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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

$(X_P + X_O) = \text{REFDLY.}$

- X_C = antenna cable delay
- $[X_D = \text{short cable} + \text{splitter delay}]$

$(X_C + X_D) = \text{CABDLY.}$ In practice, X_D is generally not used.

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

$(X_R + X_S) = \text{INTDLY.}$

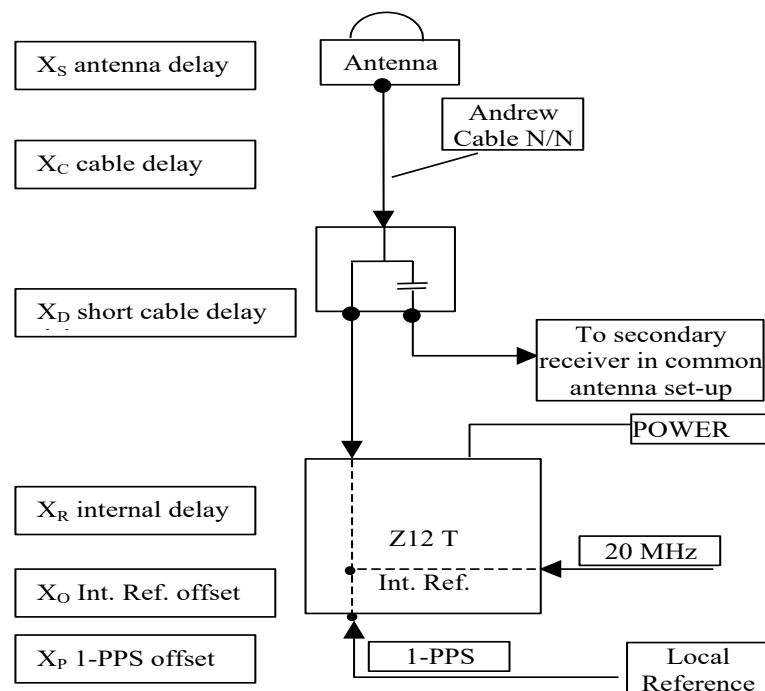


Figure 1: Definition of the different delays used in the most general set-up of a geodetic system (here shown for a Z12-T) from [Petit et al, 2001].

1/ phase 1

Laboratories: BIPM, OP, ROA, PTB, IT

1.1/ BIPM (25155)**Period**

MJD 60830 to 60836

Delays

BP2D:	(cf page 4)
REFDLY = 42.17 ns	(57.19-15.02)
CABDLY = 176.85 ns	(C210)
BP2G:	(cf page 6)
REFDLY = 42.28 ns	(57.30-15.02)
CABDLY = 176.38 ns	(C211)
BP21:	(cf page 4)
REFDLY = 43.34 ns	(58.36-15.02)
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 60830	
Date and hour of the end of measurements:	MJD 60836	
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:	1 V	1 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		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLTY):	43.34	42.17
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLTY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLTY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLTY value		
• Antenna cable delay:	140.80	176.85

Splitter delay (if any):		(2)
Additional cable delay (if any):		(1)
Data used for the generation of CGGTTS files Complete this section only if CGGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:		
• INT DLY (Galileo) /ns:		
• INT DLY (BDS) /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:		21 ± 1°C
Set humidity value and uncertainty:		

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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 60830	
Date and hour of the end of measurements:	MJD 60836	
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:	1 V	1 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		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	43.34	42.28
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		
• Antenna cable delay:	140.80	176.38

Splitter delay (if any):		(2)
Additional cable delay (if any):		(1)
Data used for the generation of CGGTTS files Complete this section only if CGGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:		
• INT DLY (Galileo) /ns:		
• INT DLY (BDS) /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:	21 ± 1°C	
Set humidity value and uncertainty:		

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

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



Log of Events / Additional Information :

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 0.0 ns.

BP2D-BP21**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 135261
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 26744 high elev obs : 6.297 7.776
 Iteration 0: Obs used = 214767; Huge residuals = 11; Large residuals = 4571
 Iteration 1: Obs used = 214771; Huge residuals = 0; Large residuals = 4556
 Computed code bias (P1/P2)/m = 6.130 7.538
 Computed baseline (X,Y,Z)/m = -3.568 -0.514 3.288
 RMS of residuals /m = 0.602

Number of phase differences to fit baseline
 L1/L2 = 130958
 L5 = 75364
 A priori baseline (X,Y,Z)/m = -3.568 -0.514 3.288
 20148 clock jitters computed out of 20148 intervals
 AVE jitter /ps = -0.1 RMS jitter /ps = 5.1

Iter 1 Large residuals L1= 2
 Iter 1 Large residuals L2= 11
 Iter 1 Large residuals L5= 4
 Computed baseline L1 (X,Y,Z)/m = -0.003 -0.027 0.110
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = 0.014 -0.038 0.111
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = 0.016 -0.035 0.116
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 2
 Iter 2 Large residuals L2= 11
 Iter 2 Large residuals L5= 4
 Computed baseline L1 (X,Y,Z)/m = -0.003 -0.027 0.110
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = 0.014 -0.038 0.111
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = 0.016 -0.035 0.116
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -3.563 -0.546 3.399
 20148 clock jitters computed out of 20148 intervals
 AVE jitter /ps = 0.2 RMS jitter /ps = 0.2

Iter 3 Large residuals L1= 2
 Iter 3 Large residuals L2= 11
 Iter 3 Large residuals L5= 4
 Computed baseline L1 (X,Y,Z)/m = -0.001 -0.010 0.004
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = 0.017 -0.021 0.004
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = 0.019 -0.020 0.011
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -3.563 -0.556 3.402

Final baseline L2 (X,Y,Z)/m = -3.546 -0.567 3.403
 Final baseline L5 (X,Y,Z)/m = -3.544 -0.566 3.410

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 546558

Global average of individual differences

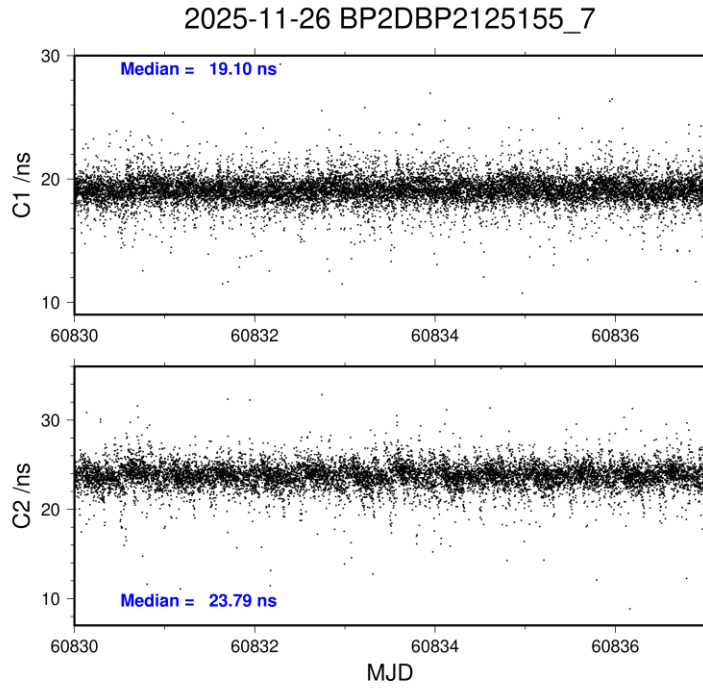
Code	#pts	ave/ns	rms/ns
C1	138628	19.090	1.906
C2	111888	23.741	2.052
P1	134953	20.304	1.741
P2	134747	25.068	2.554
E1	121128	18.842	1.674
E5	121551	22.604	1.723
BC	118027	18.308	1.779
B5	120824	22.270	1.923

Number of 300s epochs in out file = 2016

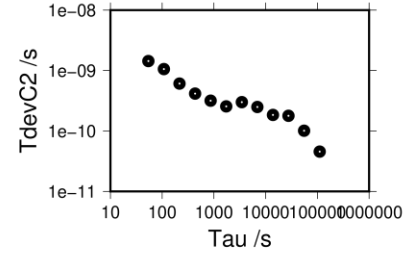
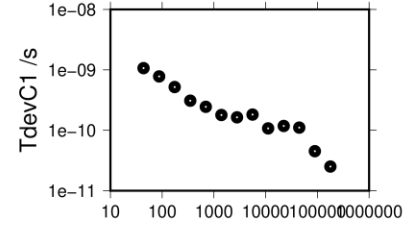
Code	#pts	median/ns	ave/ns	rms/ns
C1	13851	19.102	19.112	1.075
C2	11180	23.789	23.732	1.438
P1	13423	20.313	20.339	1.100
P2	13405	25.154	25.068	1.619
E1	12076	18.851	18.833	1.048
E5	12109	22.627	22.581	1.291
BC	11797	18.284	18.291	1.159
B5	12072	22.274	22.252	1.431

Ionofree combinations

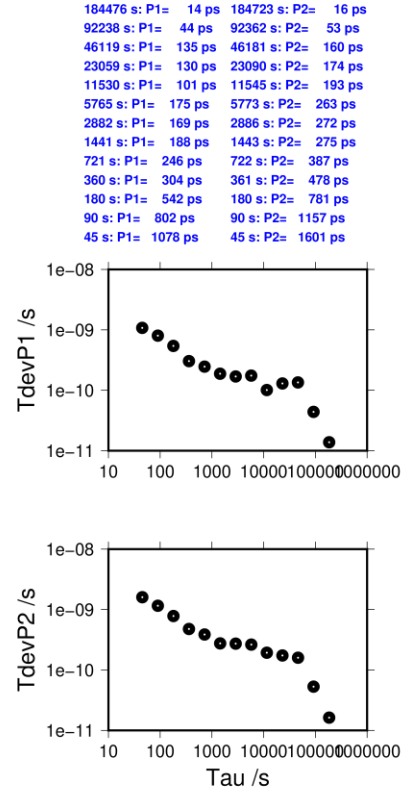
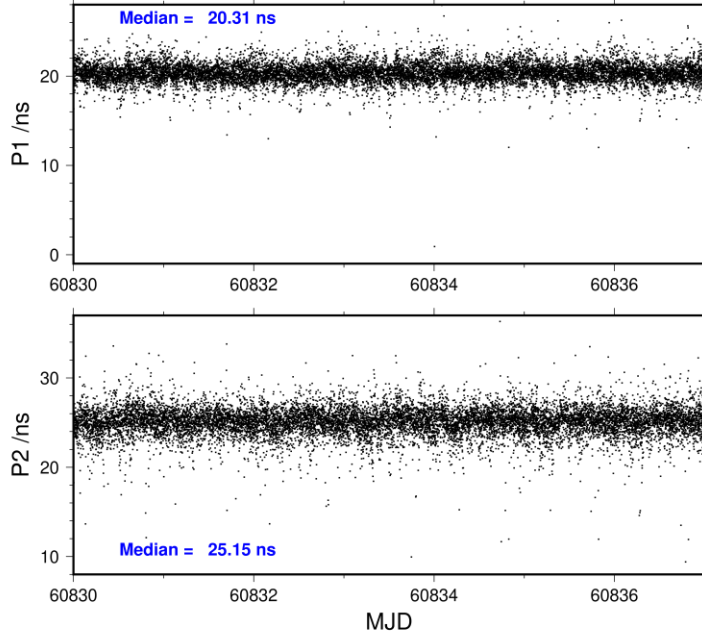
Code	#pts	median/ns	ave/ns	rms/ns
P3	2009	12.943	12.872	1.117
E3	2008	14.113	14.108	0.746
B3	2009	13.346	13.375	0.986



178775 s: C1= 25 ps	110745 s: C2= 46 ps
89387 s: C1= 45 ps	55372 s: C2= 101 ps
44694 s: C1= 111 ps	27686 s: C2= 178 ps
22347 s: C1= 118 ps	13843 s: C2= 184 ps
11173 s: C1= 107 ps	6922 s: C2= 249 ps
5587 s: C1= 182 ps	3461 s: C2= 300 ps
2793 s: C1= 164 ps	1730 s: C2= 256 ps
1397 s: C1= 179 ps	865 s: C2= 318 ps
698 s: C1= 244 ps	433 s: C2= 415 ps
349 s: C1= 309 ps	216 s: C2= 608 ps
175 s: C1= 520 ps	108 s: C2= 1056 ps
87 s: C1= 778 ps	54 s: C2= 1438 ps
44 s: C1= 1067 ps	

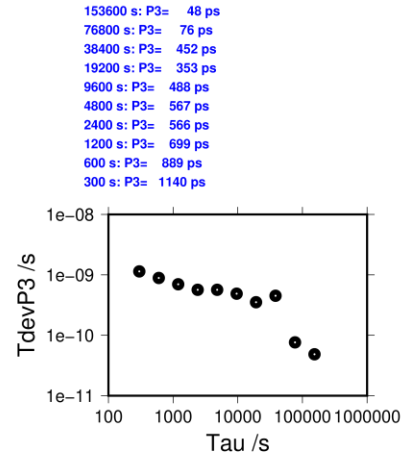
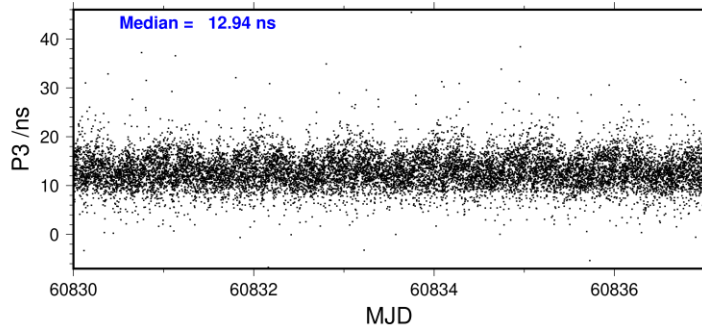


2025-11-26 BP2DBP2125155_7

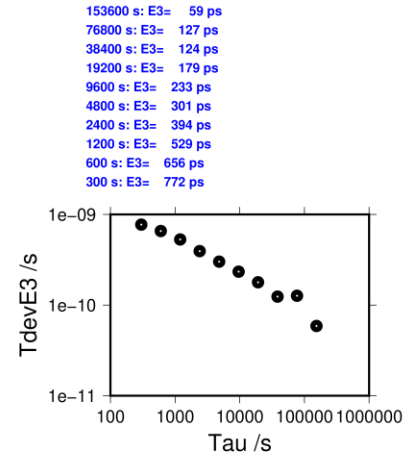
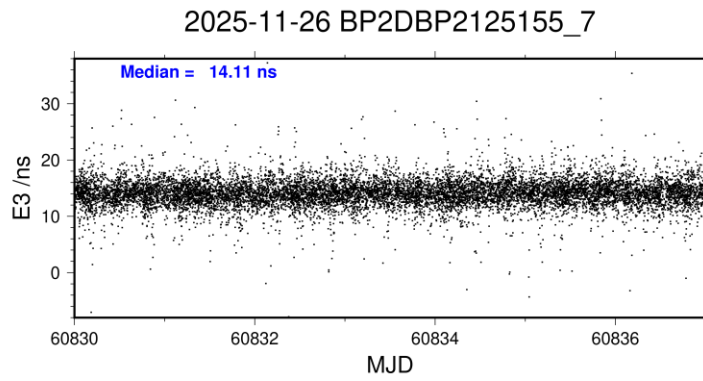
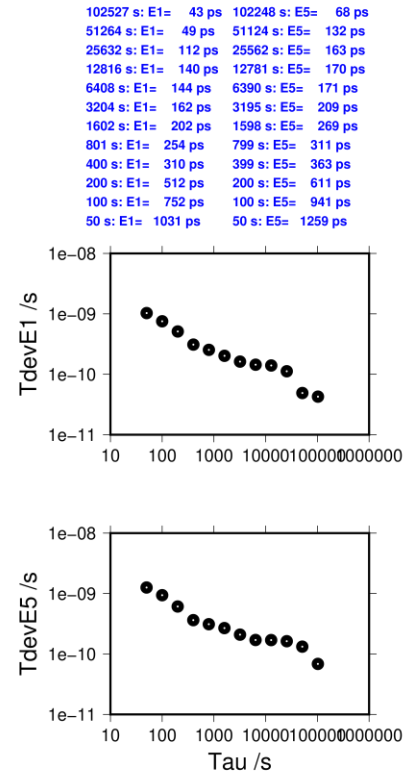
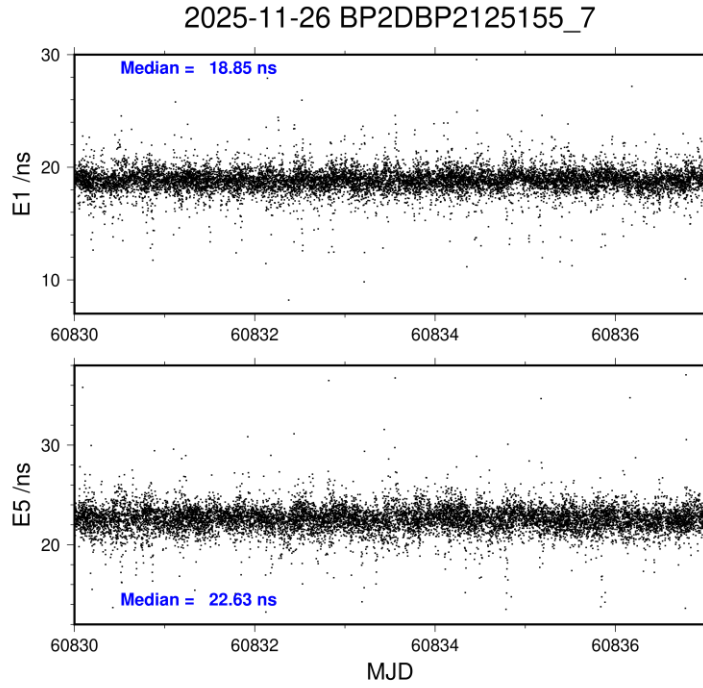


184476 s: P1= 14 ps 184723 s: P2= 16 ps
 92238 s: P1= 44 ps 92362 s: P2= 53 ps
 46119 s: P1= 135 ps 46181 s: P2= 160 ps
 23059 s: P1= 130 ps 23090 s: P2= 174 ps
 11530 s: P1= 101 ps 11545 s: P2= 193 ps
 5765 s: P1= 175 ps 5773 s: P2= 263 ps
 2882 s: P1= 169 ps 2886 s: P2= 272 ps
 1441 s: P1= 188 ps 1443 s: P2= 275 ps
 721 s: P1= 246 ps 722 s: P2= 387 ps
 360 s: P1= 304 ps 361 s: P2= 478 ps
 180 s: P1= 542 ps 180 s: P2= 781 ps
 90 s: P1= 802 ps 90 s: P2= 1157 ps
 45 s: P1= 1078 ps 45 s: P2= 1601 ps

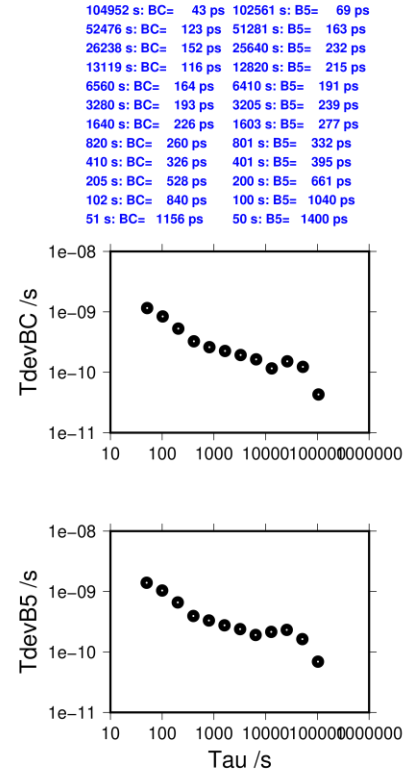
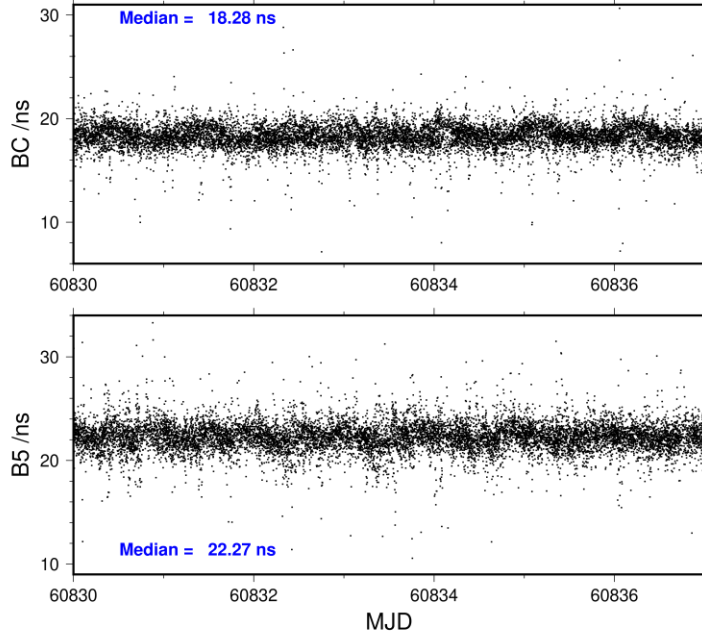
2025-11-26 BP2DBP2125155_7



153600 s: P3= 48 ps
 76800 s: P3= 76 ps
 38400 s: P3= 452 ps
 19200 s: P3= 353 ps
 9600 s: P3= 488 ps
 4800 s: P3= 567 ps
 2400 s: P3= 566 ps
 1200 s: P3= 699 ps
 600 s: P3= 889 ps
 300 s: P3= 1140 ps

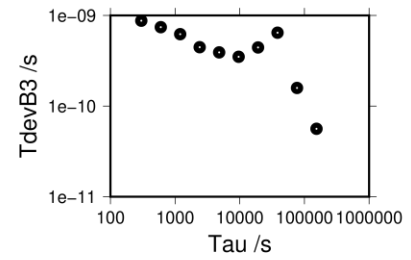
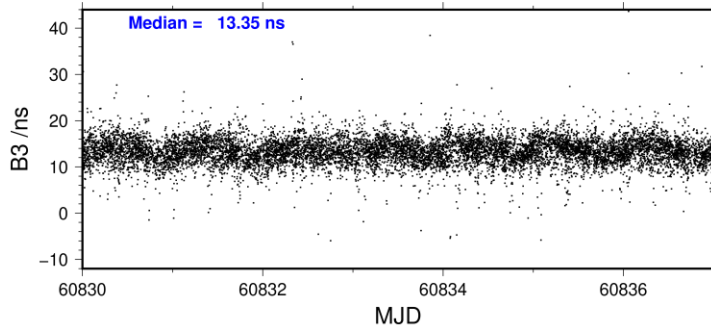


2025-11-26 BP2DBP2125155_7



104952 s: BC= 43 ps 102561 s: B5= 69 ps
 52476 s: BC= 123 ps 51281 s: B5= 163 ps
 26238 s: BC= 152 ps 25640 s: B5= 232 ps
 13119 s: BC= 116 ps 12820 s: B5= 215 ps
 6560 s: BC= 164 ps 6410 s: B5= 191 ps
 3280 s: BC= 193 ps 3205 s: B5= 239 ps
 1640 s: BC= 226 ps 1603 s: B5= 277 ps
 820 s: BC= 260 ps 801 s: B5= 332 ps
 410 s: BC= 326 ps 401 s: B5= 395 ps
 205 s: BC= 528 ps 200 s: B5= 661 ps
 102 s: BC= 840 ps 100 s: B5= 1040 ps
 51 s: BC= 1156 ps 50 s: B5= 1400 ps

2025-11-26 BP2DBP2125155_7



BP2G-BP21**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 143505
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 26750 high elev obs : 10.974 10.563
 Iteration 0: Obs used = 212572; Huge residuals = 0; Large residuals = 23242
 Iteration 1: Obs used = 212572; Huge residuals = 0; Large residuals = 23242
 Computed code bias (P1/P2)/m = 9.520 9.093
 Computed baseline (X,Y,Z)/m = -0.676 0.929 2.794
 RMS of residuals /m = 0.821

Number of phase differences to fit baseline
 L1/L2 = 135300
 L5 = 77696
 A priori baseline (X,Y,Z)/m = -0.676 0.929 2.794
 20156 clock jitters computed out of 20156 intervals
 AVE jitter /ps = -2.5 RMS jitter /ps = 4.7

Iter 1 Large residuals L1= 2
 Iter 1 Large residuals L2= 14
 Iter 1 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = -0.789 -0.870 -1.379
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -0.776 -0.871 -1.373
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -0.825 -0.904 -1.357
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 2
 Iter 2 Large residuals L2= 14
 Iter 2 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = -0.789 -0.870 -1.379
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -0.777 -0.871 -1.375
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -0.826 -0.905 -1.358
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.459 0.058 1.417
 20156 clock jitters computed out of 20156 intervals
 AVE jitter /ps = 1.5 RMS jitter /ps = 2.8

Iter 3 Large residuals L1= 2
 Iter 3 Large residuals L2= 14
 Iter 3 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = 0.005 -0.181 -0.042
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.016 -0.182 -0.038
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = 0.008 -0.186 -0.035
 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 = -1.454 -0.123 1.375
 Final baseline L2 (X,Y,Z)/m = -1.443 -0.124 1.379
 Final baseline L5 (X,Y,Z)/m = -1.451 -0.128 1.381

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 588618

Global average of individual differences

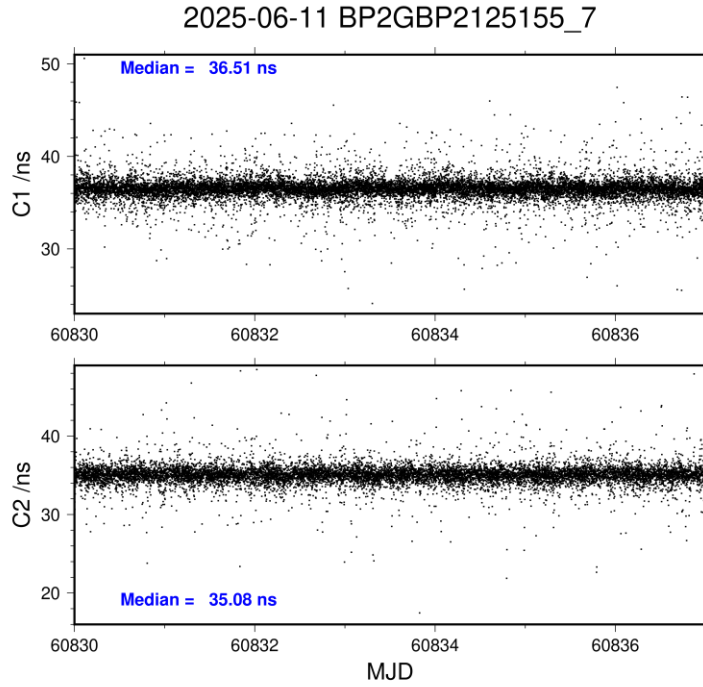
Code	#pts	ave/ns	rms/ns
C1	146321	36.492	2.641
C2	116984	35.038	2.460
P1	138380	36.320	1.950
P2	138182	34.848	3.106
E1	127719	36.506	2.330
E5	129451	35.603	2.201
BC	123440	36.464	2.293
B5	124448	35.611	2.176

Number of 300s epochs in out file = 2016

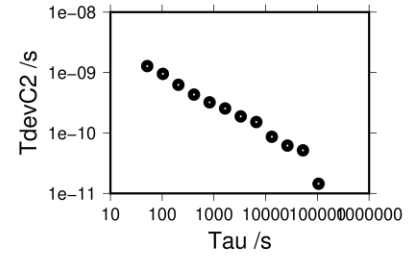
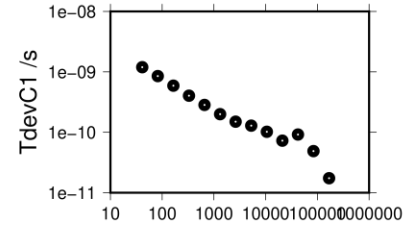
Code	#pts	median/ns	ave/ns	rms/ns
C1	14687	36.506	36.494	1.194
C2	11734	35.076	35.044	1.301
P1	13778	36.333	36.321	0.948
P2	13764	34.940	34.846	1.653
E1	12825	36.491	36.498	1.180
E5	12984	35.629	35.604	1.311
BC	12388	36.467	36.466	1.139
B5	12478	35.624	35.609	1.287

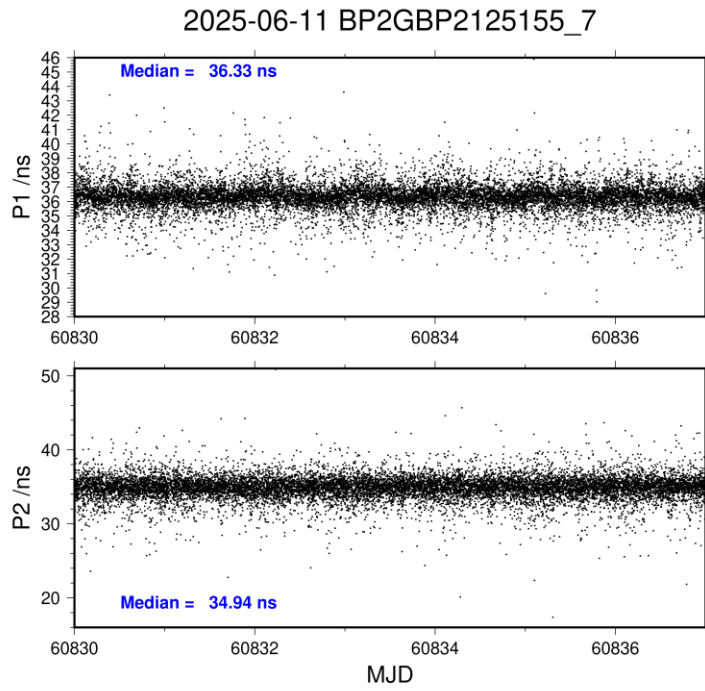
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns

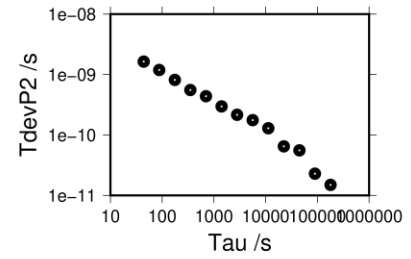
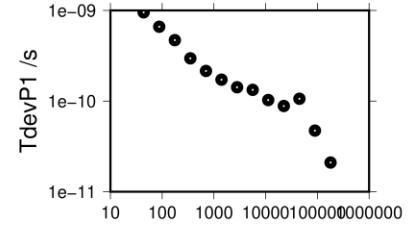


168598 s: C1= 17 ps		
84299 s: C1= 49 ps	105516 s: C2= 14 ps	
42150 s: C1= 92 ps	52758 s: C2= 52 ps	
21075 s: C1= 73 ps	26379 s: C2= 62 ps	
10537 s: C1= 102 ps	13189 s: C2= 86 ps	
5269 s: C1= 129 ps	6595 s: C2= 152 ps	
2634 s: C1= 150 ps	3297 s: C2= 188 ps	
1317 s: C1= 200 ps	1649 s: C2= 255 ps	
659 s: C1= 284 ps	824 s: C2= 322 ps	
329 s: C1= 404 ps	412 s: C2= 433 ps	
165 s: C1= 590 ps	206 s: C2= 626 ps	
82 s: C1= 851 ps	103 s: C2= 951 ps	
41 s: C1= 1196 ps	52 s: C2= 1281 ps	

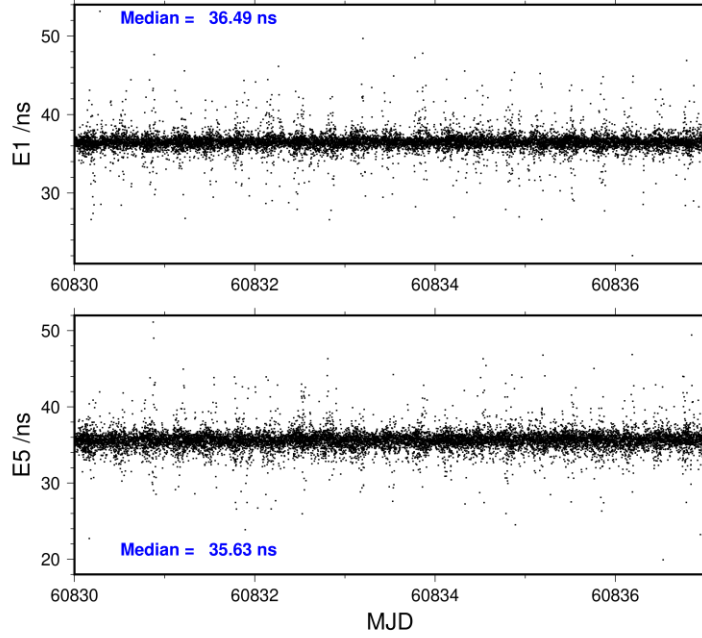




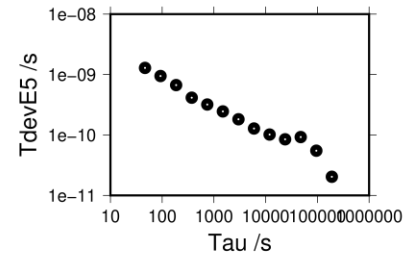
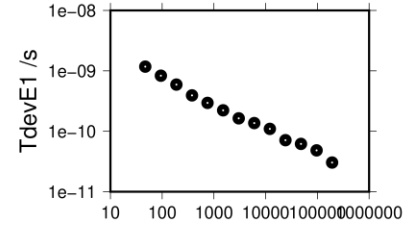
179722 s: P1= 21 ps	179905 s: P2= 15 ps
89861 s: P1= 47 ps	89952 s: P2= 23 ps
44931 s: P1= 106 ps	44976 s: P2= 56 ps
22465 s: P1= 88 ps	22488 s: P2= 65 ps
11233 s: P1= 103 ps	11244 s: P2= 129 ps
5616 s: P1= 133 ps	5622 s: P2= 176 ps
2808 s: P1= 142 ps	2811 s: P2= 216 ps
1404 s: P1= 172 ps	1406 s: P2= 297 ps
702 s: P1= 215 ps	703 s: P2= 439 ps
351 s: P1= 296 ps	351 s: P2= 555 ps
176 s: P1= 471 ps	176 s: P2= 814 ps
88 s: P1= 661 ps	88 s: P2= 1189 ps
44 s: P1= 952 ps	44 s: P2= 1636 ps



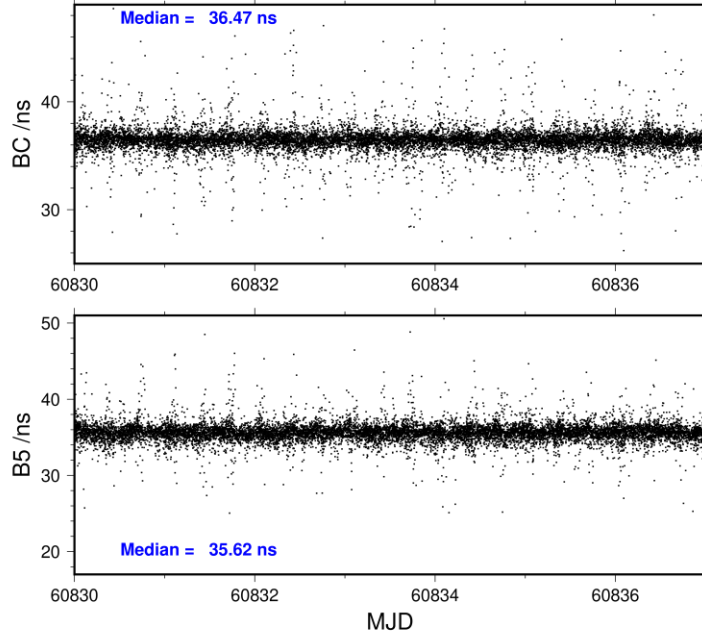
2025-06-11 BP2GBP2125155_7



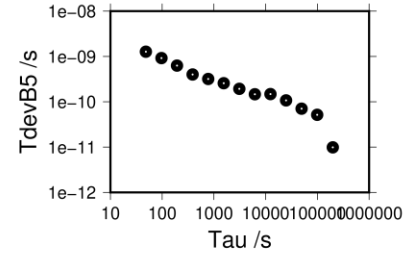
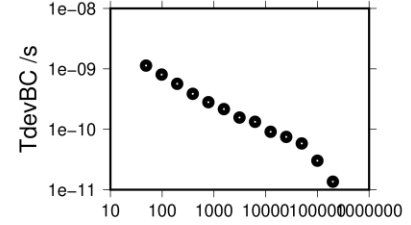
193078 s: $E1=$ 30 ps	190713 s: $E5=$ 20 ps
96539 s: $E1=$ 48 ps	95357 s: $E5=$ 55 ps
48269 s: $E1=$ 62 ps	47678 s: $E5=$ 92 ps
24135 s: $E1=$ 71 ps	23839 s: $E5=$ 85 ps
12067 s: $E1=$ 110 ps	11920 s: $E5=$ 102 ps
6034 s: $E1=$ 137 ps	5960 s: $E5=$ 128 ps
3017 s: $E1=$ 164 ps	2980 s: $E5=$ 182 ps
1508 s: $E1=$ 222 ps	1490 s: $E5=$ 246 ps
754 s: $E1=$ 295 ps	745 s: $E5=$ 319 ps
377 s: $E1=$ 393 ps	372 s: $E5=$ 415 ps
189 s: $E1=$ 592 ps	186 s: $E5=$ 669 ps
94 s: $E1=$ 831 ps	93 s: $E5=$ 946 ps
47 s: $E1=$ 1175 ps	47 s: $E5=$ 1289 ps



2025-06-11 BP2GBP2125155_7



199890 s: BC= 14 ps	198448 s: B5= 10 ps
99945 s: BC= 30 ps	99224 s: B5= 51 ps
49972 s: BC= 58 ps	49612 s: B5= 70 ps
24986 s: BC= 75 ps	24806 s: B5= 107 ps
12493 s: BC= 91 ps	12403 s: B5= 147 ps
6247 s: BC= 133 ps	6201 s: B5= 146 ps
3123 s: BC= 157 ps	3101 s: B5= 193 ps
1562 s: BC= 216 ps	1550 s: B5= 256 ps
781 s: BC= 281 ps	775 s: B5= 319 ps
390 s: BC= 387 ps	388 s: B5= 400 ps
195 s: BC= 566 ps	194 s: B5= 629 ps
98 s: BC= 806 ps	97 s: B5= 920 ps
49 s: BC= 1133 ps	48 s: B5= 1275 ps



1.2/ OP (25184)**Period**

MJD 60859 to 60865

Delays

BP2D: (cf page 4, 27)
REFDLY = 52.15 ns (42.17+9.98)
CABDLY = 176.85 ns

BP2G: (cf page 6, 27)
REFDLY = 52.26 ns (42.28+9.98)
CABDLY = 176.38 ns

OP70: (cf page 23)
REFDLY = 90.60 ns
CABDLY = 128.70 ns

OP73: (cf page 24)
REFDLY = 85.24 ns
CABDLY = 129.60 ns

OP75: (cf page 25)
REFDLY = 85.34 ns
CABDLY = 129.60 ns

OPM9: (cf page 26)
REFDLY = 60.46 ns
CABDLY = 173.60 ns

Setup at the OP

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	OP	
Date and hour of the beginning of measurements:	03/07/2025	
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	OP70	
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5Tr 3083499	
1 PPS trigger level /V:	1 V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Heliax	
Length outside the building /m:	<15 m	
• Antenna maker and type: Antenna serial number:	LEIAR25.R4 725498	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	N/A (Autocompensation OFF)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A (Autocompensation OFF)	
• Antenna cable delay:	128.7	(1)
Splitter delay (if any):	Included in antenna cable delay	(1)
Additional cable delay (if any):	Included in antenna cable delay	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	P1: 27.68 ns ; P2: 26.25 ns ; C1: 29.90 ns	
• INT DLY (Galileo) /ns:	E1: 29.96 ns ; E5a: 30.29 ns	
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	128.7	
• REF DLY /ns:	90.604	
• Coordinates reference frame:	ITRF2020	
Latitude or X /m:	4202779.839	
Longitude or Y /m:	171370.845	
Height or Z /m:	4478660.894	
General information		
• Rise time of the local UTC pulse:	500 ps	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22 +/-1°C	
Set humidity value and uncertainty:	N/A	

(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:	OP	
Date and hour of the beginning of measurements:	03/07/2025	
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	OP73	
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5Tr 3069470	
1 PPS trigger level /V:	1 V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Helix	
Length outside the building /m:	<15 m	
• Antenna maker and type: Antenna serial number:	SEPCHOKE_B3E6 5769	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	N/A (Autocompensation OFF)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A (Autocompensation OFF)	
• Antenna cable delay:	129.6 ns	(1)
Splitter delay (if any):	Included in antenna cable delay	(1)
Additional cable delay (if any):	Included in antenna cable delay	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	P1: 29.55 ns ; P2: 26.02 ns ; C1: 31.72 ns	
• INT DLY (Galileo) /ns:	E1: 31.78 ns ; E5a: 31.52 ns	
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	129.6 ns	
• REF DLY /ns:	85.254	
• Coordinates reference frame:	ITRF2020	
Latitude or X /m:	4202777.071	
Longitude or Y /m:	171367.028	
Height or Z /m:	4478661.392	
General information		
• Rise time of the local UTC pulse:	500 ps	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22 +/-1°C	
Set humidity value and uncertainty:	N/A	

(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:	OP	
Date and hour of the beginning of measurements:	03/07/2025	
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	OP75	
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx5Tr 3024918	
1 PPS trigger level /V:	1 V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Helix	
Length outside the building /m:	<15 m	
• Antenna maker and type: Antenna serial number:	SEPCHOKE_B3E6 5769	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	N/A (Autocompensation OFF)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A (Autocompensation OFF)	
• Antenna cable delay:	129.6 ns	(1)
Splitter delay (if any):	Included in antenna cable delay	(1)
Additional cable delay (if any):	Included in antenna cable delay	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	P1: 30.16 ns ; P2: 25.42 ns ; C1: 32.53 ns	
• INT DLY (Galileo) /ns:	E1: 32.58 ns ; E5a: 31.55 ns	
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	129.6 ns	
• REF DLY /ns:	85.345	
• Coordinates reference frame:	ITRF2020	
Latitude or X /m:	4202777.071	
Longitude or Y /m:	171367.028	
Height or Z /m:	4478661.392	
General information		
• Rise time of the local UTC pulse:	500 ps	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22 +/-1°C	
Set humidity value and uncertainty:	N/A	

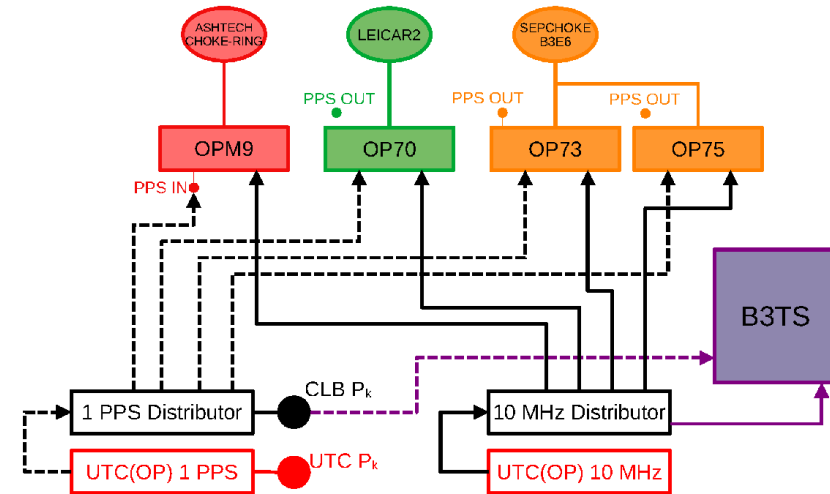
(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	OP	
Date and hour of the beginning of measurements:	03/07/2025	
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	OPM9	
• Receiver maker and type:	GTR51	
Receiver serial number:	1402025	
1 PPS trigger level /V:	1 V	
• Antenna cable maker and type:	Heliac	
Phase stabilised cable (Y/N):		
Length outside the building /m:	<15 m	
• Antenna maker and type:	ASHTECH Choke Ring	
Antenna serial number:		
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	60.456	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)		
• Antenna cable delay:	173.6 ns	(1)
Splitter delay (if any):	Included in antenna cable delay	(1)
Additional cable delay (if any):	Included in antenna cable delay	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	P1: 37.41 ns ; P2: 34.31 ns ; C1: 39.34 ns	
• INT DLY (Galileo) /ns:	E1: 40.69 ns ; E5a: 34.56 ns	
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	173.6 ns	
• REF DLY /ns:	60.456	
• Coordinates reference frame:	ITRF2020	
Latitude or X /m:	4202777.428	
Longitude or Y /m:	171367.126	
Height or Z /m:	4478660.717	
General information		
• Rise time of the local UTC pulse:	500 ps	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22 +/-1°C	
Set humidity value and uncertainty:	N/A	

(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 of the experiment set-up at OP**

$CLB P_k - UTC P_k = 9.985 \text{ ns}, \sigma = 0.2 \text{ ns}$

July 10, 2025

OP70-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 137835
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 22378 high elev obs : -21.482 -23.047
 Iteration 0: Obs used = 232476; Huge residuals = 172; Large residuals = 294
 Iteration 1: Obs used = 232479; Huge residuals = 0; Large residuals = 119
 Computed code bias (P1/P2)/m = -21.370 -22.856
 Computed baseline (X,Y,Z)/m = 2.091 -1.298 -2.030
 RMS of residuals /m = 0.416

Number of phase differences to fit baseline
 L1/L2 = 136894
 L5 = 80333
 A priori baseline (X,Y,Z)/m = 2.091 -1.298 -2.030
 15996 clock jitters computed out of 15996 intervals
 AVE jitter /ps = -0.2 RMS jitter /ps = 4.0

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 = -0.171 -0.064 -0.145
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.178 -0.060 -0.153
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.175 -0.058 -0.153
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 1.916 -1.360 -2.179
 15996 clock jitters computed out of 15996 intervals
 AVE jitter /ps = 0.1 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 = -0.002 -0.017 -0.001
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.008 -0.013 -0.008
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.004 -0.013 -0.008
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 1.915 -1.377 -2.180
 Final baseline L2 (X,Y,Z)/m = 1.908 -1.373 -2.187
 Final baseline L5 (X,Y,Z)/m = 1.913 -1.373 -2.187

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 544622

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	138160	-69.548	1.150
C2	110820	-74.304	1.343
P1	137634	-70.787	1.193
P2	137632	-75.708	1.450
E1	120182	-69.321	0.915
E5	120195	-73.296	0.990
BC	128129	-68.644	1.102
B5	128662	-72.937	1.109

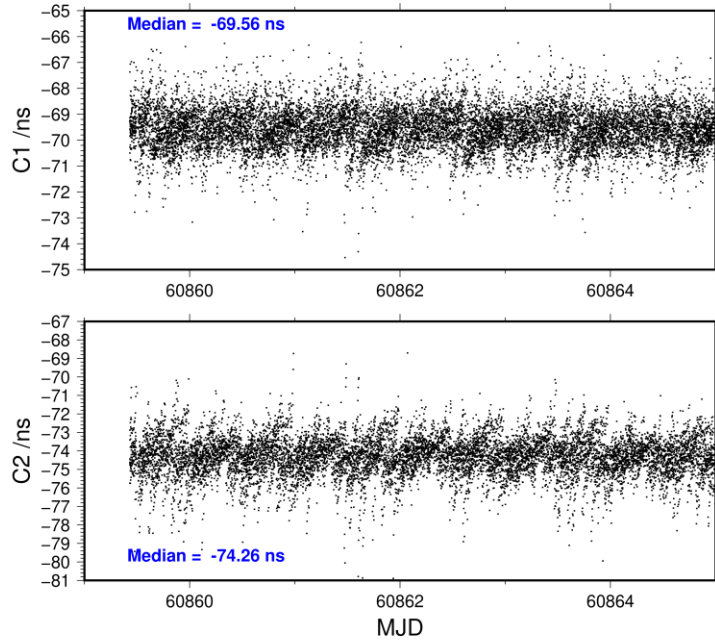
Number of 300s epochs in out file = 1605

Code	#pts	median/ns	ave/ns	rms/ns
C1	13802	-69.563	-69.561	0.788
C2	11069	-74.264	-74.302	1.062
P1	13745	-70.787	-70.798	0.853
P2	13745	-75.676	-75.691	1.132
E1	12010	-69.323	-69.318	0.642
E5	12010	-73.319	-73.292	0.889
BC	12783	-68.619	-68.638	0.817
B5	12832	-72.961	-72.934	1.001

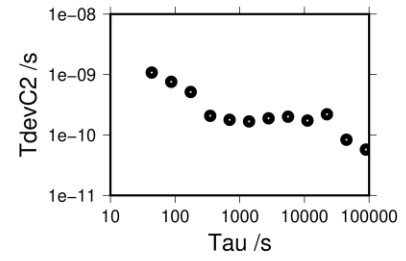
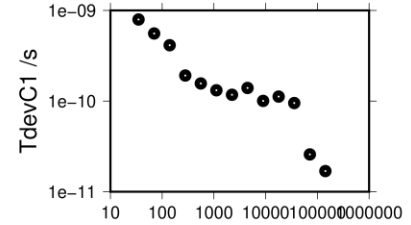
Ionofree combinations

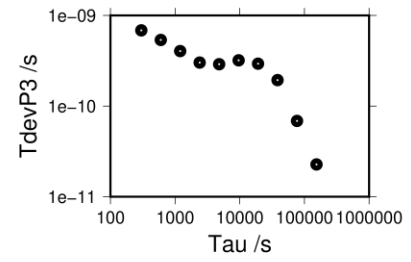
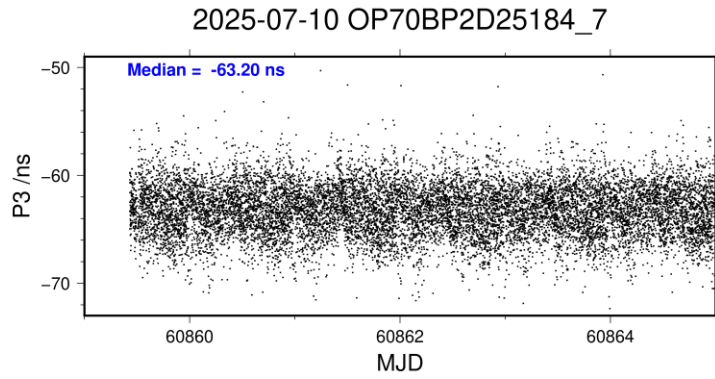
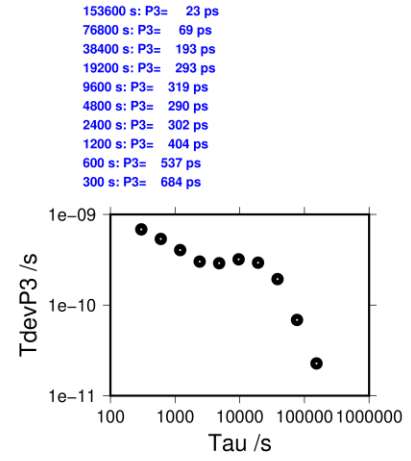
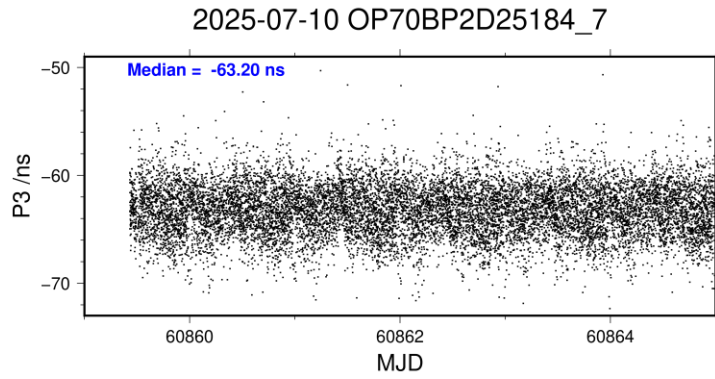
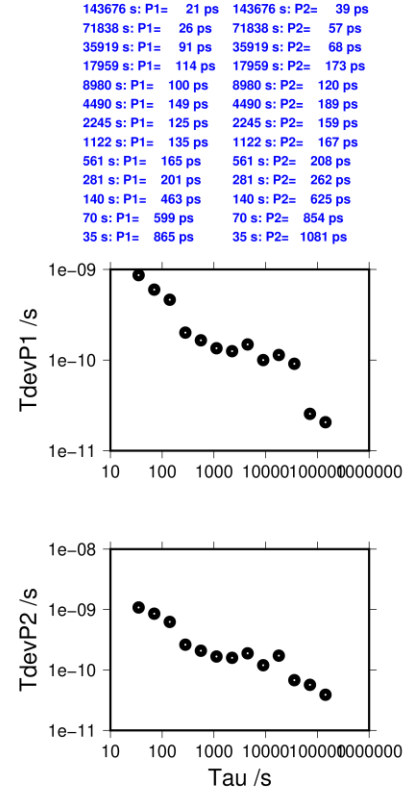
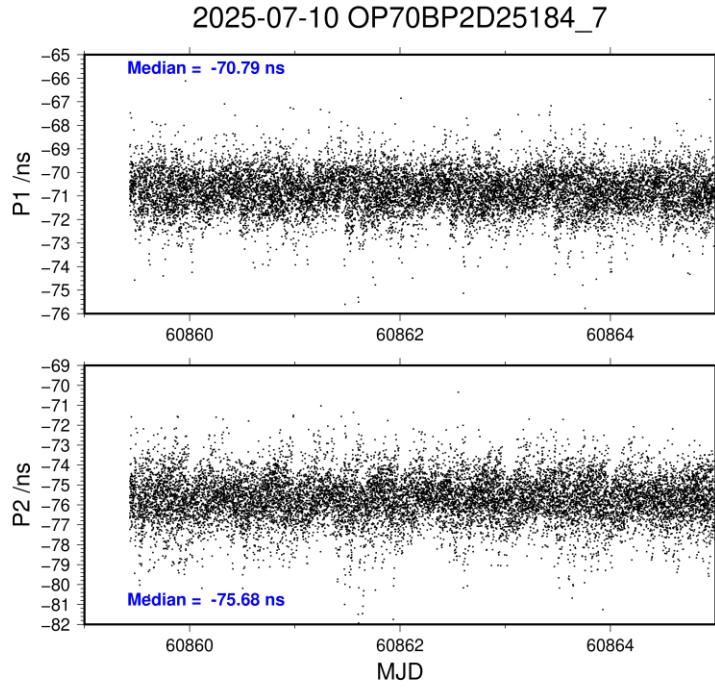
Code	#pts	median/ns	ave/ns	rms/ns
P3	1600	-63.199	-63.228	0.670
E3	1600	-64.318	-64.344	0.436
B3	1600	-63.325	-63.282	0.632

2025-07-10 OP70BP2D25184_7

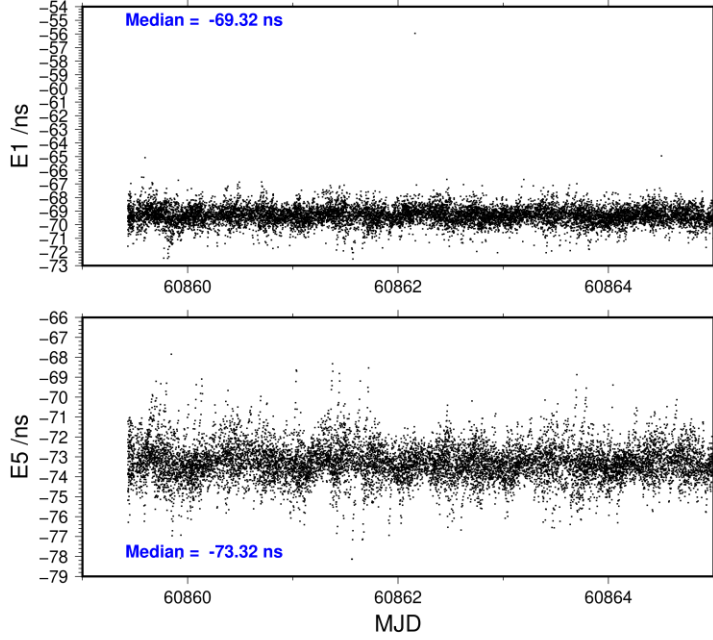


143082 s: C1= 17 ps	89207 s: C2= 57 ps
71541 s: C1= 26 ps	44603 s: C2= 83 ps
35771 s: C1= 95 ps	22302 s: C2= 221 ps
17885 s: C1= 112 ps	11151 s: C2= 173 ps
8943 s: C1= 100 ps	5575 s: C2= 201 ps
4471 s: C1= 140 ps	2788 s: C2= 189 ps
2236 s: C1= 117 ps	1394 s: C2= 167 ps
1118 s: C1= 132 ps	697 s: C2= 178 ps
559 s: C1= 156 ps	348 s: C2= 208 ps
279 s: C1= 191 ps	174 s: C2= 515 ps
140 s: C1= 414 ps	87 s: C2= 759 ps
70 s: C1= 557 ps	44 s: C2= 1079 ps
35 s: C1= 794 ps	

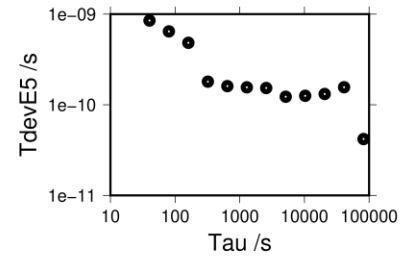
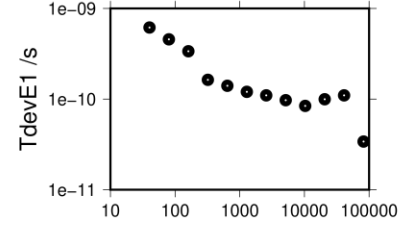




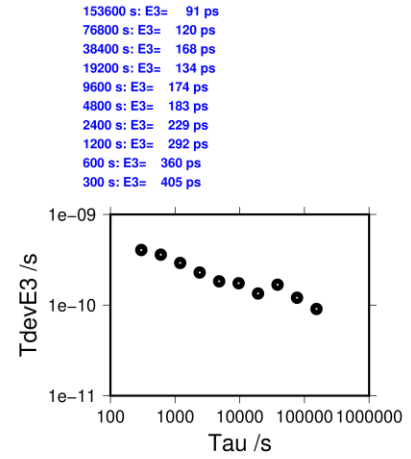
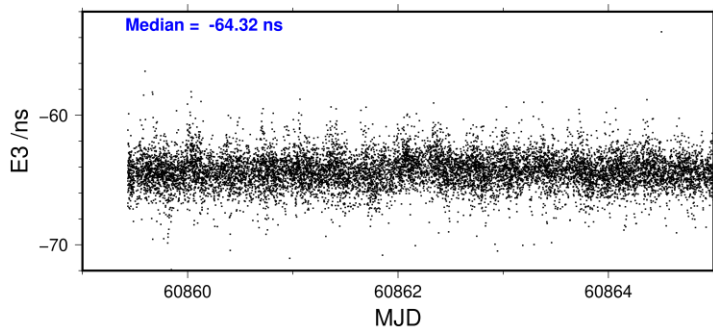
2025-07-10 OP70BP2D25184_7



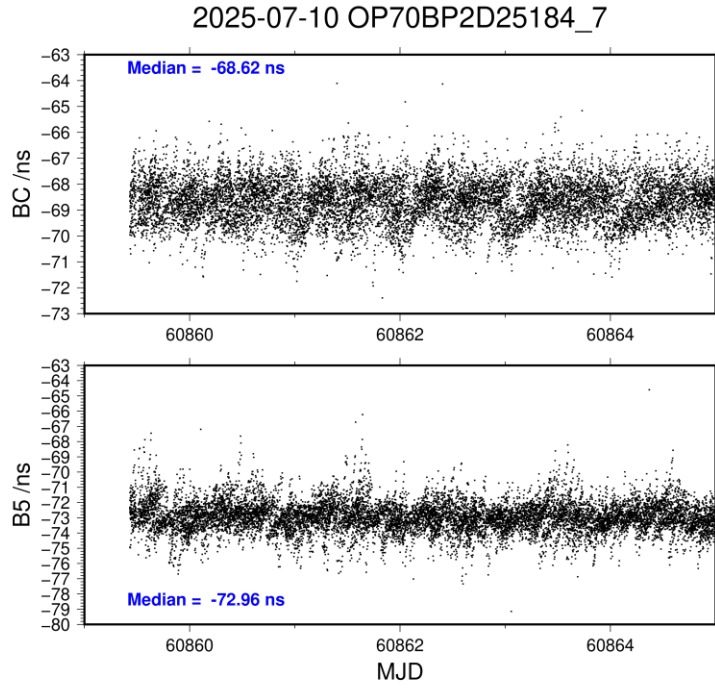
82217 s: E1= 34 ps	82217 s: E5= 42 ps
41108 s: E1= 110 ps	41108 s: E5= 156 ps
20554 s: E1= 99 ps	20554 s: E5= 131 ps
10277 s: E1= 84 ps	10277 s: E5= 126 ps
5139 s: E1= 97 ps	5139 s: E5= 123 ps
2569 s: E1= 110 ps	2569 s: E5= 153 ps
1285 s: E1= 120 ps	1285 s: E5= 156 ps
642 s: E1= 140 ps	642 s: E5= 161 ps
321 s: E1= 163 ps	321 s: E5= 180 ps
161 s: E1= 337 ps	161 s: E5= 483 ps
80 s: E1= 456 ps	80 s: E5= 645 ps
40 s: E1= 616 ps	40 s: E5= 851 ps



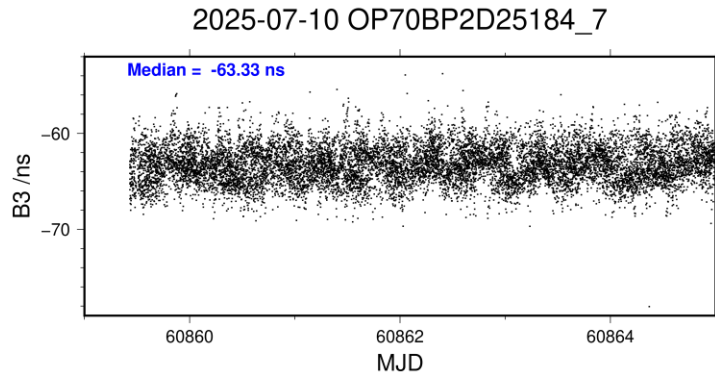
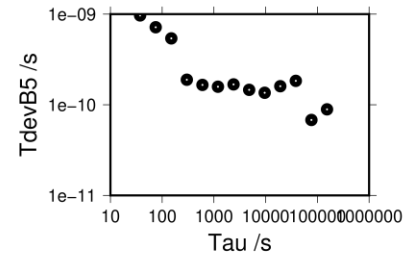
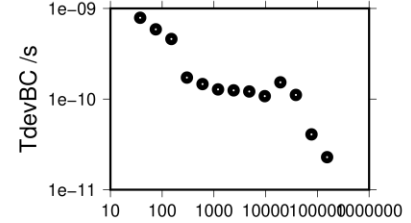
2025-07-10 OP70BP2D25184_7



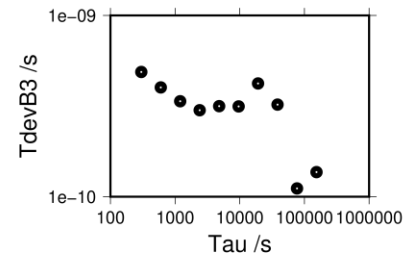
153600 s: E3= 91 ps
76800 s: E3= 120 ps
38400 s: E3= 168 ps
19200 s: E3= 134 ps
9600 s: E3= 174 ps
4800 s: E3= 183 ps
2400 s: E3= 229 ps
1200 s: E3= 292 ps
600 s: E3= 360 ps
300 s: E3= 405 ps



154105 s: BC= 23 ps 153516 s: B5= 89 ps
 77052 s: BC= 41 ps 76758 s: B5= 68 ps
 38526 s: BC= 111 ps 38379 s: B5= 183 ps
 19263 s: BC= 153 ps 19190 s: B5= 160 ps
 9632 s: BC= 108 ps 9595 s: B5= 136 ps
 4816 s: BC= 121 ps 4797 s: B5= 146 ps
 2408 s: BC= 125 ps 2399 s: B5= 168 ps
 1204 s: BC= 128 ps 1199 s: B5= 158 ps
 602 s: BC= 147 ps 600 s: B5= 166 ps
 301 s: BC= 173 ps 300 s: B5= 189 ps
 150 s: BC= 460 ps 150 s: B5= 540 ps
 75 s: BC= 588 ps 75 s: B5= 716 ps
 38 s: BC= 789 ps 37 s: B5= 967 ps



153600 s: B3= 137 ps
 76800 s: B3= 111 ps
 38400 s: B3= 322 ps
 19200 s: B3= 421 ps
 9600 s: B3= 315 ps
 4800 s: B3= 316 ps
 2400 s: B3= 300 ps
 1200 s: B3= 336 ps
 600 s: B3= 401 ps
 300 s: B3= 487 ps



OP70-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 171414
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 24381 high elev obs : -26.174 -25.819
 Iteration 0: Obs used = 287671; Huge residuals = 4212; Large residuals = 8395
 Iteration 1: Obs used = 290790; Huge residuals = 0; Large residuals = 1064
 Computed code bias (P1/P2)/m = -26.005 -25.648
 Computed baseline (X,Y,Z)/m = 1.268 -1.595 -1.407
 RMS of residuals /m = 0.477

Number of phase differences to fit baseline
 L1/L2 = 168294
 L5 = 102521
 A priori baseline (X,Y,Z)/m = 1.268 -1.595 -1.407
 17497 clock jitters computed out of 17497 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= 1
 Computed baseline L1 (X,Y,Z)/m = -0.044 -0.021 -0.076
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -0.039 -0.022 -0.067
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.005 0.099 -0.022
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 0
 Iter 2 Large residuals L2= 0
 Iter 2 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = -0.044 -0.021 -0.076
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -0.039 -0.022 -0.067
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.005 0.099 -0.022
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 1.227 -1.616 -1.478
 17497 clock jitters computed out of 17497 intervals
 AVE jitter /ps = 0.0 RMS jitter /ps = 0.1

Iter 3 Large residuals L1= 0
 Iter 3 Large residuals L2= 0
 Iter 3 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = -0.004 -0.002 -0.006
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.001 -0.003 0.003
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.037 0.117 0.047
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 1.223 -1.618 -1.484
 Final baseline L2 (X,Y,Z)/m = 1.228 -1.619 -1.476
 Final baseline L5 (X,Y,Z)/m = 1.264 -1.499 -1.431

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 666938

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	171526	-86.689	1.660
C2	141414	-85.460	1.904
P1	169224	-86.536	1.520
P2	169223	-85.355	1.606
E1	149042	-86.750	1.168
E5	149826	-85.792	1.069
BC	144249	-86.495	1.336
B5	145013	-85.799	1.163

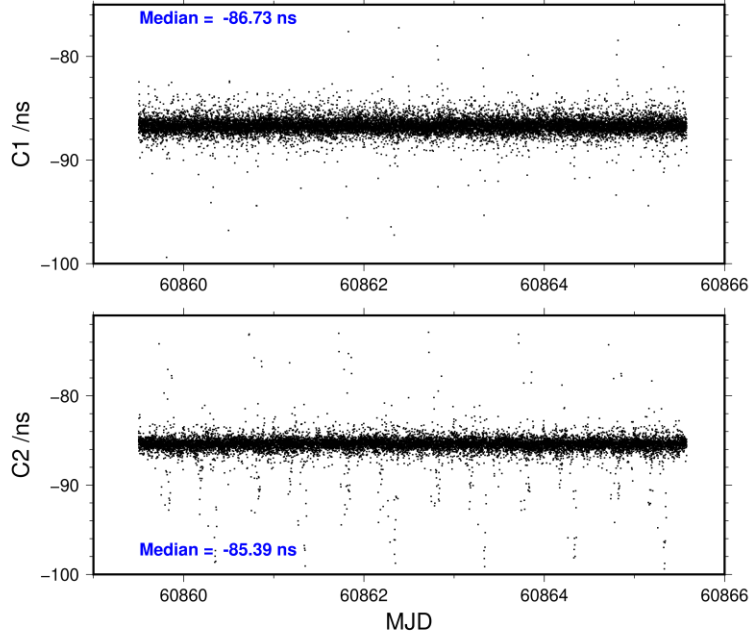
Number of 300s epochs in out file = 1751

Code	#pts	median/ns	ave/ns	rms/ns
C1	17126	-86.726	-86.691	0.805
C2	14118	-85.395	-85.464	1.154
P1	16905	-86.564	-86.533	1.001
P2	16905	-85.332	-85.344	1.133
E1	14886	-86.779	-86.750	0.606
E5	14959	-85.803	-85.801	0.653
BC	14408	-86.525	-86.487	0.652
B5	14484	-85.807	-85.799	0.729

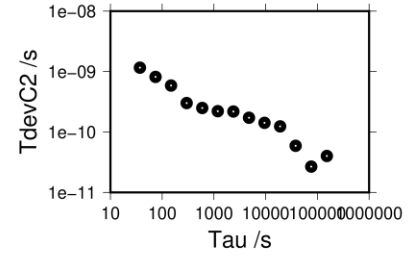
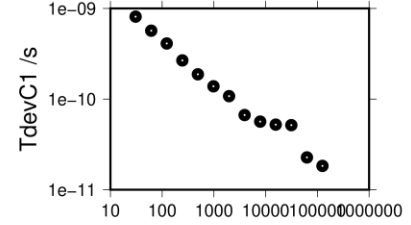
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1751	-88.455	-88.452	0.535
E3	1751	-88.009	-88.011	0.355
B3	1751	-87.433	-87.433	0.382

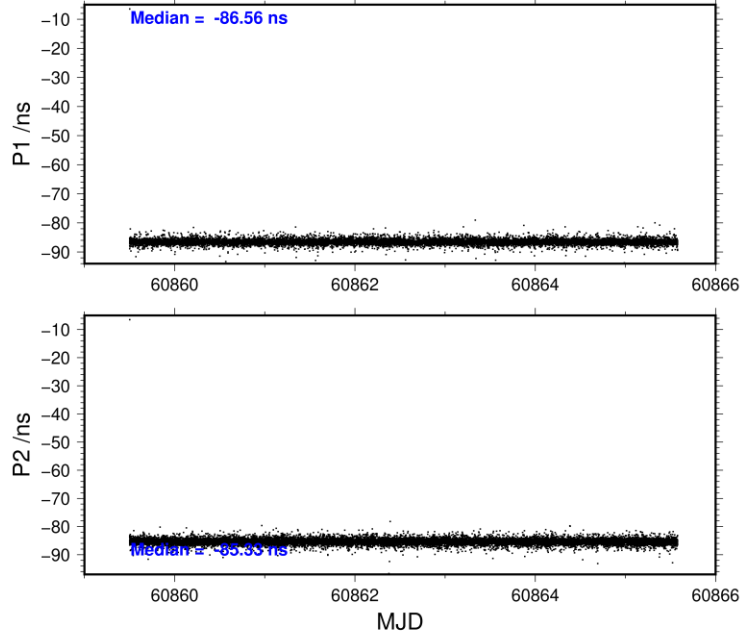
2025-07-10 OP70BP2G25184_7



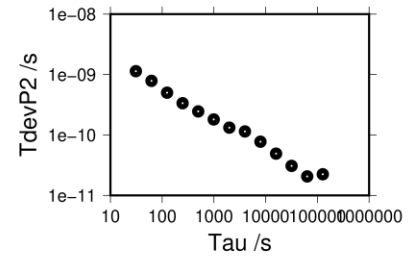
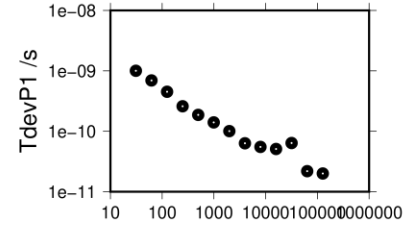
125571 s: C1= 18 ps	152327 s: C2= 40 ps
62785 s: C1= 23 ps	76163 s: C2= 27 ps
31393 s: C1= 52 ps	38082 s: C2= 59 ps
15696 s: C1= 52 ps	19041 s: C2= 124 ps
7848 s: C1= 56 ps	9520 s: C2= 141 ps
3924 s: C1= 67 ps	4760 s: C2= 172 ps
1962 s: C1= 108 ps	2380 s: C2= 218 ps
981 s: C1= 138 ps	1190 s: C2= 221 ps
491 s: C1= 187 ps	595 s: C2= 250 ps
245 s: C1= 267 ps	298 s: C2= 301 ps
123 s: C1= 411 ps	149 s: C2= 586 ps
61 s: C1= 567 ps	74 s: C2= 816 ps
31 s: C1= 813 ps	37 s: C2= 1158 ps



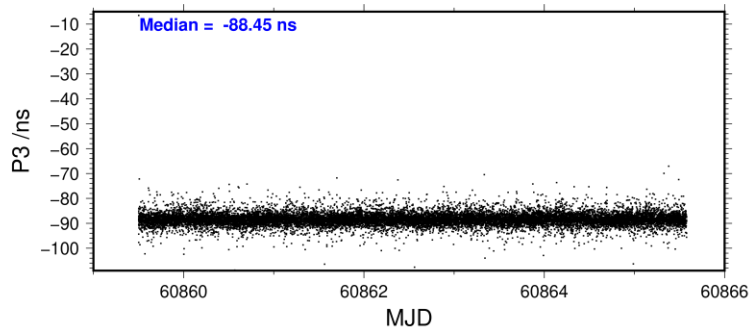
2025-07-10 OP70BP2G25184_7



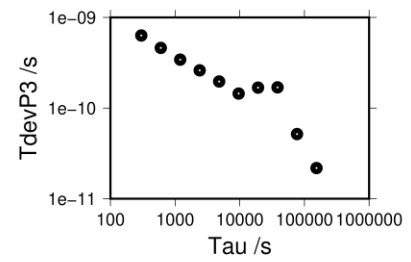
127212 s: P1= 20 ps	127212 s: P2= 22 ps
63606 s: P1= 22 ps	63606 s: P2= 21 ps
31803 s: P1= 64 ps	31803 s: P2= 31 ps
15902 s: P1= 51 ps	15902 s: P2= 49 ps
7951 s: P1= 55 ps	7951 s: P2= 77 ps
3975 s: P1= 63 ps	3975 s: P2= 115 ps
1988 s: P1= 101 ps	1988 s: P2= 132 ps
994 s: P1= 140 ps	994 s: P2= 181 ps
497 s: P1= 187 ps	497 s: P2= 246 ps
248 s: P1= 259 ps	248 s: P2= 336 ps
124 s: P1= 450 ps	124 s: P2= 501 ps
62 s: P1= 694 ps	62 s: P2= 786 ps
31 s: P1= 1004 ps	31 s: P2= 1137 ps



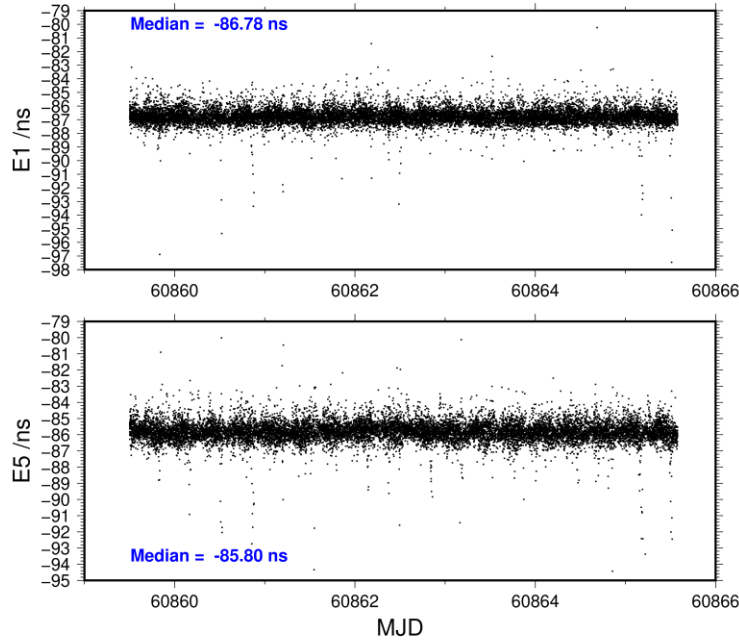
2025-07-10 OP70BP2G25184_7



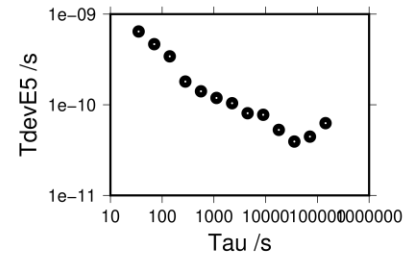
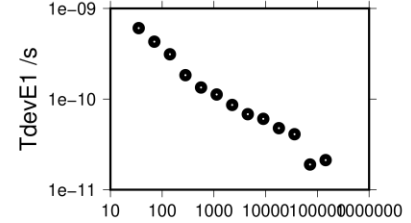
153600 s: P3= 22 ps
76800 s: P3= 52 ps
38400 s: P3= 169 ps
19200 s: P3= 168 ps
9600 s: P3= 144 ps
4800 s: P3= 197 ps
2400 s: P3= 261 ps
1200 s: P3= 342 ps
600 s: P3= 461 ps
300 s: P3= 633 ps



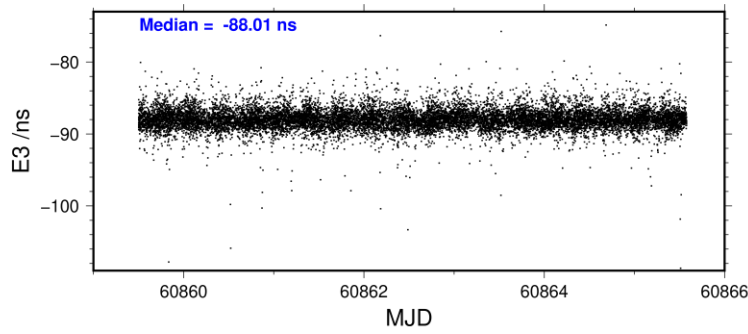
2025-07-10 OP70BP2G25184_7



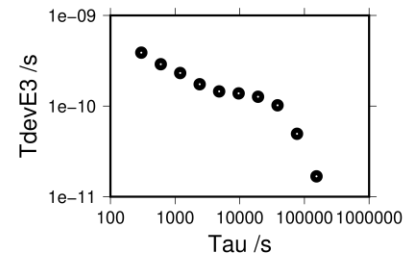
144468 s: E1= 21 ps 143763 s: E5= 63 ps
 72234 s: E1= 19 ps 71881 s: E5= 44 ps
 36117 s: E1= 41 ps 35941 s: E5= 39 ps
 18058 s: E1= 48 ps 17970 s: E5= 53 ps
 9029 s: E1= 61 ps 8985 s: E5= 78 ps
 4515 s: E1= 68 ps 4493 s: E5= 81 ps
 2257 s: E1= 86 ps 2246 s: E5= 104 ps
 1129 s: E1= 112 ps 1123 s: E5= 119 ps
 564 s: E1= 134 ps 562 s: E5= 141 ps
 282 s: E1= 184 ps 281 s: E5= 181 ps
 141 s: E1= 312 ps 140 s: E5= 342 ps
 71 s: E1= 429 ps 70 s: E5= 466 ps
 35 s: E1= 606 ps 35 s: E5= 644 ps

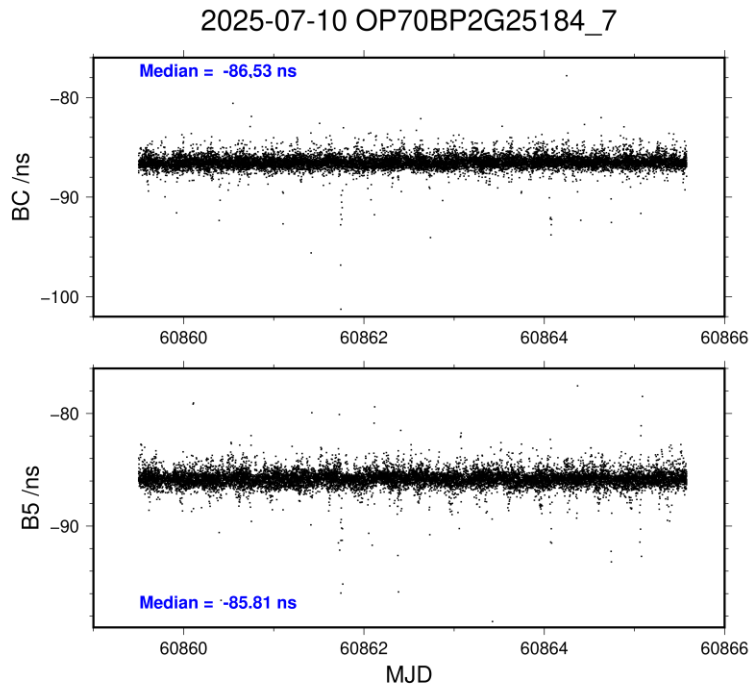


2025-07-10 OP70BP2G25184_7

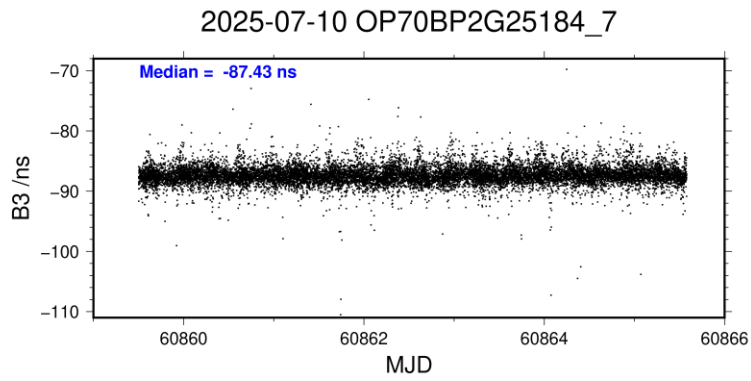
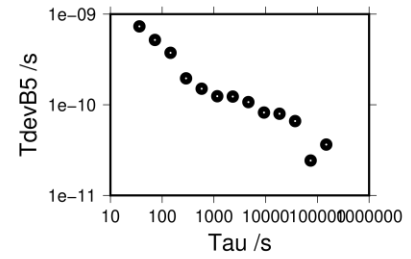
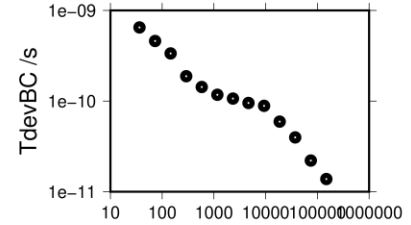


153600 s: E3= 17 ps
 76800 s: E3= 49 ps
 38400 s: E3= 102 ps
 19200 s: E3= 127 ps
 9600 s: E3= 138 ps
 4800 s: E3= 145 ps
 2400 s: E3= 174 ps
 1200 s: E3= 232 ps
 600 s: E3= 290 ps
 300 s: E3= 389 ps

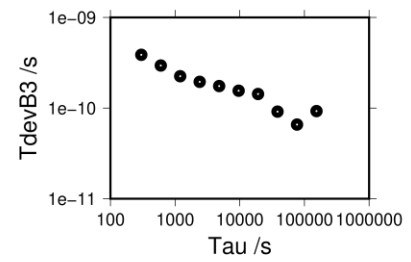




149261 s: BC= 14 ps 148478 s: B5= 36 ps
 74630 s: BC= 22 ps 74239 s: B5= 24 ps
 37315 s: BC= 40 ps 37119 s: B5= 66 ps
 18658 s: BC= 59 ps 18560 s: B5= 80 ps
 9329 s: BC= 89 ps 9280 s: B5= 82 ps
 4664 s: BC= 95 ps 4640 s: B5= 107 ps
 2332 s: BC= 107 ps 2320 s: B5= 123 ps
 1166 s: BC= 117 ps 1160 s: B5= 124 ps
 583 s: BC= 143 ps 580 s: B5= 150 ps
 292 s: BC= 188 ps 290 s: B5= 196 ps
 146 s: BC= 335 ps 145 s: B5= 375 ps
 73 s: BC= 460 ps 72 s: B5= 519 ps
 36 s: BC= 649 ps 36 s: B5= 732 ps



153600 s: B3= 93 ps
 76800 s: B3= 66 ps
 38400 s: B3= 91 ps
 19200 s: B3= 143 ps
 9600 s: B3= 155 ps
 4800 s: B3= 175 ps
 2400 s: B3= 195 ps
 1200 s: B3= 225 ps
 600 s: B3= 295 ps
 300 s: B3= 387 ps



OP73-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 134231
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 22378 high elev obs : -17.677 -19.852
 Iteration 0: Obs used = 224726; Huge residuals = 306; Large residuals = 836
 Iteration 1: Obs used = 224794; Huge residuals = 1; Large residuals = 462
 Iteration 2: Obs used = 224795; Huge residuals = 0; Large residuals = 460
 Computed code bias (P1/P2)/m = -18.347 -20.452
 Computed baseline (X,Y,Z)/m = 4.212 2.347 -3.250
 RMS of residuals /m = 0.462

Number of phase differences to fit baseline
 L1/L2 = 133161
 L5 = 78319
 A priori baseline (X,Y,Z)/m = 4.212 2.347 -3.250
 15996 clock jitters computed out of 15996 intervals
 AVE jitter /ps = -0.1 RMS jitter /ps = 4.0

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 = 0.460 0.052 0.492
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.451 0.054 0.478
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.453 0.051 0.473
 RMS of residuals L5 /m = 0.003

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 = 0.460 0.052 0.492
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.451 0.054 0.478
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.453 0.051 0.473
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 4.668 2.400 -2.765
 15996 clock jitters computed out of 15996 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 0.9

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 = 0.022 -0.010 0.021
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.012 -0.008 0.007
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.009 -0.009 0.003
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.690 2.390 -2.744
 Final baseline L2 (X,Y,Z)/m = 4.680 2.392 -2.758
 Final baseline L5 (X,Y,Z)/m = 4.677 2.391 -2.762

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 539226

Global average of individual differences

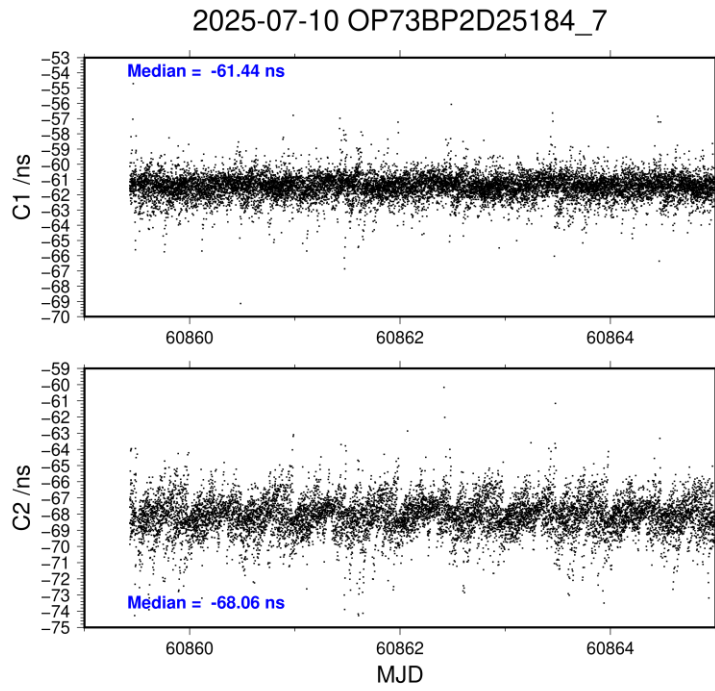
Code	#pts	ave/ns	rms/ns
C1	135490	-61.457	1.197
C2	108835	-68.092	1.438
P1	133964	-62.670	1.143
P2	133964	-69.658	1.559
E1	118640	-61.256	0.921
E5	119168	-65.952	1.125
BC	126518	-60.591	1.116
B5	127105	-65.581	1.221

Number of 300s epochs in out file = 1605

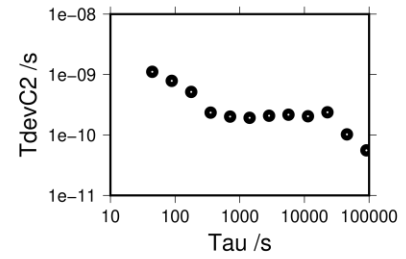
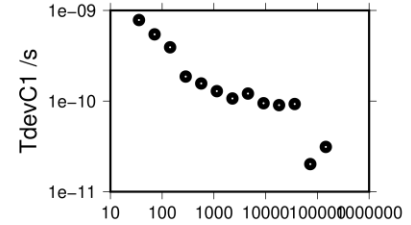
Code	#pts	median/ns	ave/ns	rms/ns
C1	13542	-61.436	-61.467	0.768
C2	10874	-68.063	-68.091	1.108
P1	13386	-62.629	-62.679	0.834
P2	13386	-69.638	-69.651	1.229
E1	11864	-61.210	-61.252	0.656
E5	11914	-65.994	-65.945	0.962
BC	12636	-60.541	-60.587	0.838
B5	12684	-65.643	-65.580	1.039

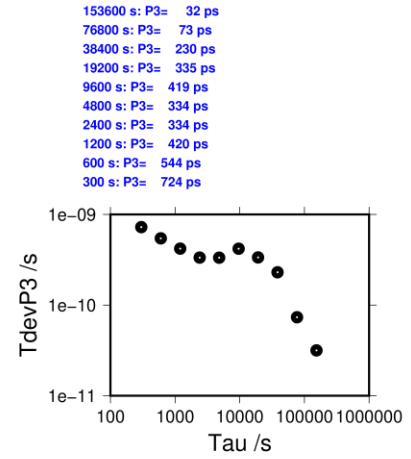
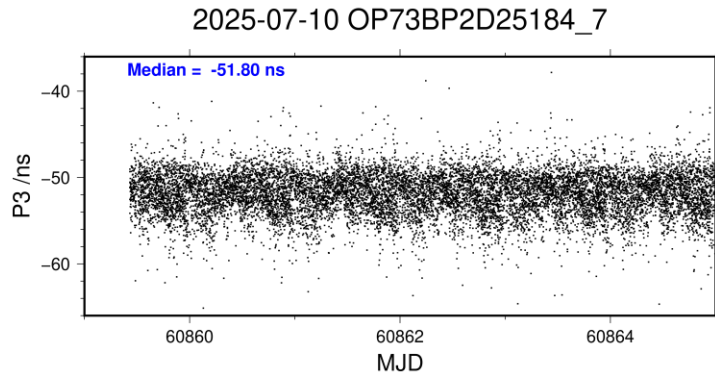
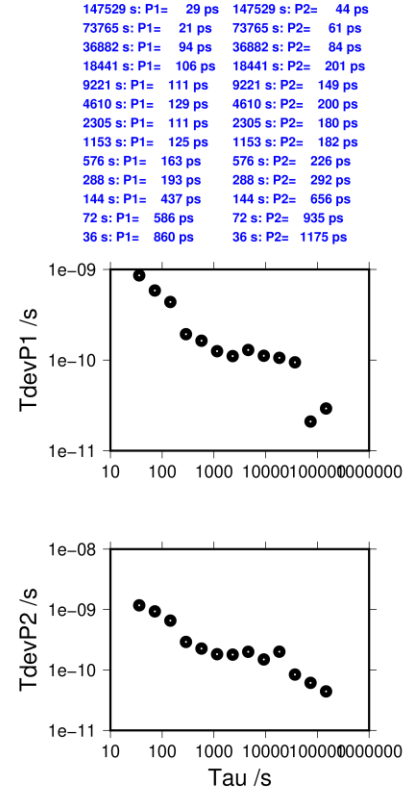
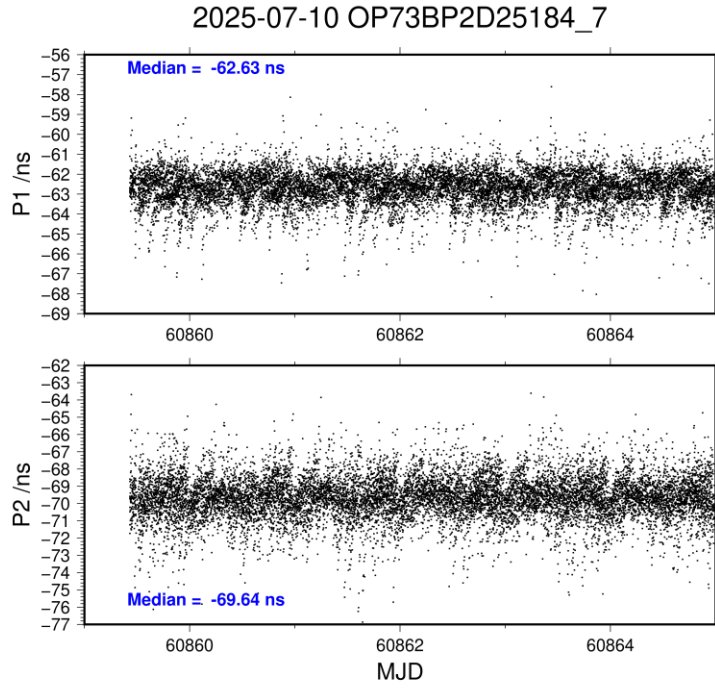
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1600	-51.805	-51.779	0.742
E3	1600	-55.261	-55.279	0.441
B3	1600	-54.356	-54.312	0.669

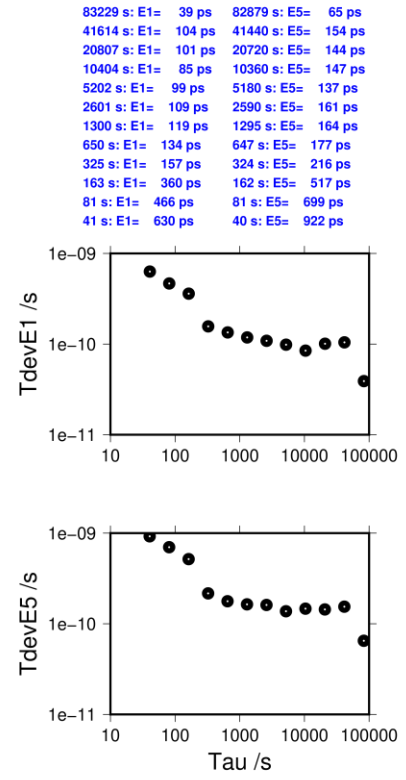
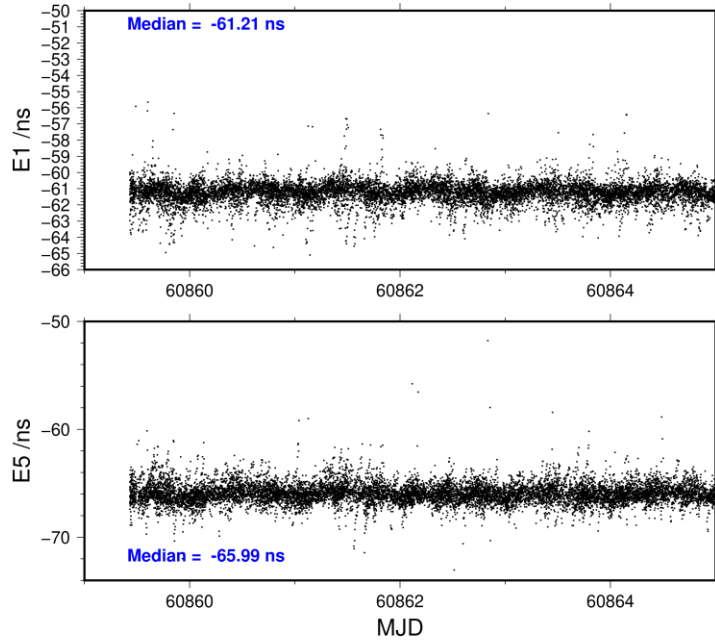


145830 s: C1= 31 ps	
72915 s: C1= 20 ps	90807 s: C2= 56 ps
36457 s: C1= 93 ps	45403 s: C2= 102 ps
18229 s: C1= 90 ps	22702 s: C2= 238 ps
9114 s: C1= 95 ps	11351 s: C2= 204 ps
4557 s: C1= 121 ps	5675 s: C2= 216 ps
2279 s: C1= 107 ps	2838 s: C2= 209 ps
1139 s: C1= 129 ps	1419 s: C2= 192 ps
570 s: C1= 157 ps	709 s: C2= 202 ps
285 s: C1= 186 ps	355 s: C2= 234 ps
142 s: C1= 392 ps	177 s: C2= 516 ps
71 s: C1= 544 ps	89 s: C2= 787 ps
36 s: C1= 784 ps	44 s: C2= 1110 ps



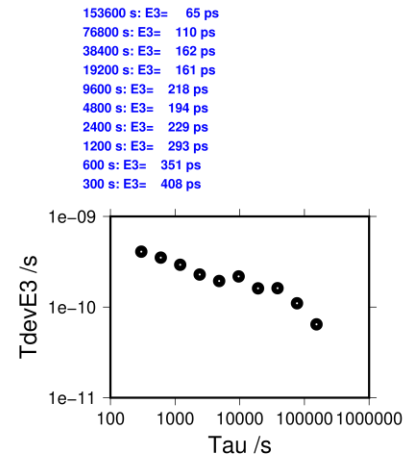
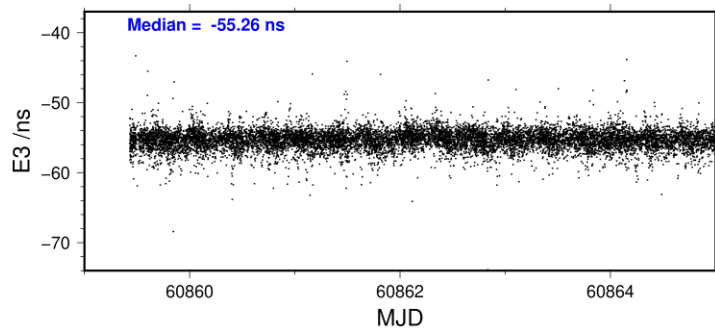


2025-07-10 OP73BP2D25184_7

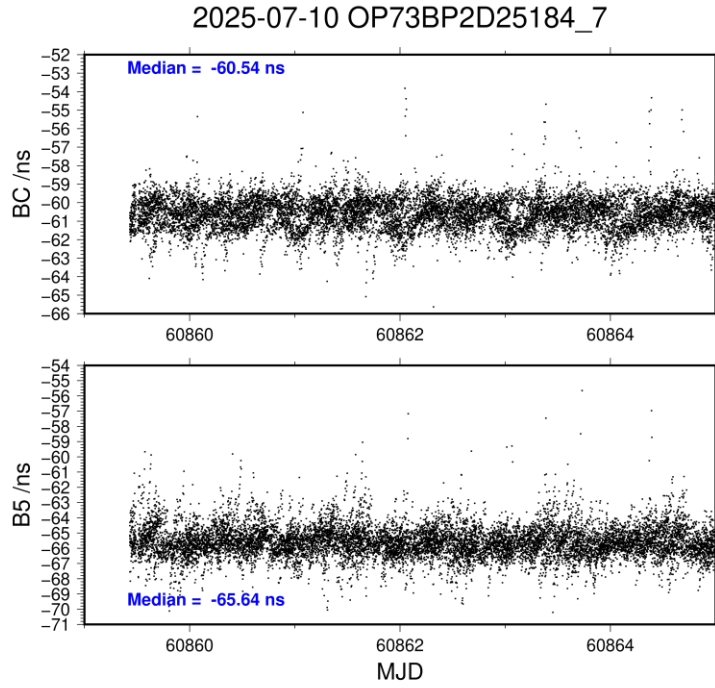


83229 s: E1= 39 ps 82879 s: E5= 65 ps
 41614 s: E1= 104 ps 41440 s: E5= 154 ps
 20807 s: E1= 101 ps 20720 s: E5= 144 ps
 10404 s: E1= 85 ps 10360 s: E5= 147 ps
 5202 s: E1= 99 ps 5180 s: E5= 137 ps
 2601 s: E1= 109 ps 2590 s: E5= 161 ps
 1300 s: E1= 119 ps 1295 s: E5= 164 ps
 650 s: E1= 134 ps 647 s: E5= 177 ps
 325 s: E1= 157 ps 324 s: E5= 216 ps
 163 s: E1= 360 ps 162 s: E5= 517 ps
 81 s: E1= 466 ps 81 s: E5= 699 ps
 41 s: E1= 630 ps 40 s: E5= 922 ps

