RMS of residuals /m = 0.569

Number of phase differences to fit baseline
L1/L2 = 131489
L5 = 72533
A priori baseline (X,Y,Z)/m = 3.684 -3.127 -2.039
14388 clock jitters computed out of 14392 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 3.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.112 0.220 -0.155
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.109 0.211 -0.149
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.047 0.291 -0.119
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 3.795 -2.912 -2.191
14388 clock jitters computed out of 14392 intervals
AVE jitter /ps = -0.2 RMS jitter /ps = 0.3

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 0
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = 0.021 0.004 -0.007
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.018 -0.006 -0.001
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.045 0.075 0.028
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 3.816 -2.909 -2.198
Final baseline L2 (X,Y,Z)/m = 3.813 -2.918 -2.192
Final baseline L5 (X,Y,Z)/m = 3.750 -2.837 -2.162

COMPUTATION OF CODE DIFFERENCES

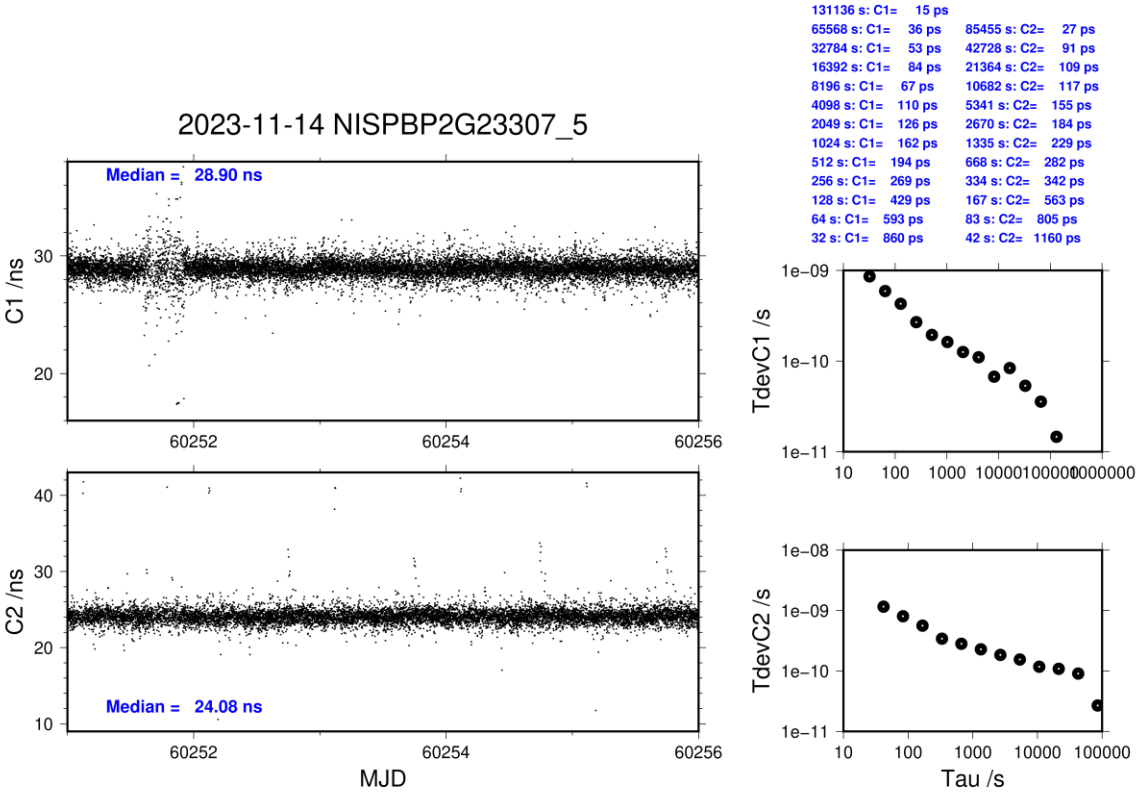
Total number of code differences = 477099

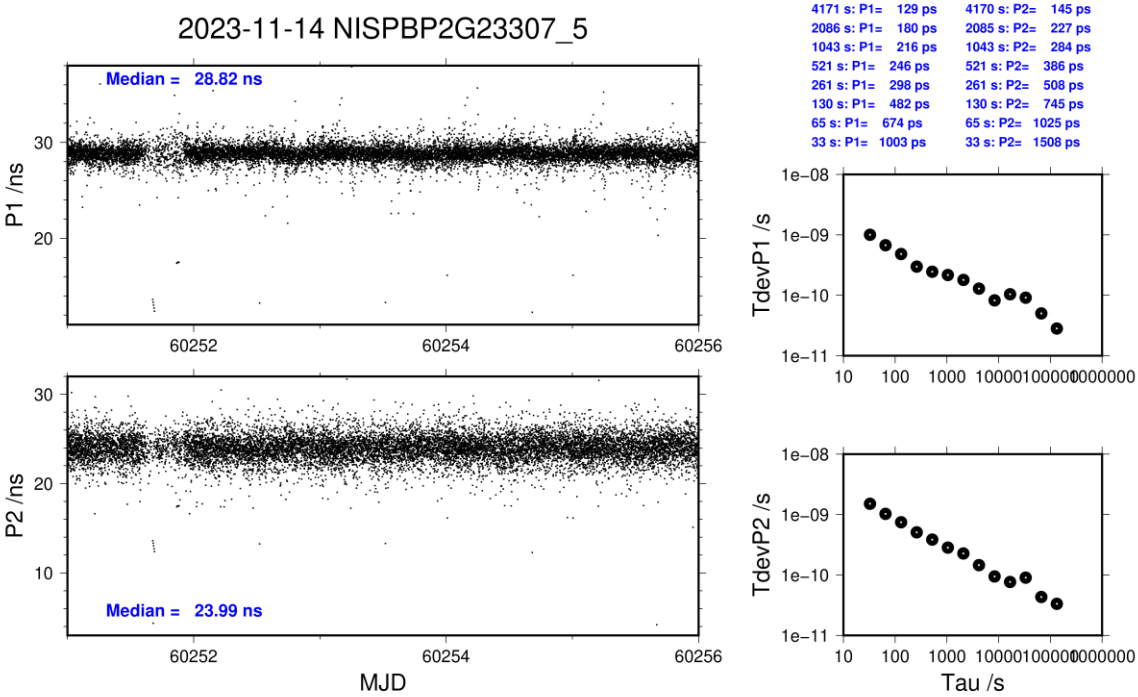
Global average of individual differences

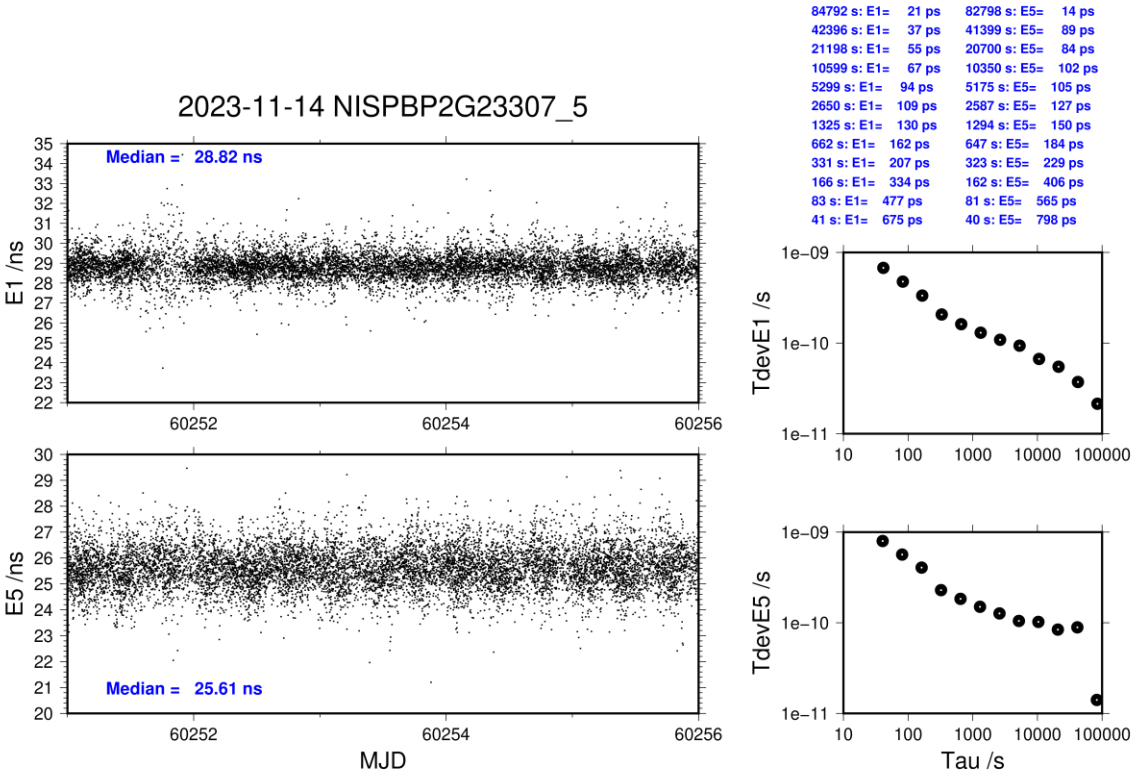
Code	#pts	ave/ns	rms/ns
C1	134903	28.893	1.742
C2	103567	24.123	1.889
P1	132582	28.791	1.690
P2	132618	23.944	2.277
E1	104292	28.827	1.266
E5	106838	25.620	1.201
BC	108422	29.246	1.465
B5	110786	25.628	1.237

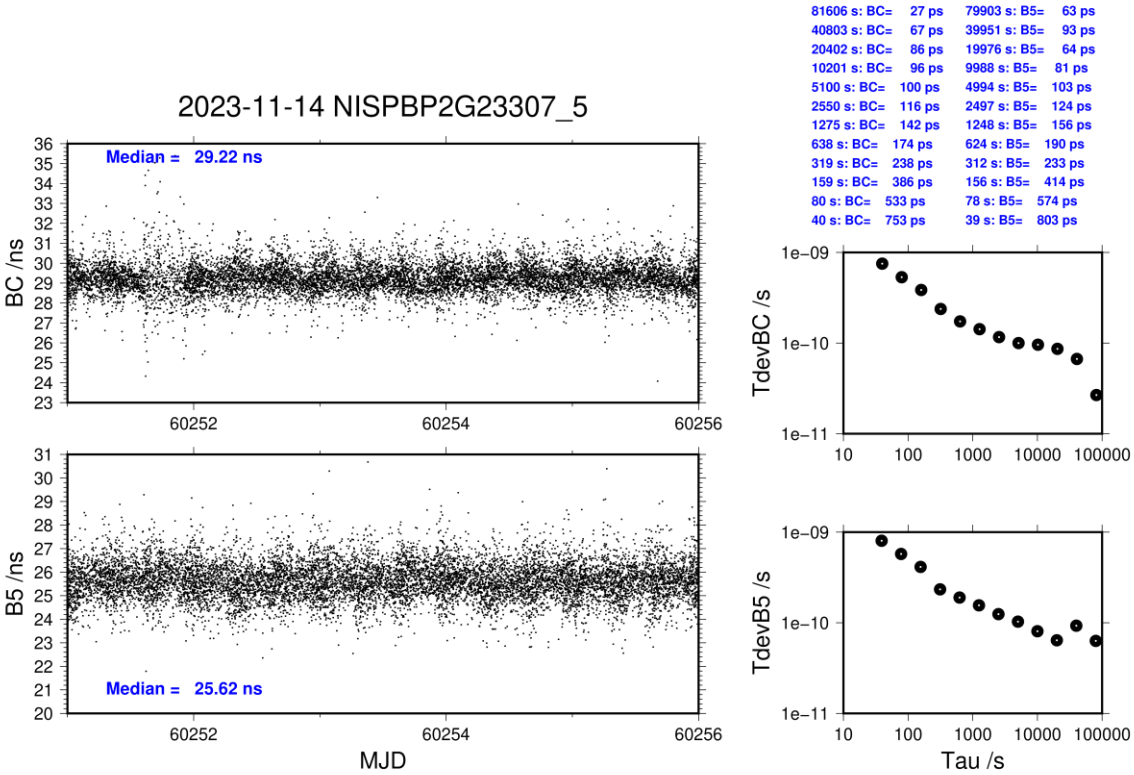
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	13485	28.901	28.898	0.851
C2	10347	24.079	24.124	1.151
P1	13249	28.817	28.798	0.992
P2	13252	23.992	23.962	1.492
E1	10428	28.820	28.835	0.674
E5	10679	25.605	25.622	0.800
BC	10835	29.222	29.251	0.759
B5	11066	25.620	25.632	0.809