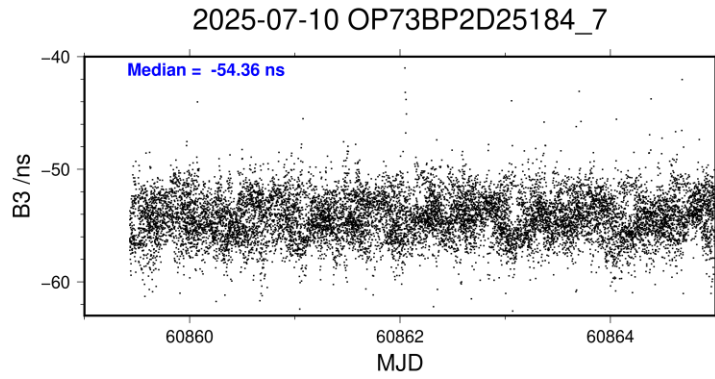
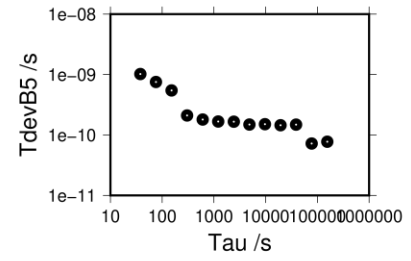
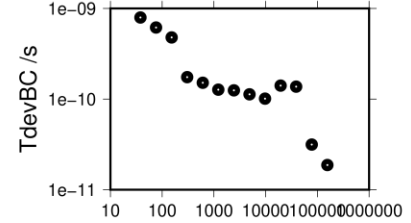
2025-07-10 OP73BP2D25184_7



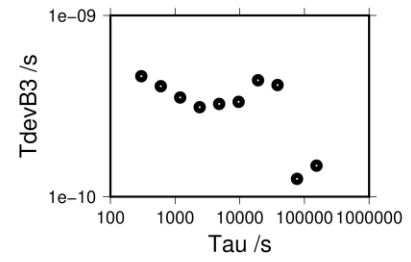
153600 s: E3= 65 ps
 76800 s: E3= 110 ps
 38400 s: E3= 162 ps
 19200 s: E3= 161 ps
 9600 s: E3= 218 ps
 4800 s: E3= 194 ps
 2400 s: E3= 229 ps
 1200 s: E3= 293 ps
 600 s: E3= 351 ps
 300 s: E3= 408 ps



155896 s: BC= 19 ps 155308 s: B5= 77 ps
 77949 s: BC= 32 ps 77654 s: B5= 72 ps
 38974 s: BC= 137 ps 38827 s: B5= 148 ps
 19487 s: BC= 141 ps 19413 s: B5= 145 ps
 9744 s: BC= 101 ps 9707 s: B5= 151 ps
 4872 s: BC= 113 ps 4853 s: B5= 149 ps
 2436 s: BC= 125 ps 2427 s: B5= 166 ps
 1218 s: BC= 127 ps 1213 s: B5= 167 ps
 609 s: BC= 151 ps 607 s: B5= 180 ps
 304 s: BC= 174 ps 303 s: B5= 210 ps
 152 s: BC= 479 ps 152 s: B5= 547 ps
 76 s: BC= 616 ps 76 s: B5= 753 ps
 38 s: BC= 795 ps 38 s: B5= 1021 ps



153600 s: B3= 148 ps
 76800 s: B3= 126 ps
 38400 s: B3= 413 ps
 19200 s: B3= 439 ps
 9600 s: B3= 334 ps
 4800 s: B3= 325 ps
 2400 s: B3= 312 ps
 1200 s: B3= 353 ps
 600 s: B3= 407 ps
 300 s: B3= 462 ps



OP73-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 167403
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 24381 high elev obs : -22.398 -22.689
 Iteration 0: Obs used = 263247; Huge residuals = 4932; Large residuals = 24797
 Iteration 1: Obs used = 281387; Huge residuals = 0; Large residuals = 1725
 Computed code bias (P1/P2)/m = -23.102 -23.366
 Computed baseline (X,Y,Z)/m = 3.534 2.037 -2.523
 RMS of residuals /m = 0.512

Number of phase differences to fit baseline
 L1/L2 = 163740
 L5 = 99744
 A priori baseline (X,Y,Z)/m = 3.534 2.037 -2.523
 17497 clock jitters computed out of 17497 intervals
 AVE jitter /ps = -0.2 RMS jitter /ps = 3.2

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 = 0.442 0.136 0.455
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.441 0.138 0.456
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.289 -0.057 0.470
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 3.976 2.174 -2.067
 17497 clock jitters computed out of 17497 intervals
 AVE jitter /ps = -0.0 RMS jitter /ps = 0.9

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 0.006 0.012
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.013 0.009 0.013
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.147 -0.186 0.027
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 3.989 2.180 -2.055
 Final baseline L2 (X,Y,Z)/m = 3.989 2.182 -2.054
 Final baseline L5 (X,Y,Z)/m = 3.829 1.988 -2.040

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 657167

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	167928	-78.585	1.712
C2	137641	-79.218	2.105
P1	164853	-78.401	1.523
P2	164851	-79.285	1.731
E1	146550	-78.657	1.212
E5	147822	-78.116	1.280
BC	141879	-78.419	1.376
B5	143009	-78.082	1.360

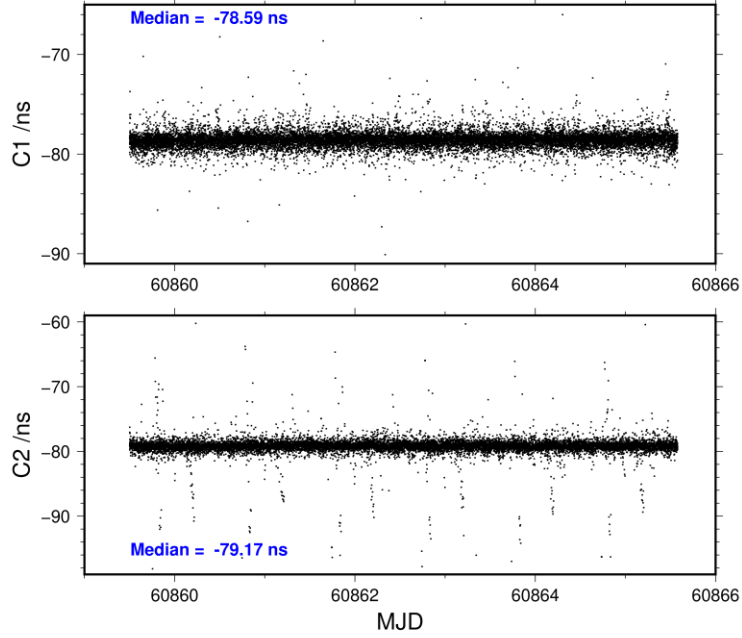
Number of 300s epochs in out file = 1751

Code	#pts	median/ns	ave/ns	rms/ns
C1	16756	-78.587	-78.590	0.819
C2	13727	-79.172	-79.227	1.362
P1	16465	-78.398	-78.406	0.823
P2	16465	-79.287	-79.285	1.077
E1	14631	-78.680	-78.660	0.686
E5	14750	-78.087	-78.118	0.853
BC	14159	-78.454	-78.425	0.724
B5	14276	-78.058	-78.088	0.922

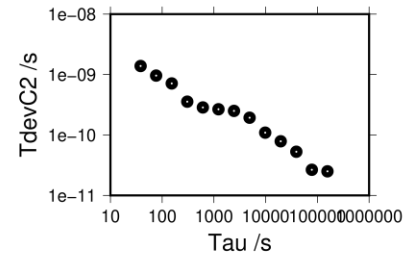
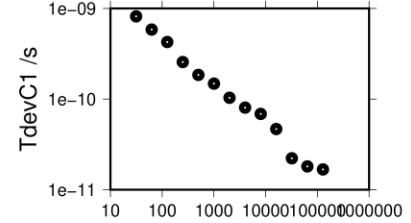
Ionofree combinations

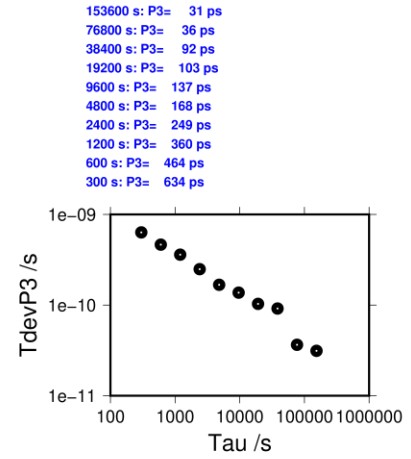
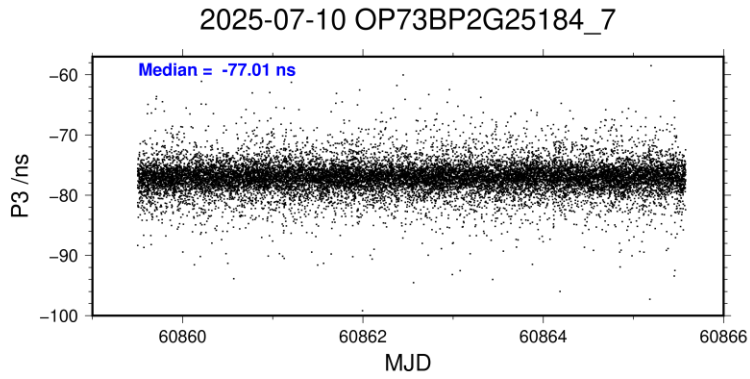
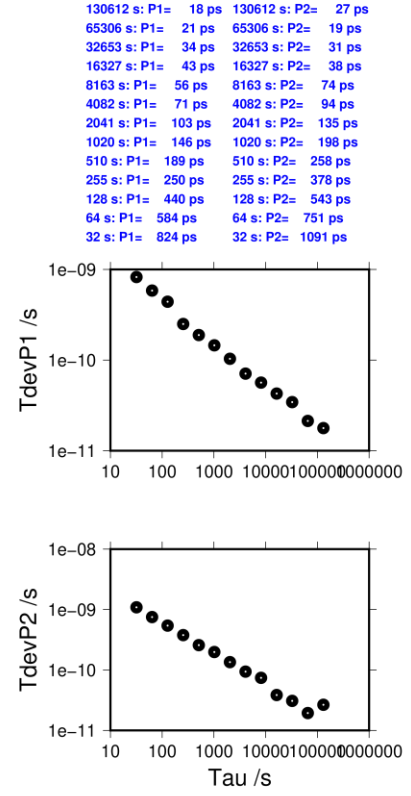
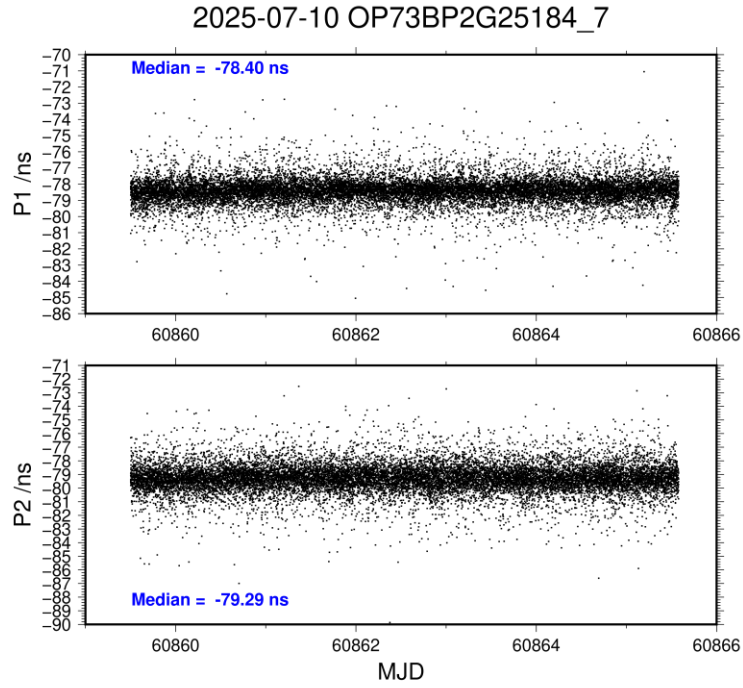
Code	#pts	median/ns	ave/ns	rms/ns
P3	1751	-77.014	-77.033	0.537
E3	1748	-79.429	-79.437	0.430
B3	1751	-78.968	-78.973	0.457

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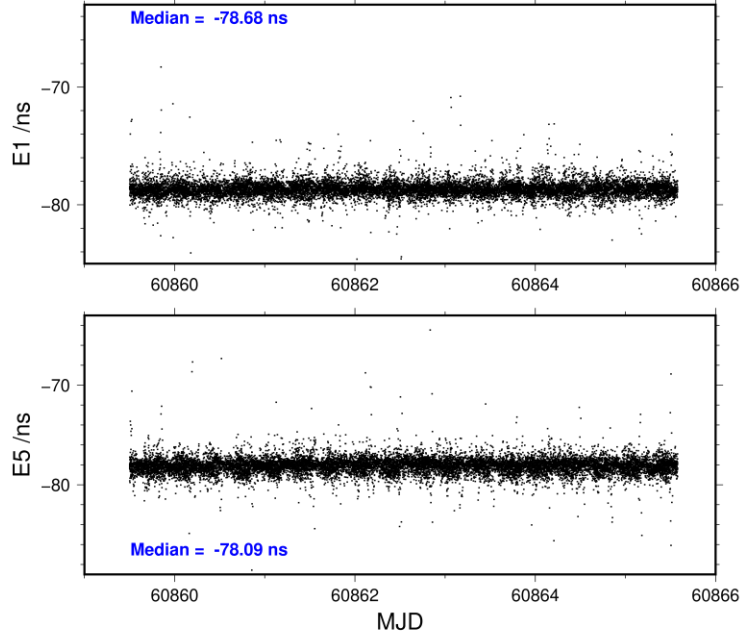


128344 s: C1= 17 ps	156666 s: C2= 25 ps
64172 s: C1= 18 ps	78333 s: C2= 27 ps
32086 s: C1= 22 ps	39167 s: C2= 53 ps
16043 s: C1= 47 ps	19583 s: C2= 79 ps
8021 s: C1= 69 ps	9792 s: C2= 109 ps
4011 s: C1= 80 ps	4896 s: C2= 193 ps
2005 s: C1= 103 ps	2448 s: C2= 251 ps
1003 s: C1= 148 ps	1224 s: C2= 266 ps
501 s: C1= 185 ps	612 s: C2= 285 ps
251 s: C1= 256 ps	306 s: C2= 356 ps
125 s: C1= 426 ps	153 s: C2= 712 ps
63 s: C1= 585 ps	76 s: C2= 962 ps
31 s: C1= 817 ps	38 s: C2= 1384 ps

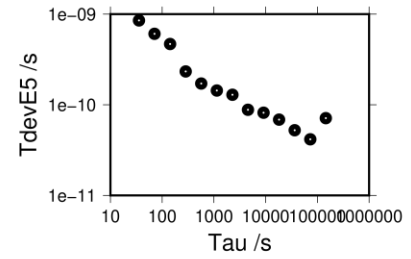
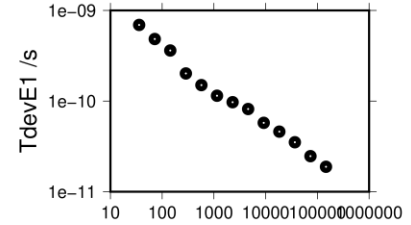




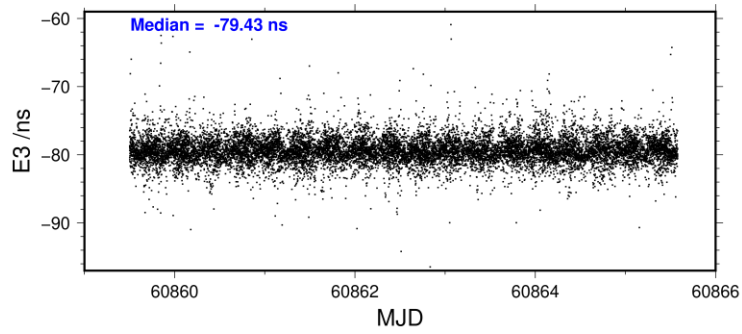
2025-07-10 OP73BP2G25184_7



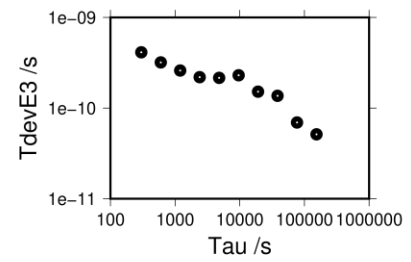
146986 s: E1= 19 ps 145800 s: E5= 71 ps
 73493 s: E1= 25 ps 72900 s: E5= 42 ps
 36746 s: E1= 35 ps 36450 s: E5= 52 ps
 18373 s: E1= 46 ps 18225 s: E5= 69 ps
 9187 s: E1= 58 ps 9112 s: E5= 82 ps
 4593 s: E1= 82 ps 4556 s: E5= 88 ps
 2297 s: E1= 97 ps 2278 s: E5= 129 ps
 1148 s: E1= 115 ps 1139 s: E5= 144 ps
 574 s: E1= 150 ps 570 s: E5= 172 ps
 287 s: E1= 202 ps 285 s: E5= 233 ps
 144 s: E1= 362 ps 142 s: E5= 468 ps
 72 s: E1= 484 ps 71 s: E5= 607 ps
 36 s: E1= 691 ps 36 s: E5= 852 ps

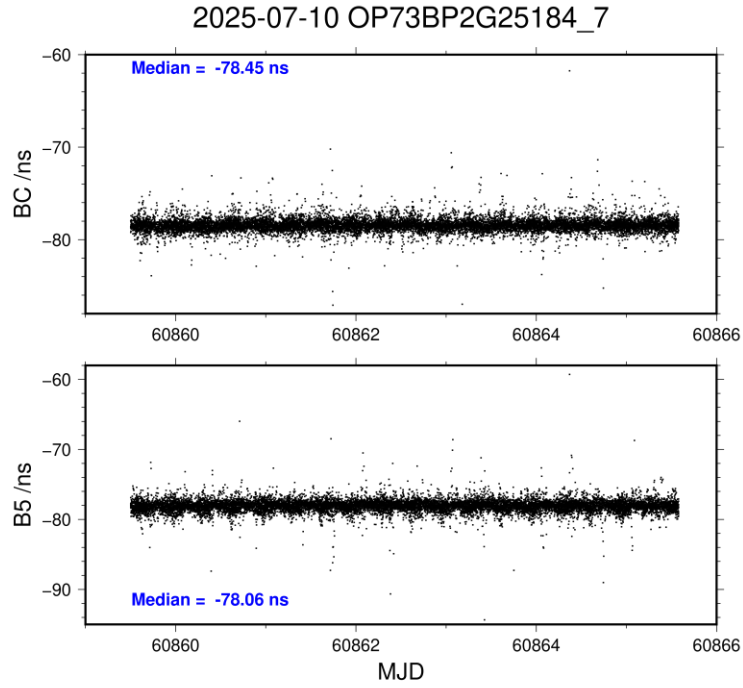


2025-07-10 OP73BP2G25184_7

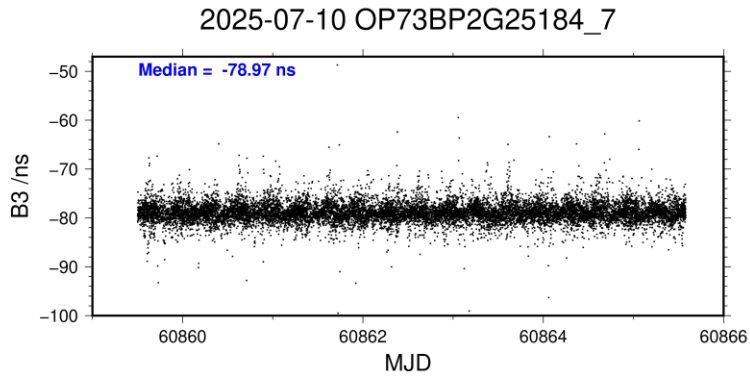
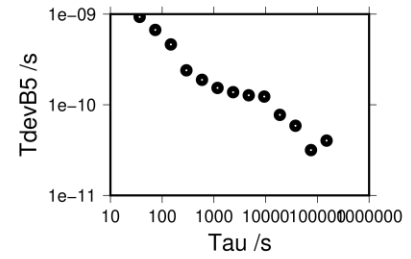
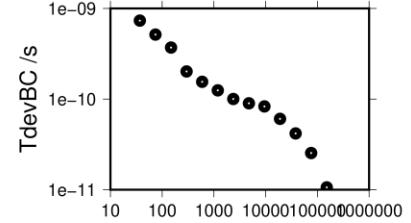


153600 s: E3= 51 ps
 76800 s: E3= 69 ps
 38400 s: E3= 137 ps
 19200 s: E3= 152 ps
 9600 s: E3= 230 ps
 4800 s: E3= 215 ps
 2400 s: E3= 219 ps
 1200 s: E3= 260 ps
 600 s: E3= 319 ps
 300 s: E3= 413 ps

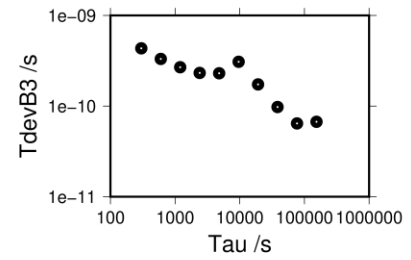




151886 s: BC=	11 ps	150641 s: B5=	40 ps
75943 s: BC=	25 ps	75320 s: B5=	32 ps
37971 s: BC=	42 ps	37660 s: B5=	59 ps
18986 s: BC=	60 ps	18830 s: B5=	77 ps
9493 s: BC=	83 ps	9415 s: B5=	123 ps
4746 s: BC=	90 ps	4708 s: B5=	127 ps
2373 s: BC=	100 ps	2354 s: B5=	138 ps
1187 s: BC=	125 ps	1177 s: B5=	153 ps
593 s: BC=	155 ps	588 s: B5=	188 ps
297 s: BC=	202 ps	294 s: B5=	240 ps
148 s: BC=	371 ps	147 s: B5=	463 ps
74 s: BC=	514 ps	74 s: B5=	669 ps
37 s: BC=	734 ps	37 s: B5=	931 ps



153600 s: B3=	67 ps
76800 s: B3=	64 ps
38400 s: B3=	98 ps
19200 s: B3=	174 ps
9600 s: B3=	308 ps
4800 s: B3=	230 ps
2400 s: B3=	232 ps
1200 s: B3=	268 ps
600 s: B3=	331 ps
300 s: B3=	434 ps



OP75-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 134249
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 22378 high elev obs : -17.518 -20.070
 Iteration 0: Obs used = 224721; Huge residuals = 323; Large residuals = 877
 Iteration 1: Obs used = 224786; Huge residuals = 0; Large residuals = 489
 Computed code bias (P1/P2)/m = -18.190 -20.667
 Computed baseline (X,Y,Z)/m = 4.209 2.345 -3.251
 RMS of residuals /m = 0.460

Number of phase differences to fit baseline
 L1/L2 = 133176
 L5 = 78330
 A priori baseline (X,Y,Z)/m = 4.209 2.345 -3.251
 15996 clock jitters computed out of 15996 intervals
 AVE jitter /ps = -0.1 RMS jitter /ps = 4.0

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 = 0.464 0.052 0.493
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.452 0.055 0.478
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.456 0.050 0.474
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 4.667 2.399 -2.765
 15996 clock jitters computed out of 15996 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 0.9

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 = 0.023 -0.010 0.021
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.011 -0.008 0.007
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.010 -0.009 0.003
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.690 2.388 -2.744
 Final baseline L2 (X,Y,Z)/m = 4.678 2.391 -2.758
 Final baseline L5 (X,Y,Z)/m = 4.677 2.390 -2.762

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 538747

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	135462	-60.761	1.185
C2	108788	-68.888	1.431
P1	133974	-62.150	1.139
P2	133974	-70.377	1.555
E1	118213	-60.562	0.915
E5	118649	-66.029	1.116
BC	125707	-59.971	1.118
B5	127031	-65.647	1.221

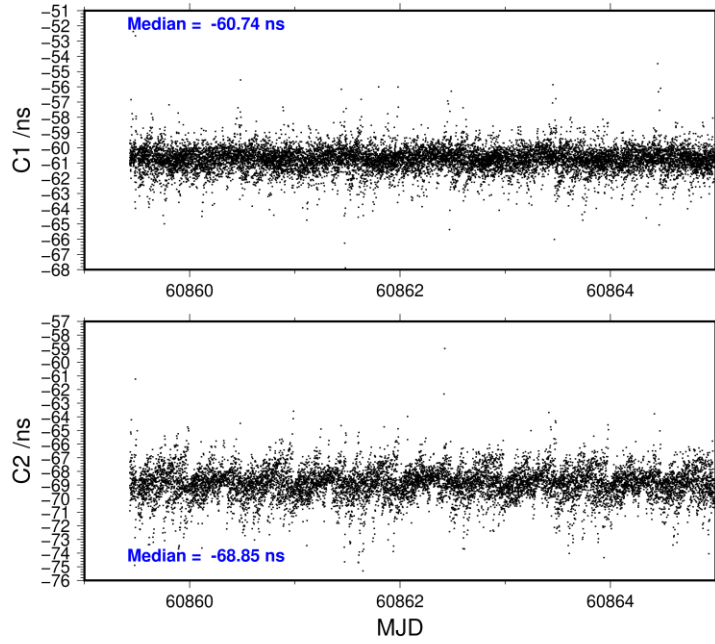
Number of 300s epochs in out file = 1605

Code	#pts	median/ns	ave/ns	rms/ns
C1	13535	-60.740	-60.767	0.773
C2	10868	-68.854	-68.890	1.117
P1	13383	-62.112	-62.160	0.833
P2	13383	-70.358	-70.371	1.222
E1	11816	-60.513	-60.560	0.652
E5	11861	-66.071	-66.020	0.950
BC	12556	-59.925	-59.965	0.843
B5	12677	-65.711	-65.645	1.040

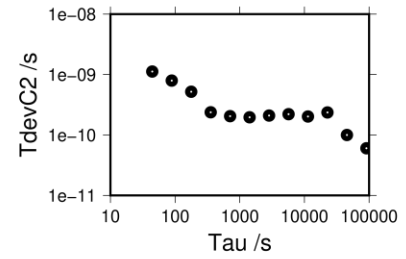
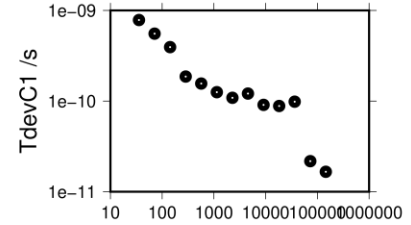
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1600	-49.368	-49.352	0.741
E3	1600	-53.607	-53.626	0.440
B3	1600	-52.889	-52.872	0.658

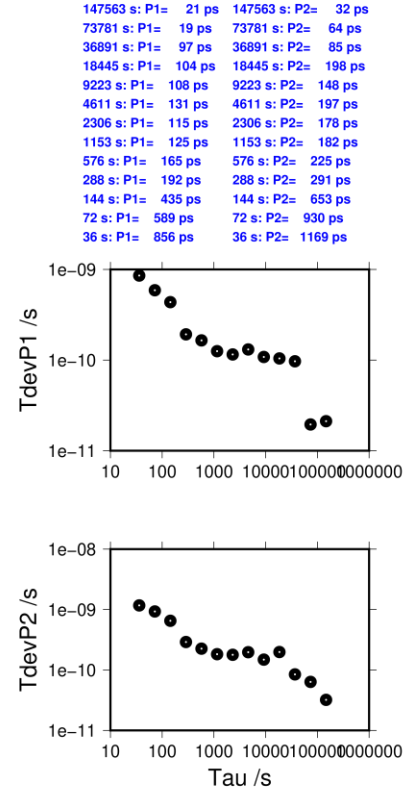
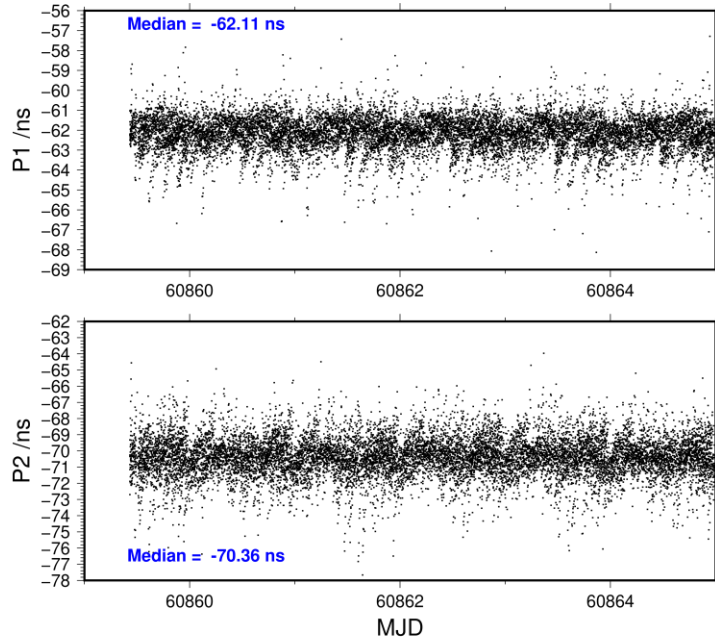
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145905 s: C1= 17 ps		
72953 s: C1= 22 ps	90857 s: C2= 60 ps	
36476 s: C1= 99 ps	45428 s: C2= 100 ps	
18238 s: C1= 88 ps	22714 s: C2= 236 ps	
9119 s: C1= 91 ps	11357 s: C2= 202 ps	
4560 s: C1= 121 ps	5679 s: C2= 221 ps	
2280 s: C1= 109 ps	2839 s: C2= 209 ps	
1140 s: C1= 125 ps	1420 s: C2= 196 ps	
570 s: C1= 156 ps	710 s: C2= 205 ps	
285 s: C1= 186 ps	355 s: C2= 237 ps	
142 s: C1= 394 ps	177 s: C2= 519 ps	
71 s: C1= 555 ps	89 s: C2= 795 ps	
36 s: C1= 784 ps	44 s: C2= 1120 ps	

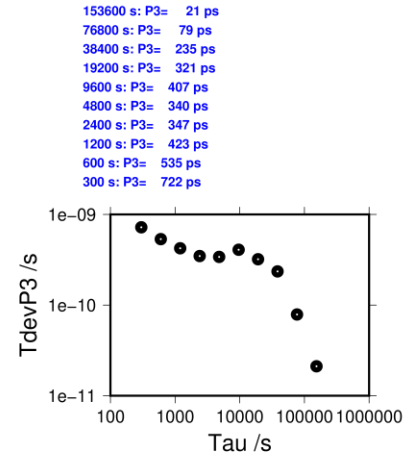
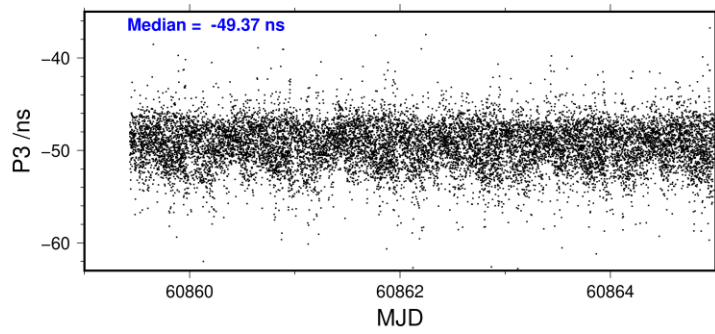


2025-07-10 OP75BP2D25184_7



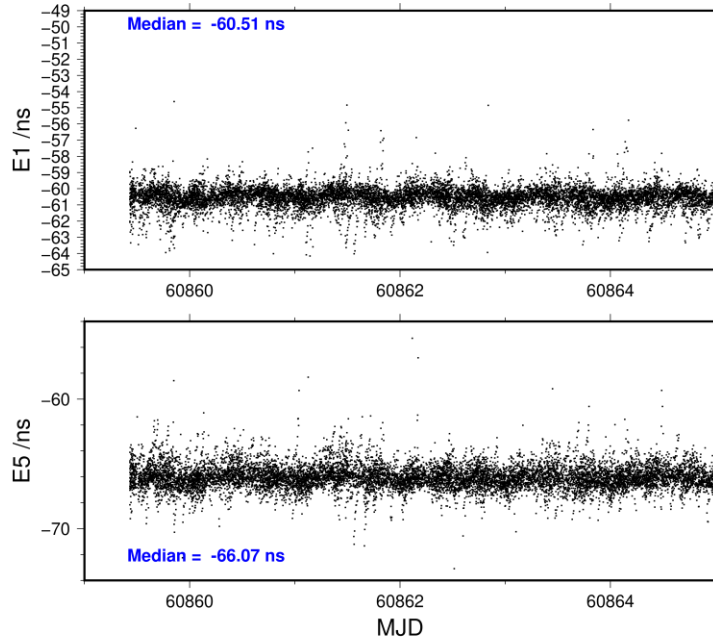
147563 s: P1= 21 ps 147563 s: P2= 32 ps
 73781 s: P1= 19 ps 73781 s: P2= 64 ps
 36891 s: P1= 97 ps 36891 s: P2= 85 ps
 18445 s: P1= 104 ps 18445 s: P2= 198 ps
 9223 s: P1= 108 ps 9223 s: P2= 148 ps
 4611 s: P1= 131 ps 4611 s: P2= 197 ps
 2306 s: P1= 115 ps 2306 s: P2= 178 ps
 1153 s: P1= 125 ps 1153 s: P2= 182 ps
 576 s: P1= 165 ps 576 s: P2= 225 ps
 288 s: P1= 192 ps 288 s: P2= 291 ps
 144 s: P1= 435 ps 144 s: P2= 653 ps
 72 s: P1= 589 ps 72 s: P2= 930 ps
 36 s: P1= 856 ps 36 s: P2= 1169 ps

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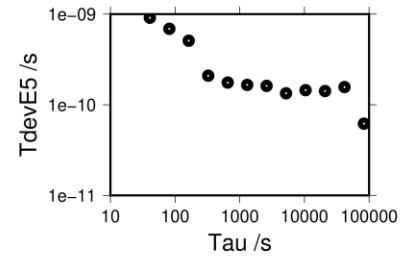
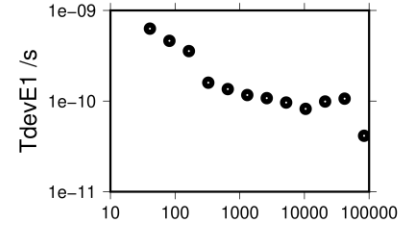


153600 s: P3= 21 ps
 76800 s: P3= 79 ps
 38400 s: P3= 235 ps
 19200 s: P3= 321 ps
 9600 s: P3= 407 ps
 4800 s: P3= 340 ps
 2400 s: P3= 347 ps
 1200 s: P3= 423 ps
 600 s: P3= 535 ps
 300 s: P3= 722 ps

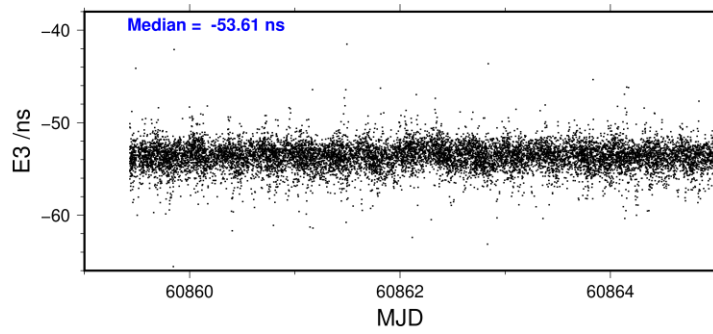
2025-07-10 OP75BP2D25184_7



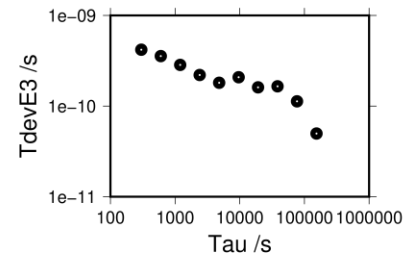
83567 s: E1= 41 ps	83250 s: E5= 62 ps
41783 s: E1= 106 ps	41625 s: E5= 157 ps
20892 s: E1= 99 ps	20812 s: E5= 142 ps
10446 s: E1= 82 ps	10406 s: E5= 145 ps
5223 s: E1= 96 ps	5203 s: E5= 134 ps
2611 s: E1= 108 ps	2602 s: E5= 162 ps
1306 s: E1= 117 ps	1301 s: E5= 165 ps
653 s: E1= 136 ps	650 s: E5= 176 ps
326 s: E1= 159 ps	325 s: E5= 210 ps
163 s: E1= 356 ps	163 s: E5= 509 ps
82 s: E1= 462 ps	81 s: E5= 689 ps
41 s: E1= 629 ps	41 s: E5= 913 ps

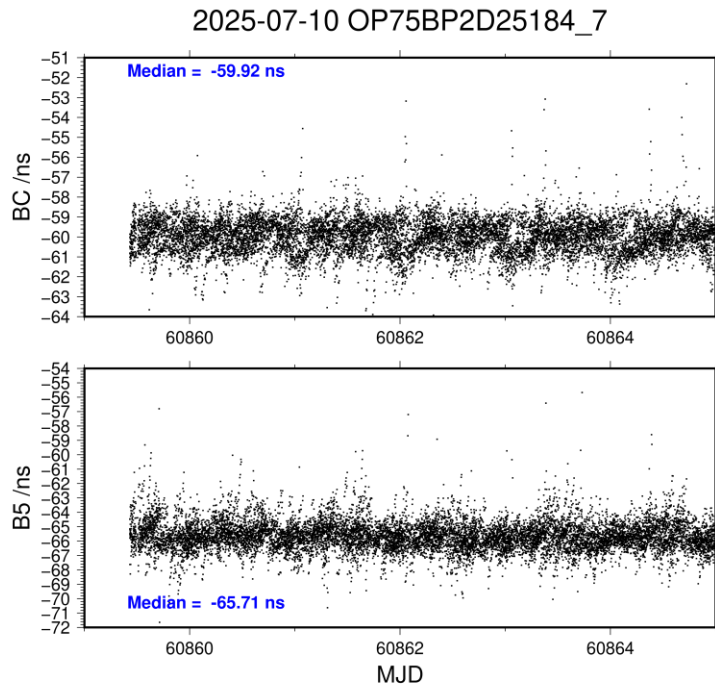


2025-07-10 OP75BP2D25184_7

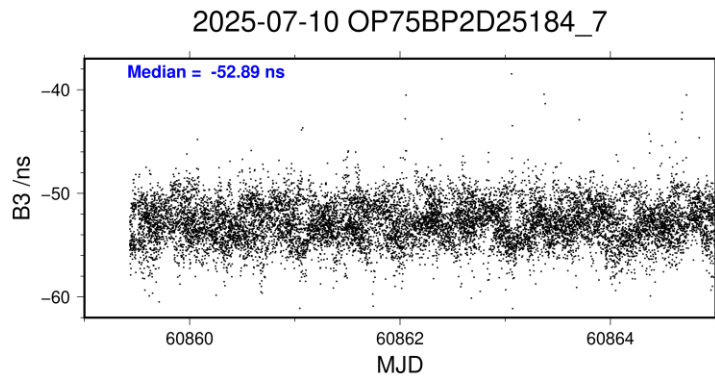
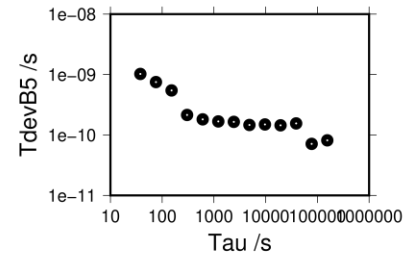
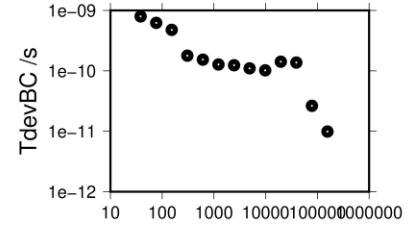


153600 s: E3= 50 ps
76800 s: E3= 113 ps
38400 s: E3= 165 ps
19200 s: E3= 161 ps
9600 s: E3= 208 ps
4800 s: E3= 181 ps
2400 s: E3= 220 ps
1200 s: E3= 284 ps
600 s: E3= 356 ps
300 s: E3= 418 ps

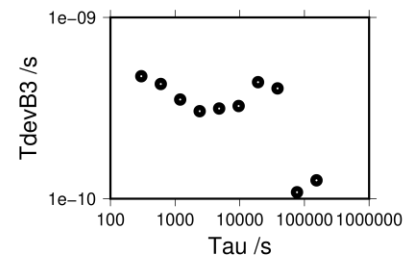




156891 s: BC=	10 ps	155393 s: B5=	82 ps
78446 s: BC=	26 ps	77697 s: B5=	71 ps
39223 s: BC=	137 ps	38848 s: B5=	155 ps
19611 s: BC=	142 ps	19424 s: B5=	144 ps
9806 s: BC=	102 ps	9712 s: B5=	149 ps
4903 s: BC=	110 ps	4856 s: B5=	146 ps
2451 s: BC=	124 ps	2428 s: B5=	165 ps
1226 s: BC=	127 ps	1214 s: B5=	168 ps
613 s: BC=	154 ps	607 s: B5=	181 ps
306 s: BC=	179 ps	304 s: B5=	214 ps
153 s: BC=	477 ps	152 s: B5=	546 ps
77 s: BC=	623 ps	76 s: B5=	750 ps
38 s: BC=	798 ps	38 s: B5=	1022 ps



153600 s: B3=	126 ps
76800 s: B3=	109 ps
38400 s: B3=	406 ps
19200 s: B3=	439 ps
9600 s: B3=	325 ps
4800 s: B3=	315 ps
2400 s: B3=	304 ps
1200 s: B3=	352 ps
600 s: B3=	429 ps
300 s: B3=	474 ps



OP75-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 167429
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 24381 high elev obs : -22.242 -22.904
 Iteration 0: Obs used = 261650; Huge residuals = 5072; Large residuals = 26446
 Iteration 1: Obs used = 281264; Huge residuals = 0; Large residuals = 1760
 Computed code bias (P1/P2)/m = -22.946 -23.582
 Computed baseline (X,Y,Z)/m = 3.532 2.035 -2.523
 RMS of residuals /m = 0.510

Number of phase differences to fit baseline
 L1/L2 = 163735
 L5 = 99696
 A priori baseline (X,Y,Z)/m = 3.532 2.035 -2.523
 17497 clock jitters computed out of 17497 intervals
 AVE jitter /ps = -0.2 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 = 0.444 0.137 0.456
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.442 0.140 0.457
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.293 -0.057 0.470
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 3.975 2.174 -2.066
 17497 clock jitters computed out of 17497 intervals
 AVE jitter /ps = -0.0 RMS jitter /ps = 0.9

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 0.006 0.012
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.013 0.009 0.013
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.143 -0.187 0.026
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 3.989 2.180 -2.054
 Final baseline L2 (X,Y,Z)/m = 3.988 2.183 -2.054
 Final baseline L5 (X,Y,Z)/m = 3.832 1.987 -2.040

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 657035

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	167795	-77.894	1.696
C2	137561	-80.017	2.092
P1	164809	-77.885	1.516
P2	164807	-80.008	1.730
E1	146524	-77.965	1.218
E5	147765	-78.196	1.278
BC	141033	-77.801	1.427
B5	142824	-78.157	1.346

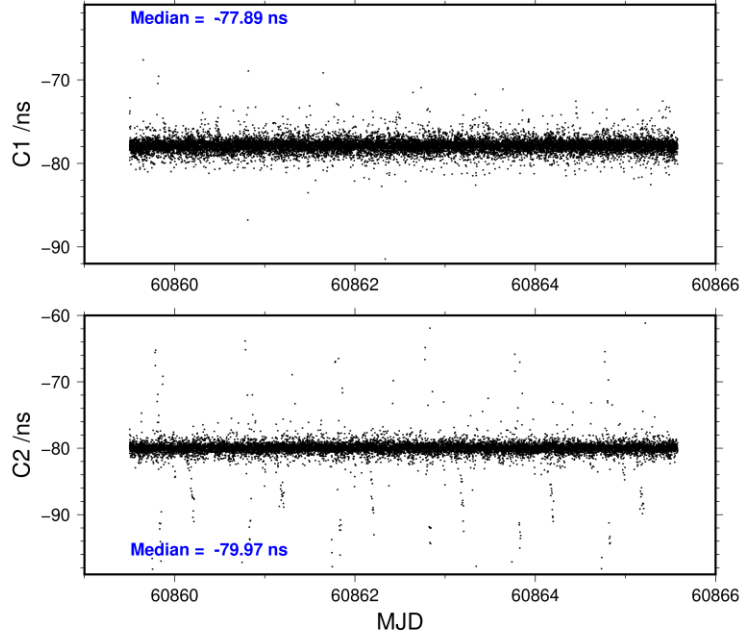
Number of 300s epochs in out file = 1751

Code	#pts	median/ns	ave/ns	rms/ns
C1	16743	-77.895	-77.892	0.801
C2	13714	-79.967	-80.026	1.361
P1	16456	-77.879	-77.886	0.813
P2	16456	-80.007	-80.010	1.071
E1	14622	-77.981	-77.968	0.679
E5	14742	-78.168	-78.200	0.863
BC	14077	-77.836	-77.808	0.817
B5	14264	-78.129	-78.160	0.907

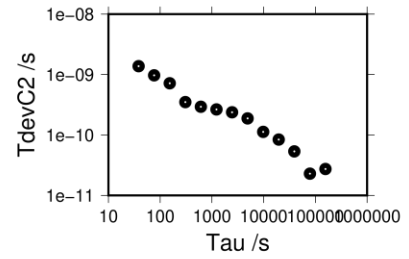
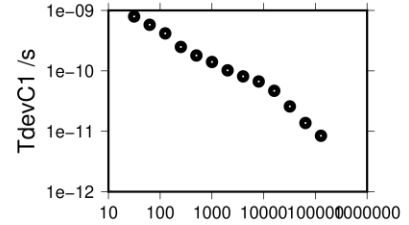
Ionofree combinations

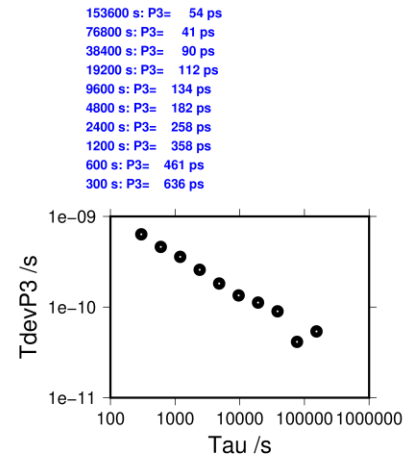
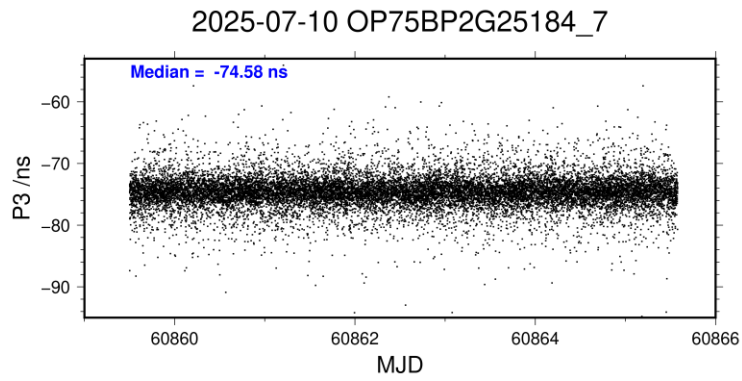
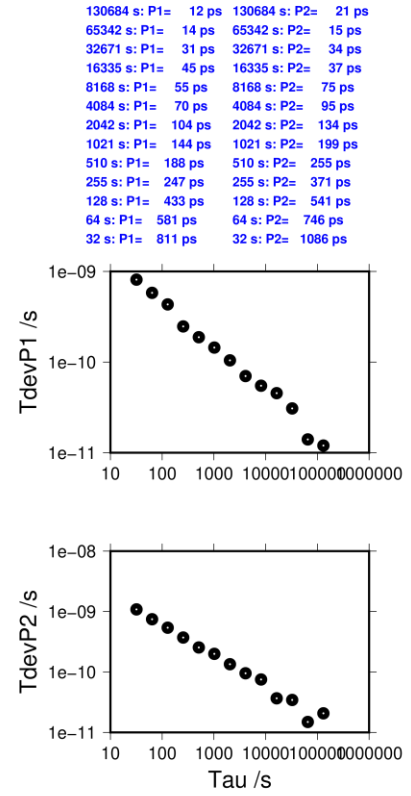
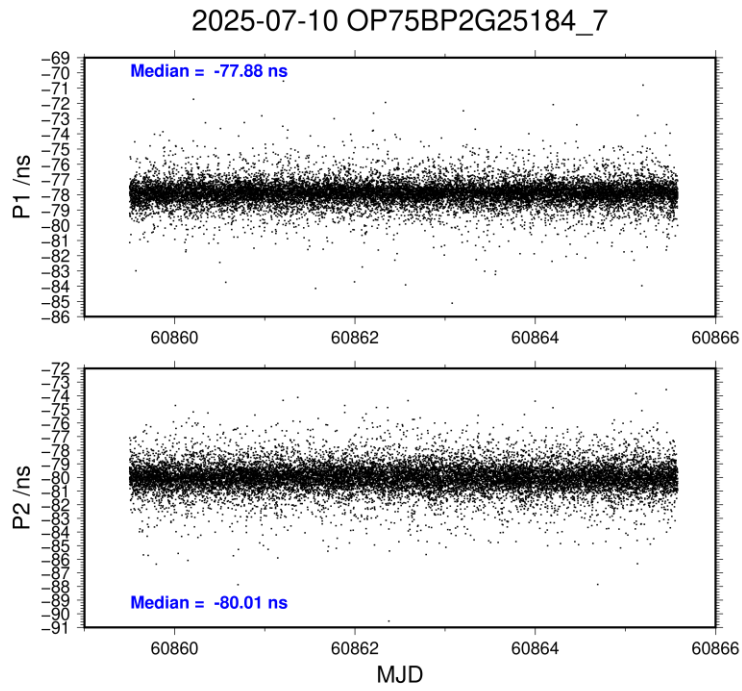
Code	#pts	median/ns	ave/ns	rms/ns
P3	1751	-74.578	-74.584	0.536
E3	1749	-77.763	-77.775	0.441
B3	1751	-77.483	-77.487	0.447

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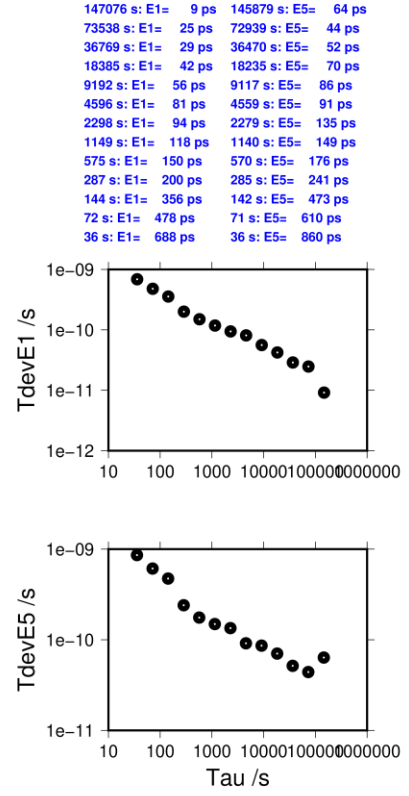
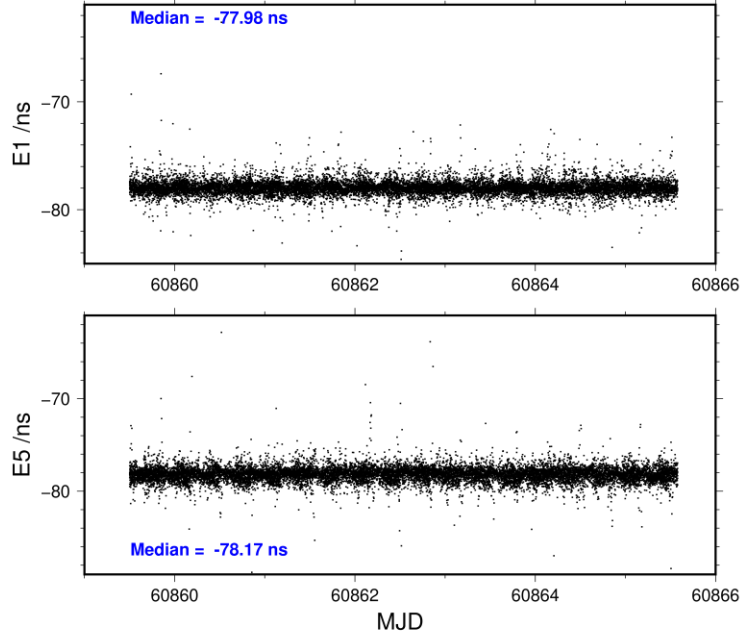


128443 s: C1=	8 ps	156815 s: C2=	27 ps
64222 s: C1=	14 ps	78407 s: C2=	23 ps
32111 s: C1=	26 ps	39204 s: C2=	53 ps
16055 s: C1=	47 ps	19602 s: C2=	84 ps
8028 s: C1=	67 ps	9801 s: C2=	112 ps
4014 s: C1=	81 ps	4900 s: C2=	188 ps
2007 s: C1=	102 ps	2450 s: C2=	237 ps
1003 s: C1=	140 ps	1225 s: C2=	265 ps
502 s: C1=	180 ps	613 s: C2=	293 ps
251 s: C1=	249 ps	306 s: C2=	350 ps
125 s: C1=	416 ps	153 s: C2=	718 ps
63 s: C1=	579 ps	77 s: C2=	970 ps
31 s: C1=	795 ps	38 s: C2=	1375 ps



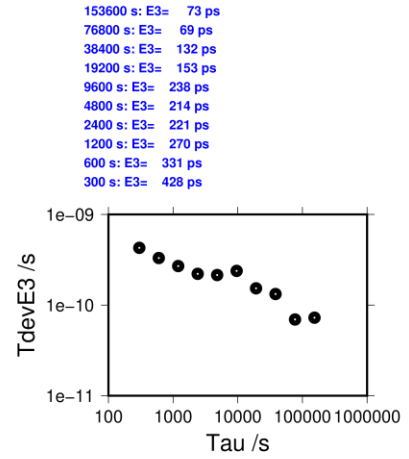
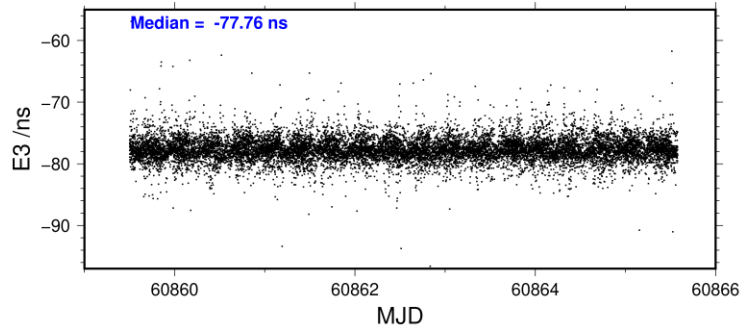


2025-07-10 OP75BP2G25184_7



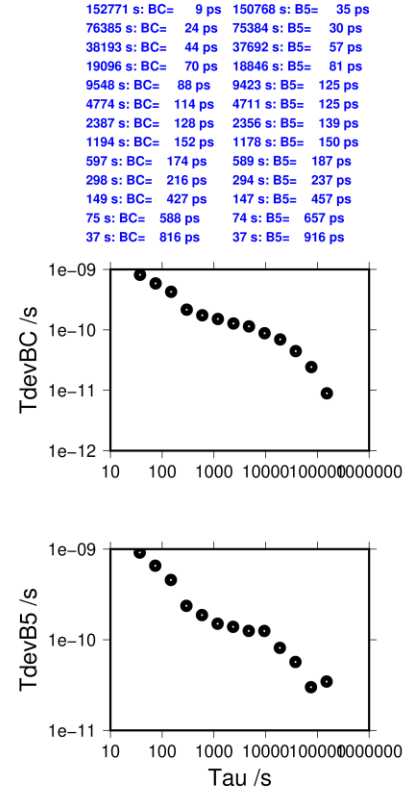
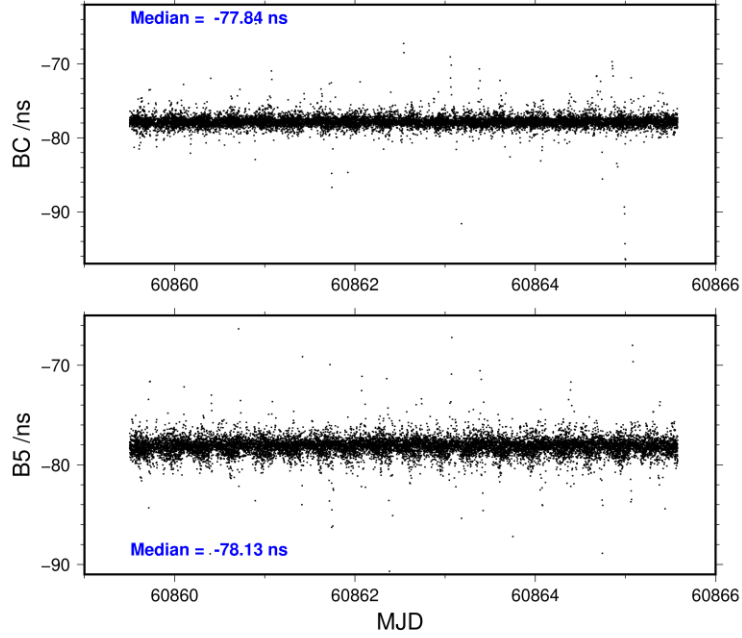
147076 s: E1= 9 ps 145879 s: E5= 64 ps
 73538 s: E1= 25 ps 72939 s: E5= 44 ps
 36769 s: E1= 29 ps 36470 s: E5= 52 ps
 18385 s: E1= 42 ps 18235 s: E5= 70 ps
 9192 s: E1= 56 ps 9117 s: E5= 86 ps
 4596 s: E1= 81 ps 4559 s: E5= 91 ps
 2298 s: E1= 94 ps 2279 s: E5= 135 ps
 1149 s: E1= 118 ps 1140 s: E5= 149 ps
 575 s: E1= 150 ps 570 s: E5= 176 ps
 287 s: E1= 200 ps 285 s: E5= 241 ps
 144 s: E1= 356 ps 142 s: E5= 473 ps
 72 s: E1= 478 ps 71 s: E5= 610 ps
 36 s: E1= 688 ps 36 s: E5= 860 ps

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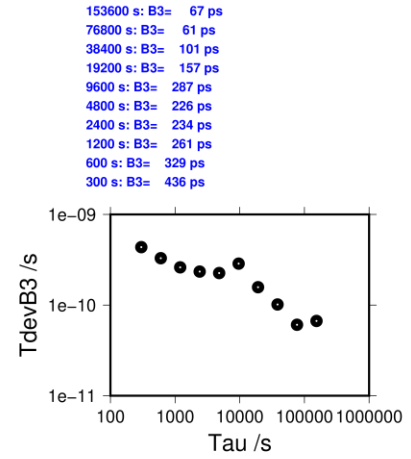
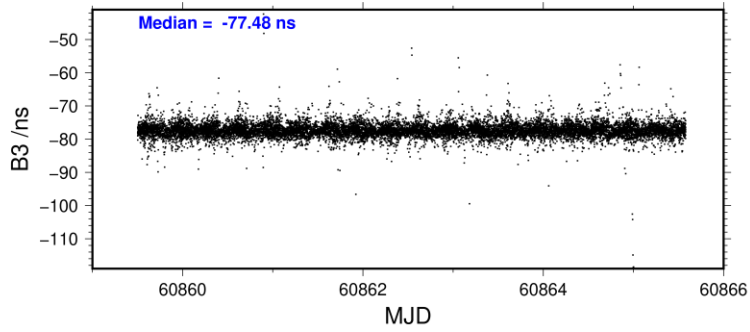
153600 s: E3= 73 ps
 76800 s: E3= 69 ps
 38400 s: E3= 132 ps
 19200 s: E3= 153 ps
 9600 s: E3= 238 ps
 4800 s: E3= 214 ps
 2400 s: E3= 221 ps
 1200 s: E3= 270 ps
 600 s: E3= 331 ps
 300 s: E3= 428 ps

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152771 s: BC= 9 ps 150768 s: B5= 35 ps
 76385 s: BC= 24 ps 75384 s: B5= 30 ps
 38193 s: BC= 44 ps 37692 s: B5= 57 ps
 19096 s: BC= 70 ps 18846 s: B5= 81 ps
 9548 s: BC= 88 ps 9423 s: B5= 125 ps
 4774 s: BC= 114 ps 4711 s: B5= 125 ps
 2387 s: BC= 128 ps 2356 s: B5= 139 ps
 1194 s: BC= 152 ps 1178 s: B5= 150 ps
 597 s: BC= 174 ps 589 s: B5= 187 ps
 298 s: BC= 216 ps 294 s: B5= 237 ps
 149 s: BC= 427 ps 147 s: B5= 457 ps
 75 s: BC= 588 ps 74 s: B5= 657 ps
 37 s: BC= 816 ps 37 s: B5= 916 ps

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153600 s: B3= 67 ps
 76800 s: B3= 61 ps
 38400 s: B3= 101 ps
 19200 s: B3= 157 ps
 9600 s: B3= 287 ps
 4800 s: B3= 226 ps
 2400 s: B3= 234 ps
 1200 s: B3= 261 ps
 600 s: B3= 329 ps
 300 s: B3= 436 ps

OPM9-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 133992

Compute baseline with sin(elev) between 0.05 and 0.90

Apriori codes biases from 22358 high elev obs : 5.525 3.561

Iteration 0: Obs used = 224653; Huge residuals = 0; Large residuals = 471

Iteration 1: Obs used = 224653; Huge residuals = 0; Large residuals = 471

Computed code bias (P1/P2)/m = 4.731 2.781

Computed baseline (X,Y,Z)/m = 3.728 2.265 -2.784

RMS of residuals /m = 0.434

Number of phase differences to fit baseline

L1/L2 = 132915

L5 = 78265

A priori baseline (X,Y,Z)/m = 3.728 2.265 -2.784

15974 clock jitters computed out of 15974 intervals

AVE jitter /ps = -0.3 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 = 0.576 0.054 0.715

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = 0.568 0.053 0.705

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = 0.575 0.048 0.701

RMS of residuals L5 /m = 0.003

New iteration of baseline

New apriori baseline (X,Y,Z)/m = 4.300 2.318 -2.074

15974 clock jitters computed out of 15974 intervals

AVE jitter /ps = 0.2 RMS jitter /ps = 1.3

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 = 0.028 -0.018 0.025

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = 0.020 -0.019 0.015

RMS of residuals L2 /m = 0.003

Computed baseline L5 (X,Y,Z)/m = 0.019 -0.019 0.014

RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.328 2.300 -2.049

Final baseline L2 (X,Y,Z)/m = 4.320 2.300 -2.059

Final baseline L5 (X,Y,Z)/m = 4.319 2.300 -2.060

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 365651

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	134224	14.932	1.000
C2	86011	8.421	1.343
P1	133893	13.844	1.121
P2	133892	7.344	1.347
E1	116679	16.370	0.890
E5	116678	5.907	1.021

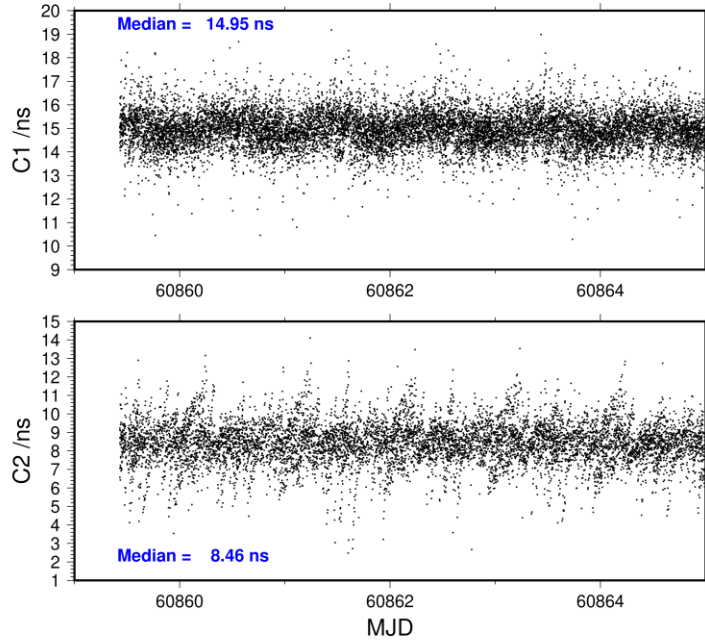
Number of 300s epochs in out file = 1605

Code	#pts	median/ns	ave/ns	rms/ns
C1	13395	14.946	14.943	0.761
C2	8586	8.461	8.434	1.125
P1	13364	13.868	13.855	0.822
P2	13364	7.391	7.347	1.118
E1	11651	16.390	16.377	0.701
E5	11651	5.894	5.911	0.917

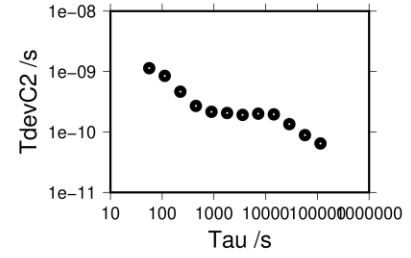
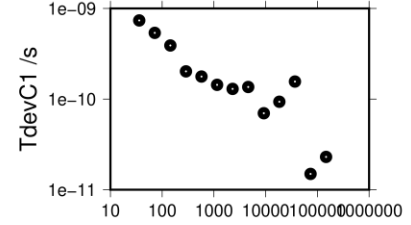
Ionofree combinations

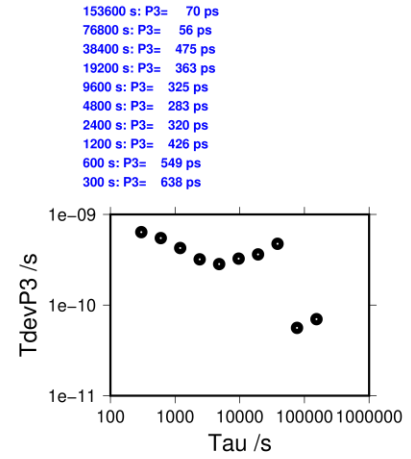
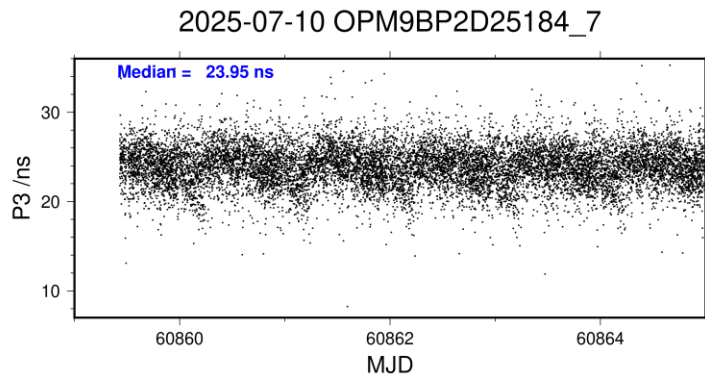
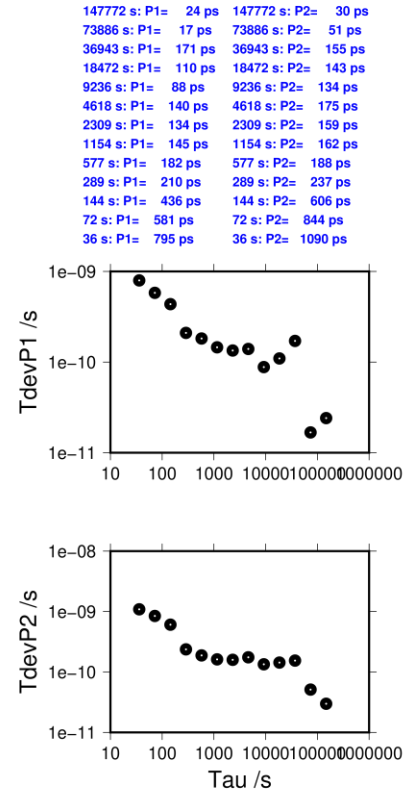
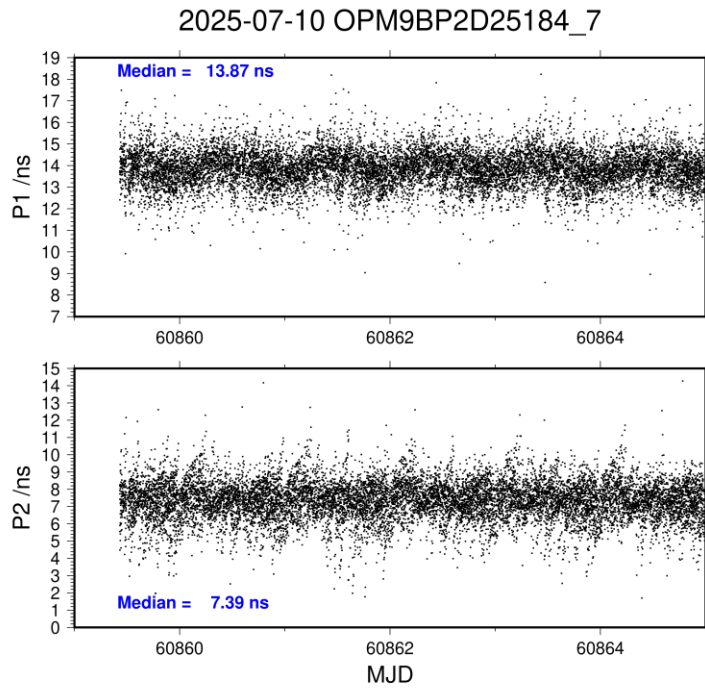
Code	#pts	median/ns	ave/ns	rms/ns
P3	1597	23.948	23.973	0.728
E3	1597	29.568	29.574	0.532

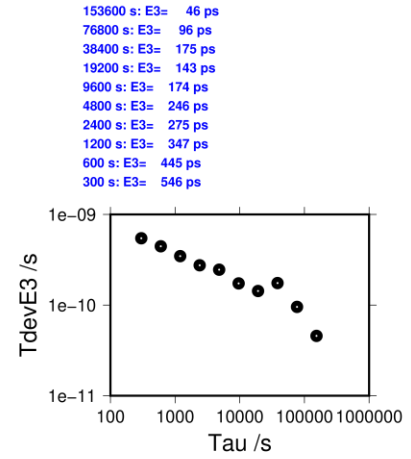
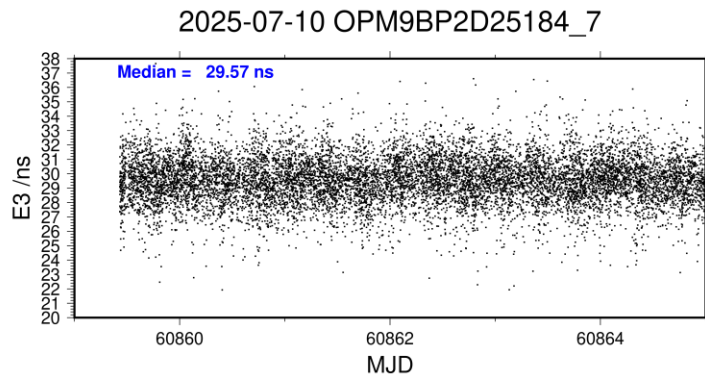
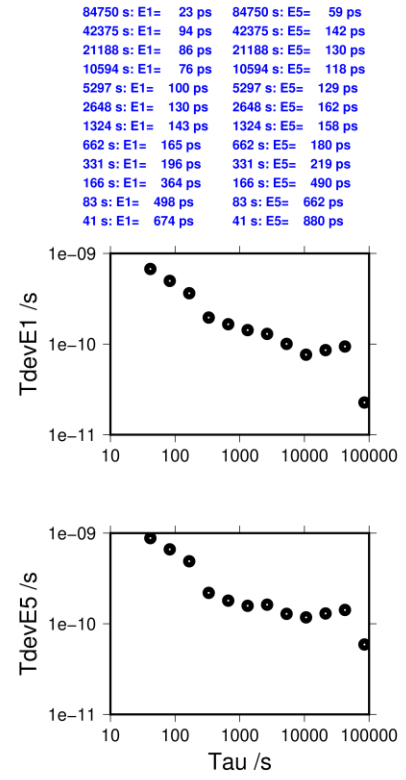
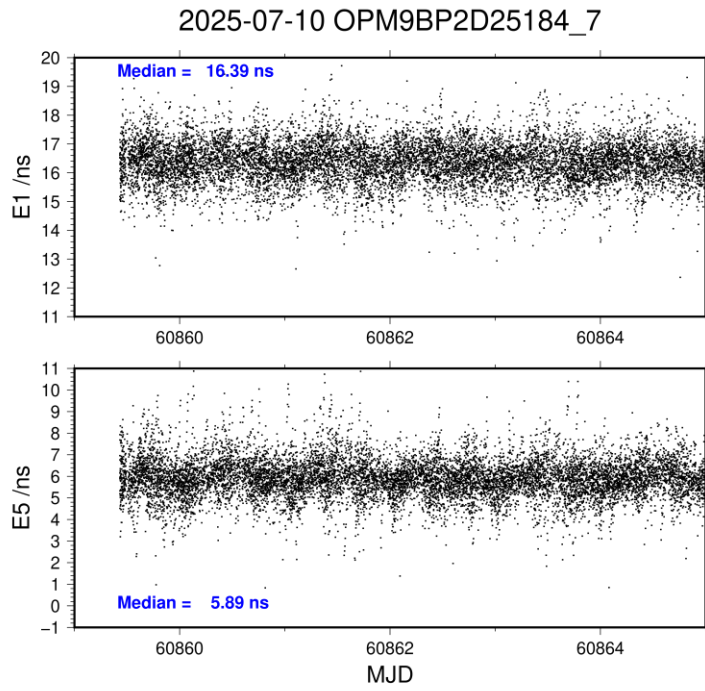
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147430 s: C1= 23 ps		
73715 s: C1= 15 ps	115008 s: C2= 64 ps	
36858 s: C1= 156 ps	57504 s: C2= 89 ps	
18429 s: C1= 93 ps	28752 s: C2= 135 ps	
9214 s: C1= 70 ps	14376 s: C2= 196 ps	
4607 s: C1= 136 ps	7188 s: C2= 201 ps	
2304 s: C1= 130 ps	3594 s: C2= 192 ps	
1152 s: C1= 144 ps	1797 s: C2= 206 ps	
576 s: C1= 177 ps	898 s: C2= 216 ps	
288 s: C1= 202 ps	449 s: C2= 270 ps	
144 s: C1= 390 ps	225 s: C2= 465 ps	
72 s: C1= 537 ps	112 s: C2= 847 ps	
36 s: C1= 737 ps	56 s: C2= 1137 ps	







OPM9-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 145988

Compute baseline with sin(elev) between 0.05 and 0.90

Apriori codes biases from 24361 high elev obs : 0.797 0.733

Iteration 0: Obs used = 244402; Huge residuals = 0; Large residuals = 852

Iteration 1: Obs used = 244402; Huge residuals = 0; Large residuals = 852

Computed code bias (P1/P2)/m = 0.061 -0.050

Computed baseline (X,Y,Z)/m = 2.956 1.960 -2.123

RMS of residuals /m = 0.461

Number of phase differences to fit baseline

L1/L2 = 144961

L5 = 86037

A priori baseline (X,Y,Z)/m = 2.956 1.960 -2.123

17475 clock jitters computed out of 17475 intervals

AVE jitter /ps = -0.0 RMS jitter /ps = 3.4

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 = 0.655 0.107 0.745

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = 0.657 0.103 0.749

RMS of residuals L2 /m = 0.003

Computed baseline L5 (X,Y,Z)/m = 0.673 0.103 0.750

RMS of residuals L5 /m = 0.003

New iteration of baseline

New apriori baseline (X,Y,Z)/m = 3.612 2.065 -1.376

17475 clock jitters computed out of 17475 intervals

AVE jitter /ps = 0.0 RMS jitter /ps = 1.4

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 = 0.024 0.001 0.019

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = 0.026 -0.004 0.023

RMS of residuals L2 /m = 0.003

Computed baseline L5 (X,Y,Z)/m = 0.032 0.001 0.027

RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 3.636 2.065 -1.357

Final baseline L2 (X,Y,Z)/m = 3.639 2.061 -1.353

Final baseline L5 (X,Y,Z)/m = 3.644 2.065 -1.349

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 395411

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	146332	-2.233	1.169
C2	94549	-2.679	1.319
P1	145925	-1.912	1.283
P2	145922	-2.301	1.457
E1	127721	-1.081	0.925
E5	127718	-6.517	0.875

Number of 300s epochs in out file = 1751

Code	#pts	median/ns	ave/ns	rms/ns
C1	14602	-2.234	-2.223	0.690
C2	9438	-2.680	-2.675	0.862
P1	14563	-1.904	-1.903	0.730
P2	14563	-2.282	-2.309	0.973
E1	12751	-1.087	-1.077	0.600
E5	12751	-6.511	-6.520	0.662

Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1748	-1.360	-1.355	0.666
E3	1748	5.735	5.717	0.484

1.3/ ROA (25221)**Period**

MJD 60896 to 60900

Delays

BP2D: (cf page 4, 80)
REFDLY = 319.67 ns (42.17+277.50)
CABDLY = 176.85 ns

BP2G: (cf page 6, 80)
REFDLY = 319.78 ns (42.28+277.50)
CABDLY = 176.38 ns

RO_6: (cf page 72)
REFDLY = 485.10 ns
CABDLY = 82.00 ns

RO_7 (ROAP): (cf page 73)
REFDLY = 452.40 ns
CABDLY = 89.90 ns

RO_8: (cf page 74)
REFDLY = 20.40 ns
CABDLY = 197.10 ns

RO_9 (ROA9): (cf page 75)
REFDLY = 451.80 ns
CABDLY = 59.70 ns

RO10 (ROAG): (cf page 76)
REFDLY = 5.10 ns
CABDLY = 200.00 ns

RO12: (cf page 77)
REFDLY = 39.80 ns
CABDLY = 190.50 ns

RO13: (cf page 78)
REFDLY = 289.00 ns
CABDLY = 83.00 ns

Setup at the ROA**Annex A - Information Sheet**

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO_6	
Receiver maker and type	Septentrio PolaRx3eTR	
Receiver serial number	200805 v2.1	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 18 m	
Antenna maker and type	LEICA AR25	
Antenna serial number	S/N 725233	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	292.6	
Delay from 1 PPS_IN to internal reference (see Annex 1)	192.5	
Antenna cable delay	70.0	
Splitter delay	7.0	
Additional cable delay	5.0	
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns	N/A	
CAB DLY /ns	82.0	
REF DLY /ns	485.1	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105581.85	
Longitude or Y /m	-555193.36	
Height or Z /m	3769704.72	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO_7	
Receiver maker and type	Septentrio PolaRx4TR PRO	
Receiver serial number	3007633	
	v2.9.6	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 18 m	
Antenna maker and type	LEICA AR25	
Antenna serial number	S/N 725233	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	305.6	
Delay from 1 PPS_IN to internal reference (see Annex 1)	146.8	
Antenna cable delay	70.0	
Splitter delay	14.0	
Additional cable delay	5.9	
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns		
CAB DLY /ns	89.9	
REF DLY /ns	452.4	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105581.71	
Longitude or Y /m	-555193.32	
Height or Z /m	3769704.62	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO_8	
Receiver maker and type	MESIT GTR51	
Receiver serial number	1509257	
	v1.9.4	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 20 m	
Antenna maker and type	ANTCOM G5Ant-72CA4T1	
Antenna serial number	S/N 448359	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	20.4	
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	
Antenna cable delay	197.1	
Splitter delay		
Additional cable delay		
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns		
CAB DLY /ns	197.1	
REF DLY /ns	20.4	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105576.83	
Longitude or Y /m	-555197.06	
Height or Z /m	3769710.77	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO_9	
Receiver maker and type	Septentrio PolaRx4TR v2.9.2	
Receiver serial number	3102314	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 37 m	
Antenna maker and type	LEICA AR25	
Antenna serial number	S/N 725232	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	451.8	
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	
Antenna cable delay	59.7	
Splitter delay		
Additional cable delay		
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns		
CAB DLY /ns	59.7	
REF DLY /ns	451.8	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105582.68	
Longitude or Y /m	-555191.07	
Height or Z /m	3769703.64	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO10	
Receiver maker and type	Septentrio PolaRx5TR v5.3.2	
Receiver serial number	4701187	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 37 m	
Antenna maker and type	LEICA AR25	
Antenna serial number	S/N 726362	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	5.1 Auto-compensation PPS IN: ON	
Delay from 1 PPS_IN to internal reference (see Annex 1)		
Antenna cable delay	200.0	
Splitter delay		
Additional cable delay		
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns		
CAB DLY /ns	200.0	
REF DLY /ns	5.1	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105577.27	
Longitude or Y /m	-555208.79	
Height or Z /m	3769714.18	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO12	
Receiver maker and type	Septentrio PolaRx5TR	
Receiver serial number	4701513	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 38 m	
Antenna maker and type	LEICA AR25	
Antenna serial number	S/N 726362	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	39.8 Auto-compensation PPS IN: ON	
Delay from 1 PPS_IN to internal reference (see Annex 1)		
Antenna cable delay	190.5	
Splitter delay		
Additional cable delay		
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns		
CAB DLY /ns	190.5	
REF DLY /ns	39.8	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105577.30	
Longitude or Y /m	-555208.80	
Height or Z /m	3769714.19	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	09-08-2025	
Date and hour end of measurements	14-08-2025	
Information on the system		
	Local	Traveling
4-character BIPM code	RO13	
Receiver maker and type	Septentrio PolaRx5TR	
Receiver serial number	4701648	
1 PPS trigger level /V	1 V	
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 18 m	
Antenna maker and type	LEICA AR25	
Antenna serial number	S/N 725233	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	289.0	
	Auto-compensation PPS IN: ON	
Delay from 1 PPS_IN to internal reference (see Annex 1)		
Antenna cable delay	83.0	
Splitter delay		
Additional cable delay		
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns		
INT DLY (Galileo) /ns		
CAB DLY /ns	83.0	
REF DLY /ns	289.0	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105581.71	
Longitude or Y /m	-555193.32	
Height or Z /m	3769704.62	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(22 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Diagram of the experiment set-up:

Wednesday 16 July 2025

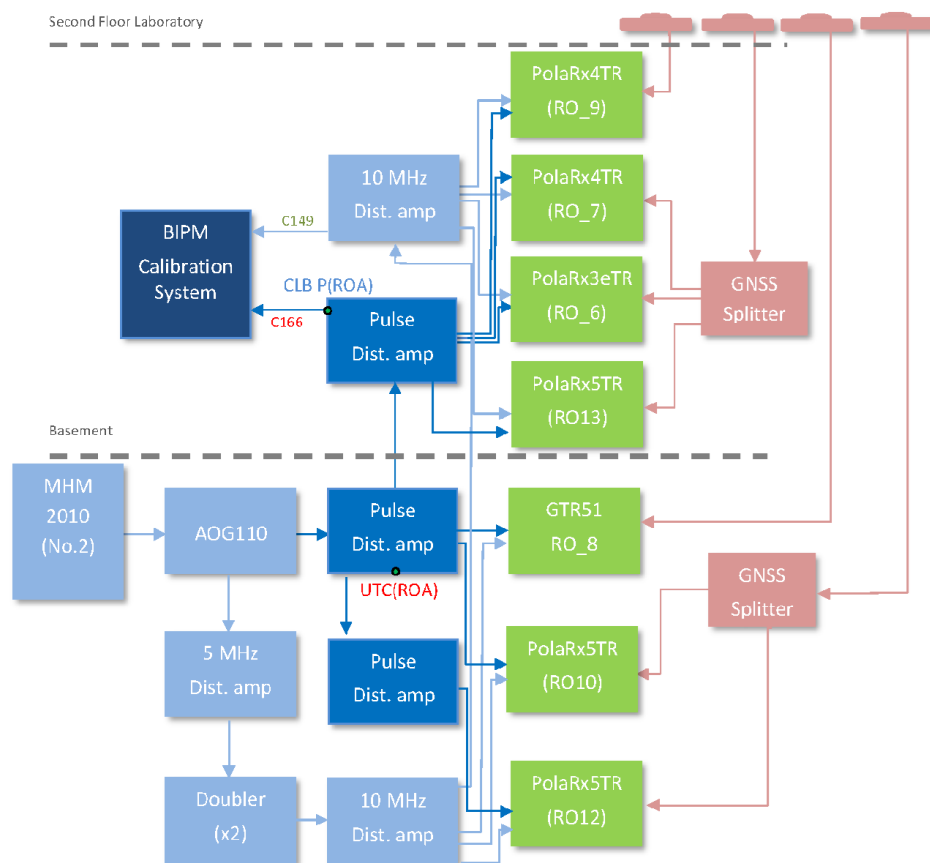
Setup

Figure 1: Hookup diagram of GNSS receivers.

Log of Events / Additional Information :**Wednesday 16 July 2025:**

UTC(ROA) – CLB P(ROA) = (277.50 ± 0.01) ns

Delay Measurement at each receiver:**BP2G (PolaRx5TR):**

Channel A [C183], channel B [C157 (PPS IN PolaRx5TR)+(Female BNC-BNC)+C155] = (15.23 ± 0.01) ns

Channel A [C183], channel B [PPS OUT PolaRx5TR +C155] = (47.89 ± 0.07) ns

UTC(ROA) — CLB P(ROA) = (277.50 ± 0.01) ns

CLB P(ROA) - PPS IN PolaRx5TR = (42.18 ± 0.07) ns

UTC(ROA) - PPS IN PolaRx5TR = (319.68 ± 0.08) ns

BP2D (GTR55):

UTC(ROA) — CLB P(ROA) = (277.50 ± 0.01) ns

CLB P(ROA) - PPS IN GTR55 = (42.06 ± 0.05) ns

UTC(ROA) - PPS IN GTR55 = (319.56 ± 0.06) ns

Wednesday 14 August 2025:

UTC(ROA) – CLB P(ROA) = (277.50 ± 0.01) ns

Delay Measurement at each receiver:**BP2G (PolaRx5TR):**

Channel A [C183], channel B [C157 (PPS IN PolaRx5TR)+(Female BNC-BNC)+C155] = (15.25 ± 0.01) ns

Channel A [C183], channel B [PPS OUT PolaRx5TR +C155] = (47.55 ± 0.08) ns

UTC(ROA) — CLB P(ROA) = (277.50 ± 0.01) ns

CLB P(ROA) - PPS IN PolaRx5TR = (42.16 ± 0.08) ns

UTC(ROA) - PPS IN PolaRx5TR = (319.66 ± 0.09) ns

BP2D (GTR55):

UTC(ROA) — CLB P(ROA) = (277.50 ± 0.01) ns

CLB P(ROA) - PPS IN GTR55 = (42.04 ± 0.04) ns

UTC(ROA) - PPS IN GTR55 = (319.54 ± 0.06) ns

RO 6-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 122566
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -65.055 -66.376
 Iteration 0: Obs used = 207140; Huge residuals = 0; Large residuals = 3616
 Iteration 1: Obs used = 207140; Huge residuals = 0; Large residuals = 3616
 Computed code bias (P1/P2)/m = -65.199 -66.546
 Computed baseline (X,Y,Z)/m = -1.716 4.181 2.512
 RMS of residuals /m = 0.449

Number of phase differences to fit baseline
 L1/L2 = 122068
 L5 = 0
 A priori baseline (X,Y,Z)/m = -1.716 4.181 2.512
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 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 = 0.109 -0.078 0.083
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.107 -0.073 0.082
 RMS of residuals L2 /m = 0.003
 No computed baseline L5, will use L1/L2

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.609 4.106 2.594
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.2 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 -0.026 0.002
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.000 -0.021 0.001
 RMS of residuals L2 /m = 0.003
 No computed baseline L5, will use L1/L2

Final baseline L1 (X,Y,Z)/m = -1.608 4.080 2.597
 Final baseline L2 (X,Y,Z)/m = -1.609 4.085 2.595
 Final baseline L5 (X,Y,Z)/m = -1.608 4.082 2.596

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 218040

Global average of individual differences

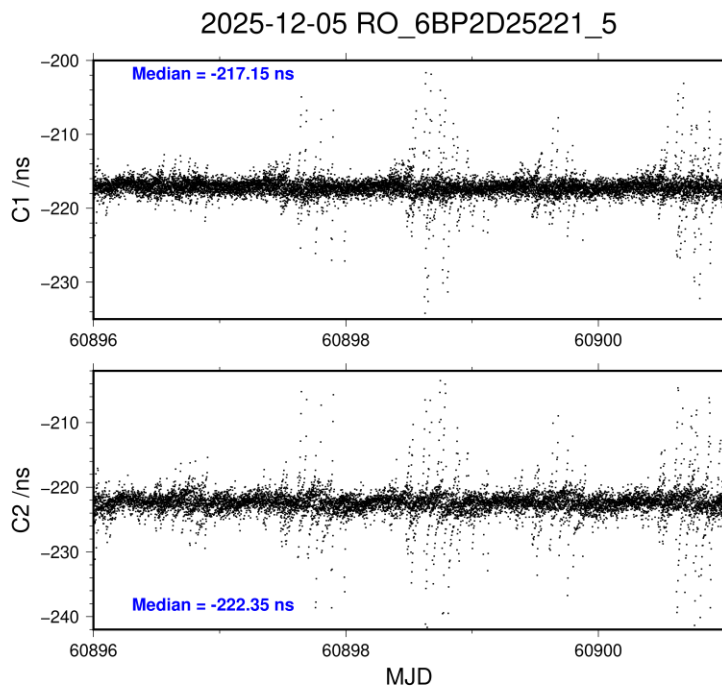
Code	#pts	ave/ns	rms/ns
C1	122506	-217.162	1.552
C2	101373	-222.418	2.294
P1	122498	-217.771	1.583
P2	122325	-222.272	2.198

Number of 300s epochs in out file = 1440

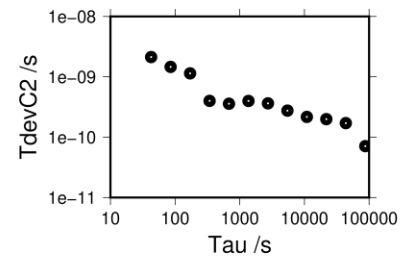
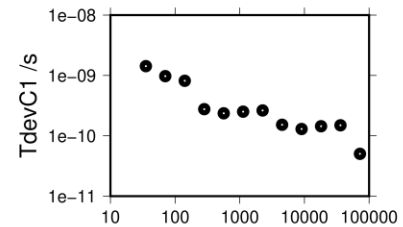
Code	#pts	median/ns	ave/ns	rms/ns
C1	12241	-217.150	-217.157	1.412
C2	10130	-222.349	-222.412	2.086
P1	12239	-217.761	-217.765	1.440
P2	12222	-222.197	-222.261	2.057

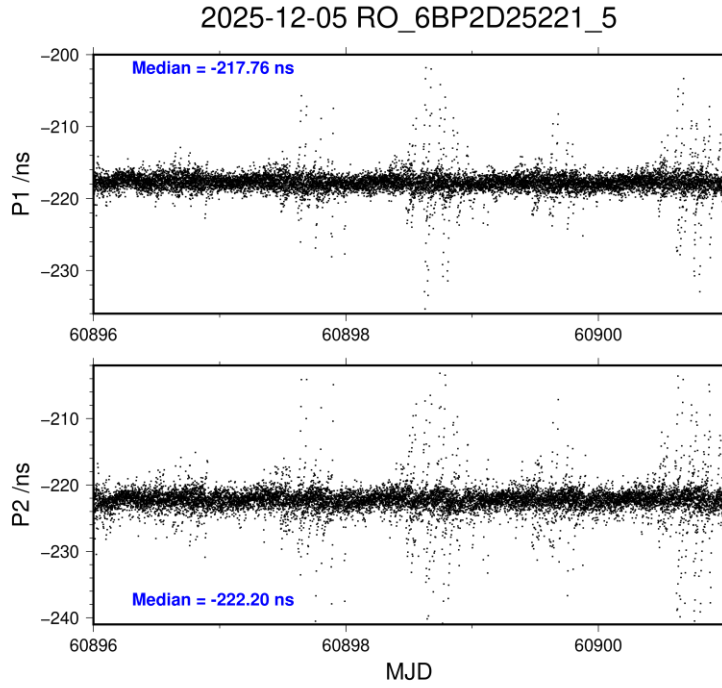
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	-210.840	-210.820	0.699

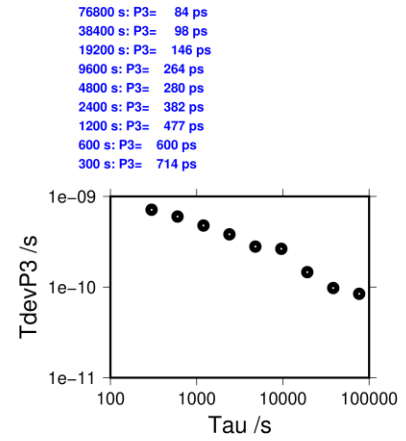
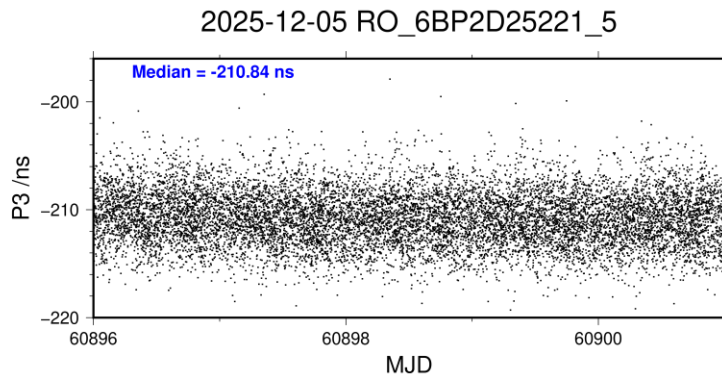
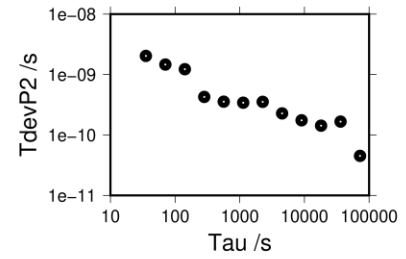
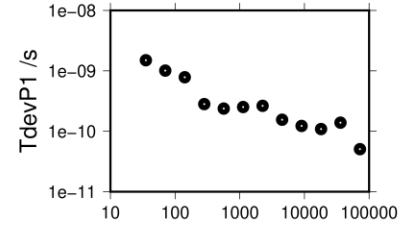


72232 s: C1= 50 ps 87286 s: C2= 71 ps
 36116 s: C1= 150 ps 43643 s: C2= 171 ps
 18058 s: C1= 144 ps 21822 s: C2= 199 ps
 9029 s: C1= 130 ps 10911 s: C2= 217 ps
 4515 s: C1= 152 ps 5455 s: C2= 275 ps
 2257 s: C1= 263 ps 2728 s: C2= 363 ps
 1129 s: C1= 251 ps 1364 s: C2= 398 ps
 564 s: C1= 236 ps 682 s: C2= 358 ps
 282 s: C1= 276 ps 341 s: C2= 399 ps
 141 s: C1= 815 ps 170 s: C2= 1141 ps
 71 s: C1= 975 ps 85 s: C2= 1462 ps
 35 s: C1= 1427 ps 43 s: C2= 2123 ps





72244 s: P1= 51 ps	72344 s: P2= 45 ps
36122 s: P1= 139 ps	36172 s: P2= 166 ps
18061 s: P1= 109 ps	18086 s: P2= 143 ps
9030 s: P1= 123 ps	9043 s: P2= 175 ps
4515 s: P1= 155 ps	4522 s: P2= 228 ps
2258 s: P1= 264 ps	2261 s: P2= 354 ps
1129 s: P1= 252 ps	1130 s: P2= 342 ps
564 s: P1= 237 ps	565 s: P2= 356 ps
282 s: P1= 282 ps	283 s: P2= 427 ps
141 s: P1= 783 ps	141 s: P2= 1226 ps
71 s: P1= 1008 ps	71 s: P2= 1464 ps
35 s: P1= 1497 ps	35 s: P2= 2036 ps



RO 6-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 138107
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -69.625 -69.006
 Iteration 0: Obs used = 241333; Huge residuals = 18; Large residuals = 505
 Iteration 1: Obs used = 241334; Huge residuals = 0; Large residuals = 486
 Computed code bias (P1/P2)/m = -69.846 -69.273
 Computed baseline (X,Y,Z)/m = -2.464 2.458 3.223
 RMS of residuals /m = 0.415

Number of phase differences to fit baseline
 L1/L2 = 137444
 L5 = 0
 A priori baseline (X,Y,Z)/m = -2.464 2.458 3.223
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 4.2

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 = 0.203 -0.014 0.135
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.212 -0.009 0.144
 RMS of residuals L2 /m = 0.003
 No computed baseline L5, will use L1/L2

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -2.256 2.446 3.362
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.0 RMS jitter /ps = 0.2

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 = -0.001 0.002 -0.003
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.008 0.007 0.006
 RMS of residuals L2 /m = 0.003
 No computed baseline L5, will use L1/L2

Final baseline L1 (X,Y,Z)/m = -2.256 2.448 3.360
 Final baseline L2 (X,Y,Z)/m = -2.247 2.453 3.369
 Final baseline L5 (X,Y,Z)/m = -2.252 2.451 3.364

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 247398

Global average of individual differences

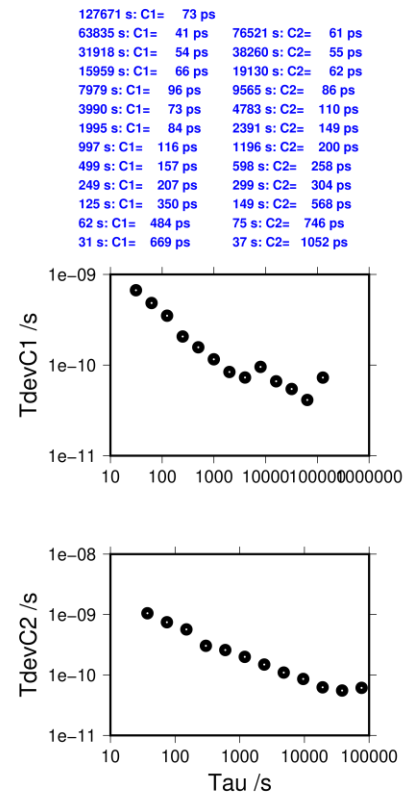
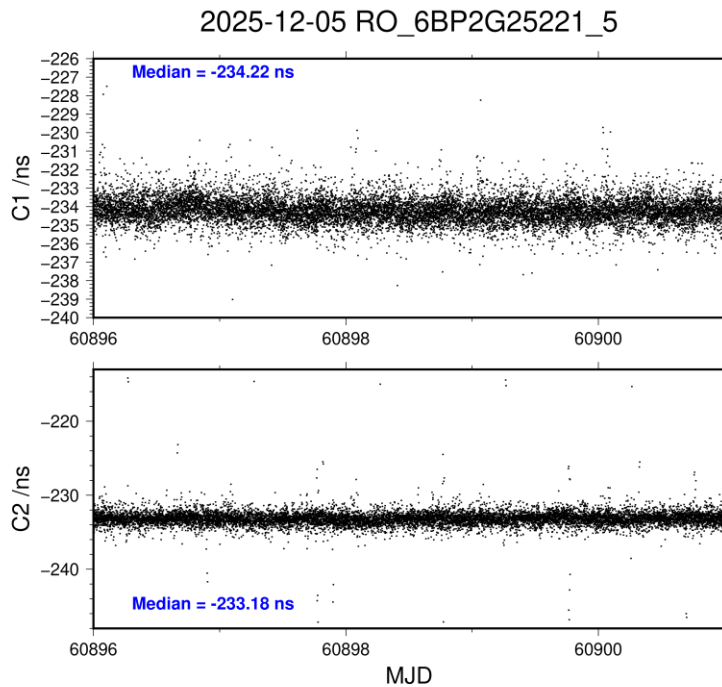
Code	#pts	ave/ns	rms/ns
C1	138617	-234.199	1.215
C2	115689	-233.159	1.749
P1	138027	-233.461	1.203
P2	138012	-231.579	1.502