2023-11-14 NISPBP2G23307_5
Median = 28.90 ns
Median = 24.08 ns
C1 /ns
C2 /ns
MJD
131136 s: C1= 15 ps
65568 s: C1= 36 ps
32784 s: C1= 53 ps
16392 s: C1= 84 ps
8196 s: C1= 67 ps
4098 s: C1= 110 ps
2049 s: C1= 126 ps
1024 s: C1= 162 ps
512 s: C1= 194 ps
256 s: C1= 269 ps
128 s: C1= 429 ps
64 s: C1= 593 ps
32 s: C1= 860 ps
85455 s: C2= 27 ps
42728 s: C2= 91 ps
21364 s: C2= 109 ps
10682 s: C2= 117 ps
5341 s: C2= 155 ps
2670 s: C2= 184 ps
1335 s: C2= 229 ps
668 s: C2= 282 ps
334 s: C2= 342 ps
167 s: C2= 563 ps
83 s: C2= 805 ps
42 s: C2= 1160 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-14 NISPBP2G23307_5
Median = 28.82 ns
Median = 23.99 ns
P1 /ns
P2 /ns
MJD
133472 s: P1= 28 ps
66736 s: P1= 50 ps
33368 s: P1= 91 ps
16684 s: P1= 104 ps
8342 s: P1= 82 ps
4171 s: P1= 129 ps
2086 s: P1= 180 ps
1043 s: P1= 216 ps
521 s: P1= 246 ps
261 s: P1= 298 ps
130 s: P1= 482 ps
65 s: P1= 674 ps
33 s: P1= 1003 ps
133442 s: P2= 33 ps
66721 s: P2= 43 ps
33361 s: P2= 90 ps
16680 s: P2= 77 ps
8340 s: P2= 95 ps
4170 s: P2= 145 ps
2085 s: P2= 227 ps
1043 s: P2= 284 ps
521 s: P2= 386 ps
261 s: P2= 508 ps
130 s: P2= 745 ps
65 s: P2= 1025 ps
33 s: P2= 1508 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-14 NISPBP2G23307_5
Median = 28.82 ns
Median = 25.61 ns
E1 /ns
E5 /ns
MJD
84792 s: E1= 21 ps
42396 s: E1= 37 ps
21198 s: E1= 55 ps
10599 s: E1= 67 ps
5299 s: E1= 94 ps
2650 s: E1= 109 ps
1325 s: E1= 130 ps
662 s: E1= 162 ps
331 s: E1= 207 ps
166 s: E1= 334 ps
83 s: E1= 477 ps
41 s: E1= 675 ps
82798 s: E5= 14 ps
41399 s: E5= 89 ps
20700 s: E5= 84 ps
10350 s: E5= 102 ps
5175 s: E5= 105 ps
2587 s: E5= 127 ps
1294 s: E5= 150 ps
647 s: E5= 184 ps
323 s: E5= 229 ps
162 s: E5= 406 ps
81 s: E5= 565 ps
40 s: E5= 798 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-14 NISPBP2G23307_5
Median = 29.22 ns
Median = 25.62 ns
BC /ns
B5 /ns
MJD
81606 s: BC= 27 ps
40803 s: BC= 67 ps
20402 s: BC= 86 ps
10201 s: BC= 96 ps
5100 s: BC= 100 ps
2550 s: BC= 116 ps
1275 s: BC= 142 ps
638 s: BC= 174 ps
319 s: BC= 238 ps
159 s: BC= 386 ps
80 s: BC= 533 ps
40 s: BC= 753 ps
79903 s: B5= 63 ps
39951 s: B5= 93 ps
19976 s: B5= 64 ps
9988 s: B5= 81 ps
4994 s: B5= 103 ps
2497 s: B5= 124 ps
1248 s: B5= 156 ps
624 s: B5= 190 ps
312 s: B5= 233 ps
156 s: B5= 414 ps
78 s: B5= 574 ps
39 s: B5= 803 ps
TdevBC /s
TdevB5 /s
Tau /s

NIST-BP2D

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 119339
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 19674 high elev obs : 144.385 142.746
Iteration 0: Obs used = 192084; Huge residuals = 96; Large residuals = 8800
Iteration 1: Obs used = 189198; Huge residuals = 0; Large residuals = 11590
Computed code bias (P1/P2)/m = 140.787 139.118
Computed baseline (X,Y,Z)/m = 65.749 34.842 51.354
RMS of residuals /m = 0.929

Number of phase differences to fit baseline
L1/L2 = 118427
L5 = 64594
A priori baseline (X,Y,Z)/m = 65.749 34.842 51.354
14396 clock jitters computed out of 14396 intervals
AVE jitter /ps = -0.3 RMS jitter /ps = 7.7

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 1
Iter 1 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.837 -3.179 2.527
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.830 -3.169 2.515
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.861 -3.152 2.495
RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 1
Iter 2 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.837 -3.179 2.527
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.831 -3.169 2.515
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.861 -3.152 2.495
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 64.915 31.668 53.875
14396 clock jitters computed out of 14396 intervals
AVE jitter /ps = 0.5 RMS jitter /ps = 5.7

Iter 3 Large residuals L1= 1
Iter 3 Large residuals L2= 1
Iter 3 Large residuals L5= 0
Computed baseline L1 (X,Y,Z)/m = -0.070 -0.079 0.089
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.063 -0.070 0.078
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.060 -0.060 0.072
RMS of residuals L5 /m = 0.004
WARNING Phase baseline L1 differs from a priori by > 10 cm

Final baseline L1 (X,Y,Z)/m = 64.846 31.589 53.965
Final baseline L2 (X,Y,Z)/m = 64.852 31.599 53.953
Final baseline L5 (X,Y,Z)/m = 64.855 31.608 53.947

COMPUTATION OF CODE DIFFERENCES

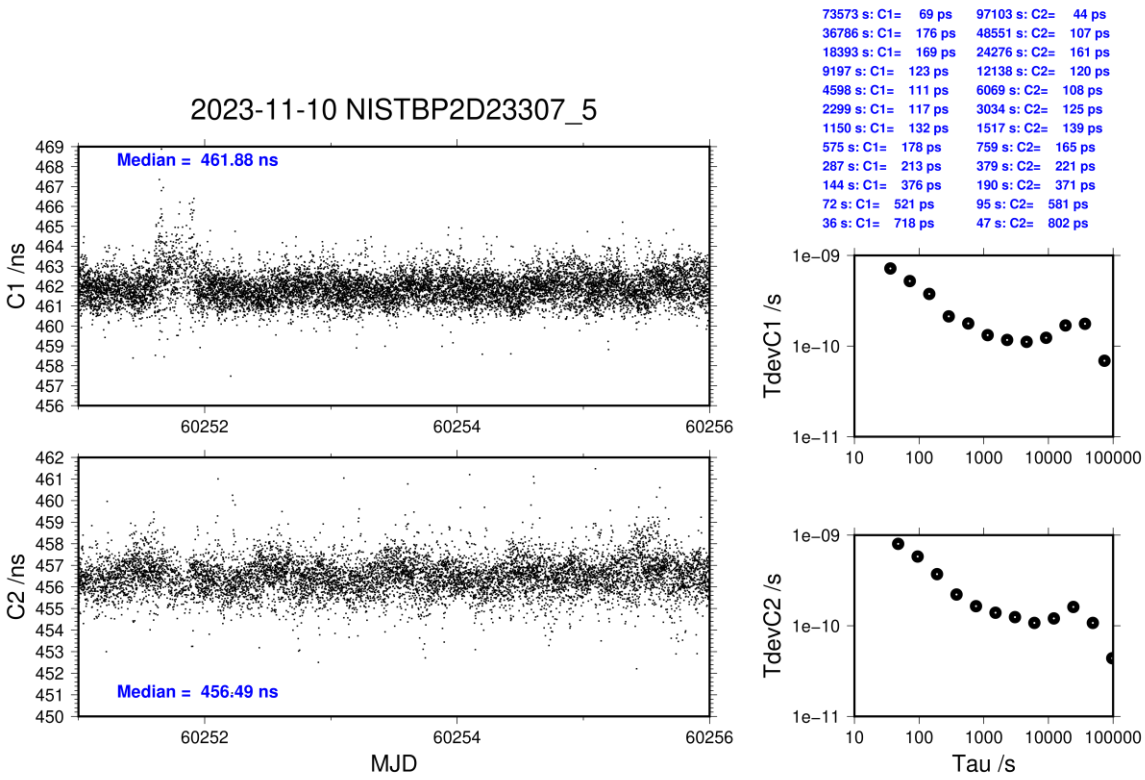
Total number of code differences = 419810

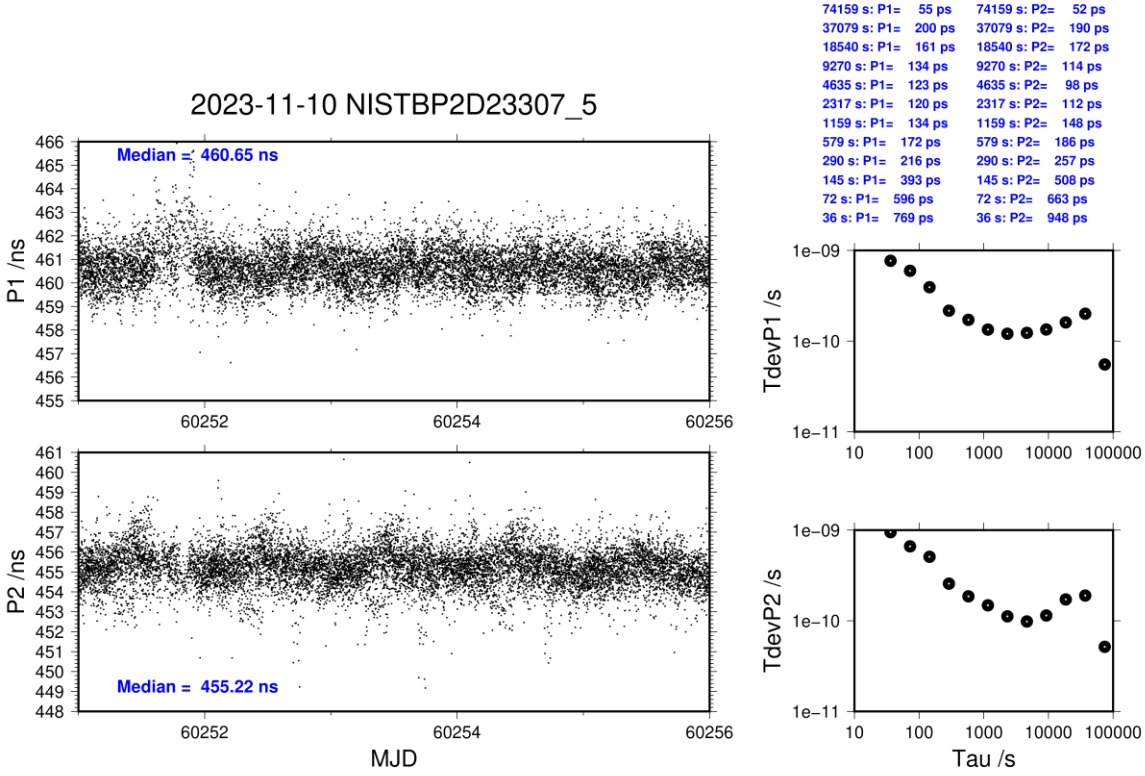
Global average of individual differences

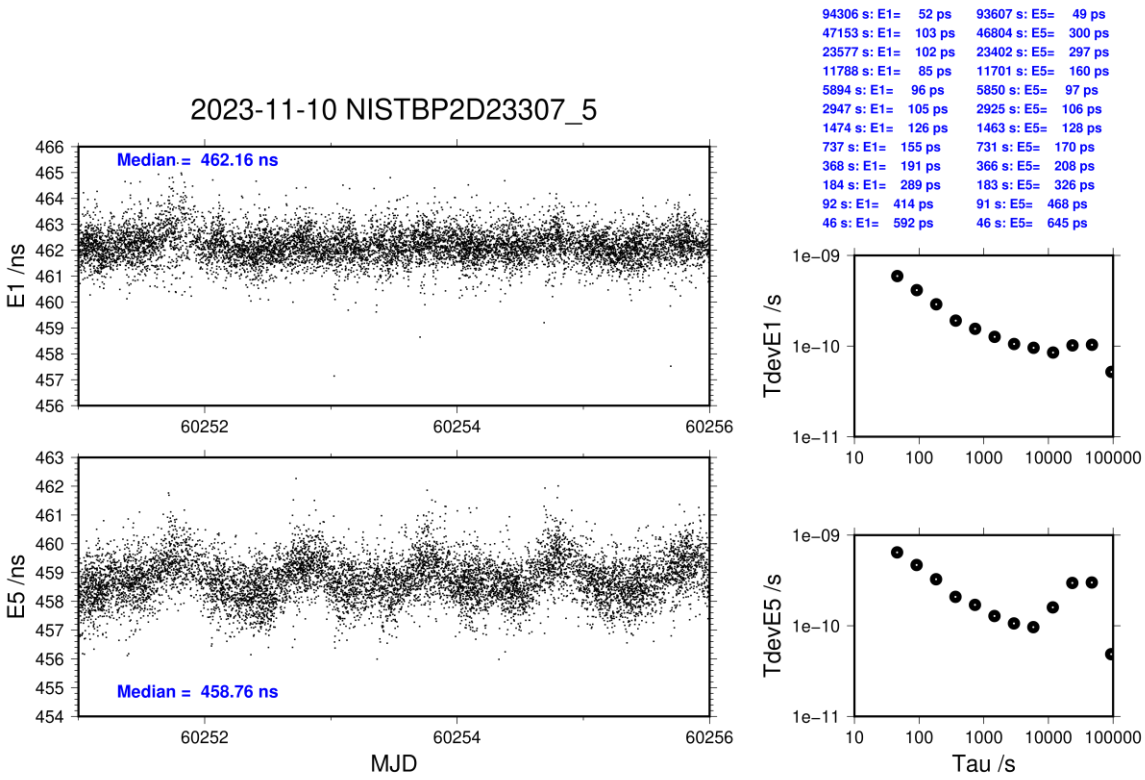
Code	#pts	ave/ns	rms/ns
C1	120194	461.925	1.347
C2	91082	456.496	1.307
P1	119236	460.680	1.350
P2	119236	455.205	1.487
E1	93690	462.185	1.074
E5	94320	458.775	1.021
BC	95133	462.760	1.338
B5	97131	459.127	1.104

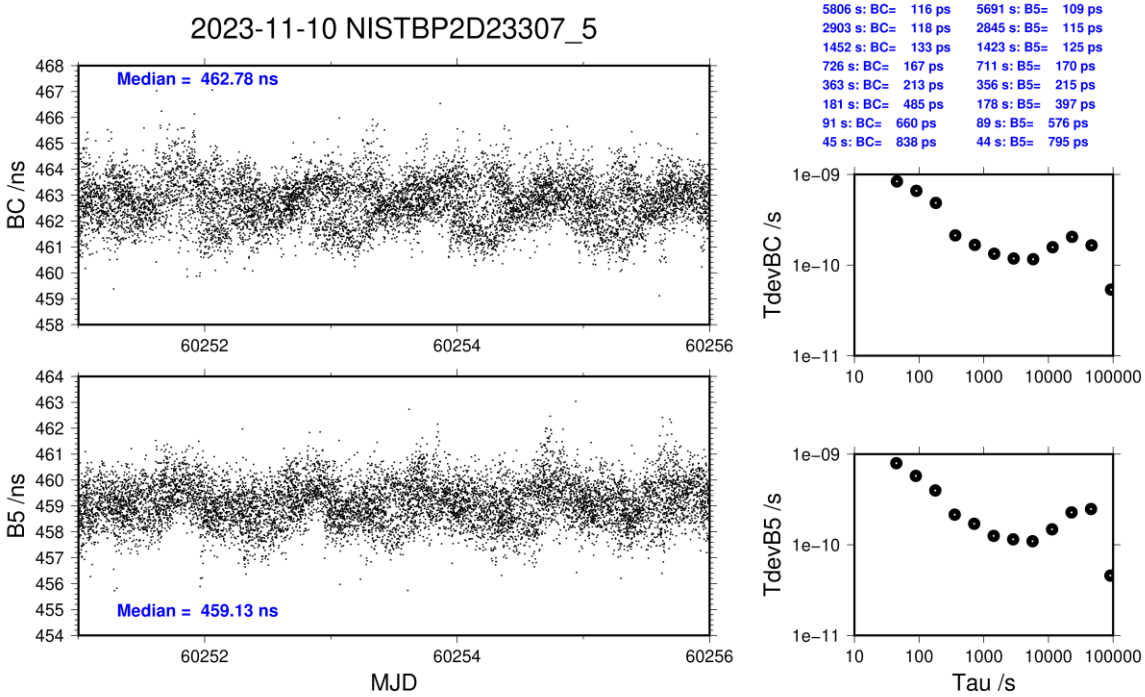
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	12018	461.883	461.922	0.759
C2	9106	456.493	456.492	0.811
P1	11923	460.655	460.674	0.815
P2	11923	455.224	455.214	0.957
E1	9376	462.163	462.185	0.611
E5	9446	458.763	458.768	0.749
BC	9518	462.781	462.762	0.902
B5	9711	459.127	459.121	0.836


2023-11-10 NISTBP2D23307_5
Median = 461.88 ns
Median = 456.49 ns
C1 /ns
C2 /ns
MJD
73573 s: C1= 69 ps
36786 s: C1= 176 ps
18393 s: C1= 169 ps
9197 s: C1= 123 ps
4598 s: C1= 111 ps
2299 s: C1= 117 ps
1150 s: C1= 132 ps
575 s: C1= 178 ps
287 s: C1= 213 ps
144 s: C1= 376 ps
72 s: C1= 521 ps
36 s: C1= 718 ps
97103 s: C2= 44 ps
48551 s: C2= 107 ps
24276 s: C2= 161 ps
12138 s: C2= 120 ps
6069 s: C2= 108 ps
3034 s: C2= 125 ps
1517 s: C2= 139 ps
759 s: C2= 165 ps
379 s: C2= 221 ps
190 s: C2= 371 ps
95 s: C2= 581 ps
47 s: C2= 802 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISTBP2D23307_5
Median = 460.65 ns
Median = 455.22 ns
P1 /ns
P2 /ns
MJD
74159 s: P1= 55 ps
37079 s: P1= 200 ps
18540 s: P1= 161 ps
9270 s: P1= 134 ps
4635 s: P1= 123 ps
2317 s: P1= 120 ps
1159 s: P1= 134 ps
579 s: P1= 172 ps
290 s: P1= 216 ps
145 s: P1= 393 ps
72 s: P1= 596 ps
36 s: P1= 769 ps
74159 s: P2= 52 ps
37079 s: P2= 190 ps
18540 s: P2= 172 ps
9270 s: P2= 114 ps
4635 s: P2= 98 ps
2317 s: P2= 112 ps
1159 s: P2= 148 ps
579 s: P2= 186 ps
290 s: P2= 257 ps
145 s: P2= 508 ps
72 s: P2= 663 ps
36 s: P2= 948 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISTBP2D23307_5
Median = 462.16 ns
Median = 458.76 ns
E1 /ns
E5 /ns
MJD
94306 s: E1= 52 ps
47153 s: E1= 103 ps
23577 s: E1= 102 ps
11788 s: E1= 85 ps
5894 s: E1= 96 ps
2947 s: E1= 105 ps
1474 s: E1= 126 ps
737 s: E1= 155 ps
368 s: E1= 191 ps
184 s: E1= 289 ps
92 s: E1= 414 ps
46 s: E1= 592 ps
93607 s: E5= 49 ps
46804 s: E5= 300 ps
23402 s: E5= 297 ps
11701 s: E5= 160 ps
5850 s: E5= 97 ps
2925 s: E5= 106 ps
1463 s: E5= 128 ps
731 s: E5= 170 ps
366 s: E5= 208 ps
183 s: E5= 326 ps
91 s: E5= 468 ps
46 s: E5= 645 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISTBP2D23307_5
Median = 462.78 ns
Median = 459.13 ns
BC /ns
B5 /ns
MJD
92899 s: BC= 54 ps
46450 s: BC= 165 ps
23225 s: BC= 205 ps
11612 s: BC= 157 ps
5806 s: BC= 116 ps
2903 s: BC= 118 ps
1452 s: BC= 133 ps
726 s: BC= 167 ps
363 s: BC= 213 ps
181 s: BC= 485 ps
91 s: BC= 660 ps
45 s: BC= 838 ps
91053 s: B5= 46 ps
45526 s: B5= 248 ps
22763 s: B5= 228 ps
11382 s: B5= 148 ps
5691 s: B5= 109 ps
2845 s: B5= 115 ps
1423 s: B5= 125 ps
711 s: B5= 170 ps
356 s: B5= 215 ps
178 s: B5= 397 ps
89 s: B5= 576 ps
44 s: B5= 795 ps
TdevBC /s
TdevB5 /s
Tau /s

NIST-BP2G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 133959
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 19673 high elev obs : 139.899 140.003
Iteration 0: Obs used = 200589; Huge residuals = 1458; Large residuals = 29537
Iteration 1: Obs used = 212761; Huge residuals = 0; Large residuals = 15907
Computed code bias (P1/P2)/m = 135.714 135.806
Computed baseline (X,Y,Z)/m = 65.872 34.420 52.084
RMS of residuals /m = 0.885

Number of phase differences to fit baseline
L1/L2 = 132047
L5 = 72650
A priori baseline (X,Y,Z)/m = 65.872 34.420 52.084
14394 clock jitters computed out of 14394 intervals
AVE jitter /ps = -0.3 RMS jitter /ps = 6.3