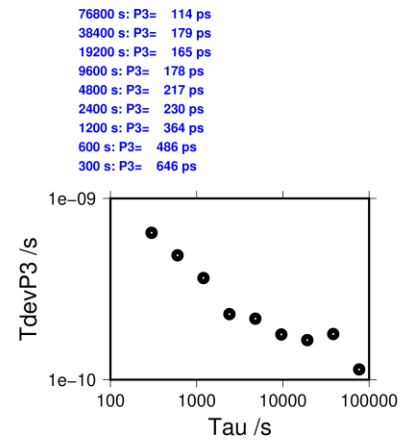
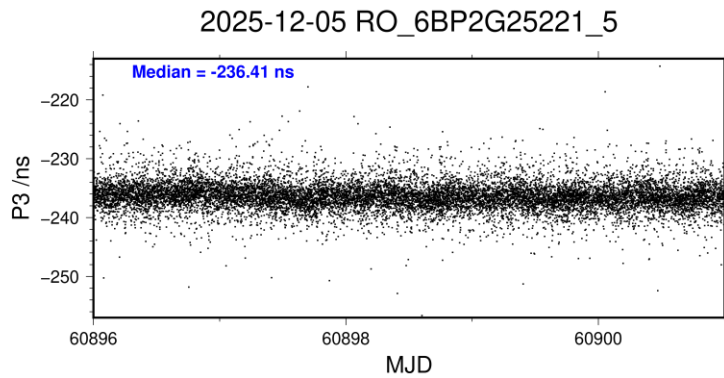
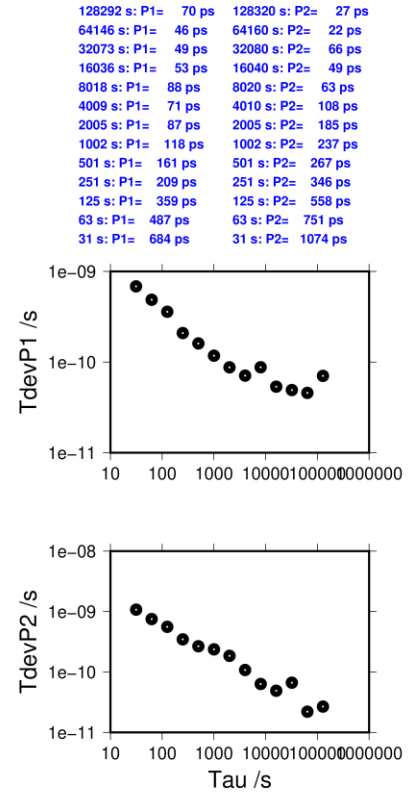
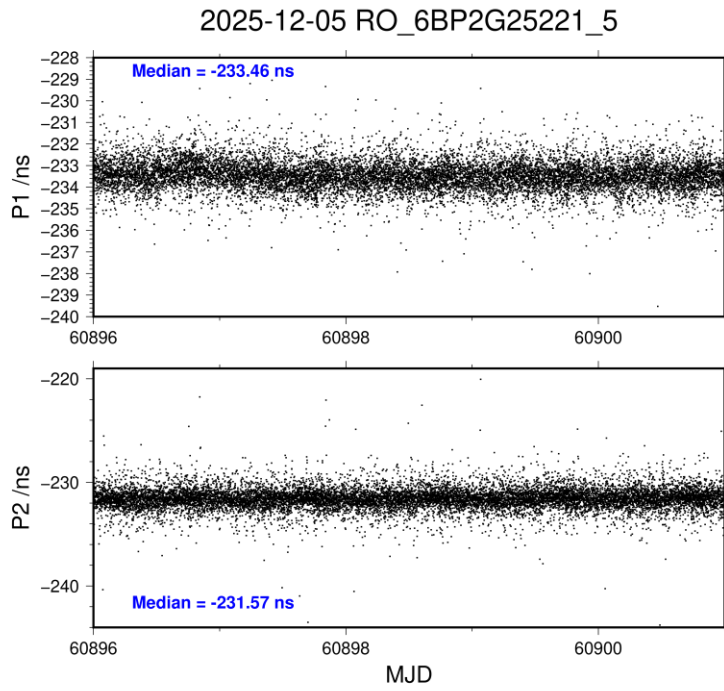
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	13851	-234.225	-234.197	0.683
C2	11555	-233.179	-233.162	1.059
P1	13784	-233.463	-233.457	0.693
P2	13781	-231.573	-231.573	1.082

Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1439	-236.414	-236.403	0.600





ROAP-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 122566
 Compute baseline with $\sin(\text{elev})$ between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -52.790 -54.065
 Iteration 0: Obs used = 207308; Huge residuals = 0; Large residuals = 3448
 Iteration 1: Obs used = 207308; Huge residuals = 0; Large residuals = 3448
 Computed code bias (P1/P2)/m = -52.937 -54.240
 Computed baseline (X,Y,Z)/m = -1.699 4.177 2.515
 RMS of residuals /m = 0.419

Number of phase differences to fit baseline
 L1/L2 = 122071
 L5 = 73050
 A priori baseline (X,Y,Z)/m = -1.699 4.177 2.515
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 4.2

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 = 0.092 -0.074 0.080
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.090 -0.068 0.078
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.088 -0.072 0.078
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.608 4.107 2.594
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.2 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 -0.027 0.002
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.002 -0.021 0.001
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.001 -0.025 0.001
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -1.607 4.080 2.596
 Final baseline L2 (X,Y,Z)/m = -1.609 4.086 2.595
 Final baseline L5 (X,Y,Z)/m = -1.609 4.082 2.595

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 388109

Global average of individual differences

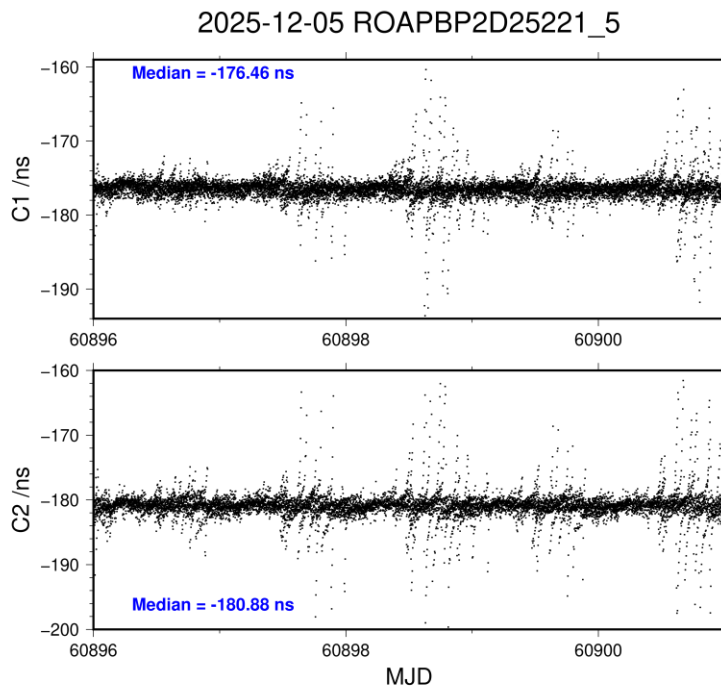
Code	#pts	ave/ns	rms/ns
C1	122508	-176.489	1.517
C2	99724	-180.929	2.145
P1	122499	-176.835	1.535
P2	122338	-181.185	2.077
E1	99540	-176.715	1.260
E5	98880	-172.041	1.858

Number of 300s epochs in out file = 1440

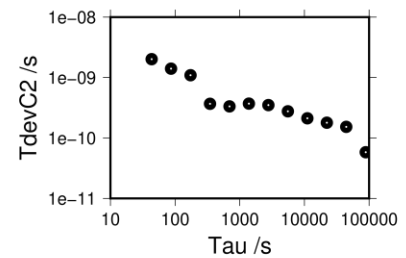
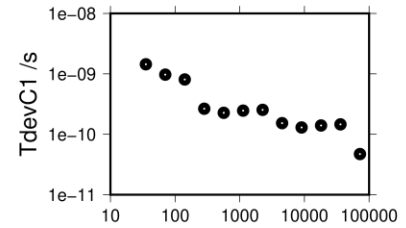
Code	#pts	median/ns	ave/ns	rms/ns
C1	12241	-176.457	-176.488	1.409
C2	9963	-180.885	-180.923	1.989
P1	12239	-176.820	-176.834	1.425
P2	12223	-181.126	-181.182	1.986
E1	9943	-176.674	-176.716	1.165
E5	9875	-171.979	-172.037	1.780

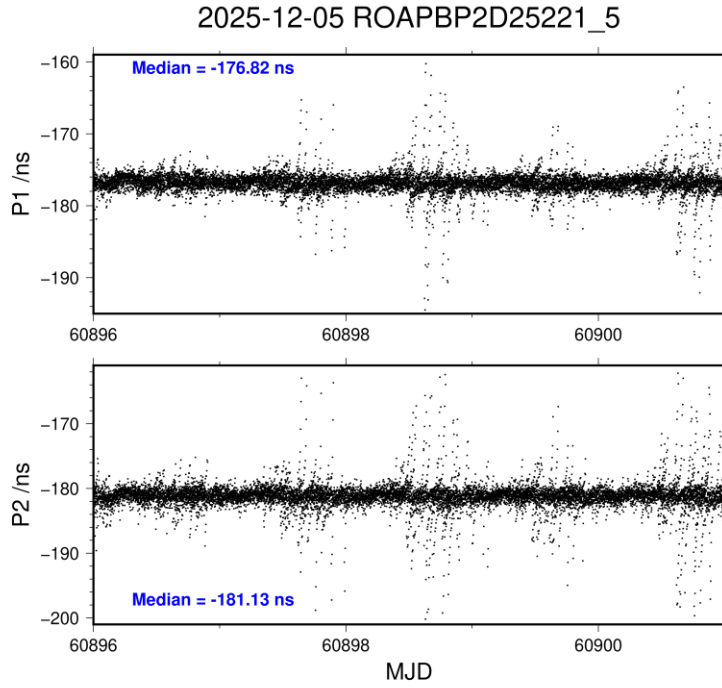
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	-170.138	-170.139	0.630
E3	1410	-182.591	-182.613	0.555

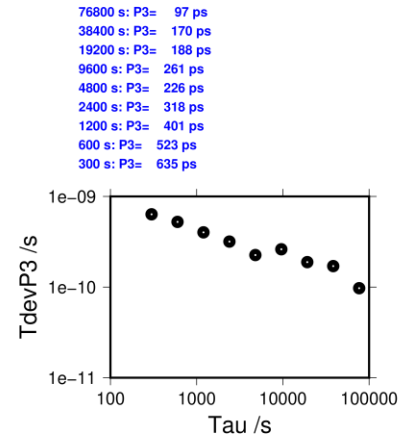
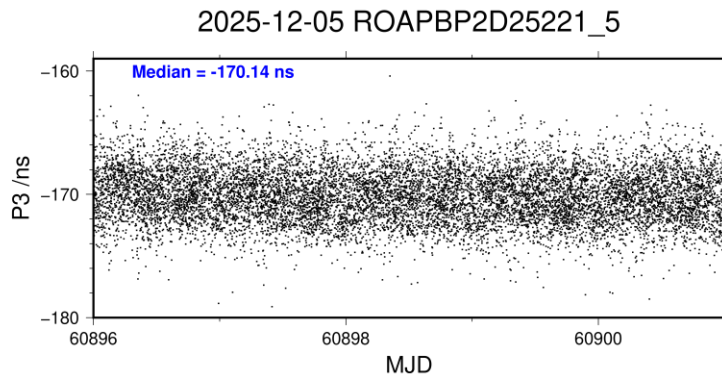
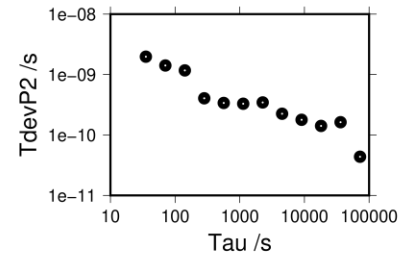
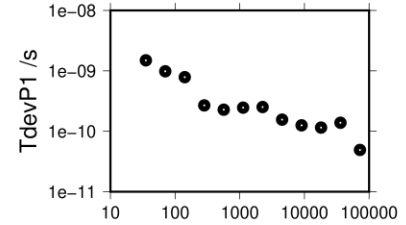


72232 s: C1= 47 ps 88749 s: C2= 58 ps
 36116 s: C1= 146 ps 44375 s: C2= 153 ps
 18058 s: C1= 140 ps 22187 s: C2= 179 ps
 9029 s: C1= 130 ps 11094 s: C2= 211 ps
 4515 s: C1= 153 ps 5547 s: C2= 276 ps
 2257 s: C1= 253 ps 2773 s: C2= 350 ps
 1129 s: C1= 246 ps 1387 s: C2= 370 ps
 564 s: C1= 227 ps 693 s: C2= 333 ps
 282 s: C1= 265 ps 347 s: C2= 368 ps
 141 s: C1= 809 ps 173 s: C2= 1093 ps
 71 s: C1= 970 ps 87 s: C2= 1401 ps
 35 s: C1= 1440 ps 43 s: C2= 2016 ps

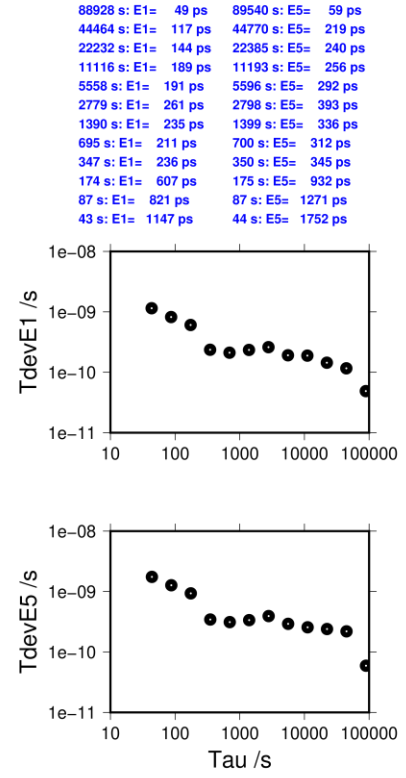
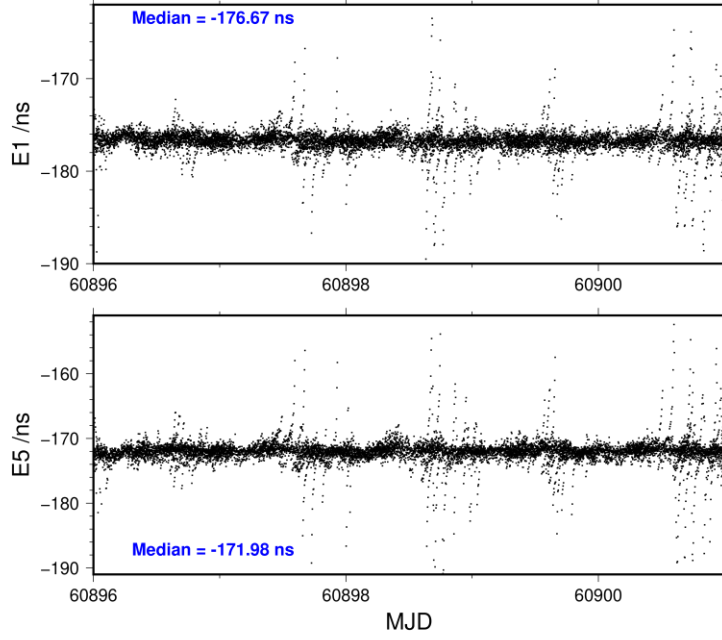




72244 s: P1= 49 ps	72339 s: P2= 44 ps
36122 s: P1= 139 ps	36169 s: P2= 163 ps
18061 s: P1= 115 ps	18085 s: P2= 141 ps
9030 s: P1= 125 ps	9042 s: P2= 178 ps
4515 s: P1= 156 ps	4521 s: P2= 224 ps
2258 s: P1= 252 ps	2261 s: P2= 346 ps
1129 s: P1= 247 ps	1130 s: P2= 329 ps
564 s: P1= 228 ps	565 s: P2= 339 ps
282 s: P1= 268 ps	283 s: P2= 405 ps
141 s: P1= 787 ps	141 s: P2= 1172 ps
71 s: P1= 983 ps	71 s: P2= 1412 ps
35 s: P1= 1492 ps	35 s: P2= 1976 ps

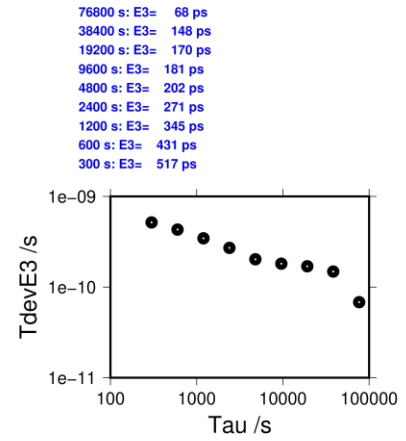
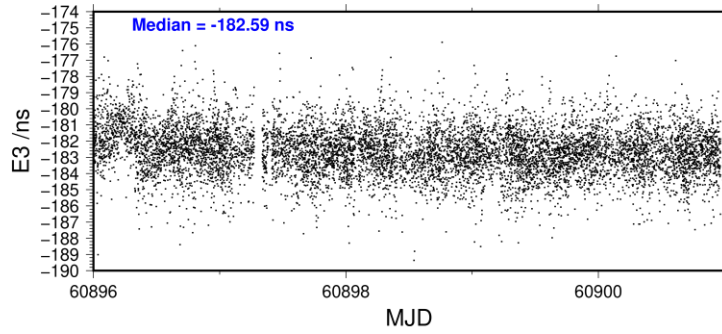


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88928 s: E1= 49 ps 89540 s: E5= 59 ps
 44464 s: E1= 117 ps 44770 s: E5= 219 ps
 22232 s: E1= 144 ps 22385 s: E5= 240 ps
 11116 s: E1= 189 ps 11193 s: E5= 256 ps
 5558 s: E1= 191 ps 5596 s: E5= 292 ps
 2779 s: E1= 261 ps 2798 s: E5= 393 ps
 1390 s: E1= 235 ps 1399 s: E5= 336 ps
 695 s: E1= 211 ps 700 s: E5= 312 ps
 347 s: E1= 236 ps 350 s: E5= 345 ps
 174 s: E1= 607 ps 175 s: E5= 932 ps
 87 s: E1= 821 ps 87 s: E5= 1271 ps
 43 s: E1= 1147 ps 44 s: E5= 1752 ps

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ROAP-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 138467
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -57.348 -56.695
 Iteration 0: Obs used = 242322; Huge residuals = 16; Large residuals = 236
 Iteration 1: Obs used = 242327; Huge residuals = 0; Large residuals = 215
 Computed code bias (P1/P2)/m = -57.576 -56.960
 Computed baseline (X,Y,Z)/m = -2.455 2.458 3.220
 RMS of residuals /m = 0.382

Number of phase differences to fit baseline
 L1/L2 = 137826
 L5 = 81664
 A priori baseline (X,Y,Z)/m = -2.455 2.458 3.220
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.0 RMS jitter /ps = 2.9

Iter 1 Large residuals L1= 0
 Iter 1 Large residuals L2= 0
 Iter 1 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = 0.193 -0.009 0.138
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.203 -0.005 0.146
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.219 -0.055 0.116
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 0
 Iter 2 Large residuals L2= 0
 Iter 2 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = 0.193 -0.009 0.138
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.203 -0.005 0.146
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.219 -0.055 0.116
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -2.256 2.451 3.363
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.0 RMS jitter /ps = 0.2

Iter 3 Large residuals L1= 0
 Iter 3 Large residuals L2= 0
 Iter 3 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = -0.002 0.001 -0.003
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.008 0.005 0.006
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.023 -0.045 -0.024
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -2.258 2.452 3.360
 Final baseline L2 (X,Y,Z)/m = -2.249 2.456 3.368

Final baseline L5 (X,Y,Z)/m = -2.233 2.406 3.338

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 439297

Global average of individual differences

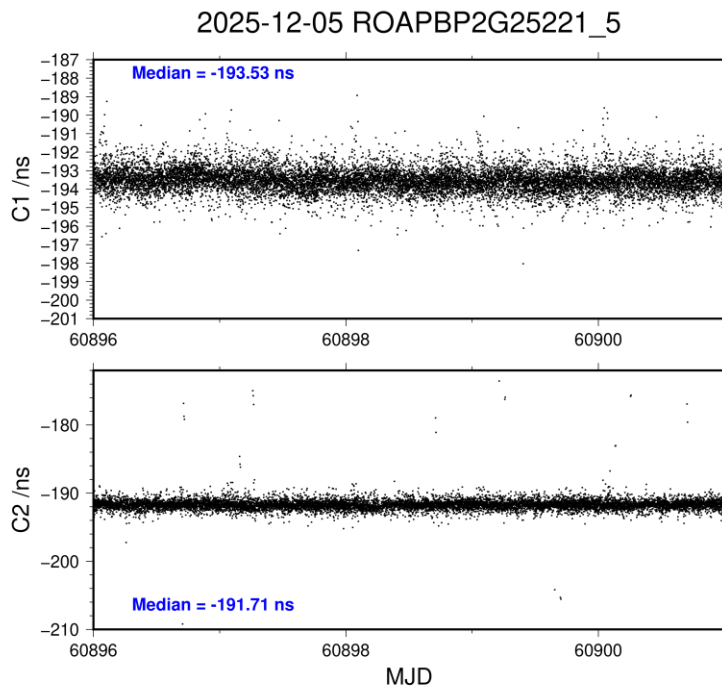
Code	#pts	ave/ns	rms/ns
C1	138896	-193.520	1.134
C2	112873	-191.681	1.507
P1	138388	-192.517	1.171
P2	138381	-190.490	1.280
E1	111927	-194.010	0.839
E5	110924	-184.960	0.778

Number of 300s epochs in out file = 1440

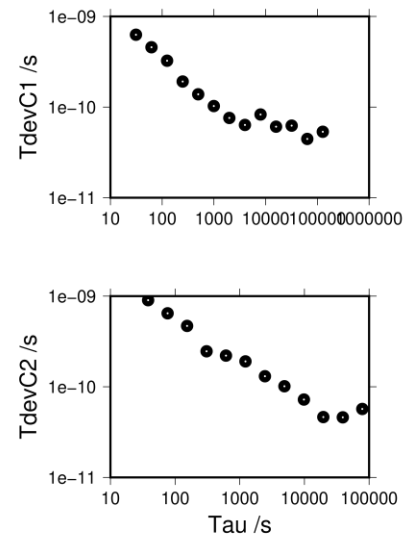
Code	#pts	median/ns	ave/ns	rms/ns
C1	13876	-193.527	-193.518	0.638
C2	11274	-191.707	-191.685	0.903
P1	13821	-192.483	-192.515	0.725
P2	13820	-190.500	-190.489	0.930
E1	11182	-194.037	-194.013	0.524
E5	11078	-184.941	-184.962	0.606

Ionofree combinations

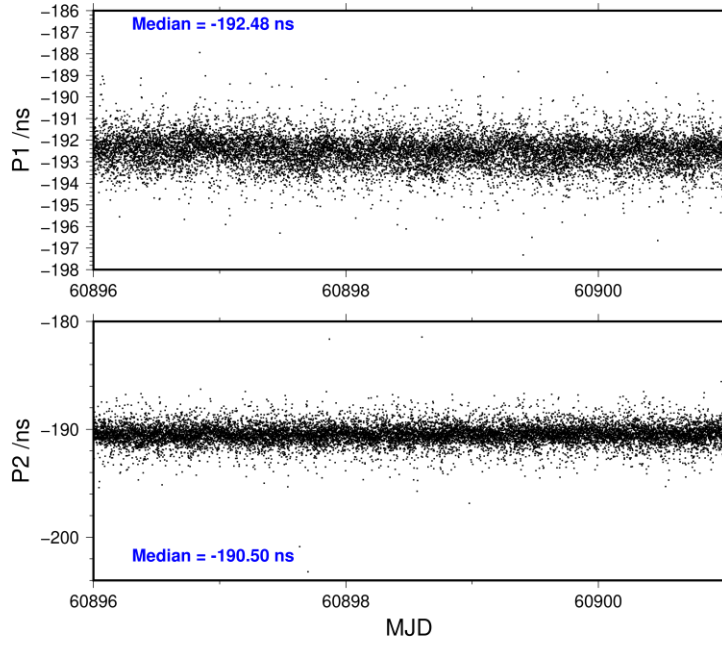
Code	#pts	median/ns	ave/ns	rms/ns



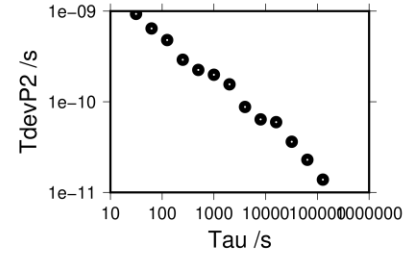
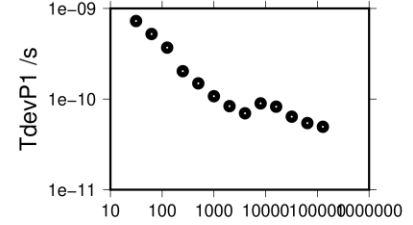
127441 s: C1= 53 ps
 63720 s: C1= 44 ps 78428 s: C2= 57 ps
 31860 s: C1= 62 ps 39214 s: C2= 46 ps
 15930 s: C1= 61 ps 19607 s: C2= 46 ps
 7965 s: C1= 83 ps 9804 s: C2= 72 ps
 3983 s: C1= 63 ps 4902 s: C2= 101 ps
 1991 s: C1= 76 ps 2451 s: C2= 131 ps
 996 s: C1= 103 ps 1225 s: C2= 190 ps
 498 s: C1= 138 ps 613 s: C2= 221 ps
 249 s: C1= 192 ps 306 s: C2= 246 ps
 124 s: C1= 325 ps 153 s: C2= 469 ps
 62 s: C1= 457 ps 77 s: C2= 647 ps
 31 s: C1= 628 ps 38 s: C2= 903 ps



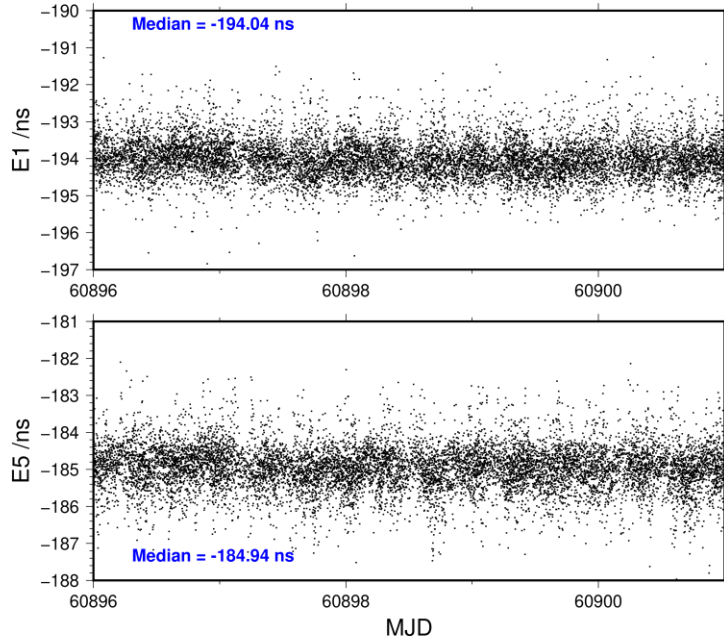
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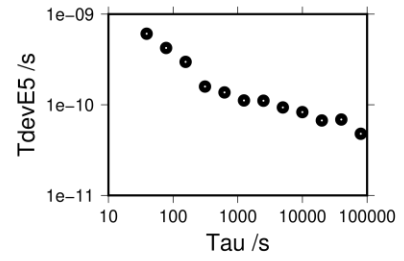
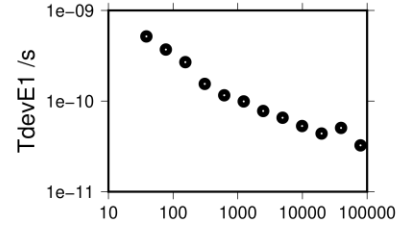
127948 s: P1= 49 ps	127957 s: P2= 14 ps
63974 s: P1= 54 ps	63979 s: P2= 23 ps
31987 s: P1= 64 ps	31989 s: P2= 36 ps
15994 s: P1= 83 ps	15995 s: P2= 60 ps
7997 s: P1= 90 ps	7997 s: P2= 64 ps
3998 s: P1= 70 ps	3999 s: P2= 88 ps
1999 s: P1= 84 ps	1999 s: P2= 156 ps
1000 s: P1= 107 ps	1000 s: P2= 199 ps
500 s: P1= 149 ps	500 s: P2= 225 ps
250 s: P1= 203 ps	250 s: P2= 291 ps
125 s: P1= 369 ps	125 s: P2= 480 ps
62 s: P1= 522 ps	62 s: P2= 644 ps
31 s: P1= 726 ps	31 s: P2= 933 ps



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79074 s: E1= 32 ps	79816 s: E5= 48 ps
39537 s: E1= 51 ps	39908 s: E5= 69 ps
19768 s: E1= 44 ps	19954 s: E5= 67 ps
9884 s: E1= 53 ps	9977 s: E5= 83 ps
4942 s: E1= 65 ps	4988 s: E5= 93 ps
2471 s: E1= 78 ps	2494 s: E5= 111 ps
1236 s: E1= 99 ps	1247 s: E5= 112 ps
618 s: E1= 116 ps	624 s: E5= 137 ps
309 s: E1= 155 ps	312 s: E5= 159 ps
154 s: E1= 269 ps	156 s: E5= 297 ps
77 s: E1= 371 ps	78 s: E5= 424 ps
39 s: E1= 517 ps	39 s: E5= 607 ps



RO 8-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 120060

Compute baseline with sin(elev) between 0.05 and 0.90

Apriori codes biases from 18298 high elev obs : 100.557 98.948

Iteration 0: Obs used = 205652; Huge residuals = 4; Large residuals = 92

Iteration 1: Obs used = 205652; Huge residuals = 0; Large residuals = 88

Computed code bias (P1/P2)/m = 100.692 99.156

Computed baseline (X,Y,Z)/m = 3.661 7.774 -3.168

RMS of residuals /m = 0.274

Number of phase differences to fit baseline

L1/L2 = 119343

L5 = 73559

A priori baseline (X,Y,Z)/m = 3.661 7.774 -3.168

14396 clock jitters computed out of 14396 intervals

AVE jitter /ps = 0.1 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 = -0.303 0.023 -0.323

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.314 0.027 -0.338

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.329 0.035 -0.349

RMS of residuals L5 /m = 0.003

New iteration of baseline

New apriori baseline (X,Y,Z)/m = 3.353 7.799 -3.499

14396 clock jitters computed out of 14396 intervals

AVE jitter /ps = -0.0 RMS jitter /ps = 0.5

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 0.001 0.002

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.011 0.006 -0.012

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.026 0.011 -0.025

RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 3.353 7.800 -3.497

Final baseline L2 (X,Y,Z)/m = 3.342 7.805 -3.511

Final baseline L5 (X,Y,Z)/m = 3.327 7.810 -3.524

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 327682

Global average of individual differences

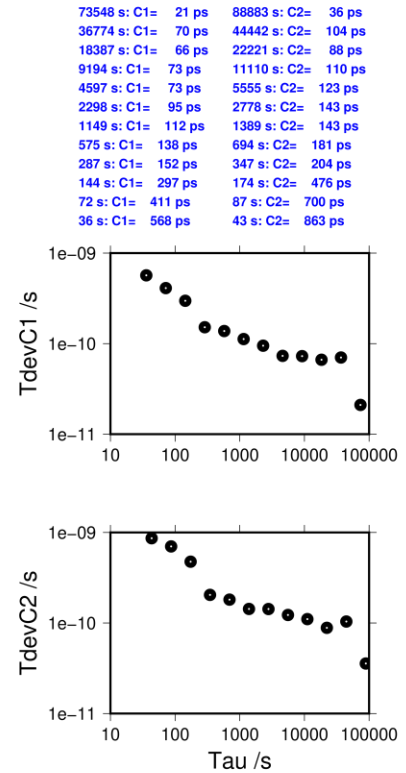
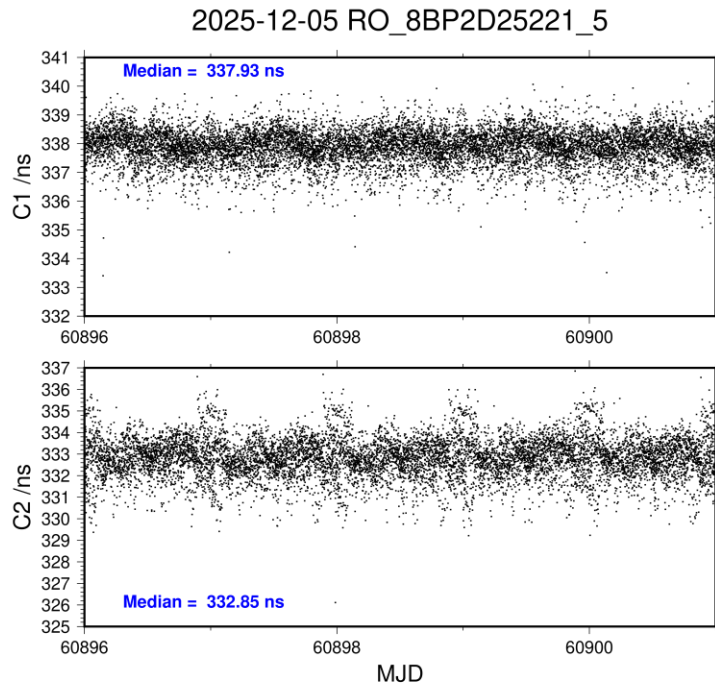
Code	#pts	ave/ns	rms/ns
C1	120424	337.897	0.648
C2	99662	332.823	0.967
P1	119994	336.779	0.753
P2	119991	331.712	1.079
E1	108345	339.379	0.628
E5	108332	327.282	1.196

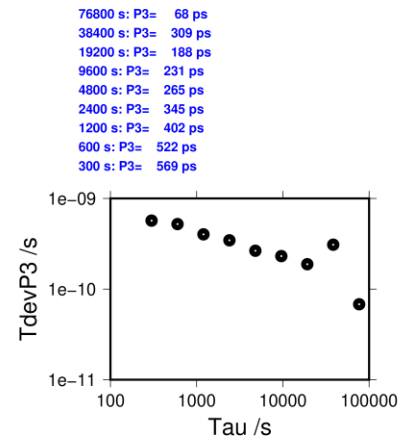
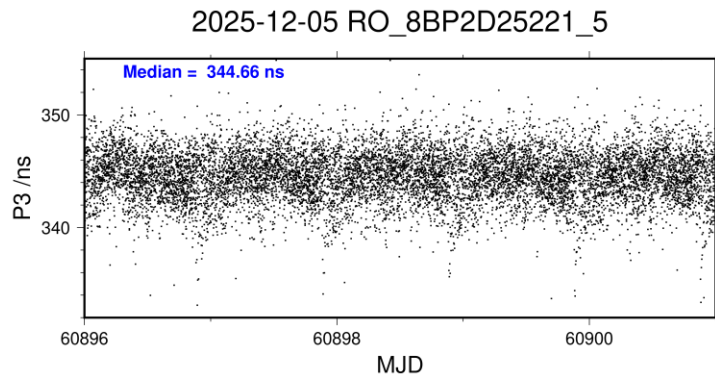
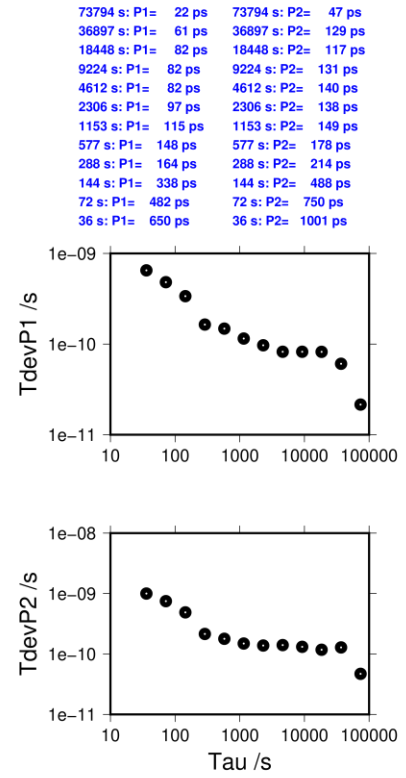
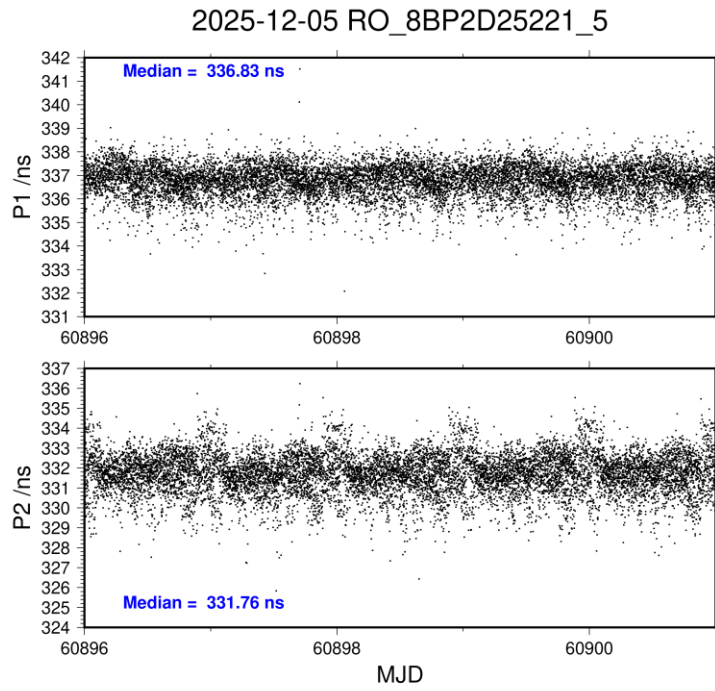
Number of 300s epochs in out file = 1440

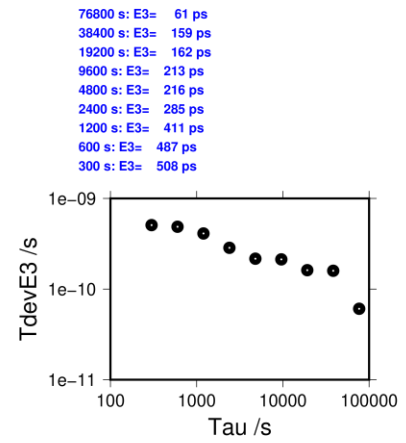
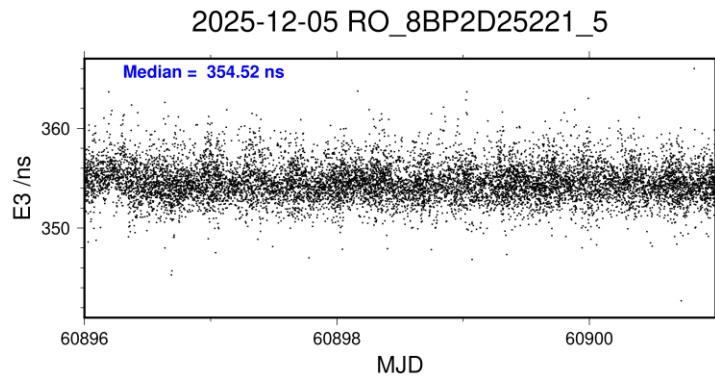
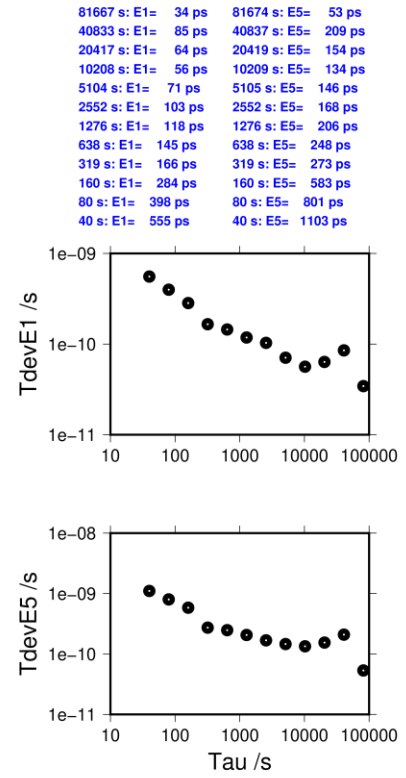
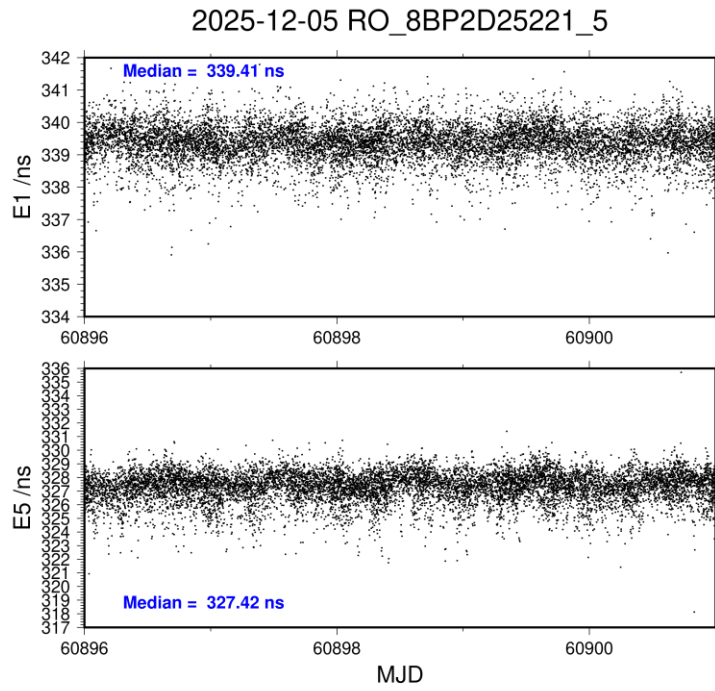
Code	#pts	median/ns	ave/ns	rms/ns
C1	12022	337.934	337.898	0.577
C2	9948	332.845	332.826	0.908
P1	11982	336.828	336.781	0.658
P2	11982	331.758	331.716	0.996
E1	10827	339.408	339.382	0.568
E5	10826	327.418	327.288	1.126

Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	344.658	344.665	0.645
E3	1439	354.521	354.502	0.572







RO 8-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 120058
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : 95.924 96.331
 Iteration 0: Obs used = 201779; Huge residuals = 0; Large residuals = 3961
 Iteration 1: Obs used = 201779; Huge residuals = 0; Large residuals = 3961
 Computed code bias (P1/P2)/m = 96.084 96.477
 Computed baseline (X,Y,Z)/m = 2.870 6.049 -2.499
 RMS of residuals /m = 0.451

Number of phase differences to fit baseline
 L1/L2 = 119342
 L5 = 73559
 A priori baseline (X,Y,Z)/m = 2.870 6.049 -2.499
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.5 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 = -0.165 0.083 -0.228
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.166 0.083 -0.234
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.177 0.094 -0.245
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.705 6.132 -2.730
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 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 = 0.000 0.032 -0.001
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.000 0.031 -0.008
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.012 0.041 -0.019
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 2.705 6.163 -2.731
 Final baseline L2 (X,Y,Z)/m = 2.704 6.163 -2.737
 Final baseline L5 (X,Y,Z)/m = 2.693 6.173 -2.749

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 323992

Global average of individual differences

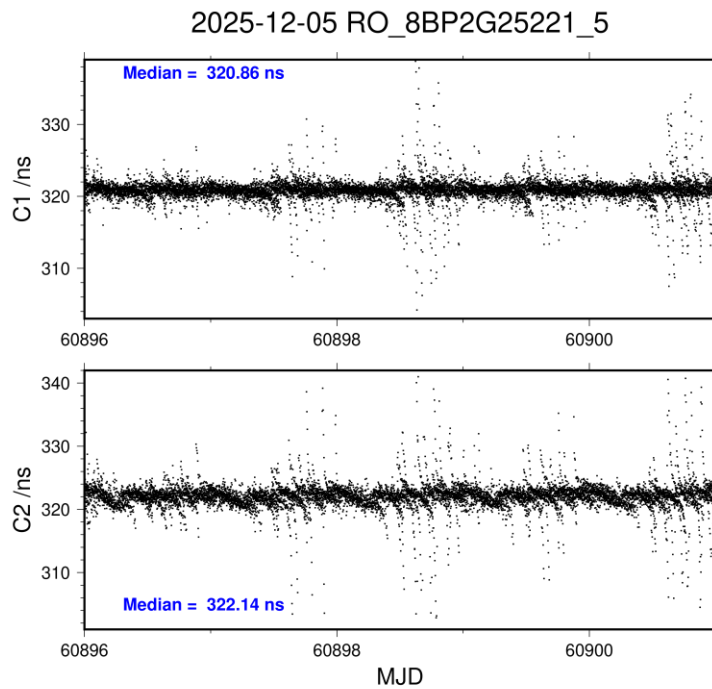
Code	#pts	ave/ns	rms/ns
C1	120423	320.837	1.514
C2	99502	322.062	2.206
P1	119991	321.082	1.541
P2	119785	322.415	2.304
E1	108346	322.023	1.228
E5	108219	314.305	2.055

Number of 300s epochs in out file = 1440

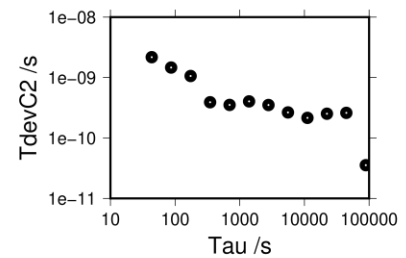
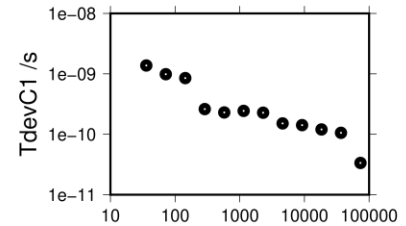
Code	#pts	median/ns	ave/ns	rms/ns
C1	12022	320.861	320.837	1.396
C2	9931	322.142	322.062	2.088
P1	11982	321.141	321.082	1.406
P2	11962	322.510	322.409	2.206
E1	10827	322.015	322.023	1.148
E5	10813	314.543	314.307	1.975

Ionofree combinations

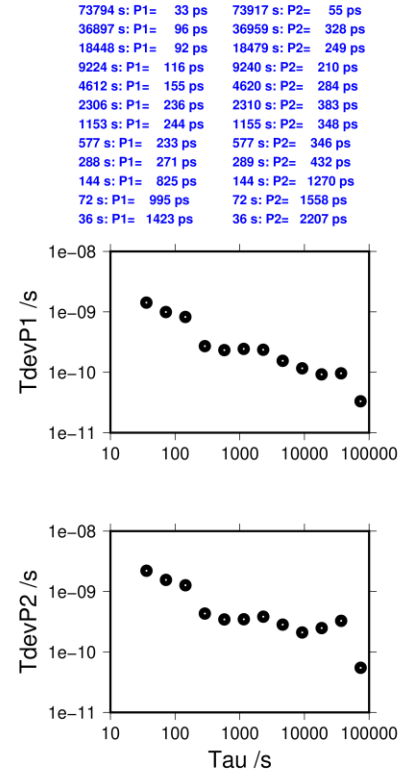
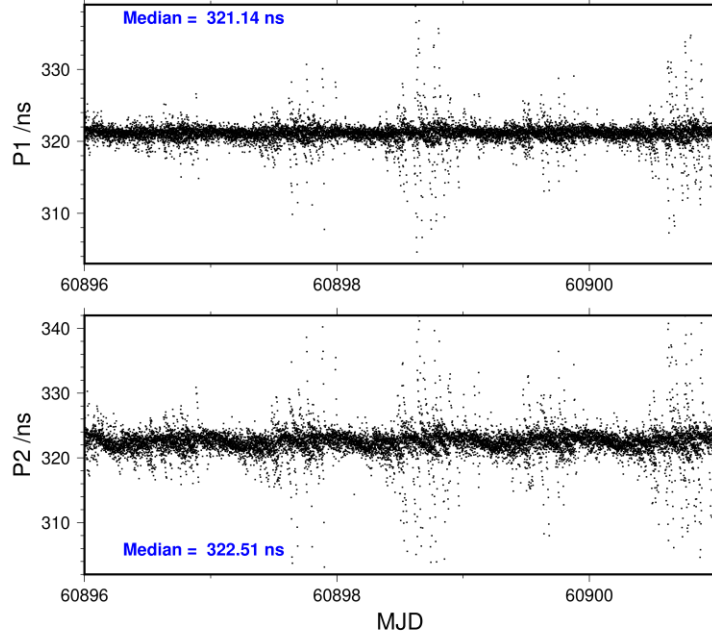
Code	#pts	median/ns	ave/ns	rms/ns
P3	1439	319.003	318.956	0.593
E3	1436	331.529	331.516	0.470



73548 s: C1= 34 ps 89035 s: C2= 36 ps
 36774 s: C1= 106 ps 44518 s: C2= 261 ps
 18387 s: C1= 120 ps 22259 s: C2= 252 ps
 9194 s: C1= 142 ps 11129 s: C2= 215 ps
 4597 s: C1= 152 ps 5565 s: C2= 265 ps
 2298 s: C1= 227 ps 2782 s: C2= 352 ps
 1149 s: C1= 244 ps 1391 s: C2= 404 ps
 575 s: C1= 230 ps 696 s: C2= 352 ps
 287 s: C1= 261 ps 348 s: C2= 390 ps
 144 s: C1= 851 ps 174 s: C2= 1062 ps
 72 s: C1= 987 ps 87 s: C2= 1464 ps
 36 s: C1= 1378 ps 43 s: C2= 2174 ps

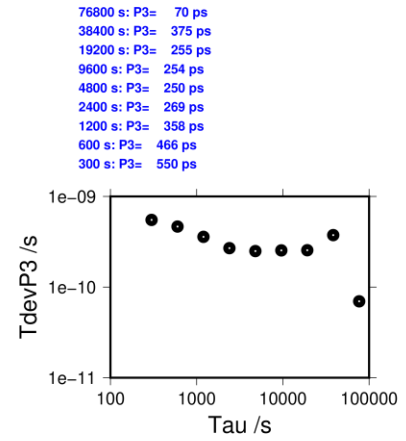
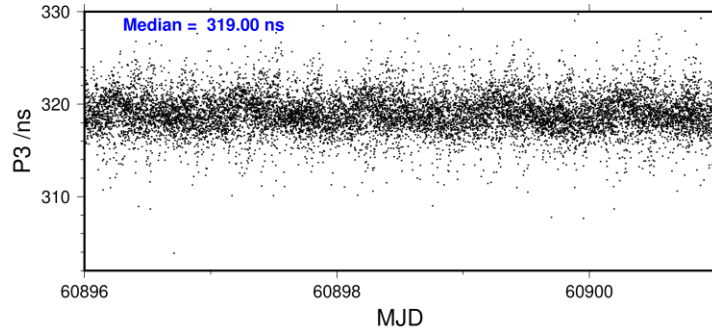


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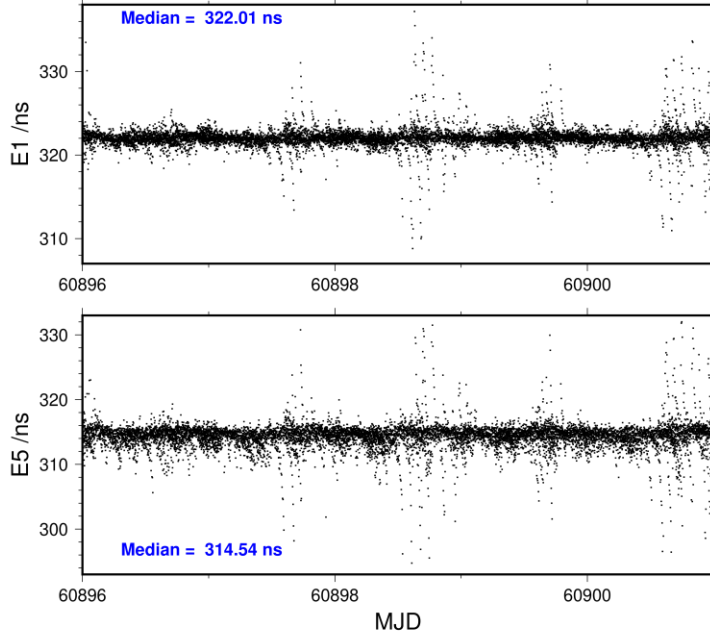
73794 s: P1= 33 ps	73917 s: P2= 55 ps
36897 s: P1= 96 ps	36959 s: P2= 328 ps
18448 s: P1= 92 ps	18479 s: P2= 249 ps
9224 s: P1= 116 ps	9240 s: P2= 210 ps
4612 s: P1= 155 ps	4620 s: P2= 284 ps
2306 s: P1= 236 ps	2310 s: P2= 383 ps
1153 s: P1= 244 ps	1155 s: P2= 348 ps
577 s: P1= 233 ps	577 s: P2= 346 ps
288 s: P1= 271 ps	289 s: P2= 432 ps
144 s: P1= 825 ps	144 s: P2= 1270 ps
72 s: P1= 995 ps	72 s: P2= 1558 ps
36 s: P1= 1423 ps	36 s: P2= 2207 ps

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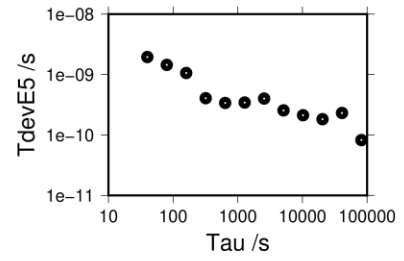
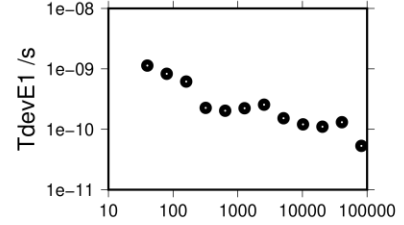


76800 s: P3= 70 ps
38400 s: P3= 375 ps
19200 s: P3= 255 ps
9600 s: P3= 254 ps
4800 s: P3= 250 ps
2400 s: P3= 269 ps
1200 s: P3= 358 ps
600 s: P3= 466 ps
300 s: P3= 550 ps

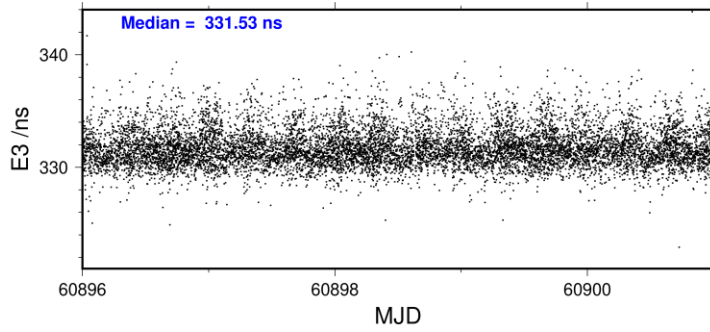
2025-12-05 RO_8BP2G25221_5



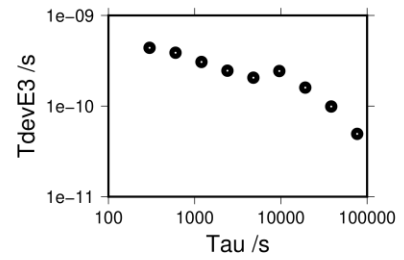
81667 s: E1= 53 ps	81772 s: E5= 82 ps
40833 s: E1= 131 ps	40886 s: E5= 232 ps
20417 s: E1= 110 ps	20443 s: E5= 183 ps
10208 s: E1= 121 ps	10222 s: E5= 212 ps
5104 s: E1= 152 ps	5111 s: E5= 255 ps
2552 s: E1= 255 ps	2555 s: E5= 400 ps
1276 s: E1= 223 ps	1278 s: E5= 344 ps
638 s: E1= 203 ps	639 s: E5= 339 ps
319 s: E1= 226 ps	319 s: E5= 406 ps
160 s: E1= 617 ps	160 s: E5= 1061 ps
80 s: E1= 830 ps	80 s: E5= 1447 ps
40 s: E1= 1133 ps	40 s: E5= 1948 ps



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76800 s: E3= 49 ps
38400 s: E3= 99 ps
19200 s: E3= 160 ps
9600 s: E3= 244 ps
4800 s: E3= 206 ps
2400 s: E3= 246 ps
1200 s: E3= 307 ps
600 s: E3= 387 ps
300 s: E3= 439 ps



ROA9-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 122566
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -61.335 -62.750
 Iteration 0: Obs used = 207314; Huge residuals = 0; Large residuals = 3442
 Iteration 1: Obs used = 207314; Huge residuals = 0; Large residuals = 3442
 Computed code bias (P1/P2)/m = -61.606 -62.989
 Computed baseline (X,Y,Z)/m = -2.747 1.938 3.435
 RMS of residuals /m = 0.414

Number of phase differences to fit baseline
 L1/L2 = 122072
 L5 = 72814
 A priori baseline (X,Y,Z)/m = -2.747 1.938 3.435
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 4.1

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 = 0.160 -0.083 0.135
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.157 -0.077 0.131
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.155 -0.082 0.131
 RMS of residuals L5 /m = 0.002

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -2.588 1.858 3.568
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.2 RMS jitter /ps = 0.2

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 = 0.003 -0.028 0.004
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.001 -0.022 0.001
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.000 -0.026 0.002
 RMS of residuals L5 /m = 0.002

Final baseline L1 (X,Y,Z)/m = -2.585 1.830 3.572
 Final baseline L2 (X,Y,Z)/m = -2.589 1.836 3.569
 Final baseline L5 (X,Y,Z)/m = -2.588 1.832 3.569

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 388682

Global average of individual differences

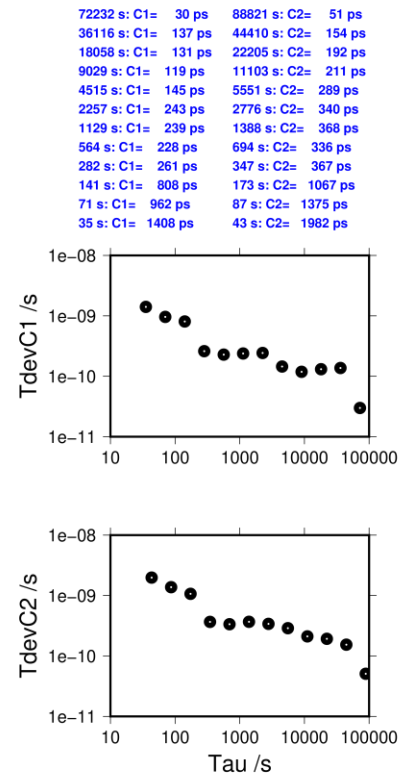
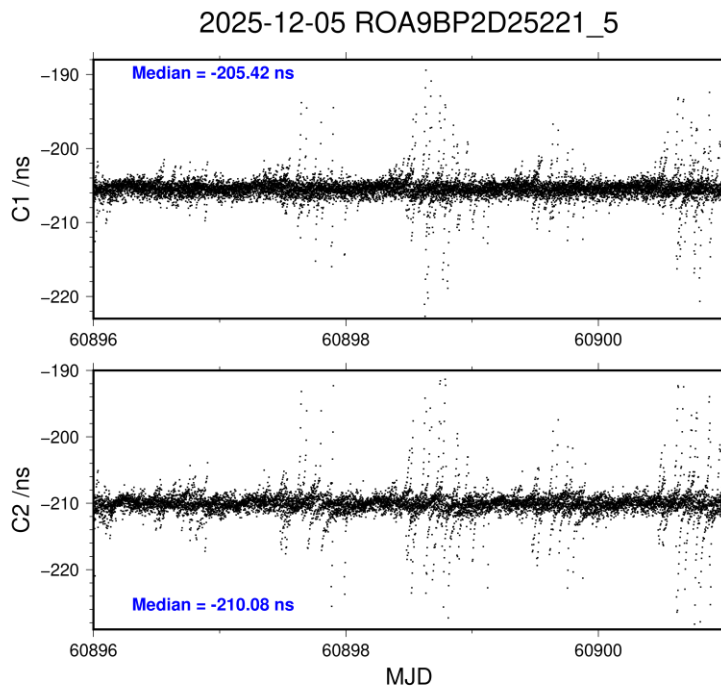
Code	#pts	ave/ns	rms/ns
C1	122508	-205.436	1.485
C2	99621	-210.107	2.110
P1	122500	-205.953	1.502
P2	122333	-210.553	2.056
E1	99052	-205.731	1.231
E5	98548	-200.654	1.874

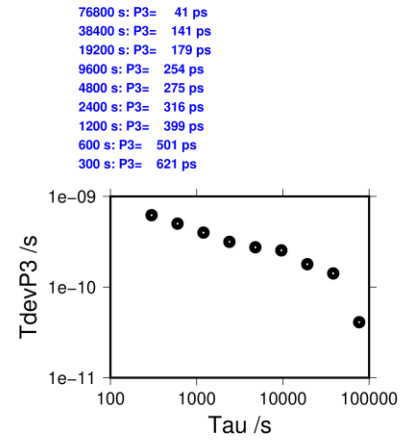
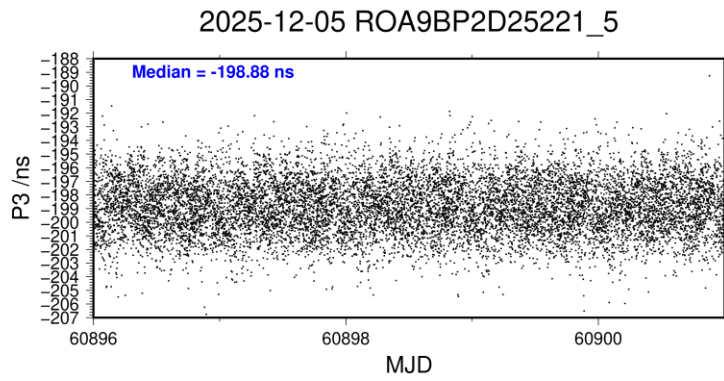
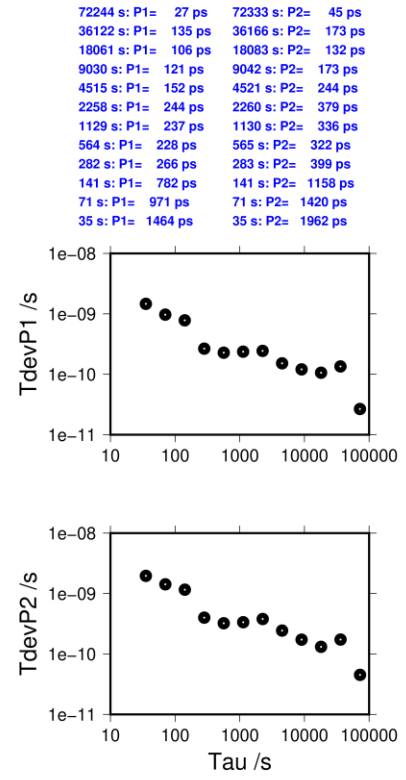
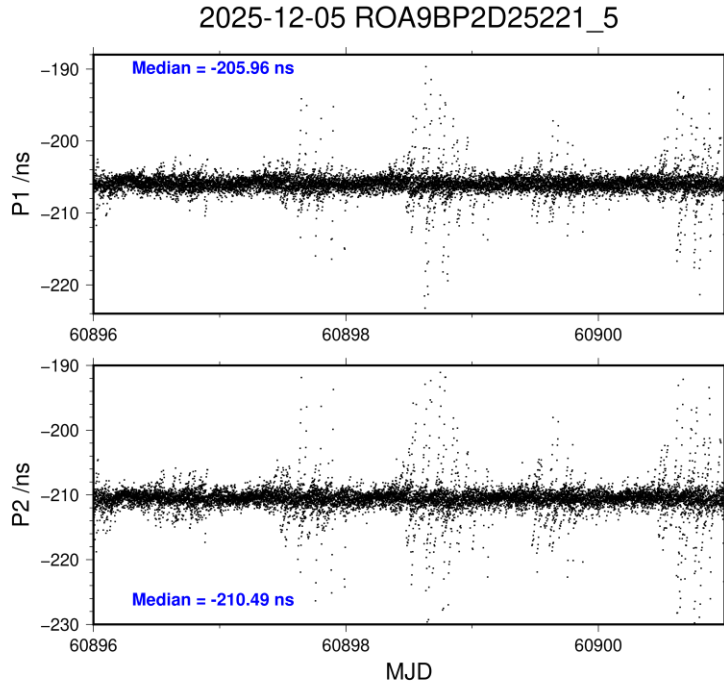
Number of 300s epochs in out file = 1440

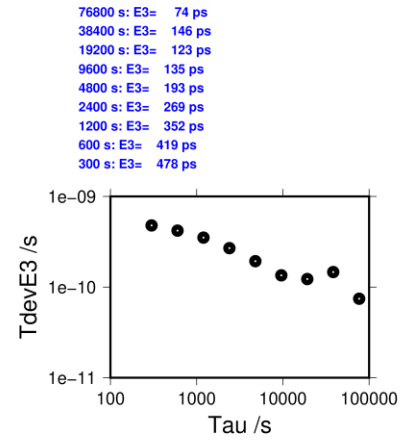
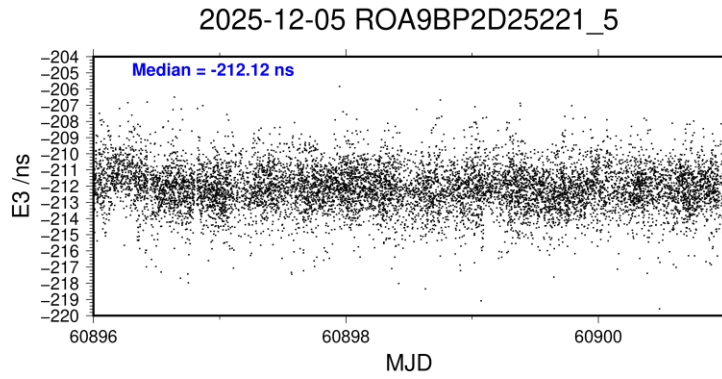
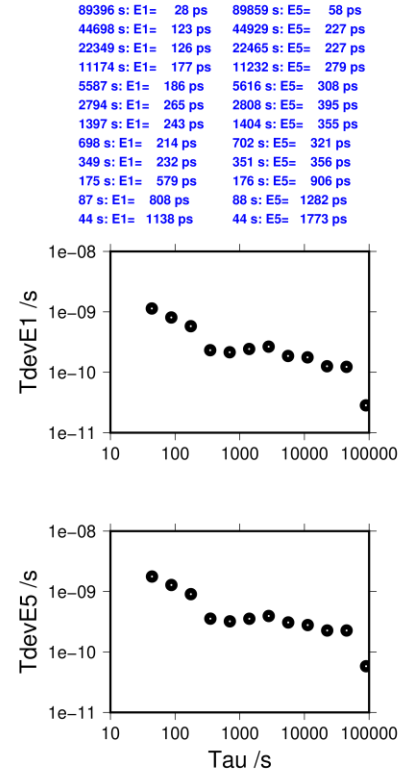
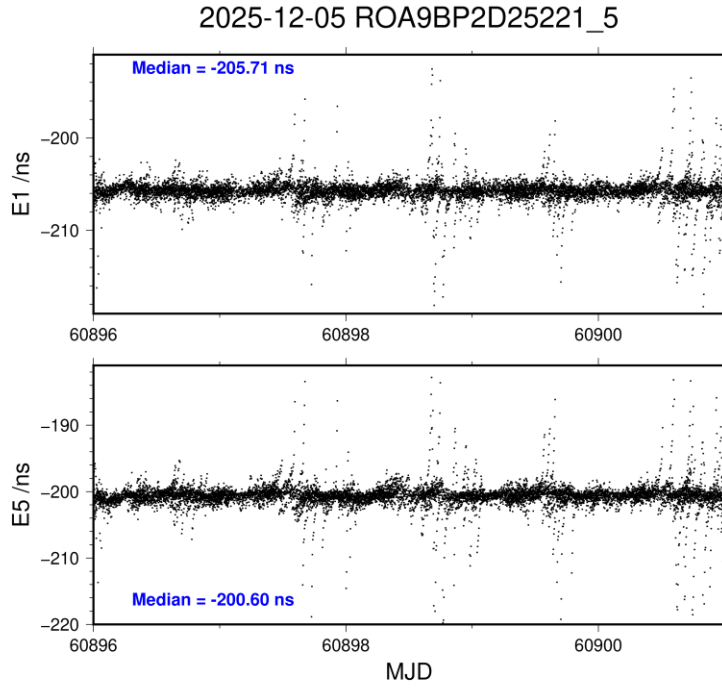
Code	#pts	median/ns	ave/ns	rms/ns
C1	12241	-205.416	-205.437	1.384
C2	9955	-210.081	-210.101	1.956
P1	12239	-205.960	-205.953	1.400
P2	12224	-210.489	-210.546	1.981
E1	9891	-205.710	-205.733	1.142
E5	9840	-200.603	-200.651	1.793

Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	-198.883	-198.888	0.615
E3	1430	-212.120	-212.128	0.497







ROA9-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 138656
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -65.855 -65.340
 Iteration 0: Obs used = 242740; Huge residuals = 18; Large residuals = 196
 Iteration 1: Obs used = 242743; Huge residuals = 0; Large residuals = 175
 Computed code bias (P1/P2)/m = -66.239 -65.703
 Computed baseline (X,Y,Z)/m = -3.507 0.216 4.126
 RMS of residuals /m = 0.374

Number of phase differences to fit baseline
 L1/L2 = 138076
 L5 = 81646
 A priori baseline (X,Y,Z)/m = -3.507 0.216 4.126
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.0 RMS jitter /ps = 2.7

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 = 0.270 -0.015 0.211
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.276 -0.013 0.217
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.308 -0.041 0.153
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -3.234 0.202 4.340
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.0 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 = 0.001 0.001 -0.001
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.007 0.003 0.005
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.039 -0.024 -0.059
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -3.233 0.203 4.339
 Final baseline L2 (X,Y,Z)/m = -3.227 0.205 4.345
 Final baseline L5 (X,Y,Z)/m = -3.196 0.178 4.282

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 440854

Global average of individual differences

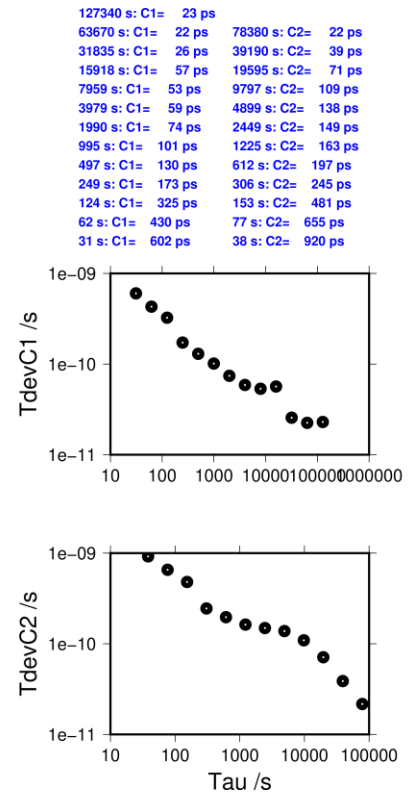
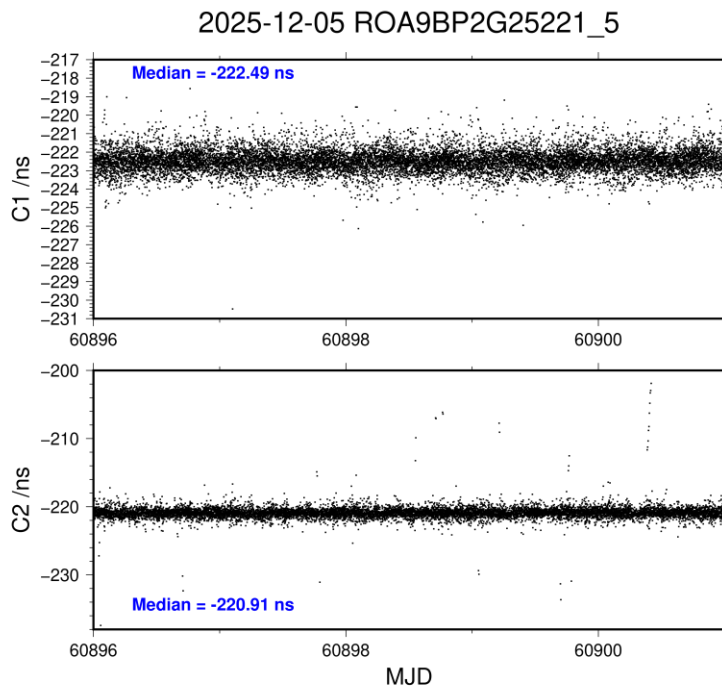
Code	#pts	ave/ns	rms/ns
C1	139022	-222.474	1.075
C2	112977	-220.889	1.507
P1	138576	-221.638	1.104
P2	138569	-219.855	1.253
E1	111871	-223.034	0.800
E5	111101	-213.561	0.772

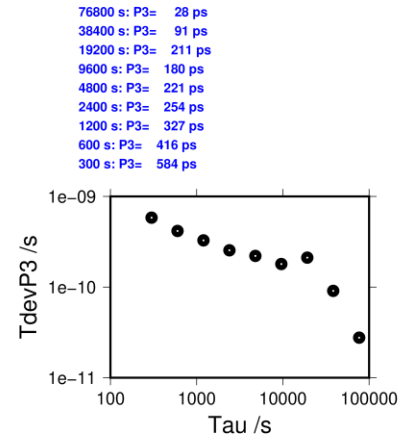
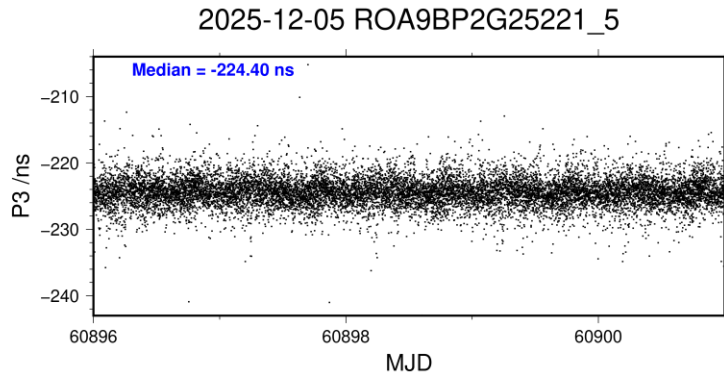
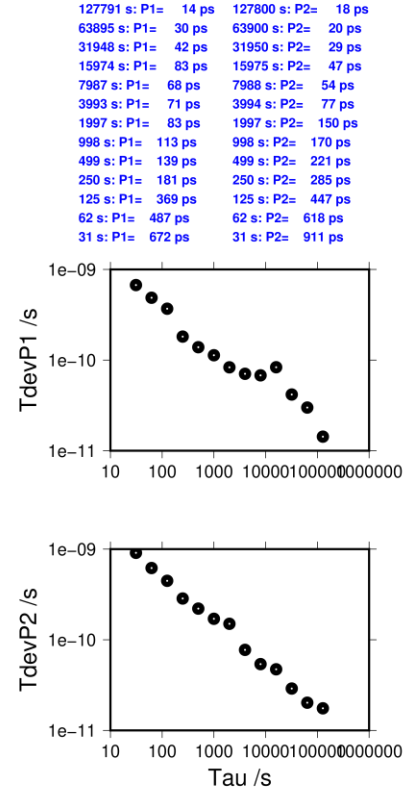
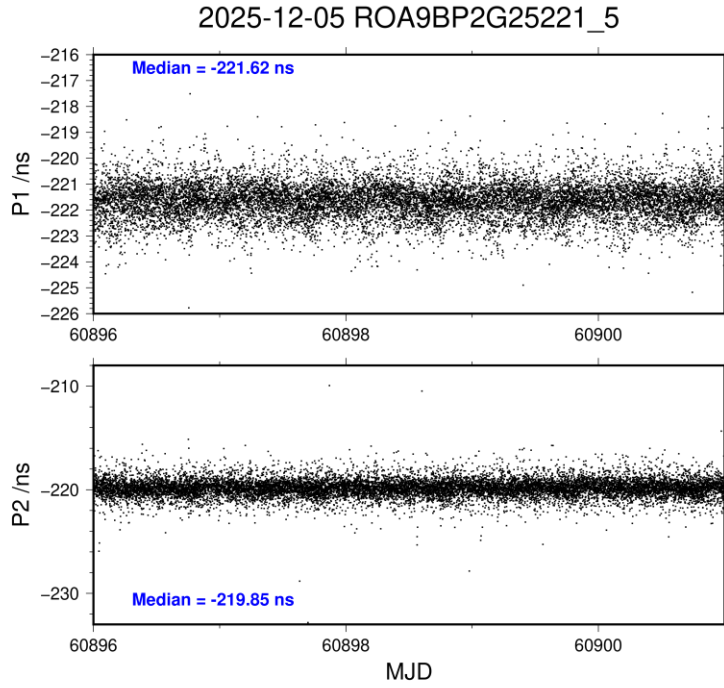
Number of 300s epochs in out file = 1440

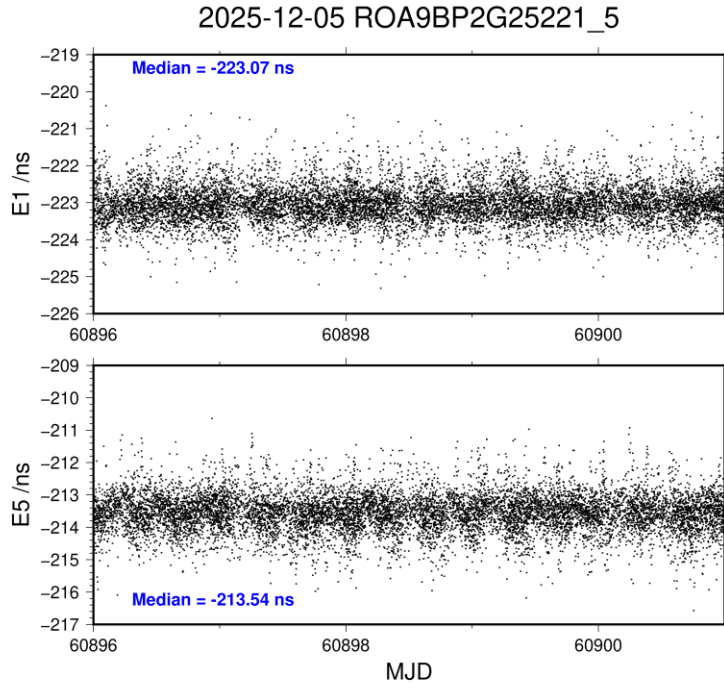
Code	#pts	median/ns	ave/ns	rms/ns
C1	13887	-222.488	-222.473	0.602
C2	11281	-220.913	-220.889	0.918
P1	13838	-221.620	-221.636	0.676
P2	13837	-219.846	-219.854	0.894
E1	11176	-223.066	-223.037	0.494
E5	11097	-213.545	-213.562	0.587

Ionofree combinations

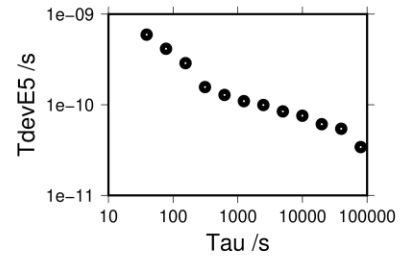
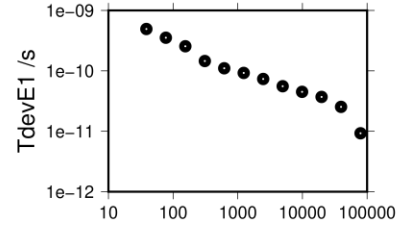
Code	#pts	median/ns	ave/ns	rms/ns







79116 s: E1= 9 ps	79679 s: E5= 34 ps
39558 s: E1= 25 ps	39840 s: E5= 54 ps
19779 s: E1= 37 ps	19920 s: E5= 61 ps
9890 s: E1= 45 ps	9960 s: E5= 76 ps
4945 s: E1= 56 ps	4980 s: E5= 85 ps
2472 s: E1= 73 ps	2490 s: E5= 99 ps
1236 s: E1= 92 ps	1245 s: E5= 110 ps
618 s: E1= 111 ps	622 s: E5= 128 ps
309 s: E1= 145 ps	311 s: E5= 157 ps
155 s: E1= 256 ps	156 s: E5= 287 ps
77 s: E1= 354 ps	78 s: E5= 415 ps
39 s: E1= 493 ps	39 s: E5= 594 ps



ROAG-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 122566
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : 102.263 99.981
 Iteration 0: Obs used = 205134; Huge residuals = 0; Large residuals = 5622
 Iteration 1: Obs used = 205134; Huge residuals = 0; Large residuals = 5622
 Computed code bias (P1/P2)/m = 104.626 102.452
 Computed baseline (X,Y,Z)/m = 5.150 19.362 -5.362
 RMS of residuals /m = 0.734

Number of phase differences to fit baseline
 L1/L2 = 122068
 L5 = 75042
 A priori baseline (X,Y,Z)/m = 5.150 19.362 -5.362
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 5.0

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 = -2.231 0.222 -1.569
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -2.235 0.227 -1.572
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -2.229 0.240 -1.565
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.917 19.587 -6.932
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.2 RMS jitter /ps = 2.9

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 = -0.051 -0.023 -0.021
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.056 -0.018 -0.025
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.055 -0.022 -0.025
 RMS of residuals L5 /m = 0.002

Final baseline L1 (X,Y,Z)/m = 2.865 19.564 -6.954
 Final baseline L2 (X,Y,Z)/m = 2.861 19.569 -6.958
 Final baseline L5 (X,Y,Z)/m = 2.862 19.565 -6.957

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 425657

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	122508	355.761	1.499
C2	101359	349.220	2.128
P1	122500	354.872	1.542
P2	122316	347.671	2.127
E1	111799	356.071	1.269
E5	111655	351.080	1.879
BC	72669	356.742	1.457
B5	72547	351.460	2.006

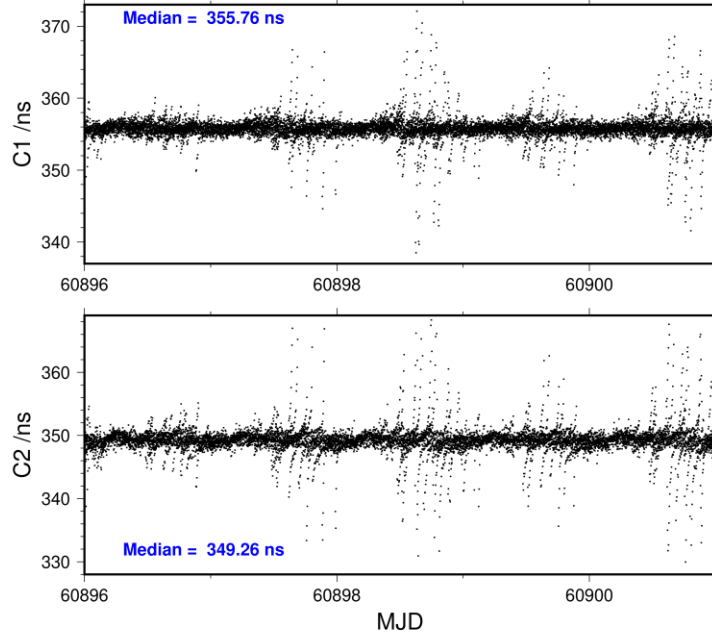
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	12241	355.762	355.761	1.371
C2	10128	349.257	349.225	1.989
P1	12239	354.889	354.873	1.415
P2	12219	347.735	347.677	1.995
E1	11168	356.084	356.073	1.170
E5	11150	351.075	351.081	1.801
BC	7266	356.805	356.746	1.347
B5	7255	351.456	351.459	1.964

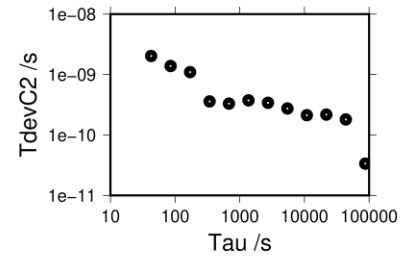
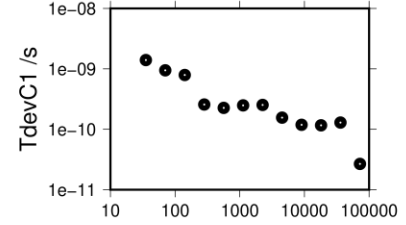
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1439	366.091	366.097	0.664
E3	1437	362.359	362.340	0.418
B3	1440	363.322	363.343	0.682

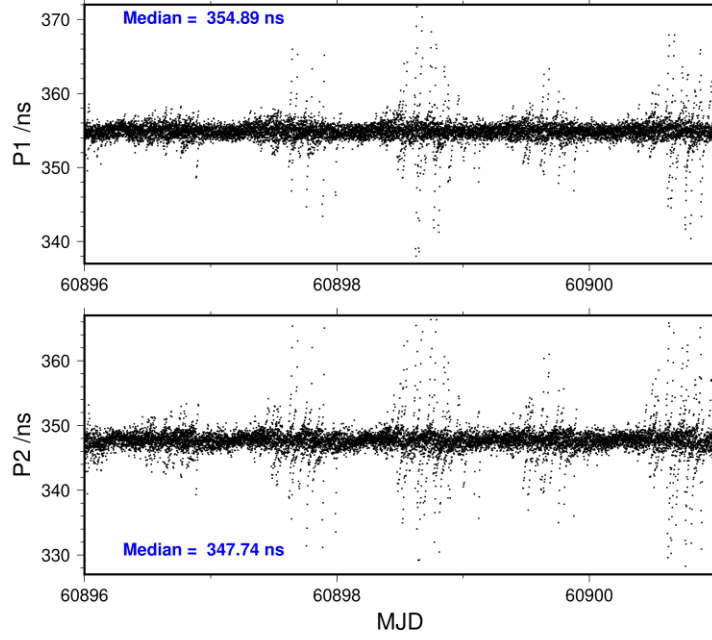
2025-12-05 ROAGBP2D25221_5



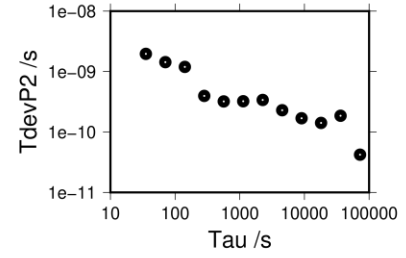
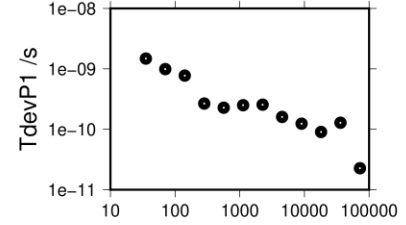
72232 s: C1= 27 ps	87303 s: C2= 34 ps
36116 s: C1= 129 ps	43652 s: C2= 181 ps
18058 s: C1= 116 ps	21826 s: C2= 217 ps
9029 s: C1= 119 ps	10913 s: C2= 212 ps
4515 s: C1= 156 ps	5456 s: C2= 274 ps
2257 s: C1= 253 ps	2728 s: C2= 341 ps
1129 s: C1= 248 ps	1364 s: C2= 375 ps
564 s: C1= 226 ps	682 s: C2= 330 ps
282 s: C1= 257 ps	341 s: C2= 359 ps
141 s: C1= 792 ps	171 s: C2= 1096 ps
71 s: C1= 946 ps	85 s: C2= 1385 ps
35 s: C1= 1400 ps	43 s: C2= 2030 ps



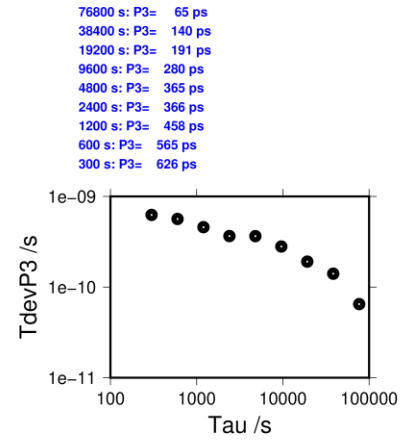
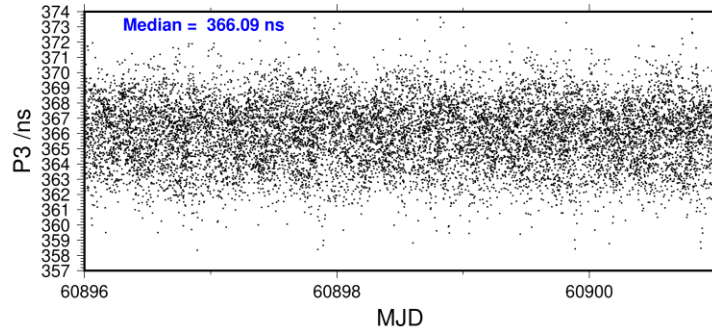
2025-12-05 ROAGBP2D25221_5



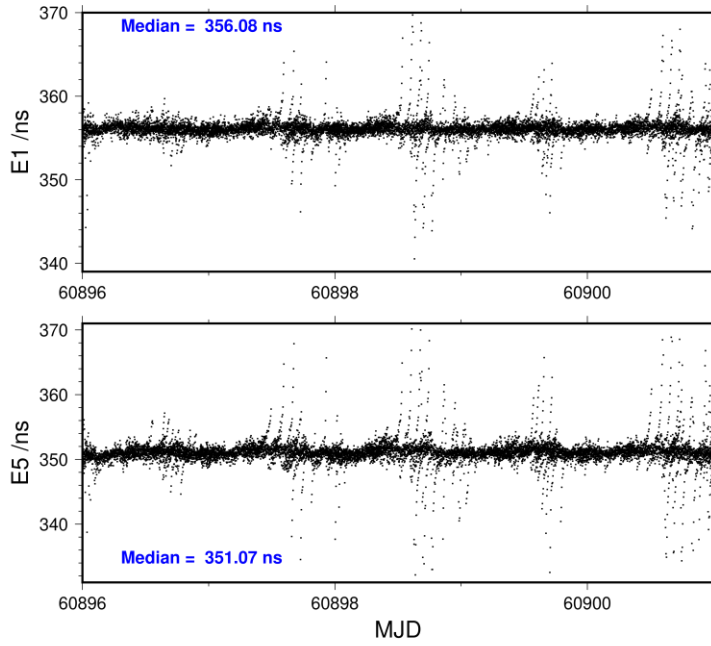
72244 s: P1= 23 ps	72362 s: P2= 42 ps
36122 s: P1= 128 ps	36181 s: P2= 185 ps
18061 s: P1= 90 ps	18091 s: P2= 141 ps
9030 s: P1= 124 ps	9045 s: P2= 169 ps
4515 s: P1= 160 ps	4523 s: P2= 229 ps
2258 s: P1= 255 ps	2261 s: P2= 339 ps
1129 s: P1= 251 ps	1131 s: P2= 322 ps
564 s: P1= 228 ps	565 s: P2= 321 ps
282 s: P1= 266 ps	283 s: P2= 395 ps
141 s: P1= 774 ps	141 s: P2= 1196 ps
71 s: P1= 989 ps	71 s: P2= 1433 ps
35 s: P1= 1481 ps	35 s: P2= 1965 ps



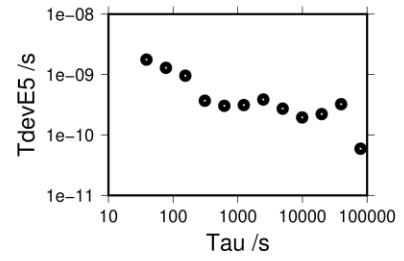
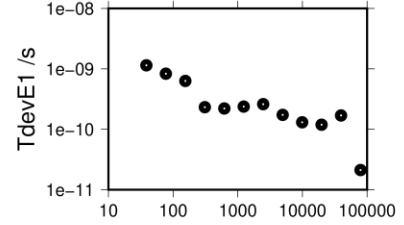
2025-12-05 ROAGBP2D25221_5



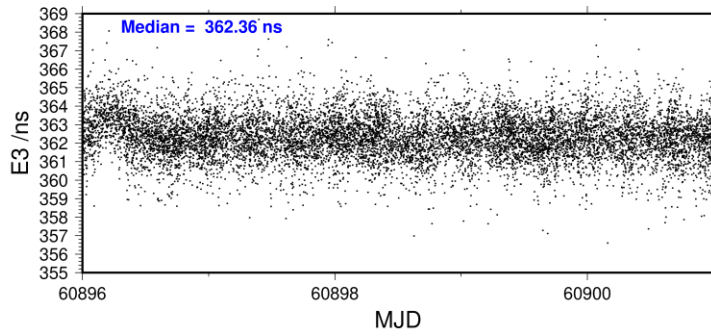
2025-12-05 ROAGBP2D25221_5



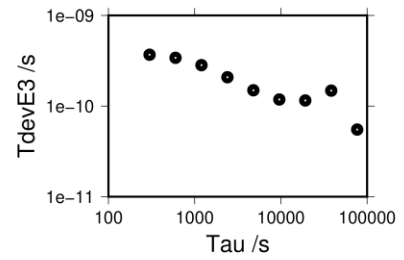
79173 s: E1= 21 ps	79301 s: E5= 59 ps
39586 s: E1= 170 ps	39650 s: E5= 324 ps
19793 s: E1= 119 ps	19825 s: E5= 221 ps
9897 s: E1= 131 ps	9913 s: E5= 195 ps
4948 s: E1= 173 ps	4956 s: E5= 273 ps
2474 s: E1= 261 ps	2478 s: E5= 386 ps
1237 s: E1= 238 ps	1239 s: E5= 313 ps
619 s: E1= 221 ps	620 s: E5= 304 ps
309 s: E1= 232 ps	310 s: E5= 369 ps
155 s: E1= 632 ps	155 s: E5= 957 ps
77 s: E1= 833 ps	77 s: E5= 1291 ps
39 s: E1= 1146 ps	39 s: E5= 1765 ps



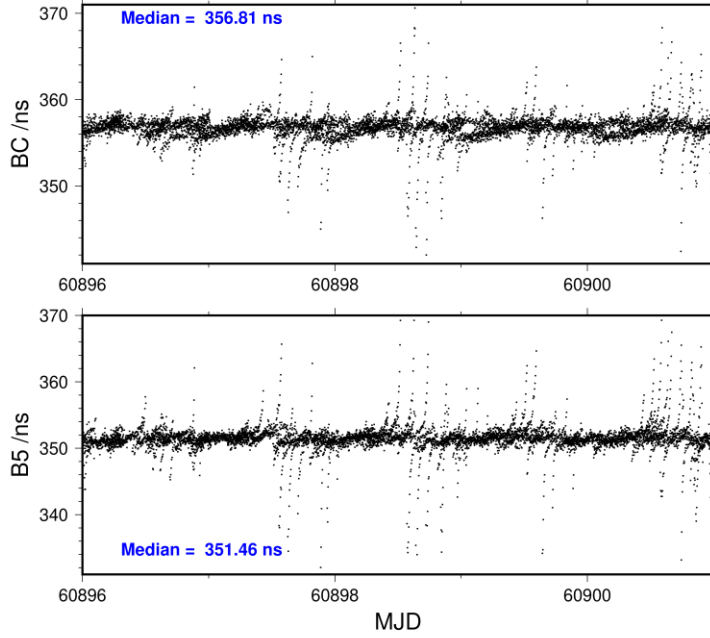
2025-12-05 ROAGBP2D25221_5



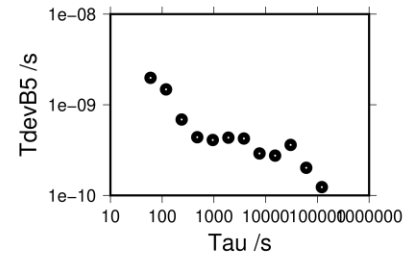
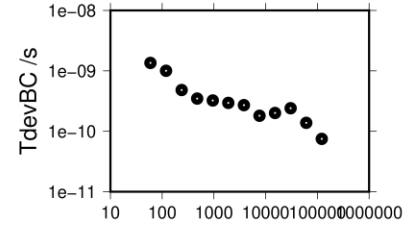
76800 s: E3= 55 ps
38400 s: E3= 148 ps
19200 s: E3= 115 ps
9600 s: E3= 118 ps
4800 s: E3= 149 ps
2400 s: E3= 208 ps
1200 s: E3= 283 ps
600 s: E3= 341 ps
300 s: E3= 369 ps



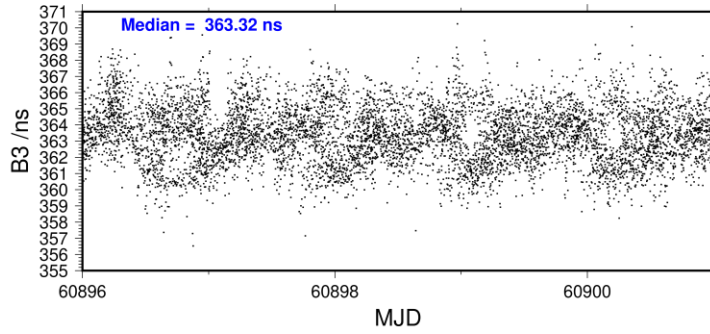
2025-12-05 ROAGBP2D25221_5



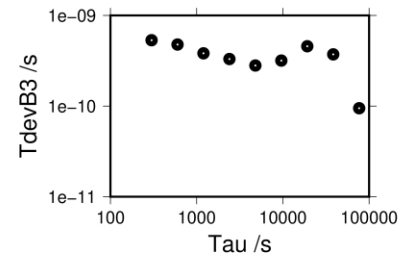
121696 s: BC= 75 ps	121881 s: B5= 123 ps
60848 s: BC= 138 ps	60940 s: B5= 202 ps
30424 s: BC= 241 ps	30470 s: B5= 361 ps
15212 s: BC= 201 ps	15235 s: B5= 275 ps
7606 s: BC= 181 ps	7618 s: B5= 290 ps
3803 s: BC= 271 ps	3809 s: B5= 424 ps
1902 s: BC= 295 ps	1904 s: B5= 433 ps
951 s: BC= 324 ps	952 s: B5= 408 ps
475 s: BC= 348 ps	476 s: B5= 439 ps
238 s: BC= 481 ps	238 s: B5= 688 ps
119 s: BC= 1004 ps	119 s: B5= 1479 ps
59 s: BC= 1354 ps	60 s: B5= 1983 ps



2025-12-05 ROAGBP2D25221_5



76800 s: B3= 95 ps
38400 s: B3= 372 ps
19200 s: B3= 457 ps
9600 s: B3= 318 ps
4800 s: B3= 281 ps
2400 s: B3= 331 ps
1200 s: B3= 382 ps
600 s: B3= 478 ps
300 s: B3= 533 ps



ROAG-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 138526
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : 97.626 97.410
 Iteration 0: Obs used = 240321; Huge residuals = 18; Large residuals = 2355
 Iteration 1: Obs used = 240423; Huge residuals = 0; Large residuals = 2235
 Computed code bias (P1/P2)/m = 100.371 100.130
 Computed baseline (X,Y,Z)/m = 3.945 17.711 -4.965
 RMS of residuals /m = 0.681

Number of phase differences to fit baseline
 L1/L2 = 137926
 L5 = 84272
 A priori baseline (X,Y,Z)/m = 3.945 17.711 -4.965
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 3.0

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 = -1.697 0.203 -1.208
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -1.685 0.202 -1.201
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -1.690 0.201 -1.195
 RMS of residuals L5 /m = 0.002

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.253 17.913 -6.169
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.1 RMS jitter /ps = 1.7

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 = -0.031 0.009 -0.015
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -0.018 0.008 -0.008
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.016 0.005 -0.006
 RMS of residuals L5 /m = 0.002

Final baseline L1 (X,Y,Z)/m = 2.223 17.923 -6.185
 Final baseline L2 (X,Y,Z)/m = 2.235 17.922 -6.177
 Final baseline L5 (X,Y,Z)/m = 2.238 17.918 -6.175

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 488381

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	138897	338.709	1.091
C2	115491	338.451	1.259
P1	138446	339.177	1.080
P2	138441	338.350	1.276
E1	126900	338.723	0.783
E5	127054	338.126	0.718
BC	82177	338.876	0.828
B5	82250	338.081	0.714