Iter 1 Large residuals L1= 8
Iter 1 Large residuals L2= 9
Iter 1 Large residuals L5= 1351
Computed baseline L1 (X,Y,Z)/m = -0.682 -2.697 2.229
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.687 -2.704 2.233
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.698 -2.702 2.213
RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 8
Iter 2 Large residuals L2= 9
Iter 2 Large residuals L5= 1351
Computed baseline L1 (X,Y,Z)/m = -0.682 -2.697 2.229
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.687 -2.704 2.233
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.700 -2.702 2.214
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = 65.187 31.720 54.315
14394 clock jitters computed out of 14394 intervals
AVE jitter /ps = 0.5 RMS jitter /ps = 4.6

Iter 3 Large residuals L1= 8
Iter 3 Large residuals L2= 9
Iter 3 Large residuals L5= 1349
Computed baseline L1 (X,Y,Z)/m = -0.052 -0.036 0.059
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.057 -0.044 0.063
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.039 -0.050 0.056
RMS of residuals L5 /m = 0.004

Iter 4 Large residuals L1= 8
Iter 4 Large residuals L2= 9

Iter 4 Large residuals L5= 1349
Computed baseline L1 (X,Y,Z)/m = -0.052 -0.036 0.059
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.057 -0.044 0.063
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.039 -0.050 0.056
RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 65.135 31.684 54.374
Final baseline L2 (X,Y,Z)/m = 65.130 31.676 54.378
Final baseline L5 (X,Y,Z)/m = 65.148 31.670 54.371

COMPUTATION OF CODE DIFFERENCES

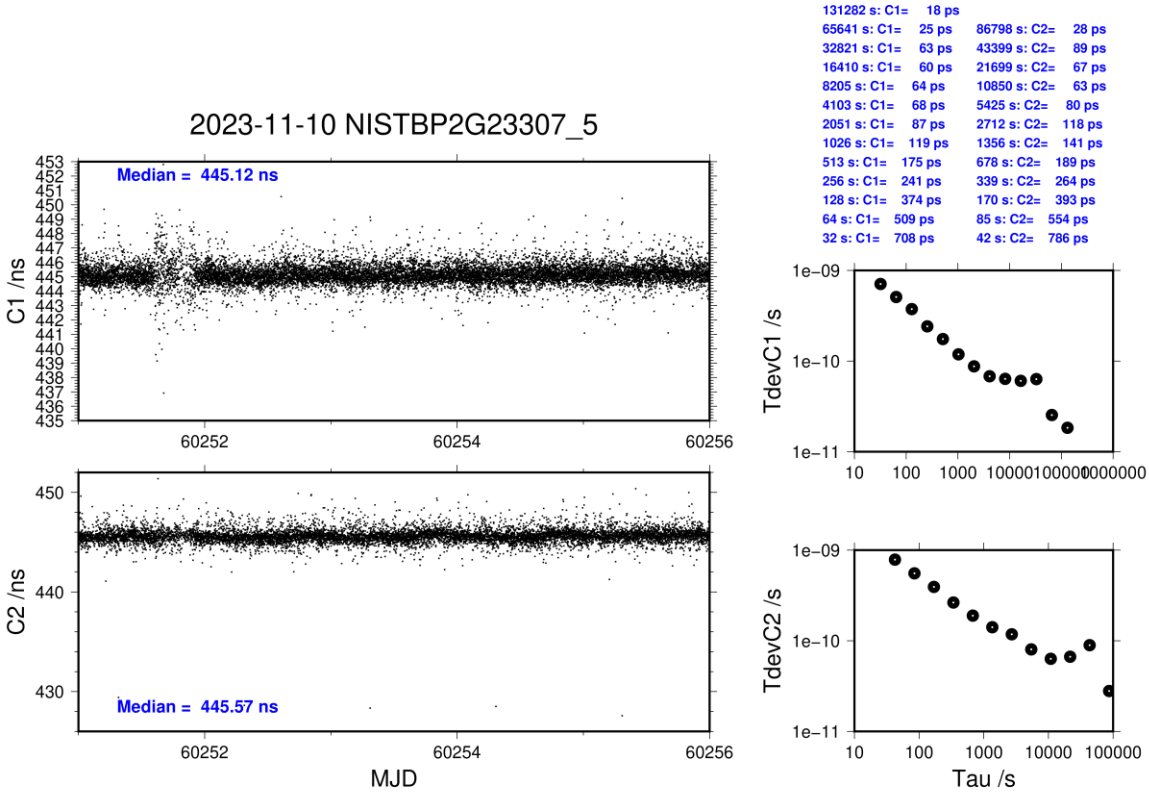
Total number of code differences = 477256

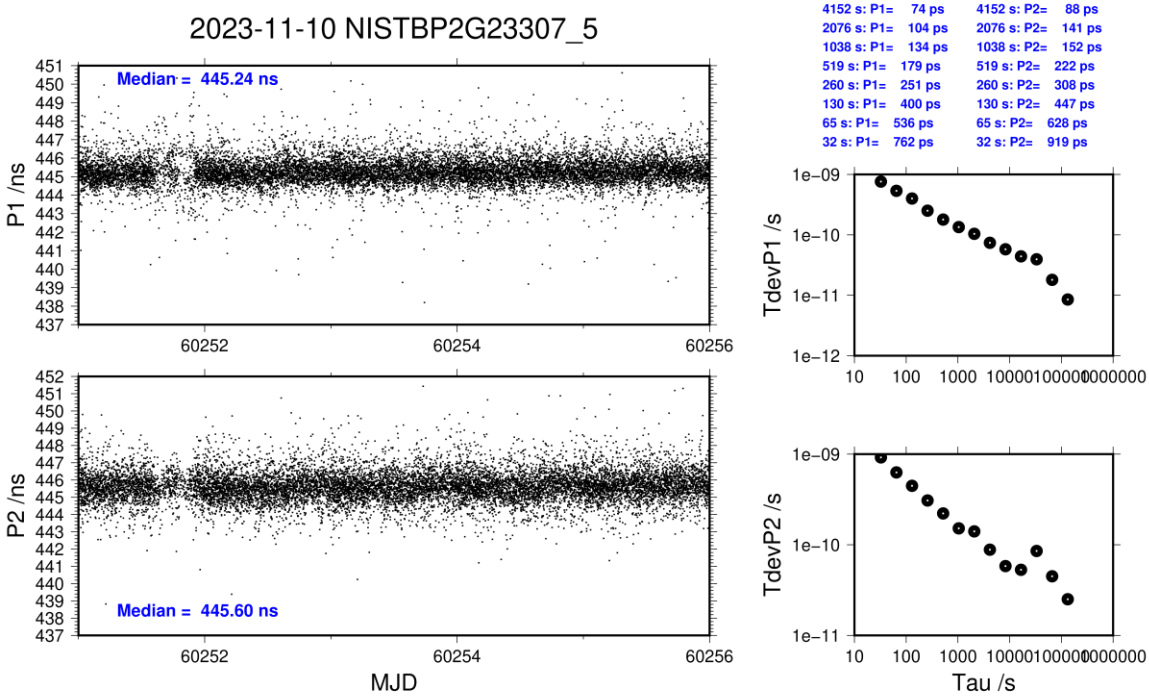
Global average of individual differences

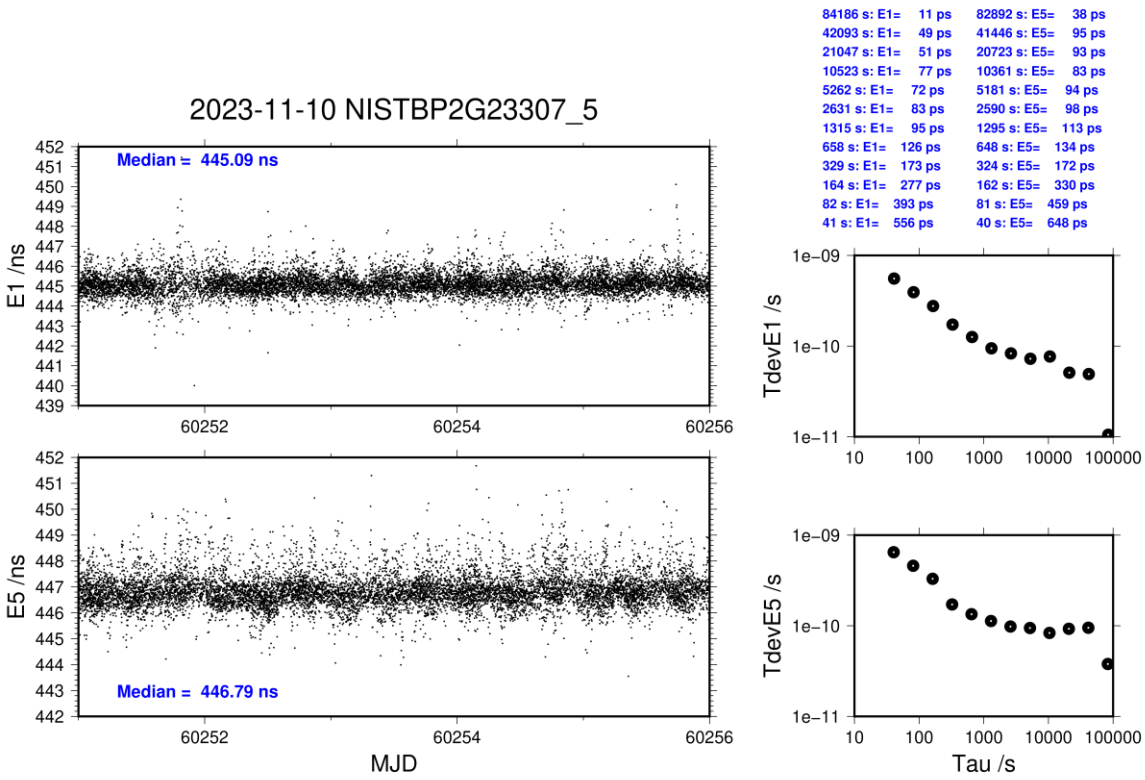
Code	#pts	ave/ns	rms/ns
C1	134774	445.172	1.579
C2	101947	445.592	1.630
P1	133151	445.294	1.526
P2	133151	445.632	1.767
E1	105047	445.132	1.195
E5	106748	446.855	1.075
BC	107994	445.203	1.391
B5	110729	446.810	1.166

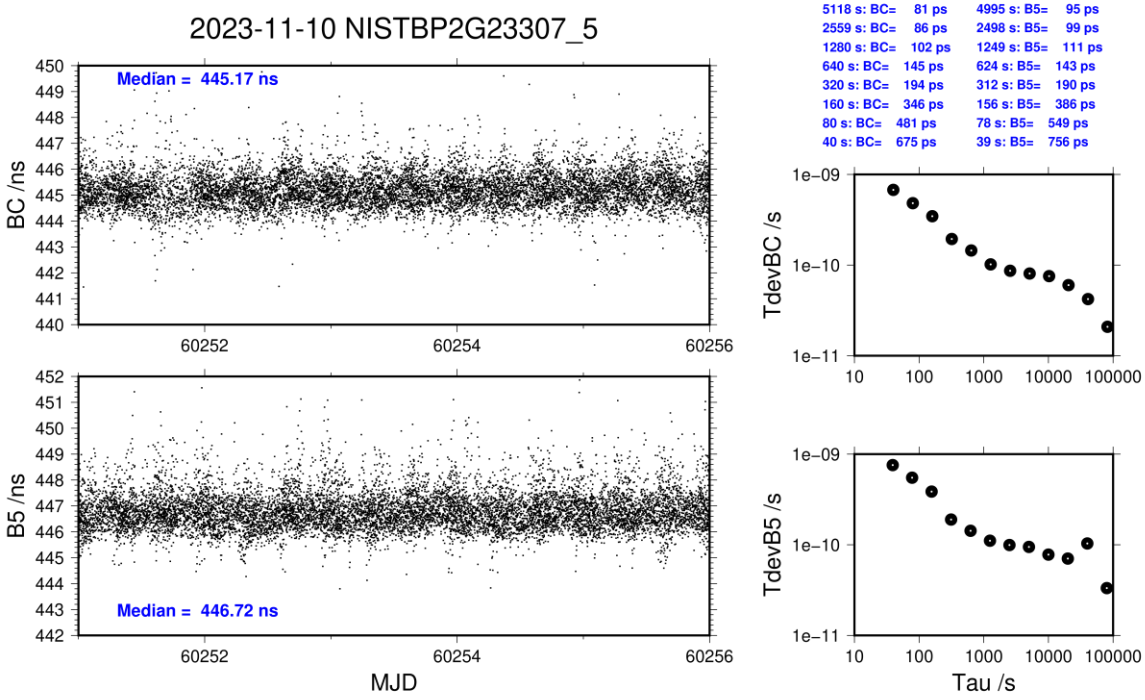
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	13470	445.119	445.168	0.720
C2	10187	445.574	445.598	0.789
P1	13309	445.236	445.288	0.764
P2	13309	445.603	445.627	0.907
E1	10503	445.093	445.134	0.558
E5	10667	446.788	446.848	0.650
BC	10797	445.165	445.209	0.673
B5	11063	446.719	446.803	0.751


2023-11-10 NISTBP2G23307_5
Median = 445.12 ns
Median = 445.57 ns
C1 /ns
C2 /ns
MJD
131282 s: C1= 18 ps
65641 s: C1= 25 ps
32821 s: C1= 63 ps
16410 s: C1= 60 ps
8205 s: C1= 64 ps
4103 s: C1= 68 ps
2051 s: C1= 87 ps
1026 s: C1= 119 ps
513 s: C1= 175 ps
256 s: C1= 241 ps
128 s: C1= 374 ps
64 s: C1= 509 ps
32 s: C1= 708 ps
86798 s: C2= 28 ps
43399 s: C2= 89 ps
21699 s: C2= 67 ps
10850 s: C2= 63 ps
5425 s: C2= 80 ps
2712 s: C2= 118 ps
1356 s: C2= 141 ps
678 s: C2= 189 ps
339 s: C2= 264 ps
170 s: C2= 393 ps
85 s: C2= 554 ps
42 s: C2= 786 ps
TdevC1 /s
TdevC2 /s
Tau /s


2023-11-10 NISTBP2G23307_5
Median = 445.24 ns
Median = 445.60 ns
P1 /ns
P2 /ns
MJD
132871 s: P1= 9 ps
66435 s: P1= 18 ps
33218 s: P1= 39 ps
16609 s: P1= 44 ps
8304 s: P1= 58 ps
4152 s: P1= 74 ps
2076 s: P1= 104 ps
1038 s: P1= 134 ps
519 s: P1= 179 ps
260 s: P1= 251 ps
130 s: P1= 400 ps
65 s: P1= 536 ps
32 s: P1= 762 ps
132871 s: P2= 25 ps
66435 s: P2= 45 ps
33218 s: P2= 85 ps
16609 s: P2= 53 ps
8304 s: P2= 58 ps
4152 s: P2= 88 ps
2076 s: P2= 141 ps
1038 s: P2= 152 ps
519 s: P2= 222 ps
260 s: P2= 308 ps
130 s: P2= 447 ps
65 s: P2= 628 ps
32 s: P2= 919 ps
TdevP1 /s
TdevP2 /s
Tau /s


2023-11-10 NISTBP2G23307_5
Median = 445.09 ns
Median = 446.79 ns
E1 /ns
E5 /ns
MJD
84186 s: E1= 11 ps
42093 s: E1= 49 ps
21047 s: E1= 51 ps
10523 s: E1= 77 ps
5262 s: E1= 72 ps
2631 s: E1= 83 ps
1315 s: E1= 95 ps
658 s: E1= 126 ps
329 s: E1= 173 ps
164 s: E1= 277 ps
82 s: E1= 393 ps
41 s: E1= 556 ps
82892 s: E5= 38 ps
41446 s: E5= 95 ps
20723 s: E5= 93 ps
10361 s: E5= 83 ps
5181 s: E5= 94 ps
2590 s: E5= 98 ps
1295 s: E5= 113 ps
648 s: E5= 134 ps
324 s: E5= 172 ps
162 s: E5= 330 ps
81 s: E5= 459 ps
40 s: E5= 648 ps
TdevE1 /s
TdevE5 /s
Tau /s


2023-11-10 NISTBP2G23307_5
Median = 445.17 ns
Median = 446.72 ns
BC /ns
B5 /ns
MJD
81893 s: BC= 21 ps
40947 s: BC= 42 ps
20473 s: BC= 60 ps
10237 s: BC= 75 ps
5118 s: BC= 81 ps
2559 s: BC= 86 ps
1280 s: BC= 102 ps
640 s: BC= 145 ps
320 s: BC= 194 ps
160 s: BC= 346 ps
80 s: BC= 481 ps
40 s: BC= 675 ps
79924 s: B5= 33 ps
39962 s: B5= 103 ps
19981 s: B5= 70 ps
9991 s: B5= 78 ps
4995 s: B5= 95 ps
2498 s: B5= 99 ps
1249 s: B5= 111 ps
624 s: B5= 143 ps
312 s: B5= 190 ps
156 s: B5= 386 ps
78 s: B5= 549 ps
39 s: B5= 756 ps
TdevBC /s
TdevB5 /s
Tau /s

3.5/ BIPM (24004)

Period

MJD 60313 to 60319

Delays

BP2D: (cf page 119)
REFDLY = 53.45 ns (68.46-15.01)
CABDLY = 176.85 ns (C210)

BP2G: (cf page 118)
REFDLY = 53.55 ns (68.56-15.01)
CABDLY = 176.38 ns (C211)

BP21: (cf page 118)
REFDLY = 43.37 ns (58.38-15.01)
CABDLY = 140.80 ns (C201)

Setup at the BIPM

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	BIPM
Date and hour of the beginning of measurements:	MJD 60313
Date and hour of the end of measurements:	MJD 60319

Information on the system

	Local:	Travelling:
4-character BIPM code	BP21	BP2G
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR 4701229	Septentrio PolaRx5TR 4701533
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	LMR-195	HYLM195
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio SEPCHOKE B3E6 5253	Septentrio SEPCHOKE B3E6 6023
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	43.37 ns	53.55 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	PPSin compensation enable	PPSin compensation enable
• Antenna cable delay:	140.80 ns	176.38 ns
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	
Longitude or Y /m:	
Height or Z /m:	

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	
Set temperature value and uncertainty:	22 ± 1°C
Set humidity value and uncertainty:	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	BIPM
Date and hour of the beginning of measurements:	MJD 60313
Date and hour of the end of measurements:	MJD 60319

Information on the system

	Local:	Travelling:
4-character BIPM code	BP21	BP2D
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5TR 4701229	Mesit GTR55 2010001
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	LMR-195	HYLM195
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio SEPCHOKE B3E6 5253	Novatel GNSS-850 NMLK17440001C
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	43.37 ns	53.45 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	PPSin compensation enable	
• Antenna cable delay:	140.80 ns	176.85 ns
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

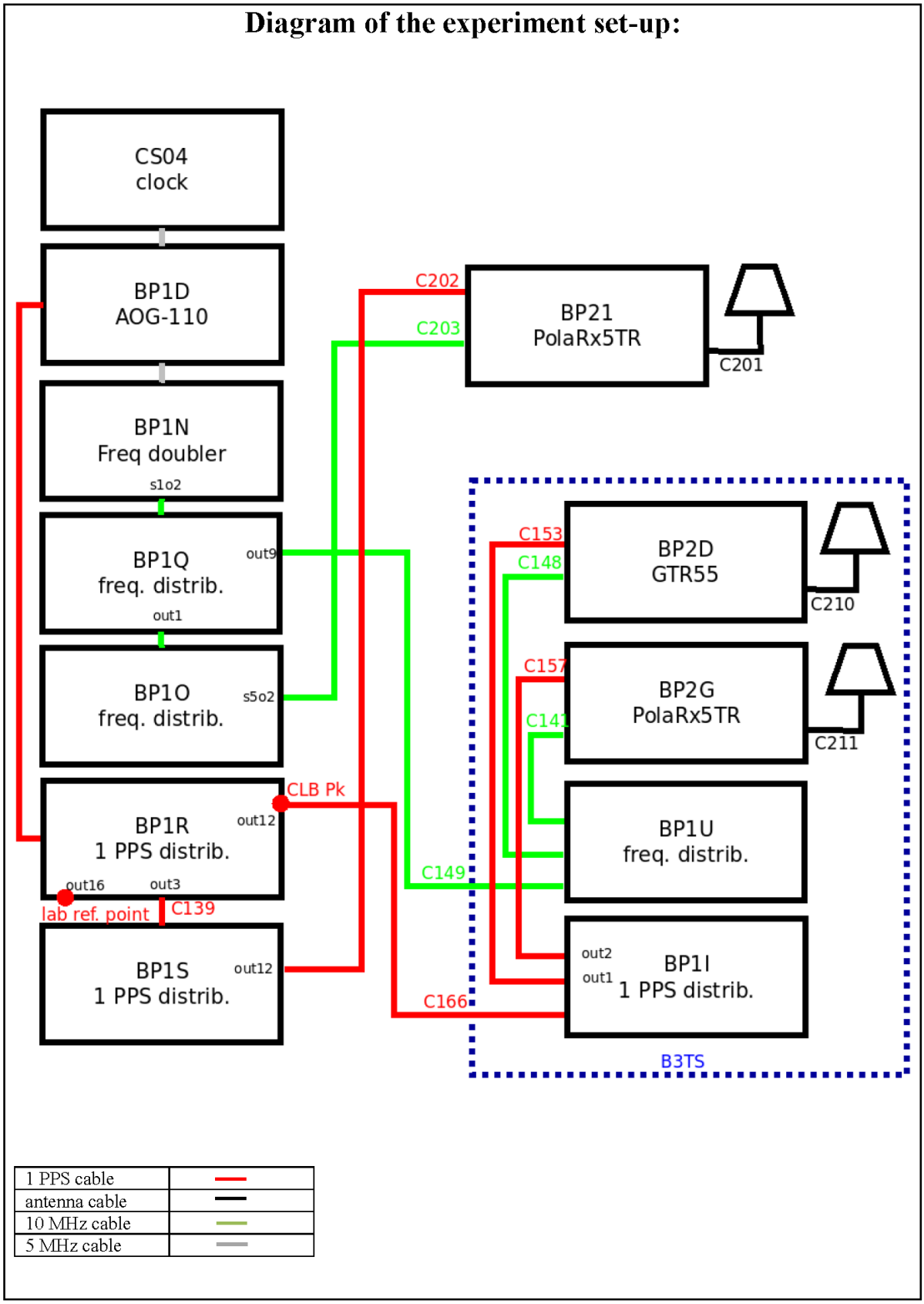
• INT DLY (GPS) /ns:	
• INT DLY (Galileo) /ns:	
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	
Longitude or Y /m:	
Height or Z /m:	

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	
Set temperature value and uncertainty:	22 ± 1°C
Set humidity value and uncertainty:	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

Diagram of the experiment set-up:



Log of Events / Additional Information :

All measurements at BIPM carried out by L. Tisserand.

Equipment used to measure delays is a Time Interval Counter (TIC), model 53230A, maker Keysight, S/N MY58390132, with measurement uncertainty typically less than 0.5 ns (using external reference frequency as timebase).

The delay between the laboratory reference point and the 1 PPS input connector of the B3TS (CLB P_k) is 0 ns.