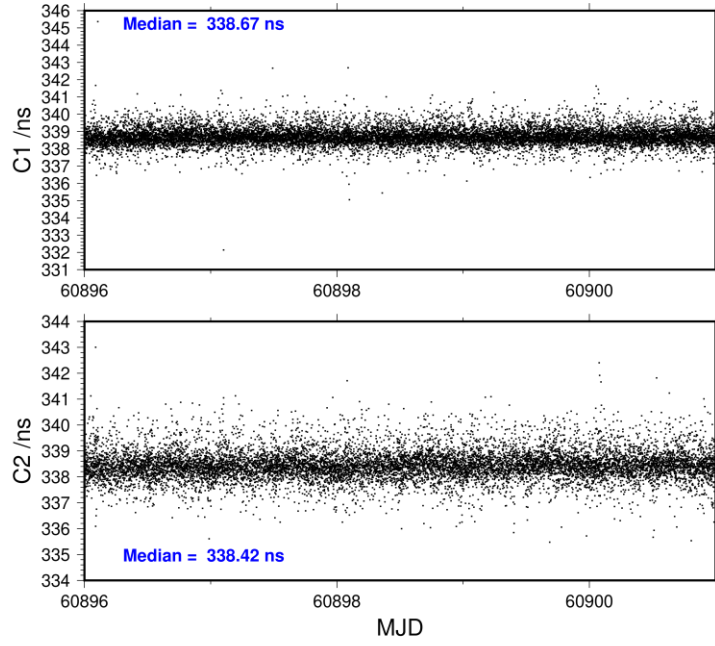
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	13879	338.672	338.711	0.519
C2	11539	338.417	338.449	0.587
P1	13830	339.148	339.180	0.535
P2	13829	338.334	338.353	0.816
E1	12678	338.681	338.721	0.414
E5	12688	338.098	338.125	0.509
BC	8214	338.833	338.879	0.424
B5	8221	338.048	338.084	0.502

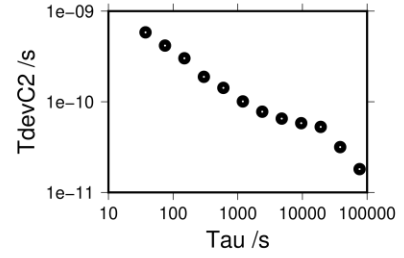
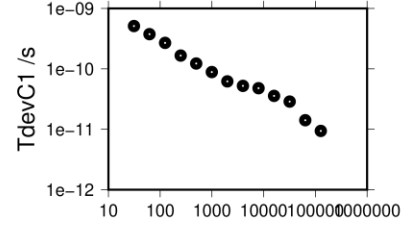
Ionofree combinations

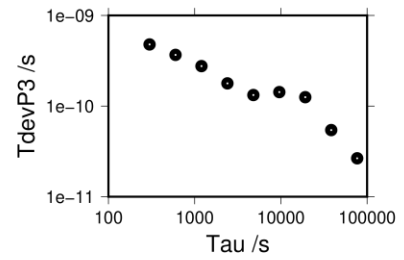
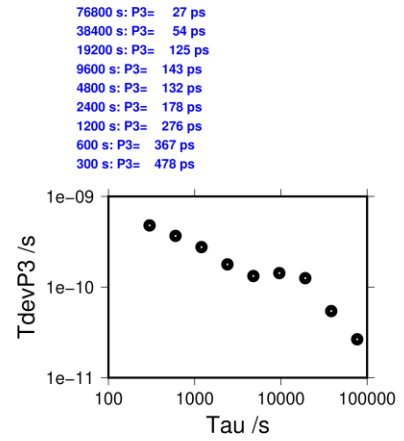
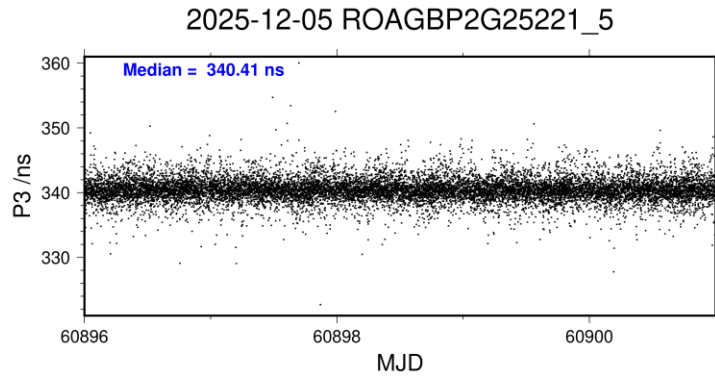
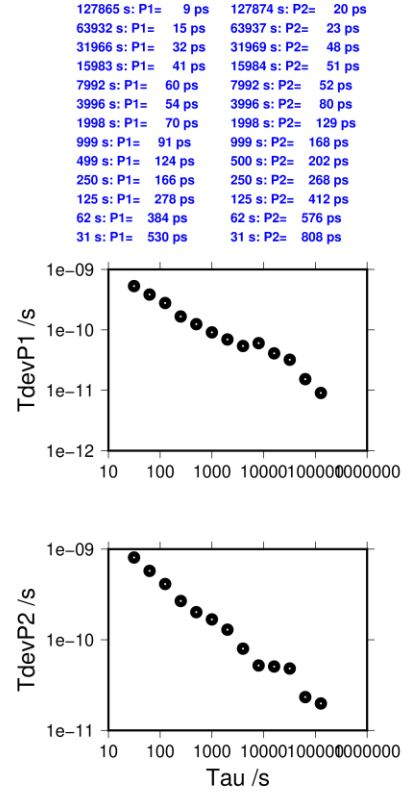
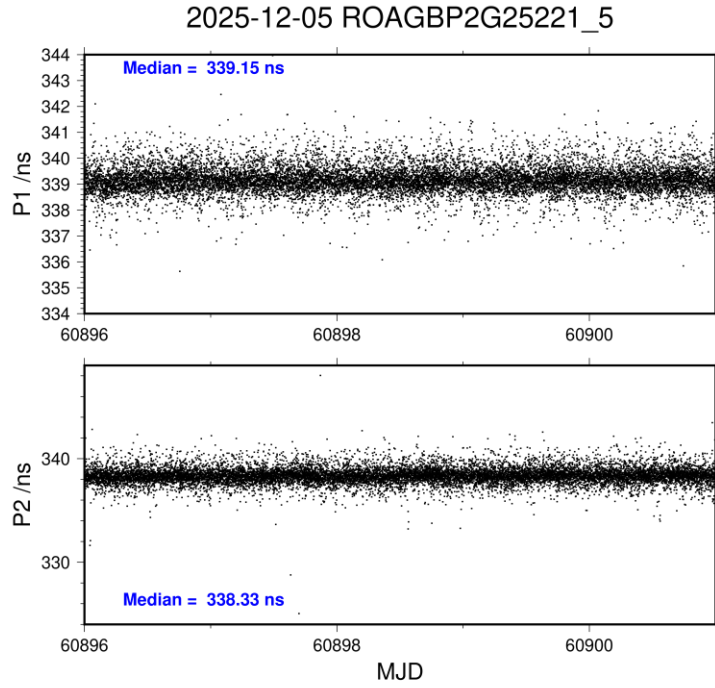
Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	340.412	340.413	0.410
E3	1440	339.416	339.408	0.301
B3	1440	339.832	339.829	0.332

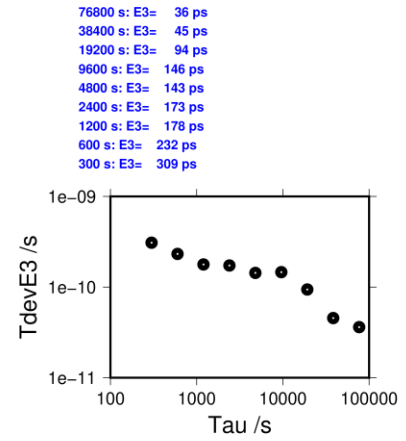
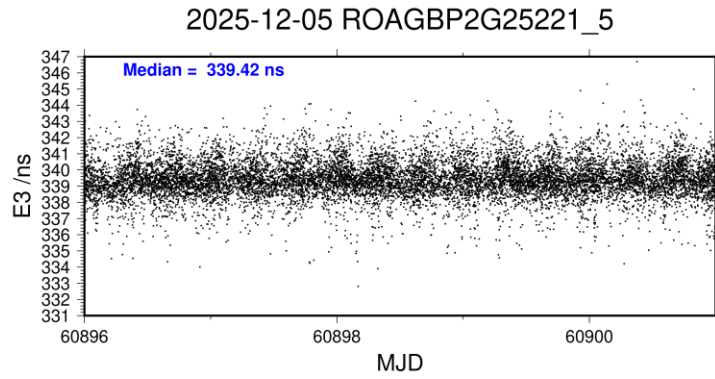
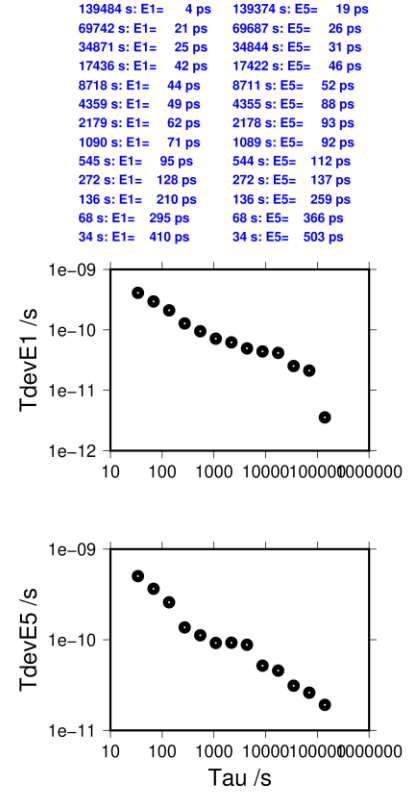
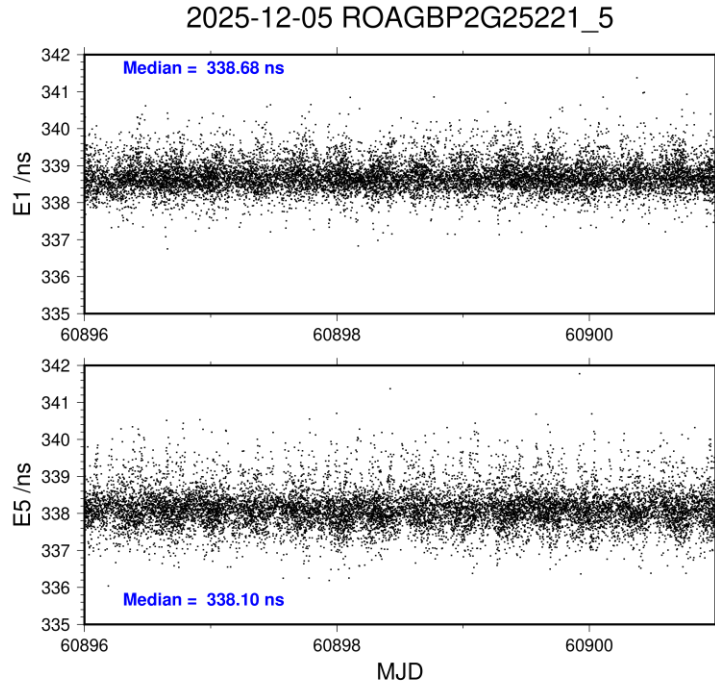
2025-12-05 ROAGBP2G25221_5



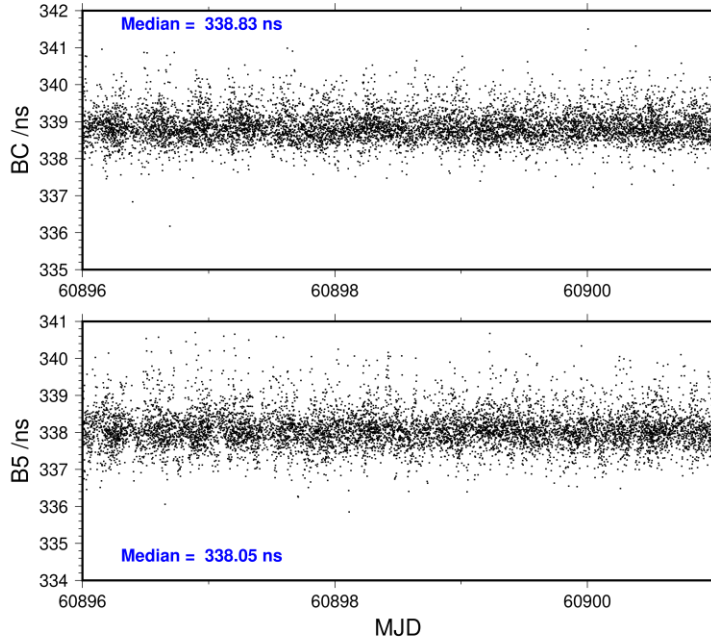
127413 s: C1= 9 ps	
63707 s: C1= 14 ps	76627 s: C2= 18 ps
31853 s: C1= 29 ps	38313 s: C2= 32 ps
15927 s: C1= 36 ps	19157 s: C2= 53 ps
7963 s: C1= 48 ps	9578 s: C2= 58 ps
3982 s: C1= 52 ps	4789 s: C2= 65 ps
1991 s: C1= 62 ps	2395 s: C2= 78 ps
995 s: C1= 89 ps	1197 s: C2= 101 ps
498 s: C1= 123 ps	599 s: C2= 142 ps
249 s: C1= 166 ps	299 s: C2= 188 ps
124 s: C1= 269 ps	150 s: C2= 302 ps
62 s: C1= 375 ps	75 s: C2= 417 ps
31 s: C1= 511 ps	37 s: C2= 583 ps



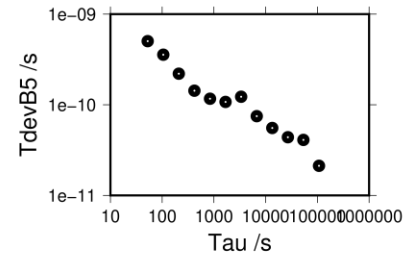
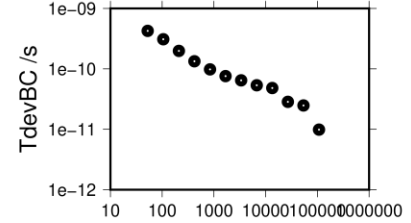




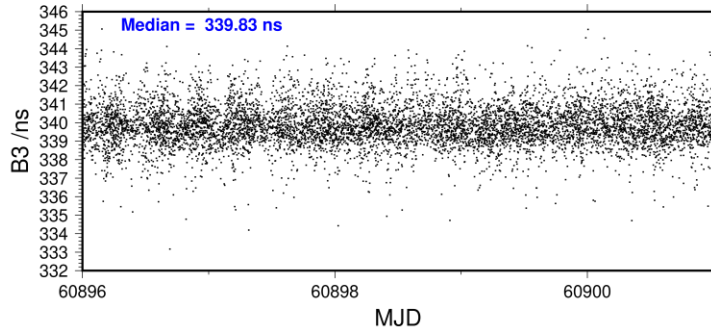
2025-12-05 ROAGBP2G25221_5



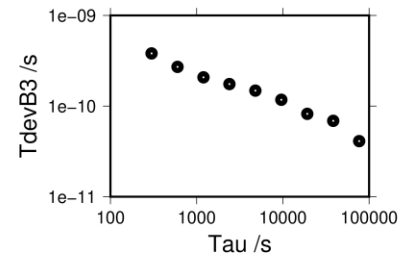
107649 s: BC=	10 ps	107557 s: B5=	21 ps
53825 s: BC=	25 ps	53779 s: B5=	41 ps
26912 s: BC=	28 ps	26889 s: B5=	44 ps
13456 s: BC=	48 ps	13445 s: B5=	55 ps
6728 s: BC=	54 ps	6722 s: B5=	75 ps
3364 s: BC=	64 ps	3361 s: B5=	122 ps
1682 s: BC=	76 ps	1681 s: B5=	107 ps
841 s: BC=	98 ps	840 s: B5=	117 ps
420 s: BC=	134 ps	420 s: B5=	143 ps
210 s: BC=	198 ps	210 s: B5=	220 ps
105 s: BC=	309 ps	105 s: B5=	357 ps
53 s: BC=	425 ps	53 s: B5=	504 ps



2025-12-05 ROAGBP2G25221_5



76800 s: B3=	41 ps
38400 s: B3=	69 ps
19200 s: B3=	82 ps
9600 s: B3=	117 ps
4800 s: B3=	148 ps
2400 s: B3=	175 ps
1200 s: B3=	208 ps
600 s: B3=	270 ps
300 s: B3=	381 ps



RO12-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 122565
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : 89.055 87.563
 Iteration 0: Obs used = 205240; Huge residuals = 0; Large residuals = 5514
 Iteration 1: Obs used = 205240; Huge residuals = 0; Large residuals = 5514
 Computed code bias (P1/P2)/m = 91.424 90.036
 Computed baseline (X,Y,Z)/m = 5.149 19.359 -5.360
 RMS of residuals /m = 0.734

Number of phase differences to fit baseline
 L1/L2 = 122068
 L5 = 75040
 A priori baseline (X,Y,Z)/m = 5.149 19.359 -5.360
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 4.9

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 = -2.230 0.224 -1.570
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -2.235 0.229 -1.574
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -2.228 0.242 -1.567
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.917 19.586 -6.932
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 2.9

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 = -0.051 -0.022 -0.022
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.056 -0.018 -0.025
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.055 -0.021 -0.025
 RMS of residuals L5 /m = 0.002

Final baseline L1 (X,Y,Z)/m = 2.865 19.563 -6.954
 Final baseline L2 (X,Y,Z)/m = 2.861 19.568 -6.958
 Final baseline L5 (X,Y,Z)/m = 2.862 19.564 -6.957

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 450729

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	122506	312.067	1.499
C2	101356	307.695	2.132
P1	122499	310.836	1.543
P2	122314	306.258	2.104
E1	111799	312.376	1.268
E5	111652	307.971	1.873
BC	97724	313.020	1.445
B5	97351	308.332	2.048

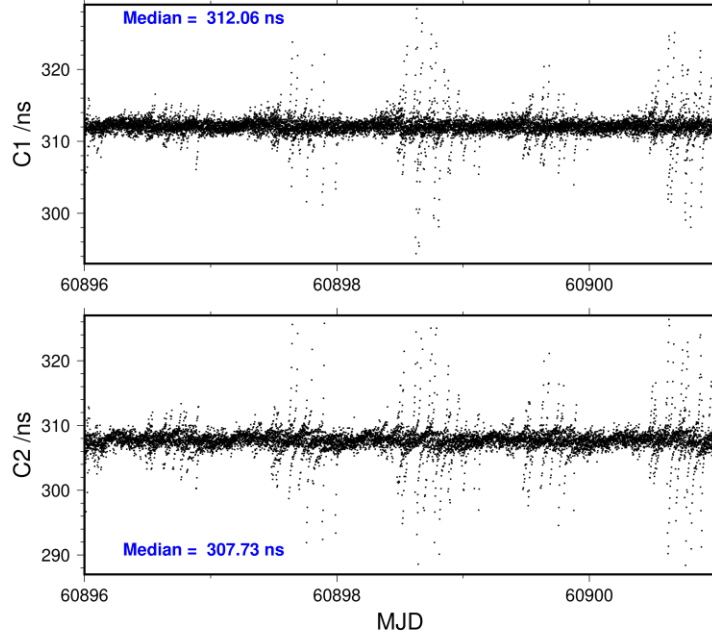
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	12241	312.062	312.065	1.372
C2	10127	307.730	307.694	1.990
P1	12239	310.845	310.834	1.416
P2	12218	306.319	306.263	1.965
E1	11168	312.383	312.376	1.172
E5	11151	307.964	307.973	1.804
BC	9772	313.073	313.024	1.346
B5	9736	308.283	308.333	2.009

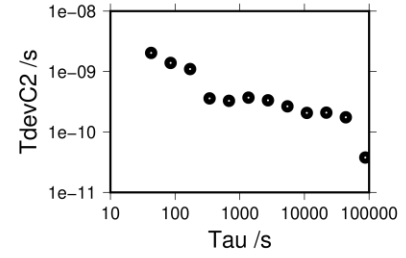
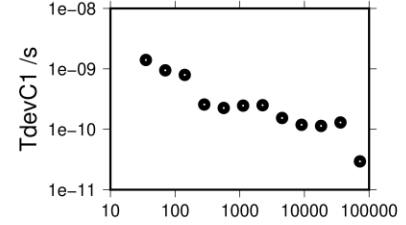
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1439	317.992	317.990	0.658
E3	1437	317.921	317.918	0.418
B3	1440	318.845	318.881	0.648

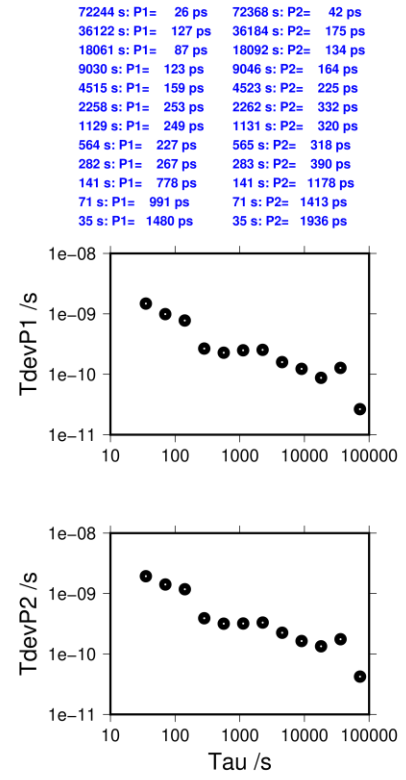
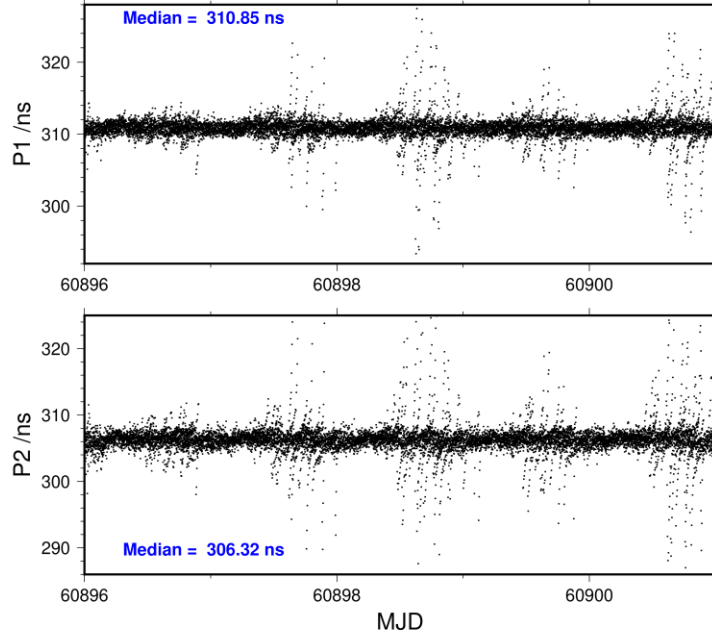
2025-12-05 RO12BP2D25221_5



72232 s: C1= 29 ps	87312 s: C2= 38 ps
36116 s: C1= 130 ps	43656 s: C2= 175 ps
18058 s: C1= 114 ps	21828 s: C2= 209 ps
9029 s: C1= 119 ps	10914 s: C2= 207 ps
4515 s: C1= 154 ps	5457 s: C2= 266 ps
2257 s: C1= 251 ps	2728 s: C2= 335 ps
1129 s: C1= 246 ps	1364 s: C2= 370 ps
564 s: C1= 225 ps	682 s: C2= 327 ps
282 s: C1= 257 ps	341 s: C2= 360 ps
141 s: C1= 795 ps	171 s: C2= 1100 ps
71 s: C1= 946 ps	85 s: C2= 1390 ps
35 s: C1= 1402 ps	43 s: C2= 2033 ps

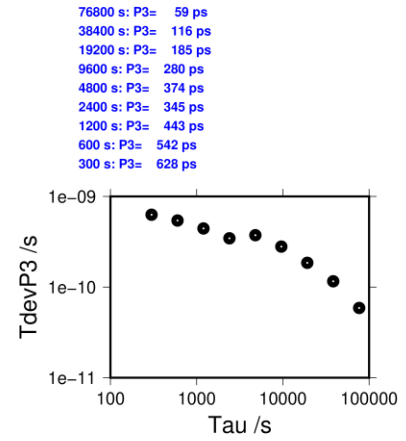
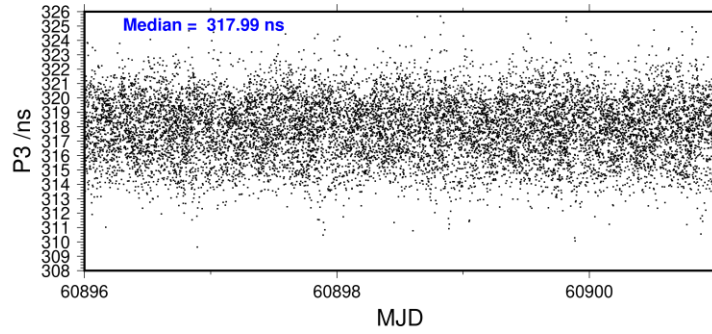


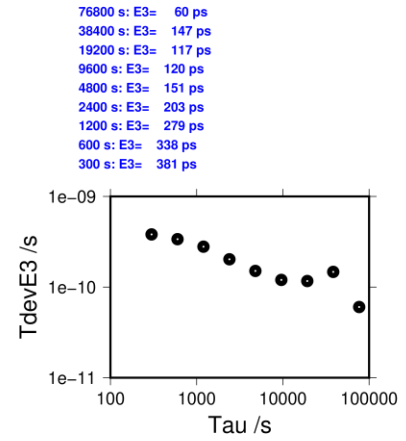
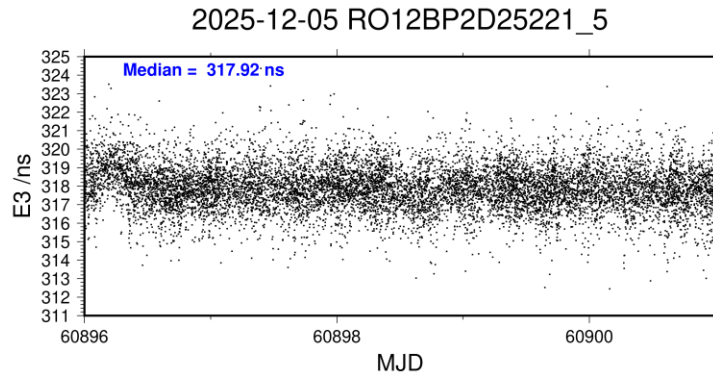
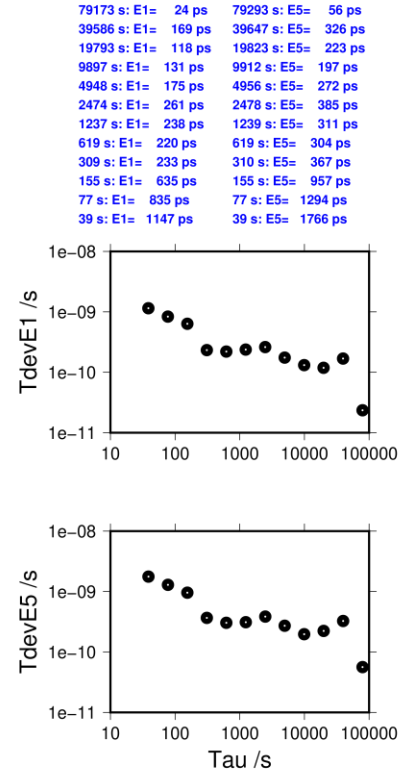
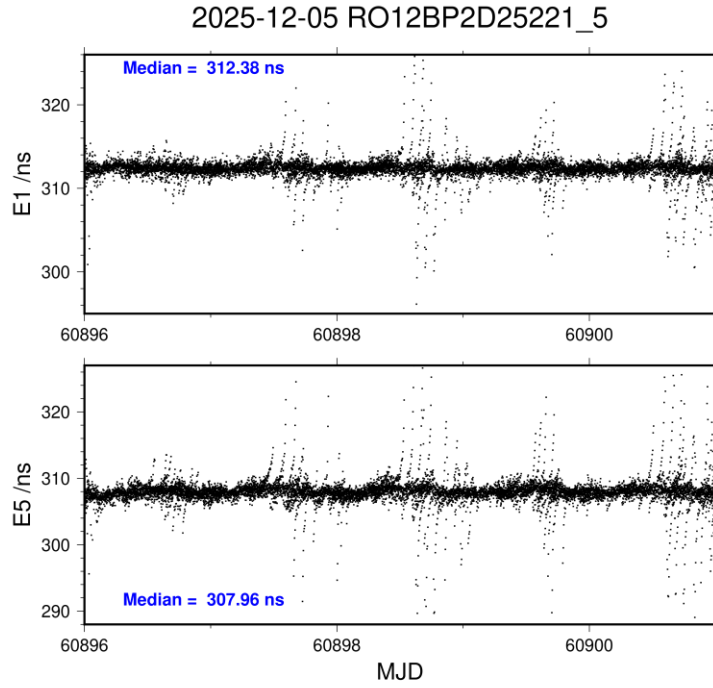
2025-12-05 RO12BP2D25221_5



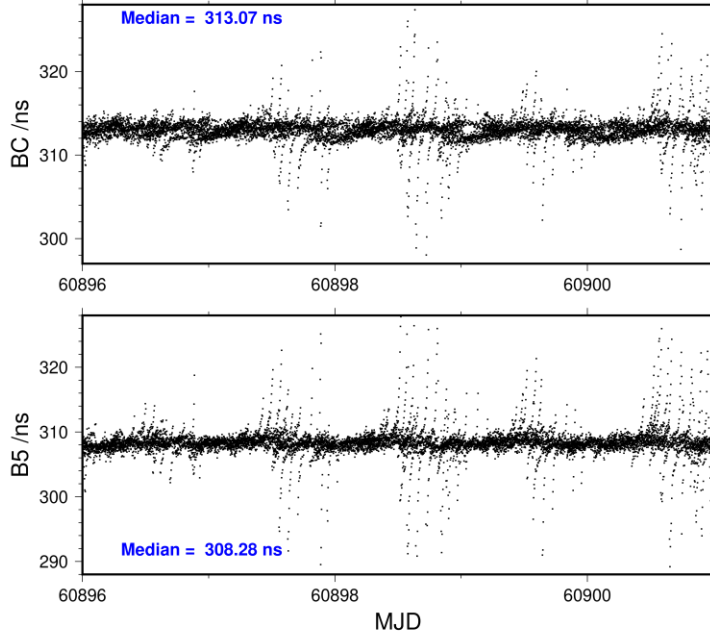
72244 s: P1= 26 ps 72368 s: P2= 42 ps
 36122 s: P1= 127 ps 36184 s: P2= 175 ps
 18061 s: P1= 87 ps 18092 s: P2= 134 ps
 9030 s: P1= 123 ps 9046 s: P2= 164 ps
 4515 s: P1= 159 ps 4523 s: P2= 225 ps
 2258 s: P1= 253 ps 2262 s: P2= 332 ps
 1129 s: P1= 249 ps 1131 s: P2= 320 ps
 564 s: P1= 227 ps 565 s: P2= 318 ps
 282 s: P1= 267 ps 283 s: P2= 390 ps
 141 s: P1= 778 ps 141 s: P2= 1178 ps
 71 s: P1= 991 ps 71 s: P2= 1413 ps
 35 s: P1= 1480 ps 35 s: P2= 1936 ps

2025-12-05 RO12BP2D25221_5

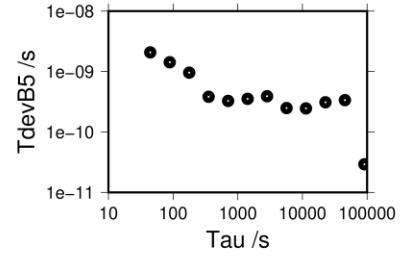
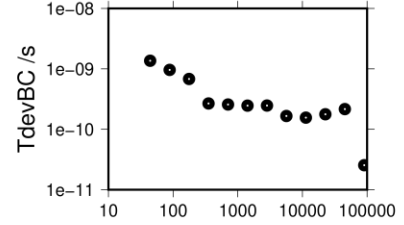




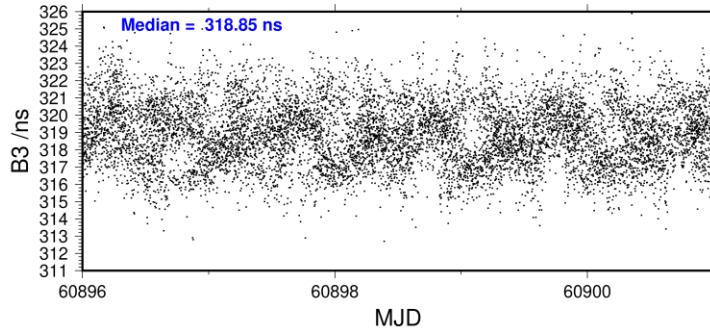
2025-12-05 RO12BP2D25221_5



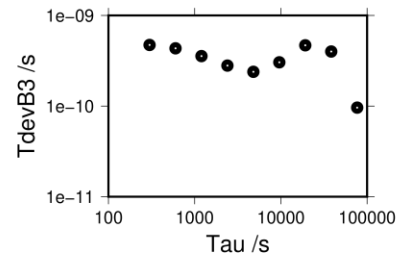
90484 s: BC= 25 ps	90819 s: B5= 29 ps
45242 s: BC= 216 ps	45409 s: B5= 337 ps
22621 s: BC= 178 ps	22705 s: B5= 310 ps
11311 s: BC= 156 ps	11352 s: B5= 245 ps
5655 s: BC= 166 ps	5676 s: B5= 249 ps
2828 s: BC= 247 ps	2838 s: B5= 390 ps
1414 s: BC= 246 ps	1419 s: B5= 353 ps
707 s: BC= 257 ps	710 s: B5= 327 ps
353 s: BC= 267 ps	355 s: B5= 383 ps
177 s: BC= 680 ps	177 s: B5= 957 ps
88 s: BC= 960 ps	89 s: B5= 1425 ps
44 s: BC= 1363 ps	44 s: B5= 2075 ps



2025-12-05 RO12BP2D25221_5



76800 s: B3= 96 ps
38400 s: B3= 400 ps
19200 s: B3= 468 ps
9600 s: B3= 304 ps
4800 s: B3= 239 ps
2400 s: B3= 280 ps
1200 s: B3= 356 ps
600 s: B3= 433 ps
300 s: B3= 472 ps



RO12-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 138742
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : 84.428 84.997
 Iteration 0: Obs used = 240769; Huge residuals = 18; Large residuals = 2339
 Iteration 1: Obs used = 240862; Huge residuals = 0; Large residuals = 2228
 Computed code bias (P1/P2)/m = 87.172 87.718
 Computed baseline (X,Y,Z)/m = 3.942 17.708 -4.970
 RMS of residuals /m = 0.681

Number of phase differences to fit baseline
 L1/L2 = 138208
 L5 = 87017
 A priori baseline (X,Y,Z)/m = 3.942 17.708 -4.970
 14396 clock jitters computed out of 14396 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= 407
 Computed baseline L1 (X,Y,Z)/m = -1.693 0.220 -1.205
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -1.679 0.222 -1.195
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -1.664 0.168 -1.142
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 0
 Iter 2 Large residuals L2= 0
 Iter 2 Large residuals L5= 407
 Computed baseline L1 (X,Y,Z)/m = -1.693 0.220 -1.205
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -1.679 0.222 -1.195
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -1.670 0.166 -1.149
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.256 17.929 -6.170
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.1 RMS jitter /ps = 1.8

Iter 3 Large residuals L1= 0
 Iter 3 Large residuals L2= 0
 Iter 3 Large residuals L5= 409
 Computed baseline L1 (X,Y,Z)/m = -0.031 0.010 -0.016
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = -0.017 0.012 -0.006
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.001 -0.045 0.034
 RMS of residuals L5 /m = 0.004

Iter 4 Large residuals L1= 0
 Iter 4 Large residuals L2= 0

Iter 4 Large residuals L5= 409

Computed baseline L1 (X,Y,Z)/m = -0.031 0.010 -0.016

RMS of residuals L1 /m = 0.002

Computed baseline L2 (X,Y,Z)/m = -0.017 0.012 -0.006

RMS of residuals L2 /m = 0.003

Computed baseline L5 (X,Y,Z)/m = -0.001 -0.045 0.034

RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 2.225 17.939 -6.186

Final baseline L2 (X,Y,Z)/m = 2.239 17.941 -6.176

Final baseline L5 (X,Y,Z)/m = 2.255 17.884 -6.136

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 521625

Global average of individual differences

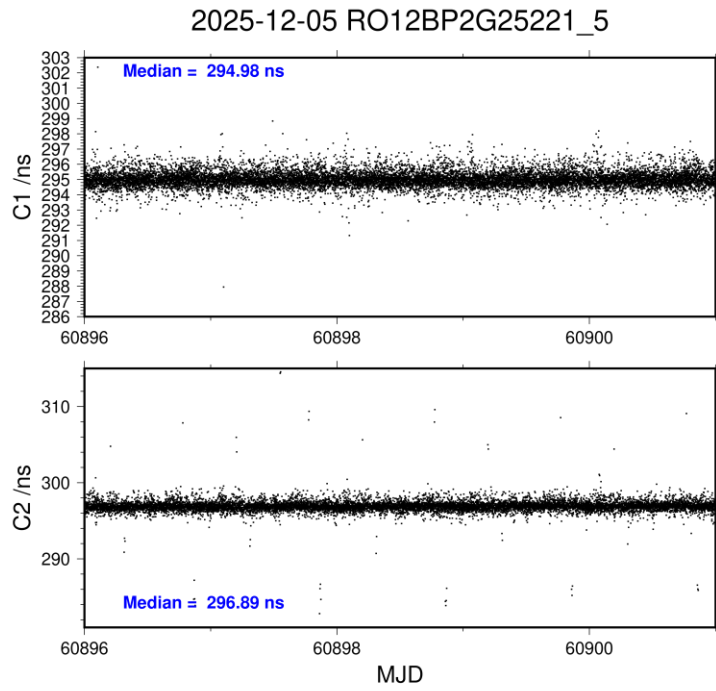
Code	#pts	ave/ns	rms/ns
C1	139097	295.018	1.097
C2	116163	296.921	1.450
P1	138662	295.139	1.087
P2	138656	296.934	1.285
E1	127076	295.032	0.783
E5	127242	294.948	0.728
BC	114652	295.158	0.855
B5	114462	294.921	0.808

Number of 300s epochs in out file = 1440

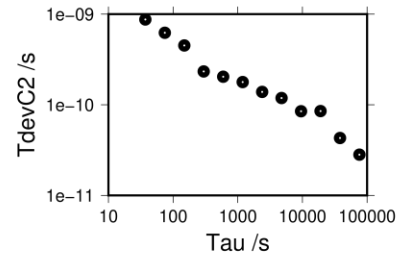
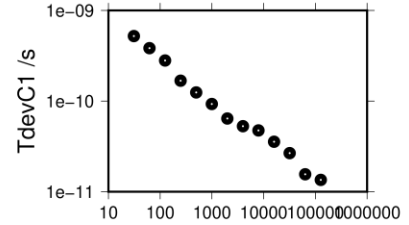
Code	#pts	median/ns	ave/ns	rms/ns
C1	13895	294.976	295.017	0.531
C2	11603	296.889	296.914	0.871
P1	13848	295.106	295.139	0.545
P2	13847	296.919	296.937	0.826
E1	12696	294.989	295.032	0.423
E5	12708	294.905	294.947	0.524
BC	11462	295.122	295.160	0.454
B5	11443	294.863	294.921	0.601

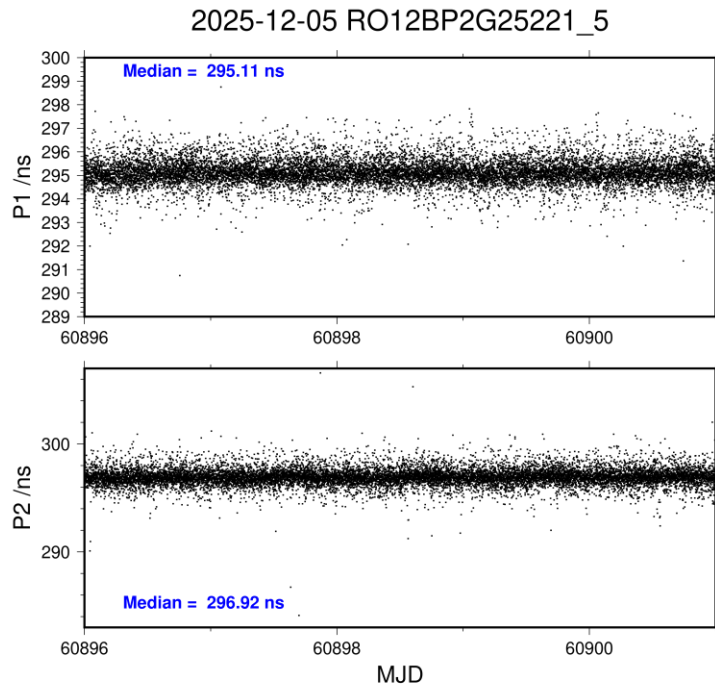
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	292.323	292.333	0.409
E3	1440	295.087	295.070	0.302
B3	1440	295.434	295.437	0.298

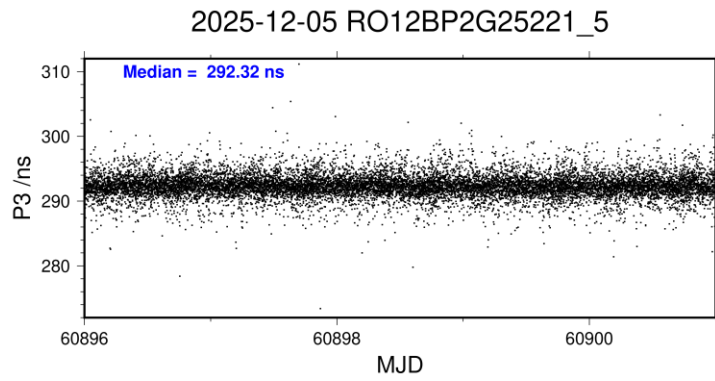
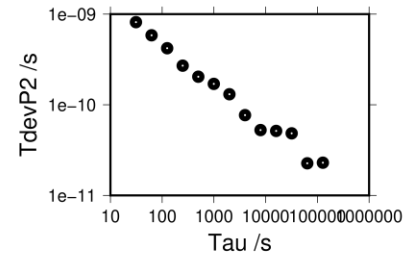
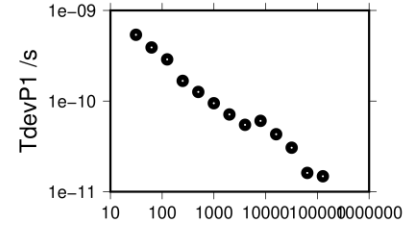


127267 s: C1= 14 ps	
63633 s: C1= 16 ps	76204 s: C2= 28 ps
31817 s: C1= 27 ps	38102 s: C2= 43 ps
15908 s: C1= 36 ps	19051 s: C2= 85 ps
7954 s: C1= 47 ps	9526 s: C2= 85 ps
3977 s: C1= 53 ps	4763 s: C2= 119 ps
1989 s: C1= 64 ps	2381 s: C2= 139 ps
994 s: C1= 93 ps	1191 s: C2= 178 ps
497 s: C1= 124 ps	595 s: C2= 204 ps
249 s: C1= 168 ps	298 s: C2= 233 ps
124 s: C1= 280 ps	149 s: C2= 451 ps
62 s: C1= 384 ps	74 s: C2= 623 ps
31 s: C1= 521 ps	37 s: C2= 873 ps

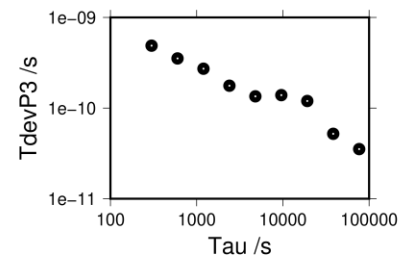


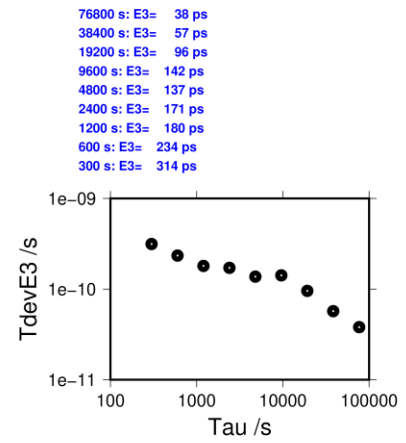
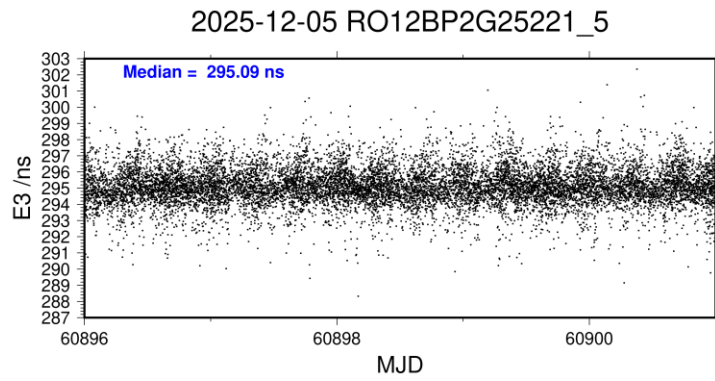
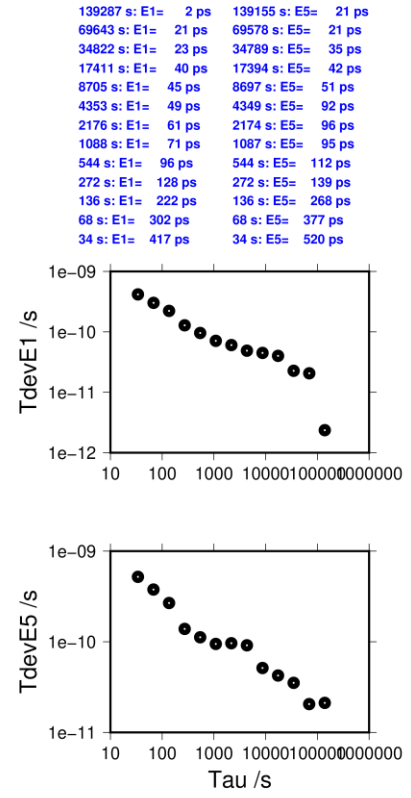
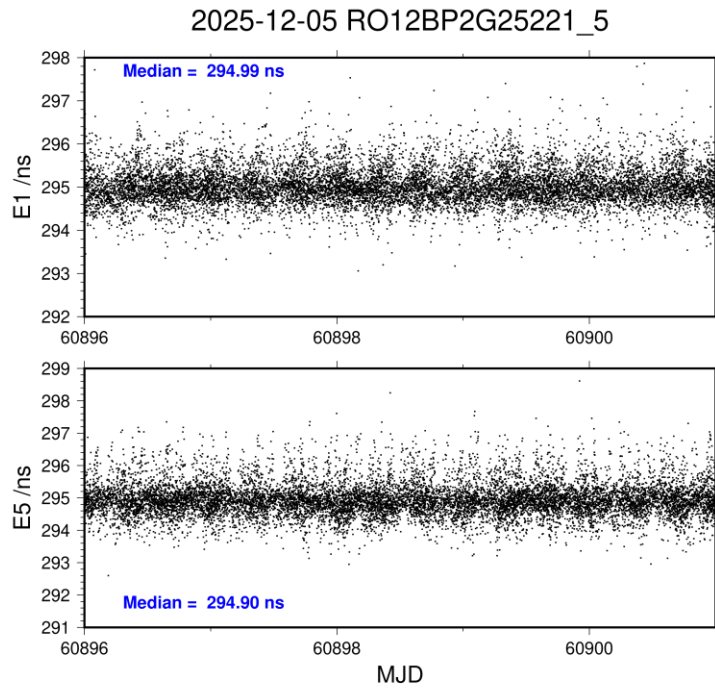


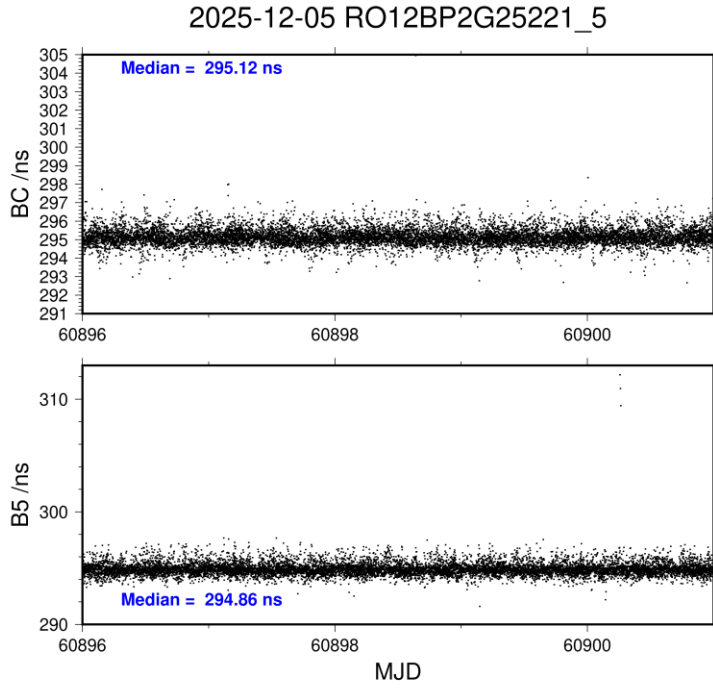
127699 s: P1= 15 ps	127708 s: P2= 23 ps
63849 s: P1= 16 ps	63854 s: P2= 23 ps
31925 s: P1= 31 ps	31927 s: P2= 48 ps
15962 s: P1= 43 ps	15963 s: P2= 51 ps
7981 s: P1= 61 ps	7982 s: P2= 53 ps
3991 s: P1= 55 ps	3991 s: P2= 77 ps
1995 s: P1= 71 ps	1995 s: P2= 131 ps
998 s: P1= 95 ps	998 s: P2= 170 ps
499 s: P1= 126 ps	499 s: P2= 204 ps
249 s: P1= 167 ps	249 s: P2= 270 ps
125 s: P1= 288 ps	125 s: P2= 420 ps
62 s: P1= 390 ps	62 s: P2= 585 ps
31 s: P1= 539 ps	31 s: P2= 815 ps



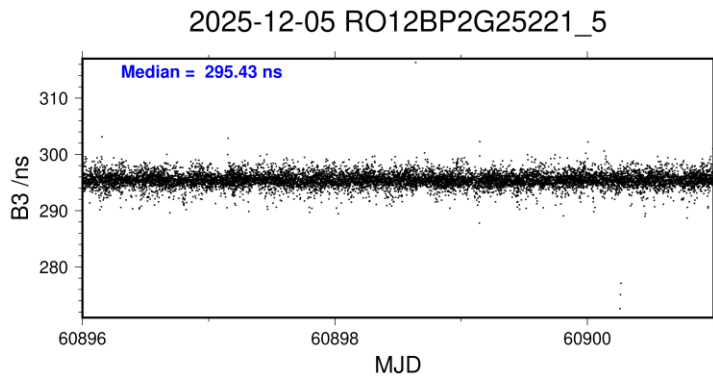
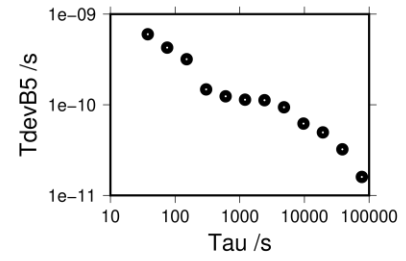
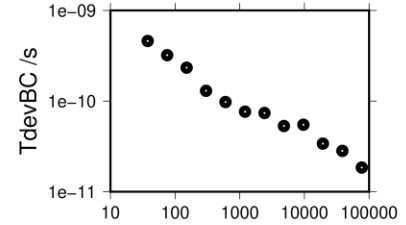
76800 s: P3= 35 ps
38400 s: P3= 52 ps
19200 s: P3= 120 ps
9600 s: P3= 139 ps
4800 s: P3= 135 ps
2400 s: P3= 176 ps
1200 s: P3= 272 ps
600 s: P3= 353 ps
300 s: P3= 488 ps



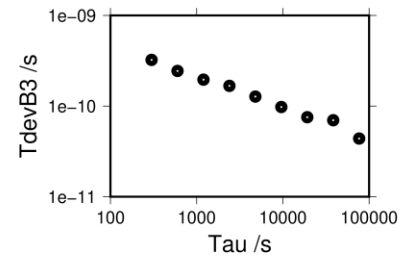




77142 s: BC=	18 ps	77270 s: B5=	16 ps
38571 s: BC=	28 ps	38635 s: B5=	32 ps
19285 s: BC=	34 ps	19317 s: B5=	50 ps
9643 s: BC=	55 ps	9659 s: B5=	62 ps
4821 s: BC=	53 ps	4829 s: B5=	94 ps
2411 s: BC=	74 ps	2415 s: B5=	112 ps
1205 s: BC=	76 ps	1207 s: B5=	114 ps
603 s: BC=	98 ps	604 s: B5=	124 ps
301 s: BC=	130 ps	302 s: B5=	148 ps
151 s: BC=	234 ps	151 s: B5=	318 ps
75 s: BC=	321 ps	75 s: B5=	427 ps
38 s: BC=	460 ps	38 s: B5=	600 ps



76800 s: B3=	44 ps
38400 s: B3=	70 ps
19200 s: B3=	75 ps
9600 s: B3=	98 ps
4800 s: B3=	127 ps
2400 s: B3=	167 ps
1200 s: B3=	196 ps
600 s: B3=	244 ps
300 s: B3=	323 ps



RO13-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 122566
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -13.738 -15.480
 Iteration 0: Obs used = 207131; Huge residuals = 0; Large residuals = 3625
 Iteration 1: Obs used = 207131; Huge residuals = 0; Large residuals = 3625
 Computed code bias (P1/P2)/m = -13.877 -15.654
 Computed baseline (X,Y,Z)/m = -1.712 4.182 2.512
 RMS of residuals /m = 0.441

Number of phase differences to fit baseline
 L1/L2 = 122069
 L5 = 75042
 A priori baseline (X,Y,Z)/m = -1.712 4.182 2.512
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 4.1

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 = 0.105 -0.078 0.082
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.102 -0.072 0.080
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.102 -0.076 0.081
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.609 4.107 2.594
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.2 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 -0.027 0.003
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.001 -0.021 0.001
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = -0.000 -0.025 0.002
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -1.608 4.080 2.596
 Final baseline L2 (X,Y,Z)/m = -1.610 4.086 2.595
 Final baseline L5 (X,Y,Z)/m = -1.609 4.082 2.595

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 450730

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	122508	-45.616	1.522
C2	101379	-51.432	2.145
P1	122500	-46.573	1.554
P2	122330	-52.504	2.189
E1	111799	-45.297	1.291
E5	111648	-48.179	1.890
BC	97718	-44.554	1.469
B5	97326	-47.791	2.063

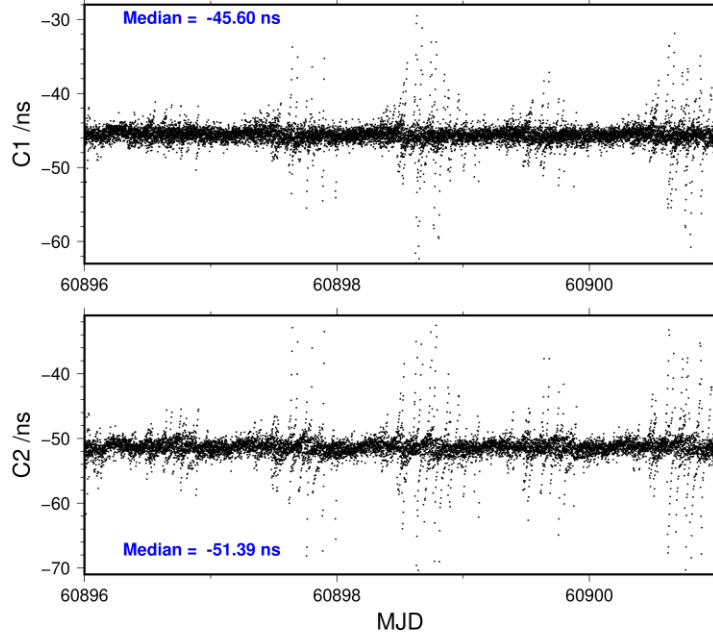
Number of 300s epochs in out file = 1440

Code	#pts	median/ns	ave/ns	rms/ns
C1	12241	-45.604	-45.617	1.396
C2	10129	-51.394	-51.433	2.001
P1	12239	-46.562	-46.574	1.428
P2	12222	-52.430	-52.493	2.058
E1	11168	-45.274	-45.294	1.202
E5	11151	-48.175	-48.175	1.830
BC	9771	-44.516	-44.549	1.380
B5	9732	-47.817	-47.790	2.019

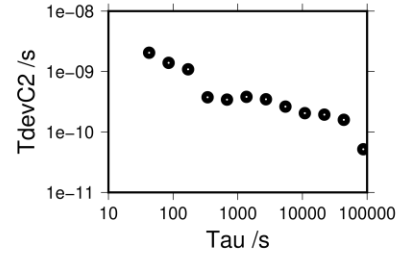
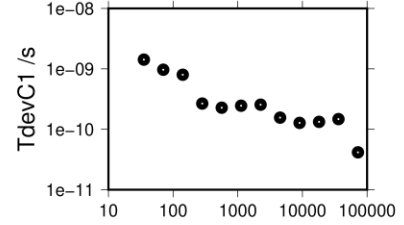
Ionofree combinations

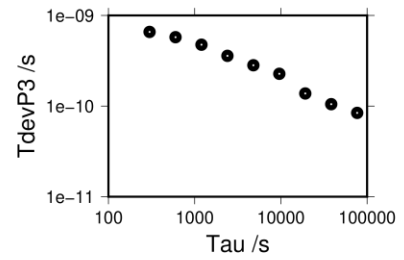
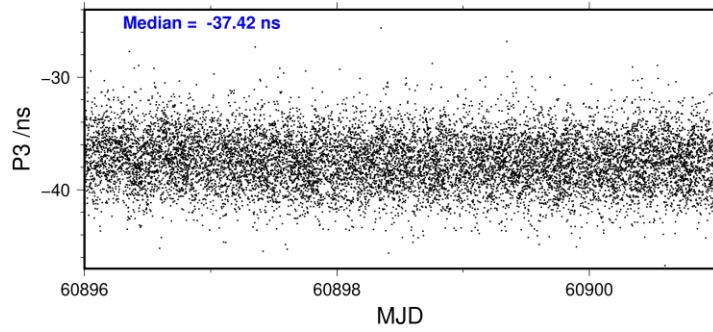
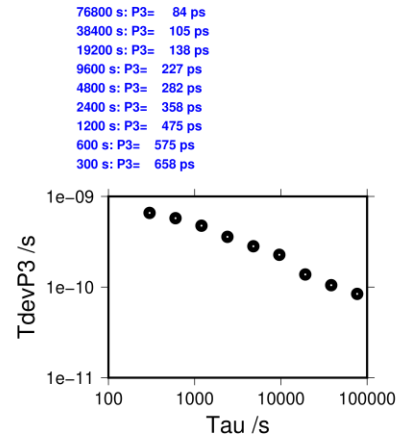
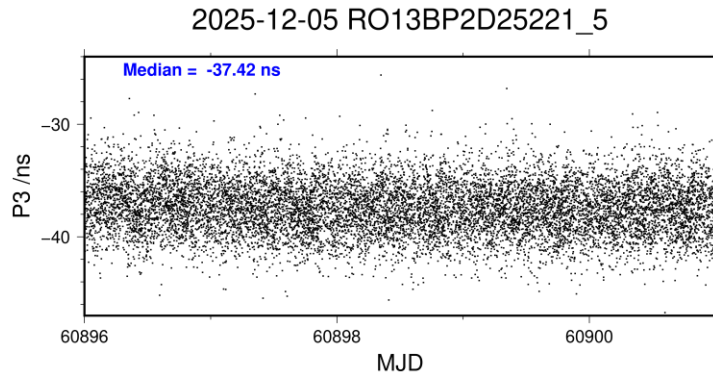
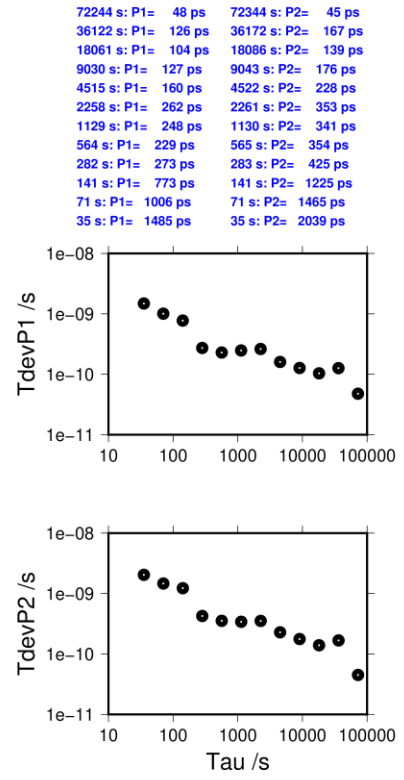
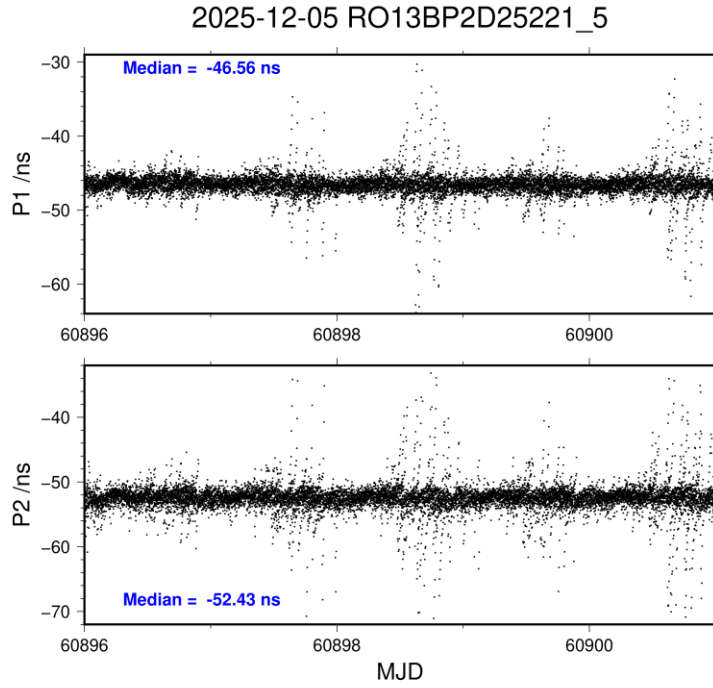
Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	-37.423	-37.423	0.682
E3	1437	-41.648	-41.658	0.529
B3	1440	-40.540	-40.548	0.749

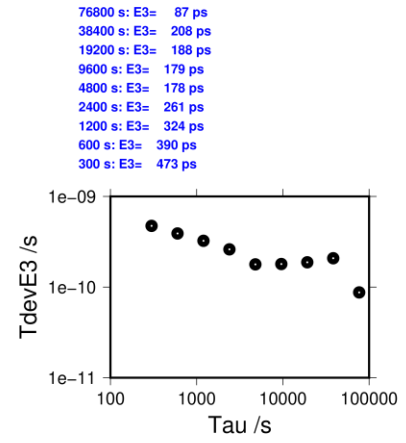
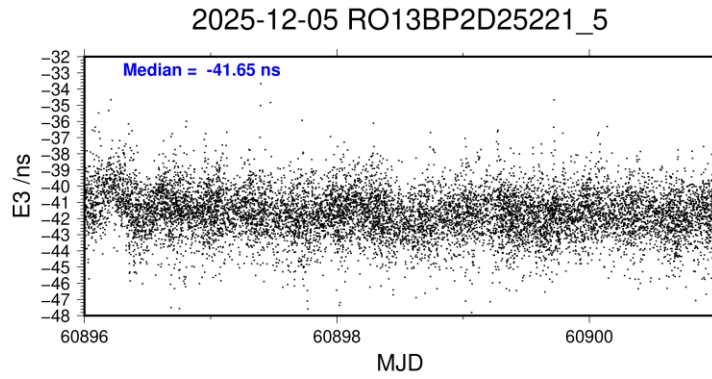
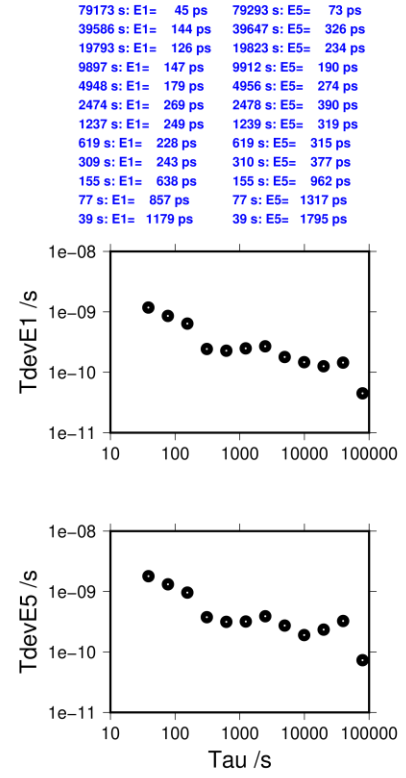
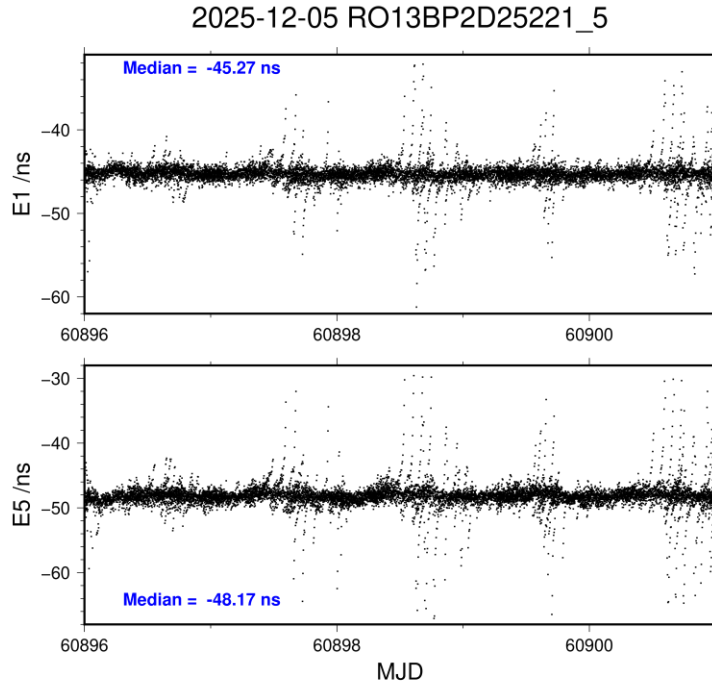
2025-12-05 RO13BP2D25221_5



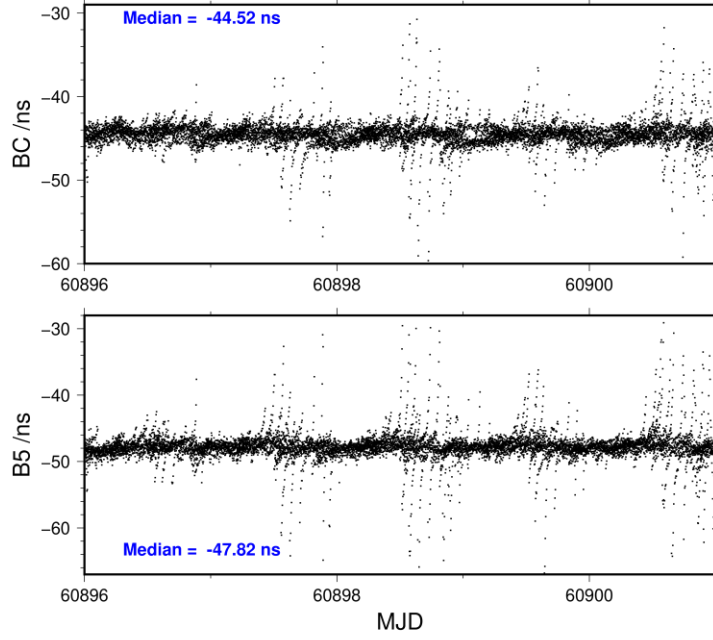
72232 s: C1= 42 ps	87295 s: C2= 52 ps
36116 s: C1= 147 ps	43647 s: C2= 159 ps
18058 s: C1= 133 ps	21824 s: C2= 194 ps
9029 s: C1= 128 ps	10912 s: C2= 205 ps
4515 s: C1= 156 ps	5456 s: C2= 263 ps
2257 s: C1= 256 ps	2728 s: C2= 348 ps
1129 s: C1= 245 ps	1364 s: C2= 382 ps
564 s: C1= 227 ps	682 s: C2= 343 ps
282 s: C1= 267 ps	341 s: C2= 375 ps
141 s: C1= 799 ps	170 s: C2= 1091 ps
71 s: C1= 967 ps	85 s: C2= 1394 ps
35 s: C1= 1422 ps	43 s: C2= 2052 ps



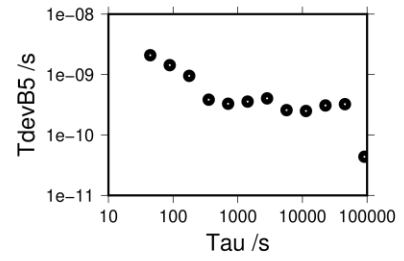
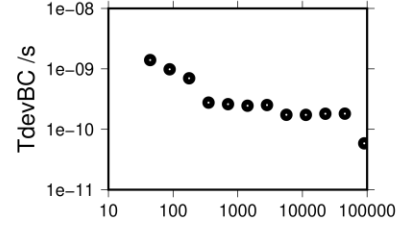




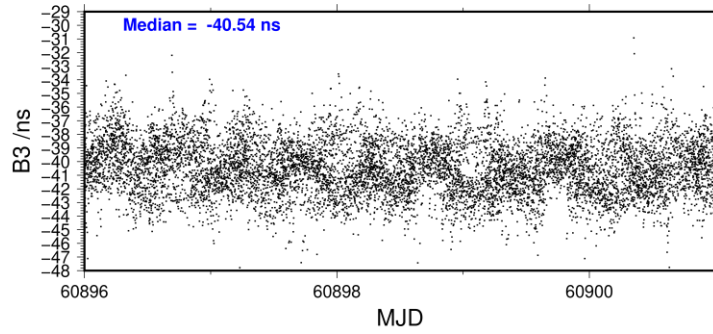
2025-12-05 RO13BP2D25221_5



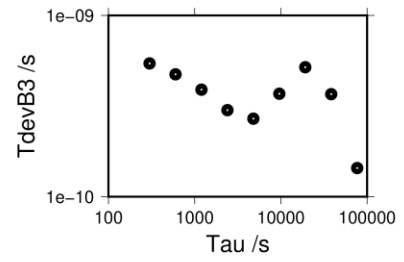
90494 s: BC= 58 ps	90856 s: B5= 44 ps
45247 s: BC= 181 ps	45428 s: B5= 324 ps
22623 s: BC= 181 ps	22714 s: B5= 308 ps
11312 s: BC= 173 ps	11357 s: B5= 250 ps
5656 s: BC= 174 ps	5679 s: B5= 258 ps
2828 s: BC= 252 ps	2839 s: B5= 404 ps
1414 s: BC= 245 ps	1420 s: B5= 357 ps
707 s: BC= 260 ps	710 s: B5= 329 ps
353 s: BC= 276 ps	355 s: B5= 384 ps
177 s: BC= 699 ps	177 s: B5= 951 ps
88 s: BC= 983 ps	89 s: B5= 1431 ps
44 s: BC= 1397 ps	44 s: B5= 2092 ps



2025-12-05 RO13BP2D25221_5



76800 s: B3= 144 ps
38400 s: B3= 368 ps
19200 s: B3= 518 ps
9600 s: B3= 370 ps
4800 s: B3= 269 ps
2400 s: B3= 300 ps
1200 s: B3= 389 ps
600 s: B3= 474 ps
300 s: B3= 543 ps



RO13-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 138456
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 18298 high elev obs : -18.306 -18.112
 Iteration 0: Obs used = 242192; Huge residuals = 12; Large residuals = 344
 Iteration 1: Obs used = 242192; Huge residuals = 0; Large residuals = 332
 Computed code bias (P1/P2)/m = -18.520 -18.377
 Computed baseline (X,Y,Z)/m = -2.465 2.457 3.223
 RMS of residuals /m = 0.401

Number of phase differences to fit baseline
 L1/L2 = 137847
 L5 = 85310
 A priori baseline (X,Y,Z)/m = -2.465 2.457 3.223
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 2.7

Iter 1 Large residuals L1= 0
 Iter 1 Large residuals L2= 0
 Iter 1 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = 0.200 -0.012 0.137
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.209 -0.008 0.146
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.230 -0.050 0.087
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 0
 Iter 2 Large residuals L2= 0
 Iter 2 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = 0.200 -0.012 0.137
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.209 -0.008 0.146
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.230 -0.050 0.087
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -2.260 2.447 3.364
 14396 clock jitters computed out of 14396 intervals
 AVE jitter /ps = -0.0 RMS jitter /ps = 0.2

Iter 3 Large residuals L1= 0
 Iter 3 Large residuals L2= 0
 Iter 3 Large residuals L5= 1
 Computed baseline L1 (X,Y,Z)/m = -0.001 0.001 -0.003
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.008 0.005 0.006
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.028 -0.037 -0.052
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -2.262 2.448 3.361
 Final baseline L2 (X,Y,Z)/m = -2.252 2.452 3.370

Final baseline L5 (X,Y,Z)/m = -2.233 2.410 3.312

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 521370

Global average of individual differences

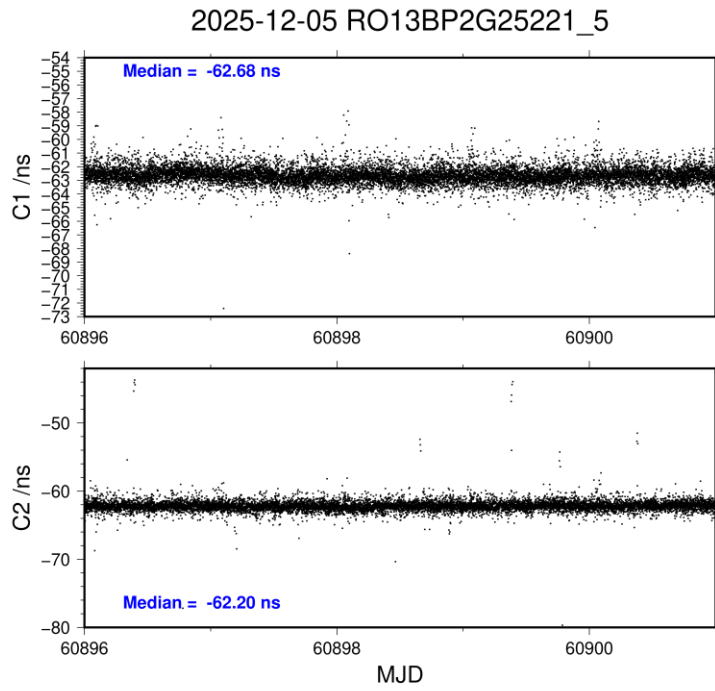
Code	#pts	ave/ns	rms/ns
C1	138955	-62.647	1.171
C2	115610	-62.164	1.447
P1	138379	-62.252	1.154
P2	138371	-61.804	1.427
E1	126884	-62.617	0.850
E5	127059	-61.068	0.755
BC	115422	-62.394	1.213
B5	115403	-61.062	1.169

Number of 300s epochs in out file = 1440

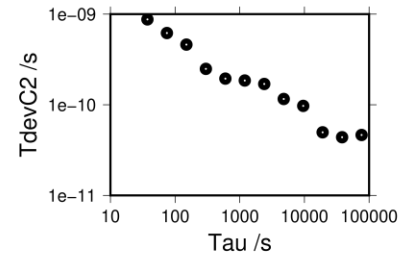
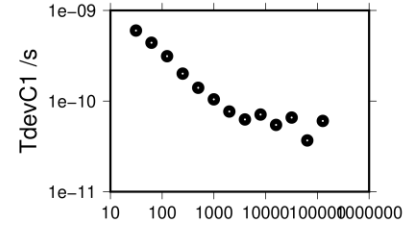
Code	#pts	median/ns	ave/ns	rms/ns
C1	13878	-62.677	-62.646	0.616
C2	11550	-62.196	-62.168	0.881
P1	13817	-62.269	-62.249	0.632
P2	13816	-61.802	-61.802	1.019
E1	12677	-62.643	-62.613	0.518
E5	12689	-61.076	-61.070	0.583
BC	11531	-62.417	-62.391	0.930
B5	11532	-61.077	-61.062	1.000

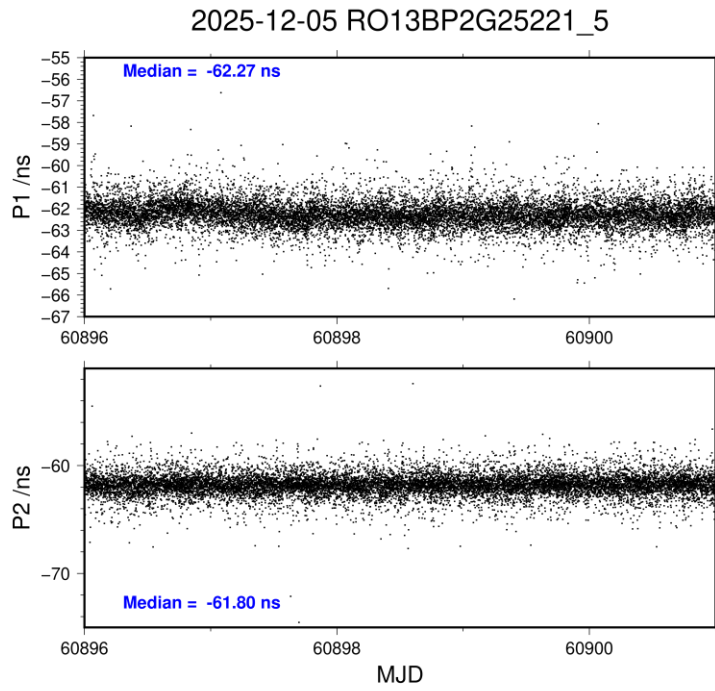
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	1440	-63.011	-63.014	0.539
E3	1440	-64.640	-64.649	0.371
B3	1439	-64.102	-64.120	0.417

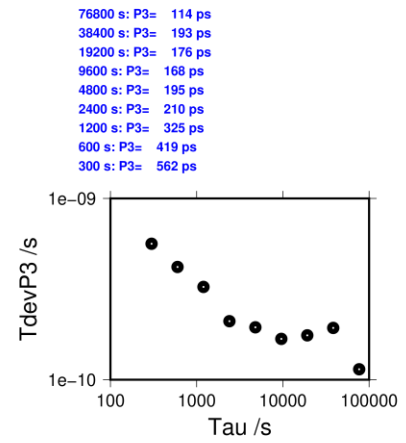
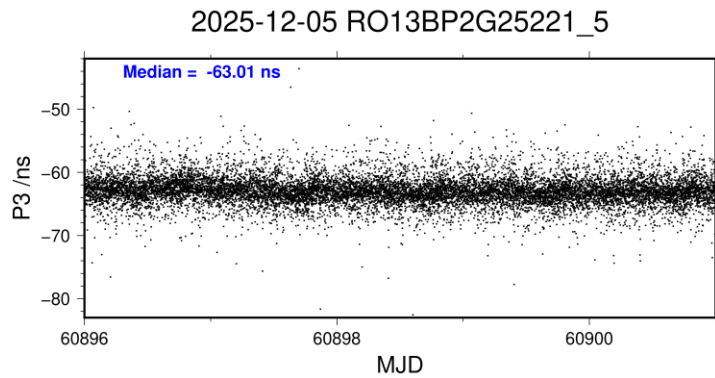
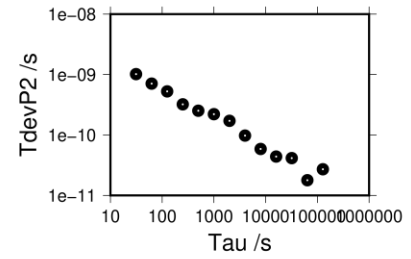
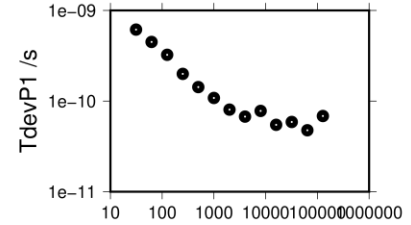


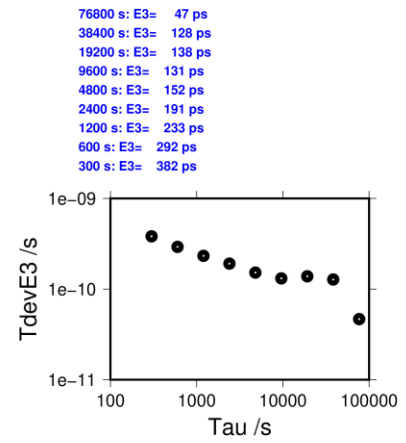
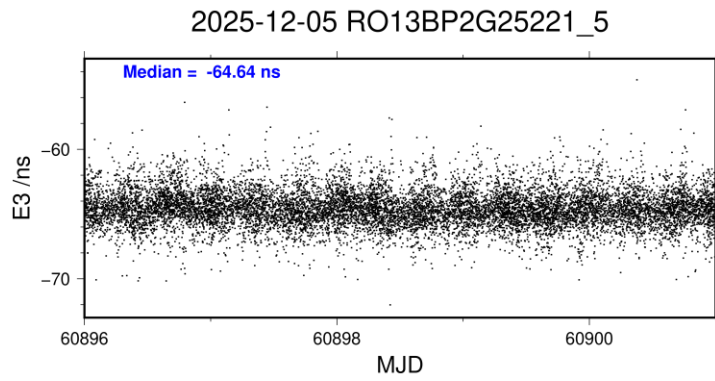
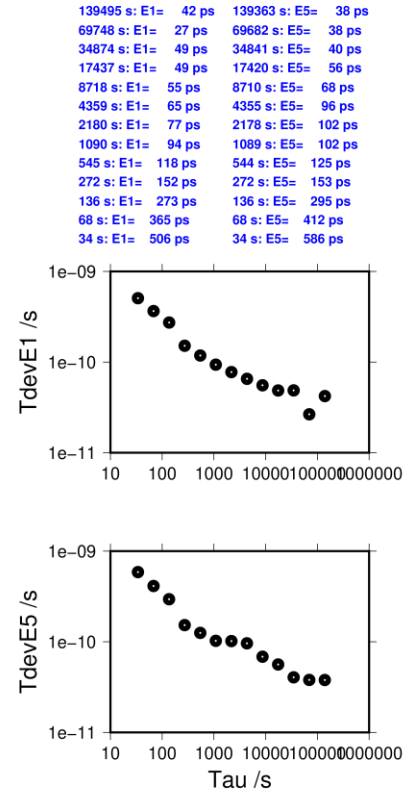
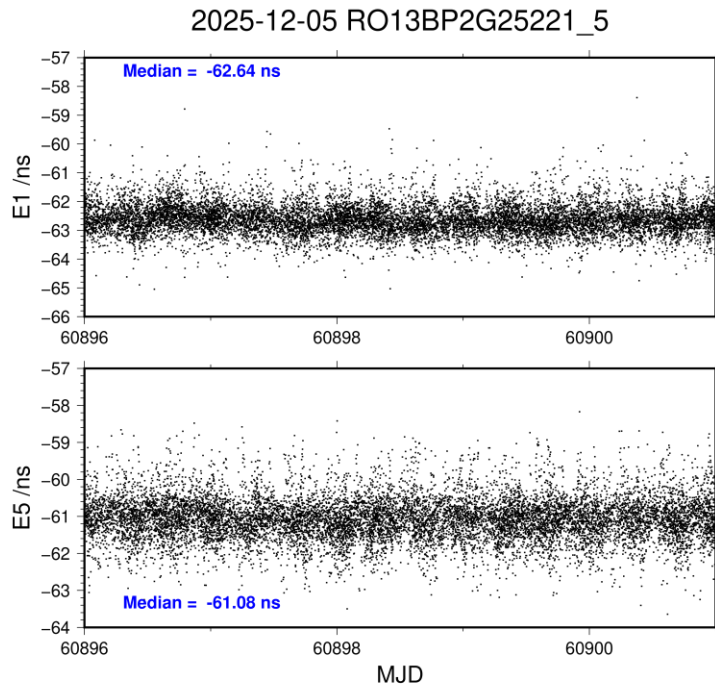
127423 s: C1= 60 ps		
63711 s: C1= 37 ps	76554 s: C2= 46 ps	
31856 s: C1= 66 ps	38277 s: C2= 44 ps	
15928 s: C1= 55 ps	19138 s: C2= 50 ps	
7964 s: C1= 71 ps	9569 s: C2= 97 ps	
3982 s: C1= 63 ps	4785 s: C2= 116 ps	
1991 s: C1= 77 ps	2392 s: C2= 170 ps	
995 s: C1= 104 ps	1196 s: C2= 185 ps	
498 s: C1= 140 ps	598 s: C2= 194 ps	
249 s: C1= 201 ps	299 s: C2= 249 ps	
124 s: C1= 313 ps	150 s: C2= 461 ps	
62 s: C1= 440 ps	75 s: C2= 619 ps	
31 s: C1= 601 ps	37 s: C2= 875 ps	

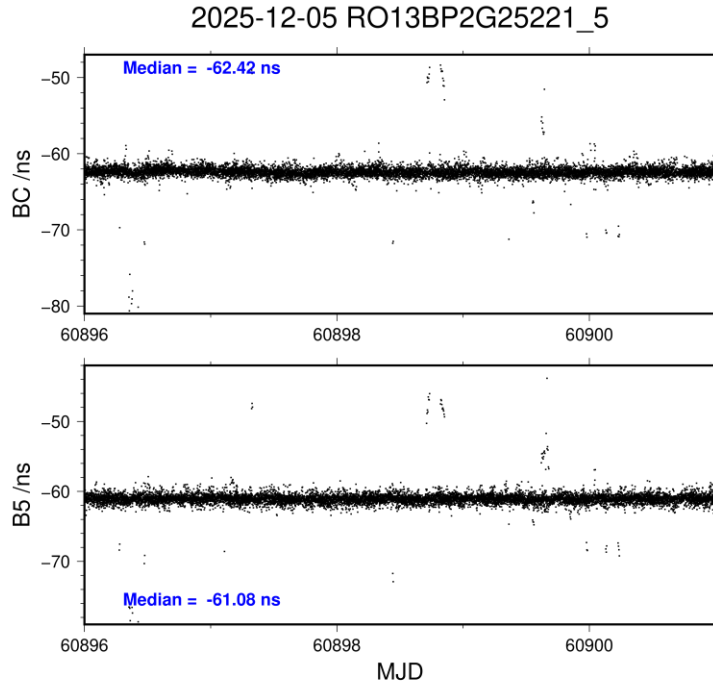




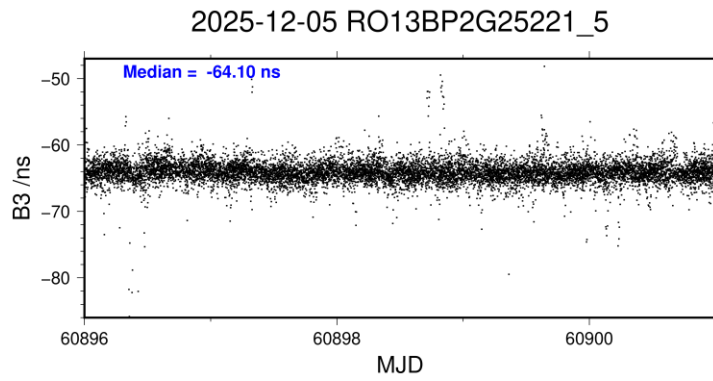
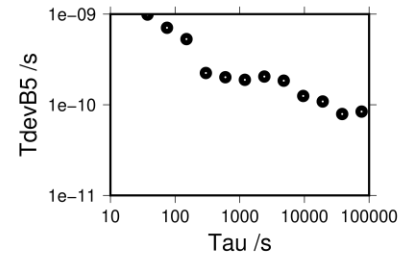
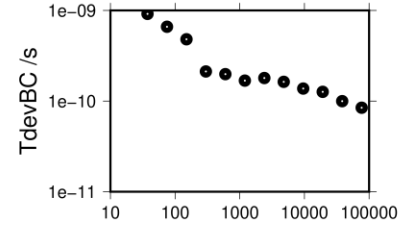
127985 s: P1= 68 ps	127994 s: P2= 27 ps
63993 s: P1= 48 ps	63997 s: P2= 18 ps
31996 s: P1= 59 ps	31999 s: P2= 41 ps
15998 s: P1= 55 ps	15999 s: P2= 44 ps
7999 s: P1= 78 ps	8000 s: P2= 59 ps
4000 s: P1= 67 ps	4000 s: P2= 98 ps
2000 s: P1= 81 ps	2000 s: P2= 172 ps
1000 s: P1= 108 ps	1000 s: P2= 221 ps
500 s: P1= 143 ps	500 s: P2= 252 ps
250 s: P1= 199 ps	250 s: P2= 322 ps
125 s: P1= 324 ps	125 s: P2= 526 ps
62 s: P1= 449 ps	62 s: P2= 708 ps
31 s: P1= 615 ps	31 s: P2= 1017 ps



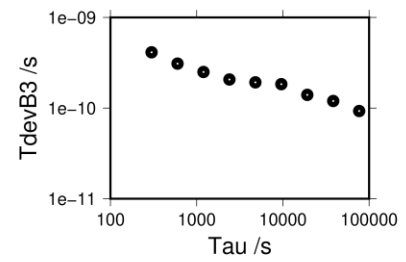




76680 s: BC= 84 ps	76673 s: B5= 84 ps
38340 s: BC= 100 ps	38337 s: B5= 79 ps
19170 s: BC= 126 ps	19168 s: B5= 109 ps
9585 s: BC= 137 ps	9584 s: B5= 125 ps
4793 s: BC= 163 ps	4792 s: B5= 184 ps
2396 s: BC= 180 ps	2396 s: B5= 205 ps
1198 s: BC= 168 ps	1198 s: B5= 188 ps
599 s: BC= 198 ps	599 s: B5= 201 ps
300 s: BC= 212 ps	300 s: B5= 224 ps
150 s: BC= 481 ps	150 s: B5= 531 ps
75 s: BC= 661 ps	75 s: B5= 707 ps
37 s: BC= 915 ps	37 s: B5= 990 ps



76800 s: B3= 93 ps
38400 s: B3= 120 ps
19200 s: B3= 140 ps
9600 s: B3= 184 ps
4800 s: B3= 192 ps
2400 s: B3= 207 ps
1200 s: B3= 250 ps
600 s: B3= 310 ps
300 s: B3= 412 ps



1.4/ PTB (25234)**Period**

MJD 60909 to 60920

Delays

BP2D: (cf page 148)

REFDLY = 77.24 ns

CABDLY = 176.85 ns

BP2G: (cf page 148)

REFDLY = 77.37 ns

CABDLY = 176.38 ns

PT07: (cf page 148)

REFDLY = 43.19 ns

CABDLY = 245.80 ns

PT09: (cf page 150)

REFDLY = 182.14 ns

CABDLY = 198.70 ns

PT10: (cf page 152)

REFDLY = 36.44 ns

CABDLY = 250.00 ns

PT13 (PTBB): (cf page 154)

REFDLY = 55.73 ns

CABDLY = 205.70 ns

PT15: (cf page 156)

REFDLY = 11.04 ns

CABDLY = 205.50 ns

Setup at the PTB

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	PTB	
Date and hour of the beginning of measurements:	20.08.2025 13:15 UTC	
Date and hour of the end of measurements:	17.09.2025 14:00 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	PT07	(a) BP2D (b) BP2G
• Receiver maker and type:	Mesit GTR50	(a) Mesit GTR55 (b) Septentrio PolaRx5TR
Receiver serial number:	806091	(a) SN 1808001 (b) 4701533
1 PPS trigger level /V:	1	1
• Antenna cable maker and type:	FSJ-1	(a) HYLM195
Phase stabilised cable (Y/N):	Y	(b) HYLM195
Length outside the building /m:	25	25
• Antenna maker and type:	Novatel GPS-702-PP	(a) Novatel GNSS-850 (b) Septentrio SEPCHOKE B2E6
Antenna serial number:	01017577	(a) NMLK18070096N (b) 6023
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	43.19 ns	(a) 77.24 ns (b) 77.37 ns
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		

BIPM Guidelines for GNSS equipment calibration - Annex1

• Antenna cable delay:	245.8 ns	(2)
Splitter delay (if any):	-	(2)
Additional cable delay (if any):	-	(1)
Data used for the generation of CCGTTS files		
Complete this section only if CCGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:	-36.0 (P1), -25.4 (P2), -36.0 (C1)	
• INT DLY (Galileo) /ns:	-	
• INT DLY (BDS) /ns:	-	
• INT DLY (GLONASS) /ns:	-	
• CAB DLY /ns:	245.8	
• REF DLY /ns:	43.7	
• Coordinates reference frame:	ITRF	
Latitude or X /m:	3844062.43	
Longitude or Y /m:	709659.03	
Height or Z /m:	5023128.06	
General information		
• Rise time of the local UTC pulse:	< 3 ns	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22.8 °C , 0.5 °C	
Set humidity value and uncertainty:	NA	

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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:	PTB	
Date and hour of the beginning of measurements:	20.08.2025 13:15 UTC	
Date and hour of the end of measurements:	17.09.2025 14:00 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	PT09	(a) BP2D (b) BP2G
• Receiver maker and type:	Septentrio PolaRx4TR Pro	(a) Mesit GTR55 (b) Septentrio PolaRx5TR
Receiver serial number:	3001148	(a) SN 1808001 (b) 4701533
1 PPS trigger level /V:	1	1
• Antenna cable maker and type:	SBB-electronics, Ecoflex15plus	(a) HYLM195
Phase stabilised cable (Y/N):	Y	(b) HYLM195
Length outside the building /m:	25	25
• Antenna maker and type:	Novatel NOV750.R4	(a) Novatel GNSS-850 (b) Septentrio SEPCHOKE B2E6
Antenna serial number:	NA	(a) NMLK18070096N (b) 6023
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☐	REF point is PPSIN x
• Delay from local UTC to receiver 1 PPS-in (REFDLY):		(a) 77.24 ns (b) 77.37 ns
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT x	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):	182.14 ns	
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		

BIPM Guidelines for GNSS equipment calibration - Annex1

• Antenna cable delay:	198.7 ns	(2)
Splitter delay (if any):	-	(2)
Additional cable delay (if any):	-	(1)
Data used for the generation of CGGTTS files Complete this section only if CGGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:	55.5 ns (P1), 54.7 ns (P2), 57.0 ns (C1)	
• INT DLY (Galileo) /ns:	56.5 ns (E1), 65.5 ns (E5a)	
• INT DLY (BDS) /ns:	-	
• INT DLY (GLONASS) /ns:	-	
• CAB DLY /ns:	198.7	
• REF DLY /ns:	182.9	
• Coordinates reference frame:	ITRF	
Latitude or X /m:	3844057.34	
Longitude or Y /m:	709663.82	
Height or Z /m:	5023131.76	
General information		
• Rise time of the local UTC pulse:	< 3 ns	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22.8 °C , 0.5 °C	
Set humidity value and uncertainty:	NA	

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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:	PTB	
Date and hour of the beginning of measurements:	20.08.2025 13:15 UTC	
Date and hour of the end of measurements:	17.09.2025 14:00 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	PT10	(a) BP2D (b) BP2G
• Receiver maker and type:	Mesit GTR51	(a) Mesit GTR55 (b) Septentrio PolaRx5TR
Receiver serial number:	1309042	(a) SN 1808001 (b) 4701533
1 PPS trigger level /V:	1	1
• Antenna cable maker and type:	Belden 8214 RG-8/U	(a) HYLM195
Phase stabilised cable (Y/N):	Y	(b) HYLM195
Length outside the building /m:	25	25
• Antenna maker and type:	NavExperience, 3G+C	(a) Novatel GNSS-850 (b) Septentrio SEPCHOKE B2E6
Antenna serial number:	NA	(a) NMLK18070096N (b) 6023
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	36.44	(a) 77.24 ns (b) 77.37 ns
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		

• Antenna cable delay:	250.0 ns	(2)
Splitter delay (if any):	-	(2)
Additional cable delay (if any):	-	(1)
Data used for the generation of CCGTTS files Complete this section only if CCGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:	32.7 ns (C1), 30.7 ns (P1), 24.2 ns (P2)	
• INT DLY (Galileo) /ns:	34.0 ns (GAL E1), 23.0 ns (GAL E5a)	
• INT DLY (BDS) /ns:	-	
• INT DLY (GLONASS) /ns:	-	
• CAB DLY /ns:	250.0	
• REF DLY /ns:	36.6	
• Coordinates reference frame:	ITRF	
Latitude or X /m:	3844056.64	
Longitude or Y /m:	709664.25	
Height or Z /m:	5023131.88	
General information		
• Rise time of the local UTC pulse:	< 3 ns	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22.8 °C , 0.5 °C	
Set humidity value and uncertainty:	NA	

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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:	PTB	
Date and hour of the beginning of measurements:	20.08.2025 13:15 UTC	
Date and hour of the end of measurements:	17.09.2025 14:00 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	PTBB	(a) BP2D (b) BP2G
• Receiver maker and type:	Septentrio, PolaRX5TR	(a) Mesit GTR55 (b) Septentrio PolaRx5TR
Receiver serial number:	4701292	(a) SN 1808001 (b) 4701533
1 PPS trigger level /V:	1	1
• Antenna cable maker and type:	ECOFLEX15	(a) HYLM195
Phase stabilised cable (Y/N):		(b) HYLM195
Length outside the building /m:	25	25
• Antenna maker and type:	LEICA AR25	(a) Novatel GNSS-850 (b) Septentrio SEPCHOKE B2E6
Antenna serial number:	726333	(a) NMLK18070096N (b) 6023
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	55.73 ns	(a) 77.24 ns (b) 77.37 ns
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		

BIPM Guidelines for GNSS equipment calibration - Annex1

• Antenna cable delay:	205.7 ns	(2)
Splitter delay (if any):	-	(2)
Additional cable delay (if any):	-	(1)

Data used for the generation of CGGTTS files		
Complete this section only if CGGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:	31.0 (P1), 28.5 (P2), 33.1 (C1)	
• INT DLY (Galileo) /ns:	33.2 (E1), 33.0 (E5a)	
• INT DLY (BDS) /ns:	-	
• INT DLY (GLONASS) /ns:	-	
• CAB DLY /ns:	205.7	
• REF DLY /ns:	56.2	
• Coordinates reference frame:	ITRF	
Latitude or X /m:	3844059.86	
Longitude or Y /m:	709661.56	
Height or Z /m:	5023129.87	

General information	
• Rise time of the local UTC pulse:	< 3 ns
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	22.8 °C , 0.5 °C
Set humidity value and uncertainty:	NA

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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:	PTB	
Date and hour of the beginning of measurements:	20.08.2025 13:15 UTC	
Date and hour of the end of measurements:	17.09.2025 14:00 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	PT15	(a) BP2D (b) BP2G
• Receiver maker and type:	Mesit GTR55	(a) Mesit GTR55 (b) Septentrio PolaRx5TR
Receiver serial number:	2312001	(a) SN 1808001 (b) 4701533
1 PPS trigger level /V:	1	1
• Antenna cable maker and type:	LMR-400	(a) HYLM195
Phase stabilised cable (Y/N):	Y	(b) HYLM195
Length outside the building /m:	25	25
• Antenna maker and type:	NOV850	(a) Novatel GNSS-850 (b) Septentrio SEPCHOKE B2E6
Antenna serial number:	NMLK22480015P	(a) NMLK18070096N (b) 6023
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	11.04 ns	(a) 77.24 ns (b) 77.37 ns
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		

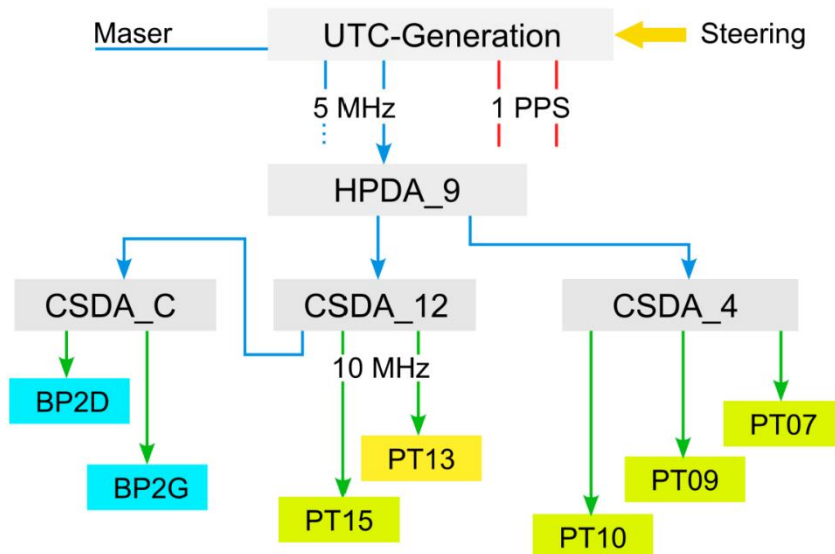
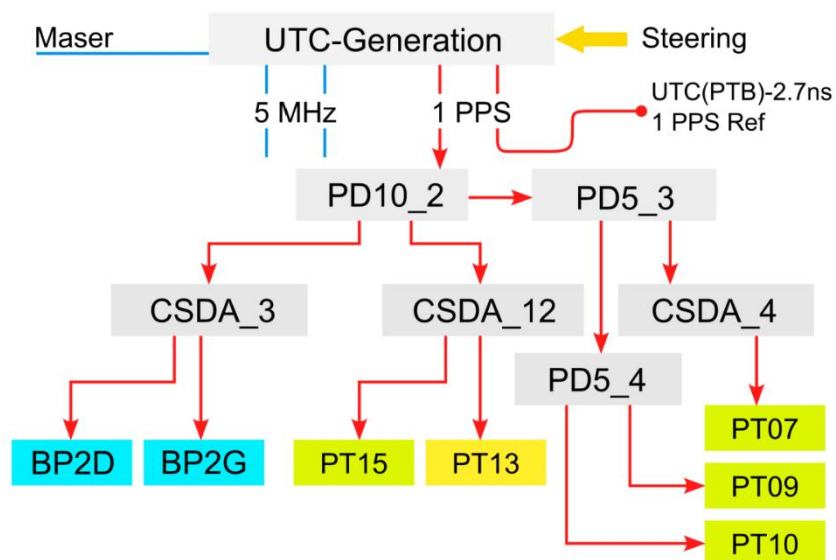
BIPM Guidelines for GNSS equipment calibration - Annex1

• Antenna cable delay:	205.5 ns	(2)
Splitter delay (if any):	-	(2)
Additional cable delay (if any):	-	(1)
Data used for the generation of CCGTTS files Complete this section only if CCGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:	38.6 ns (C1), 34.9 ns (P1), 28.1 ns (P2)	
• INT DLY (Galileo) /ns:	38.6 ns (GAL E1), 31.6 ns (GAL E5a)	
• INT DLY (BDS) /ns:	-	
• INT DLY (GLONASS) /ns:	-	
• CAB DLY /ns:	205.5	
• REF DLY /ns:	11.0	
• Coordinates reference frame:	ITRF	
Latitude or X /m:	3844063.42	
Longitude or Y /m:	709658.80	
Height or Z /m:	5023127.41	
General information		
• Rise time of the local UTC pulse:	< 3 ns	
• Is the laboratory air conditioned:	Yes	
Set temperature value and uncertainty:	22.8 °C , 0.5 °C	
Set humidity value and uncertainty:	NA	

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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 :

BIPM Guidelines for GNSS equipment calibration - Annex1

PT07-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 26728
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 4870 high elev obs : -32.938 -34.056
 Iteration 0: Obs used = 43793; Huge residuals = 160; Large residuals = 237
 Iteration 1: Obs used = 43811; Huge residuals = 0; Large residuals = 59
 Computed code bias (P1/P2)/m = -33.007 -34.082
 Computed baseline (X,Y,Z)/m = -0.261 -0.333 0.228
 RMS of residuals /m = 0.425

Number of phase differences to fit baseline
 L1/L2 = 285115
 L5 = 0
 A priori baseline (X,Y,Z)/m = -0.261 -0.333 0.228
 34222 clock jitters computed out of 34254 intervals
 AVE jitter /ps = -0.2 RMS jitter /ps = 29.0

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 = 0.026 -0.064 -0.062
 RMS of residuals L1 /m = 0.005
 Computed baseline L2 (X,Y,Z)/m = 0.027 -0.060 -0.059
 RMS of residuals L2 /m = 0.004
 No computed baseline L5, will use L1/L2

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 = 0.026 -0.064 -0.062
 RMS of residuals L1 /m = 0.005
 Computed baseline L2 (X,Y,Z)/m = 0.027 -0.060 -0.059
 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 = -0.234 -0.395 0.168
 34222 clock jitters computed out of 34254 intervals
 AVE jitter /ps = 0.2 RMS jitter /ps = 0.1

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 = 0.002 -0.017 -0.003
 RMS of residuals L1 /m = 0.005
 Computed baseline L2 (X,Y,Z)/m = 0.003 -0.013 -0.000
 RMS of residuals L2 /m = 0.004
 No computed baseline L5, will use L1/L2

Final baseline L1 (X,Y,Z)/m = -0.232 -0.412 0.165
 Final baseline L2 (X,Y,Z)/m = -0.232 -0.408 0.168
 Final baseline L5 (X,Y,Z)/m = -0.232 -0.410 0.166

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 294877

Global average of individual differences

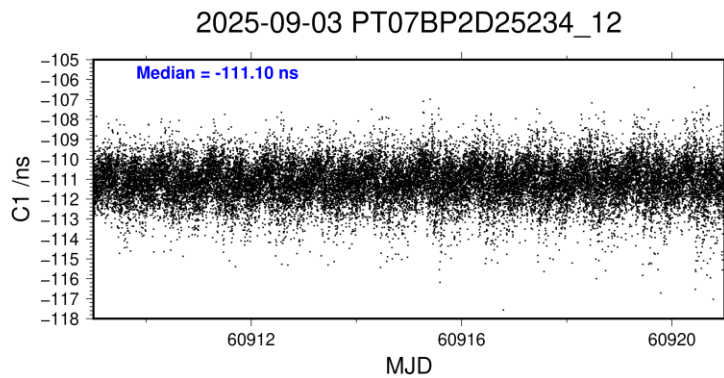
Code	#pts	ave/ns	rms/ns
C1	294103	-111.127	1.063
P1	26617	-110.003	1.229
P2	26616	-113.608	1.524

Number of 300s epochs in out file = 3456

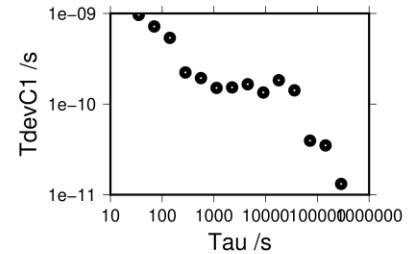
Code	#pts	median/ns	ave/ns	rms/ns
C1	29472	-111.102	-111.125	0.993
P1	2580	-109.932	-110.000	1.136
P2	2580	-113.562	-113.615	1.430

Ionofree combinations

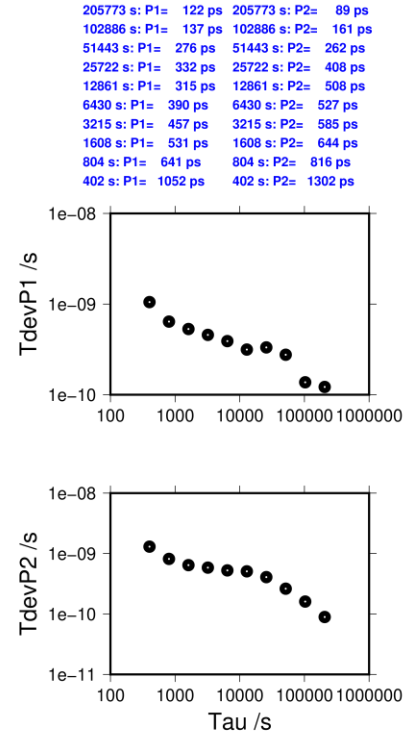
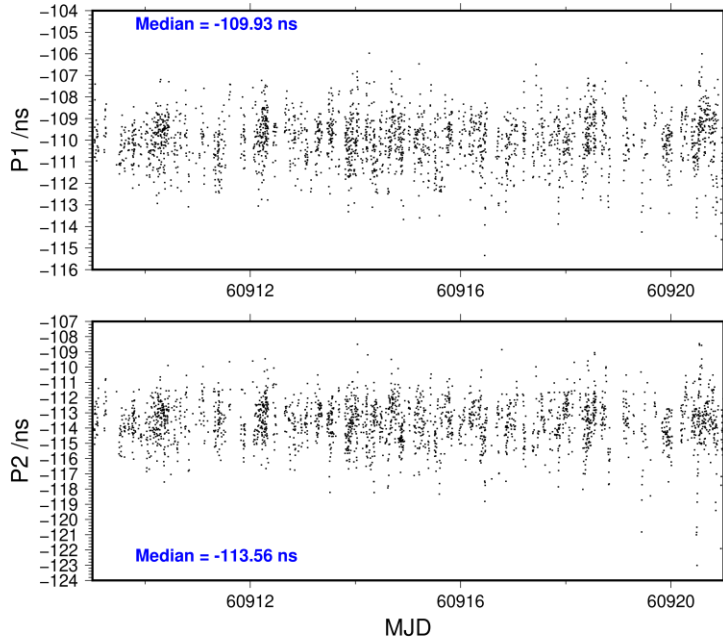
Code	#pts	median/ns	ave/ns	rms/ns
P3	1775	-104.457	-104.234	1.940



288114 s: C1= 13 ps
 144057 s: C1= 35 ps
 72028 s: C1= 39 ps
 36014 s: C1= 142 ps
 18007 s: C1= 183 ps
 9004 s: C1= 134 ps
 4502 s: C1= 165 ps
 2251 s: C1= 153 ps
 1125 s: C1= 151 ps
 563 s: C1= 193 ps
 281 s: C1= 223 ps
 141 s: C1= 537 ps
 70 s: C1= 719 ps
 35 s: C1= 962 ps

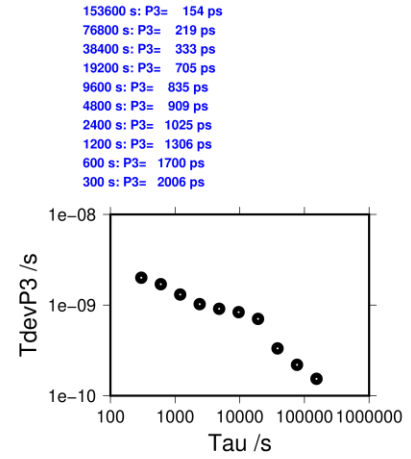
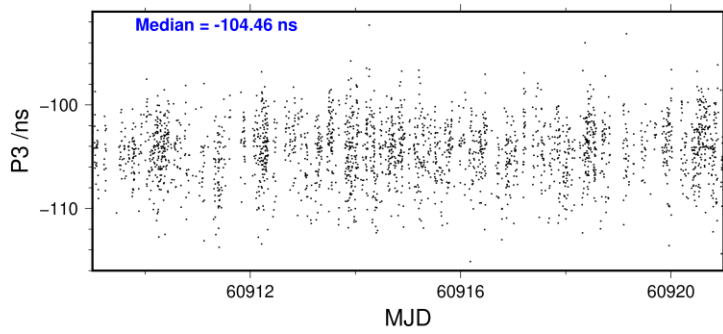


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205773 s: P1= 122 ps 205773 s: P2= 89 ps
 102886 s: P1= 137 ps 102886 s: P2= 161 ps
 51443 s: P1= 276 ps 51443 s: P2= 262 ps
 25722 s: P1= 332 ps 25722 s: P2= 408 ps
 12861 s: P1= 315 ps 12861 s: P2= 508 ps
 6430 s: P1= 390 ps 6430 s: P2= 527 ps
 3215 s: P1= 457 ps 3215 s: P2= 585 ps
 1608 s: P1= 531 ps 1608 s: P2= 644 ps
 804 s: P1= 641 ps 804 s: P2= 816 ps
 402 s: P1= 1052 ps 402 s: P2= 1302 ps

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153600 s: P3= 154 ps
 76800 s: P3= 219 ps
 38400 s: P3= 333 ps
 19200 s: P3= 705 ps
 9600 s: P3= 835 ps
 4800 s: P3= 909 ps
 2400 s: P3= 1025 ps
 1200 s: P3= 1306 ps
 600 s: P3= 1700 ps
 300 s: P3= 2006 ps

PT07-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 26769
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 4870 high elev obs : -37.529 -36.772
 Iteration 0: Obs used = 43929; Huge residuals = 146; Large residuals = 183
 Iteration 1: Obs used = 43935; Huge residuals = 0; Large residuals = 31
 Computed code bias (P1/P2)/m = -37.637 -36.815
 Computed baseline (X,Y,Z)/m = 0.656 -1.255 -0.458
 RMS of residuals /m = 0.411

Number of phase differences to fit baseline

L1/L2 = 286206

L5 = 0

A priori baseline (X,Y,Z)/m = 0.656 -1.255 -0.458

34255 clock jitters computed out of 34283 intervals

AVE jitter /ps = -0.1 RMS jitter /ps = 28.9

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 = 0.128 -0.023 0.061

RMS of residuals L1 /m = 0.004

Computed baseline L2 (X,Y,Z)/m = 0.137 -0.021 0.075

RMS of residuals L2 /m = 0.003

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 = 0.128 -0.023 0.061

RMS of residuals L1 /m = 0.004

Computed baseline L2 (X,Y,Z)/m = 0.137 -0.021 0.075

RMS of residuals L2 /m = 0.003

No computed baseline L5, will use L1/L2

New iteration of baseline

New apriori baseline (X,Y,Z)/m = 0.788 -1.278 -0.390

34255 clock jitters computed out of 34283 intervals

AVE jitter /ps = 0.1 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 = 0.001 -0.009 -0.005

RMS of residuals L1 /m = 0.004

Computed baseline L2 (X,Y,Z)/m = 0.010 -0.007 0.010

RMS of residuals L2 /m = 0.003

No computed baseline L5, will use L1/L2

Final baseline L1 (X,Y,Z)/m = 0.789 -1.286 -0.395

Final baseline L2 (X,Y,Z)/m = 0.798 -1.285 -0.380

Final baseline L5 (X,Y,Z)/m = 0.794 -1.285 -0.387

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 295558

Global average of individual differences

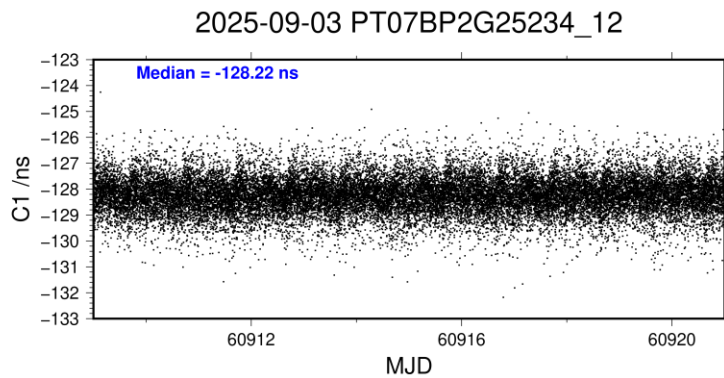
Code	#pts	ave/ns	rms/ns
C1	294948	-128.228	1.047
P1	26665	-125.814	1.142
P2	26664	-123.109	1.451

Number of 300s epochs in out file = 3456

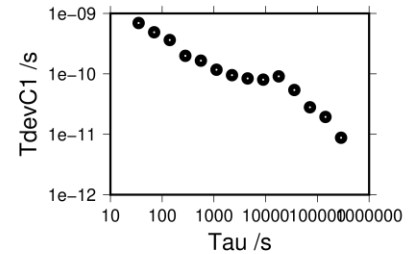
Code	#pts	median/ns	ave/ns	rms/ns
C1	29581	-128.218	-128.223	0.696
P1	2588	-125.802	-125.815	0.799
P2	2588	-123.115	-123.130	1.014

Ionofree combinations

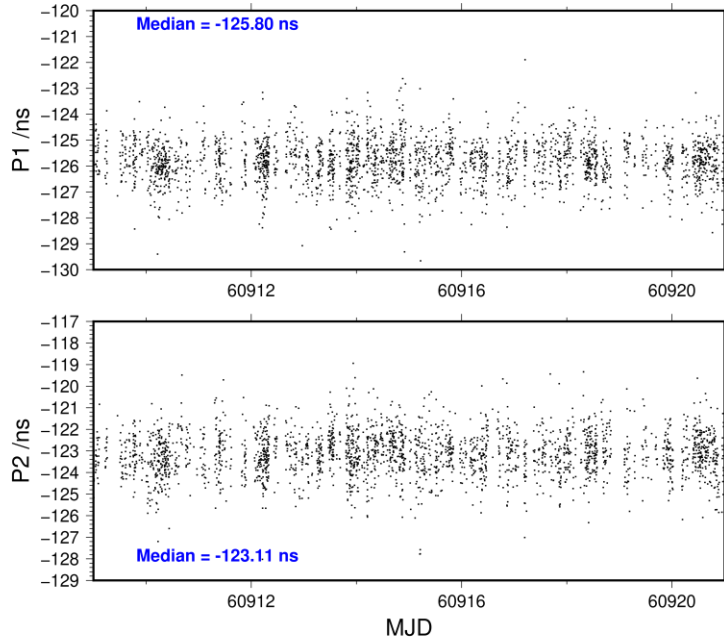
Code	#pts	median/ns	ave/ns	rms/ns
P3	1778	-129.997	-129.921	1.743



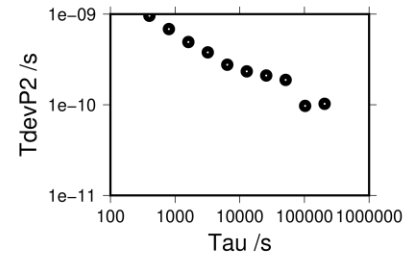
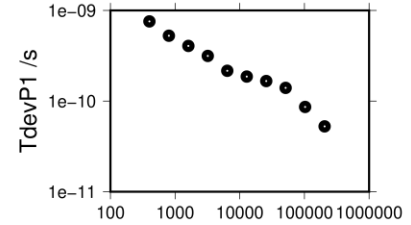
287052 s: C1= 9 ps
 143526 s: C1= 19 ps
 71763 s: C1= 28 ps
 35882 s: C1= 54 ps
 17941 s: C1= 91 ps
 8970 s: C1= 80 ps
 4485 s: C1= 84 ps
 2243 s: C1= 95 ps
 1121 s: C1= 117 ps
 561 s: C1= 166 ps
 280 s: C1= 199 ps
 140 s: C1= 363 ps
 70 s: C1= 488 ps
 35 s: C1= 695 ps



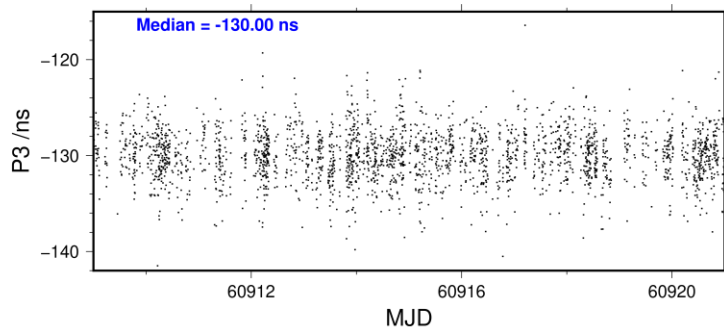
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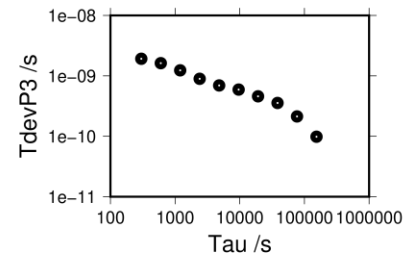
205136 s: P1= 53 ps	205136 s: P2= 103 ps
102568 s: P1= 86 ps	102568 s: P2= 97 ps
51284 s: P1= 140 ps	51284 s: P2= 188 ps
25642 s: P1= 166 ps	25642 s: P2= 210 ps
12821 s: P1= 186 ps	12821 s: P2= 234 ps
6411 s: P1= 216 ps	6411 s: P2= 276 ps
3205 s: P1= 315 ps	3205 s: P2= 379 ps
1603 s: P1= 406 ps	1603 s: P2= 492 ps
801 s: P1= 526 ps	801 s: P2= 685 ps
401 s: P1= 756 ps	401 s: P2= 960 ps



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153600 s: P3= 98 ps
76800 s: P3= 213 ps
38400 s: P3= 356 ps
19200 s: P3= 458 ps
9600 s: P3= 593 ps
4800 s: P3= 694 ps
2400 s: P3= 895 ps
1200 s: P3= 1234 ps
600 s: P3= 1622 ps
300 s: P3= 1918 ps



PT09-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 298487
 Compute baseline with $\sin(\text{elev})$ between 0.05 and 0.90
 Apriori codes biases from 42943 high elev obs : -11.410 -12.716
 Iteration 0: Obs used = 514550; Huge residuals = 0; Large residuals = 496
 Iteration 1: Obs used = 514550; Huge residuals = 0; Large residuals = 496
 Computed code bias (P1/P2)/m = -11.633 -12.868
 Computed baseline (X,Y,Z)/m = 4.794 -5.106 -3.622
 RMS of residuals /m = 0.433

Number of phase differences to fit baseline
 L1/L2 = 296514
 L5 = 172867
 A priori baseline (X,Y,Z)/m = 4.794 -5.106 -3.622
 34525 clock jitters computed out of 34525 intervals
 AVE jitter /ps = -0.2 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 = 0.082 -0.033 0.186
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.075 -0.028 0.182
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.070 -0.028 0.176
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 4.872 -5.137 -3.438
 34525 clock jitters computed out of 34525 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 = 0.009 -0.014 0.007
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.002 -0.008 0.004
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.003 -0.008 0.000
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 4.882 -5.151 -3.431
 Final baseline L2 (X,Y,Z)/m = 4.874 -5.145 -3.434
 Final baseline L5 (X,Y,Z)/m = 4.869 -5.145 -3.438

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

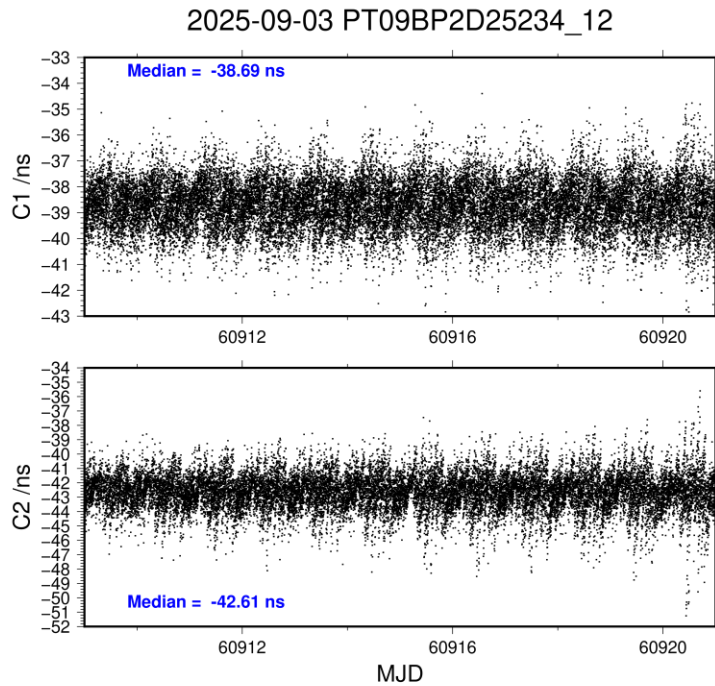
Code	#pts	ave/ns	rms/ns
C1	299037	-38.702	1.217
C2	242539	-42.655	1.579
P1	298399	-39.154	1.260
P2	298394	-43.253	1.512
E1	242684	-38.933	1.020
E5	241637	-34.346	1.257

Number of 300s epochs in out file = 3456

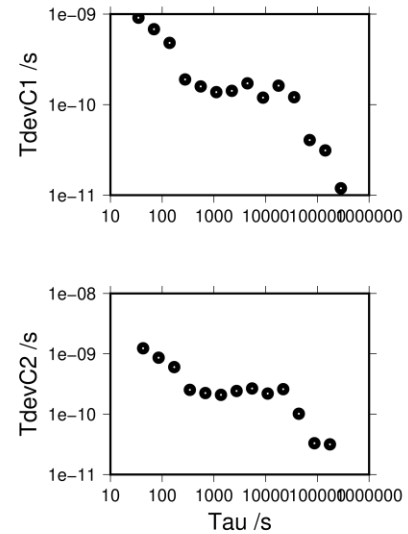
Code	#pts	median/ns	ave/ns	rms/ns
C1	29823	-38.694	-38.709	0.923
C2	24219	-42.612	-42.655	1.233
P1	29771	-39.160	-39.160	0.962
P2	29771	-43.181	-43.244	1.232
E1	24219	-38.917	-38.937	0.755
E5	24115	-34.324	-34.343	1.121

Ionofree combinations

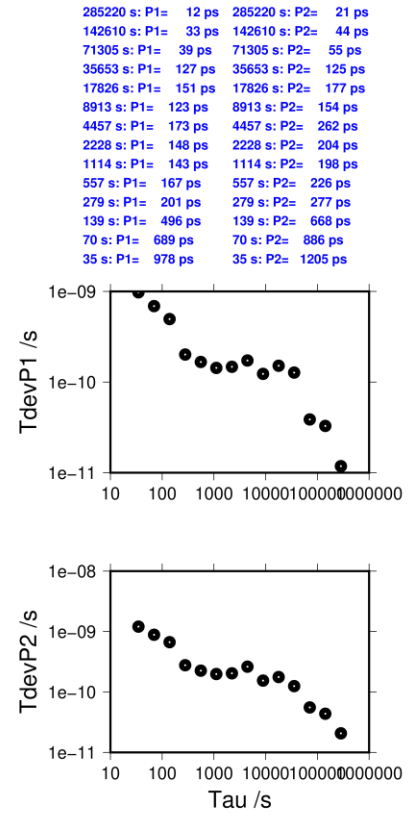
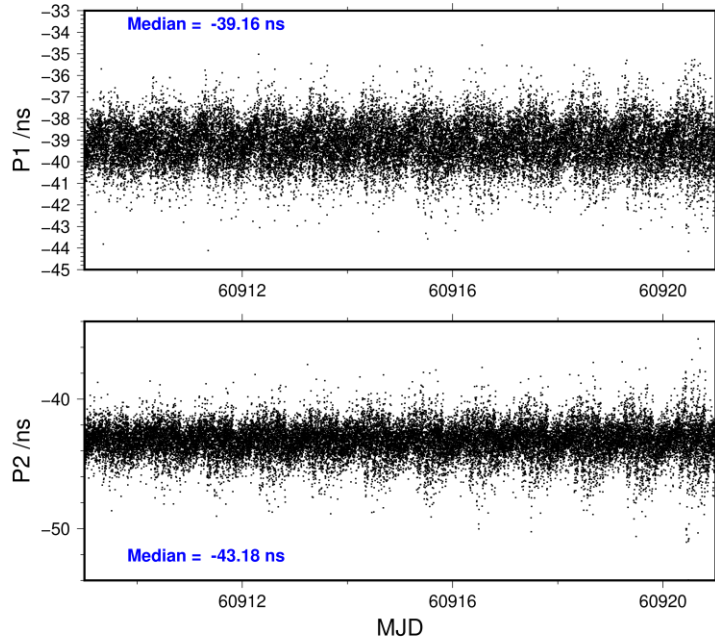
Code	#pts	median/ns	ave/ns	rms/ns
P3	3452	-32.861	-32.839	0.685
E3	3440	-44.719	-44.729	0.563



284723 s: C1= 12 ps
 142361 s: C1= 31 ps 175304 s: C2= 32 ps
 71181 s: C1= 41 ps 87652 s: C2= 33 ps
 35590 s: C1= 121 ps 43826 s: C2= 102 ps
 17795 s: C1= 162 ps 21913 s: C2= 260 ps
 8898 s: C1= 119 ps 10956 s: C2= 220 ps
 4449 s: C1= 172 ps 5478 s: C2= 267 ps
 2224 s: C1= 142 ps 2739 s: C2= 242 ps
 1112 s: C1= 138 ps 1370 s: C2= 209 ps
 556 s: C1= 159 ps 685 s: C2= 224 ps
 278 s: C1= 190 ps 342 s: C2= 253 ps
 139 s: C1= 480 ps 171 s: C2= 603 ps
 70 s: C1= 682 ps 86 s: C2= 863 ps
 35 s: C1= 912 ps 43 s: C2= 1234 ps

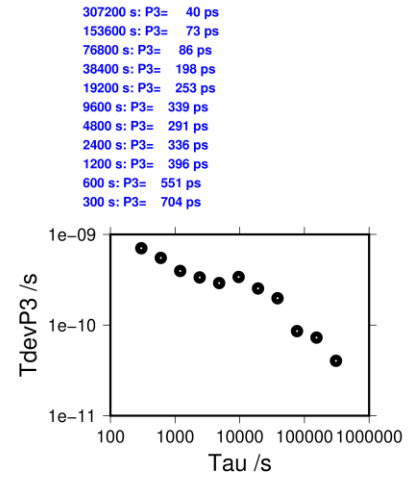
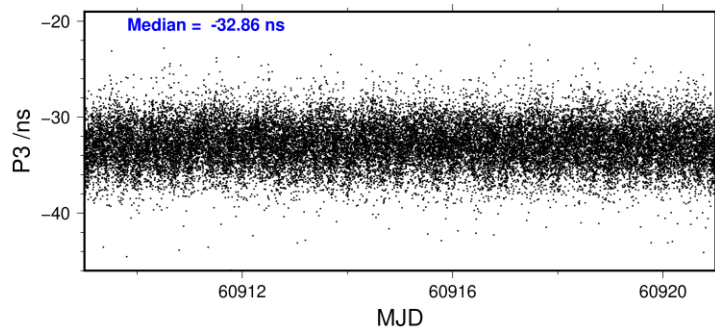


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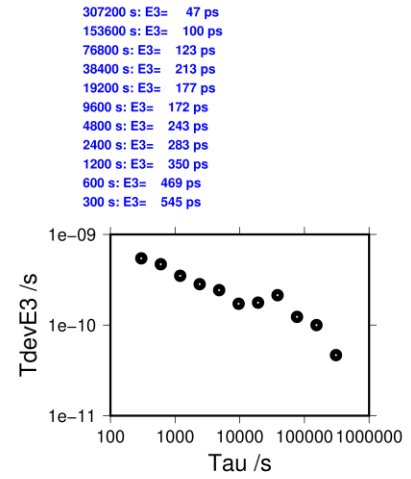
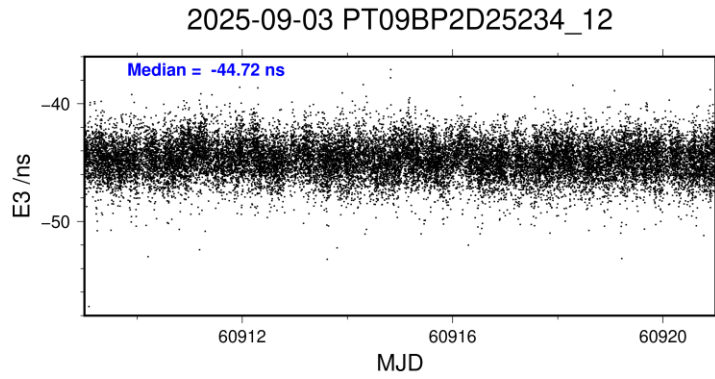
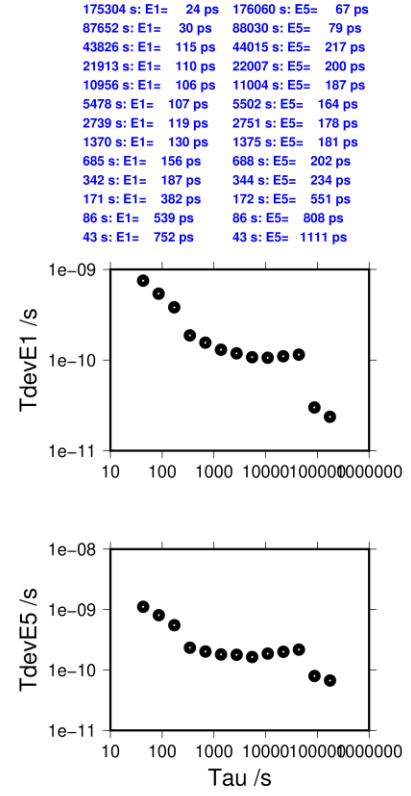
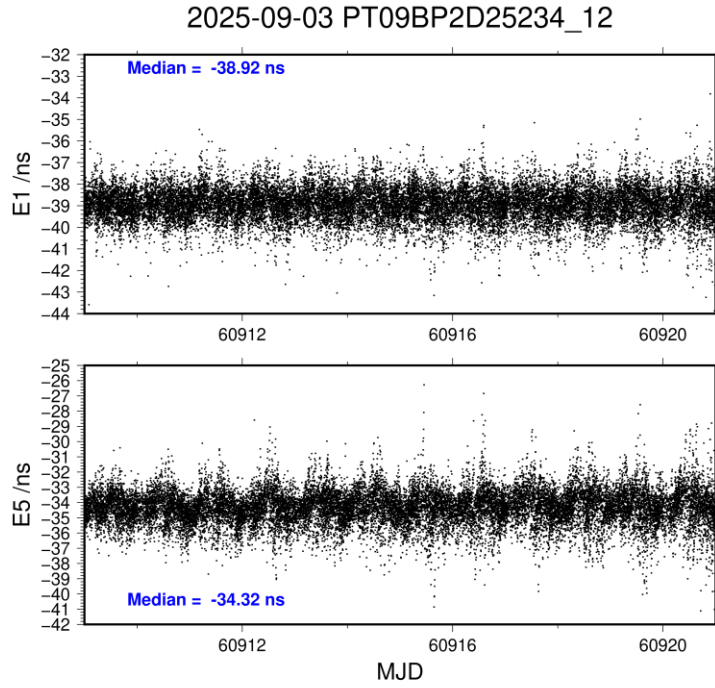


285220 s: P1= 12 ps 285220 s: P2= 21 ps
 142610 s: P1= 33 ps 142610 s: P2= 44 ps
 71305 s: P1= 39 ps 71305 s: P2= 55 ps
 35653 s: P1= 127 ps 35653 s: P2= 125 ps
 17826 s: P1= 151 ps 17826 s: P2= 177 ps
 8913 s: P1= 123 ps 8913 s: P2= 154 ps
 4457 s: P1= 173 ps 4457 s: P2= 262 ps
 2228 s: P1= 148 ps 2228 s: P2= 204 ps
 1114 s: P1= 143 ps 1114 s: P2= 198 ps
 557 s: P1= 167 ps 557 s: P2= 226 ps
 279 s: P1= 201 ps 279 s: P2= 277 ps
 139 s: P1= 496 ps 139 s: P2= 668 ps
 70 s: P1= 689 ps 70 s: P2= 886 ps
 35 s: P1= 978 ps 35 s: P2= 1205 ps

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307200 s: P3= 40 ps
 153600 s: P3= 73 ps
 76800 s: P3= 86 ps
 38400 s: P3= 198 ps
 19200 s: P3= 253 ps
 9600 s: P3= 339 ps
 4800 s: P3= 291 ps
 2400 s: P3= 336 ps
 1200 s: P3= 396 ps
 600 s: P3= 551 ps
 300 s: P3= 704 ps



PT09-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 302221
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 42972 high elev obs : -16.083 -15.526
 Iteration 0: Obs used = 521626; Huge residuals = 90; Large residuals = 830
 Iteration 1: Obs used = 521633; Huge residuals = 0; Large residuals = 733
 Computed code bias (P1/P2)/m = -16.287 -15.662
 Computed baseline (X,Y,Z)/m = 5.740 -6.040 -4.245
 RMS of residuals /m = 0.440

Number of phase differences to fit baseline
 L1/L2 = 300401
 L5 = 174646
 A priori baseline (X,Y,Z)/m = 5.740 -6.040 -4.245
 34556 clock jitters computed out of 34556 intervals
 AVE jitter /ps = -0.1 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 = 0.154 0.020 0.245
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.156 0.024 0.252
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.156 0.024 0.246
 RMS of residuals L5 /m = 0.002

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 5.895 -6.019 -3.997
 34556 clock jitters computed out of 34556 intervals
 AVE jitter /ps = 0.1 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 = 0.005 -0.005 0.004
 RMS of residuals L1 /m = 0.002
 Computed baseline L2 (X,Y,Z)/m = 0.007 -0.001 0.010
 RMS of residuals L2 /m = 0.003
 Computed baseline L5 (X,Y,Z)/m = 0.005 0.000 0.008
 RMS of residuals L5 /m = 0.002

Final baseline L1 (X,Y,Z)/m = 5.901 -6.024 -3.992
 Final baseline L2 (X,Y,Z)/m = 5.903 -6.019 -3.986
 Final baseline L5 (X,Y,Z)/m = 5.901 -6.018 -3.989

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

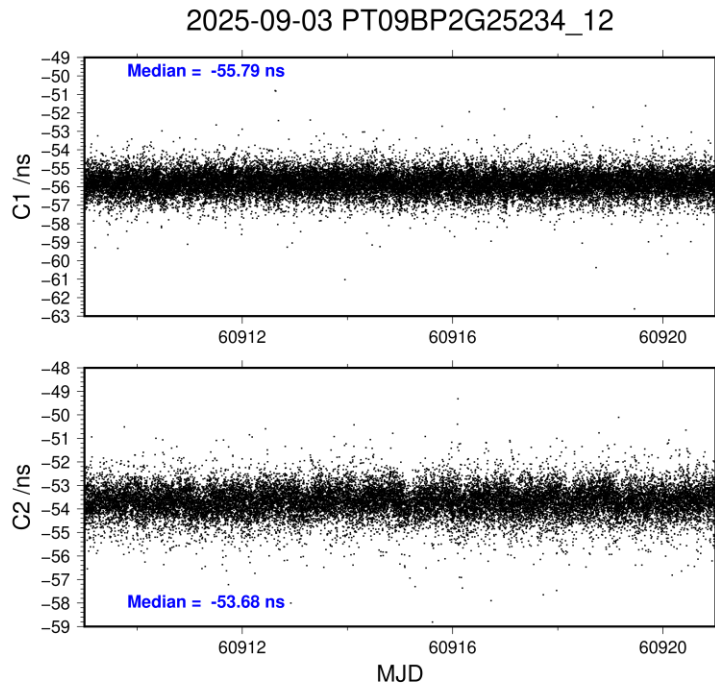
Code	#pts	ave/ns	rms/ns
C1	303256	-55.798	1.267
C2	244917	-53.685	1.396
P1	301996	-54.900	1.315
P2	301995	-52.814	1.482
E1	246131	-56.272	1.016
E5	245358	-46.581	0.921

Number of 300s epochs in out file = 3456

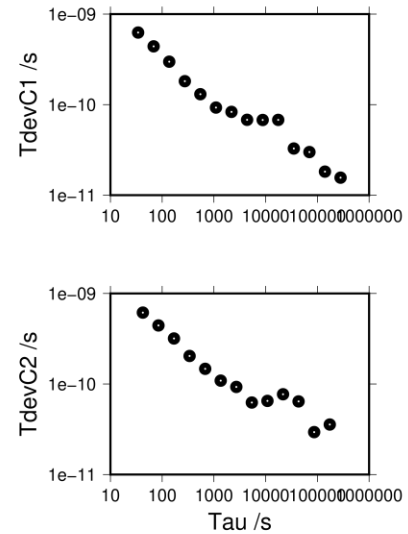
Code	#pts	median/ns	ave/ns	rms/ns
C1	30270	-55.789	-55.799	0.612
C2	24476	-53.678	-53.689	0.626
P1	30131	-54.868	-54.902	0.729
P2	30130	-52.801	-52.811	0.805
E1	24588	-56.292	-56.280	0.521
E5	24509	-46.561	-46.583	0.586

Ionofree combinations

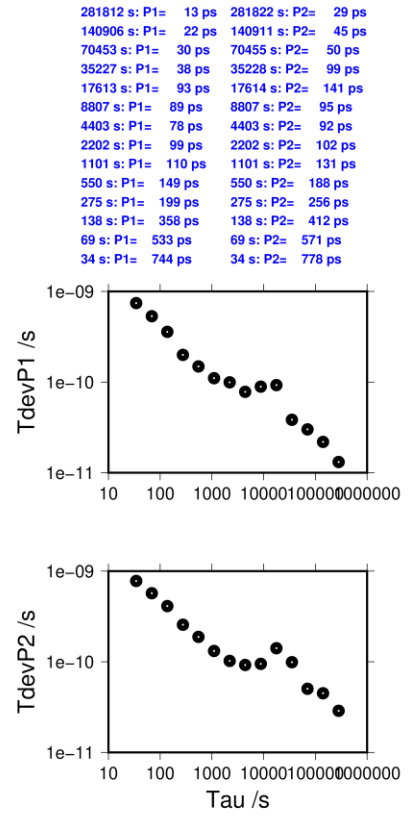
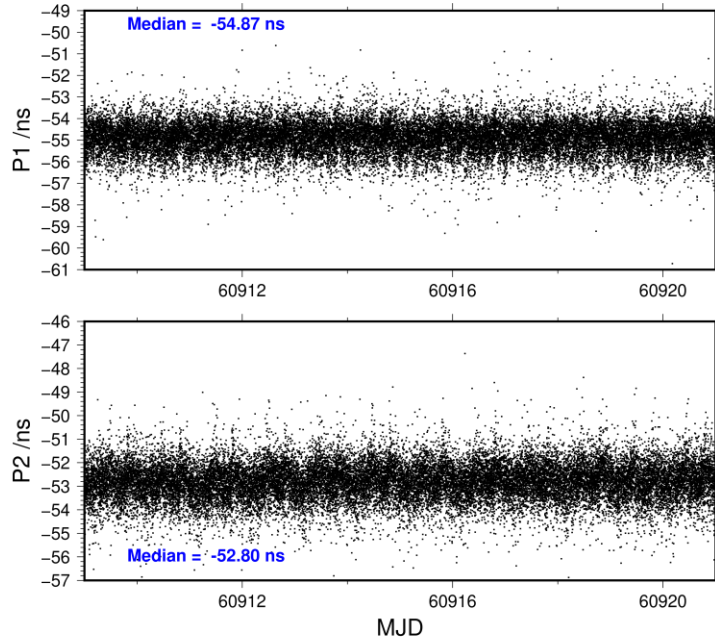
Code	#pts	median/ns	ave/ns	rms/ns
P3	3456	-58.129	-58.136	0.615
E3	3445	-68.570	-68.572	0.459



280518 s: C1= 16 ps
 140259 s: C1= 18 ps 173463 s: C2= 36 ps
 70130 s: C1= 30 ps 86731 s: C2= 29 ps
 35065 s: C1= 33 ps 43366 s: C2= 64 ps
 17532 s: C1= 68 ps 21683 s: C2= 77 ps
 8766 s: C1= 68 ps 10841 s: C2= 65 ps
 4383 s: C1= 68 ps 5421 s: C2= 62 ps
 2192 s: C1= 83 ps 2710 s: C2= 93 ps
 1096 s: C1= 93 ps 1355 s: C2= 109 ps
 548 s: C1= 130 ps 678 s: C2= 147 ps
 274 s: C1= 182 ps 339 s: C2= 204 ps
 137 s: C1= 298 ps 169 s: C2= 318 ps
 68 s: C1= 440 ps 85 s: C2= 444 ps
 34 s: C1= 626 ps 42 s: C2= 615 ps

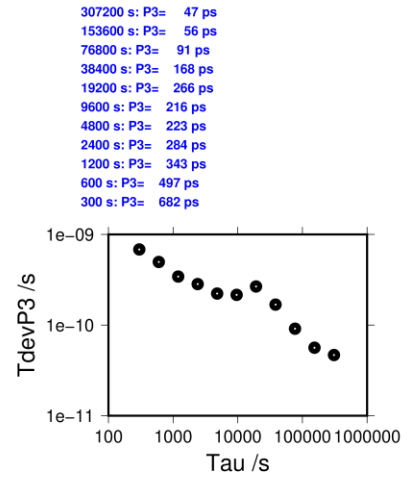
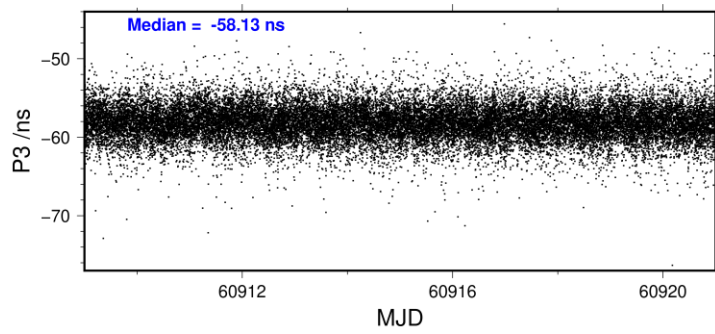


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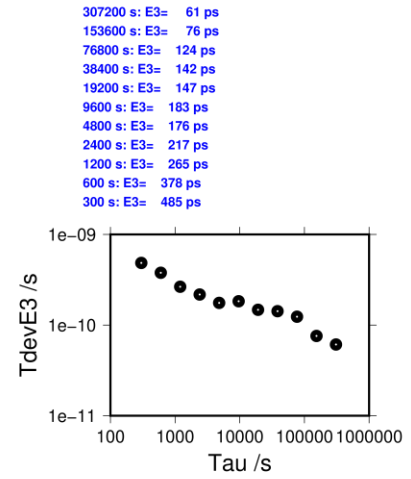
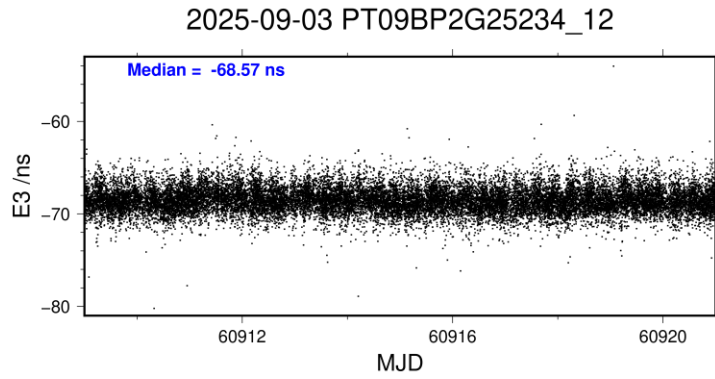
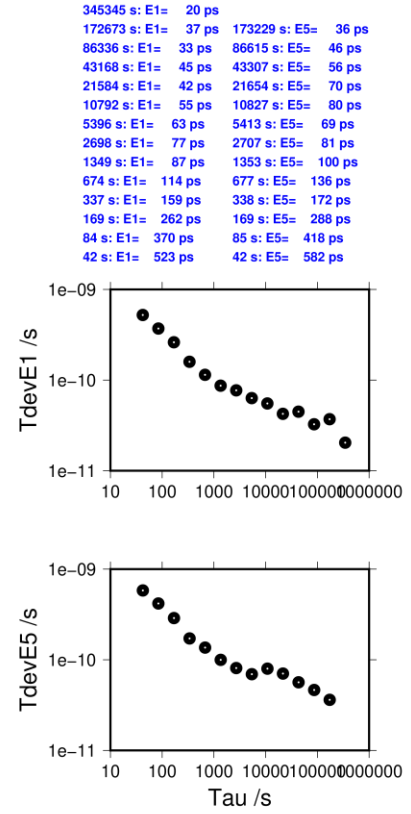
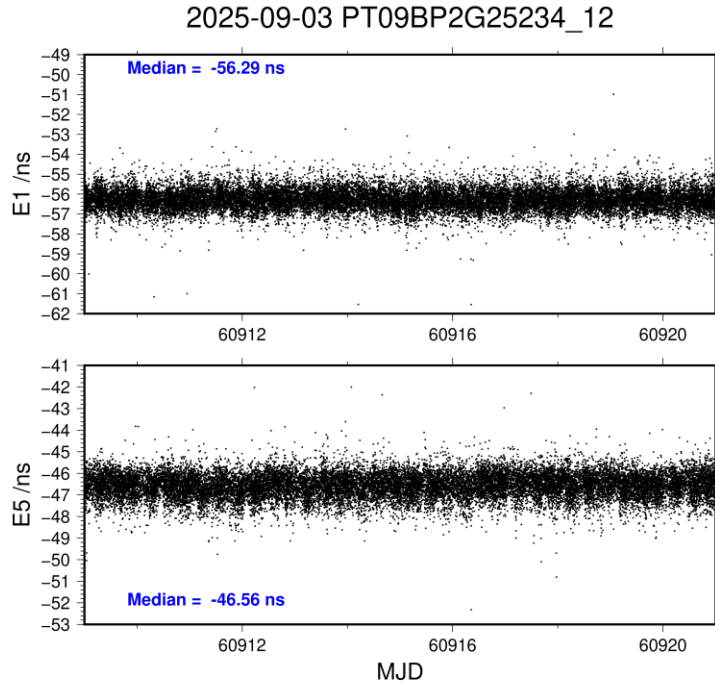


281812 s: P1=	13 ps	281822 s: P2=	29 ps
140906 s: P1=	22 ps	140911 s: P2=	45 ps
70453 s: P1=	30 ps	70455 s: P2=	50 ps
35227 s: P1=	38 ps	35228 s: P2=	99 ps
17613 s: P1=	93 ps	17614 s: P2=	141 ps
8807 s: P1=	89 ps	8807 s: P2=	95 ps
4403 s: P1=	78 ps	4403 s: P2=	92 ps
2202 s: P1=	99 ps	2202 s: P2=	102 ps
1101 s: P1=	110 ps	1101 s: P2=	131 ps
550 s: P1=	149 ps	550 s: P2=	188 ps
275 s: P1=	199 ps	275 s: P2=	256 ps
138 s: P1=	358 ps	138 s: P2=	412 ps
69 s: P1=	533 ps	69 s: P2=	571 ps
34 s: P1=	744 ps	34 s: P2=	778 ps

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307200 s: P3=	47 ps
153600 s: P3=	56 ps
76800 s: P3=	91 ps
38400 s: P3=	168 ps
19200 s: P3=	266 ps
9600 s: P3=	216 ps
4800 s: P3=	223 ps
2400 s: P3=	284 ps
1200 s: P3=	343 ps
600 s: P3=	497 ps
300 s: P3=	682 ps



PT10-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 293692
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 43078 high elev obs : 40.388 37.439
 Iteration 0: Obs used = 503584; Huge residuals = 54; Large residuals = 1614
 Iteration 1: Obs used = 503577; Huge residuals = 0; Large residuals = 1567
 Computed code bias (P1/P2)/m = 40.130 37.166
 Computed baseline (X,Y,Z)/m = 5.427 -5.574 -3.844
 RMS of residuals /m = 0.449

Number of phase differences to fit baseline
 L1/L2 = 290656
 L5 = 176537
 A priori baseline (X,Y,Z)/m = 5.427 -5.574 -3.844
 34472 clock jitters computed out of 34472 intervals
 AVE jitter /ps = -0.2 RMS jitter /ps = 4.7

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 = 0.095 -0.035 0.169
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = 0.099 -0.035 0.170
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.097 -0.032 0.165
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 5.524 -5.609 -3.674
 34472 clock jitters computed out of 34472 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 = 0.004 -0.012 0.005
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = 0.007 -0.011 0.005
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.003 -0.009 0.002
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = 5.528 -5.621 -3.669
 Final baseline L2 (X,Y,Z)/m = 5.532 -5.620 -3.669
 Final baseline L5 (X,Y,Z)/m = 5.528 -5.617 -3.671

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 814466

Global average of individual differences

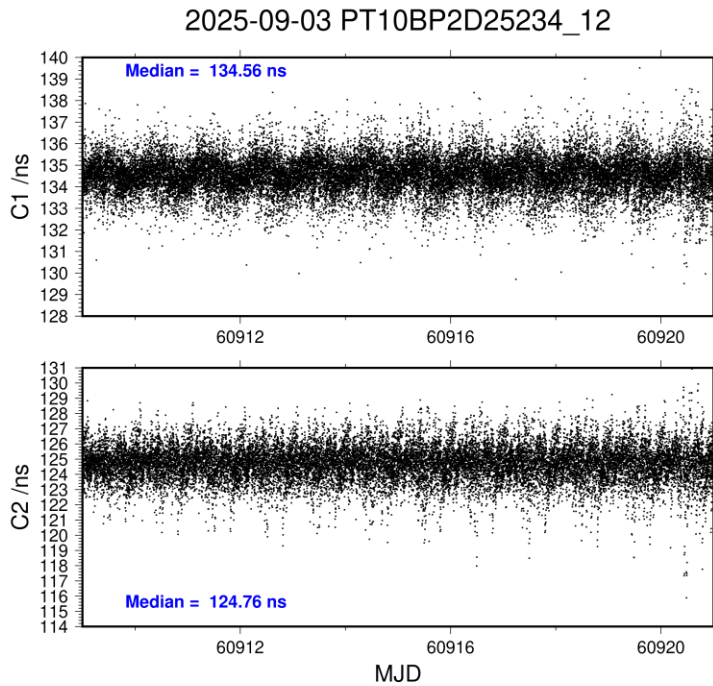
Code	#pts	ave/ns	rms/ns
C1	294825	134.537	1.139
C2	237816	124.708	1.438
P1	293594	133.472	1.324
P2	293586	123.568	1.604
E1	266220	136.036	0.964
E5	266219	120.644	1.215

Number of 300s epochs in out file = 3452

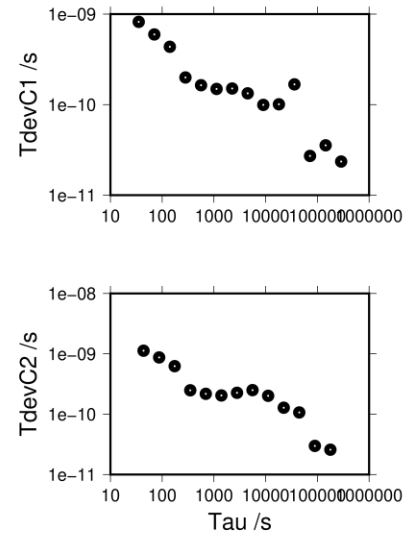
Code	#pts	median/ns	ave/ns	rms/ns
C1	29424	134.564	134.552	0.835
C2	23745	124.757	124.718	1.182
P1	29302	133.502	133.488	0.903
P2	29302	123.645	123.581	1.234
E1	26584	136.054	136.046	0.730
E5	26584	120.631	120.648	1.086

Ionofree combinations

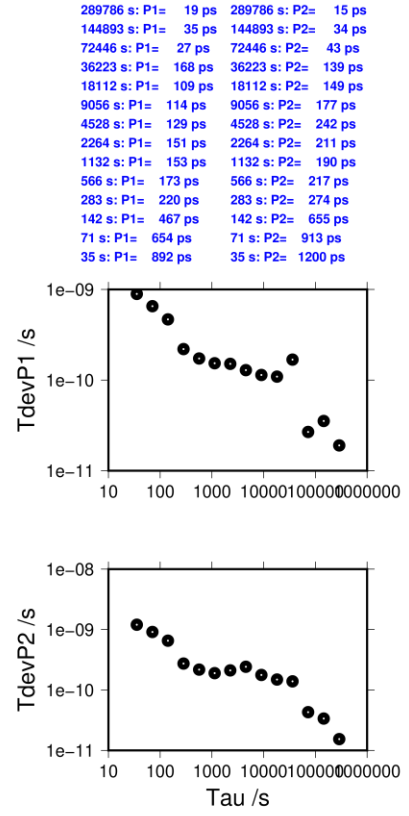
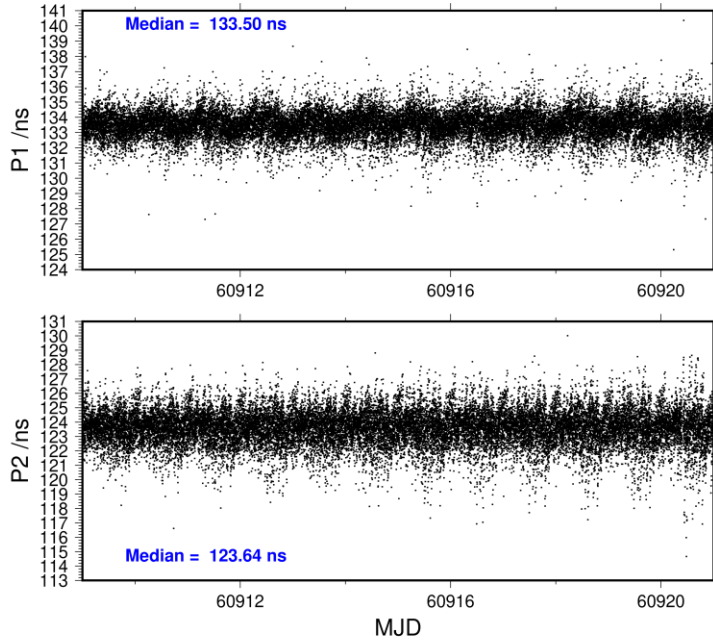
Code	#pts	median/ns	ave/ns	rms/ns
P3	3446	148.845	148.867	0.691
E3	3446	155.473	155.462	0.550



288584 s: C1= 24 ps
 144292 s: C1= 36 ps 178803 s: C2= 26 ps
 72146 s: C1= 27 ps 89402 s: C2= 30 ps
 36073 s: C1= 167 ps 44701 s: C2= 107 ps
 18036 s: C1= 101 ps 22350 s: C2= 128 ps
 9018 s: C1= 99 ps 11175 s: C2= 201 ps
 4509 s: C1= 133 ps 5588 s: C2= 251 ps
 2255 s: C1= 151 ps 2794 s: C2= 226 ps
 1127 s: C1= 149 ps 1397 s: C2= 204 ps
 564 s: C1= 164 ps 698 s: C2= 217 ps
 282 s: C1= 200 ps 349 s: C2= 249 ps
 141 s: C1= 435 ps 175 s: C2= 625 ps
 70 s: C1= 596 ps 87 s: C2= 870 ps
 35 s: C1= 821 ps 44 s: C2= 1125 ps

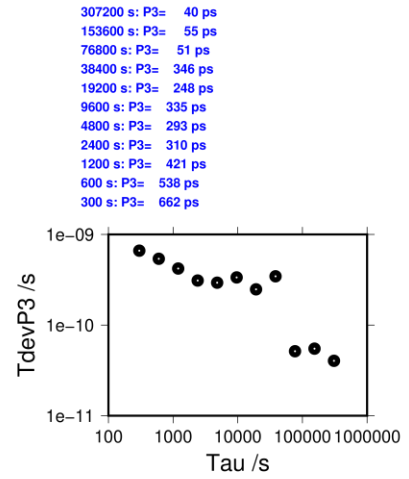
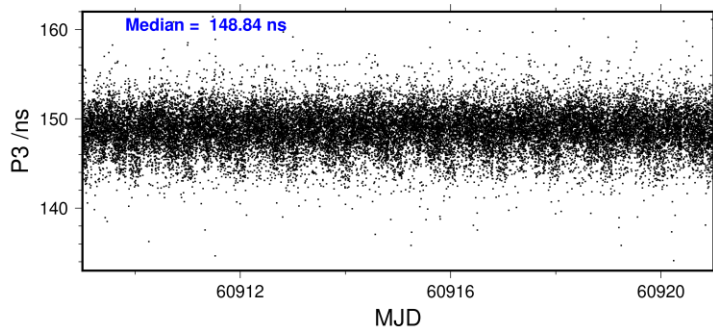


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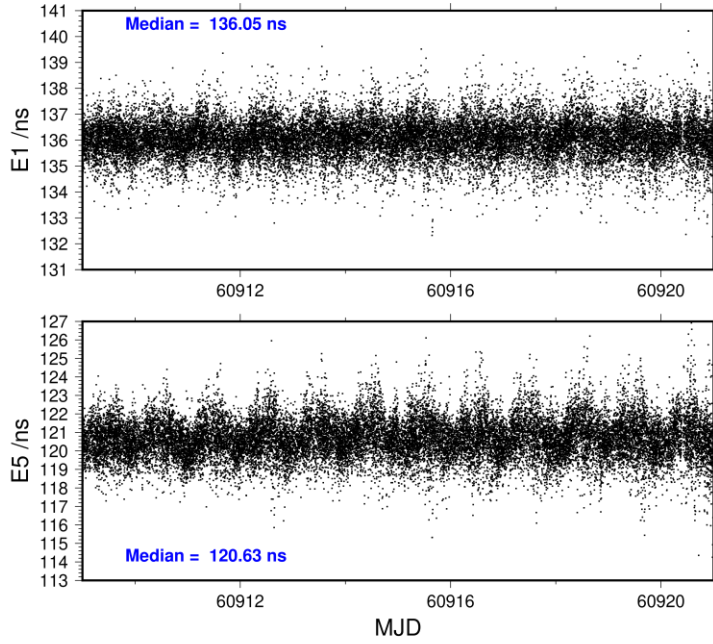
289786 s: P1= 19 ps 289786 s: P2= 15 ps
 144893 s: P1= 35 ps 144893 s: P2= 34 ps
 72446 s: P1= 27 ps 72446 s: P2= 43 ps
 36223 s: P1= 168 ps 36223 s: P2= 139 ps
 18112 s: P1= 109 ps 18112 s: P2= 149 ps
 9056 s: P1= 114 ps 9056 s: P2= 177 ps
 4528 s: P1= 129 ps 4528 s: P2= 242 ps
 2264 s: P1= 151 ps 2264 s: P2= 211 ps
 1132 s: P1= 153 ps 1132 s: P2= 190 ps
 566 s: P1= 173 ps 566 s: P2= 217 ps
 283 s: P1= 220 ps 283 s: P2= 274 ps
 142 s: P1= 467 ps 142 s: P2= 655 ps
 71 s: P1= 654 ps 71 s: P2= 913 ps
 35 s: P1= 892 ps 35 s: P2= 1200 ps

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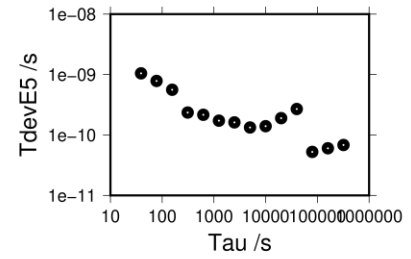
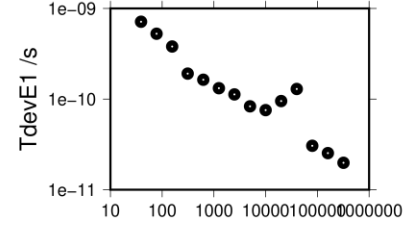


307200 s: P3= 40 ps
 153600 s: P3= 55 ps
 76800 s: P3= 51 ps
 38400 s: P3= 346 ps
 19200 s: P3= 248 ps
 9600 s: P3= 335 ps
 4800 s: P3= 293 ps
 2400 s: P3= 310 ps
 1200 s: P3= 421 ps
 600 s: P3= 538 ps
 300 s: P3= 662 ps

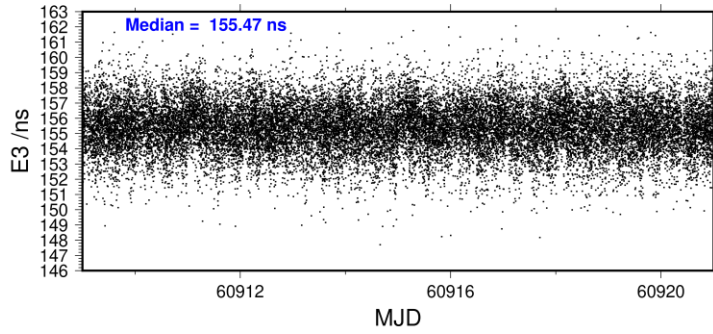
2025-09-03 PT10BP2D25234_12



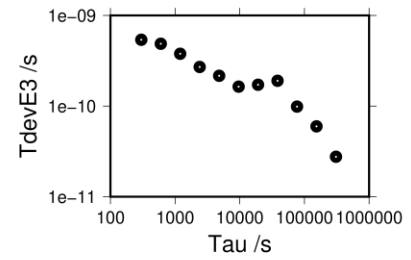
319415 s: E1= 20 ps	319415 s: E5= 68 ps
159707 s: E1= 25 ps	159707 s: E5= 60 ps
79854 s: E1= 31 ps	79854 s: E5= 52 ps
39927 s: E1= 129 ps	39927 s: E5= 269 ps
19963 s: E1= 95 ps	19963 s: E5= 190 ps
9982 s: E1= 76 ps	9982 s: E5= 140 ps
4991 s: E1= 83 ps	4991 s: E5= 133 ps
2495 s: E1= 112 ps	2495 s: E5= 162 ps
1248 s: E1= 132 ps	1248 s: E5= 173 ps
624 s: E1= 163 ps	624 s: E5= 216 ps
312 s: E1= 191 ps	312 s: E5= 235 ps
156 s: E1= 380 ps	156 s: E5= 560 ps
78 s: E1= 525 ps	78 s: E5= 784 ps
39 s: E1= 714 ps	39 s: E5= 1047 ps



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307200 s: E3= 28 ps
153600 s: E3= 60 ps
76800 s: E3= 99 ps
38400 s: E3= 190 ps
19200 s: E3= 172 ps
9600 s: E3= 164 ps
4800 s: E3= 216 ps
2400 s: E3= 270 ps
1200 s: E3= 378 ps
600 s: E3= 487 ps
300 s: E3= 538 ps



PT10-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 293337
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 42921 high elev obs : 35.754 34.631
 Iteration 0: Obs used = 502957; Huge residuals = 72; Large residuals = 1833
 Iteration 1: Obs used = 502941; Huge residuals = 0; Large residuals = 1777
 Computed code bias (P1/P2)/m = 35.477 34.368
 Computed baseline (X,Y,Z)/m = 6.367 -6.511 -4.459
 RMS of residuals /m = 0.464

Number of phase differences to fit baseline
 L1/L2 = 290558
 L5 = 176001
 A priori baseline (X,Y,Z)/m = 6.367 -6.511 -4.459
 34503 clock jitters computed out of 34503 intervals
 AVE jitter /ps = -0.1 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 = 0.177 0.017 0.223
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.190 0.017 0.235
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.193 0.022 0.232
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 6.550 -6.494 -4.230
 34503 clock jitters computed out of 34503 intervals
 AVE jitter /ps = 0.0 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 = -0.000 -0.002 0.001
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.013 -0.002 0.013
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.014 0.003 0.011
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 6.549 -6.496 -4.229
 Final baseline L2 (X,Y,Z)/m = 6.563 -6.496 -4.217
 Final baseline L5 (X,Y,Z)/m = 6.564 -6.491 -4.219

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 804904

Global average of individual differences

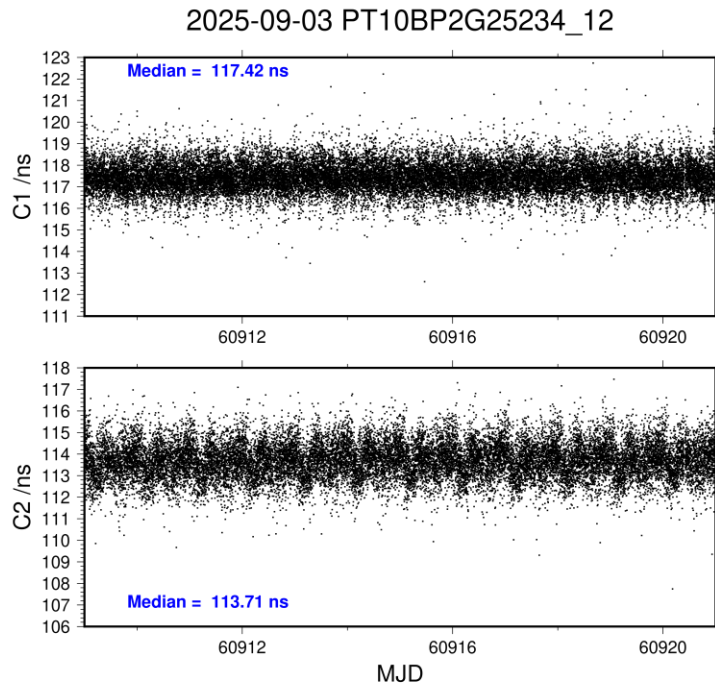
Code	#pts	ave/ns	rms/ns
C1	294657	117.435	1.242
C2	237132	113.704	1.379
P1	293235	117.725	1.379
P2	293231	113.998	1.636
E1	266506	118.663	0.959
E5	266628	108.380	0.946

Number of 300s epochs in out file = 3452

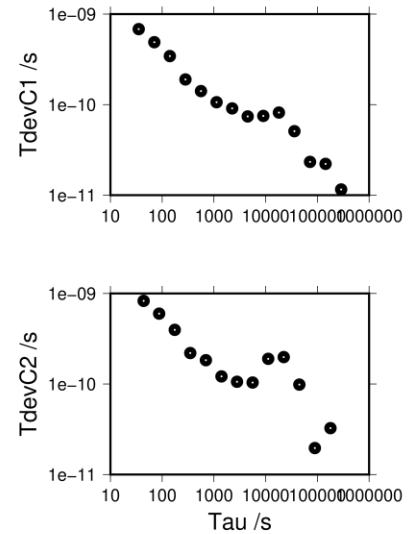
Code	#pts	median/ns	ave/ns	rms/ns
C1	29439	117.419	117.444	0.676
C2	23689	113.706	113.703	0.842
P1	29288	117.755	117.734	0.710
P2	29288	114.017	113.993	0.926
E1	26633	118.662	118.666	0.545
E5	26642	108.378	108.380	0.673

Ionofree combinations

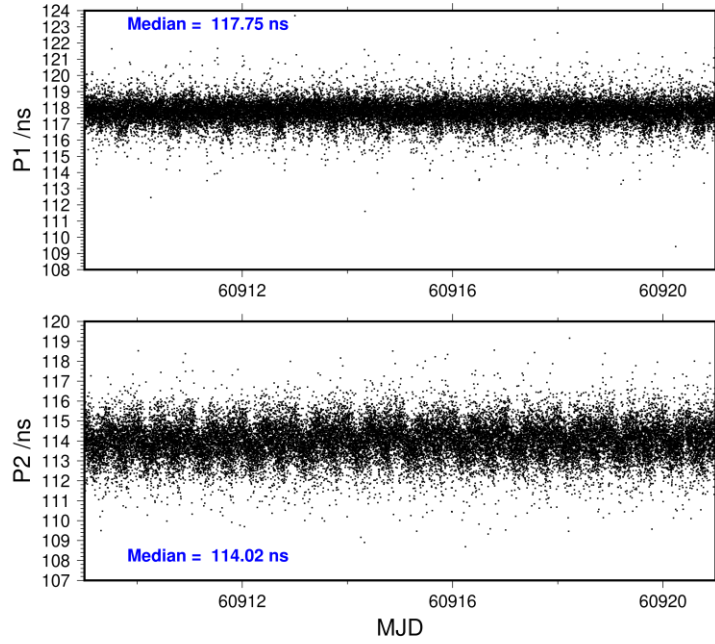
Code	#pts	median/ns	ave/ns	rms/ns
P3	3450	123.475	123.486	0.591
E3	3450	131.620	131.632	0.449



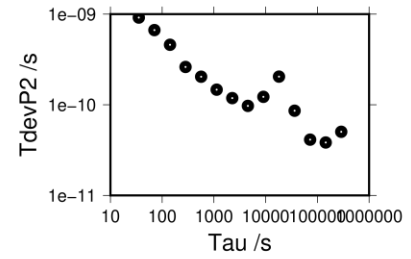
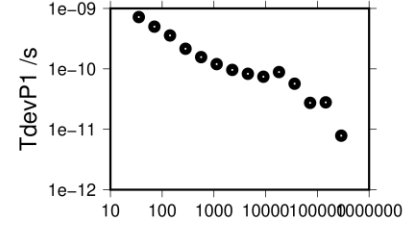
288437 s: C1= 12 ps
 144218 s: C1= 22 ps 179226 s: C2= 33 ps
 72109 s: C1= 23 ps 89613 s: C2= 20 ps
 36055 s: C1= 51 ps 44806 s: C2= 98 ps
 18027 s: C1= 82 ps 22403 s: C2= 198 ps
 9014 s: C1= 75 ps 11202 s: C2= 190 ps
 4507 s: C1= 74 ps 5601 s: C2= 104 ps
 2253 s: C1= 91 ps 2800 s: C2= 106 ps
 1127 s: C1= 106 ps 1400 s: C2= 121 ps
 563 s: C1= 141 ps 700 s: C2= 183 ps
 282 s: C1= 190 ps 350 s: C2= 220 ps
 141 s: C1= 344 ps 175 s: C2= 396 ps
 70 s: C1= 489 ps 88 s: C2= 598 ps
 35 s: C1= 683 ps 44 s: C2= 828 ps



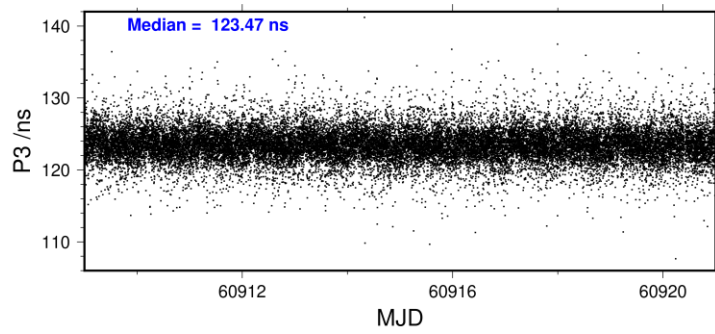
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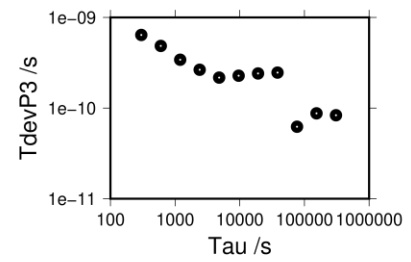
289924 s: P1=	8 ps	289924 s: P2=	50 ps
144962 s: P1=	28 ps	144962 s: P2=	38 ps
72481 s: P1=	27 ps	72481 s: P2=	41 ps
36241 s: P1=	57 ps	36241 s: P2=	86 ps
18120 s: P1=	88 ps	18120 s: P2=	204 ps
9060 s: P1=	74 ps	9060 s: P2=	122 ps
4530 s: P1=	83 ps	4530 s: P2=	97 ps
2265 s: P1=	96 ps	2265 s: P2=	118 ps
1133 s: P1=	120 ps	1133 s: P2=	147 ps
566 s: P1=	156 ps	566 s: P2=	204 ps
283 s: P1=	215 ps	283 s: P2=	261 ps
142 s: P1=	358 ps	142 s: P2=	459 ps
71 s: P1=	500 ps	71 s: P2=	667 ps
35 s: P1=	719 ps	35 s: P2=	915 ps



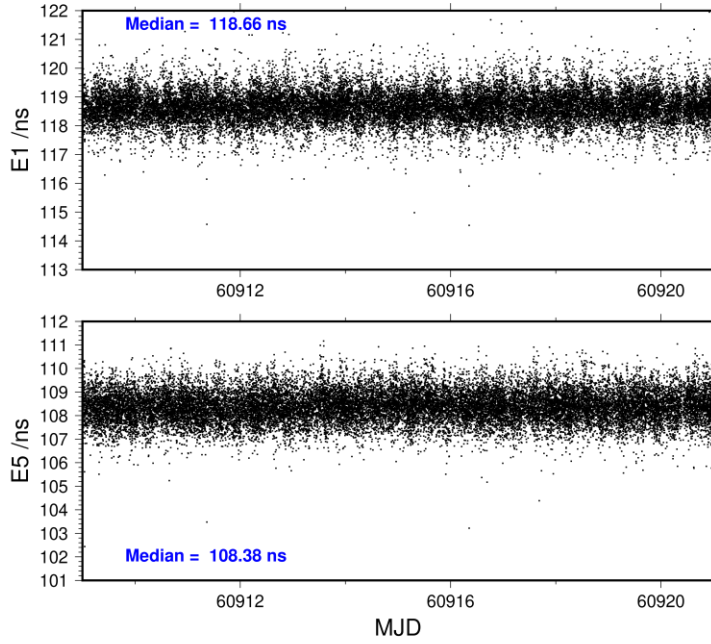
2025-09-03 PT10BP2G25234_12



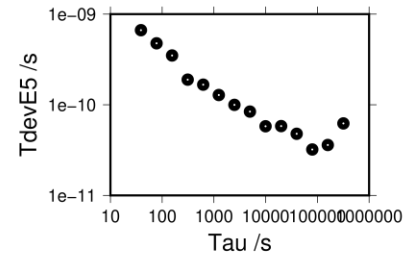
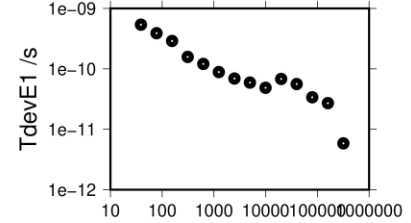
307200 s: P3=	83 ps
153600 s: P3=	87 ps
76800 s: P3=	62 ps
38400 s: P3=	246 ps
19200 s: P3=	241 ps
9600 s: P3=	228 ps
4800 s: P3=	217 ps
2400 s: P3=	265 ps
1200 s: P3=	341 ps
600 s: P3=	485 ps
300 s: P3=	640 ps



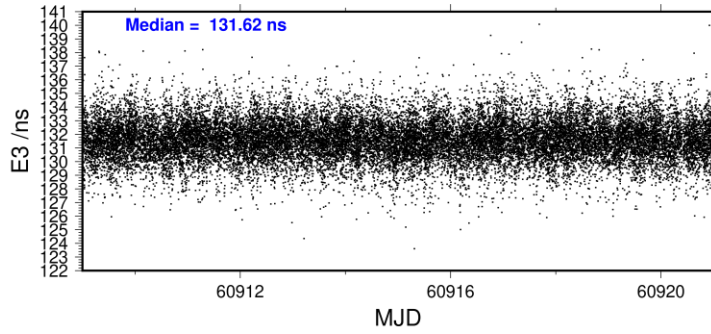
2025-09-03 PT10BP2G25234_12



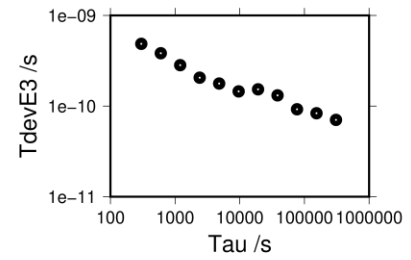
318827 s: E1=	6 ps	318720 s: E5=	62 ps
159414 s: E1=	27 ps	159360 s: E5=	36 ps
79707 s: E1=	34 ps	79680 s: E5=	32 ps
39853 s: E1=	56 ps	39840 s: E5=	48 ps
19927 s: E1=	68 ps	19920 s: E5=	58 ps
9963 s: E1=	49 ps	9960 s: E5=	58 ps
4982 s: E1=	59 ps	4980 s: E5=	84 ps
2491 s: E1=	69 ps	2490 s: E5=	100 ps
1245 s: E1=	89 ps	1245 s: E5=	128 ps
623 s: E1=	121 ps	622 s: E5=	167 ps
311 s: E1=	158 ps	311 s: E5=	189 ps
156 s: E1=	290 ps	156 s: E5=	350 ps
78 s: E1=	389 ps	78 s: E5=	477 ps
39 s: E1=	540 ps	39 s: E5=	665 ps



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307200 s: E3=	70 ps
153600 s: E3=	83 ps
76800 s: E3=	92 ps
38400 s: E3=	131 ps
19200 s: E3=	153 ps
9600 s: E3=	145 ps
4800 s: E3=	177 ps
2400 s: E3=	206 ps
1200 s: E3=	283 ps
600 s: E3=	383 ps
300 s: E3=	486 ps



PTBB-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 299078
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 42943 high elev obs : 21.141 19.360
 Iteration 0: Obs used = 515322; Huge residuals = 1; Large residuals = 906
 Iteration 1: Obs used = 515322; Huge residuals = 0; Large residuals = 905
 Computed code bias (P1/P2)/m = 21.030 19.250
 Computed baseline (X,Y,Z)/m = 2.249 -2.863 -1.693
 RMS of residuals /m = 0.474

Number of phase differences to fit baseline
 L1/L2 = 297165
 L5 = 180797
 A priori baseline (X,Y,Z)/m = 2.249 -2.863 -1.693
 34525 clock jitters computed out of 34525 intervals
 AVE jitter /ps = -0.1 RMS jitter /ps = 4.2

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 = 0.020 -0.012 0.102
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.012 -0.007 0.096
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.010 -0.008 0.097
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.265 -2.872 -1.594
 34525 clock jitters computed out of 34525 intervals
 AVE jitter /ps = 0.0 RMS jitter /ps = 0.2

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 = 0.006 -0.006 0.006
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.002 -0.001 -0.000
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.005 -0.002 0.001
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 2.271 -2.878 -1.588
 Final baseline L2 (X,Y,Z)/m = 2.263 -2.873 -1.594
 Final baseline L5 (X,Y,Z)/m = 2.260 -2.874 -1.592

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	299664	71.035	1.299
C2	251069	65.567	1.528
P1	298990	70.006	1.340
P2	298985	64.085	1.720
E1	274148	71.251	1.104
E5	274274	66.842	1.206
BC	146417	71.898	1.324
B5	146762	67.302	1.345

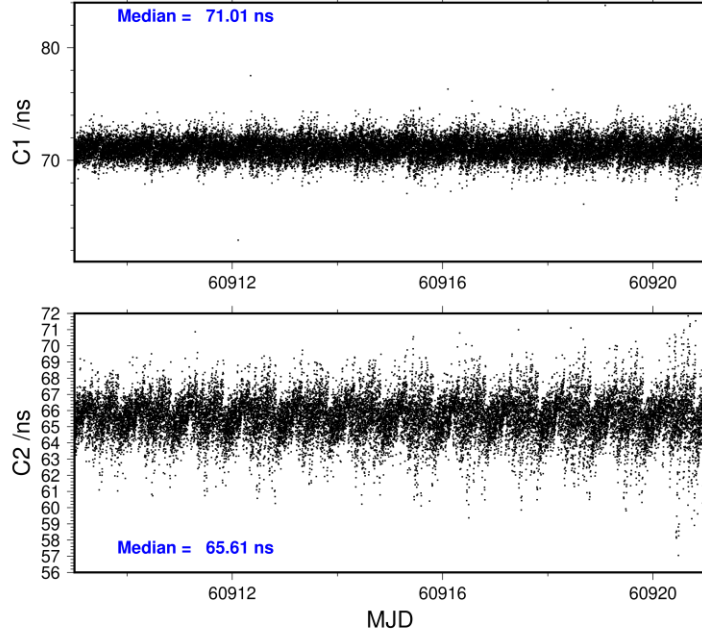
Number of 300s epochs in out file = 3456

Code	#pts	median/ns	ave/ns	rms/ns
C1	29884	71.014	71.029	0.893
C2	25046	65.610	65.572	1.240
P1	29828	69.987	70.001	0.952
P2	29828	64.179	64.103	1.331
E1	27354	71.261	71.258	0.769
E5	27365	66.819	66.846	1.086
BC	14615	71.937	71.911	0.961
B5	14651	67.291	67.307	1.231

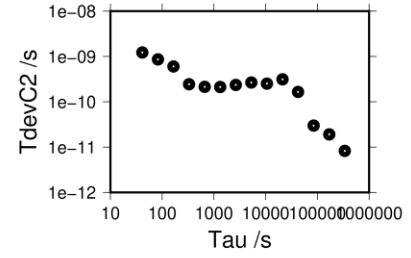
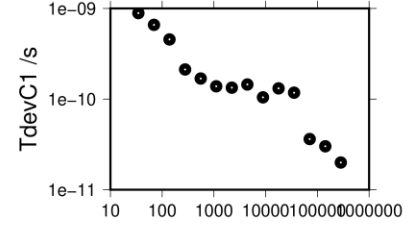
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	3452	79.110	79.125	0.792
E3	3452	76.815	76.818	0.532
B3	2877	77.639	77.668	0.790

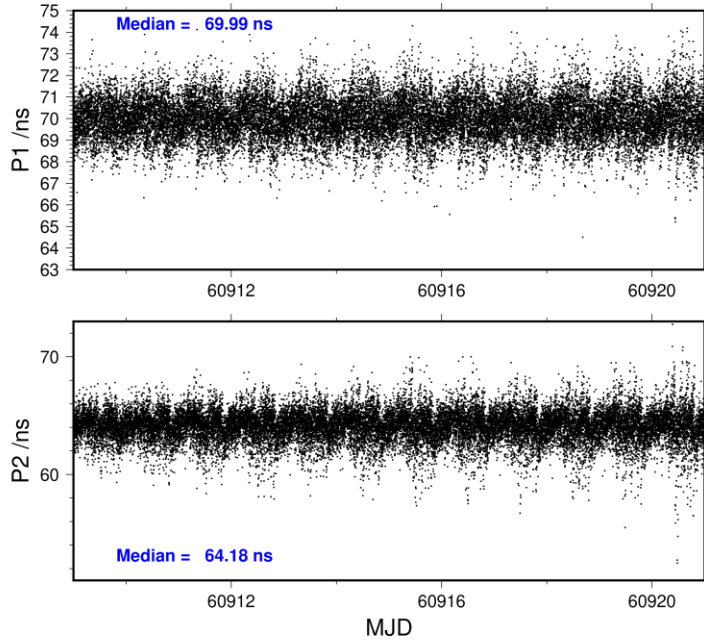
2025-09-03 PTBBBP2D25234_12



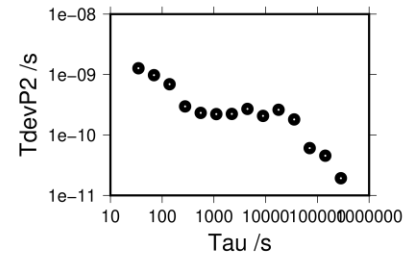
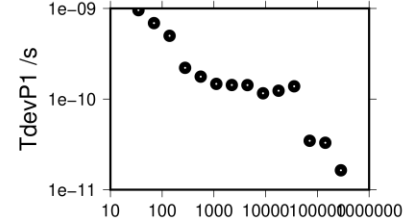
284142 s: C1= 20 ps	339030 s: C2= 8 ps
142071 s: C1= 30 ps	169515 s: C2= 19 ps
71035 s: C1= 36 ps	84758 s: C2= 30 ps
35518 s: C1= 118 ps	42379 s: C2= 165 ps
17759 s: C1= 131 ps	21189 s: C2= 313 ps
8879 s: C1= 104 ps	10595 s: C2= 251 ps
4440 s: C1= 145 ps	5297 s: C2= 265 ps
2220 s: C1= 133 ps	2649 s: C2= 235 ps
1110 s: C1= 138 ps	1324 s: C2= 212 ps
555 s: C1= 169 ps	662 s: C2= 214 ps
277 s: C1= 212 ps	331 s: C2= 244 ps
139 s: C1= 455 ps	166 s: C2= 601 ps
69 s: C1= 659 ps	83 s: C2= 863 ps
35 s: C1= 888 ps	41 s: C2= 1226 ps



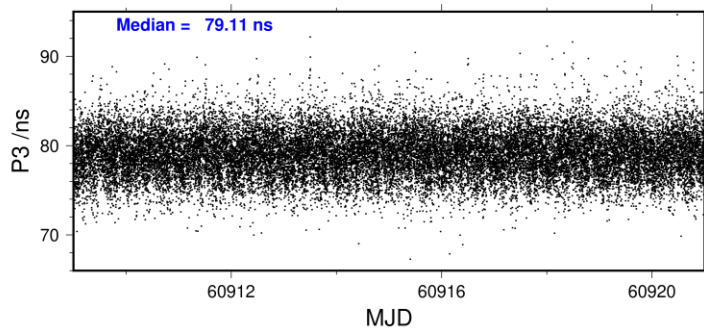
2025-09-03 PTBBBP2D25234_12



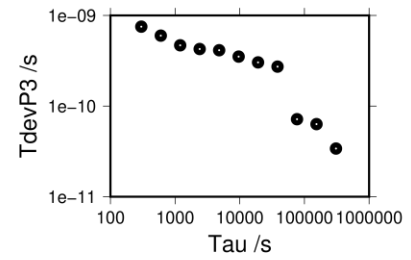
284675 s: P1= 16 ps 284675 s: P2= 19 ps
 142338 s: P1= 33 ps 142338 s: P2= 45 ps
 71169 s: P1= 35 ps 71169 s: P2= 61 ps
 35584 s: P1= 138 ps 35584 s: P2= 181 ps
 17792 s: P1= 124 ps 17792 s: P2= 262 ps
 8896 s: P1= 116 ps 8896 s: P2= 207 ps
 4448 s: P1= 143 ps 4448 s: P2= 270 ps
 2224 s: P1= 143 ps 2224 s: P2= 223 ps
 1112 s: P1= 147 ps 1112 s: P2= 222 ps
 556 s: P1= 177 ps 556 s: P2= 232 ps
 278 s: P1= 221 ps 278 s: P2= 297 ps
 139 s: P1= 498 ps 139 s: P2= 691 ps
 70 s: P1= 689 ps 70 s: P2= 978 ps
 35 s: P1= 957 ps 35 s: P2= 1273 ps

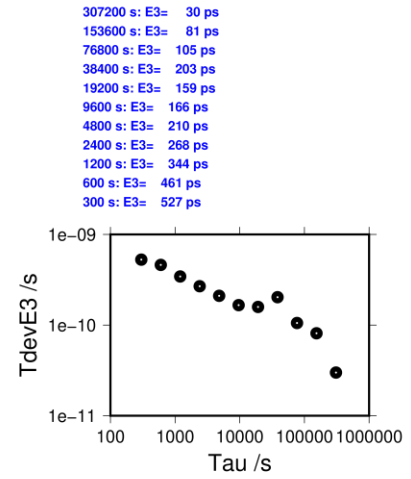
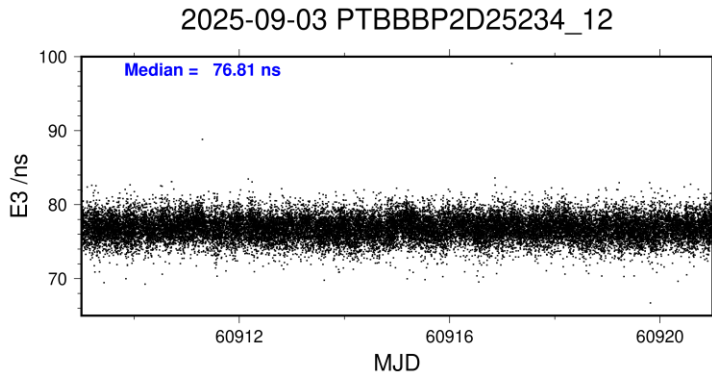
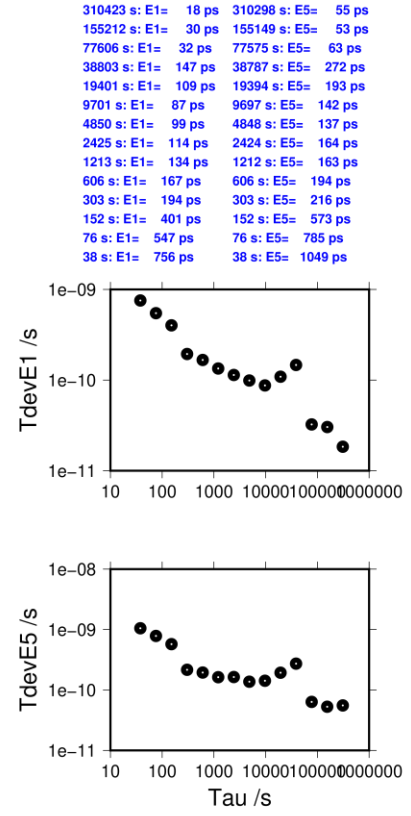
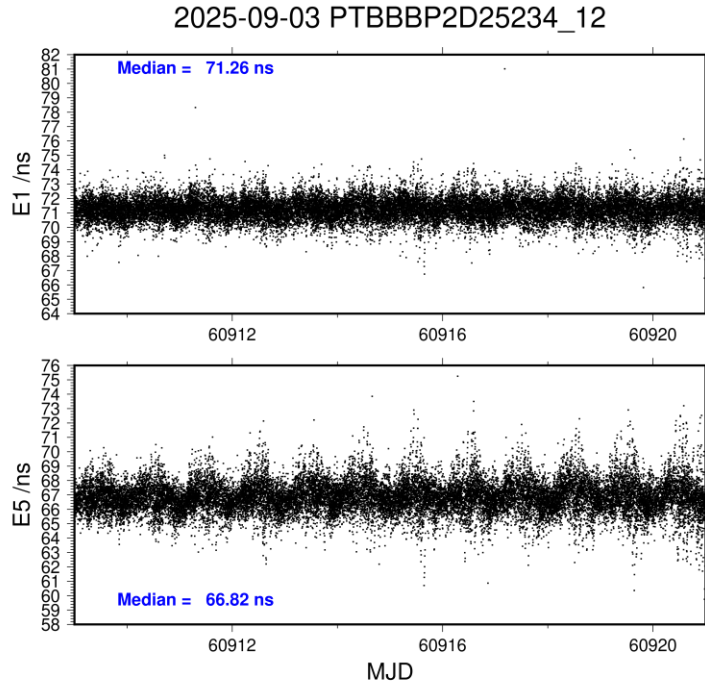


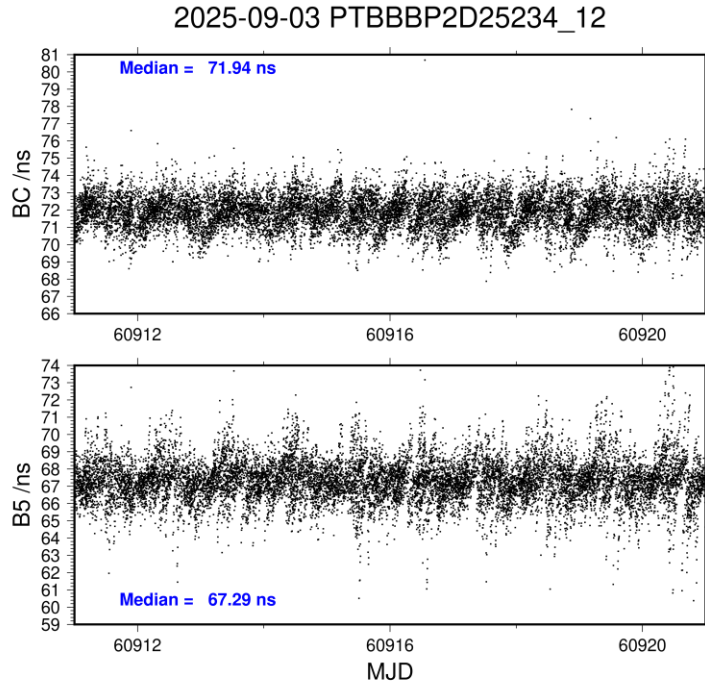
2025-09-03 PTBBBP2D25234_12



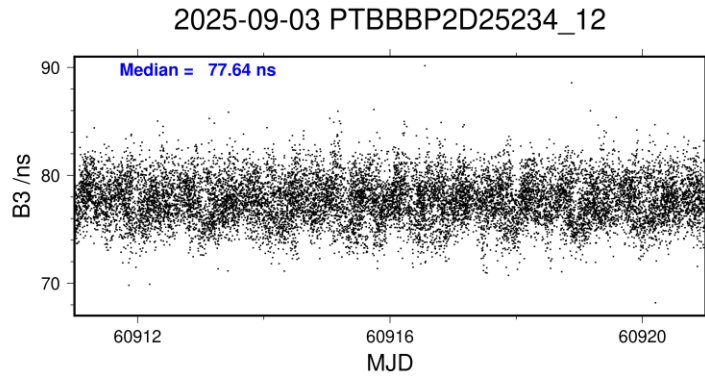
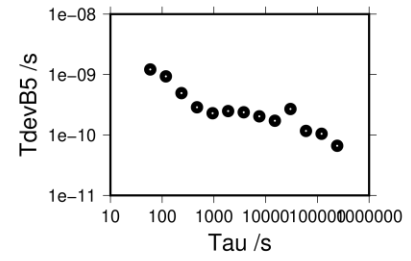
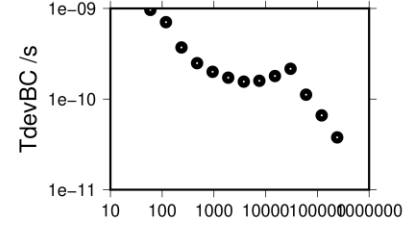
307200 s: P3= 34 ps
 153600 s: P3= 63 ps
 76800 s: P3= 72 ps
 38400 s: P3= 272 ps
 19200 s: P3= 304 ps
 9600 s: P3= 352 ps
 4800 s: P3= 413 ps
 2400 s: P3= 426 ps
 1200 s: P3= 468 ps
 600 s: P3= 598 ps
 300 s: P3= 752 ps



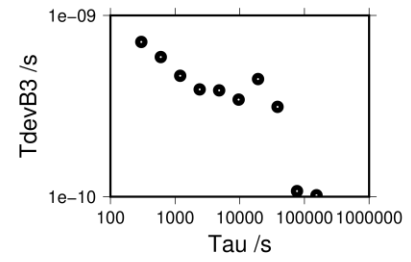




242077 s: BC= 38 ps 241482 s: B5= 66 ps
 121039 s: BC= 66 ps 120741 s: B5= 105 ps
 60519 s: BC= 112 ps 60371 s: B5= 117 ps
 30260 s: BC= 216 ps 30185 s: B5= 269 ps
 15130 s: BC= 180 ps 15093 s: B5= 172 ps
 7565 s: BC= 159 ps 7546 s: B5= 203 ps
 3782 s: BC= 156 ps 3773 s: B5= 237 ps
 1891 s: BC= 172 ps 1887 s: B5= 249 ps
 946 s: BC= 200 ps 943 s: B5= 229 ps
 473 s: BC= 249 ps 472 s: B5= 287 ps
 236 s: BC= 371 ps 236 s: B5= 493 ps
 118 s: BC= 706 ps 118 s: B5= 935 ps
 59 s: BC= 963 ps 59 s: B5= 1216 ps



153600 s: B3= 102 ps
 76800 s: B3= 107 ps
 38400 s: B3= 313 ps
 19200 s: B3= 446 ps
 9600 s: B3= 344 ps
 4800 s: B3= 386 ps
 2400 s: B3= 391 ps
 1200 s: B3= 465 ps
 600 s: B3= 589 ps
 300 s: B3= 715 ps



PTBB-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 332766
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 42972 high elev obs : 16.488 16.554
 Iteration 0: Obs used = 568839; Huge residuals = 842; Large residuals = 14707
 Iteration 1: Obs used = 569395; Huge residuals = 9; Large residuals = 13309
 Iteration 2: Obs used = 569398; Huge residuals = 1; Large residuals = 13297
 Iteration 3: Obs used = 569398; Huge residuals = 0; Large residuals = 13296
 Computed code bias (P1/P2)/m = 15.646 15.721
 Computed baseline (X,Y,Z)/m = 3.747 -3.743 -1.313
 RMS of residuals /m = 0.561

Number of phase differences to fit baseline
 L1/L2 = 324894
 L5 = 199428
 A priori baseline (X,Y,Z)/m = 3.747 -3.743 -1.313
 34556 clock jitters computed out of 34556 intervals
 AVE jitter /ps = 0.4 RMS jitter /ps = 3.3

Iter 1 Large residuals L1= 0
 Iter 1 Large residuals L2= 3
 Iter 1 Large residuals L5= 2
 Computed baseline L1 (X,Y,Z)/m = -0.435 -0.036 -0.812
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.431 -0.033 -0.804
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.427 0.034 -0.770
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 0
 Iter 2 Large residuals L2= 3
 Iter 2 Large residuals L5= 2
 Computed baseline L1 (X,Y,Z)/m = -0.435 -0.036 -0.812
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.431 -0.033 -0.804
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.427 0.034 -0.770
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 3.314 -3.777 -2.120
 34556 clock jitters computed out of 34556 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 1.3

Iter 3 Large residuals L1= 0
 Iter 3 Large residuals L2= 3
 Iter 3 Large residuals L5= 2
 Computed baseline L1 (X,Y,Z)/m = -0.022 0.013 -0.026
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.017 0.016 -0.019
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.002 0.081 0.008
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 3.292 -3.765 -2.147
 Final baseline L2 (X,Y,Z)/m = 3.297 -3.762 -2.139
 Final baseline L5 (X,Y,Z)/m = 3.311 -3.697 -2.112

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	336720	53.970	1.885
C2	282389	54.552	2.062
P1	327366	54.277	1.534
P2	327370	54.523	1.740
E1	311972	53.922	1.498
E5	315273	54.565	1.211
BC	199075	54.043	1.685
B5	201239	54.553	1.237