BP2D-BP21

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 124623
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 22338 high elev obs : 3.151 4.404
Iteration 0: Obs used = 202987; Huge residuals = 2; Large residuals = 4069
Iteration 1: Obs used = 202988; Huge residuals = 0; Large residuals = 4066
Computed code bias (P1/P2)/m = 2.972 4.198
Computed baseline (X,Y,Z)/m = -3.561 -0.476 3.257
RMS of residuals /m = 0.596

Number of phase differences to fit baseline
L1/L2 = 121314
L5 = 64691
A priori baseline (X,Y,Z)/m = -3.561 -0.476 3.257
18063 clock jitters computed out of 18063 intervals
AVE jitter /ps = -0.2 RMS jitter /ps = 4.9

Iter 1 Large residuals L1= 4
Iter 1 Large residuals L2= 6
Iter 1 Large residuals L5= 3
Computed baseline L1 (X,Y,Z)/m = -0.016 -0.067 0.136
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.007 -0.059 0.151
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.001 -0.053 0.156
RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 4
Iter 2 Large residuals L2= 6
Iter 2 Large residuals L5= 3
Computed baseline L1 (X,Y,Z)/m = -0.016 -0.067 0.136
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.007 -0.059 0.151
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = -0.000 -0.053 0.156
RMS of residuals L5 /m = 0.004

New iteration of baseline
New apriori baseline (X,Y,Z)/m = -3.572 -0.539 3.400
18063 clock jitters computed out of 18063 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 0.3

Iter 3 Large residuals L1= 4
Iter 3 Large residuals L2= 6
Iter 3 Large residuals L5= 3
Computed baseline L1 (X,Y,Z)/m = 0.002 -0.025 -0.004
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.012 -0.017 0.012
RMS of residuals L2 /m = 0.005
Computed baseline L5 (X,Y,Z)/m = 0.018 -0.013 0.018
RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -3.570 -0.564 3.396
Final baseline L2 (X,Y,Z)/m = -3.561 -0.556 3.412

Final baseline L5 (X,Y,Z)/m = -3.555 -0.552 3.418

COMPUTATION OF CODE DIFFERENCES

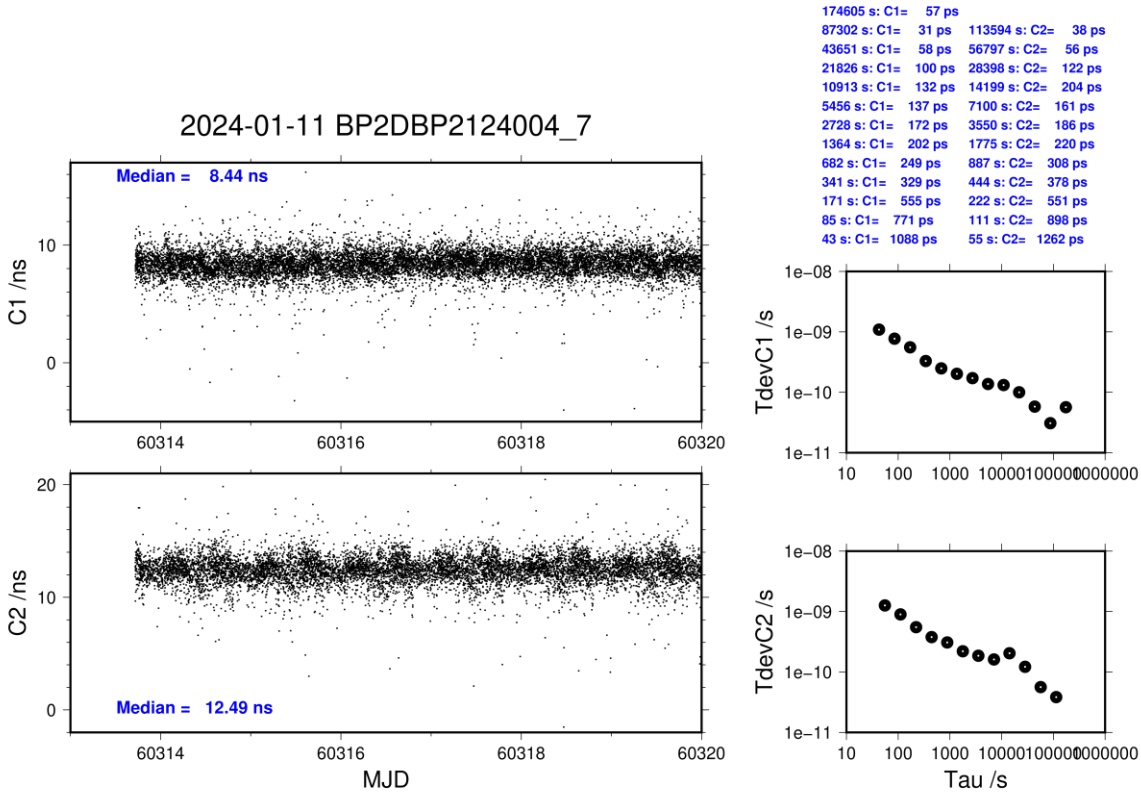
Total number of code differences = 505645

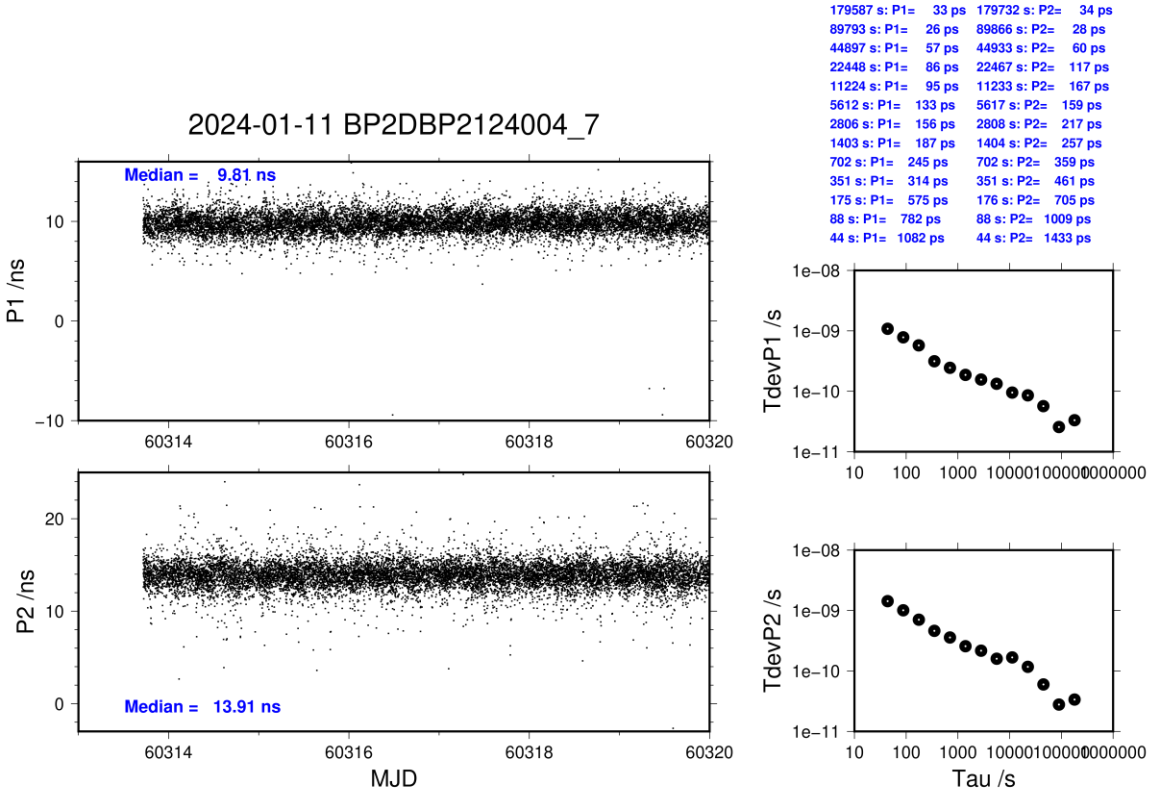
Global average of individual differences

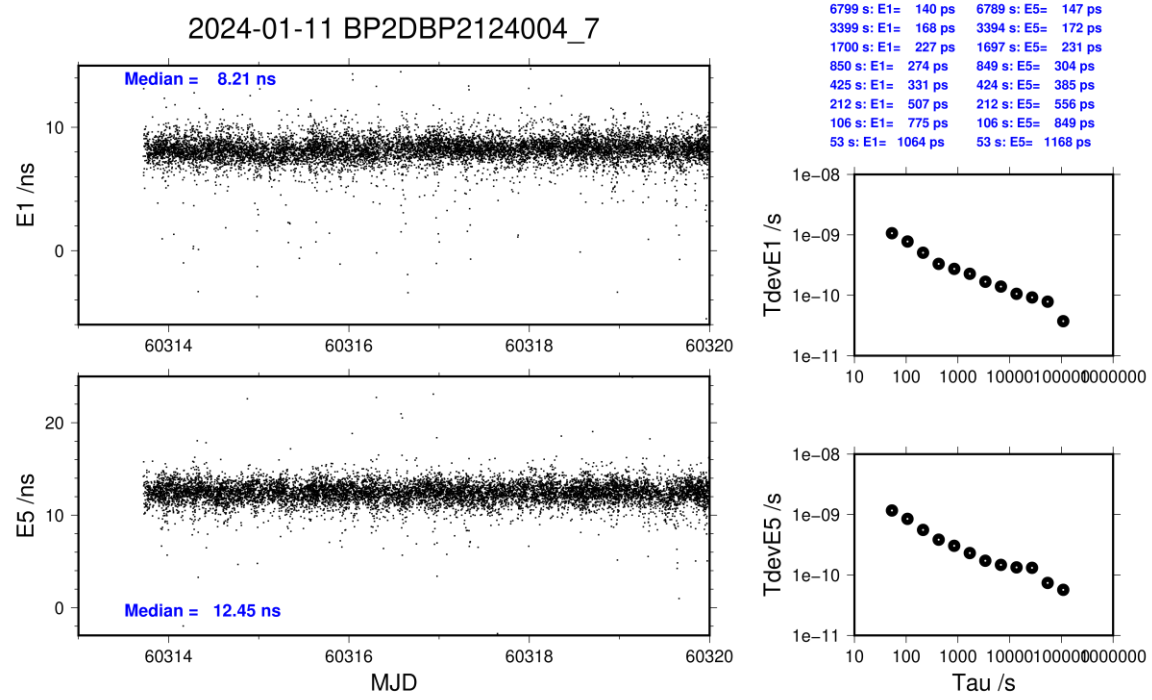
Code	#pts	ave/ns	rms/ns
C1	127391	8.405	1.996
C2	97945	12.437	2.019
P1	124361	9.779	1.877
P2	124206	13.882	2.516
E1	102275	8.191	1.801
E5	102502	12.419	1.754
BC	116569	7.647	2.010
B5	118689	12.047	1.970