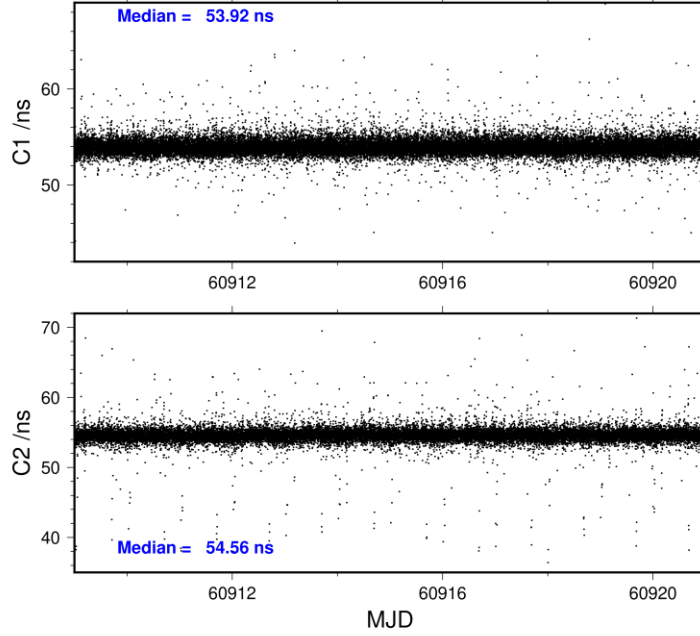
Number of 300s epochs in out file = 3456

Code	#pts	median/ns	ave/ns	rms/ns
C1	33625	53.922	53.967	0.829
C2	28179	54.564	54.556	1.135
P1	32649	54.242	54.269	0.743
P2	32650	54.528	54.520	0.912
E1	31152	53.899	53.927	0.727
E5	31478	54.543	54.564	0.683
BC	19880	54.024	54.054	0.813
B5	20114	54.536	54.554	0.689

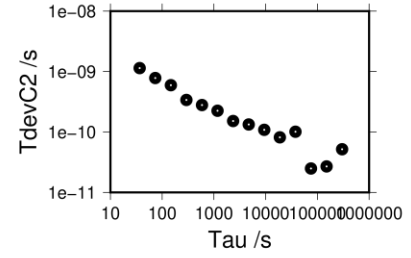
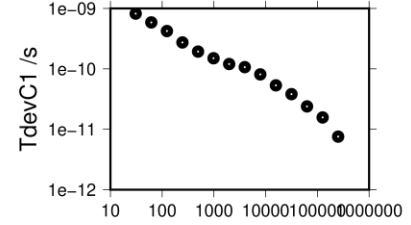
Ionofree combinations

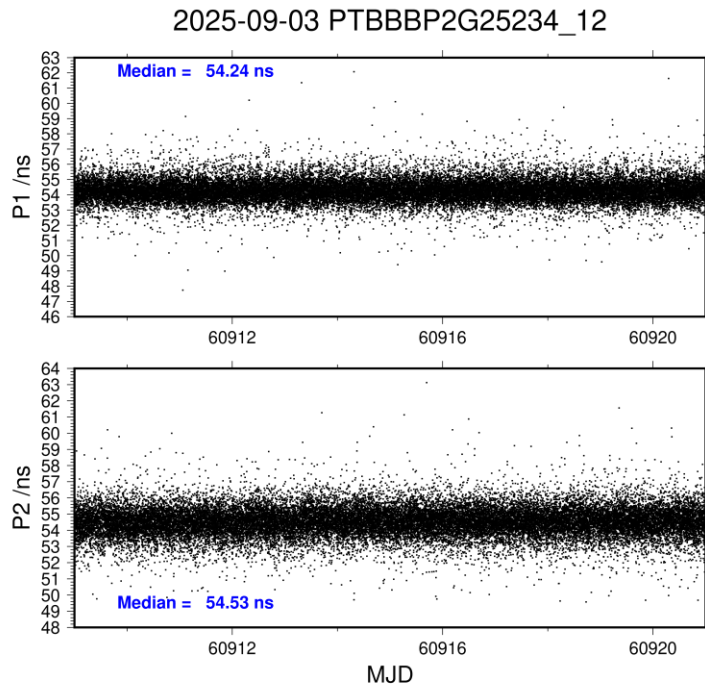
Code	#pts	median/ns	ave/ns	rms/ns
P3	3456	53.828	53.826	0.598
E3	3454	53.085	53.081	0.418
B3	3452	53.389	53.391	0.531

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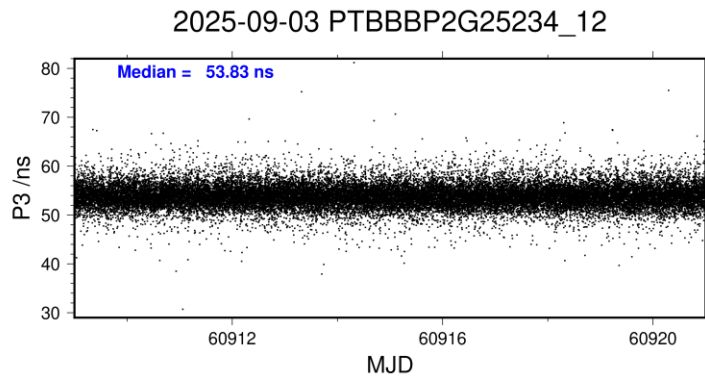
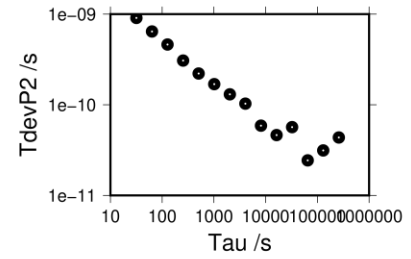
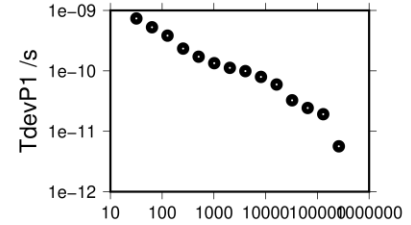


252528 s: C1=	8 ps	301335 s: C2=	52 ps
126264 s: C1=	16 ps	150667 s: C2=	27 ps
63132 s: C1=	24 ps	75334 s: C2=	25 ps
31566 s: C1=	38 ps	37667 s: C2=	101 ps
15783 s: C1=	53 ps	18833 s: C2=	82 ps
7892 s: C1=	81 ps	9417 s: C2=	109 ps
3946 s: C1=	107 ps	4708 s: C2=	133 ps
1973 s: C1=	120 ps	2354 s: C2=	152 ps
986 s: C1=	150 ps	1177 s: C2=	225 ps
493 s: C1=	193 ps	589 s: C2=	279 ps
247 s: C1=	273 ps	294 s: C2=	339 ps
123 s: C1=	423 ps	147 s: C2=	595 ps
62 s: C1=	587 ps	74 s: C2=	782 ps
31 s: C1=	821 ps	37 s: C2=	1140 ps

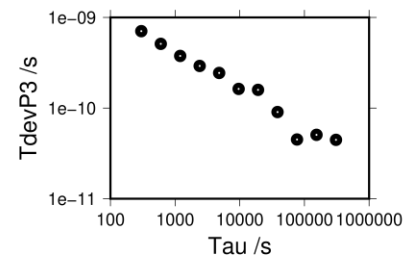


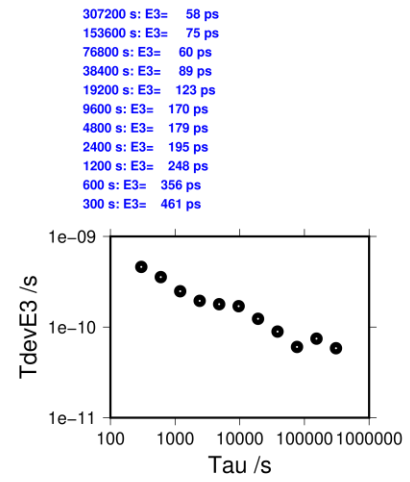
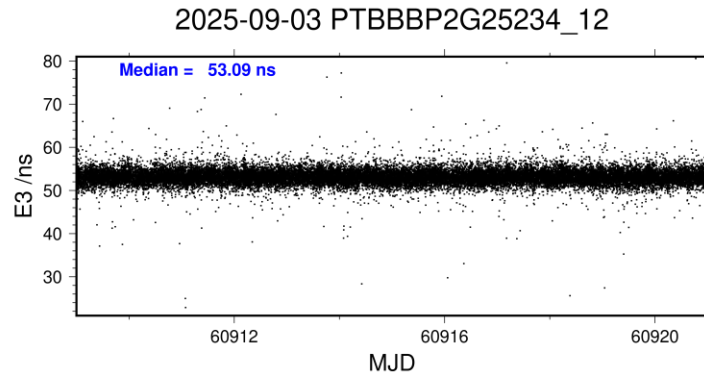


260077 s: P1=	6 ps	260069 s: P2=	44 ps
130039 s: P1=	19 ps	130035 s: P2=	31 ps
65019 s: P1=	24 ps	65017 s: P2=	24 ps
32510 s: P1=	33 ps	32509 s: P2=	57 ps
16255 s: P1=	59 ps	16254 s: P2=	46 ps
8127 s: P1=	79 ps	8127 s: P2=	59 ps
4064 s: P1=	99 ps	4064 s: P2=	103 ps
2032 s: P1=	112 ps	2032 s: P2=	130 ps
1016 s: P1=	134 ps	1016 s: P2=	169 ps
508 s: P1=	171 ps	508 s: P2=	221 ps
254 s: P1=	233 ps	254 s: P2=	307 ps
127 s: P1=	383 ps	127 s: P2=	462 ps
64 s: P1=	526 ps	63 s: P2=	643 ps
32 s: P1=	737 ps	32 s: P2=	907 ps

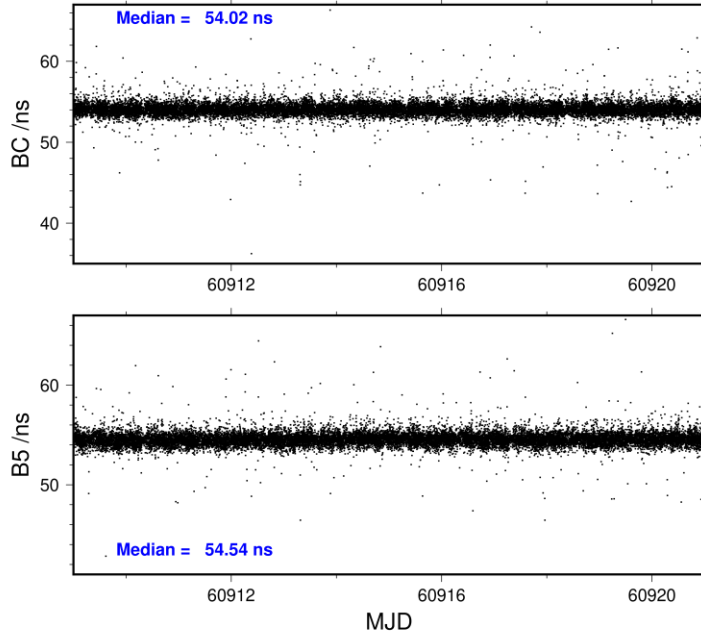


307200 s: P3=	45 ps
153600 s: P3=	51 ps
76800 s: P3=	45 ps
38400 s: P3=	90 ps
19200 s: P3=	159 ps
9600 s: P3=	163 ps
4800 s: P3=	244 ps
2400 s: P3=	291 ps
1200 s: P3=	376 ps
600 s: P3=	511 ps
300 s: P3=	705 ps

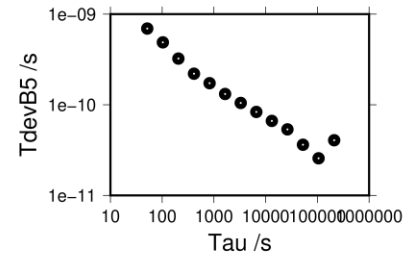
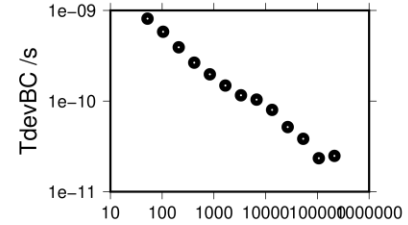




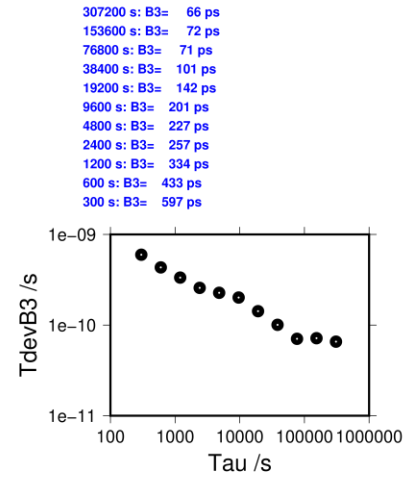
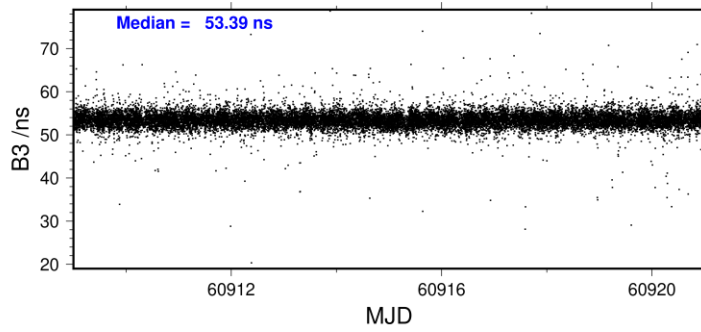
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213567 s: BC= 25 ps	211083 s: B5= 41 ps
106784 s: BC= 23 ps	105541 s: B5= 26 ps
53392 s: BC= 38 ps	52771 s: B5= 36 ps
26696 s: BC= 52 ps	26385 s: B5= 54 ps
13348 s: BC= 80 ps	13193 s: B5= 66 ps
6674 s: BC= 104 ps	6596 s: B5= 83 ps
3337 s: BC= 116 ps	3298 s: B5= 105 ps
1668 s: BC= 148 ps	1649 s: B5= 131 ps
834 s: BC= 197 ps	825 s: B5= 173 ps
417 s: BC= 265 ps	412 s: B5= 220 ps
209 s: BC= 392 ps	206 s: B5= 323 ps
104 s: BC= 582 ps	103 s: B5= 488 ps
52 s: BC= 812 ps	52 s: B5= 693 ps



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307200 s: B3= 66 ps
153600 s: B3= 72 ps
76800 s: B3= 71 ps
38400 s: B3= 101 ps
19200 s: B3= 142 ps
9600 s: B3= 201 ps
4800 s: B3= 227 ps
2400 s: B3= 257 ps
1200 s: B3= 334 ps
600 s: B3= 433 ps
300 s: B3= 597 ps

PT15-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 274803
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39536 high elev obs : 35.603 32.530
 Iteration 0: Obs used = 472381; Huge residuals = 1648; Large residuals = 1789
 Iteration 1: Obs used = 472366; Huge residuals = 0; Large residuals = 155
 Computed code bias (P1/P2)/m = 35.729 32.566
 Computed baseline (X,Y,Z)/m = -1.303 -0.026 0.934
 RMS of residuals /m = 0.240

Number of phase differences to fit baseline
 L1/L2 = 238521
 L5 = 145264
 A priori baseline (X,Y,Z)/m = -1.303 -0.026 0.934
 27757 clock jitters computed out of 27766 intervals
 AVE jitter /ps = 0.1 RMS jitter /ps = 4.9

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 = -0.057 0.014 -0.065
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -0.056 0.020 -0.062
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -0.052 0.010 -0.059
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.360 -0.009 0.870
 27757 clock jitters computed out of 27766 intervals
 AVE jitter /ps = -0.1 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 0.002 -0.004
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -0.002 0.008 -0.000
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = 0.003 -0.001 0.002
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -1.362 -0.007 0.867
 Final baseline L2 (X,Y,Z)/m = -1.362 -0.001 0.870
 Final baseline L5 (X,Y,Z)/m = -1.357 -0.011 0.872

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

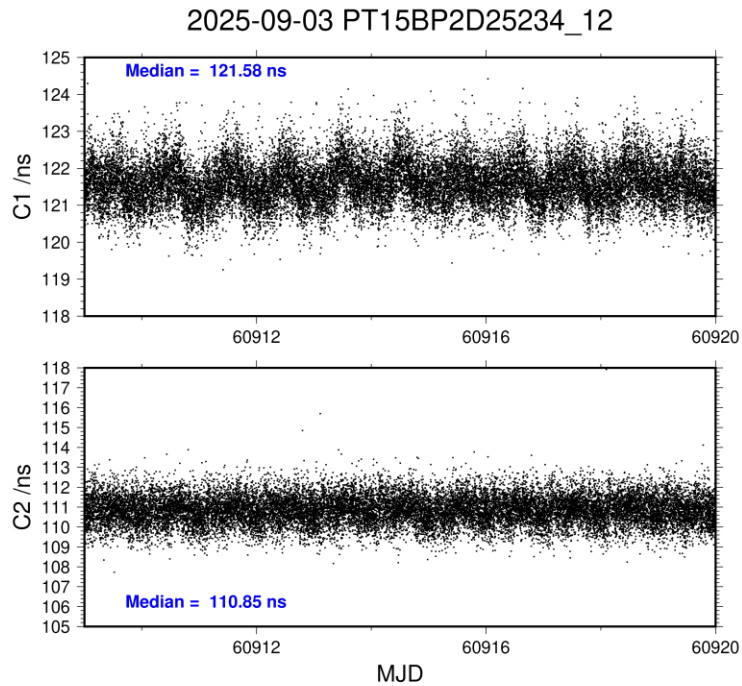
Code	#pts	ave/ns	rms/ns
C1	274871	121.606	0.663
C2	231007	110.854	0.821
P1	273753	119.396	0.781
P2	273748	108.824	0.833
E1	251706	122.246	0.707
E5	252026	110.639	0.829

Number of 300s epochs in out file = 3168

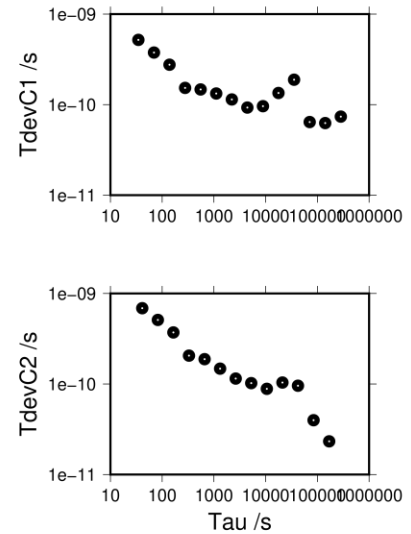
Code	#pts	median/ns	ave/ns	rms/ns
C1	27413	121.581	121.606	0.576
C2	23044	110.852	110.853	0.719
P1	27303	119.361	119.394	0.679
P2	27306	108.811	108.822	0.706
E1	25107	122.256	122.248	0.615
E5	25149	110.632	110.637	0.757

Ionofree combinations

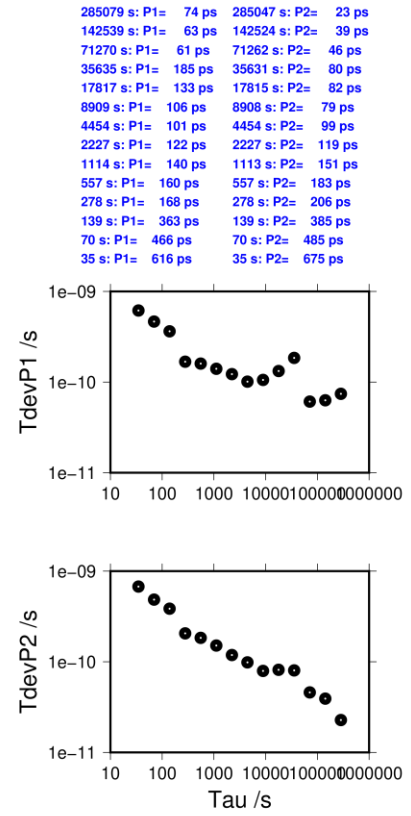
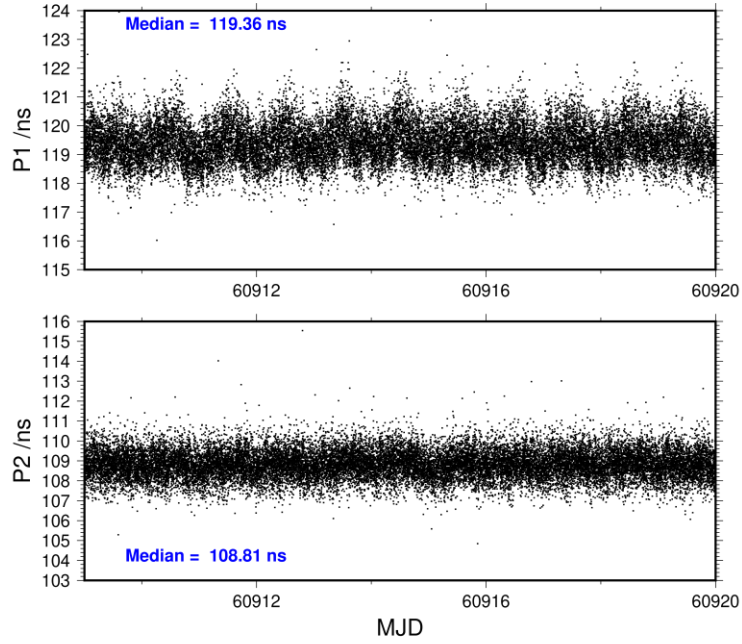
Code	#pts	median/ns	ave/ns	rms/ns
P3	3164	135.688	135.663	0.718
E3	3164	136.933	136.931	0.616



283935 s: C1= 74 ps
 141967 s: C1= 63 ps 168885 s: C2= 23 ps
 70984 s: C1= 64 ps 84442 s: C2= 40 ps
 35492 s: C1= 188 ps 42221 s: C2= 96 ps
 17746 s: C1= 134 ps 21111 s: C2= 104 ps
 8873 s: C1= 96 ps 10555 s: C2= 88 ps
 4436 s: C1= 93 ps 5278 s: C2= 102 ps
 2218 s: C1= 114 ps 2639 s: C2= 115 ps
 1109 s: C1= 133 ps 1319 s: C2= 148 ps
 555 s: C1= 147 ps 660 s: C2= 188 ps
 277 s: C1= 153 ps 330 s: C2= 206 ps
 139 s: C1= 276 ps 165 s: C2= 371 ps
 69 s: C1= 376 ps 82 s: C2= 509 ps
 35 s: C1= 519 ps 41 s: C2= 687 ps

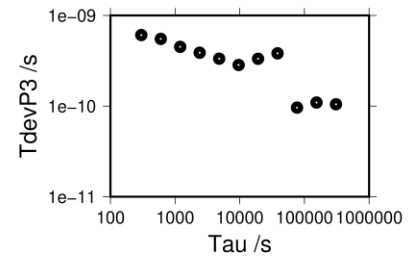
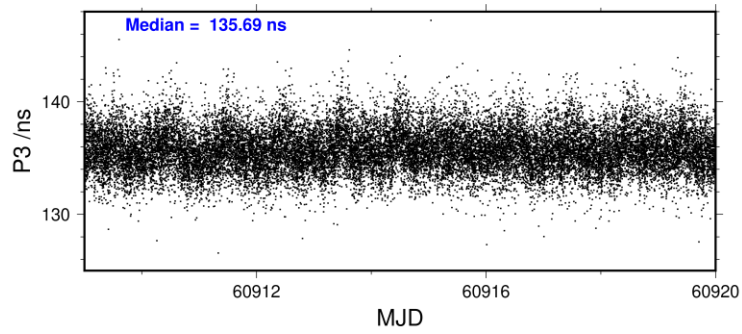


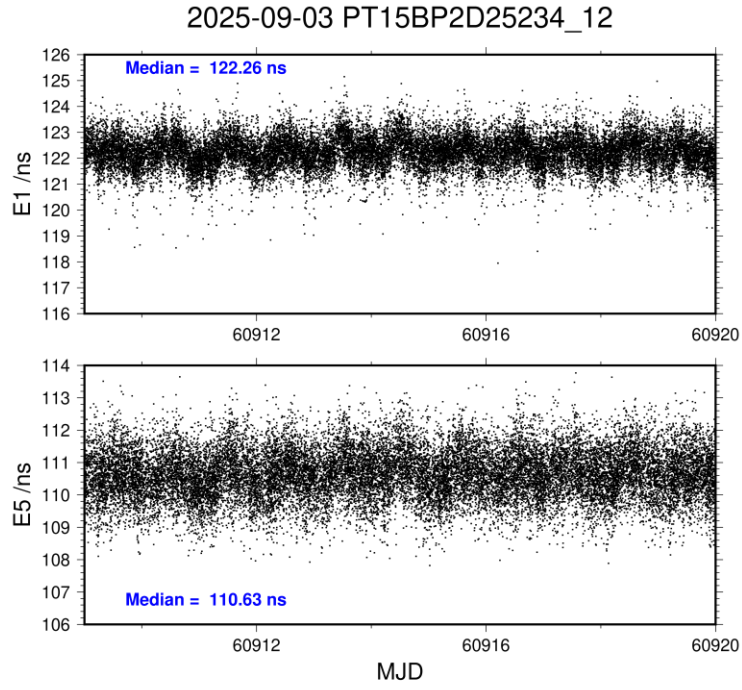
2025-09-03 PT15BP2D25234_12



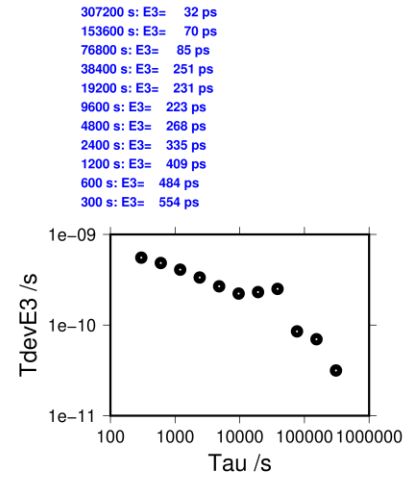
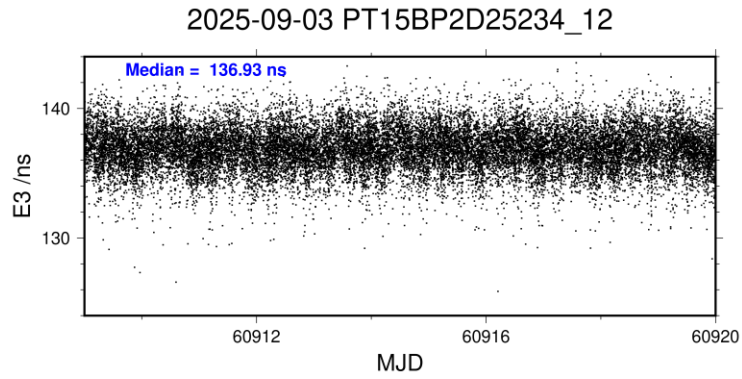
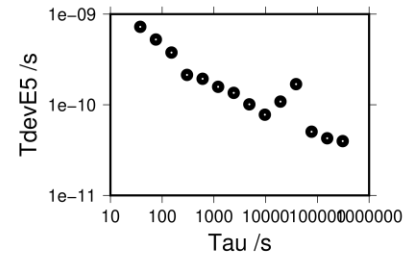
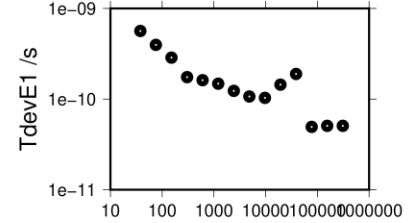
307200 s: P3= 105 ps
 153600 s: P3= 110 ps
 76800 s: P3= 96 ps
 38400 s: P3= 382 ps
 19200 s: P3= 333 ps
 9600 s: P3= 284 ps
 4800 s: P3= 333 ps
 2400 s: P3= 388 ps
 1200 s: P3= 450 ps
 600 s: P3= 551 ps
 300 s: P3= 607 ps

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310014 s: E1=	51 ps	309497 s: E5=	40 ps
155007 s: E1=	51 ps	154748 s: E5=	43 ps
77504 s: E1=	49 ps	77374 s: E5=	50 ps
38752 s: E1=	189 ps	38687 s: E5=	169 ps
19376 s: E1=	144 ps	19344 s: E5=	109 ps
9688 s: E1=	103 ps	9672 s: E5=	78 ps
4844 s: E1=	107 ps	4836 s: E5=	101 ps
2422 s: E1=	123 ps	2418 s: E5=	135 ps
1211 s: E1=	148 ps	1209 s: E5=	158 ps
606 s: E1=	162 ps	604 s: E5=	194 ps
303 s: E1=	175 ps	302 s: E5=	214 ps
151 s: E1=	286 ps	151 s: E5=	377 ps
76 s: E1=	396 ps	76 s: E5=	525 ps
38 s: E1=	564 ps	38 s: E5=	725 ps



PT15-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 274657
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39379 high elev obs : 30.950 29.694
 Iteration 0: Obs used = 471805; Huge residuals = 1740; Large residuals = 2375
 Iteration 1: Obs used = 471751; Huge residuals = 0; Large residuals = 689
 Computed code bias (P1/P2)/m = 31.061 29.753
 Computed baseline (X,Y,Z)/m = -0.356 -0.961 0.340
 RMS of residuals /m = 0.447

Number of phase differences to fit baseline
 L1/L2 = 238686
 L5 = 144659
 A priori baseline (X,Y,Z)/m = -0.356 -0.961 0.340
 27780 clock jitters computed out of 27790 intervals
 AVE jitter /ps = 0.2 RMS jitter /ps = 3.6

Iter 1 Large residuals L1= 1
 Iter 1 Large residuals L2= 0
 Iter 1 Large residuals L5= 0
 Computed baseline L1 (X,Y,Z)/m = 0.017 0.064 -0.031
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.029 0.071 -0.018
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.035 0.063 -0.015
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 1
 Iter 2 Large residuals L2= 0
 Iter 2 Large residuals L5= 0
 Computed baseline L1 (X,Y,Z)/m = 0.017 0.064 -0.031
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.029 0.071 -0.018
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.035 0.063 -0.015
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -0.334 -0.894 0.315
 27780 clock jitters computed out of 27790 intervals
 AVE jitter /ps = -0.2 RMS jitter /ps = 0.1

Iter 3 Large residuals L1= 1
 Iter 3 Large residuals L2= 0
 Iter 3 Large residuals L5= 0
 Computed baseline L1 (X,Y,Z)/m = -0.008 0.010 -0.007
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.004 0.018 0.006
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.010 0.010 0.009
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -0.342 -0.884 0.308
 Final baseline L2 (X,Y,Z)/m = -0.330 -0.877 0.321

Final baseline L5 (X,Y,Z)/m = -0.323 -0.884 0.324

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

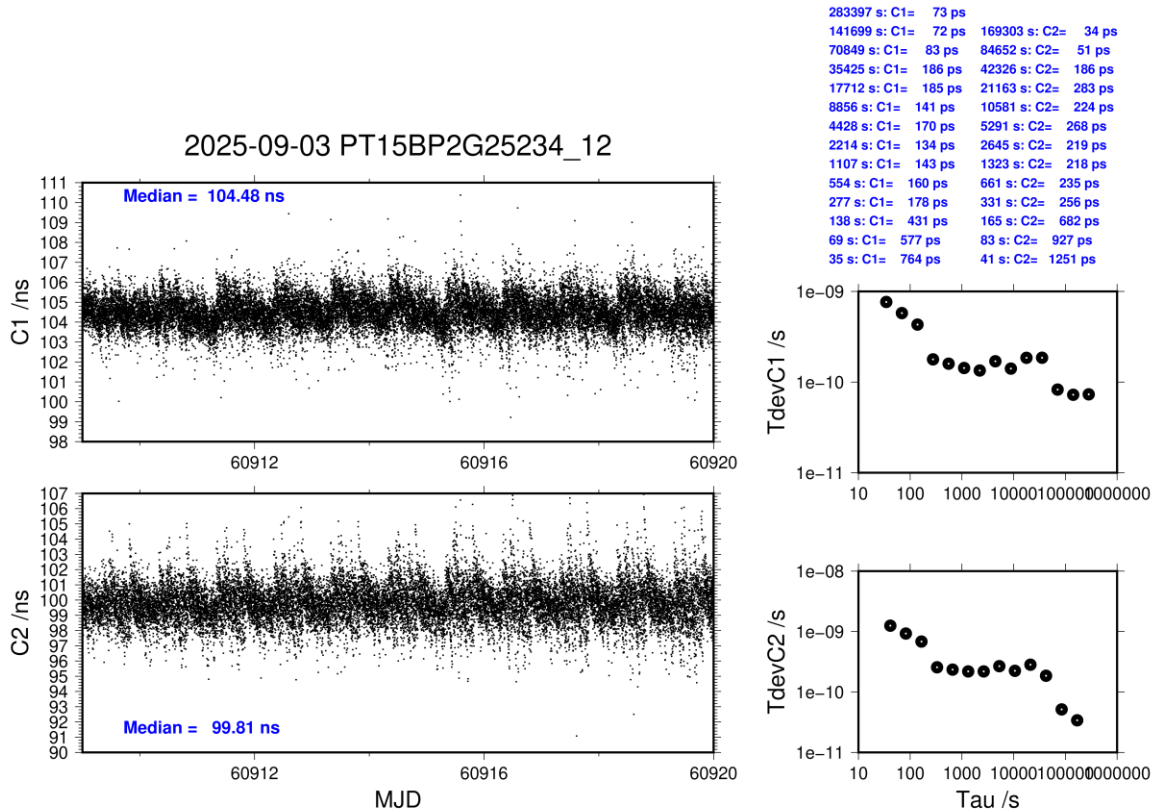
Code	#pts	ave/ns	rms/ns
C1	275002	104.499	1.141
C2	230216	99.839	1.572
P1	273571	103.640	1.157
P2	273567	99.247	1.712
E1	252171	104.882	0.920
E5	252807	98.382	1.222

Number of 300s epochs in out file = 3168

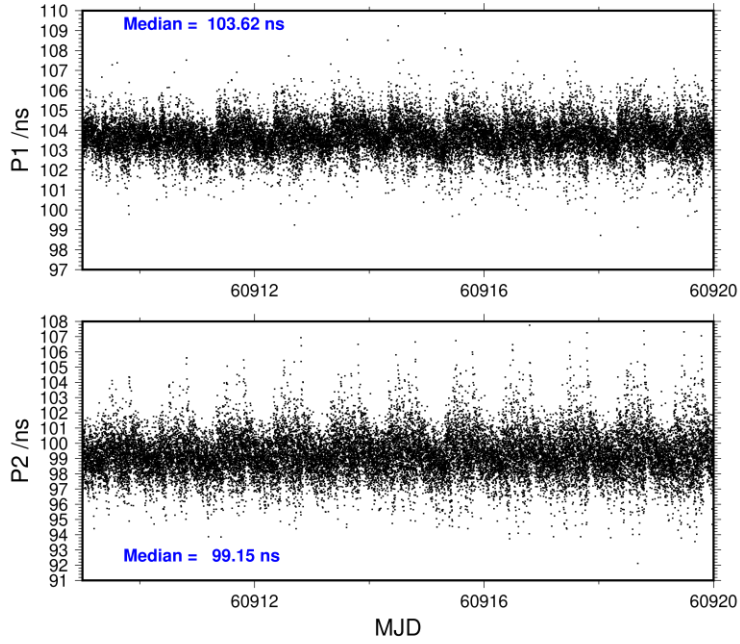
Code	#pts	median/ns	ave/ns	rms/ns
C1	27465	104.485	104.502	0.820
C2	22987	99.807	99.831	1.301
P1	27318	103.625	103.641	0.837
P2	27317	99.151	99.230	1.394
E1	25174	104.878	104.878	0.680
E5	25240	98.379	98.375	1.094

Ionofree combinations

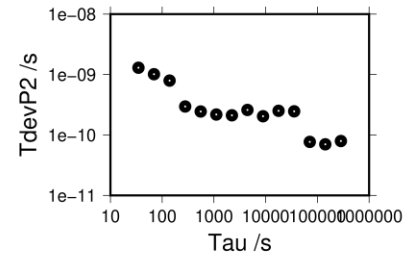
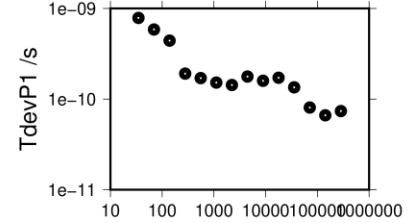
Code	#pts	median/ns	ave/ns	rms/ns
P3	3168	110.412	110.377	0.678
E3	3167	113.098	113.090	0.609



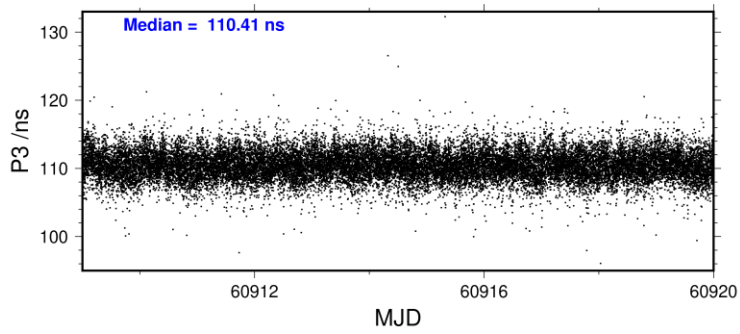
2025-09-03 PT15BP2G25234_12



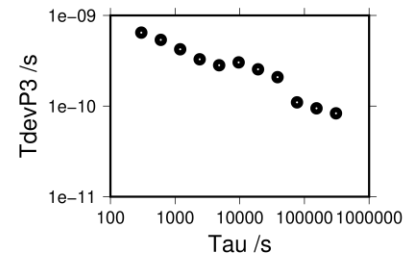
284922 s: P1= 74 ps 284933 s: P2= 80 ps
 142461 s: P1= 66 ps 142466 s: P2= 70 ps
 71231 s: P1= 81 ps 71233 s: P2= 77 ps
 35615 s: P1= 135 ps 35617 s: P2= 246 ps
 17808 s: P1= 172 ps 17808 s: P2= 251 ps
 8904 s: P1= 159 ps 8904 s: P2= 204 ps
 4452 s: P1= 177 ps 4452 s: P2= 260 ps
 2226 s: P1= 143 ps 2226 s: P2= 212 ps
 1113 s: P1= 152 ps 1113 s: P2= 218 ps
 556 s: P1= 170 ps 557 s: P2= 245 ps
 278 s: P1= 191 ps 278 s: P2= 296 ps
 139 s: P1= 442 ps 139 s: P2= 794 ps
 70 s: P1= 586 ps 70 s: P2= 1014 ps
 35 s: P1= 786 ps 35 s: P2= 1298 ps



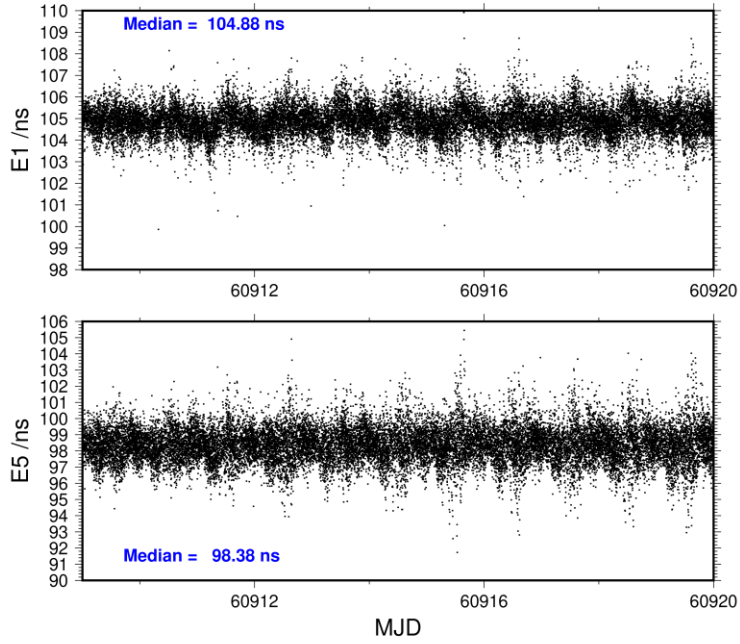
2025-09-03 PT15BP2G25234_12



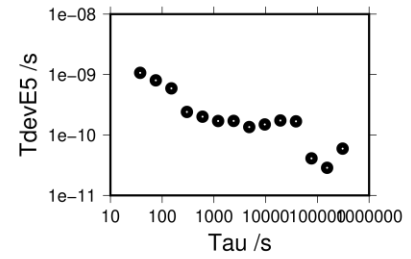
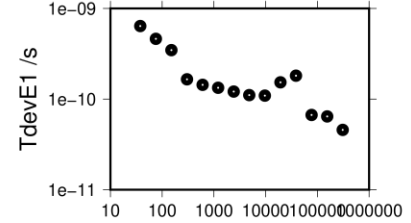
307200 s: P3= 83 ps
 153600 s: P3= 94 ps
 76800 s: P3= 110 ps
 38400 s: P3= 208 ps
 19200 s: P3= 254 ps
 9600 s: P3= 303 ps
 4800 s: P3= 282 ps
 2400 s: P3= 328 ps
 1200 s: P3= 423 ps
 600 s: P3= 538 ps
 300 s: P3= 647 ps



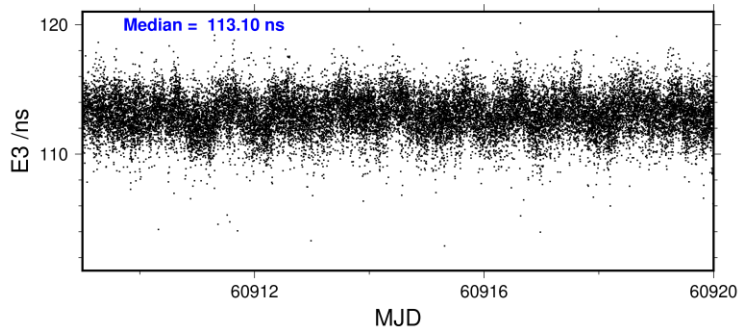
2025-09-03 PT15BP2G25234_12



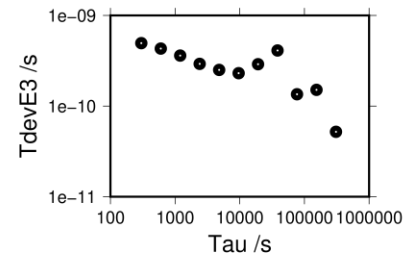
309189 s: E1= 46 ps	308381 s: E5= 59 ps
154595 s: E1= 64 ps	154190 s: E5= 29 ps
77297 s: E1= 67 ps	77095 s: E5= 41 ps
38649 s: E1= 181 ps	38548 s: E5= 168 ps
19324 s: E1= 153 ps	19274 s: E5= 174 ps
9662 s: E1= 109 ps	9637 s: E5= 150 ps
4831 s: E1= 111 ps	4818 s: E5= 135 ps
2416 s: E1= 121 ps	2409 s: E5= 171 ps
1208 s: E1= 133 ps	1205 s: E5= 170 ps
604 s: E1= 144 ps	602 s: E5= 201 ps
302 s: E1= 165 ps	301 s: E5= 241 ps
151 s: E1= 347 ps	151 s: E5= 591 ps
75 s: E1= 462 ps	75 s: E5= 801 ps
38 s: E1= 639 ps	38 s: E5= 1068 ps



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307200 s: E3= 52 ps
153600 s: E3= 151 ps
76800 s: E3= 135 ps
38400 s: E3= 411 ps
19200 s: E3= 290 ps
9600 s: E3= 231 ps
4800 s: E3= 251 ps
2400 s: E3= 292 ps
1200 s: E3= 361 ps
600 s: E3= 431 ps
300 s: E3= 495 ps



1.5/ IT (25287)**Period**

MJD 60962 to 60971

Delays

BP2D: (cf page 4, 211)
REFDLY = 143.27 ns (42.17+101.10)
CABDLY = 176.85 ns

BP2G: (cf page 6, 211)
REFDLY = 143.38 ns (42.28+101.10)
CABDLY = 176.38 ns

IT07 (IENG): (cf page 203)
REFDLY = 372.70 ns
CABDLY = 130.50 ns

IT05 (INR5): (cf page 204)
REFDLY = 373.50 ns
CABDLY = 254.70 ns

IT11 (GR01): (cf page 205)
REFDLY = 483.60 ns
CABDLY = 298.60 ns

IT16 (GR06): (cf page 206)
REFDLY = 161.10 ns
CABDLY = 355.50 ns

IT20 (GR10): (cf page 207)
REFDLY = 151.00 ns
CABDLY = 119.40 ns

IT21 (GR11): (cf page 208)
REFDLY = 374.50 ns
CABDLY = 199.30 ns

Setup at the IT

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	IT	
Date and hour of the beginning of measurements:	26/09/2025 00:00 UTC	
Date and hour of the end of measurements:	23/10/2025 23:59 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	IT07	
• Receiver maker and type:	SEPT POLARX5TR	
Receiver serial number:	3074186 v5.4.0	
1 PPS trigger level /V:	1.0	
• Antenna cable maker and type:	RG214	
Phase stabilised cable (Y/N):	N	
Length outside the building /m:	5	
• Antenna maker and type:	SEPCHOKE_MC NONE	
Antenna serial number:	5261	
Temperature (if stabilised) /°C	N/A	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	372.7 (REFDLY)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	
• Antenna cable delay:	130.5	(1)
Splitter delay (if any):	N/A	(1)
Additional cable delay (if any):	N/A	(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:	< 500 ps	
• Is the laboratory air conditioned:	Y	
Set temperature value and uncertainty:	See readme.txt	
Set humidity value and uncertainty:	See readme.txt	

(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:	IT	
Date and hour of the beginning of measurements:	02/10/2025 00:00 UTC	
Date and hour of the end of measurements:	23/10/2025 23:59 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	IT05	
• Receiver maker and type:	SEPT POLARX5TR	
Receiver serial number:	3096075 v5.5.0	
1 PPS trigger level /V:	1.0	
• Antenna cable maker and type:	RG214	
Phase stabilised cable (Y/N):	N	
Length outside the building /m:	5	
• Antenna maker and type:	SEPCHOKE_B3E6	
Antenna serial number:	5410	
Temperature (if stabilised) /°C	N/A	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	373.5 (REFDLY)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	
• Antenna cable delay:	254.7	(1)
Splitter delay (if any):	N/A	(1)
Additional cable delay (if any):	N/A	(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:	< 500 ps	
• Is the laboratory air conditioned:	Y	
Set temperature value and uncertainty:	See readme.txt	
Set humidity value and uncertainty:	See readme.txt	

(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:	IT	
Date and hour of the beginning of measurements:	26/09/2025 00:00 UTC	
Date and hour of the end of measurements:	23/10/2025 23:59 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	IT11	
• Receiver maker and type:	SEPT POLARX4TR	
Receiver serial number:	3008032 v2.9.6-patch2	
1 PPS trigger level /V:	1.0	
• Antenna cable maker and type:	RG214	
Phase stabilised cable (Y/N):	N	
Length outside the building /m:	5	
• Antenna maker and type:	SEPCHOKE_B3E6	
Antenna serial number:	5025	
Temperature (if stabilised) /°C	N/A	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	483.6 (REFDLY)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	
• Antenna cable delay:	298.6	(1)
Splitter delay (if any):	N/A	(1)
Additional cable delay (if any):	N/A	(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:	< 500 ps	
• Is the laboratory air conditioned:	Y	
Set temperature value and uncertainty:	See readme.txt	
Set humidity value and uncertainty:	See readme.txt	

(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:	IT	
Date and hour of the beginning of measurements:	26/09/2025 00:00 UTC	
Date and hour of the end of measurements:	23/10/2025 23:59 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	IT16	
• Receiver maker and type:	SEPT POLARX5TR	
Receiver serial number:	3083484 v5.4.0	
1 PPS trigger level /V:	1.0	
• Antenna cable maker and type:	RG213	
Phase stabilised cable (Y/N):	N	
Length outside the building /m:	10	
• Antenna maker and type:	SEPCHOKE_B3E6	
Antenna serial number:	5987	
Temperature (if stabilised) /°C	N/A	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	161.1 (REFDLY)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	
• Antenna cable delay:	355.5	(1)
Splitter delay (if any):	N/A	(1)
Additional cable delay (if any):	N/A	(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:	< 500 ps	
• Is the laboratory air conditioned:	Y	
Set temperature value and uncertainty:	See readme.txt	
Set humidity value and uncertainty:	See readme.txt	

(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:	IT	
Date and hour of the beginning of measurements:	26/09/2025 00:00 UTC	
Date and hour of the end of measurements:	23/10/2025 23:59 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	IT20	
• Receiver maker and type:	SEPT POLARX5TR	
Receiver serial number:	3096034 v5.5.0	
1 PPS trigger level /V:	1.0	
• Antenna cable maker and type:	RG213	
Phase stabilised cable (Y/N):	N	
Length outside the building /m:	10	
• Antenna maker and type:	SEPCHOKE_B3E6 SPKE	
Antenna serial number:	6149	
Temperature (if stabilised) /°C	N/A	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	151.0 (REFDLY)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	
• Antenna cable delay:	119.4	(1)
Splitter delay (if any):	N/A	(1)
Additional cable delay (if any):	N/A	(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:	< 500 ps	
• Is the laboratory air conditioned:	Y	
Set temperature value and uncertainty:	See readme.txt	
Set humidity value and uncertainty:	See readme.txt	

(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:	IT	
Date and hour of the beginning of measurements:	26/09/2025 00:00 UTC	
Date and hour of the end of measurements:	23/10/2025 23:59 UTC	
Information on the system		
	Local:	Travelling:
4-character BIPM code	IT21	
• Receiver maker and type:	SEPT POLARX5TR	
Receiver serial number:	3096068 v5.5.0	
1 PPS trigger level /V:	1.0	
• Antenna cable maker and type:	RG213	
Phase stabilised cable (Y/N):	N	
Length outside the building /m:	10	
• Antenna maker and type:	SEPCHOKE_B3E6 SPKE	
Antenna serial number:	6118	
Temperature (if stabilised) /°C	N/A	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	374.5 (REFDLY)	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	N/A	
• Antenna cable delay:	199.3	(1)
Splitter delay (if any):	N/A	(1)
Additional cable delay (if any):	N/A	(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:	< 500 ps	
• Is the laboratory air conditioned:	Y	
Set temperature value and uncertainty:	See readme.txt	
Set humidity value and uncertainty:	See readme.txt	

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

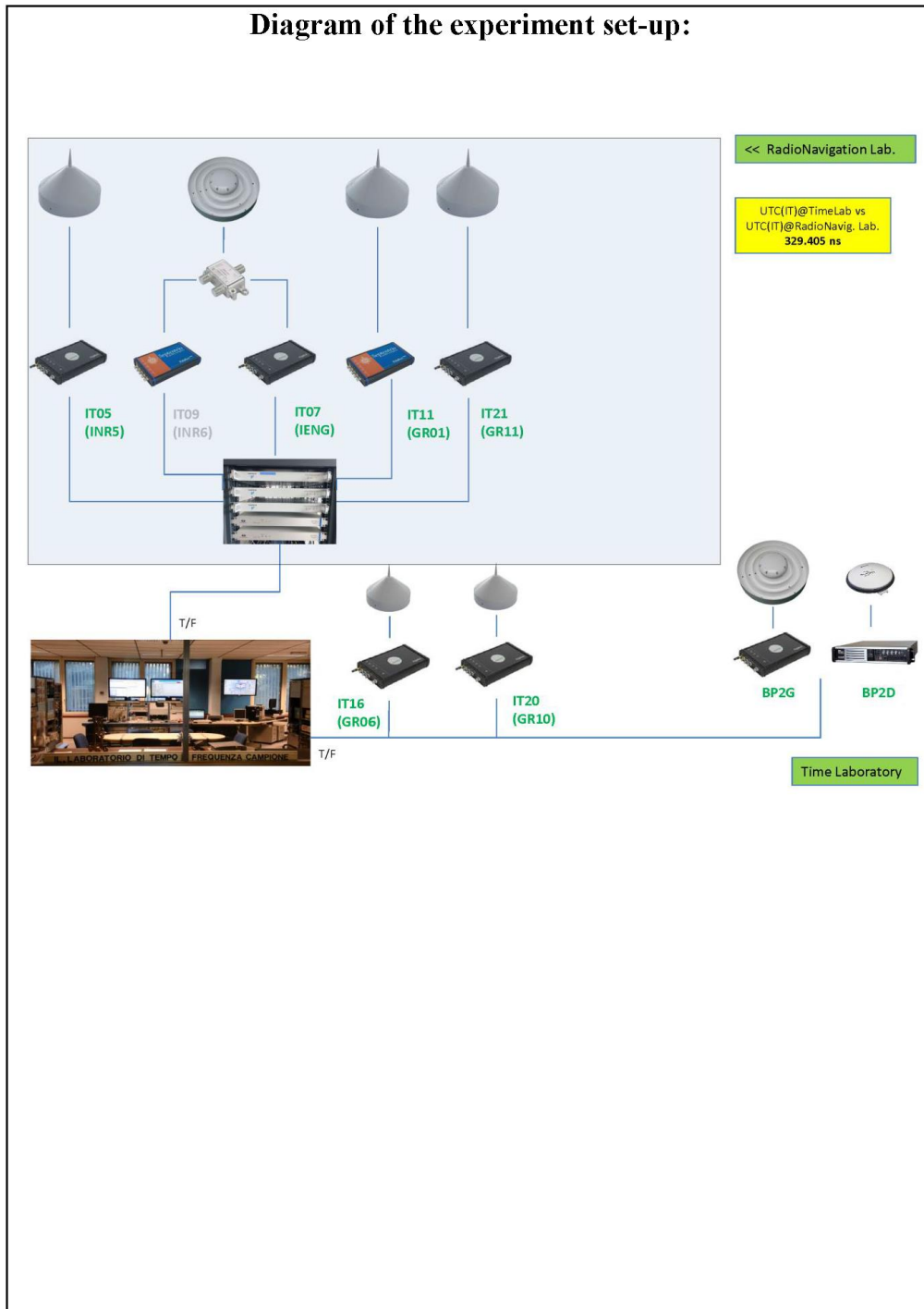
Diagram of the experiment set-up:

Diagram of the experiment set-up:

Time Laboratory Setup



UTC(IT) Reference Plane: custom TF signals switch



UTC(IT) TF signals to IT16, IT20 and B3TS
(TimeTech Pulse Distribution Unit and SDI HPDA-15RM-C)



IT20 (GR10) and IT16 (GR06)

BIPM B3TS →



RadioNavigation Laboratory Setup



UTC(IT) TF signals Distribution at Time Lab. towards the RadioNavigation Lab.
(TimeTech Pulse Distribution Unit and SDI HPDA-15RM-C)



UTC(IT) TF signals at RadioNavigation Lab. To GNSS receivers
(TimeTech Pulse Distribution Unit and SDI HPDA-15RM-C)



IT05 (INRS), IT09 (INRG) and IT07 (IENG)



IT11 (GR01) and IT12 (GR02)



IT21 (GR11)

Log of Events / Additional Information :

Email from **Tung Thanh Thai** (t.thai@inrim.it) on 29/09/2025 16:26:

REFDELAY (UTC(IT) - CLB_Pk) is 101.1 ns.

IENG-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 238496
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39523 high elev obs : -90.225 -91.216
 Iteration 0: Obs used = 264099; Huge residuals = 5; Large residuals = 137167
 Iteration 1: Obs used = 264132; Huge residuals = 0; Large residuals = 137125
 Computed code bias (P1/P2)/m = -83.588 -84.530
 Computed baseline (X,Y,Z)/m = 13.017 -21.591 -14.951
 RMS of residuals /m = 1.171

Number of phase differences to fit baseline
 L1/L2 = 236192
 L5 = 141049
 A priori baseline (X,Y,Z)/m = 13.017 -21.591 -14.951
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = -2.8 RMS jitter /ps = 13.0

Iter 1 Large residuals L1= 8
 Iter 1 Large residuals L2= 9
 Iter 1 Large residuals L5= 10
 Computed baseline L1 (X,Y,Z)/m = -6.162 -0.386 -5.593
 RMS of residuals L1 /m = 0.005
 Computed baseline L2 (X,Y,Z)/m = -6.141 -0.394 -5.586
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -6.160 -0.297 -5.566
 RMS of residuals L5 /m = 0.005

Iter 2 Large residuals L1= 8
 Iter 2 Large residuals L2= 9
 Iter 2 Large residuals L5= 10
 Computed baseline L1 (X,Y,Z)/m = -6.164 -0.386 -5.595
 RMS of residuals L1 /m = 0.005
 Computed baseline L2 (X,Y,Z)/m = -6.143 -0.394 -5.588
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -6.169 -0.297 -5.572
 RMS of residuals L5 /m = 0.005

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 6.863 -21.981 -20.542
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = 1.8 RMS jitter /ps = 11.9

Iter 3 Large residuals L1= 8
 Iter 3 Large residuals L2= 9
 Iter 3 Large residuals L5= 10
 Computed baseline L1 (X,Y,Z)/m = -0.252 -0.169 -0.177
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.232 -0.178 -0.171
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.246 -0.174 -0.180
 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 = 6.611 -22.150 -20.719
 Final baseline L2 (X,Y,Z)/m = 6.632 -22.159 -20.713
 Final baseline L5 (X,Y,Z)/m = 6.618 -22.155 -20.722

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 896097

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	239678	-259.107	1.275
C2	195332	-262.373	1.688
P1	238434	-260.531	1.324
P2	238438	-263.738	1.694
E1	212526	-258.914	1.200
E5	212519	-261.922	1.488
BC	188157	-258.204	1.478
B5	191793	-261.535	1.710

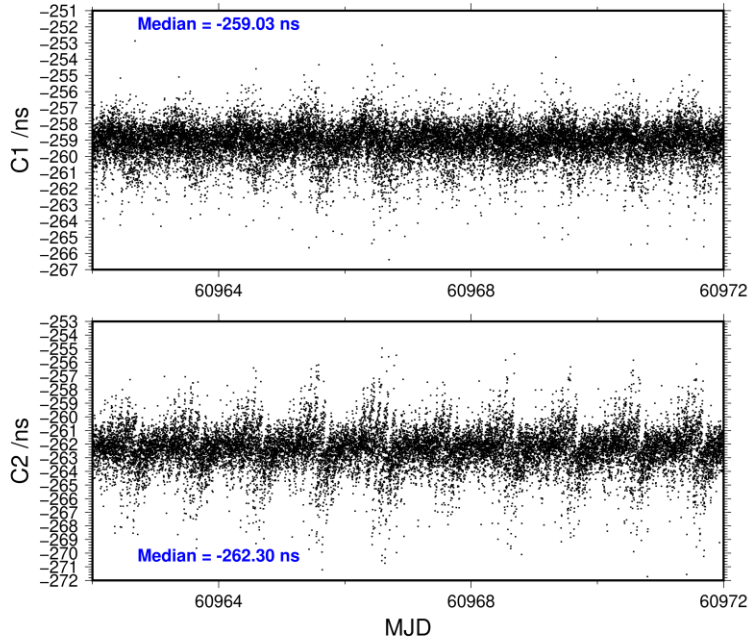
Number of 300s epochs in out file = 2880

Code	#pts	median/ns	ave/ns	rms/ns
C1	23965	-259.029	-259.112	1.059
C2	19525	-262.299	-262.371	1.468
P1	23840	-260.461	-260.533	1.125
P2	23840	-263.677	-263.742	1.513
E1	21243	-258.841	-258.917	1.030
E5	21243	-261.910	-261.923	1.382
BC	18798	-258.076	-258.212	1.296
B5	19137	-261.462	-261.532	1.585

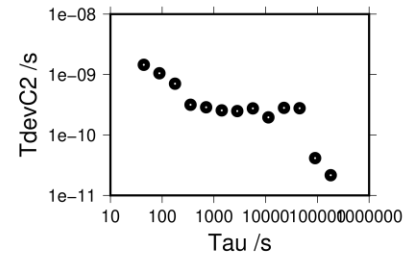
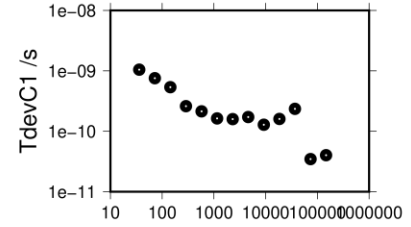
Ionofree combinations

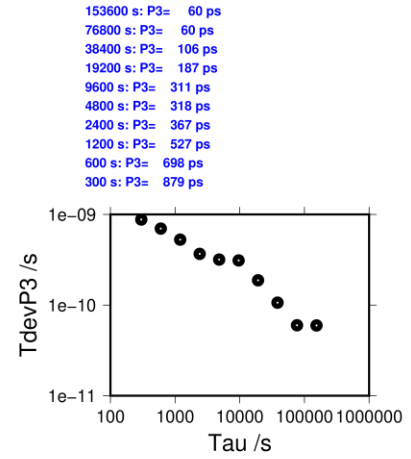
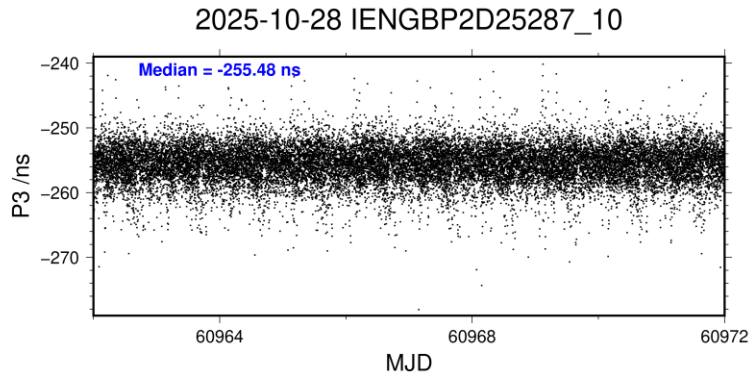
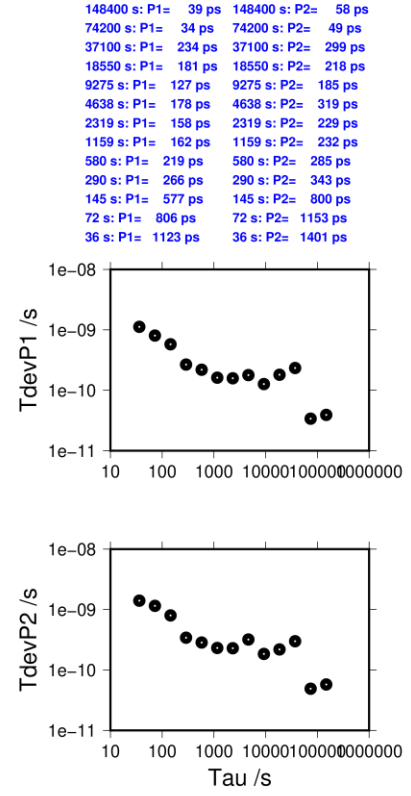
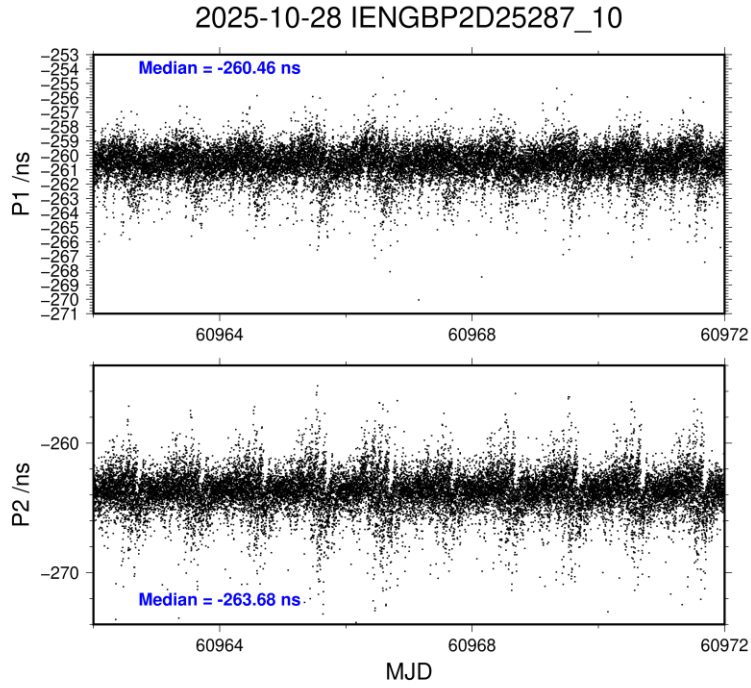
Code	#pts	median/ns	ave/ns	rms/ns
P3	2879	-255.477	-255.452	0.799
E3	2879	-255.055	-255.038	0.692
B3	2878	-253.986	-253.971	0.891

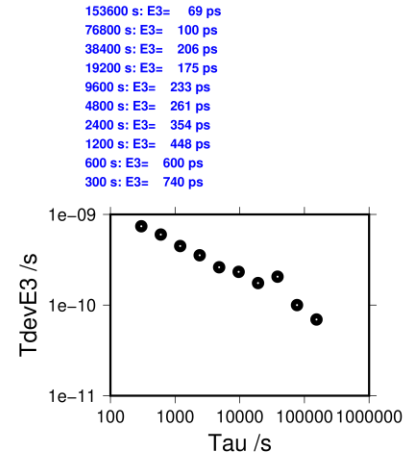
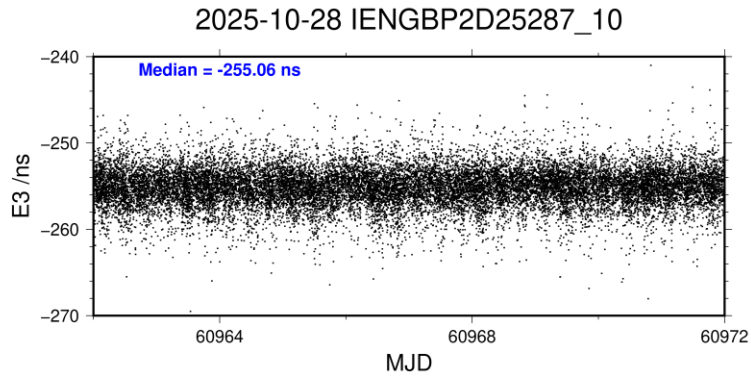
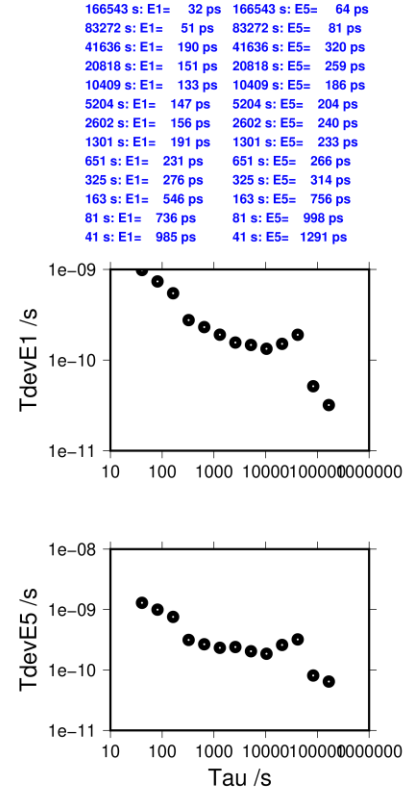
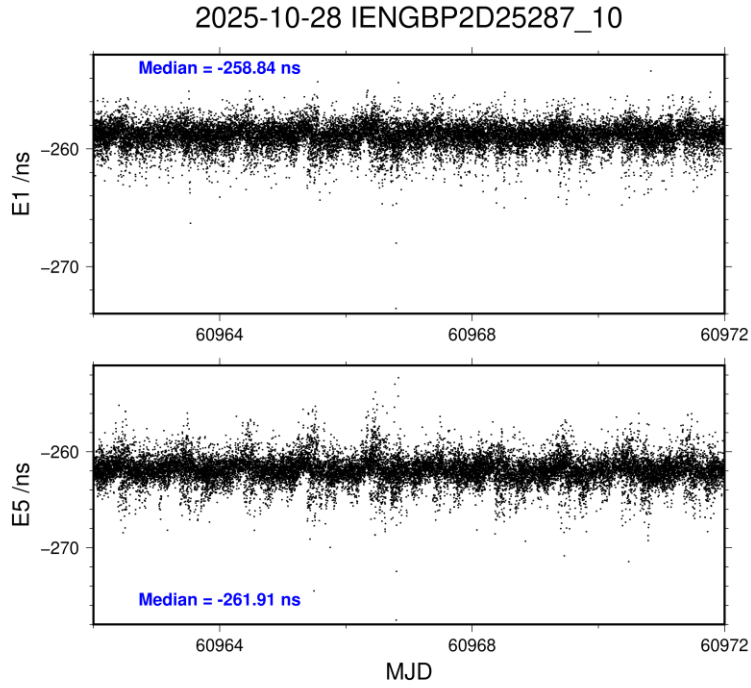
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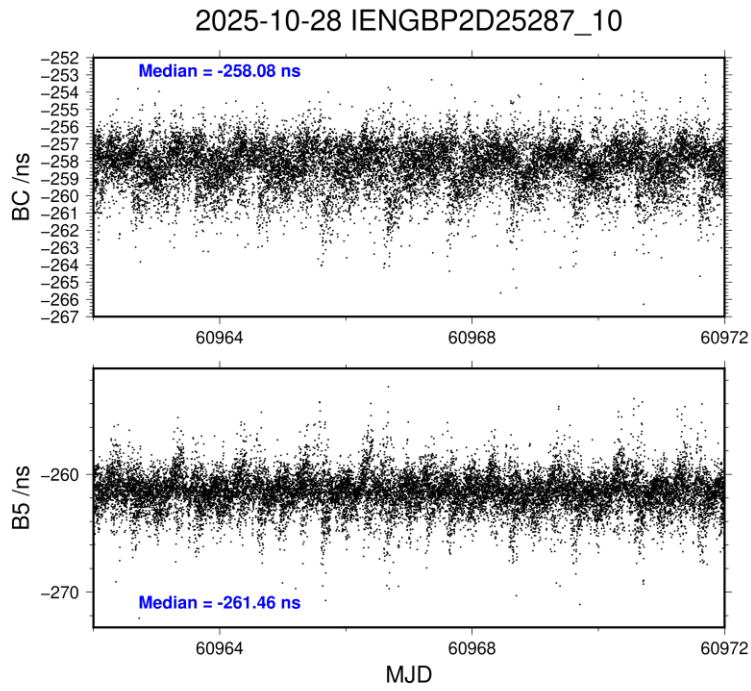


147626 s: C1=	40 ps	181198 s: C2=	22 ps
73813 s: C1=	35 ps	90599 s: C2=	41 ps
36907 s: C1=	235 ps	45300 s: C2=	277 ps
18453 s: C1=	160 ps	22650 s: C2=	281 ps
9227 s: C1=	128 ps	11325 s: C2=	195 ps
4613 s: C1=	172 ps	5662 s: C2=	276 ps
2307 s: C1=	159 ps	2831 s: C2=	249 ps
1153 s: C1=	163 ps	1416 s: C2=	255 ps
577 s: C1=	214 ps	708 s: C2=	287 ps
288 s: C1=	261 ps	354 s: C2=	316 ps
144 s: C1=	537 ps	177 s: C2=	707 ps
72 s: C1=	755 ps	88 s: C2=	1051 ps
36 s: C1=	1048 ps	44 s: C2=	1448 ps

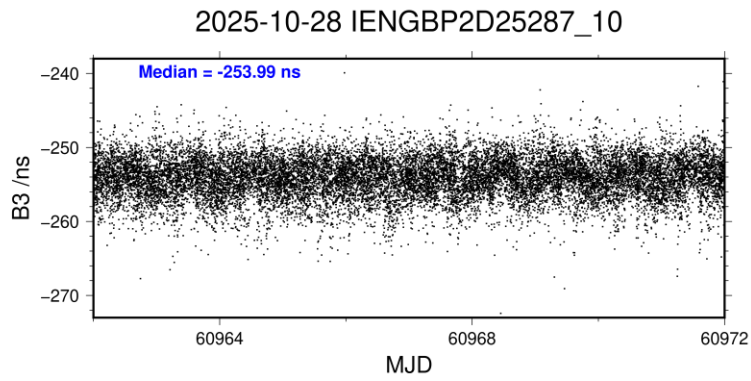
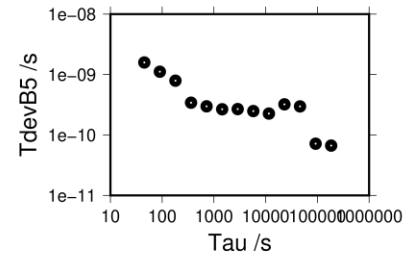
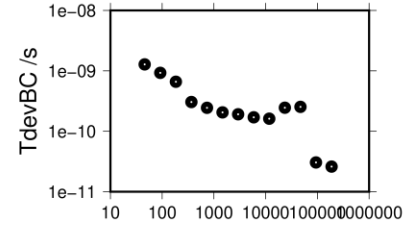




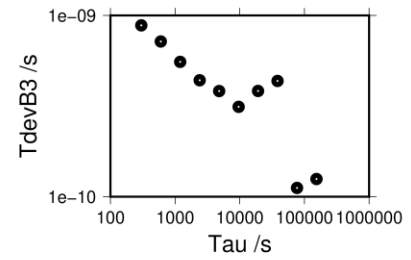




188206 s: BC= 26 ps 184872 s: B5= 67 ps
 94103 s: BC= 30 ps 92436 s: B5= 72 ps
 47052 s: BC= 253 ps 46218 s: B5= 297 ps
 23526 s: BC= 246 ps 23109 s: B5= 321 ps
 11763 s: BC= 162 ps 11555 s: B5= 226 ps
 5881 s: BC= 171 ps 5777 s: B5= 249 ps
 2941 s: BC= 191 ps 2889 s: B5= 268 ps
 1470 s: BC= 205 ps 1444 s: B5= 267 ps
 735 s: BC= 244 ps 722 s: B5= 298 ps
 368 s: BC= 305 ps 361 s: B5= 342 ps
 184 s: BC= 660 ps 181 s: B5= 790 ps
 92 s: BC= 926 ps 90 s: B5= 1115 ps
 46 s: BC= 1280 ps 45 s: B5= 1583 ps



153600 s: B3= 125 ps
 76800 s: B3= 112 ps
 38400 s: B3= 435 ps
 19200 s: B3= 383 ps
 9600 s: B3= 313 ps
 4800 s: B3= 382 ps
 2400 s: B3= 439 ps
 1200 s: B3= 554 ps
 600 s: B3= 718 ps
 300 s: B3= 881 ps



IENG-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 261041
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39540 high elev obs : -94.789 -93.886
 Iteration 0: Obs used = 309245; Huge residuals = 164; Large residuals = 137077
 Iteration 1: Obs used = 308423; Huge residuals = 0; Large residuals = 137726
 Computed code bias (P1/P2)/m = -87.381 -86.526
 Computed baseline (X,Y,Z)/m = 11.703 -21.898 -15.423
 RMS of residuals /m = 1.130

Number of phase differences to fit baseline
 L1/L2 = 258633
 L5 = 156032
 A priori baseline (X,Y,Z)/m = 11.703 -21.898 -15.423
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = -2.5 RMS jitter /ps = 10.5

Iter 1 Large residuals L1= 359
 Iter 1 Large residuals L2= 359
 Iter 1 Large residuals L5= 2534
 Computed baseline L1 (X,Y,Z)/m = -5.186 -0.058 -4.750
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -5.154 -0.052 -4.734
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -5.210 0.050 -4.656
 RMS of residuals L5 /m = 0.005

Iter 2 Large residuals L1= 359
 Iter 2 Large residuals L2= 359
 Iter 2 Large residuals L5= 2534
 Computed baseline L1 (X,Y,Z)/m = -5.192 -0.057 -4.754
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -5.163 -0.053 -4.741
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -5.266 0.029 -4.682
 RMS of residuals L5 /m = 0.005

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 6.526 -21.953 -20.171
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = 1.6 RMS jitter /ps = 9.7

Iter 3 Large residuals L1= 359
 Iter 3 Large residuals L2= 361
 Iter 3 Large residuals L5= 2542
 Computed baseline L1 (X,Y,Z)/m = -0.194 -0.147 -0.140
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.164 -0.143 -0.128
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.266 -0.153 -0.097
 RMS of residuals L5 /m = 0.004

Iter 4 Large residuals L1= 359
 Iter 4 Large residuals L2= 361

Iter 4 Large residuals L5= 2542

Computed baseline L1 (X,Y,Z)/m = -0.194 -0.147 -0.140

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.164 -0.143 -0.128

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.269 -0.155 -0.097

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 = 6.332 -22.100 -20.311

Final baseline L2 (X,Y,Z)/m = 6.361 -22.097 -20.299

Final baseline L5 (X,Y,Z)/m = 6.257 -22.108 -20.268

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	273846	-276.567	2.564
C2	223452	-273.929	2.787
P1	260902	-276.428	1.865
P2	260462	-273.670	2.792
E1	240342	-276.498	2.080
E5	242568	-274.081	2.215
BC	211401	-276.468	2.507
B5	214006	-274.197	2.548

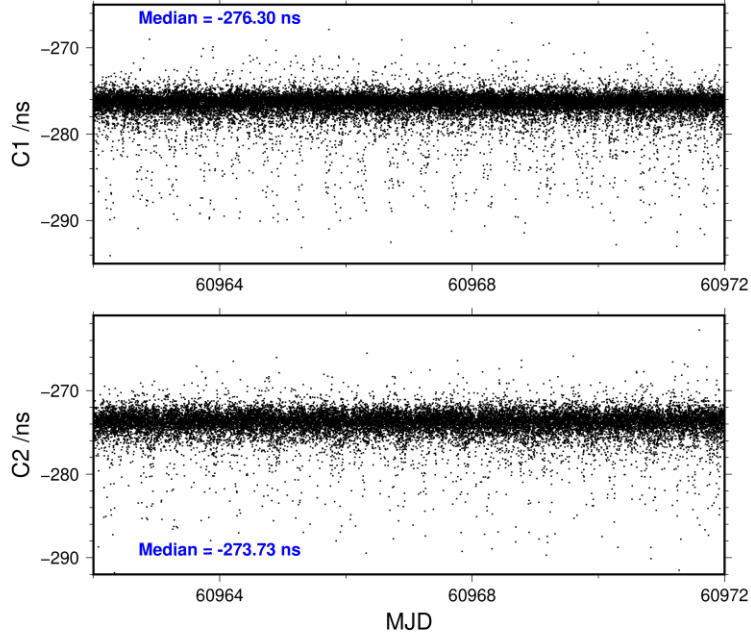
Number of 300s epochs in out file = 2880

Code	#pts	median/ns	ave/ns	rms/ns
C1	27344	-276.299	-276.583	1.645
C2	22250	-273.728	-273.946	1.745
P1	26057	-276.305	-276.436	1.179
P2	26026	-273.647	-273.745	1.902
E1	24016	-276.327	-276.521	1.439
E5	24248	-273.938	-274.121	1.750
BC	21149	-276.196	-276.501	1.830
B5	21415	-273.922	-274.242	2.082

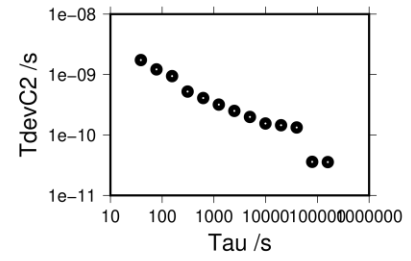
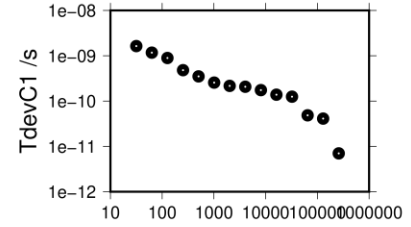
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	2873	-280.448	-280.347	0.919
E3	2864	-279.370	-279.354	0.698
B3	2869	-279.089	-279.073	0.761

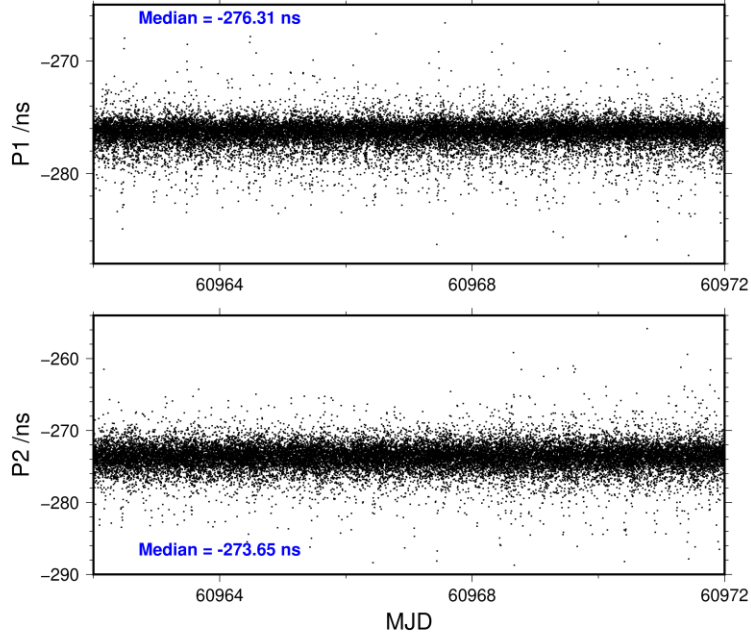
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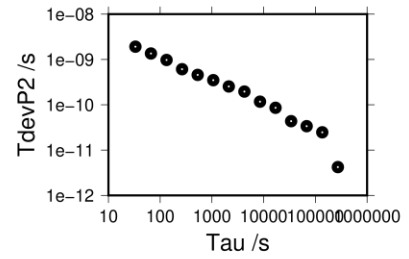
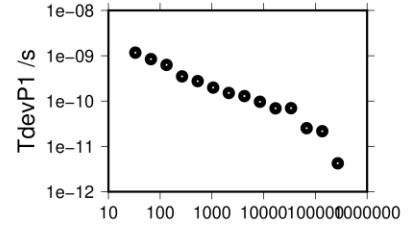
258766 s: C1= 7 ps	
129383 s: C1= 41 ps	159006 s: C2= 36 ps
64691 s: C1= 49 ps	79503 s: C2= 36 ps
32346 s: C1= 125 ps	39751 s: C2= 133 ps
16173 s: C1= 138 ps	19876 s: C2= 145 ps
8086 s: C1= 174 ps	9938 s: C2= 155 ps
4043 s: C1= 208 ps	4969 s: C2= 199 ps
2022 s: C1= 217 ps	2484 s: C2= 251 ps
1011 s: C1= 256 ps	1242 s: C2= 318 ps
505 s: C1= 351 ps	621 s: C2= 408 ps
253 s: C1= 480 ps	311 s: C2= 524 ps
126 s: C1= 891 ps	155 s: C2= 942 ps
63 s: C1= 1171 ps	78 s: C2= 1218 ps
32 s: C1= 1634 ps	39 s: C2= 1740 ps



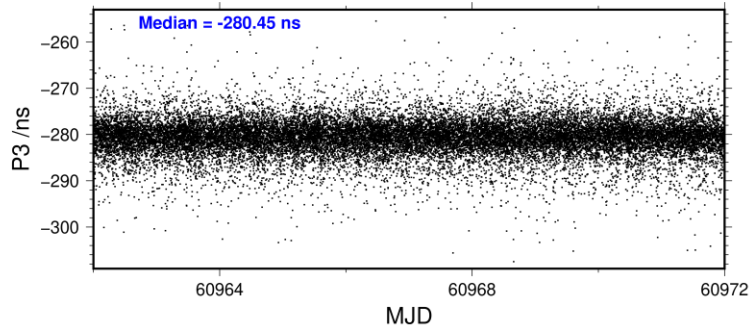
2025-10-28 IENGBP2G25287_10



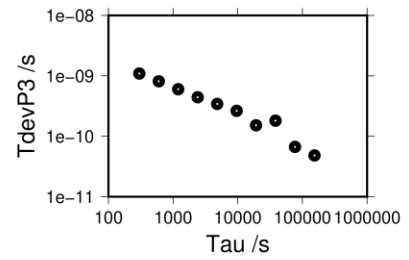
271547 s: P1= 4 ps	271871 s: P2= 4 ps
135774 s: P1= 22 ps	135935 s: P2= 25 ps
67887 s: P1= 25 ps	67968 s: P2= 34 ps
33943 s: P1= 70 ps	33984 s: P2= 44 ps
16972 s: P1= 69 ps	16992 s: P2= 86 ps
8486 s: P1= 97 ps	8496 s: P2= 117 ps
4243 s: P1= 129 ps	4248 s: P2= 195 ps
2121 s: P1= 151 ps	2124 s: P2= 253 ps
1061 s: P1= 198 ps	1062 s: P2= 349 ps
530 s: P1= 275 ps	531 s: P2= 456 ps
265 s: P1= 350 ps	266 s: P2= 610 ps
133 s: P1= 630 ps	133 s: P2= 973 ps
66 s: P1= 843 ps	66 s: P2= 1352 ps
33 s: P1= 1172 ps	33 s: P2= 1914 ps

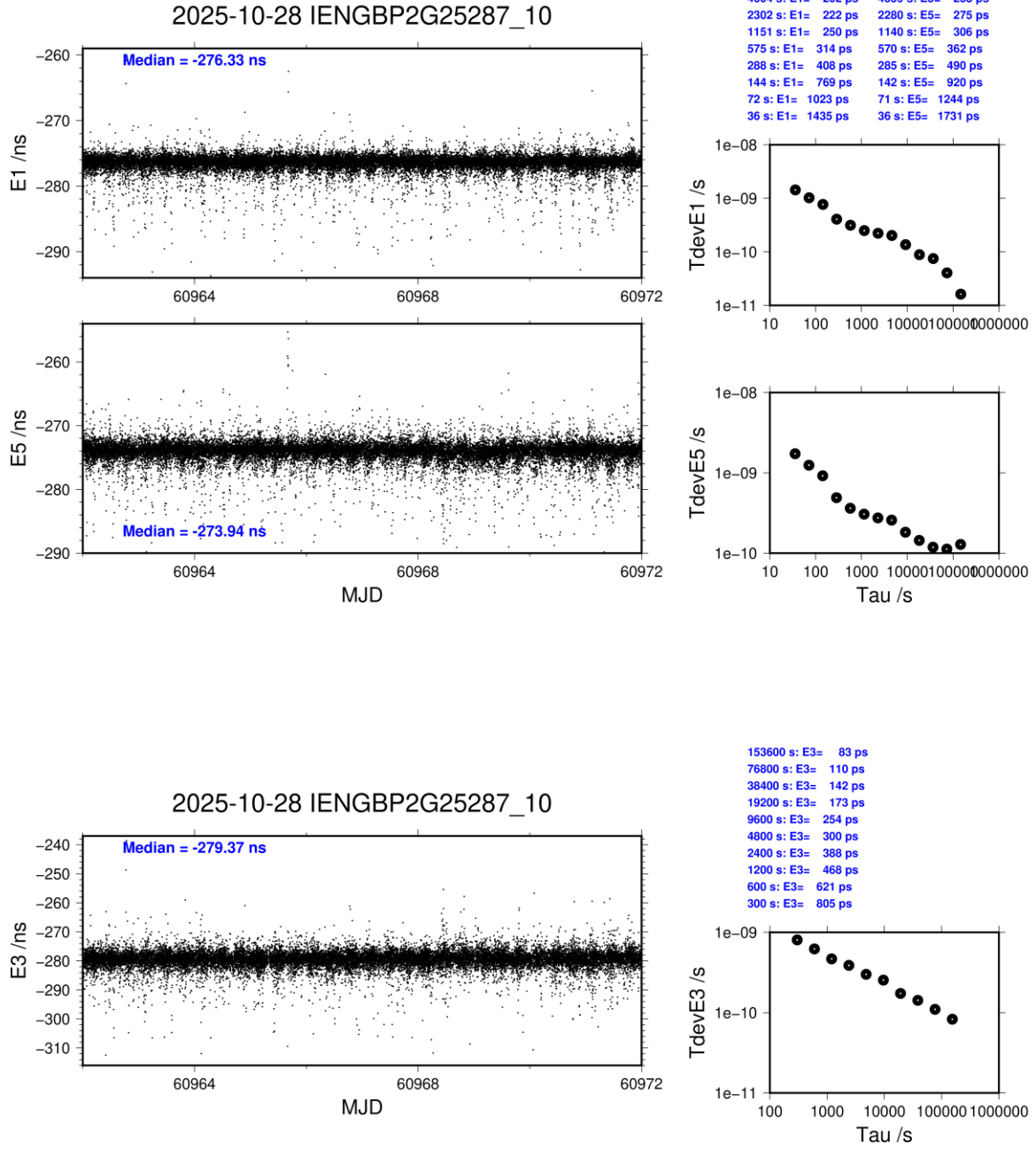


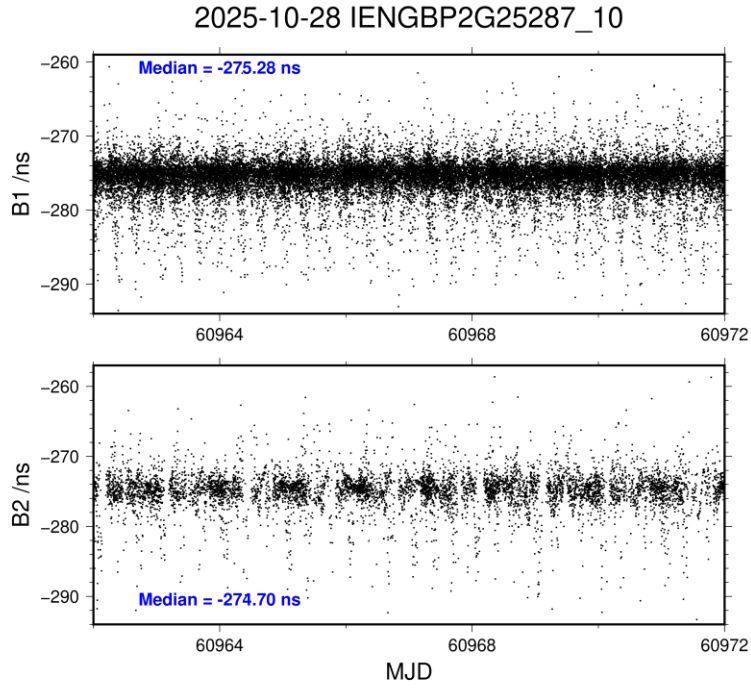
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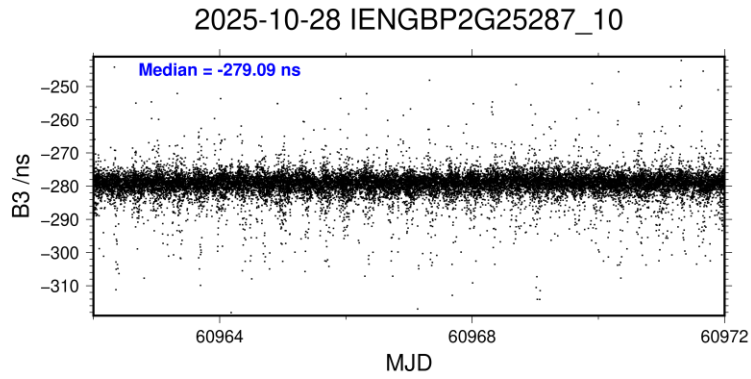
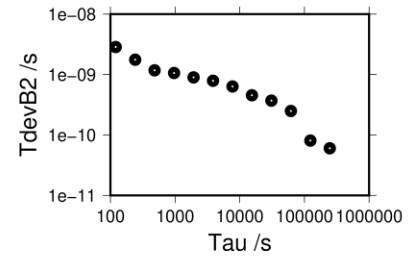
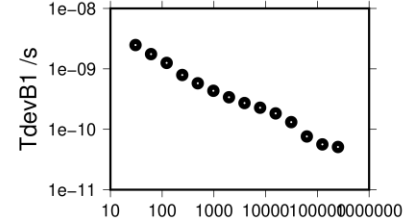
153600 s: P3= 48 ps
76800 s: P3= 67 ps
38400 s: P3= 181 ps
19200 s: P3= 152 ps
9600 s: P3= 264 ps
4800 s: P3= 343 ps
2400 s: P3= 442 ps
1200 s: P3= 601 ps
600 s: P3= 812 ps
300 s: P3= 1094 ps



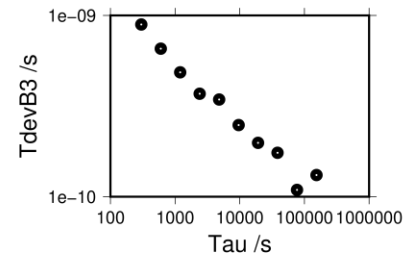




250077 s: B1= 51 ps
 125039 s: B1= 56 ps
 62519 s: B1= 76 ps 246909 s: B2= 60 ps
 31260 s: B1= 131 ps 123455 s: B2= 81 ps
 15630 s: B1= 183 ps 61727 s: B2= 250 ps
 7815 s: B1= 228 ps 30864 s: B2= 371 ps
 3907 s: B1= 272 ps 15432 s: B2= 454 ps
 1954 s: B1= 339 ps 7716 s: B2= 634 ps
 977 s: B1= 434 ps 3858 s: B2= 790 ps
 488 s: B1= 578 ps 1929 s: B2= 897 ps
 244 s: B1= 792 ps 964 s: B2= 1063 ps
 122 s: B1= 1256 ps 482 s: B2= 1174 ps
 61 s: B1= 1752 ps 241 s: B2= 1762 ps
 31 s: B1= 2476 ps 121 s: B2= 2858 ps



153600 s: B3= 132 ps
 76800 s: B3= 109 ps
 38400 s: B3= 175 ps
 19200 s: B3= 198 ps
 9600 s: B3= 248 ps
 4800 s: B3= 344 ps
 2400 s: B3= 370 ps
 1200 s: B3= 485 ps
 600 s: B3= 656 ps
 300 s: B3= 891 ps



IT05-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 236981
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39317 high elev obs : -50.418 -51.902
 Iteration 0: Obs used = 330576; Huge residuals = 8; Large residuals = 68038
 Iteration 1: Obs used = 330602; Huge residuals = 0; Large residuals = 67999
 Computed code bias (P1/P2)/m = -45.533 -47.023
 Computed baseline (X,Y,Z)/m = 8.481 -31.355 -8.935
 RMS of residuals /m = 1.088

Number of phase differences to fit baseline
 L1/L2 = 234716
 L5 = 140122
 A priori baseline (X,Y,Z)/m = 8.481 -31.355 -8.935
 28611 clock jitters computed out of 28612 intervals
 AVE jitter /ps = -2.3 RMS jitter /ps = 10.0

Iter 1 Large residuals L1= 8
 Iter 1 Large residuals L2= 8
 Iter 1 Large residuals L5= 8
 Computed baseline L1 (X,Y,Z)/m = -4.627 -0.347 -4.083
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.603 -0.354 -4.076
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -4.618 -0.286 -4.063
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 8
 Iter 2 Large residuals L2= 8
 Iter 2 Large residuals L5= 8
 Computed baseline L1 (X,Y,Z)/m = -4.628 -0.347 -4.084
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.603 -0.354 -4.076
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -4.624 -0.286 -4.066
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 3.866 -31.705 -13.015
 28611 clock jitters computed out of 28612 intervals
 AVE jitter /ps = 1.5 RMS jitter /ps = 8.8

Iter 3 Large residuals L1= 8
 Iter 3 Large residuals L2= 8
 Iter 3 Large residuals L5= 8
 Computed baseline L1 (X,Y,Z)/m = -0.194 -0.148 -0.133
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.169 -0.155 -0.125
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.181 -0.154 -0.134
 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 = 3.672 -31.853 -13.147
 Final baseline L2 (X,Y,Z)/m = 3.697 -31.860 -13.140
 Final baseline L5 (X,Y,Z)/m = 3.685 -31.860 -13.148

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 890952

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	238197	-136.773	1.277
C2	194006	-142.131	1.706
P1	236920	-138.309	1.325
P2	236922	-143.375	1.766
E1	211286	-136.551	1.183
E5	211318	-139.301	1.481
BC	186859	-135.799	2.160
B5	190747	-138.737	2.169

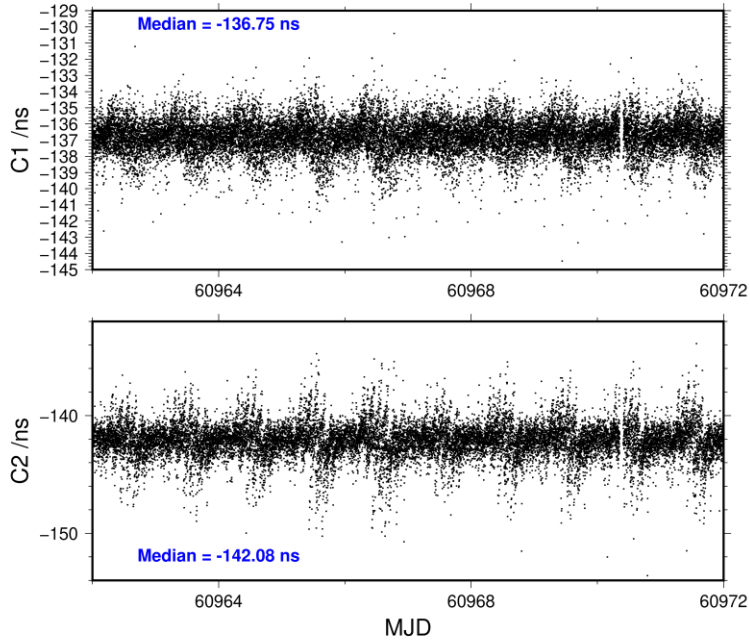
Number of 300s epochs in out file = 2864

Code	#pts	median/ns	ave/ns	rms/ns
C1	23814	-136.745	-136.776	1.035
C2	19389	-142.079	-142.126	1.487
P1	23686	-138.283	-138.309	1.097
P2	23686	-143.318	-143.364	1.536
E1	21119	-136.524	-136.553	0.995
E5	21122	-139.305	-139.300	1.365
BC	18667	-135.730	-135.807	2.030
B5	19032	-138.797	-138.735	2.075

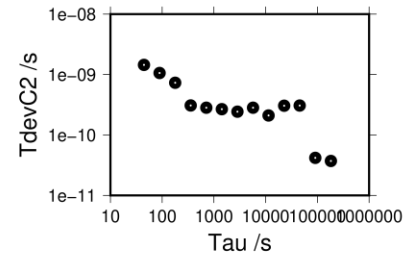
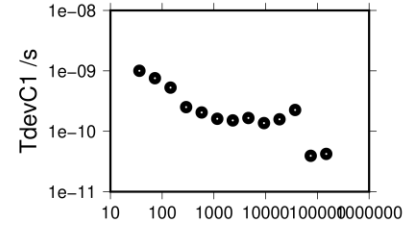
Ionofree combinations