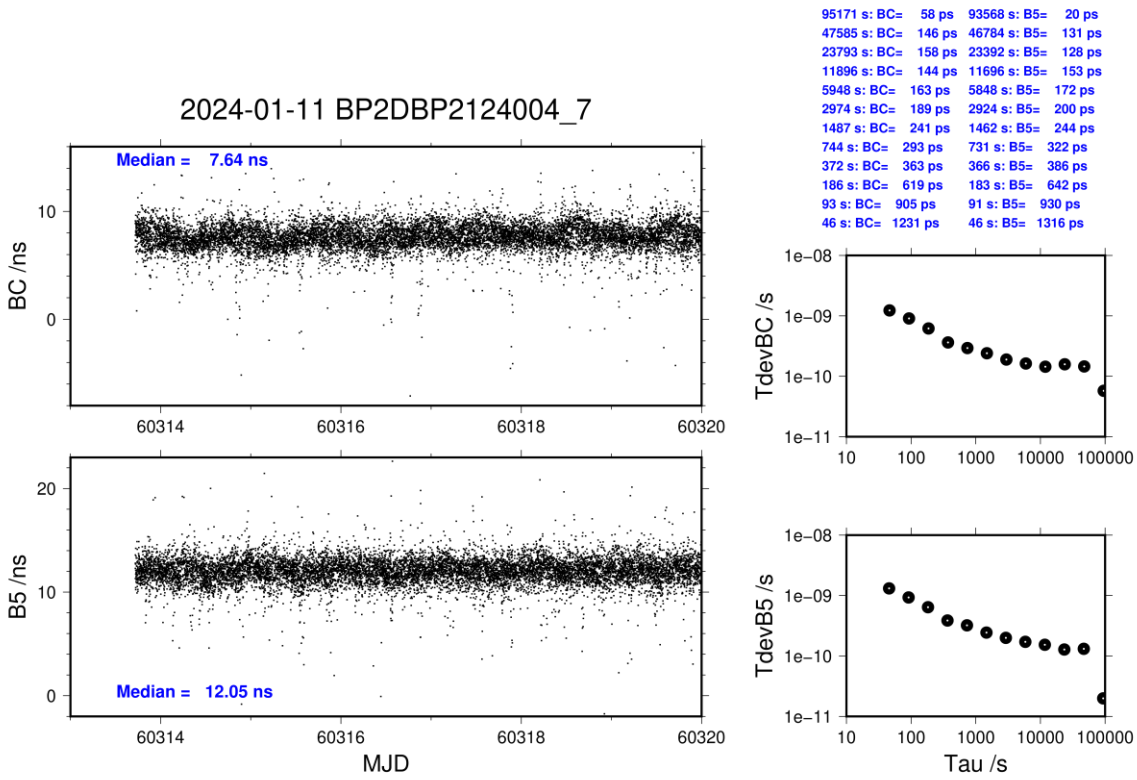
Number of 300s epochs in out file = 1808

Code	#pts	median/ns	ave/ns	rms/ns
C1	12725	8.439	8.424	1.094
C2	9780	12.495	12.444	1.246
P1	12372	9.808	9.817	1.092
P2	12362	13.912	13.891	1.430
E1	10213	8.215	8.175	1.079
E5	10228	12.454	12.411	1.184
BC	11673	7.636	7.635	1.262
B5	11873	12.053	12.023	1.312




2024-01-11 BP2DBP2124004_7
Median = 9.81 ns
Median = 13.91 ns
P1 /ns
P2 /ns
MJD
179587 s: P1= 33 ps 179732 s: P2= 34 ps
89793 s: P1= 26 ps 89866 s: P2= 28 ps
44897 s: P1= 57 ps 44933 s: P2= 60 ps
22448 s: P1= 86 ps 22467 s: P2= 117 ps
11224 s: P1= 95 ps 11233 s: P2= 167 ps
5612 s: P1= 133 ps 5617 s: P2= 159 ps
2806 s: P1= 156 ps 2808 s: P2= 217 ps
1403 s: P1= 187 ps 1404 s: P2= 257 ps
702 s: P1= 245 ps 702 s: P2= 359 ps
351 s: P1= 314 ps 351 s: P2= 461 ps
175 s: P1= 575 ps 176 s: P2= 705 ps
88 s: P1= 782 ps 88 s: P2= 1009 ps
44 s: P1= 1082 ps 44 s: P2= 1433 ps
TdevP1 /s
TdevP2 /s
Tau /s


2024-01-11 BP2DBP2124004_7
Median = 8.21 ns
Median = 12.45 ns
E1 /ns
E5 /ns
MJD
108777 s: E1= 37 ps 108618 s: E5= 57 ps
54389 s: E1= 78 ps 54309 s: E5= 74 ps
27194 s: E1= 92 ps 27154 s: E5= 131 ps
13597 s: E1= 106 ps 13577 s: E5= 134 ps
6799 s: E1= 140 ps 6789 s: E5= 147 ps
3399 s: E1= 168 ps 3394 s: E5= 172 ps
1700 s: E1= 227 ps 1697 s: E5= 231 ps
850 s: E1= 274 ps 849 s: E5= 304 ps
425 s: E1= 331 ps 424 s: E5= 385 ps
212 s: E1= 507 ps 212 s: E5= 556 ps
106 s: E1= 775 ps 106 s: E5= 849 ps
53 s: E1= 1064 ps 53 s: E5= 1168 ps
TdevE1 /s
TdevE5 /s
Tau /s


2024-01-11 BP2DBP2124004_7
Median = 7.64 ns
BC /ns
10
0
60314
60316
60318
60320
B5 /ns
20
10
0
Median = 12.05 ns
MJD
95171 s: BC= 58 ps 93568 s: B5= 20 ps
47585 s: BC= 146 ps 46784 s: B5= 131 ps
23793 s: BC= 158 ps 23392 s: B5= 128 ps
11896 s: BC= 144 ps 11696 s: B5= 153 ps
5948 s: BC= 163 ps 5848 s: B5= 172 ps
2974 s: BC= 189 ps 2924 s: B5= 200 ps
1487 s: BC= 241 ps 1462 s: B5= 244 ps
744 s: BC= 293 ps 731 s: B5= 322 ps
372 s: BC= 363 ps 366 s: B5= 386 ps
186 s: BC= 619 ps 183 s: B5= 642 ps
93 s: BC= 905 ps 91 s: B5= 930 ps
46 s: BC= 1231 ps 46 s: B5= 1316 ps
TdevBC /s
1e−08
1e−09
1e−10
1e−11
10
100
1000
10000
100000
TdevB5 /s
Tau /s

BP2G-BP21

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 129928
Compute baseline with sin(elev) between 0.05 and 0.90
Apriori codes biases from 22368 high elev obs : 7.569 7.173
Iteration 0: Obs used = 203370; Huge residuals = 9; Large residuals = 14250
Iteration 1: Obs used = 203359; Huge residuals = 0; Large residuals = 14252
Computed code bias (P1/P2)/m = 6.884 6.482
Computed baseline (X,Y,Z)/m = -1.011 0.327 1.972
RMS of residuals /m = 0.709

Number of phase differences to fit baseline
L1/L2 = 124635
L5 = 66124
A priori baseline (X,Y,Z)/m = -1.011 0.327 1.972
18085 clock jitters computed out of 18085 intervals
AVE jitter /ps = -1.3 RMS jitter /ps = 3.9

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 2
Iter 1 Large residuals L5= 1
Computed baseline L1 (X,Y,Z)/m = -0.429 -0.426 -0.575
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.426 -0.417 -0.572
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.436 -0.428 -0.571
RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 2
Iter 2 Large residuals L5= 1
Computed baseline L1 (X,Y,Z)/m = -0.429 -0.426 -0.575
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.426 -0.418 -0.572
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = -0.436 -0.428 -0.571
RMS of residuals L5 /m = 0.003

New iteration of baseline
New apriori baseline (X,Y,Z)/m = -1.438 -0.095 1.399
18085 clock jitters computed out of 18085 intervals
AVE jitter /ps = 0.8 RMS jitter /ps = 1.2

Iter 3 Large residuals L1= 0
Iter 3 Large residuals L2= 2
Iter 3 Large residuals L5= 1
Computed baseline L1 (X,Y,Z)/m = 0.005 -0.097 -0.019
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.007 -0.088 -0.017
RMS of residuals L2 /m = 0.004
Computed baseline L5 (X,Y,Z)/m = 0.009 -0.086 -0.015
RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -1.434 -0.191 1.380
Final baseline L2 (X,Y,Z)/m = -1.431 -0.183 1.382

Final baseline L5 (X,Y,Z)/m = -1.429 -0.180 1.383

COMPUTATION OF CODE DIFFERENCES

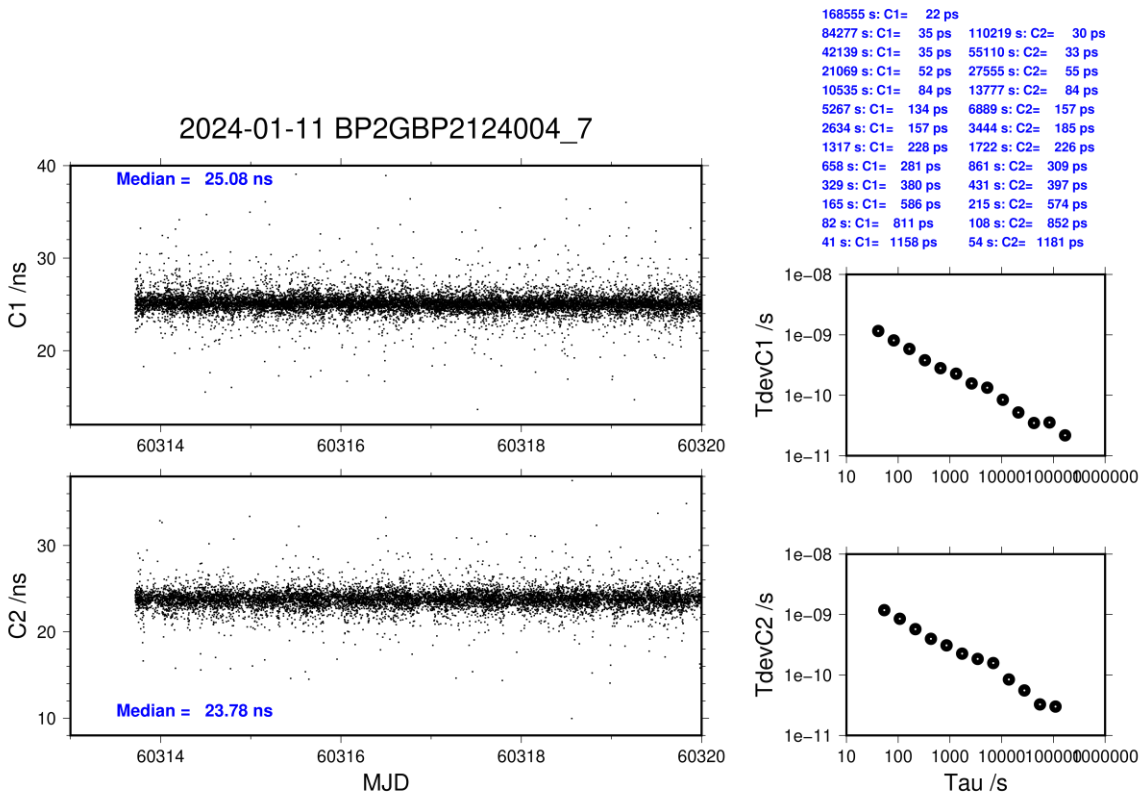
Total number of code differences = 535875

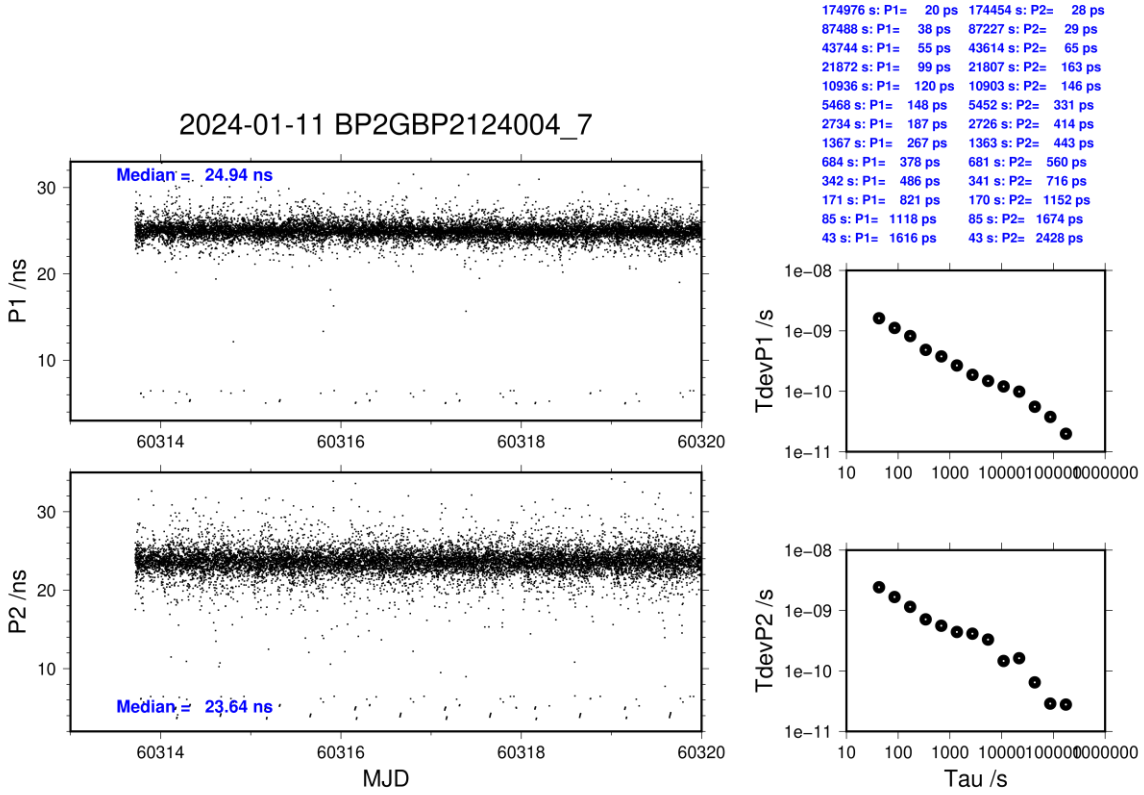
Global average of individual differences

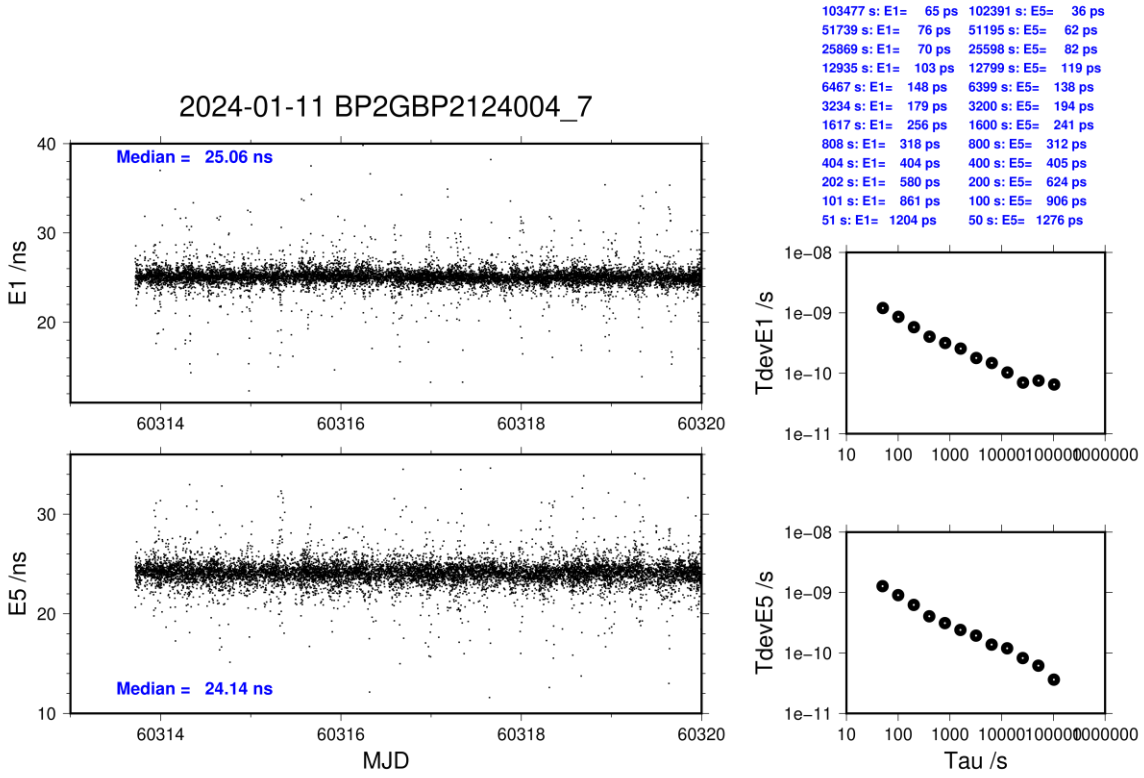
Code	#pts	ave/ns	rms/ns
C1	131892	25.128	2.482
C2	100938	23.767	2.357
P1	127415	24.897	2.391
P2	127846	23.448	3.559
E1	107157	25.081	2.318
E5	108338	24.116	2.202
BC	119554	25.089	2.251
B5	120677	24.113	2.128

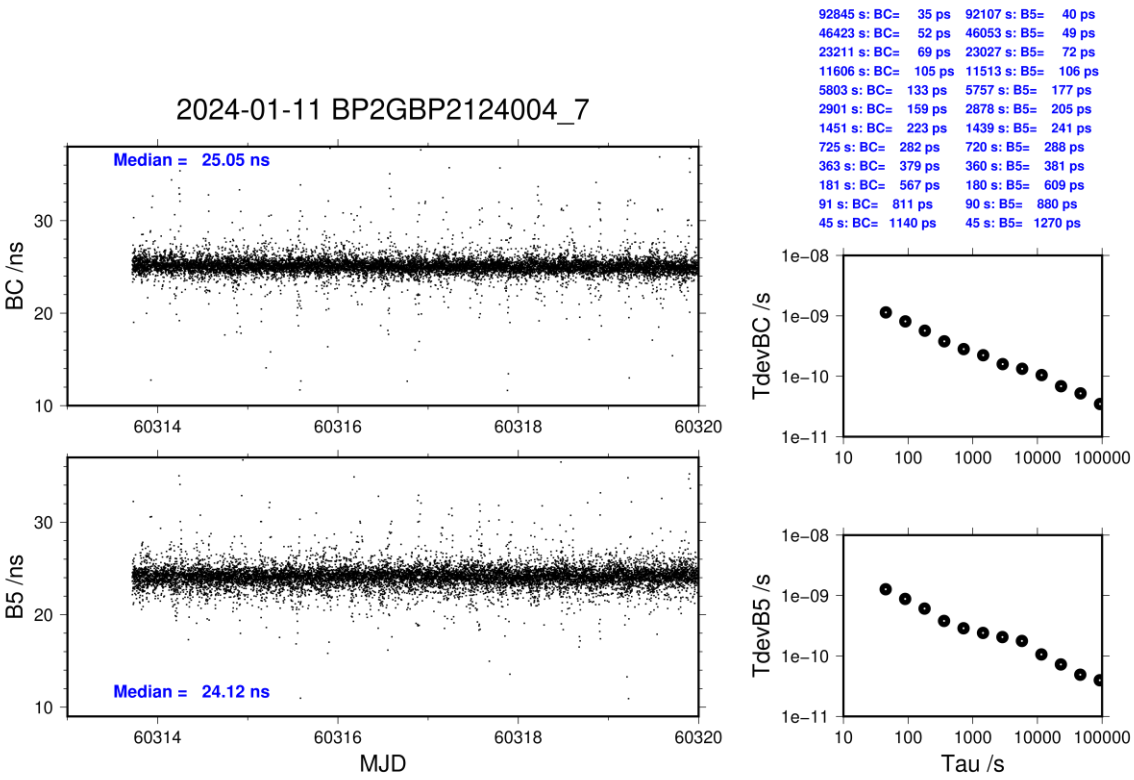
Number of 300s epochs in out file = 1810

Code	#pts	median/ns	ave/ns	rms/ns
C1	13189	25.083	25.131	1.157
C2	10085	23.778	23.767	1.192
P1	12705	24.943	24.909	1.588
P2	12743	23.641	23.470	2.376
E1	10742	25.059	25.086	1.217
E5	10856	24.138	24.113	1.276
BC	11972	25.053	25.093	1.146
B5	12068	24.124	24.115	1.250




174976 s: P1= 20 ps 174454 s: P2= 28 ps
87488 s: P1= 38 ps 87227 s: P2= 29 ps
43744 s: P1= 55 ps 43614 s: P2= 65 ps
21872 s: P1= 99 ps 21807 s: P2= 163 ps
10936 s: P1= 120 ps 10903 s: P2= 146 ps
5468 s: P1= 148 ps 5452 s: P2= 331 ps
2734 s: P1= 187 ps 2726 s: P2= 414 ps
1367 s: P1= 267 ps 1363 s: P2= 443 ps
684 s: P1= 378 ps 681 s: P2= 560 ps
342 s: P1= 486 ps 341 s: P2= 716 ps
171 s: P1= 821 ps 170 s: P2= 1152 ps
85 s: P1= 1118 ps 85 s: P2= 1674 ps
43 s: P1= 1616 ps 43 s: P2= 2428 ps
2024-01-11 BP2GBP2124004_7
Median = 24.94 ns
P1 /ns
P2 /ns
Median = 23.64 ns
MJD
TdevP1 /s
TdevP2 /s
Tau /s


103477 s: E1= 65 ps 102391 s: E5= 36 ps
51739 s: E1= 76 ps 51195 s: E5= 62 ps
25869 s: E1= 70 ps 25598 s: E5= 82 ps
12935 s: E1= 103 ps 12799 s: E5= 119 ps
6467 s: E1= 148 ps 6399 s: E5= 138 ps
3234 s: E1= 179 ps 3200 s: E5= 194 ps
1617 s: E1= 256 ps 1600 s: E5= 241 ps
808 s: E1= 318 ps 800 s: E5= 312 ps
404 s: E1= 404 ps 400 s: E5= 405 ps
202 s: E1= 580 ps 200 s: E5= 624 ps
101 s: E1= 861 ps 100 s: E5= 906 ps
51 s: E1= 1204 ps 50 s: E5= 1276 ps
2024-01-11 BP2GBP2124004_7
Median = 25.06 ns
E1 /ns
E5 /ns
Median = 24.14 ns
MJD
TdevE1 /s
TdevE5 /s
Tau /s


2024-01-11 BP2GBP2124004_7
Median = 25.05 ns
Median = 24.12 ns
BC /ns
B5 /ns
MJD
92845 s: BC= 35 ps 92107 s: B5= 40 ps
46423 s: BC= 52 ps 46053 s: B5= 49 ps
23211 s: BC= 69 ps 23027 s: B5= 72 ps
11606 s: BC= 105 ps 11513 s: B5= 106 ps
5803 s: BC= 133 ps 5757 s: B5= 177 ps
2901 s: BC= 159 ps 2878 s: B5= 205 ps
1451 s: BC= 223 ps 1439 s: B5= 241 ps
725 s: BC= 282 ps 720 s: B5= 288 ps
363 s: BC= 379 ps 360 s: B5= 381 ps
181 s: BC= 567 ps 180 s: B5= 609 ps
91 s: BC= 811 ps 90 s: B5= 880 ps
45 s: BC= 1140 ps 45 s: B5= 1270 ps
TdevBC /s
TdevB5 /s
Tau /s