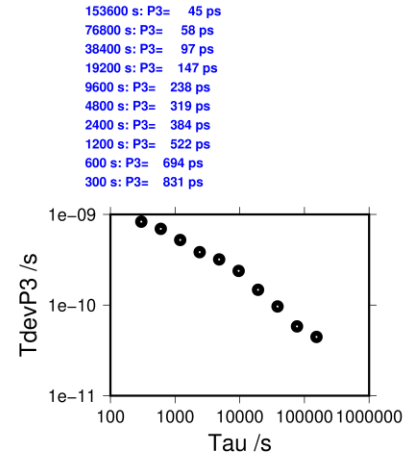
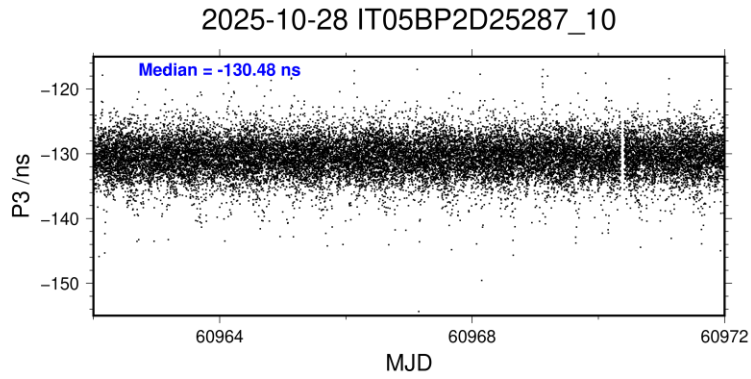
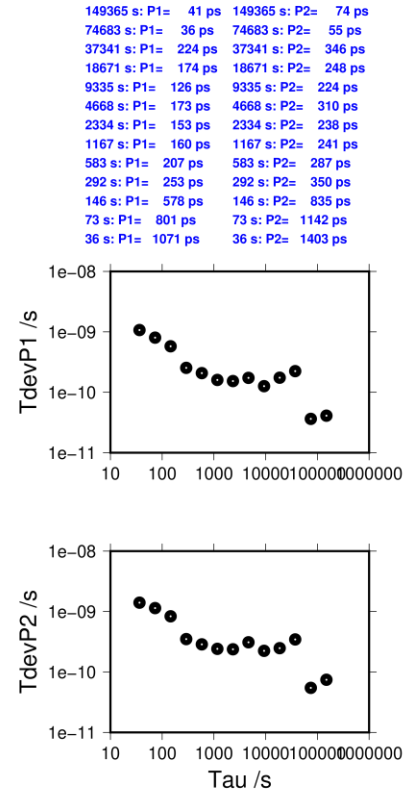
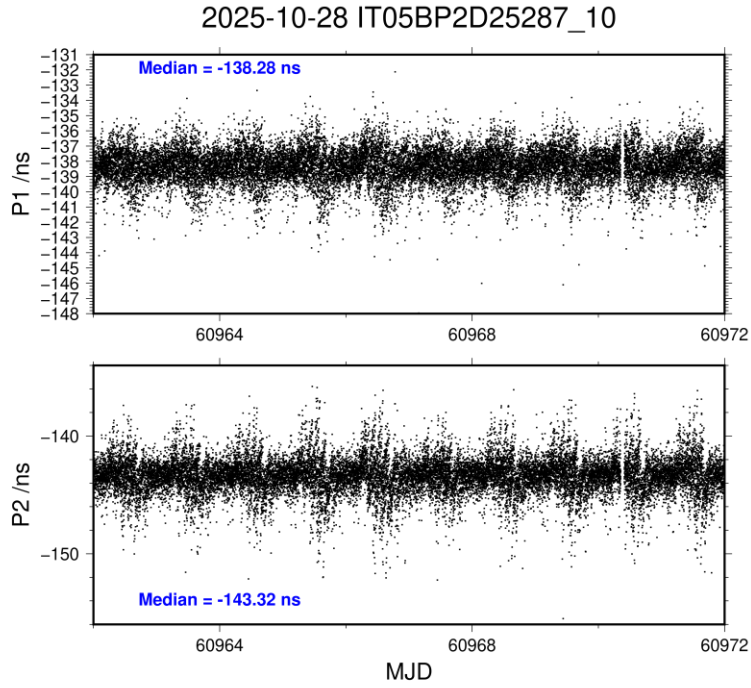
Code	#pts	median/ns	ave/ns	rms/ns
P3	2863	-130.476	-130.485	0.772
E3	2863	-133.088	-133.080	0.683
B3	2862	-132.117	-132.147	0.990

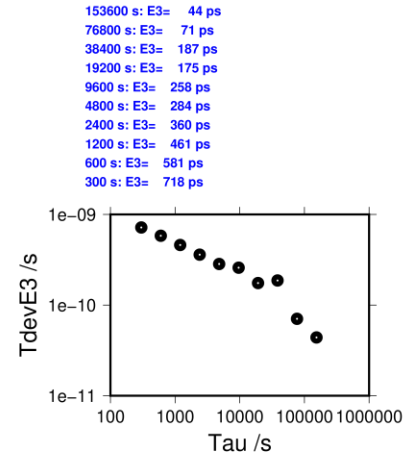
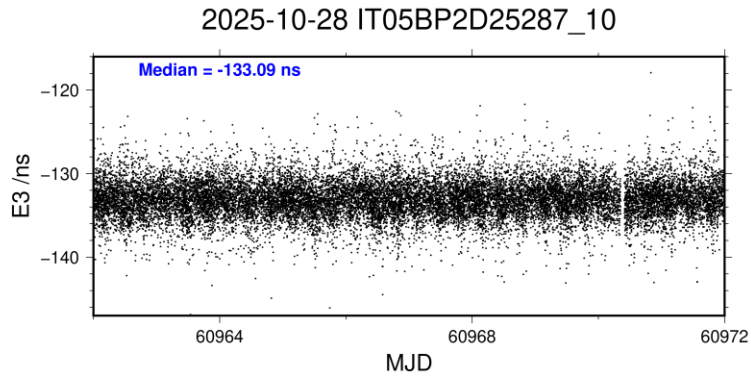
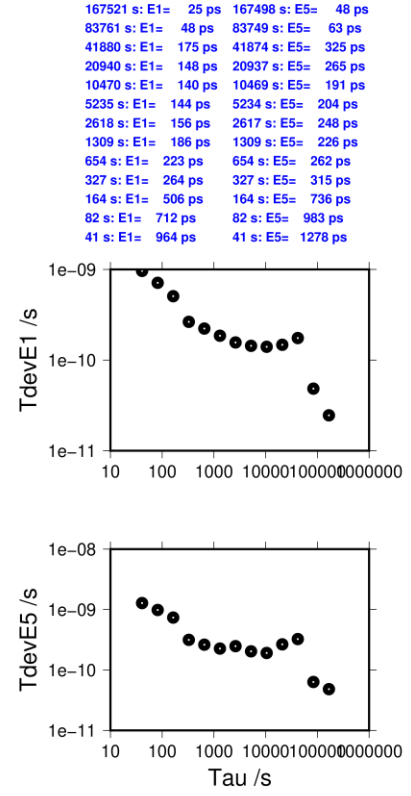
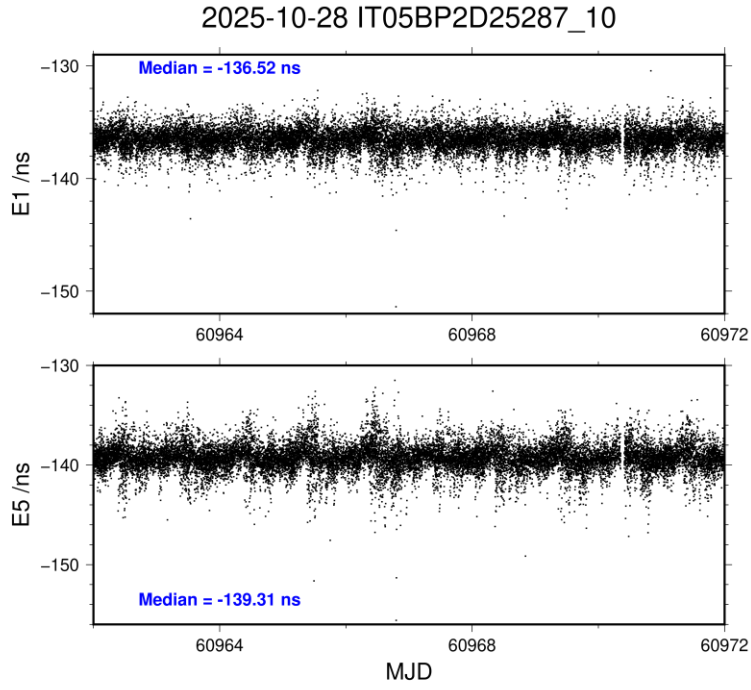
2025-10-28 IT05BP2D25287_10

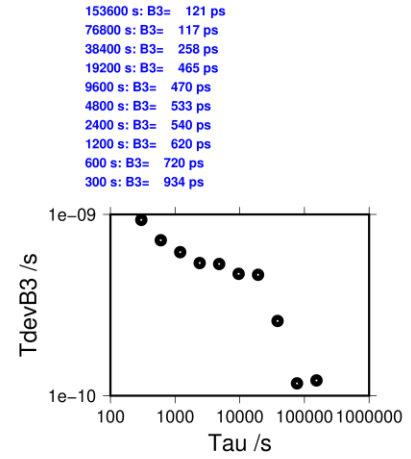
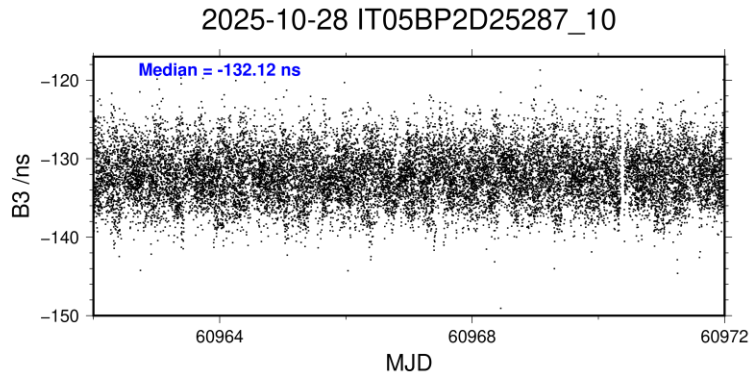
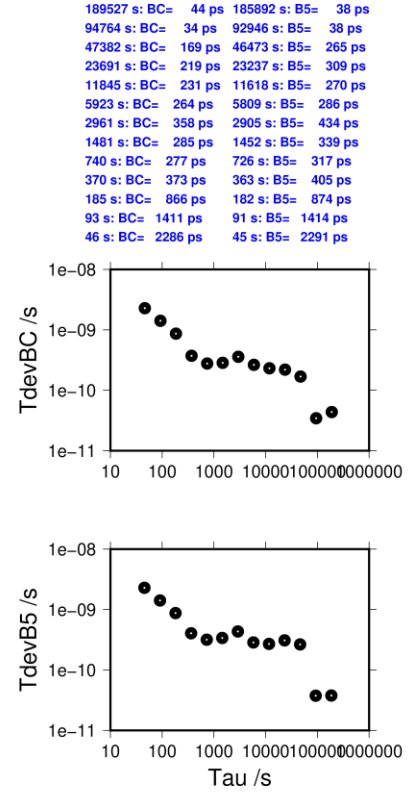
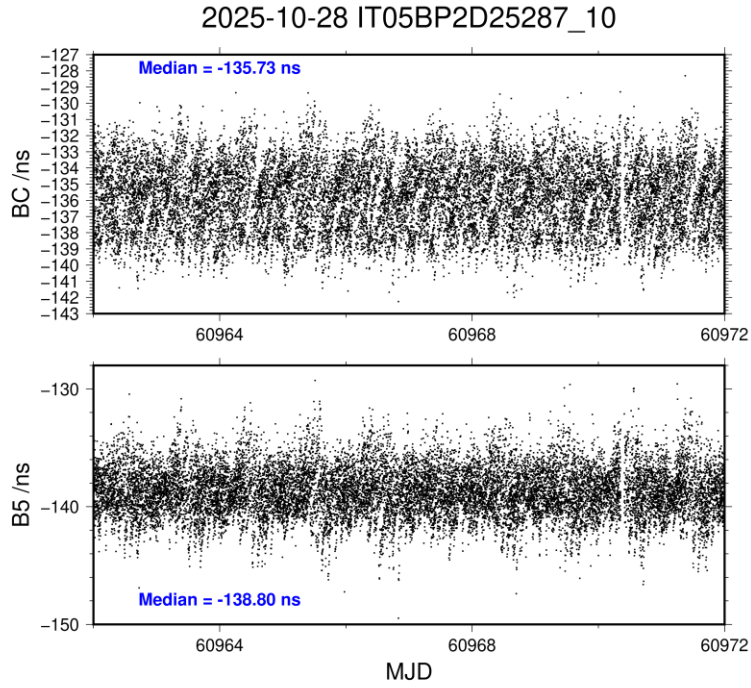


148562 s: C1= 42 ps	182469 s: C2= 37 ps
74281 s: C1= 39 ps	91235 s: C2= 42 ps
37141 s: C1= 225 ps	45617 s: C2= 307 ps
18570 s: C1= 158 ps	22809 s: C2= 305 ps
9285 s: C1= 137 ps	11404 s: C2= 210 ps
4643 s: C1= 166 ps	5702 s: C2= 282 ps
2321 s: C1= 151 ps	2851 s: C2= 243 ps
1161 s: C1= 161 ps	1426 s: C2= 267 ps
580 s: C1= 205 ps	713 s: C2= 283 ps
290 s: C1= 251 ps	356 s: C2= 308 ps
145 s: C1= 529 ps	178 s: C2= 731 ps
73 s: C1= 756 ps	89 s: C2= 1061 ps
36 s: C1= 1004 ps	45 s: C2= 1446 ps









IT05-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 257965
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39334 high elev obs : -55.001 -54.702
 Iteration 0: Obs used = 371352; Huge residuals = 1093; Large residuals = 69196
 Iteration 1: Obs used = 361773; Huge residuals = 1; Large residuals = 77673
 Iteration 2: Obs used = 361767; Huge residuals = 0; Large residuals = 77678
 Computed code bias (P1/P2)/m = -49.630 -49.337
 Computed baseline (X,Y,Z)/m = 7.497 -31.561 -9.112
 RMS of residuals /m = 1.040

Number of phase differences to fit baseline
 L1/L2 = 255085
 L5 = 153722
 A priori baseline (X,Y,Z)/m = 7.497 -31.561 -9.112
 28626 clock jitters computed out of 28627 intervals
 AVE jitter /ps = -1.8 RMS jitter /ps = 8.2

Iter 1 Large residuals L1= 305
 Iter 1 Large residuals L2= 306
 Iter 1 Large residuals L5= 2084
 Computed baseline L1 (X,Y,Z)/m = -3.969 -0.134 -3.526
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -3.941 -0.132 -3.515
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -3.981 -0.044 -3.471
 RMS of residuals L5 /m = 0.005

Iter 2 Large residuals L1= 305
 Iter 2 Large residuals L2= 306
 Iter 2 Large residuals L5= 2081
 Computed baseline L1 (X,Y,Z)/m = -3.972 -0.133 -3.528
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -3.945 -0.133 -3.518
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.026 -0.044 -3.495
 RMS of residuals L5 /m = 0.005

Iter 3 Large residuals L1= 305
 Iter 3 Large residuals L2= 306
 Iter 3 Large residuals L5= 2081
 Computed baseline L1 (X,Y,Z)/m = -3.972 -0.133 -3.528
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -3.945 -0.133 -3.518
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.027 -0.044 -3.495
 RMS of residuals L5 /m = 0.005

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 3.539 -31.694 -12.635
 28626 clock jitters computed out of 28627 intervals
 AVE jitter /ps = 1.2 RMS jitter /ps = 7.3

Iter 4 Large residuals L1= 305

Iter 4 Large residuals L2= 309
 Iter 4 Large residuals L5= 2083
 Computed baseline L1 (X,Y,Z)/m = -0.148 -0.119 -0.105
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.121 -0.118 -0.095
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.201 -0.091 -0.089
 RMS of residuals L5 /m = 0.004

Iter 5 Large residuals L1= 305
 Iter 5 Large residuals L2= 309
 Iter 5 Large residuals L5= 2083
 Computed baseline L1 (X,Y,Z)/m = -0.148 -0.119 -0.105
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.121 -0.118 -0.096
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.203 -0.091 -0.089
 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 = 3.391 -31.813 -12.740
 Final baseline L2 (X,Y,Z)/m = 3.417 -31.813 -12.730
 Final baseline L5 (X,Y,Z)/m = 3.336 -31.785 -12.724

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

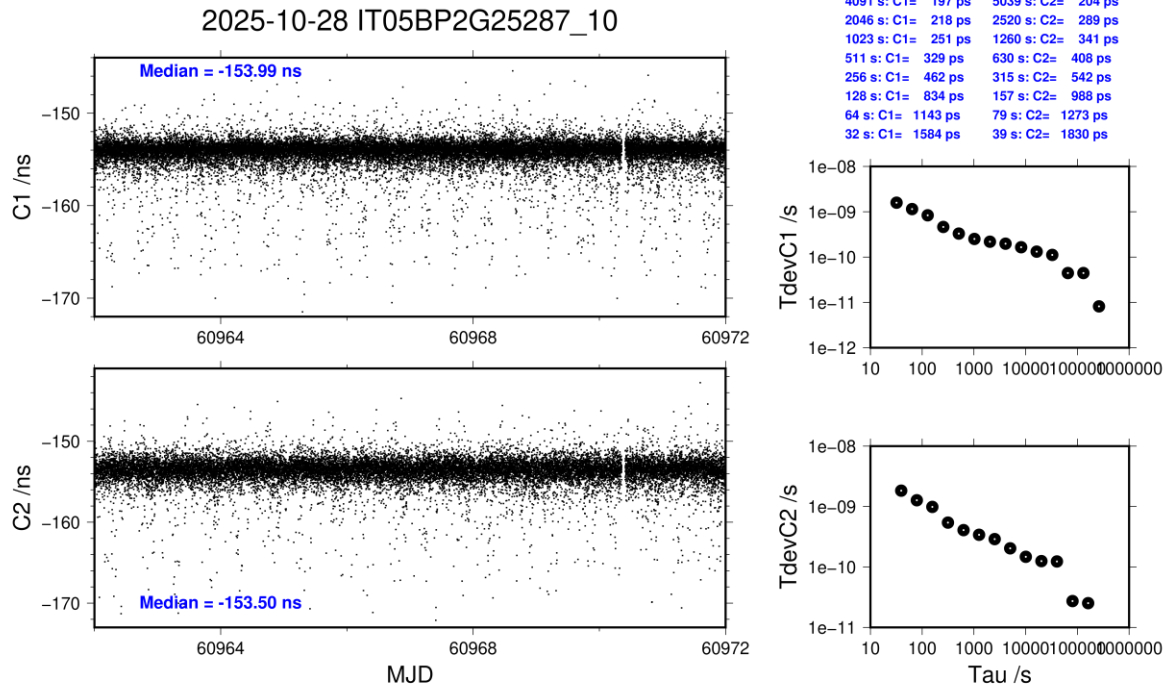
Code	#pts	ave/ns	rms/ns
C1	270760	-154.228	2.565
C2	220321	-153.694	2.850
P1	257360	-154.194	1.843
P2	256936	-153.293	2.860
E1	238027	-154.131	2.051
E5	240433	-151.472	2.209
BC	209068	-154.157	2.479
B5	212309	-151.562	2.542

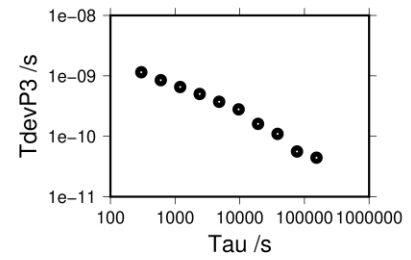
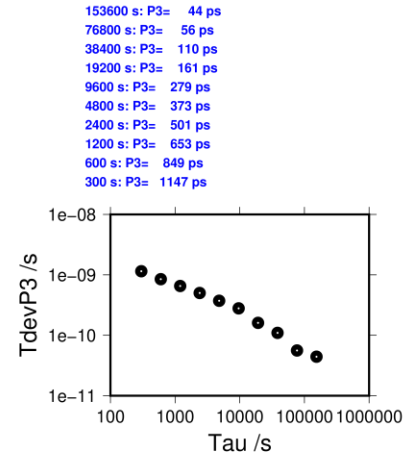
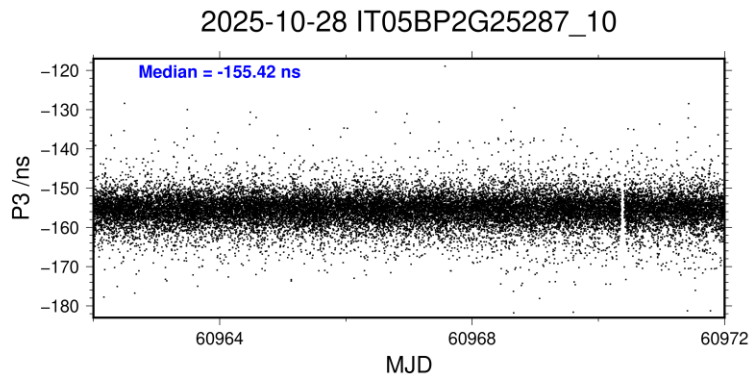
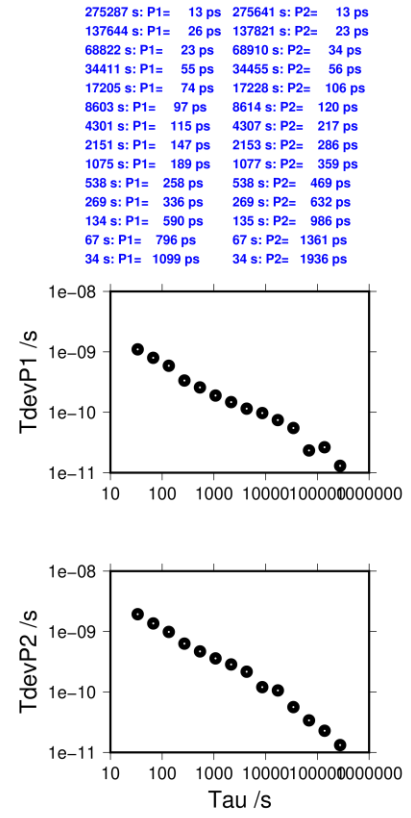
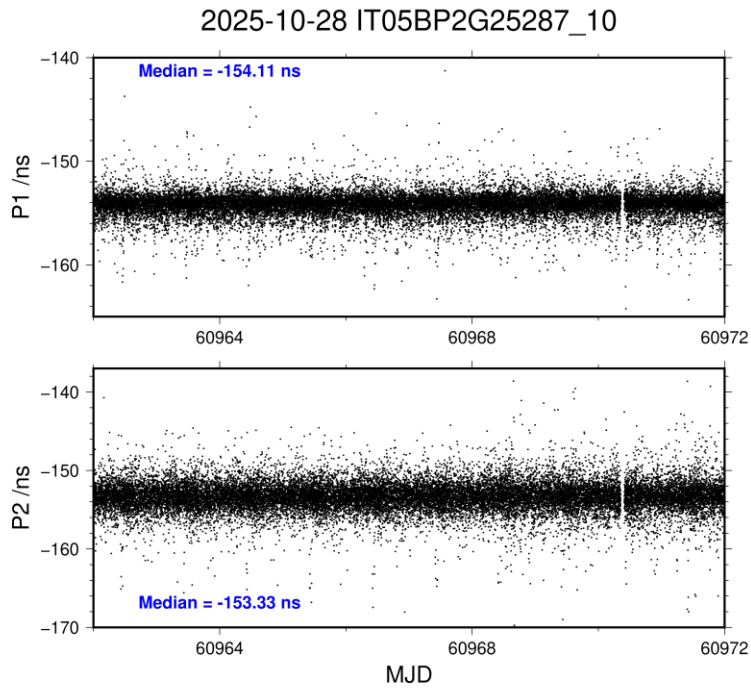
Number of 300s epochs in out file = 2864

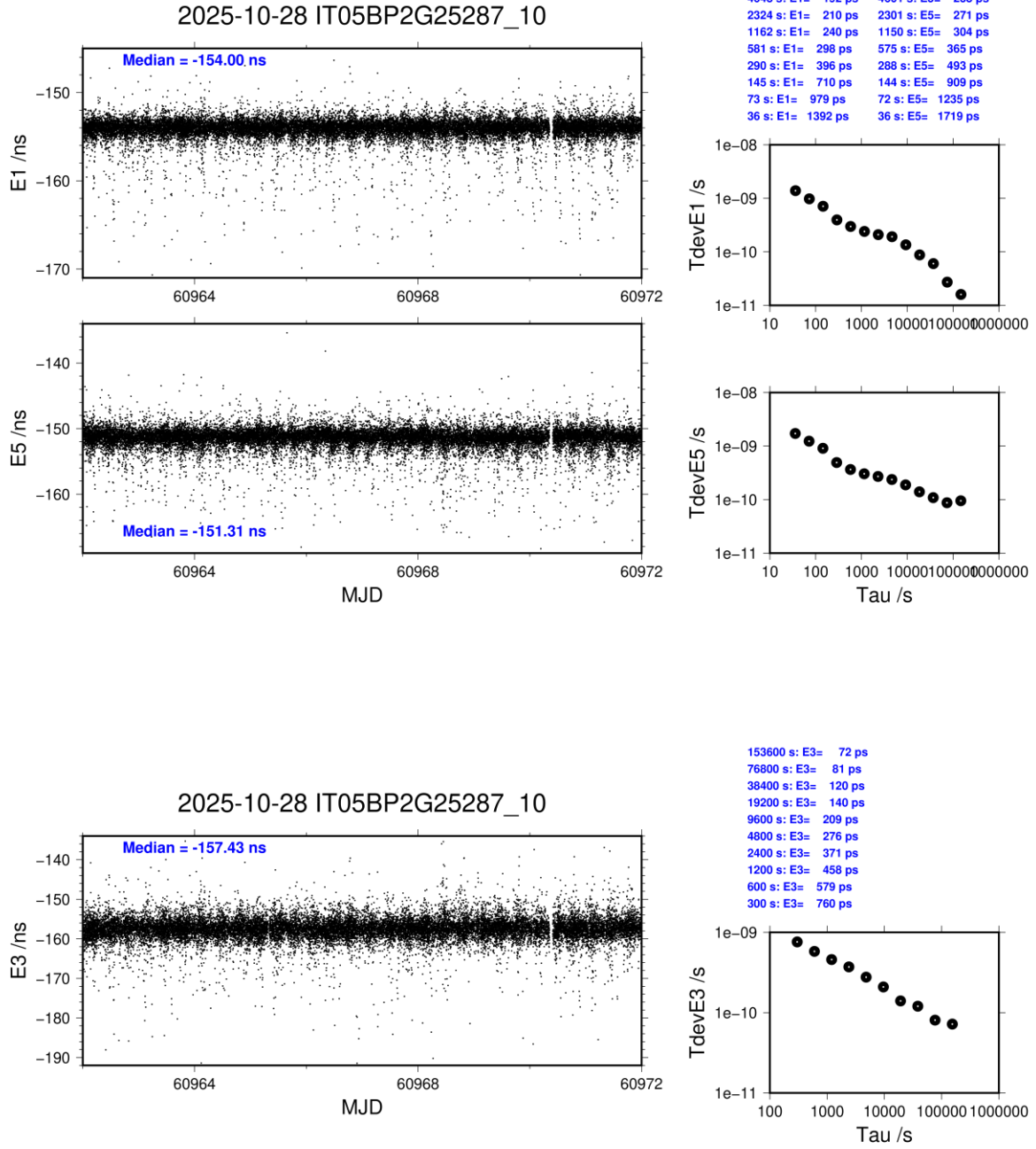
Code	#pts	median/ns	ave/ns	rms/ns
C1	27024	-153.990	-154.241	1.585
C2	21940	-153.503	-153.712	1.826
P1	25703	-154.113	-154.204	1.109
P2	25670	-153.329	-153.353	1.932
E1	23787	-153.999	-154.154	1.377
E5	24027	-151.313	-151.509	1.732
BC	20917	-153.930	-154.187	1.757
B5	21250	-151.294	-151.603	2.063

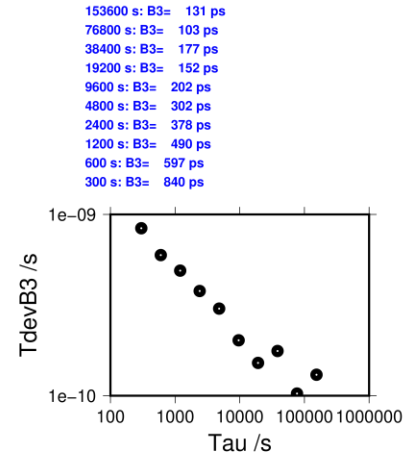
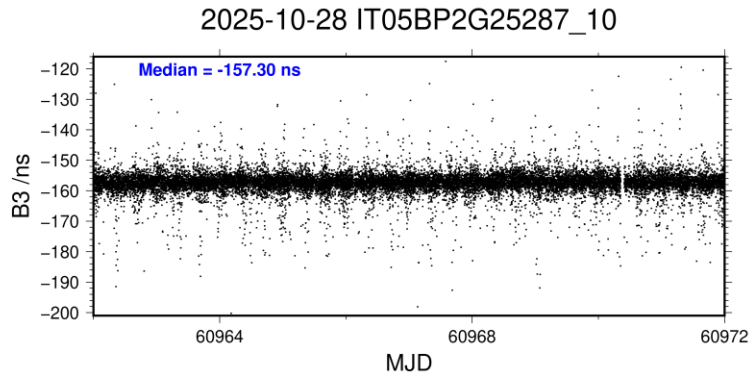
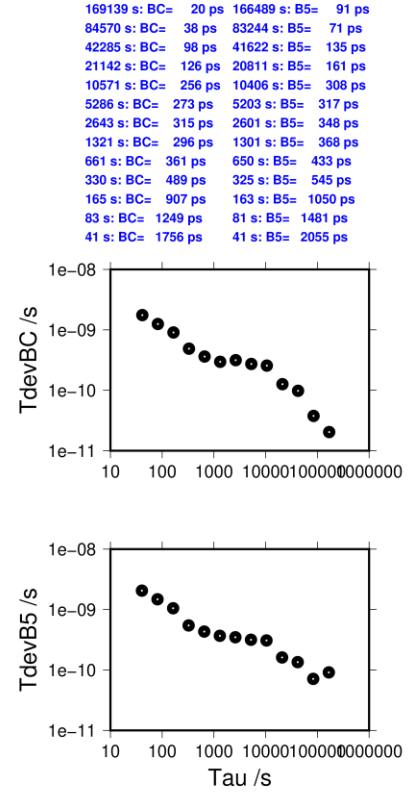
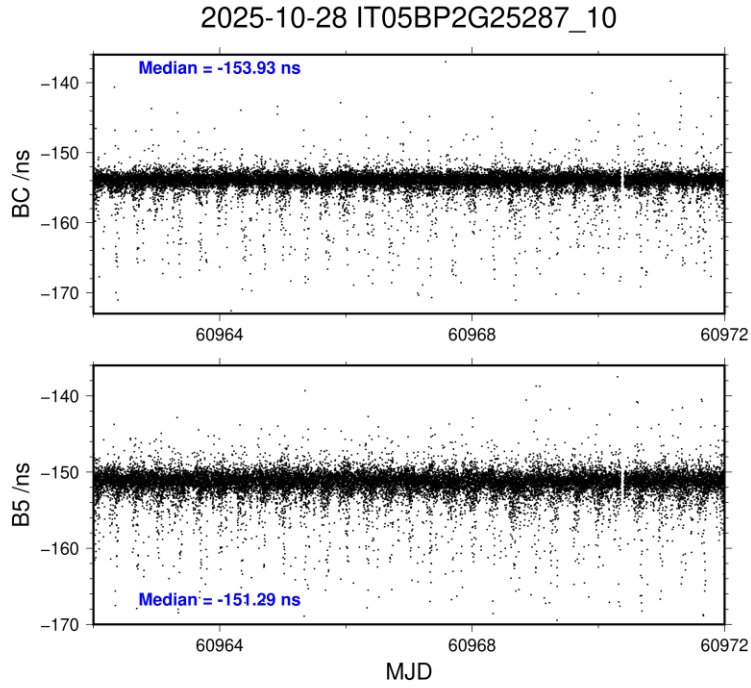
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	2855	-155.423	-155.366	0.948
E3	2848	-157.426	-157.433	0.663
B3	2853	-157.296	-157.333	0.723









IT11-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 238374
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39523 high elev obs : -61.136 -62.528
 Iteration 0: Obs used = 336109; Huge residuals = 6; Large residuals = 64913
 Iteration 1: Obs used = 336168; Huge residuals = 0; Large residuals = 64843
 Computed code bias (P1/P2)/m = -56.304 -57.708
 Computed baseline (X,Y,Z)/m = 7.593 -31.172 -8.115
 RMS of residuals /m = 1.091

Number of phase differences to fit baseline
 L1/L2 = 236104
 L5 = 137106
 A priori baseline (X,Y,Z)/m = 7.593 -31.172 -8.115
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = -2.0 RMS jitter /ps = 9.9

Iter 1 Large residuals L1= 7
 Iter 1 Large residuals L2= 7
 Iter 1 Large residuals L5= 5
 Computed baseline L1 (X,Y,Z)/m = -4.602 -0.366 -4.073
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.578 -0.374 -4.066
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.599 -0.303 -4.060
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 7
 Iter 2 Large residuals L2= 7
 Iter 2 Large residuals L5= 5
 Computed baseline L1 (X,Y,Z)/m = -4.603 -0.366 -4.073
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.578 -0.374 -4.066
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.604 -0.304 -4.063
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 3.002 -31.542 -12.184
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = 1.3 RMS jitter /ps = 8.7

Iter 3 Large residuals L1= 7
 Iter 3 Large residuals L2= 7
 Iter 3 Large residuals L5= 5
 Computed baseline L1 (X,Y,Z)/m = -0.190 -0.127 -0.131
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.166 -0.134 -0.123
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.182 -0.132 -0.136
 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 = 2.812 -31.669 -12.315

Final baseline L2 (X,Y,Z)/m = 2.836 -31.676 -12.308
 Final baseline L5 (X,Y,Z)/m = 2.821 -31.675 -12.321

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 640897

Global average of individual differences

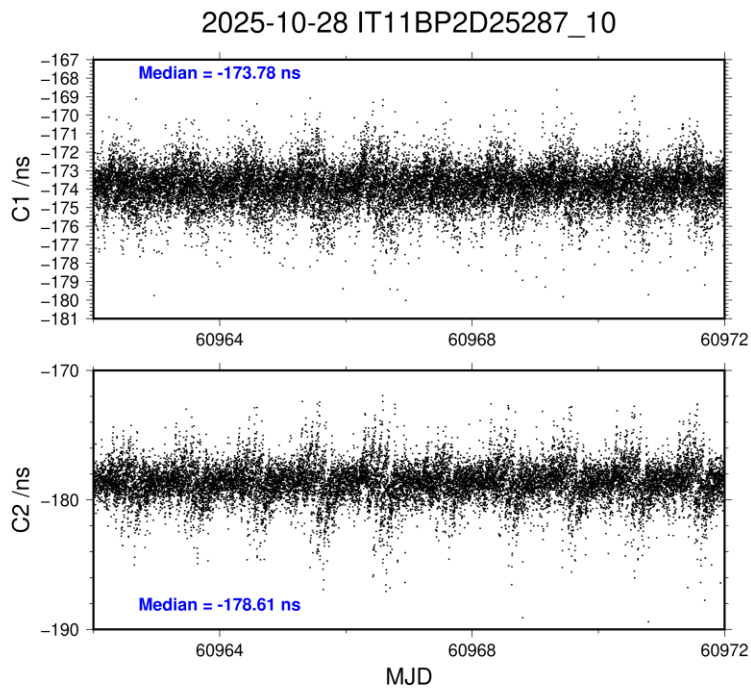
Code	#pts	ave/ns	rms/ns
C1	239565	-173.826	1.249
C2	192330	-178.653	1.677
P1	238313	-174.292	1.276
P2	238316	-179.070	1.624
E1	211821	-174.064	1.151
E5	210182	-171.922	1.499

Number of 300s epochs in out file = 2880

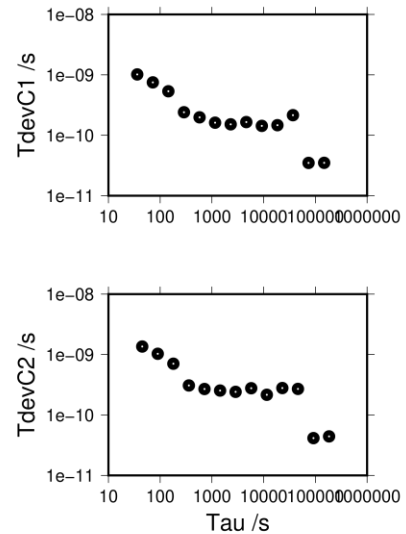
Code	#pts	median/ns	ave/ns	rms/ns
C1	23954	-173.785	-173.832	1.036
C2	19220	-178.609	-178.648	1.421
P1	23828	-174.254	-174.295	1.073
P2	23828	-179.033	-179.068	1.457
E1	21169	-174.039	-174.070	0.978
E5	21007	-171.909	-171.921	1.363

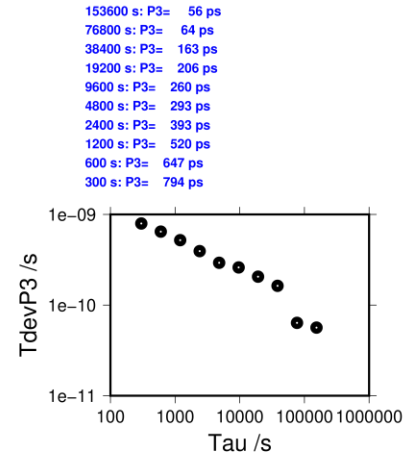
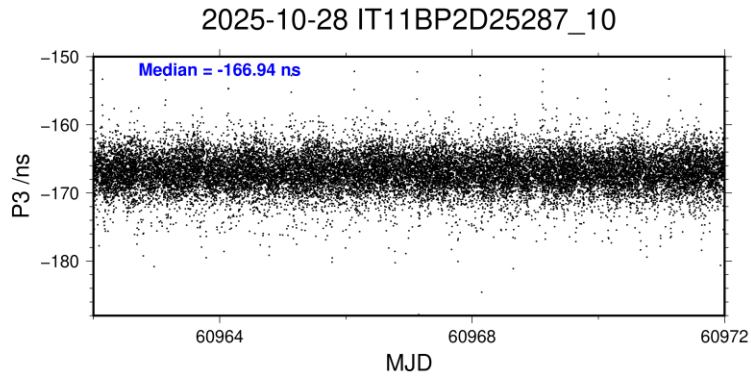
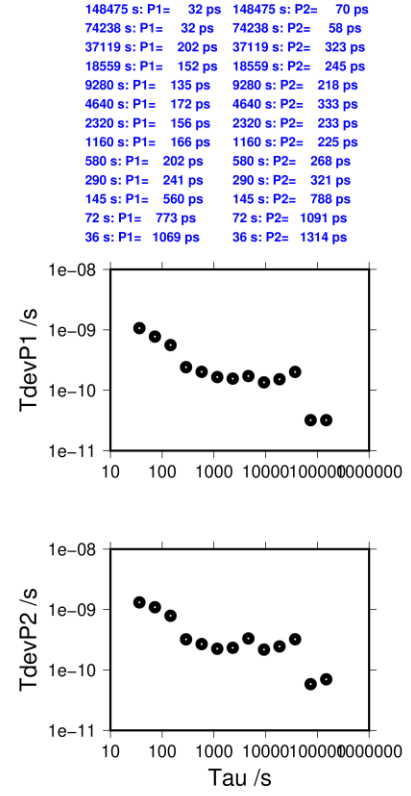
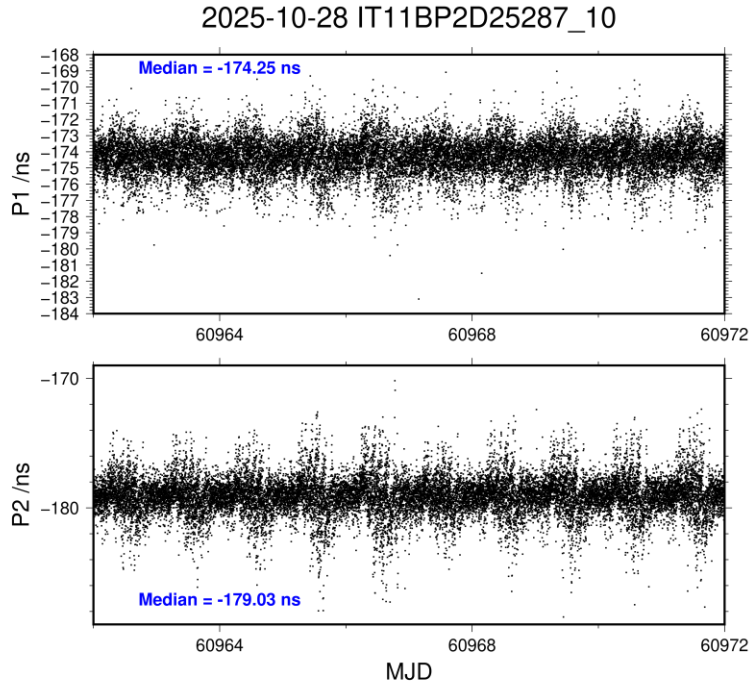
Ionofree combinations

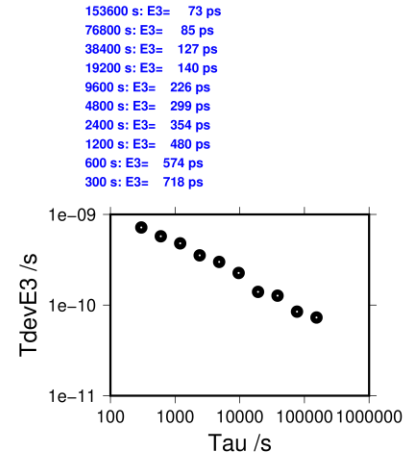
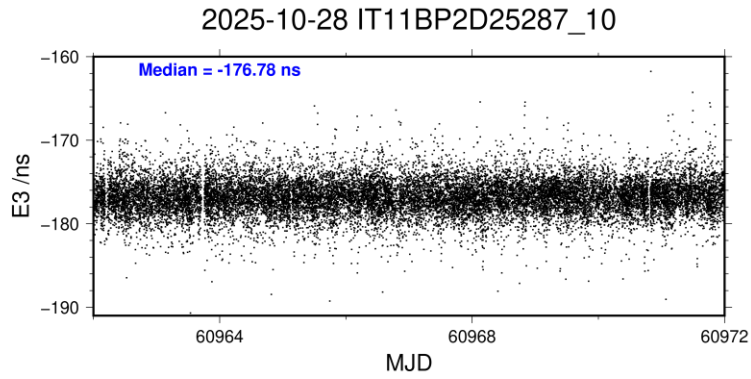
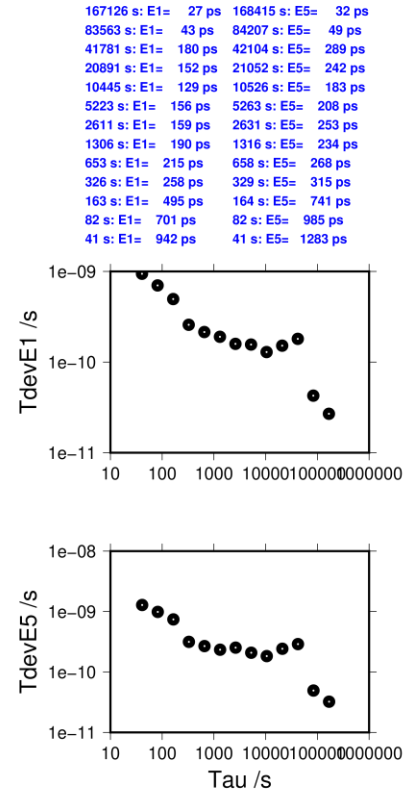
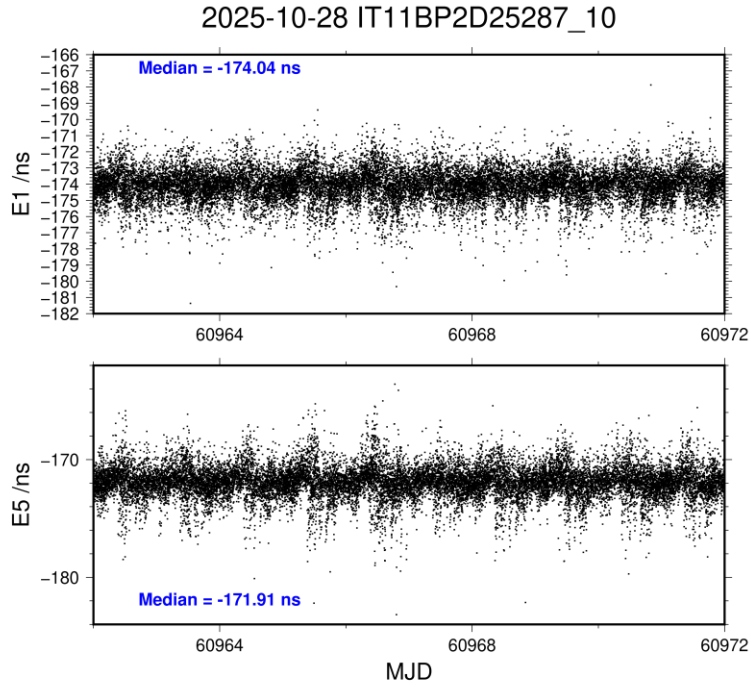
Code	#pts	median/ns	ave/ns	rms/ns
P3	2879	-166.936	-166.921	0.749
E3	2858	-176.781	-176.757	0.673



147694 s: C1= 35 ps 184074 s: C2= 44 ps
 73847 s: C1= 35 ps 92037 s: C2= 41 ps
 36924 s: C1= 215 ps 46018 s: C2= 270 ps
 18462 s: C1= 147 ps 23009 s: C2= 279 ps
 9231 s: C1= 143 ps 11505 s: C2= 216 ps
 4615 s: C1= 166 ps 5752 s: C2= 277 ps
 2308 s: C1= 152 ps 2876 s: C2= 241 ps
 1154 s: C1= 162 ps 1438 s: C2= 253 ps
 577 s: C1= 198 ps 719 s: C2= 269 ps
 288 s: C1= 240 ps 360 s: C2= 308 ps
 144 s: C1= 536 ps 180 s: C2= 705 ps
 72 s: C1= 751 ps 90 s: C2= 1030 ps
 36 s: C1= 1016 ps 45 s: C2= 1356 ps







IT11-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 259448
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39540 high elev obs : -65.720 -65.295
 Iteration 0: Obs used = 373580; Huge residuals = 581; Large residuals = 69556
 Iteration 1: Obs used = 367009; Huge residuals = 0; Large residuals = 75536
 Computed code bias (P1/P2)/m = -60.392 -60.006
 Computed baseline (X,Y,Z)/m = 6.604 -31.372 -8.317
 RMS of residuals /m = 1.036

Number of phase differences to fit baseline
 L1/L2 = 256777
 L5 = 149167
 A priori baseline (X,Y,Z)/m = 6.604 -31.372 -8.317
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = -1.4 RMS jitter /ps = 8.2

Iter 1 Large residuals L1= 407
 Iter 1 Large residuals L2= 405
 Iter 1 Large residuals L5= 2054
 Computed baseline L1 (X,Y,Z)/m = -3.934 -0.155 -3.488
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -3.905 -0.154 -3.475
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -3.962 -0.082 -3.435
 RMS of residuals L5 /m = 0.005

Iter 2 Large residuals L1= 407
 Iter 2 Large residuals L2= 405
 Iter 2 Large residuals L5= 2051
 Computed baseline L1 (X,Y,Z)/m = -3.936 -0.155 -3.490
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -3.908 -0.155 -3.478
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.022 -0.071 -3.453
 RMS of residuals L5 /m = 0.005

Iter 3 Large residuals L1= 407
 Iter 3 Large residuals L2= 405
 Iter 3 Large residuals L5= 2051
 Computed baseline L1 (X,Y,Z)/m = -3.936 -0.155 -3.490
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -3.908 -0.155 -3.478
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.023 -0.071 -3.453
 RMS of residuals L5 /m = 0.005

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 2.682 -31.527 -11.800
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = 1.0 RMS jitter /ps = 7.3

Iter 4 Large residuals L1= 408
 Iter 4 Large residuals L2= 409

Iter 4 Large residuals L5= 2064

Computed baseline L1 (X,Y,Z)/m = -0.152 -0.098 -0.107

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.124 -0.098 -0.096

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.234 -0.084 -0.086

RMS of residuals L5 /m = 0.004

Iter 5 Large residuals L1= 408

Iter 5 Large residuals L2= 409

Iter 5 Large residuals L5= 2064

Computed baseline L1 (X,Y,Z)/m = -0.152 -0.098 -0.107

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.124 -0.098 -0.096

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.235 -0.084 -0.086

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 = 2.529 -31.625 -11.907

Final baseline L2 (X,Y,Z)/m = 2.558 -31.625 -11.896

Final baseline L5 (X,Y,Z)/m = 2.447 -31.611 -11.887

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 742834

Global average of individual differences

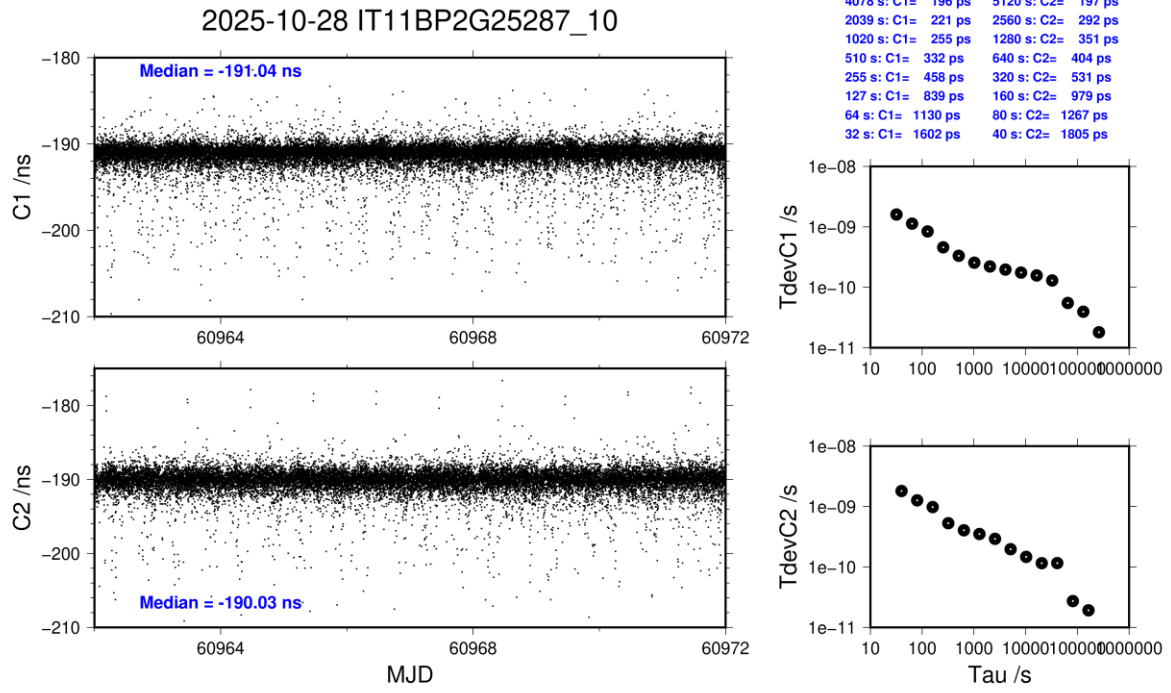
Code	#pts	ave/ns	rms/ns
C1	271497	-191.276	2.530
C2	217023	-190.237	2.841
P1	259104	-190.182	1.840
P2	258668	-188.984	2.764
E1	236115	-191.633	2.012
E5	236525	-184.077	2.219

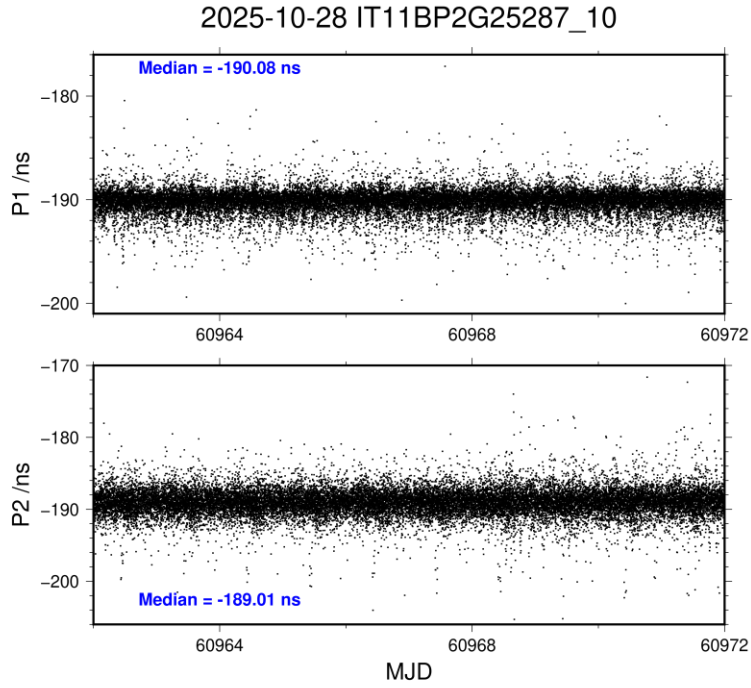
Number of 300s epochs in out file = 2880

Code	#pts	median/ns	ave/ns	rms/ns
C1	27109	-191.036	-191.291	1.592
C2	21592	-190.035	-190.250	1.809
P1	25868	-190.082	-190.192	1.148
P2	25834	-189.013	-189.046	1.877
E1	23583	-191.505	-191.659	1.363
E5	23642	-183.916	-184.113	1.726

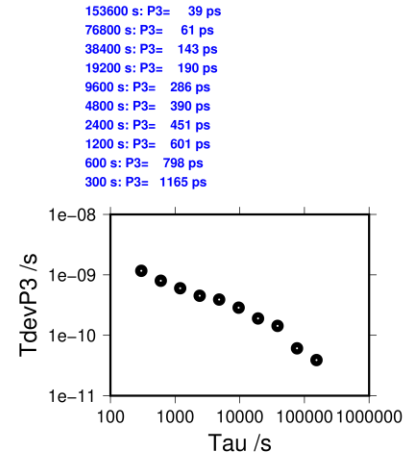
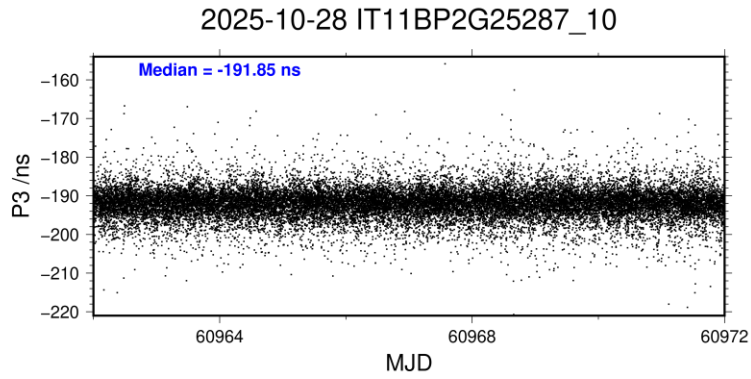
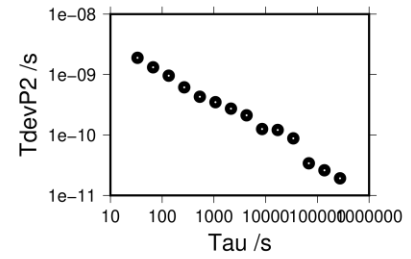
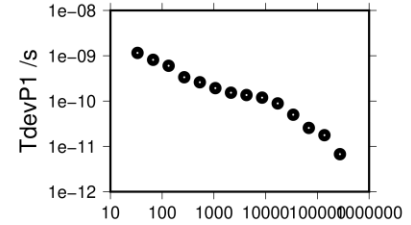
Ionofree combinations

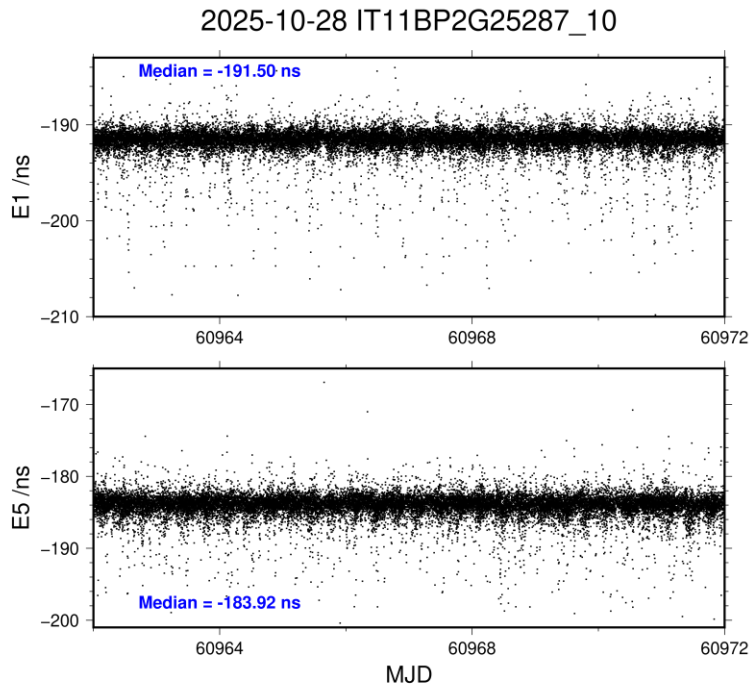
Code	#pts	median/ns	ave/ns	rms/ns
P3	2872	-191.851	-191.799	0.947
E3	2839	-201.105	-201.126	0.715



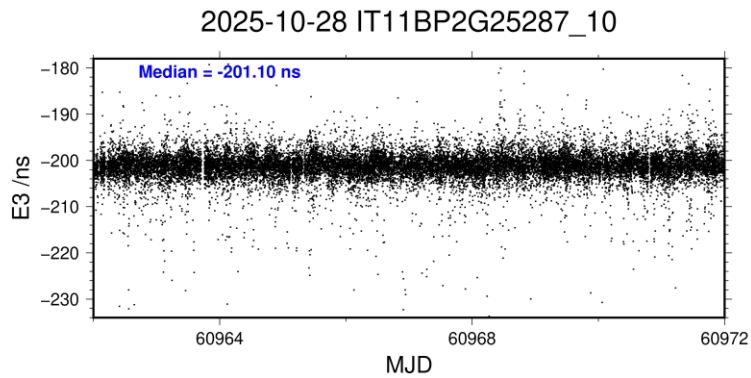
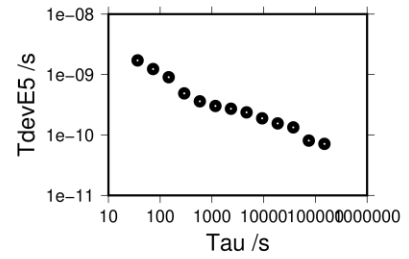
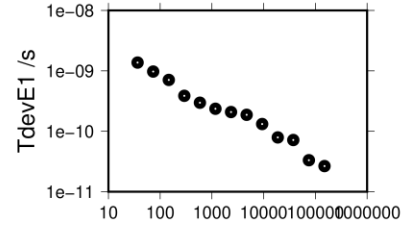


273531 s: P1=	7 ps	273891 s: P2=	19 ps
136766 s: P1=	18 ps	136946 s: P2=	26 ps
68383 s: P1=	26 ps	68473 s: P2=	34 ps
34191 s: P1=	50 ps	34236 s: P2=	88 ps
17096 s: P1=	89 ps	17118 s: P2=	121 ps
8548 s: P1=	119 ps	8559 s: P2=	126 ps
4274 s: P1=	136 ps	4280 s: P2=	211 ps
2137 s: P1=	153 ps	2140 s: P2=	273 ps
1068 s: P1=	193 ps	1070 s: P2=	348 ps
534 s: P1=	260 ps	535 s: P2=	430 ps
267 s: P1=	335 ps	267 s: P2=	614 ps
134 s: P1=	601 ps	134 s: P2=	957 ps
67 s: P1=	815 ps	67 s: P2=	1317 ps
33 s: P1=	1157 ps	33 s: P2=	1891 ps

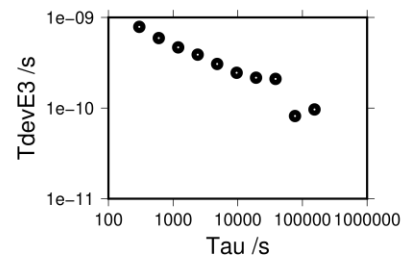




150018 s: E1= 27 ps	149643 s: E5= 71 ps
75009 s: E1= 33 ps	74822 s: E5= 81 ps
37504 s: E1= 72 ps	37411 s: E5= 134 ps
18752 s: E1= 79 ps	18705 s: E5= 155 ps
9376 s: E1= 132 ps	9353 s: E5= 189 ps
4688 s: E1= 188 ps	4676 s: E5= 237 ps
2344 s: E1= 208 ps	2338 s: E5= 272 ps
1172 s: E1= 236 ps	1169 s: E5= 302 ps
586 s: E1= 297 ps	585 s: E5= 361 ps
293 s: E1= 386 ps	292 s: E5= 489 ps
146 s: E1= 708 ps	146 s: E5= 904 ps
73 s: E1= 975 ps	73 s: E5= 1233 ps
37 s: E1= 1371 ps	37 s: E5= 1713 ps



153600 s: E3= 96 ps
76800 s: E3= 82 ps
38400 s: E3= 210 ps
19200 s: E3= 216 ps
9600 s: E3= 245 ps
4800 s: E3= 307 ps
2400 s: E3= 389 ps
1200 s: E3= 467 ps
600 s: E3= 593 ps
300 s: E3= 788 ps



IT16-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 238594
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39523 high elev obs : 51.925 50.180
 Iteration 0: Obs used = 399091; Huge residuals = 439; Large residuals = 2371
 Iteration 1: Obs used = 399337; Huge residuals = 0; Large residuals = 1680
 Computed code bias (P1/P2)/m = 52.363 50.677
 Computed baseline (X,Y,Z)/m = 0.704 -0.182 -0.997
 RMS of residuals /m = 0.511

Number of phase differences to fit baseline
 L1/L2 = 236163
 L5 = 141020
 A priori baseline (X,Y,Z)/m = 0.704 -0.182 -0.997
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = -0.3 RMS jitter /ps = 4.2

Iter 1 Large residuals L1= 8
 Iter 1 Large residuals L2= 8
 Iter 1 Large residuals L5= 11
 Computed baseline L1 (X,Y,Z)/m = -0.623 -0.051 -0.501
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.595 -0.059 -0.491
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.614 -0.050 -0.502
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 8
 Iter 2 Large residuals L2= 8
 Iter 2 Large residuals L5= 11
 Computed baseline L1 (X,Y,Z)/m = -0.623 -0.051 -0.501
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.595 -0.059 -0.491
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.615 -0.050 -0.503
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 0.095 -0.238 -1.493
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = 0.3 RMS jitter /ps = 1.1

Iter 3 Large residuals L1= 8
 Iter 3 Large residuals L2= 8
 Iter 3 Large residuals L5= 11
 Computed baseline L1 (X,Y,Z)/m = -0.037 -0.021 -0.021
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.010 -0.029 -0.011
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.028 -0.029 -0.024
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = 0.058 -0.259 -1.513
 Final baseline L2 (X,Y,Z)/m = 0.085 -0.267 -1.504

Final baseline L5 (X,Y,Z)/m = 0.067 -0.266 -1.517

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 895137

Global average of individual differences

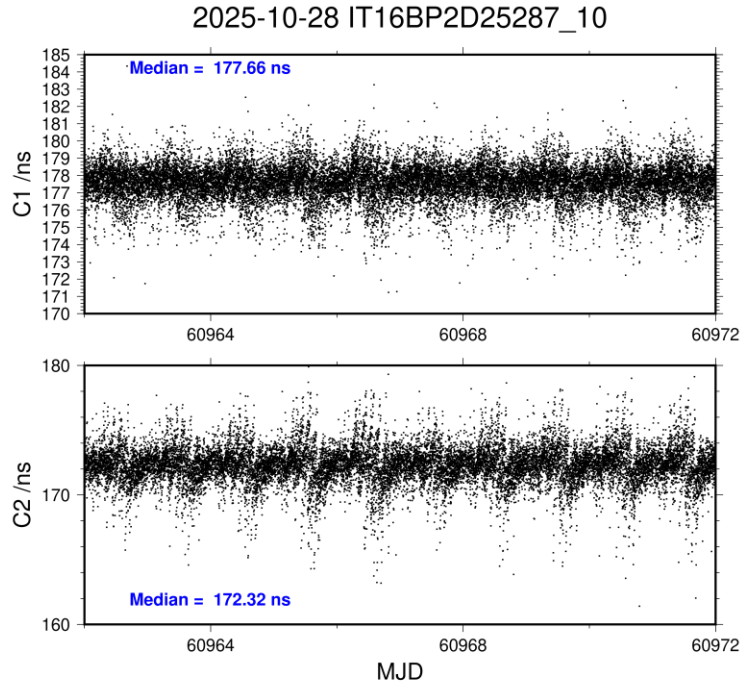
Code	#pts	ave/ns	rms/ns
C1	239665	177.605	1.323
C2	195275	172.286	1.737
P1	238314	176.407	1.355
P2	238322	170.705	1.856
E1	212373	177.864	1.188
E5	212413	171.575	1.485
BC	186892	178.416	1.383
B5	191014	171.910	1.600

Number of 300s epochs in out file = 2880

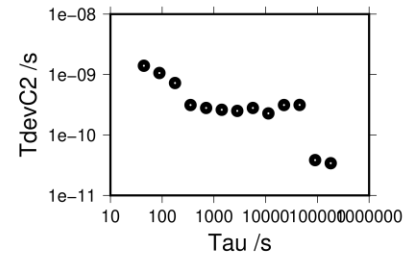
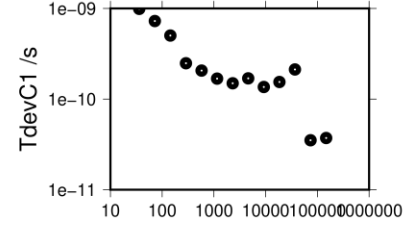
Code	#pts	median/ns	ave/ns	rms/ns
C1	23962	177.656	177.598	1.007
C2	19520	172.325	172.292	1.469
P1	23840	176.447	176.401	1.077
P2	23840	170.757	170.712	1.566
E1	21233	177.915	177.863	0.974
E5	21235	171.560	171.579	1.352
BC	18677	178.465	178.411	1.126
B5	19063	171.905	171.918	1.441

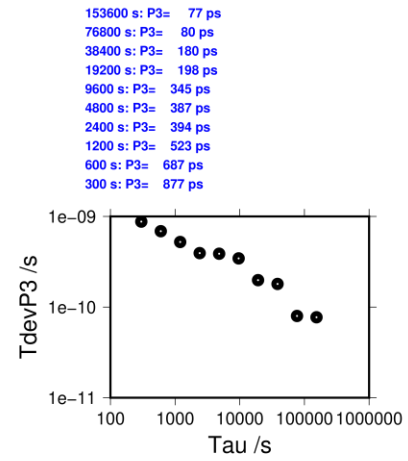
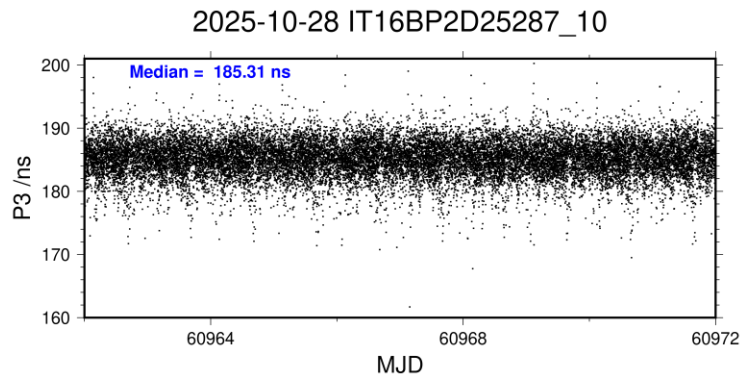
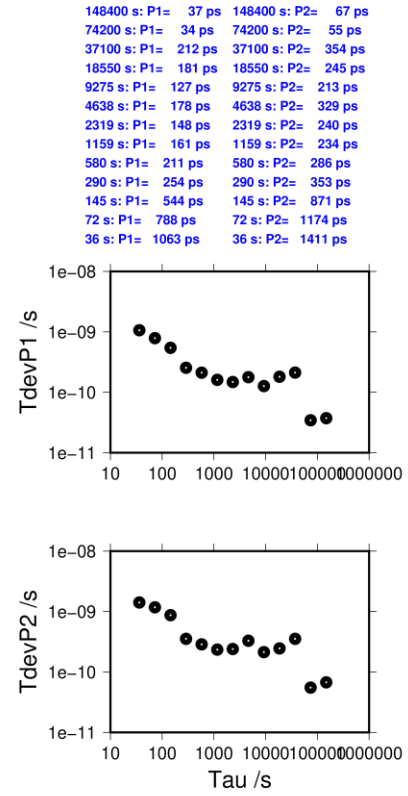
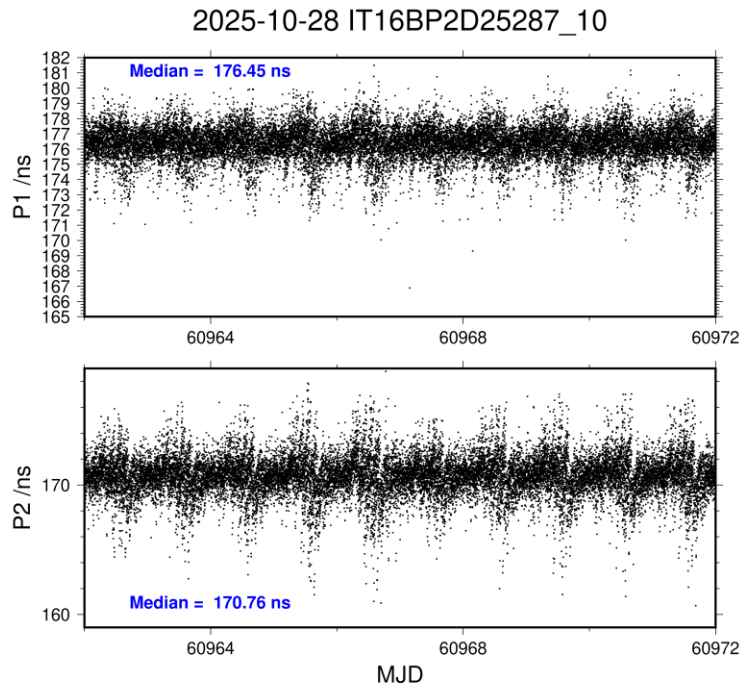
Ionofree combinations

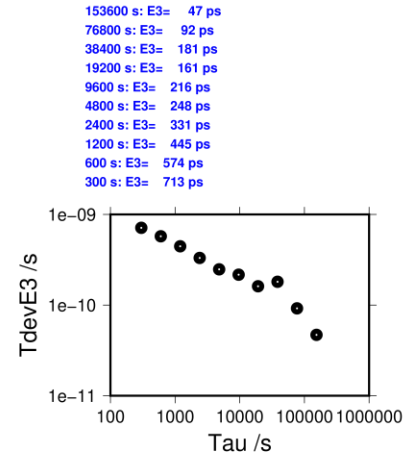
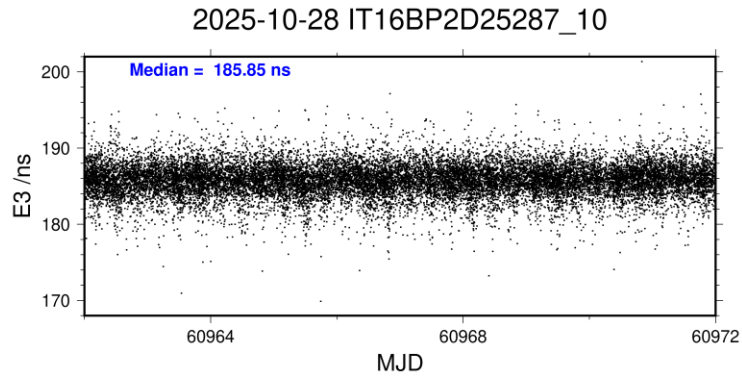
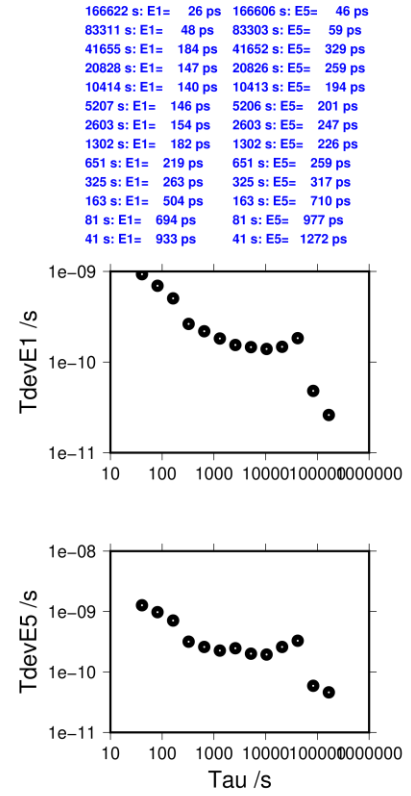
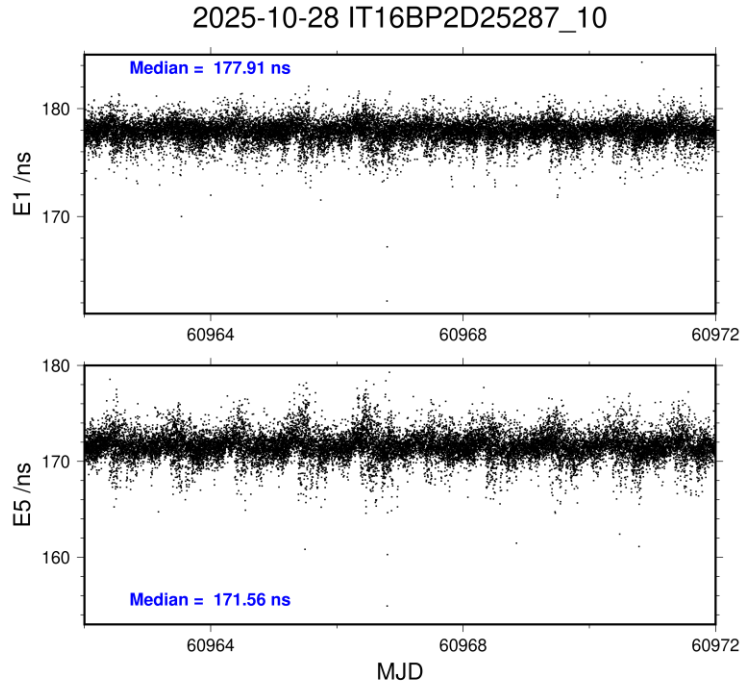
Code	#pts	median/ns	ave/ns	rms/ns
P3	2879	185.306	185.315	0.817
E3	2878	185.853	185.863	0.654
B3	2878	186.602	186.631	0.849

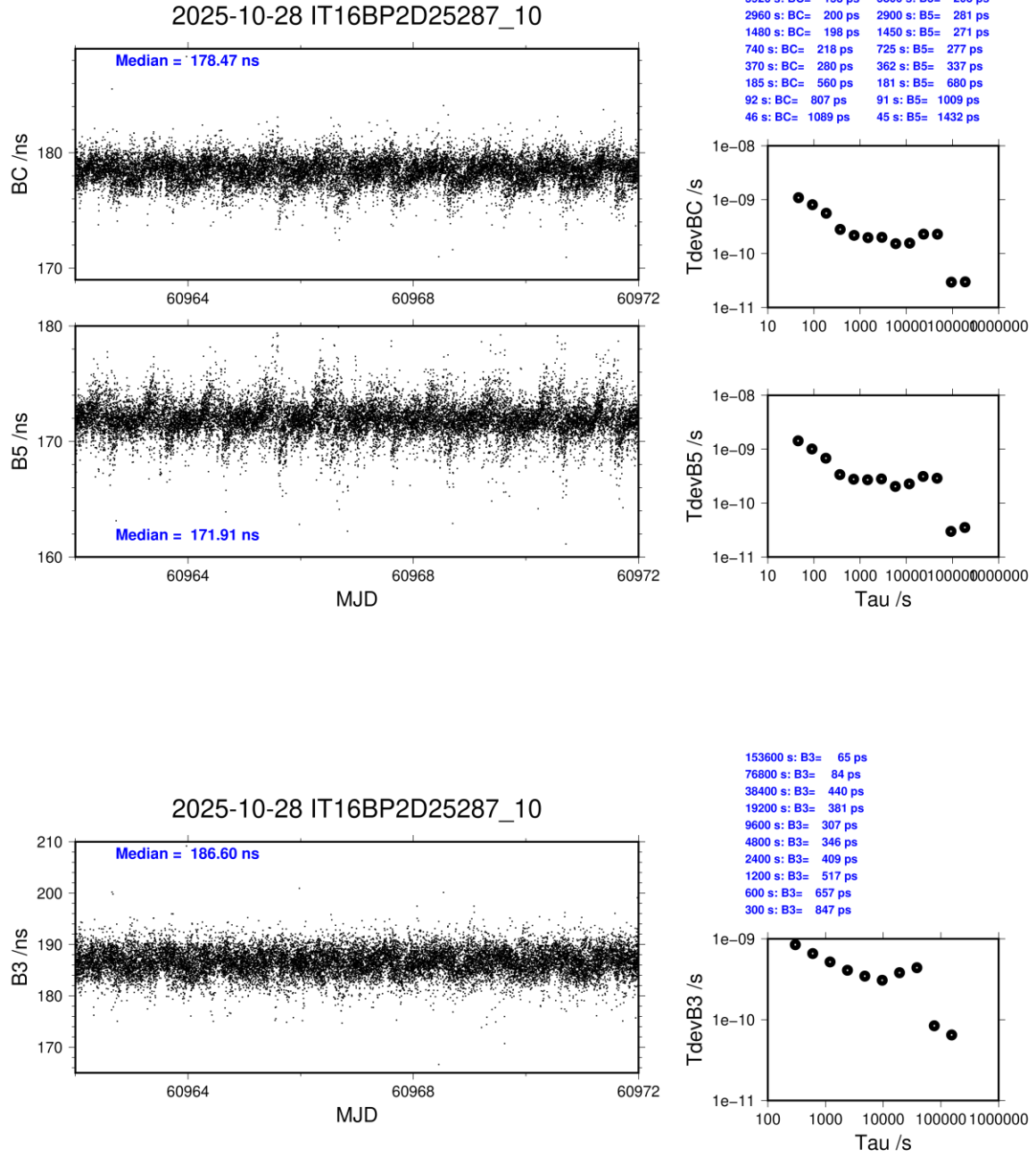


147645 s: C1= 37 ps	181245 s: C2= 34 ps
73822 s: C1= 35 ps	90622 s: C2= 38 ps
36911 s: C1= 212 ps	45311 s: C2= 314 ps
18456 s: C1= 154 ps	22656 s: C2= 313 ps
9228 s: C1= 136 ps	11328 s: C2= 227 ps
4614 s: C1= 169 ps	5664 s: C2= 280 ps
2307 s: C1= 149 ps	2832 s: C2= 250 ps
1153 s: C1= 168 ps	1416 s: C2= 262 ps
577 s: C1= 206 ps	708 s: C2= 280 ps
288 s: C1= 248 ps	354 s: C2= 313 ps
144 s: C1= 503 ps	177 s: C2= 725 ps
72 s: C1= 726 ps	88 s: C2= 1060 ps
36 s: C1= 988 ps	44 s: C2= 1399 ps









IT16-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 269696
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39540 high elev obs : 47.293 47.319
 Iteration 0: Obs used = 190557; Huge residuals = 18984; Large residuals = 273075
 Iteration 1: Obs used = 432620; Huge residuals = 6; Large residuals = 12019
 Iteration 2: Obs used = 432623; Huge residuals = 0; Large residuals = 12010
 Computed code bias (P1/P2)/m = 47.689 47.786
 Computed baseline (X,Y,Z)/m = 0.265 -0.221 -0.550
 RMS of residuals /m = 0.633

Number of phase differences to fit baseline
 L1/L2 = 257999
 L5 = 155303
 A priori baseline (X,Y,Z)/m = 0.265 -0.221 -0.550
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = -0.0 RMS jitter /ps = 3.2

Iter 1 Large residuals L1= 0
 Iter 1 Large residuals L2= 4
 Iter 1 Large residuals L5= 41
 Computed baseline L1 (X,Y,Z)/m = -0.484 0.027 -0.549
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.457 0.031 -0.539
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.486 0.043 -0.539
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 0
 Iter 2 Large residuals L2= 4
 Iter 2 Large residuals L5= 41
 Computed baseline L1 (X,Y,Z)/m = -0.484 0.027 -0.549
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.457 0.031 -0.539
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.487 0.042 -0.539
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -0.205 -0.193 -1.094
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = 0.0 RMS jitter /ps = 1.1

Iter 3 Large residuals L1= 0
 Iter 3 Large residuals L2= 4
 Iter 3 Large residuals L5= 41
 Computed baseline L1 (X,Y,Z)/m = -0.030 -0.000 -0.020
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.003 0.004 -0.011
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.034 0.008 -0.014
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -0.236 -0.193 -1.115
 Final baseline L2 (X,Y,Z)/m = -0.208 -0.189 -1.105
 Final baseline L5 (X,Y,Z)/m = -0.239 -0.185 -1.109

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	271977	160.249	2.501
C2	224511	160.835	2.764
P1	260144	160.552	1.878
P2	259664	160.822	2.858
E1	239397	160.353	1.975
E5	241842	159.402	2.178
BC	210035	160.282	2.397
B5	213370	159.279	2.491

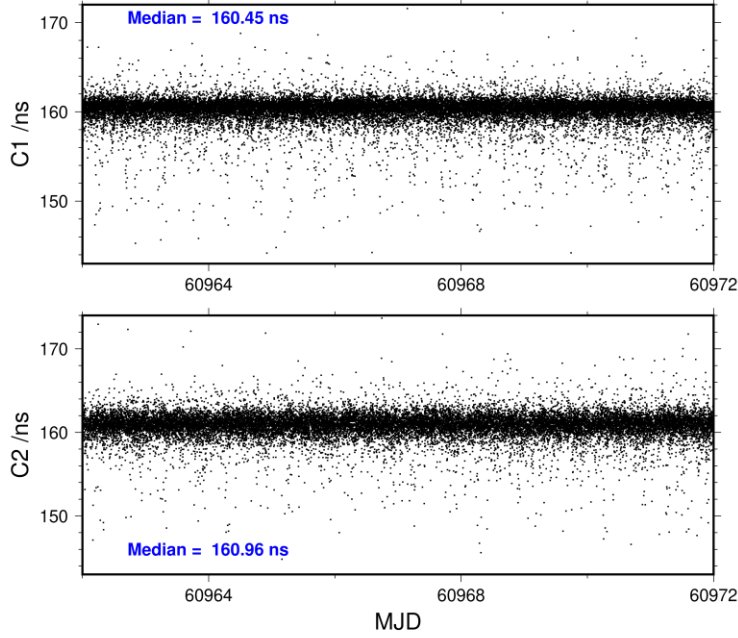
Number of 300s epochs in out file = 2880

Code	#pts	median/ns	ave/ns	rms/ns
C1	27152	160.453	160.231	1.446
C2	22363	160.961	160.813	1.634
P1	25987	160.667	160.539	1.117
P2	25956	160.781	160.765	1.873
E1	23920	160.485	160.331	1.252
E5	24186	159.508	159.369	1.659
BC	20995	160.489	160.251	1.622
B5	21353	159.493	159.245	1.958

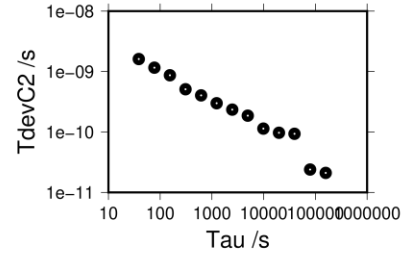
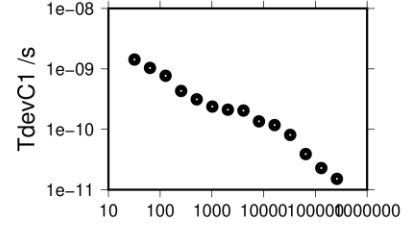
Ionofree combinations

Code	#pts	median/ns	ave/ns	rms/ns
P3	2873	160.363	160.430	0.931
E3	2870	161.675	161.676	0.656
B3	2871	161.718	161.716	0.700

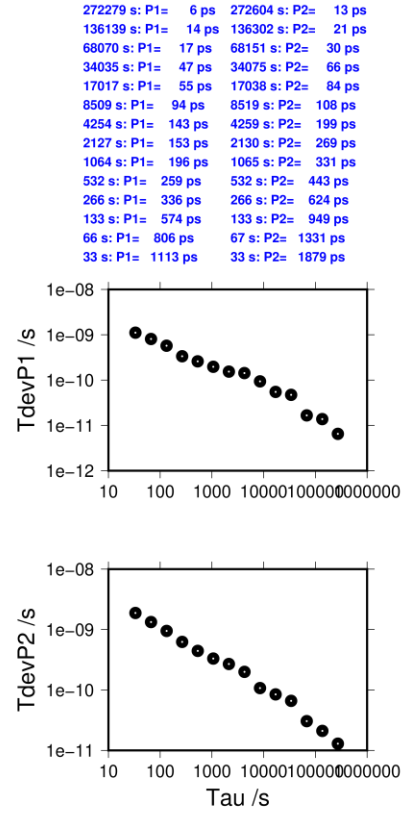
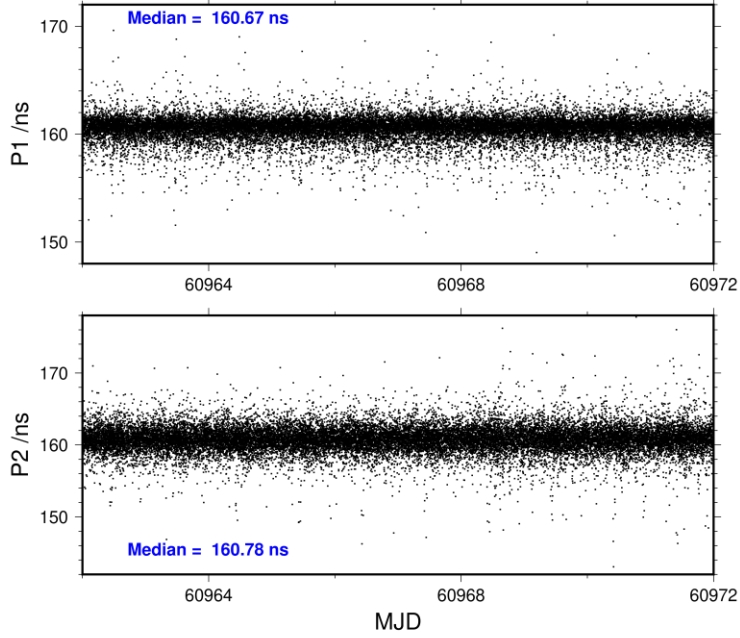
2025-10-28 IT16BP2G25287_10



260596 s: C1= 15 ps
 130298 s: C1= 23 ps 158202 s: C2= 21 ps
 65149 s: C1= 39 ps 79101 s: C2= 24 ps
 32574 s: C1= 81 ps 39551 s: C2= 93 ps
 16287 s: C1= 118 ps 19775 s: C2= 97 ps
 8144 s: C1= 136 ps 9888 s: C2= 114 ps
 4072 s: C1= 204 ps 4944 s: C2= 186 ps
 2036 s: C1= 211 ps 2472 s: C2= 234 ps
 1018 s: C1= 238 ps 1236 s: C2= 299 ps
 509 s: C1= 313 ps 618 s: C2= 404 ps
 254 s: C1= 431 ps 309 s: C2= 509 ps
 127 s: C1= 768 ps 154 s: C2= 867 ps
 64 s: C1= 1037 ps 77 s: C2= 1161 ps
 32 s: C1= 1429 ps 39 s: C2= 1614 ps

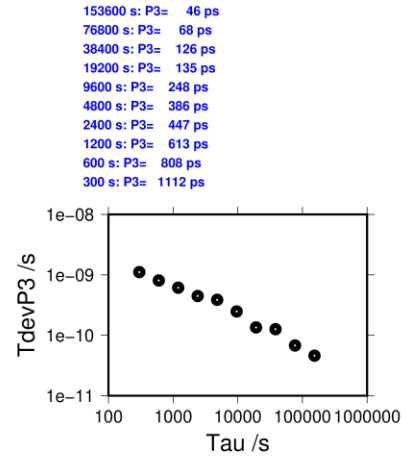
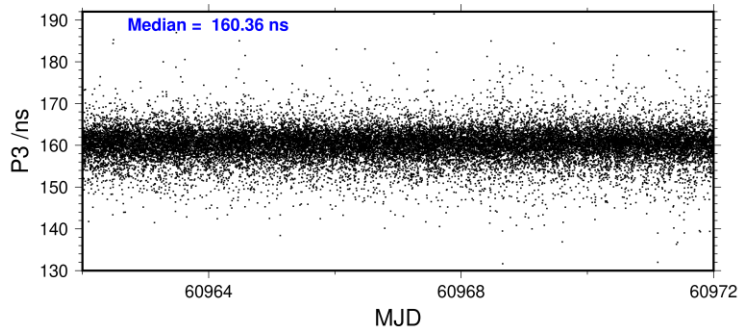


2025-10-28 IT16BP2G25287_10

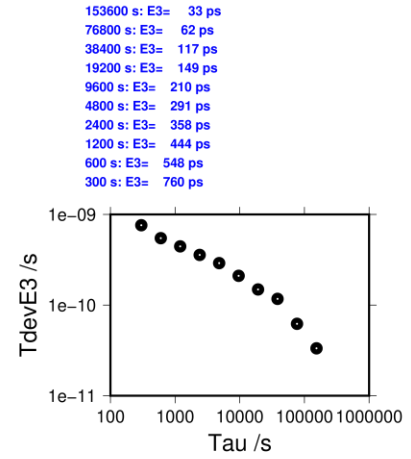
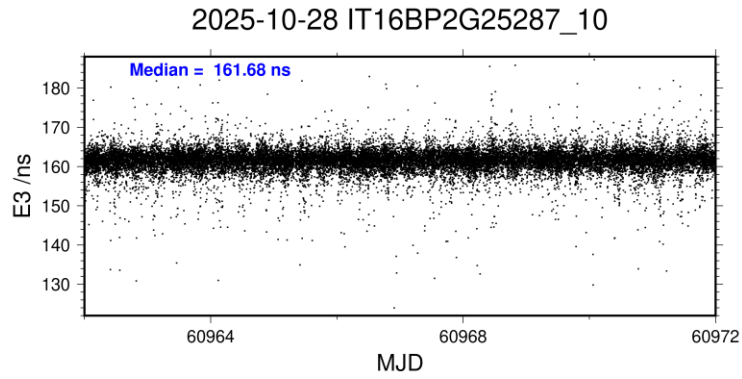
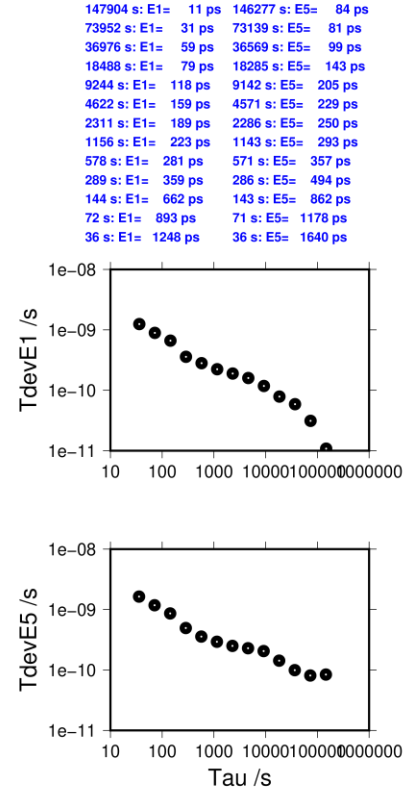
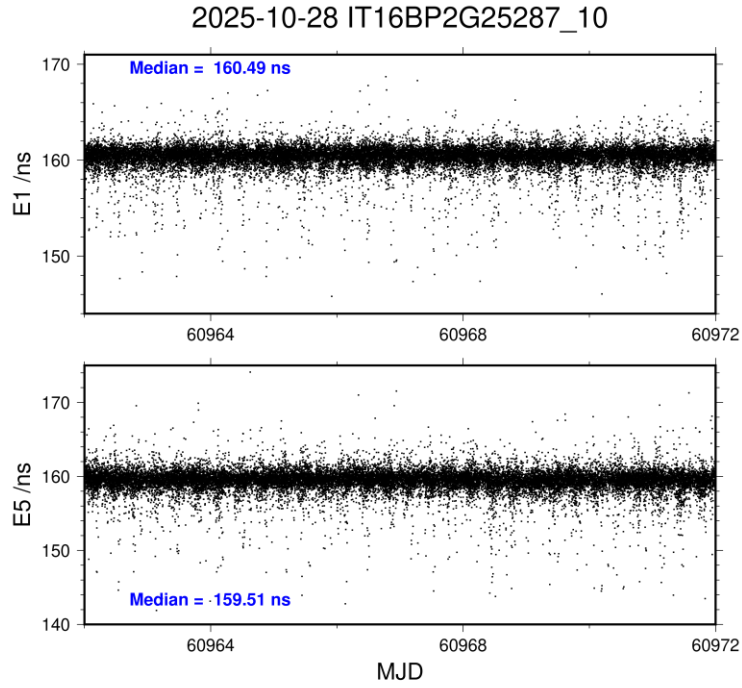


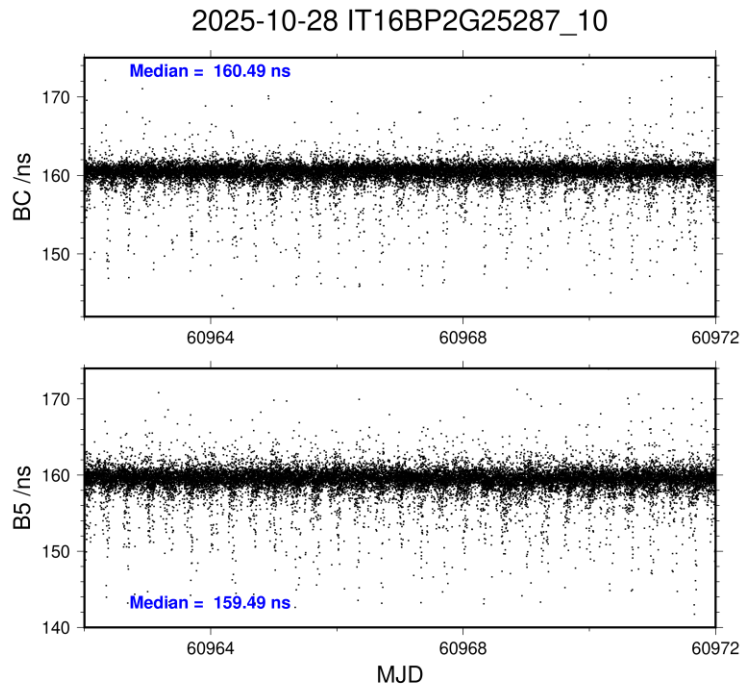
272279 s: P1= 6 ps 272604 s: P2= 13 ps
 136139 s: P1= 14 ps 136302 s: P2= 21 ps
 68070 s: P1= 17 ps 68151 s: P2= 30 ps
 34035 s: P1= 47 ps 34075 s: P2= 66 ps
 17017 s: P1= 55 ps 17038 s: P2= 84 ps
 8509 s: P1= 94 ps 8519 s: P2= 108 ps
 4254 s: P1= 143 ps 4259 s: P2= 199 ps
 2127 s: P1= 153 ps 2130 s: P2= 269 ps
 1064 s: P1= 196 ps 1065 s: P2= 331 ps
 532 s: P1= 259 ps 532 s: P2= 443 ps
 266 s: P1= 336 ps 266 s: P2= 624 ps
 133 s: P1= 574 ps 133 s: P2= 949 ps
 66 s: P1= 806 ps 67 s: P2= 1331 ps
 33 s: P1= 1113 ps 33 s: P2= 1879 ps

2025-10-28 IT16BP2G25287_10

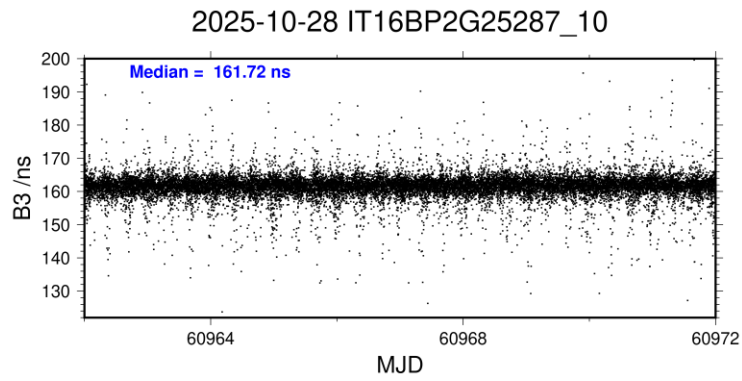
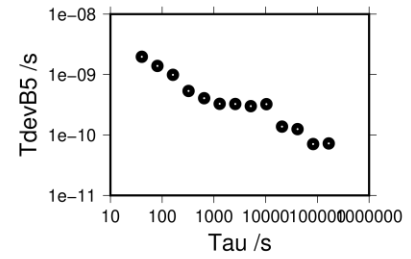
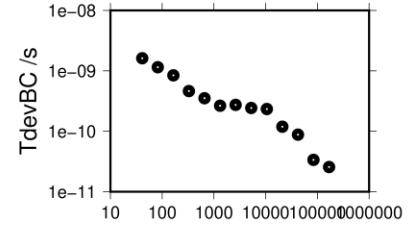


153600 s: P3= 46 ps
 76800 s: P3= 68 ps
 38400 s: P3= 126 ps
 19200 s: P3= 135 ps
 9600 s: P3= 248 ps
 4800 s: P3= 386 ps
 2400 s: P3= 447 ps
 1200 s: P3= 613 ps
 600 s: P3= 808 ps
 300 s: P3= 1112 ps

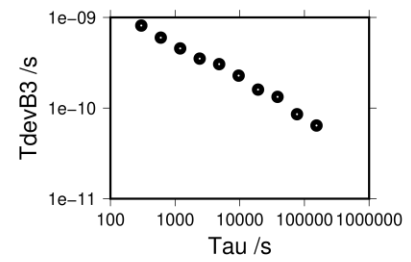




168511 s: BC= 26 ps 165685 s: B5= 73 ps
 84255 s: BC= 34 ps 82843 s: B5= 71 ps
 42128 s: BC= 88 ps 41421 s: B5= 125 ps
 21064 s: BC= 119 ps 20711 s: B5= 138 ps
 10532 s: BC= 234 ps 10355 s: B5= 324 ps
 5266 s: BC= 243 ps 5178 s: B5= 300 ps
 2633 s: BC= 274 ps 2589 s: B5= 326 ps
 1316 s: BC= 264 ps 1294 s: B5= 327 ps
 658 s: BC= 353 ps 647 s: B5= 406 ps
 329 s: BC= 464 ps 324 s: B5= 535 ps
 165 s: BC= 844 ps 162 s: B5= 989 ps
 82 s: BC= 1150 ps 81 s: B5= 1391 ps
 41 s: BC= 1617 ps 40 s: B5= 1971 ps



153600 s: B3= 64 ps
 76800 s: B3= 86 ps
 38400 s: B3= 133 ps
 19200 s: B3= 160 ps
 9600 s: B3= 228 ps
 4800 s: B3= 305 ps
 2400 s: B3= 351 ps
 1200 s: B3= 455 ps
 600 s: B3= 599 ps
 300 s: B3= 814 ps



IT20-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 238557
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39523 high elev obs : -15.472 -17.192
 Iteration 0: Obs used = 400008; Huge residuals = 7; Large residuals = 1380
 Iteration 1: Obs used = 399999; Huge residuals = 0; Large residuals = 1376
 Computed code bias (P1/P2)/m = -15.044 -16.697
 Computed baseline (X,Y,Z)/m = -0.601 2.280 -0.011
 RMS of residuals /m = 0.494

Number of phase differences to fit baseline
 L1/L2 = 236215
 L5 = 141067
 A priori baseline (X,Y,Z)/m = -0.601 2.280 -0.011
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = -0.6 RMS jitter /ps = 4.2

Iter 1 Large residuals L1= 6
 Iter 1 Large residuals L2= 6
 Iter 1 Large residuals L5= 9
 Computed baseline L1 (X,Y,Z)/m = -0.606 -0.093 -0.417
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.586 -0.100 -0.410
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.597 -0.094 -0.418
 RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 6
 Iter 2 Large residuals L2= 6
 Iter 2 Large residuals L5= 9
 Computed baseline L1 (X,Y,Z)/m = -0.606 -0.093 -0.417
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.586 -0.100 -0.410
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.598 -0.094 -0.418
 RMS of residuals L5 /m = 0.003

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.198 2.184 -0.425
 28781 clock jitters computed out of 28781 intervals
 AVE jitter /ps = 0.4 RMS jitter /ps = 1.0

Iter 3 Large residuals L1= 6
 Iter 3 Large residuals L2= 6
 Iter 3 Large residuals L5= 9
 Computed baseline L1 (X,Y,Z)/m = -0.032 -0.039 -0.017
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.012 -0.047 -0.010
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.022 -0.048 -0.019
 RMS of residuals L5 /m = 0.003

Final baseline L1 (X,Y,Z)/m = -1.230 2.144 -0.442

Final baseline L2 (X,Y,Z)/m = -1.210 2.137 -0.435
 Final baseline L5 (X,Y,Z)/m = -1.219 2.136 -0.444

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 895768

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	239679	-47.038	1.299
C2	195329	-52.737	1.694
P1	238423	-48.591	1.348
P2	238426	-54.162	1.777
E1	212495	-46.813	1.194
E5	212510	-52.063	1.474
BC	188019	-46.255	1.550
B5	191728	-51.652	1.732

Number of 300s epochs in out file = 2880

Code	#pts	median/ns	ave/ns	rms/ns
C1	23965	-47.028	-47.042	1.015
C2	19525	-52.706	-52.729	1.456
P1	23839	-48.580	-48.593	1.084
P2	23839	-54.116	-54.154	1.521
E1	21241	-46.791	-46.813	0.986
E5	21242	-52.084	-52.057	1.344
BC	18785	-46.294	-46.259	1.341
B5	19132	-51.753	-51.646	1.607

Ionofree combinations

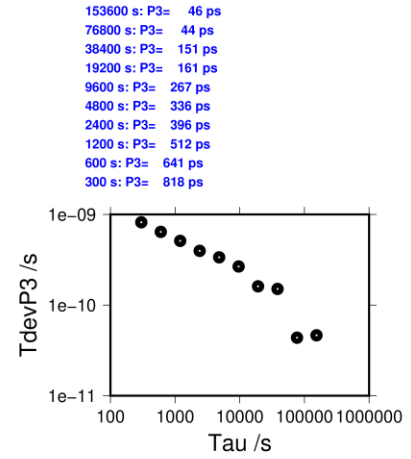
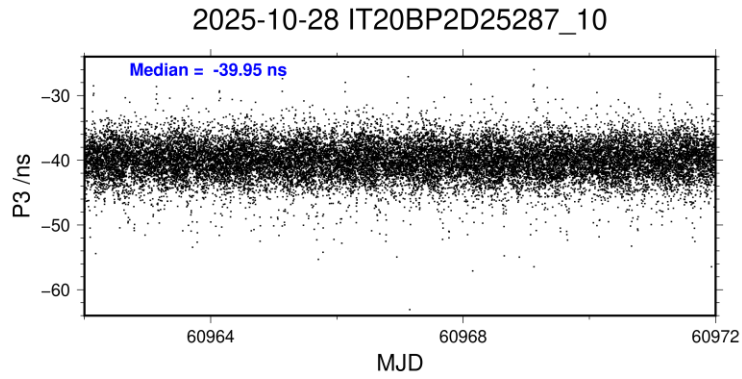
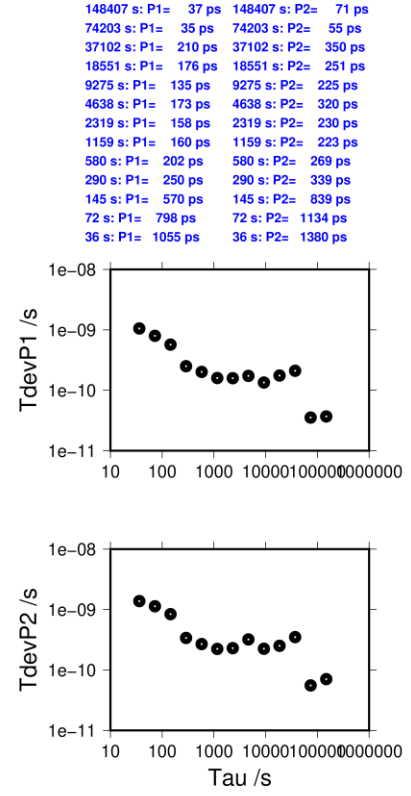
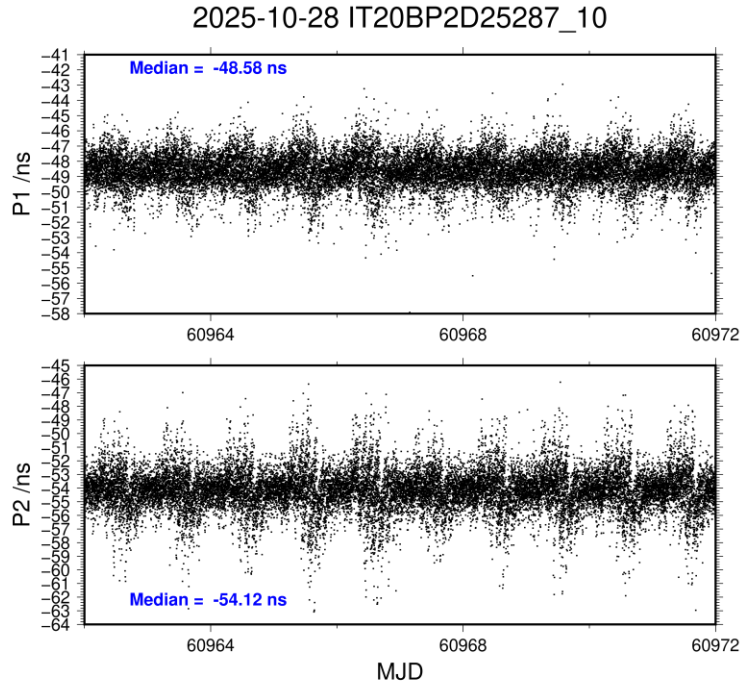
Code	#pts	median/ns	ave/ns	rms/ns
P3	2879	-39.954	-39.956	0.762
E3	2879	-40.182	-40.179	0.683
B3	2878	-39.480	-39.472	0.876

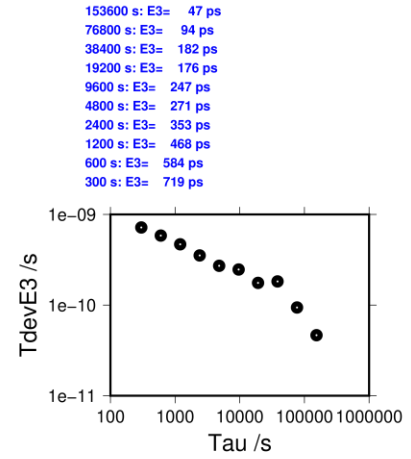
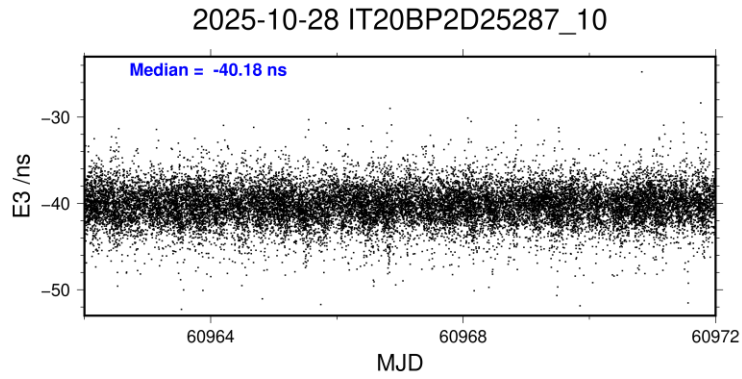
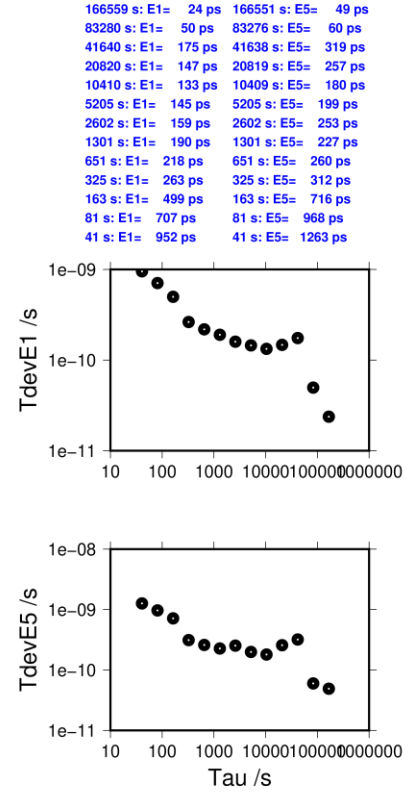
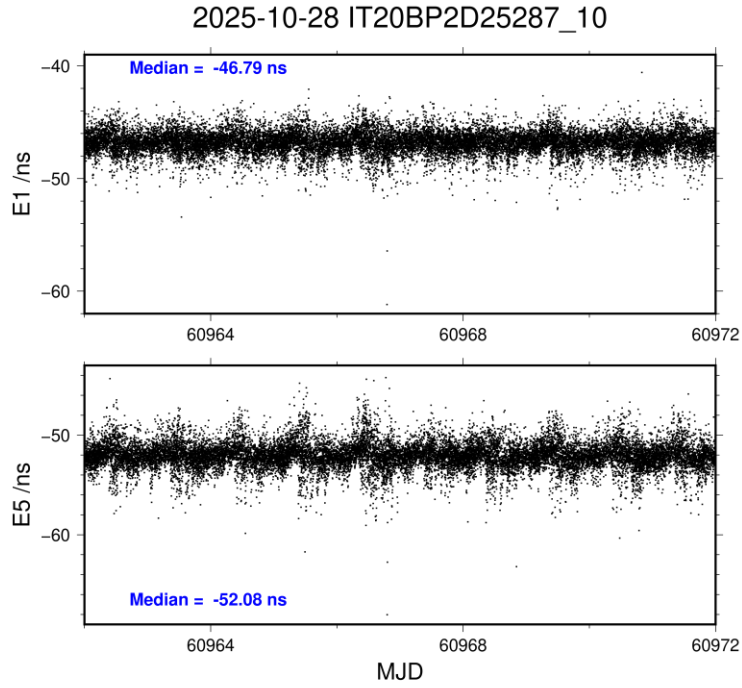
147626 s: C1= 37 ps 181198 s: C2= 34 ps
73813 s: C1= 38 ps 90599 s: C2= 39 ps
36907 s: C1= 211 ps 45300 s: C2= 317 ps
18453 s: C1= 152 ps 22650 s: C2= 323 ps
9227 s: C1= 145 ps 11325 s: C2= 233 ps
4613 s: C1= 167 ps 5662 s: C2= 286 ps
2307 s: C1= 157 ps 2831 s: C2= 246 ps
1153 s: C1= 165 ps 1416 s: C2= 249 ps
577 s: C1= 195 ps 708 s: C2= 264 ps
288 s: C1= 242 ps 354 s: C2= 304 ps
144 s: C1= 527 ps 177 s: C2= 724 ps
72 s: C1= 738 ps 88 s: C2= 1041 ps
36 s: C1= 984 ps 44 s: C2= 1392 ps

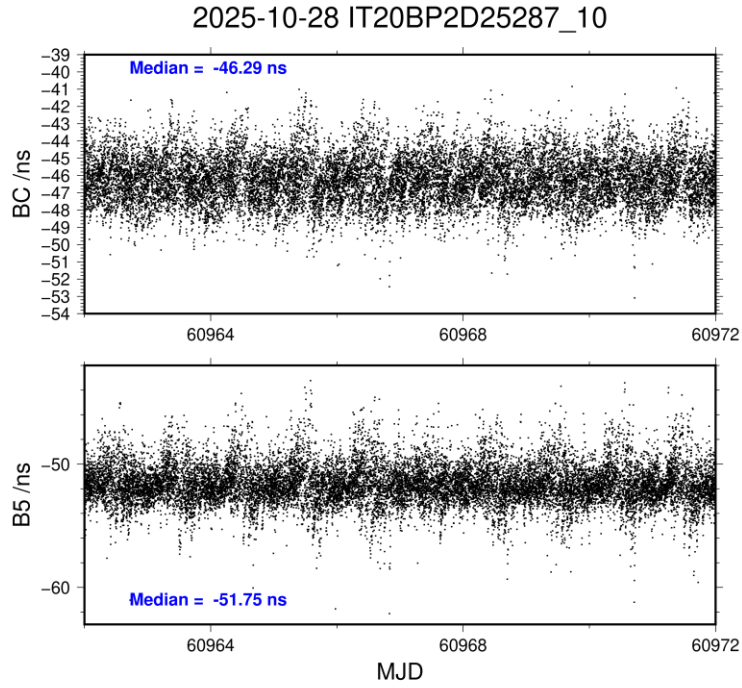
TdevC1 / s

TdevC2 / s

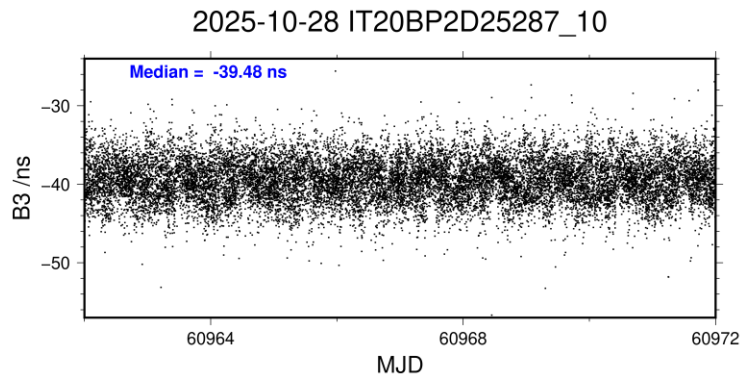
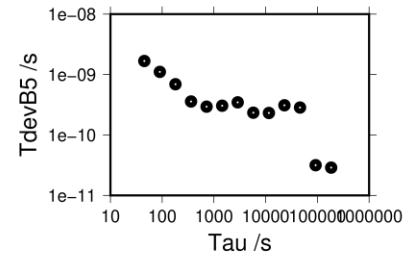
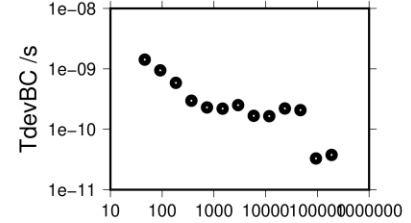
Tau / s



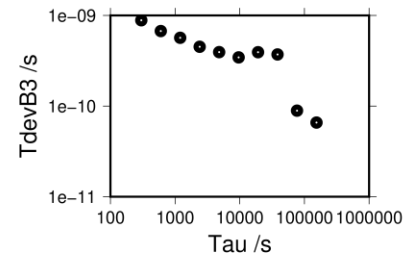




188337 s: BC= 38 ps 184921 s: B5= 29 ps
 94168 s: BC= 33 ps 92460 s: B5= 32 ps
 47084 s: BC= 208 ps 46230 s: B5= 285 ps
 23542 s: BC= 221 ps 23115 s: B5= 310 ps
 11771 s: BC= 165 ps 11558 s: B5= 231 ps
 5886 s: BC= 167 ps 5779 s: B5= 234 ps
 2943 s: BC= 251 ps 2889 s: B5= 347 ps
 1471 s: BC= 220 ps 1445 s: B5= 305 ps
 736 s: BC= 230 ps 722 s: B5= 294 ps
 368 s: BC= 297 ps 361 s: B5= 358 ps
 184 s: BC= 588 ps 181 s: B5= 693 ps
 92 s: BC= 945 ps 90 s: B5= 1108 ps
 46 s: BC= 1424 ps 45 s: B5= 1677 ps



153600 s: B3= 66 ps
 76800 s: B3= 89 ps
 38400 s: B3= 372 ps
 19200 s: B3= 393 ps
 9600 s: B3= 345 ps
 4800 s: B3= 393 ps
 2400 s: B3= 451 ps
 1200 s: B3= 567 ps
 600 s: B3= 672 ps
 300 s: B3= 884 ps



IT20-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 265932
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39540 high elev obs : -20.138 -20.042
 Iteration 0: Obs used = 423074; Huge residuals = 1671; Large residuals = 33030
 Iteration 1: Obs used = 422637; Huge residuals = 0; Large residuals = 31786
 Computed code bias (P1/P2)/m = -18.734 -18.604
 Computed baseline (X,Y,Z)/m = -2.652 2.632 0.241
 RMS of residuals /m = 0.802

Number of phase differences to fit baseline
 L1/L2 = 258240
 L5 = 155824
 A priori baseline (X,Y,Z)/m = -2.652 2.632 0.241
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = -0.9 RMS jitter /ps = 3.2

Iter 1 Large residuals L1= 1
 Iter 1 Large residuals L2= 3
 Iter 1 Large residuals L5= 45
 Computed baseline L1 (X,Y,Z)/m = 1.102 -0.339 -0.288
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 1.126 -0.338 -0.278
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 1.116 -0.404 -0.286
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 1
 Iter 2 Large residuals L2= 3
 Iter 2 Large residuals L5= 45
 Computed baseline L1 (X,Y,Z)/m = 1.102 -0.339 -0.288
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 1.126 -0.338 -0.278
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 1.116 -0.404 -0.286
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = -1.538 2.293 -0.042
 28796 clock jitters computed out of 28796 intervals
 AVE jitter /ps = 0.5 RMS jitter /ps = 1.2

Iter 3 Large residuals L1= 1
 Iter 3 Large residuals L2= 3
 Iter 3 Large residuals L5= 45
 Computed baseline L1 (X,Y,Z)/m = 0.011 -0.060 -0.006
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = 0.034 -0.059 0.005
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = 0.032 -0.126 -0.014
 RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -1.527 2.233 -0.047

Final baseline L2 (X,Y,Z)/m = -1.503 2.235 -0.037
 Final baseline L5 (X,Y,Z)/m = -1.506 2.168 -0.056

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	272640	-64.421	2.522
C2	225033	-64.217	2.900
P1	260401	-64.427	1.862
P2	259957	-64.040	2.834
E1	239736	-64.341	2.039
E5	242168	-64.245	2.151
BC	210908	-64.473	2.476
B5	213821	-64.380	2.487

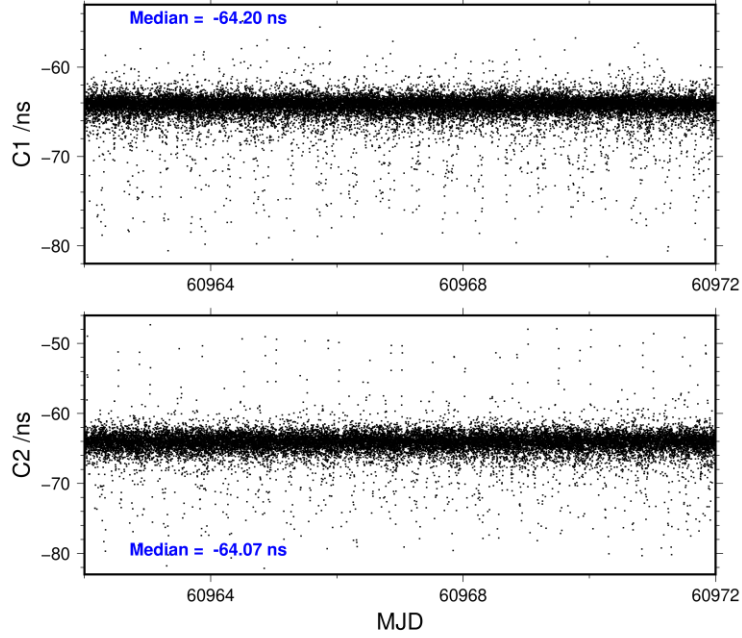
Number of 300s epochs in out file = 2880

Code	#pts	median/ns	ave/ns	rms/ns
C1	27244	-64.199	-64.445	1.561
C2	22415	-64.070	-64.238	1.930
P1	26008	-64.338	-64.438	1.108
P2	25976	-64.076	-64.106	1.856
E1	23950	-64.200	-64.363	1.362
E5	24211	-64.169	-64.282	1.630
BC	21093	-64.235	-64.504	1.770
B5	21399	-64.197	-64.421	1.967

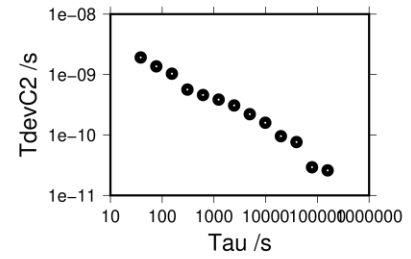
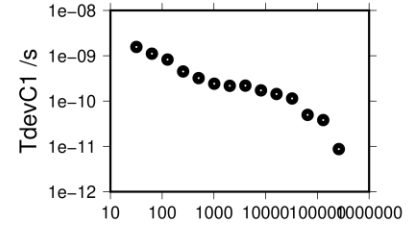
Ionofree combinations

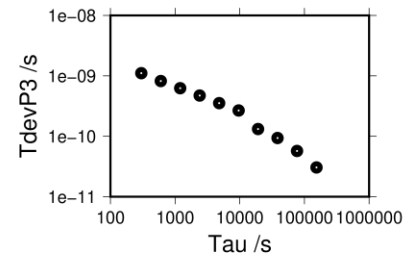
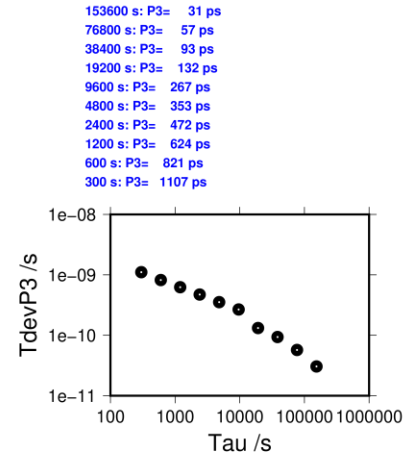
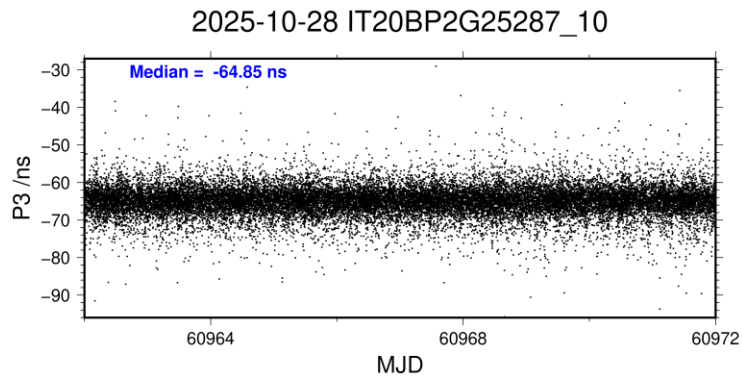
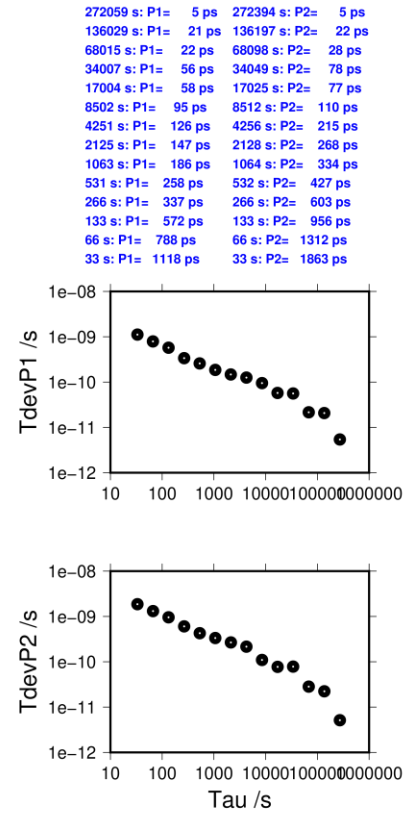
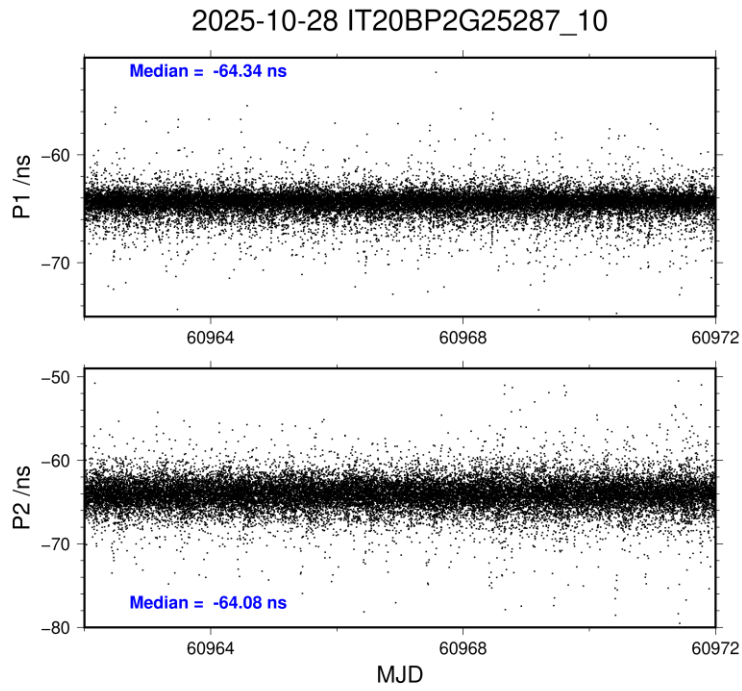
Code	#pts	median/ns	ave/ns	rms/ns
P3	2873	-64.847	-64.783	0.922
E3	2868	-64.299	-64.273	0.634
B3	2872	-64.325	-64.309	0.691

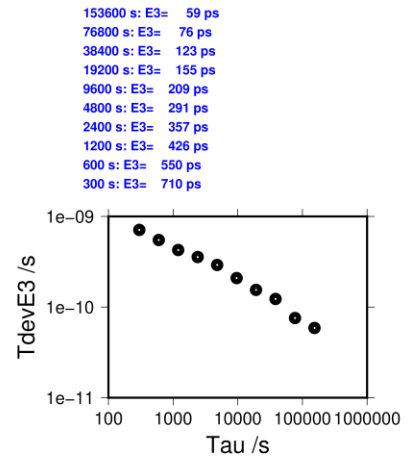
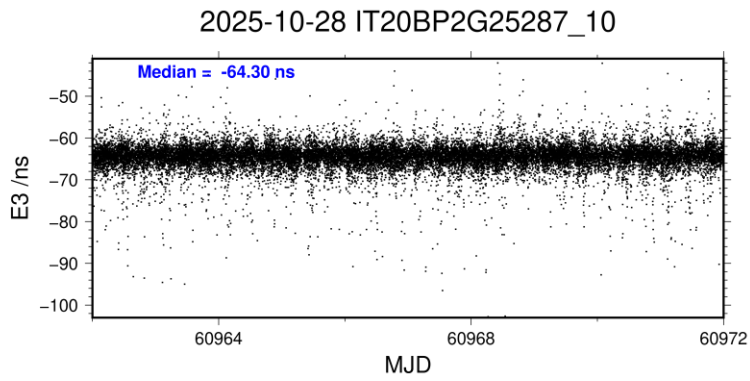
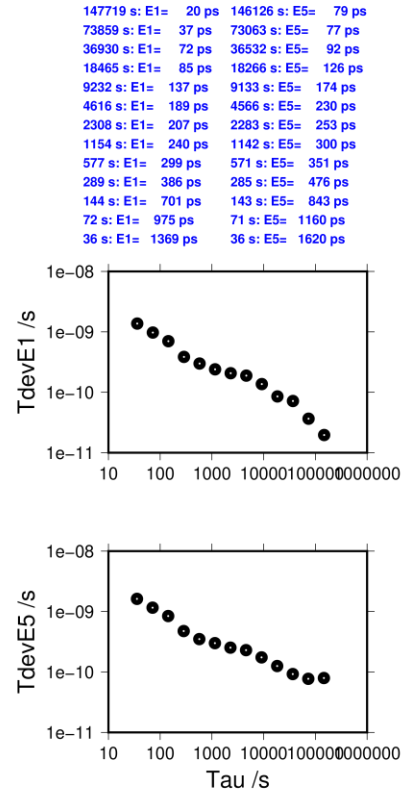
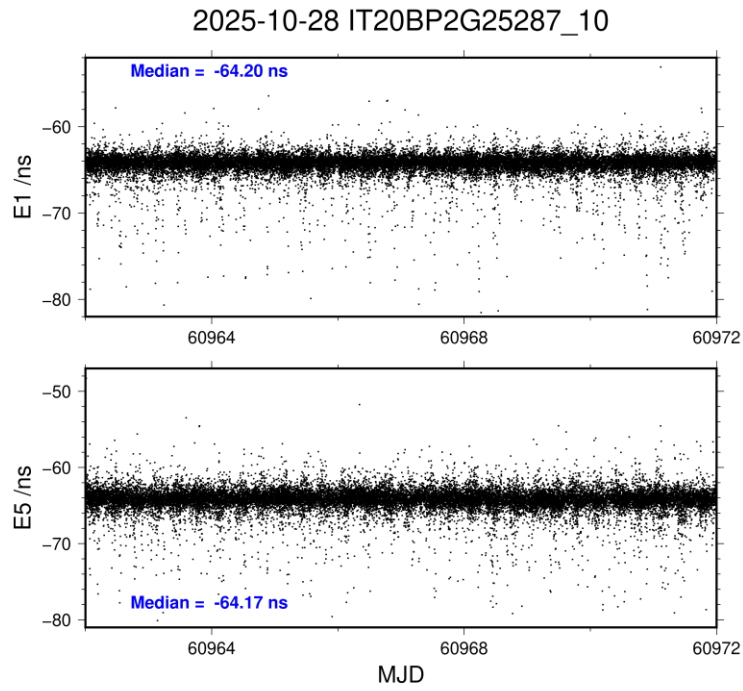
2025-10-28 IT20BP2G25287_10

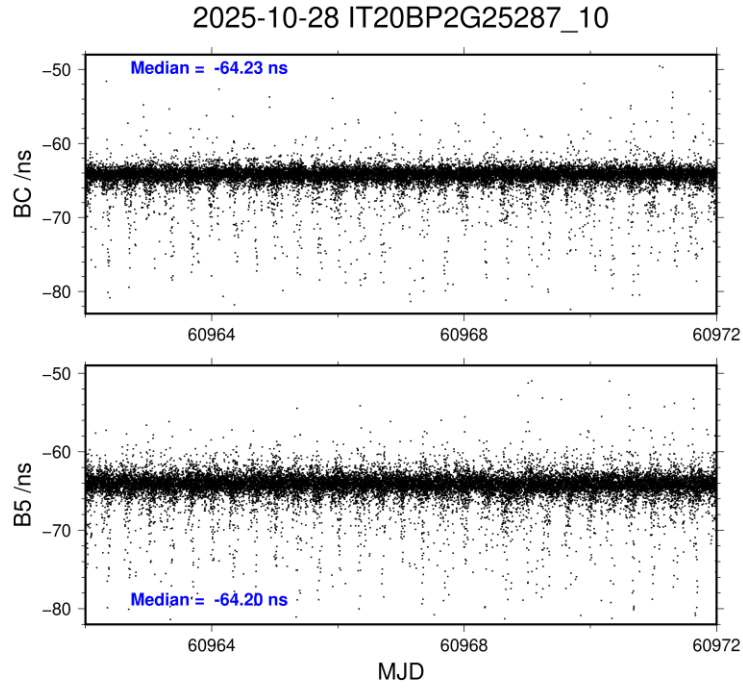


259716 s: C1= 9 ps
 129858 s: C1= 38 ps 157835 s: C2= 26 ps
 64929 s: C1= 50 ps 78918 s: C2= 29 ps
 32464 s: C1= 114 ps 39459 s: C2= 76 ps
 16232 s: C1= 144 ps 19729 s: C2= 96 ps
 8116 s: C1= 172 ps 9865 s: C2= 159 ps
 4058 s: C1= 219 ps 4932 s: C2= 221 ps
 2029 s: C1= 217 ps 2466 s: C2= 308 ps
 1015 s: C1= 242 ps 1233 s: C2= 385 ps
 507 s: C1= 321 ps 617 s: C2= 459 ps
 254 s: C1= 449 ps 308 s: C2= 565 ps
 127 s: C1= 826 ps 154 s: C2= 1035 ps
 63 s: C1= 1112 ps 77 s: C2= 1365 ps
 32 s: C1= 1564 ps 39 s: C2= 1919 ps

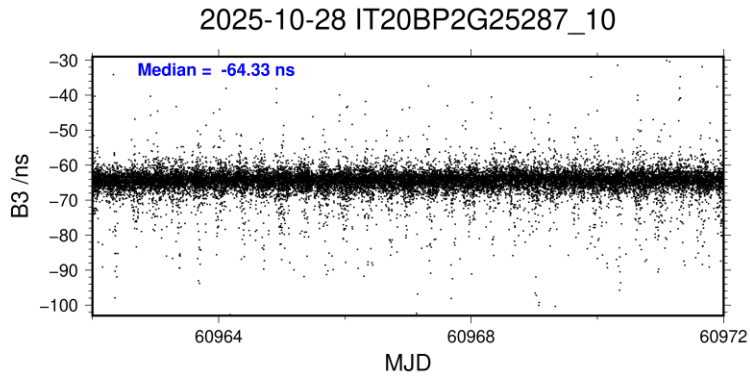
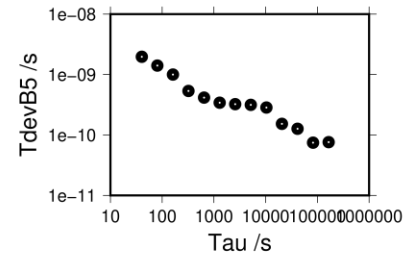
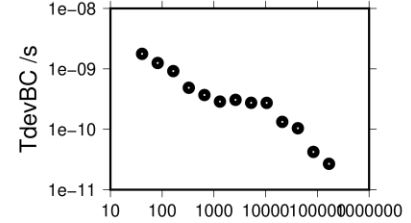




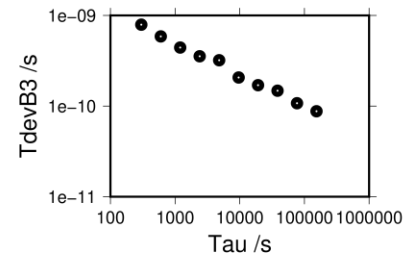




167728 s: BC= 27 ps 165329 s: B5= 76 ps
 83864 s: BC= 42 ps 82665 s: B5= 75 ps
 41932 s: BC= 104 ps 41332 s: B5= 127 ps
 20966 s: BC= 133 ps 20666 s: B5= 153 ps
 10483 s: BC= 273 ps 10333 s: B5= 284 ps
 5241 s: BC= 274 ps 5167 s: B5= 316 ps
 2621 s: BC= 307 ps 2583 s: B5= 324 ps
 1310 s: BC= 287 ps 1292 s: B5= 342 ps
 655 s: BC= 369 ps 646 s: B5= 415 ps
 328 s: BC= 487 ps 323 s: B5= 535 ps
 164 s: BC= 919 ps 161 s: B5= 999 ps
 82 s: BC= 1253 ps 81 s: B5= 1407 ps
 41 s: BC= 1771 ps 40 s: B5= 1967 ps



153600 s: B3= 88 ps
 76800 s: B3= 107 ps
 38400 s: B3= 148 ps
 19200 s: B3= 170 ps
 9600 s: B3= 206 ps
 4800 s: B3= 321 ps
 2400 s: B3= 354 ps
 1200 s: B3= 442 ps
 600 s: B3= 586 ps
 300 s: B3= 791 ps



IT21-BP2D**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 236648
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39264 high elev obs : -66.758 -68.480
 Iteration 0: Obs used = 329881; Huge residuals = 8; Large residuals = 68173
 Iteration 1: Obs used = 329909; Huge residuals = 0; Large residuals = 68132
 Computed code bias (P1/P2)/m = -61.840 -63.546
 Computed baseline (X,Y,Z)/m = 10.679 -32.011 -10.884
 RMS of residuals /m = 1.099

Number of phase differences to fit baseline
 L1/L2 = 234386
 L5 = 139918
 A priori baseline (X,Y,Z)/m = 10.679 -32.011 -10.884
 28598 clock jitters computed out of 28598 intervals
 AVE jitter /ps = -1.9 RMS jitter /ps = 10.0

Iter 1 Large residuals L1= 7
 Iter 1 Large residuals L2= 8
 Iter 1 Large residuals L5= 10
 Computed baseline L1 (X,Y,Z)/m = -4.685 -0.287 -4.186
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.661 -0.295 -4.178
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -4.676 -0.225 -4.163
 RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 7
 Iter 2 Large residuals L2= 8
 Iter 2 Large residuals L5= 10
 Computed baseline L1 (X,Y,Z)/m = -4.686 -0.287 -4.187
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.661 -0.295 -4.178
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -4.681 -0.226 -4.167
 RMS of residuals L5 /m = 0.004

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 6.006 -32.302 -15.066
 28598 clock jitters computed out of 28598 intervals
 AVE jitter /ps = 1.3 RMS jitter /ps = 8.9

Iter 3 Large residuals L1= 7
 Iter 3 Large residuals L2= 8
 Iter 3 Large residuals L5= 10
 Computed baseline L1 (X,Y,Z)/m = -0.193 -0.117 -0.133
 RMS of residuals L1 /m = 0.003
 Computed baseline L2 (X,Y,Z)/m = -0.168 -0.125 -0.124
 RMS of residuals L2 /m = 0.004
 Computed baseline L5 (X,Y,Z)/m = -0.178 -0.124 -0.132
 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 = 5.813 -32.419 -15.199
 Final baseline L2 (X,Y,Z)/m = 5.838 -32.427 -15.190
 Final baseline L5 (X,Y,Z)/m = 5.827 -32.426 -15.198

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 890260

Global average of individual differences

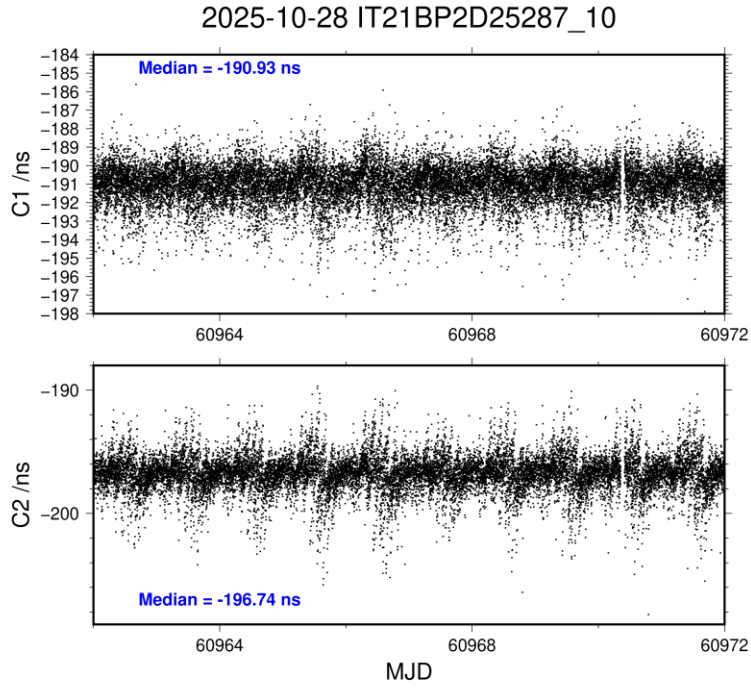
Code	#pts	ave/ns	rms/ns
C1	237939	-191.016	1.291
C2	193789	-196.791	1.683
P1	236585	-192.476	1.338
P2	236589	-198.257	1.778
E1	211142	-190.823	1.209
E5	211166	-196.032	1.464
BC	186969	-190.079	1.937
B5	190656	-195.482	2.240

Number of 300s epochs in out file = 2863

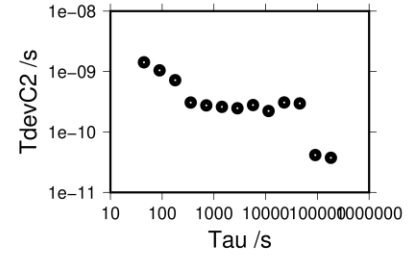
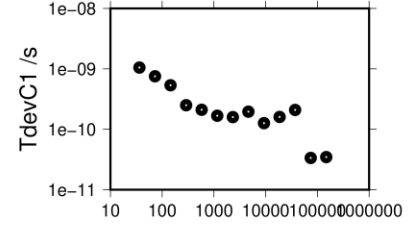
Code	#pts	median/ns	ave/ns	rms/ns
C1	23793	-190.934	-191.021	1.057
C2	19375	-196.741	-196.789	1.466
P1	23660	-192.409	-192.478	1.123
P2	23660	-198.195	-198.248	1.574
E1	21106	-190.731	-190.826	1.032
E5	21109	-196.051	-196.029	1.355
BC	18678	-190.055	-190.086	1.799
B5	19023	-195.514	-195.482	2.154

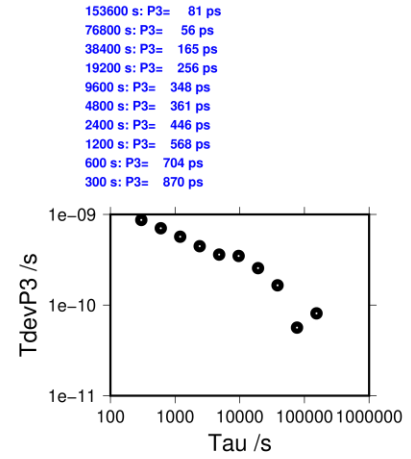
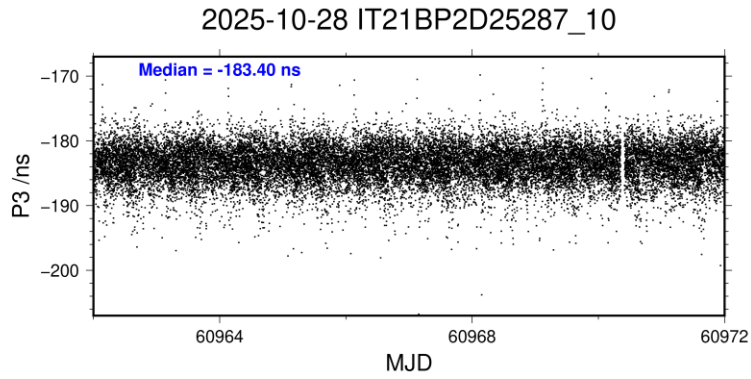
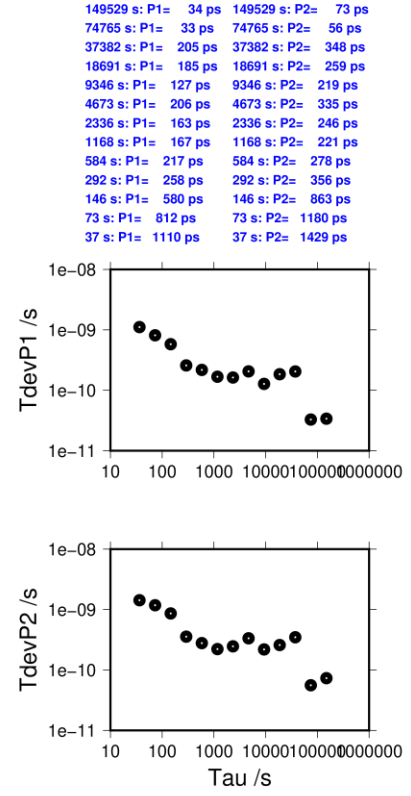
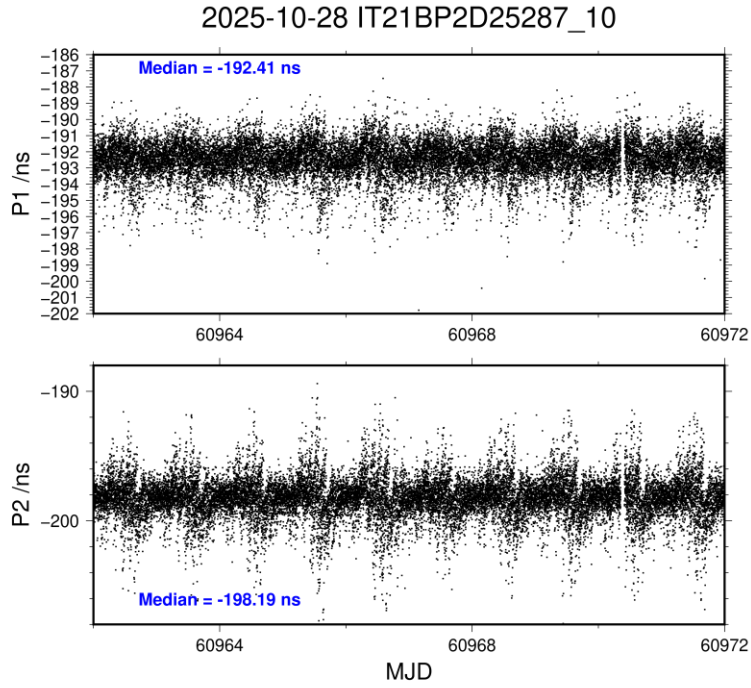
Ionofree combinations

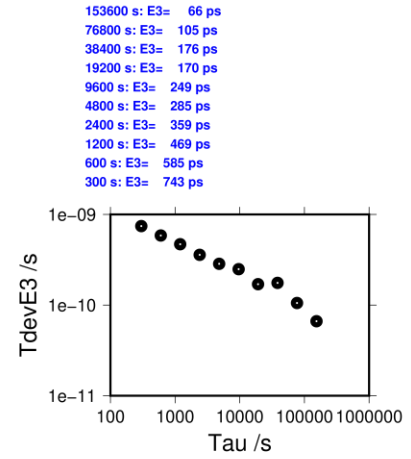
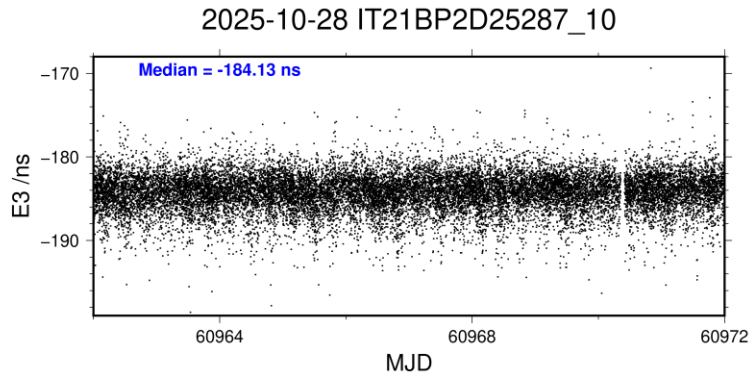
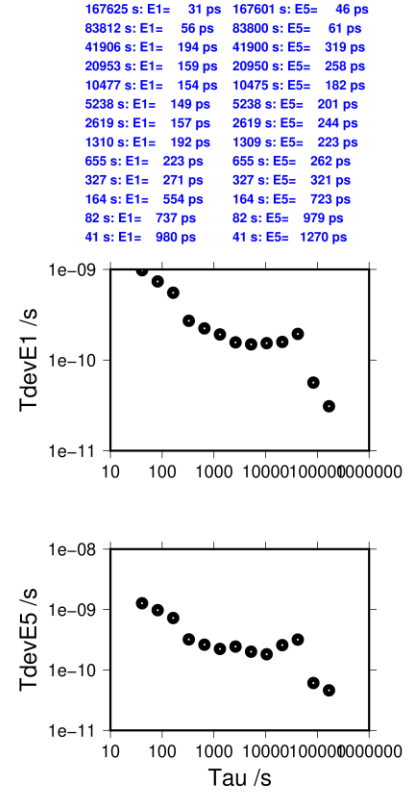
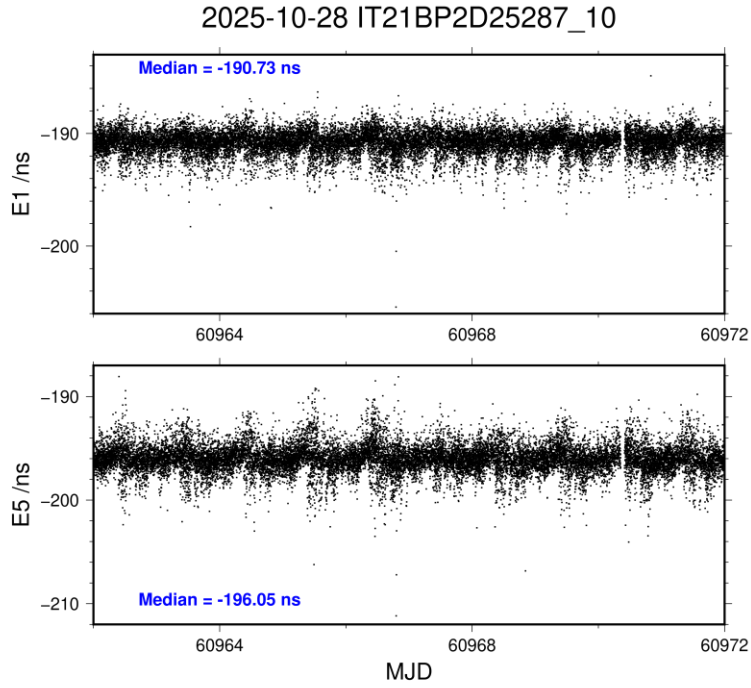
Code	#pts	median/ns	ave/ns	rms/ns
P3	2861	-183.398	-183.388	0.843
E3	2861	-184.126	-184.102	0.695
B3	2860	-183.317	-183.334	0.892

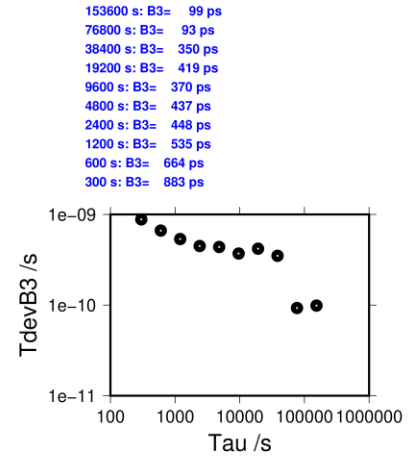
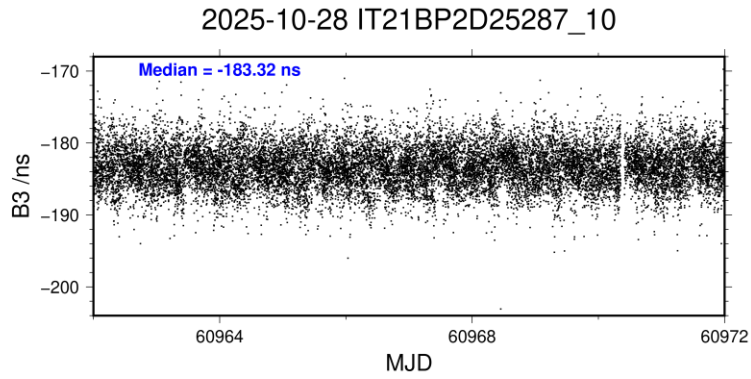
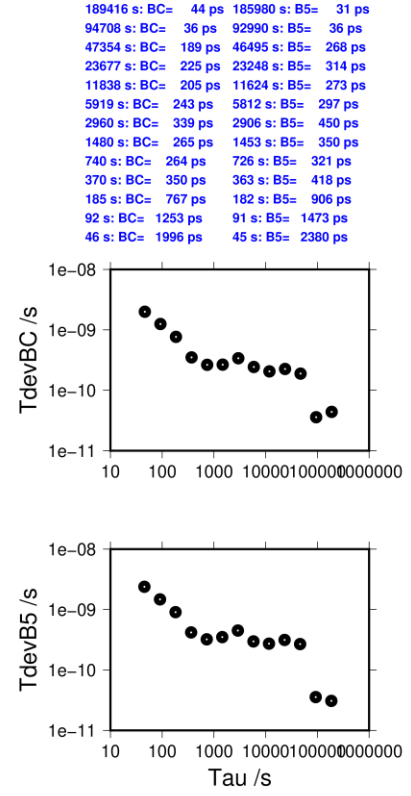
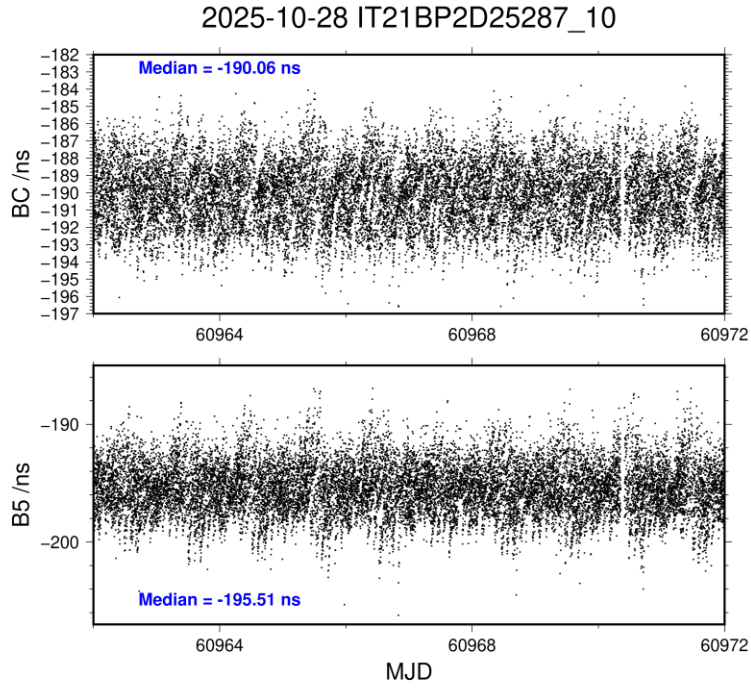


148693 s: C1= 35 ps	182601 s: C2= 37 ps
74347 s: C1= 34 ps	91301 s: C2= 42 ps
37173 s: C1= 209 ps	45650 s: C2= 297 ps
18587 s: C1= 160 ps	22825 s: C2= 308 ps
9293 s: C1= 126 ps	11413 s: C2= 223 ps
4647 s: C1= 195 ps	5706 s: C2= 279 ps
2323 s: C1= 159 ps	2853 s: C2= 247 ps
1162 s: C1= 168 ps	1427 s: C2= 261 ps
581 s: C1= 211 ps	713 s: C2= 275 ps
290 s: C1= 250 ps	357 s: C2= 307 ps
145 s: C1= 535 ps	178 s: C2= 720 ps
73 s: C1= 754 ps	89 s: C2= 1048 ps
36 s: C1= 1052 ps	45 s: C2= 1420 ps









IT21-BP2G**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 256587
 Compute baseline with sin(elev) between 0.05 and 0.90
 Apriori codes biases from 39281 high elev obs : -71.364 -71.367
 Iteration 0: Obs used = 364924; Huge residuals = 603; Large residuals = 72974
 Iteration 1: Obs used = 358629; Huge residuals = 0; Large residuals = 78657
 Computed code bias (P1/P2)/m = -65.971 -65.903
 Computed baseline (X,Y,Z)/m = 9.738 -32.175 -11.022
 RMS of residuals /m = 1.049

Number of phase differences to fit baseline
 L1/L2 = 254363
 L5 = 153643
 A priori baseline (X,Y,Z)/m = 9.738 -32.175 -11.022
 28613 clock jitters computed out of 28613 intervals
 AVE jitter /ps = -1.7 RMS jitter /ps = 8.1

Iter 1 Large residuals L1= 651
 Iter 1 Large residuals L2= 653
 Iter 1 Large residuals L5= 2410
 Computed baseline L1 (X,Y,Z)/m = -4.071 -0.101 -3.672
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.045 -0.099 -3.662
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.084 -0.018 -3.620
 RMS of residuals L5 /m = 0.005

Iter 2 Large residuals L1= 651
 Iter 2 Large residuals L2= 653
 Iter 2 Large residuals L5= 2409
 Computed baseline L1 (X,Y,Z)/m = -4.075 -0.100 -3.674
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.050 -0.098 -3.666
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.125 -0.022 -3.642
 RMS of residuals L5 /m = 0.005

Iter 3 Large residuals L1= 651
 Iter 3 Large residuals L2= 653
 Iter 3 Large residuals L5= 2409
 Computed baseline L1 (X,Y,Z)/m = -4.075 -0.100 -3.674
 RMS of residuals L1 /m = 0.004
 Computed baseline L2 (X,Y,Z)/m = -4.050 -0.098 -3.666
 RMS of residuals L2 /m = 0.005
 Computed baseline L5 (X,Y,Z)/m = -4.126 -0.021 -3.642
 RMS of residuals L5 /m = 0.005

New iteration of baseline
 New apriori baseline (X,Y,Z)/m = 5.676 -32.274 -14.692
 28613 clock jitters computed out of 28613 intervals
 AVE jitter /ps = 1.1 RMS jitter /ps = 7.3

Iter 4 Large residuals L1= 653
 Iter 4 Large residuals L2= 653

Iter 4 Large residuals L5= 2421

Computed baseline L1 (X,Y,Z)/m = -0.142 -0.096 -0.099

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.117 -0.095 -0.090

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.181 -0.084 -0.088

RMS of residuals L5 /m = 0.004

Iter 5 Large residuals L1= 653

Iter 5 Large residuals L2= 653

Iter 5 Large residuals L5= 2421

Computed baseline L1 (X,Y,Z)/m = -0.142 -0.096 -0.099

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.118 -0.095 -0.090

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.182 -0.084 -0.088

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 = 5.533 -32.370 -14.791

Final baseline L2 (X,Y,Z)/m = 5.558 -32.369 -14.782

Final baseline L5 (X,Y,Z)/m = 5.494 -32.358 -14.779

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = *****

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	270646	-208.482	2.603
C2	220589	-208.385	2.870
P1	256224	-208.373	1.859
P2	255786	-208.189	2.848
E1	238041	-208.413	2.078
E5	240382	-208.204	2.180
BC	209314	-208.457	2.518
B5	212307	-208.320	2.524

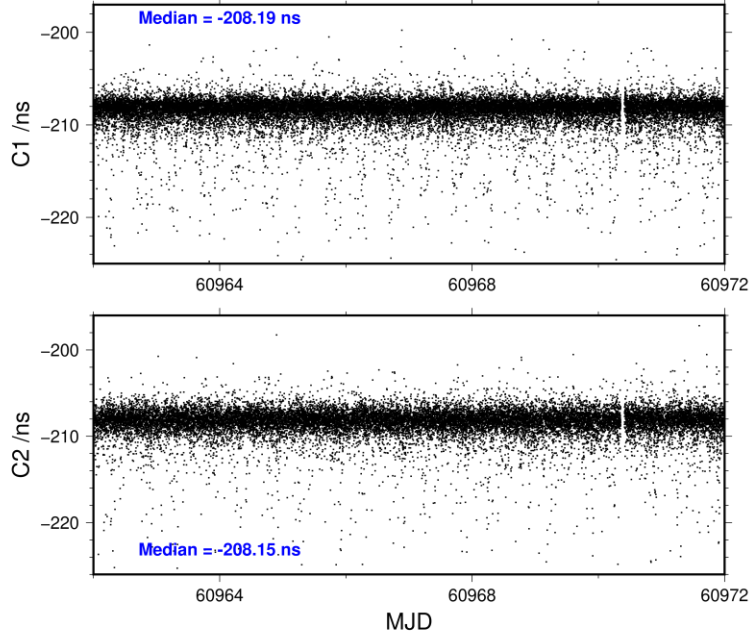
Number of 300s epochs in out file = 2863

Code	#pts	median/ns	ave/ns	rms/ns
C1	27021	-208.187	-208.499	1.665
C2	21971	-208.151	-208.406	1.845
P1	25577	-208.220	-208.385	1.176
P2	25545	-208.178	-208.248	1.935
E1	23786	-208.213	-208.435	1.434
E5	24032	-208.072	-208.244	1.707
BC	20943	-208.156	-208.491	1.830
B5	21251	-208.057	-208.360	2.038

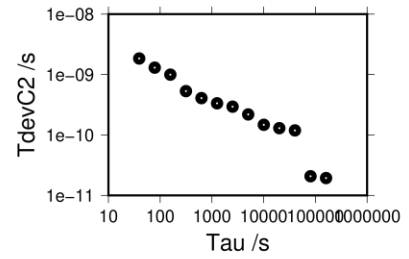
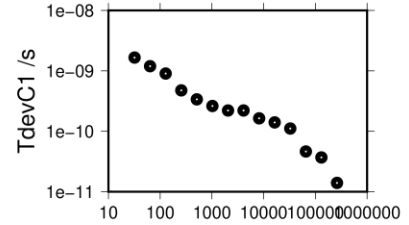
Ionofree combinations

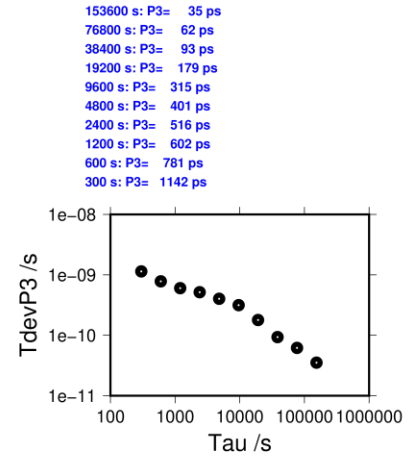
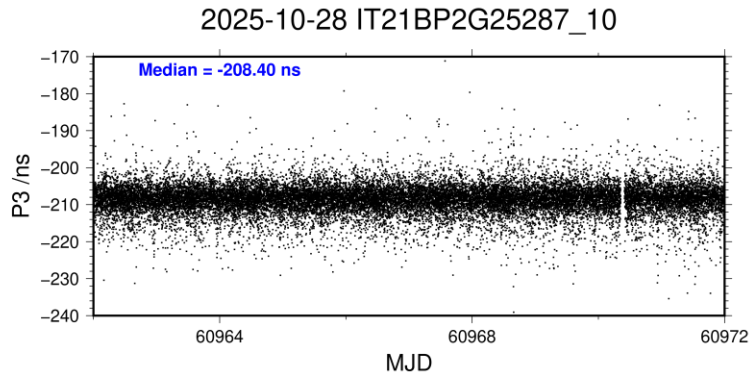
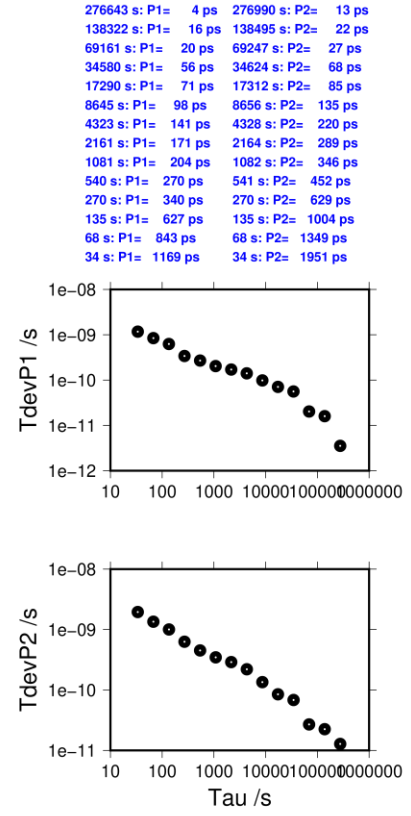
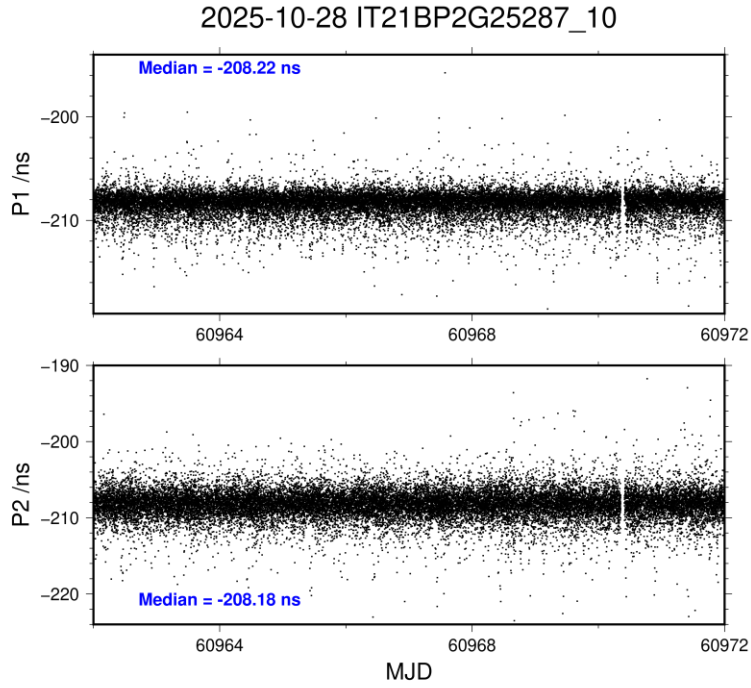
Code	#pts	median/ns	ave/ns	rms/ns
P3	2854	-208.396	-208.333	0.948
E3	2846	-208.441	-208.430	0.687
B3	2851	-208.318	-208.314	0.750

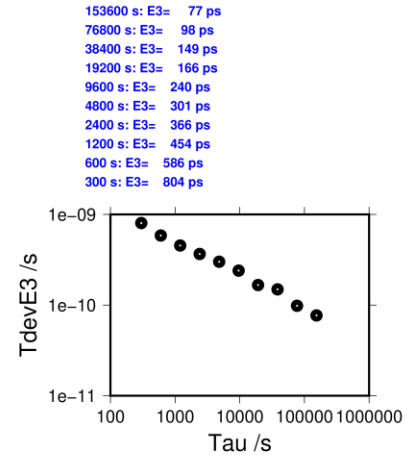
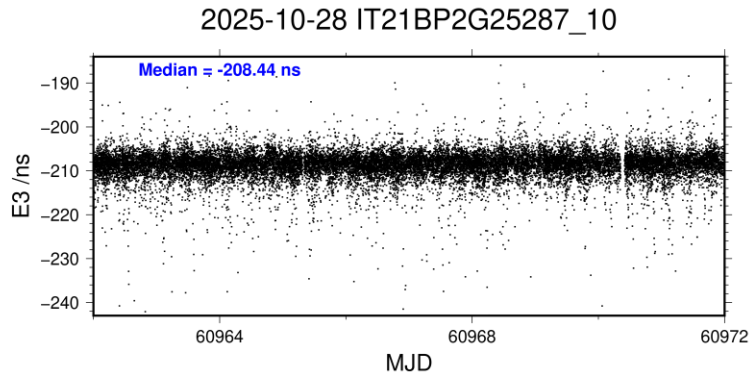
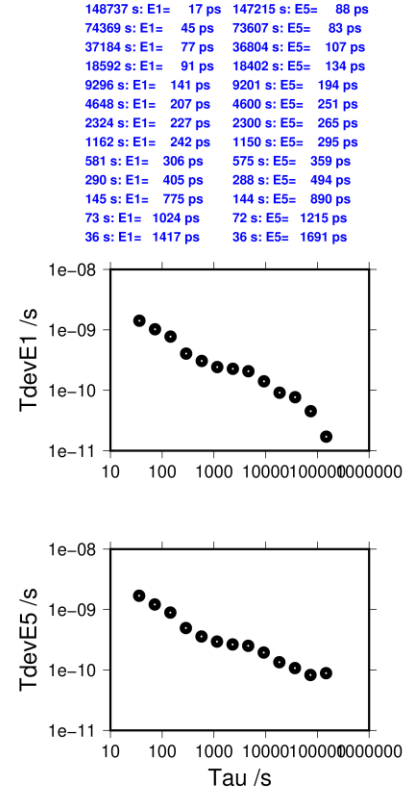
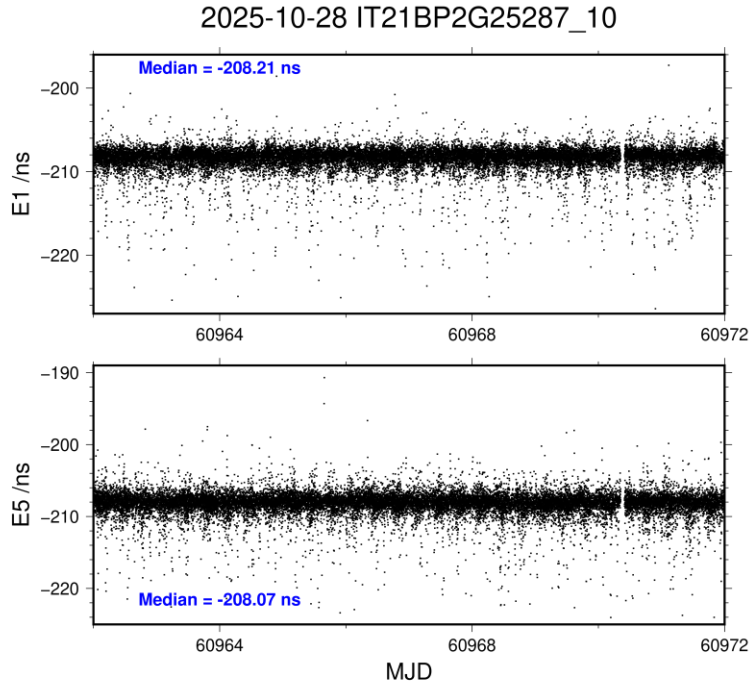
2025-10-28 IT21BP2G25287_10

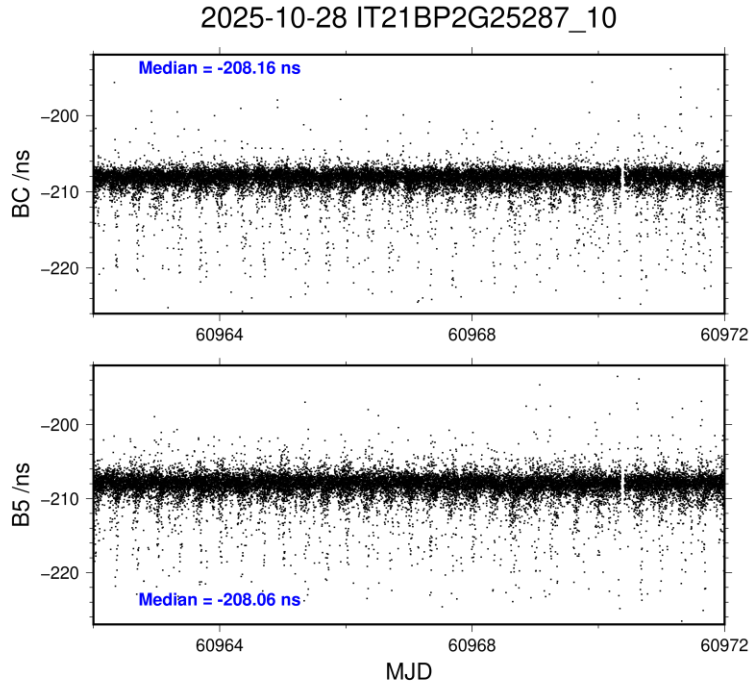


261859 s: C1= 14 ps
 130930 s: C1= 37 ps 161025 s: C2= 19 ps
 65465 s: C1= 46 ps 80512 s: C2= 21 ps
 32732 s: C1= 111 ps 40256 s: C2= 119 ps
 16366 s: C1= 141 ps 20128 s: C2= 130 ps
 8183 s: C1= 164 ps 10064 s: C2= 147 ps
 4092 s: C1= 221 ps 5032 s: C2= 219 ps
 2046 s: C1= 221 ps 2516 s: C2= 294 ps
 1023 s: C1= 262 ps 1258 s: C2= 335 ps
 511 s: C1= 338 ps 629 s: C2= 407 ps
 256 s: C1= 476 ps 314 s: C2= 532 ps
 128 s: C1= 902 ps 157 s: C2= 997 ps
 64 s: C1= 1193 ps 79 s: C2= 1300 ps
 32 s: C1= 1657 ps 39 s: C2= 1845 ps

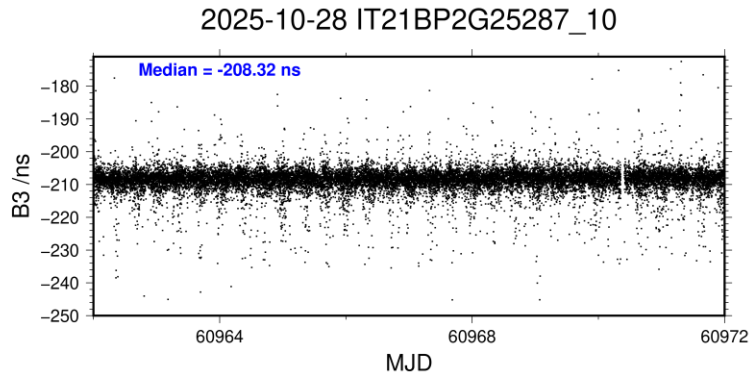
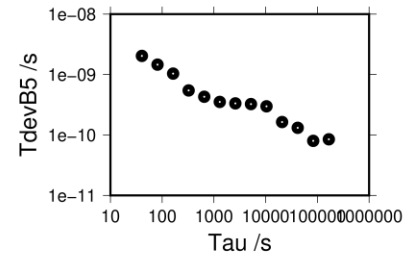
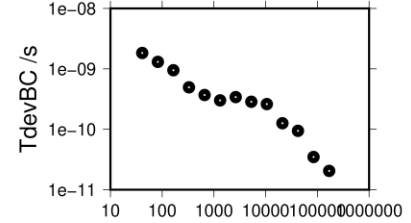




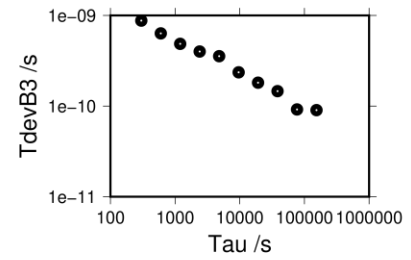




168929 s: BC= 20 ps 166481 s: B5= 85 ps
 84465 s: BC= 35 ps 83240 s: B5= 80 ps
 42232 s: BC= 94 ps 41620 s: B5= 131 ps
 21116 s: BC= 126 ps 20810 s: B5= 164 ps
 10558 s: BC= 261 ps 10405 s: B5= 298 ps
 5279 s: BC= 286 ps 5203 s: B5= 325 ps
 2640 s: BC= 341 ps 2601 s: B5= 333 ps
 1320 s: BC= 301 ps 1301 s: B5= 353 ps
 660 s: BC= 369 ps 650 s: B5= 429 ps
 330 s: BC= 494 ps 325 s: B5= 546 ps
 165 s: BC= 947 ps 163 s: B5= 1037 ps
 82 s: BC= 1306 ps 81 s: B5= 1459 ps
 41 s: BC= 1831 ps 41 s: B5= 2035 ps



153600 s: B3= 90 ps
 76800 s: B3= 92 ps
 38400 s: B3= 146 ps
 19200 s: B3= 181 ps
 9600 s: B3= 236 ps
 4800 s: B3= 355 ps
 2400 s: B3= 400 ps
 1200 s: B3= 486 ps
 600 s: B3= 634 ps
 300 s: B3= 876 ps



1.6/ BIPM (25321)**Period**

MJD 60996 to 61002

Delays

BP2D:	(cf page 82)
REFDLY = 42.18 ns	(57.20-15.02)
CABDLY = 176.85 ns	(C210)
BP2G:	(cf page 84)
REFDLY = 42.30 ns	(57.32-15.02)
CABDLY = 176.38 ns	(C211)
BP21:	(cf page 82)
REFDLY = 43.33 ns	(58.35-15.02)
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 60996	
Date and hour of the end of measurements:	MJD 61002	
Information on the system		
	Local:	Travelling:
4-character BIPM code	BP21	BP2D
• Receiver maker and type:	Septentrio PolaRx5TR	Mesit GTR55
Receiver serial number:	4701229	2010001
1 PPS trigger level /V:	1 V	1 V
• Antenna cable maker and type:	LMR-195	HYLM195
Phase stabilised cable (Y/N):		
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type:	Septentrio SEPCHOKE B3E6	Novatel GNSS-850
Antenna serial number:	5253	NMLK17440001C
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	43.33	42.18
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		
• Antenna cable delay:	140.80	176.85

BIPM Guidelines for GNSS equipment calibration - Annex1

Splitter delay (if any):		(2)
Additional cable delay (if any):		(1)
Data used for the generation of CCGTTS files Complete this section only if CCGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:		
• INT DLY (Galileo) /ns:		
• INT DLY (BDS) /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:		21 ± 1°C
Set humidity value and uncertainty:		

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

(2) 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 60996	
Date and hour of the end of measurements:	MJD 61002	
Information on the system		
	Local:	Travelling:
4-character BIPM code	BP21	BP2G
• Receiver maker and type:	Septentrio PolaRx5TR	Septentrio PolaRx5TR
Receiver serial number:	4701229	4701533
1 PPS trigger level /V:	1 V	1 V
• Antenna cable maker and type:	LMR-195	HYLM195
Phase stabilised cable (Y/N):		
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type:	Septentrio SEPCHOKE B3E6	Septentrio SEPCHOKE B3E6
Antenna serial number:	5253	6023
Temperature (if stabilised) /°C		
Measured delays /ns		
Please tick the correct box depending on the receiver (1)		
	Local:	Travelling:
	REF point is PPSIN ☒	REF point is PPSIN ☒
• Delay from local UTC to receiver 1 PPS-in (REFDLY):	43.33	42.30
• Optional Delay from local UTC to receiver 1 PPS-Out:		
	REF point is PPSOUT ☐	REF point is PPSOUT ☐
• Delay from local UTC to receiver 1 PPS-Out (REFDLY):		
• Optional Delay from local UTC to receiver 1 PPS-in:		
	REF point. TTS 4/5 ☐	REF point. TTS 4/5 ☐
• Delay from local UTC to receiver 1 PPS-in:		
• Delay from 1 PPS-in to 10 MHz input receiver:		
• Computed 1PPS frequency offset correction:		
• Computed REFDLY by the receiver:		
	(Not to be filled)	REF point is calibration point ☐
• Delay from local UTC to traveling box calibration point:	(Not to be filled)	
	Other case ☐	Other case ☐
Please describe measurements and final REFDLY value		
• Antenna cable delay:	140.80	176.38

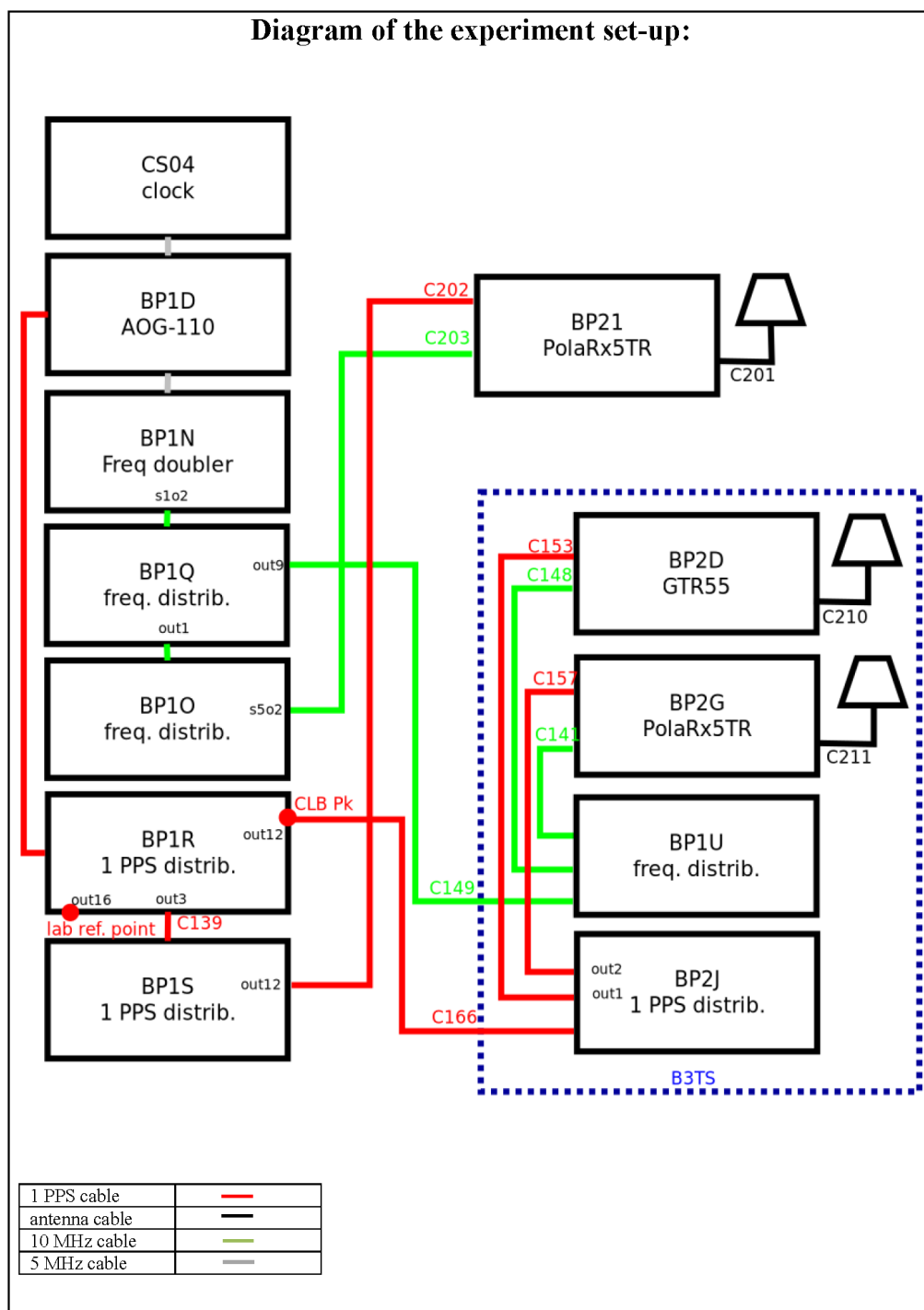
BIPM Guidelines for GNSS equipment calibration - Annex1

Splitter delay (if any):		(2)
Additional cable delay (if any):		(1)
Data used for the generation of CCGTTS files Complete this section only if CCGTTS-format data were used for the calibration. Please fill with the parameter values as configured in the receiver at the time of calibration		
• INT DLY (GPS) /ns:		
• INT DLY (Galileo) /ns:		
• INT DLY (BDS) /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:		21 ± 1°C
Set humidity value and uncertainty:		

(1) Typical cases:

- REF point is PPSIN: Mesit GTR receivers, Piktime TTS3, Polarx5 with autocompesation mode activated
- REF point is PPSOUT: Septentrio Polarx3, Polarx4, Polarx5 Polarx5 with no autocompesation mode activated. (For all Septentrio receivers PPSOUT must be RxClock). Novatel OEM4, OEM5 or OEM6 (Please check the documentation to configure the receivers accordingly)
- REF point for TTS 4/5 receivers: Piktime TTS4, TTS5
- REF point can be the calibration point for some G1 calibration box. Please refer to the G1 instructions.

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



Log of Events / Additional Information :

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 0.0 ns.

BP2D-BP21**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 143466

Compute baseline with sin(elev) between 0.05 and 0.90

Apriori codes biases from 28510 high elev obs : 6.261 7.595

Iteration 0: Obs used = 226870; Huge residuals = 4; Large residuals = 5274

Iteration 1: Obs used = 226869; Huge residuals = 0; Large residuals = 5271

Computed code bias (P1/P2)/m = 6.145 7.501

Computed baseline (X,Y,Z)/m = -3.724 0.729 3.357

RMS of residuals /m = 0.618

Number of phase differences to fit baseline

L1/L2 = 139445

L5 = 82262

A priori baseline (X,Y,Z)/m = -3.724 0.729 3.357

20131 clock jitters computed out of 20133 intervals

AVE jitter /ps = -0.3 RMS jitter /ps = 5.4

Iter 1 Large residuals L1= 5

Iter 1 Large residuals L2= 7

Iter 1 Large residuals L5= 15

Computed baseline L1 (X,Y,Z)/m = 0.042 -0.048 0.085

RMS of residuals L1 /m = 0.004

Computed baseline L2 (X,Y,Z)/m = 0.091 -0.041 0.115

RMS of residuals L2 /m = 0.005

Computed baseline L5 (X,Y,Z)/m = 0.072 -0.049 0.107

RMS of residuals L5 /m = 0.004

Iter 2 Large residuals L1= 5

Iter 2 Large residuals L2= 7

Iter 2 Large residuals L5= 15

Computed baseline L1 (X,Y,Z)/m = 0.042 -0.048 0.085

RMS of residuals L1 /m = 0.004

Computed baseline L2 (X,Y,Z)/m = 0.091 -0.041 0.115

RMS of residuals L2 /m = 0.005

Computed baseline L5 (X,Y,Z)/m = 0.072 -0.049 0.107

RMS of residuals L5 /m = 0.004

New iteration of baseline

New apriori baseline (X,Y,Z)/m = -3.658 0.684 3.457

20131 clock jitters computed out of 20133 intervals

AVE jitter /ps = 0.3 RMS jitter /ps = 0.2

Iter 3 Large residuals L1= 5

Iter 3 Large residuals L2= 7

Iter 3 Large residuals L5= 15

Computed baseline L1 (X,Y,Z)/m = -0.010 -0.033 -0.010

RMS of residuals L1 /m = 0.004

Computed baseline L2 (X,Y,Z)/m = 0.039 -0.026 0.020

RMS of residuals L2 /m = 0.005

Computed baseline L5 (X,Y,Z)/m = 0.021 -0.033 0.013

RMS of residuals L5 /m = 0.004

Final baseline L1 (X,Y,Z)/m = -3.668 0.651 3.446

Final baseline L2 (X,Y,Z)/m = -3.619 0.658 3.477
 Final baseline L5 (X,Y,Z)/m = -3.636 0.651 3.469

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 565017

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	146380	19.102	1.943
C2	119003	23.505	2.058
P1	143194	20.349	1.794
P2	143014	24.788	2.659
E1	124243	18.843	1.783
E5	124729	23.262	1.759
BC	121920	18.330	1.959
B5	124896	22.921	1.950

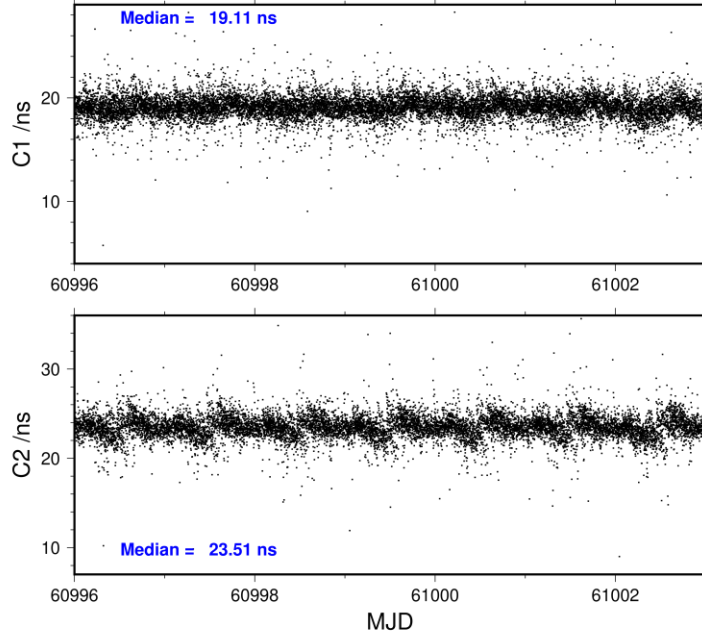
Number of 300s epochs in out file = 2016

Code	#pts	median/ns	ave/ns	rms/ns
C1	14589	19.114	19.126	1.111
C2	11872	23.506	23.495	1.374
P1	14229	20.381	20.381	1.140
P2	14207	24.773	24.782	1.631
E1	12389	18.851	18.831	1.069
E5	12424	23.312	23.232	1.285
BC	12195	18.304	18.304	1.337
B5	12495	22.928	22.894	1.427

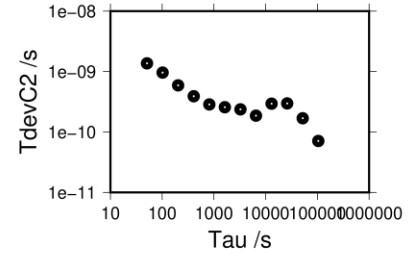
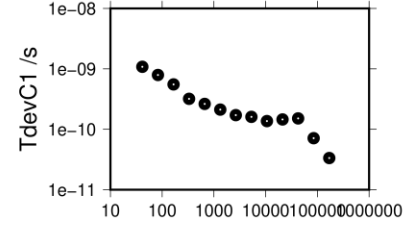
Ionofree combinations

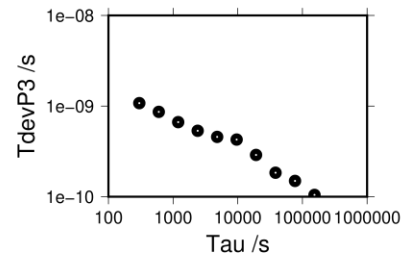
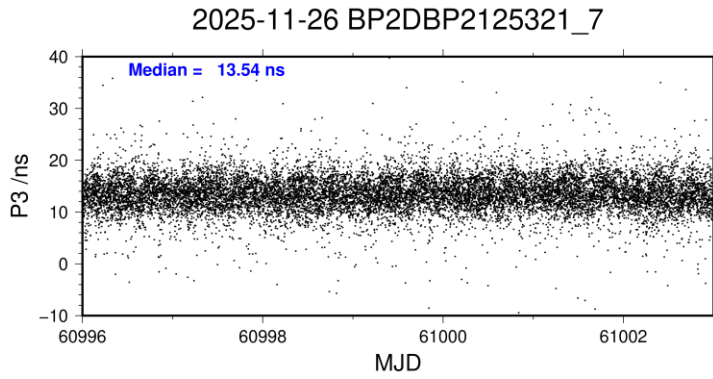
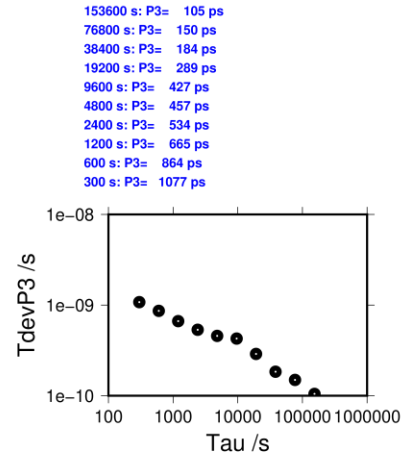
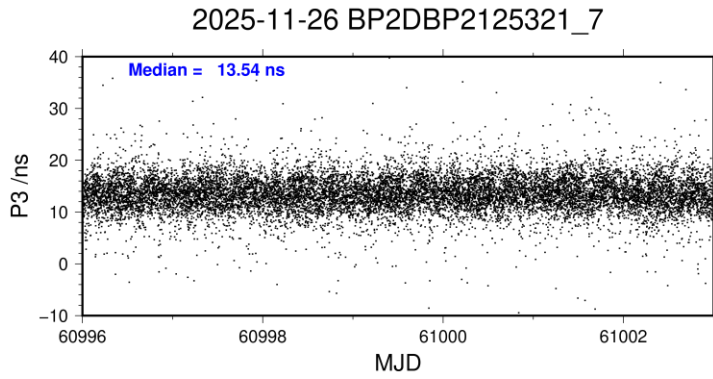
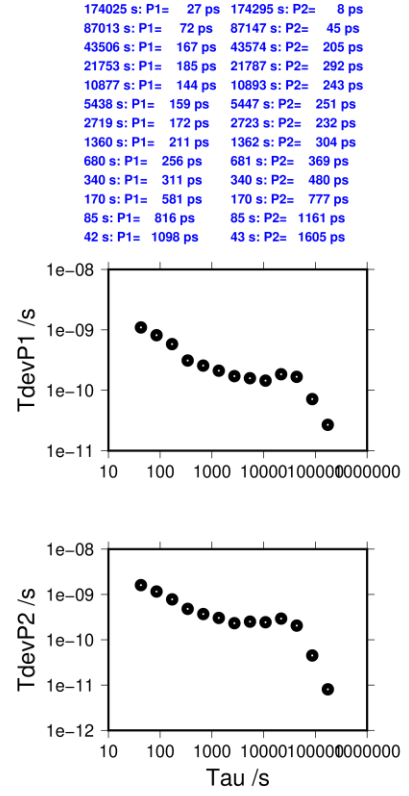
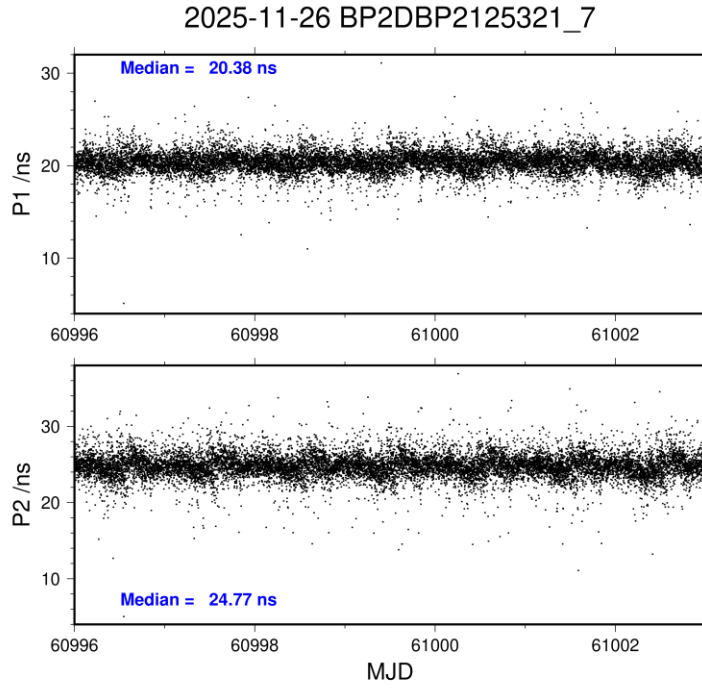
Code	#pts	median/ns	ave/ns	rms/ns
P3	2013	13.541	13.548	1.032
E3	2014	13.224	13.221	0.752
B3	2005	12.590	12.597	1.003

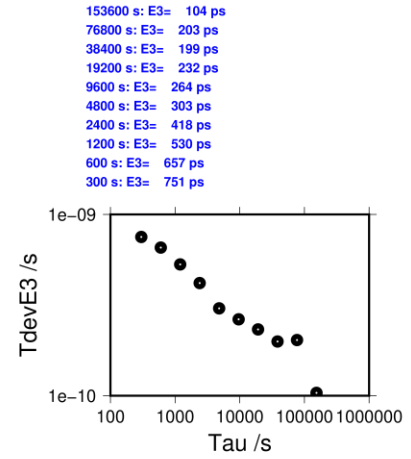
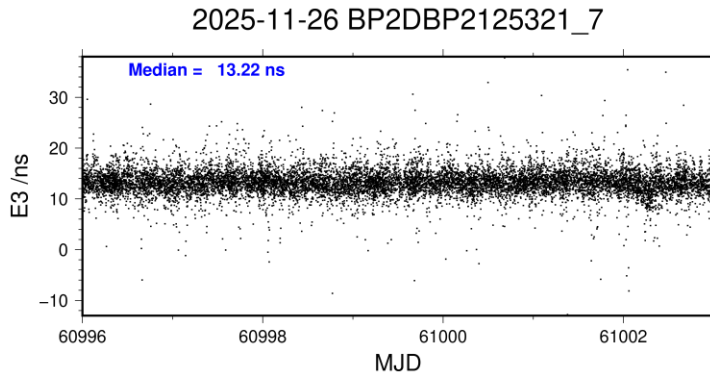
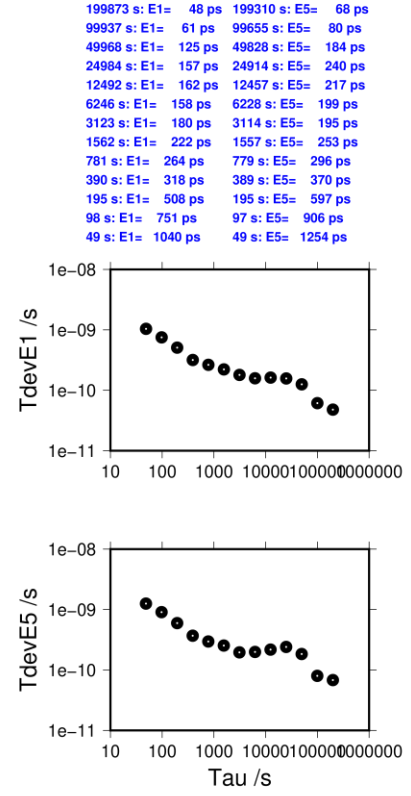
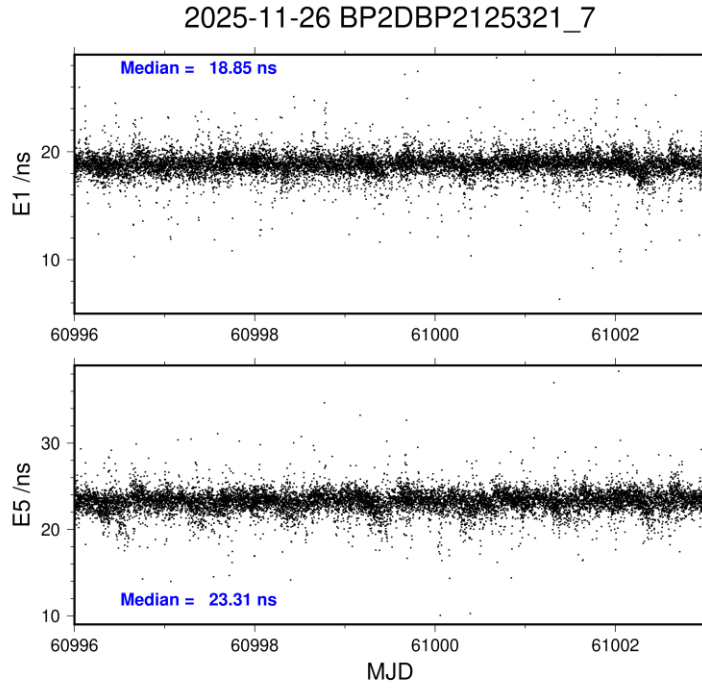
2025-11-26 BP2DBP2125321_7



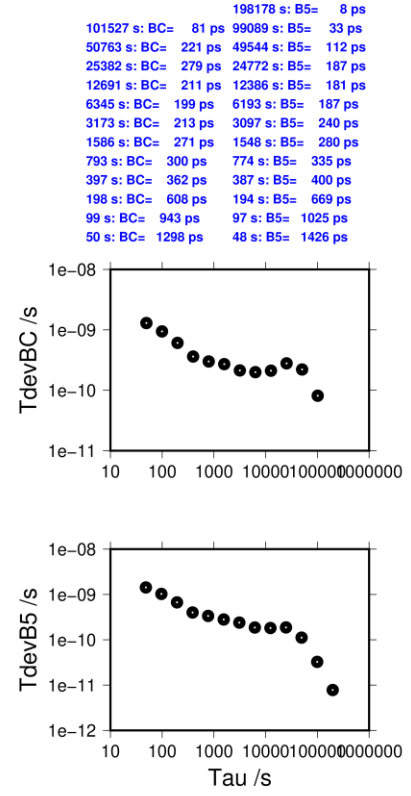
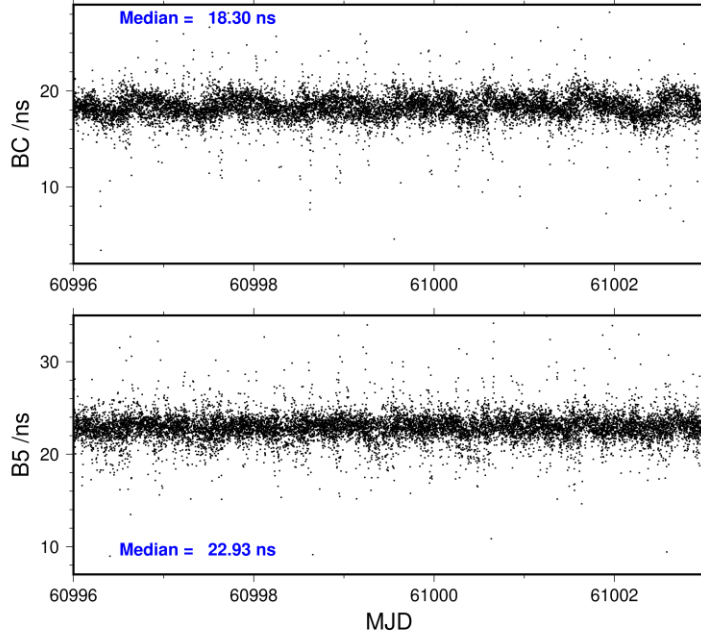
169731 s: C1= 33 ps	
84865 s: C1= 71 ps	104289 s: C2= 71 ps
42433 s: C1= 151 ps	52145 s: C2= 169 ps
21216 s: C1= 146 ps	26072 s: C2= 297 ps
10608 s: C1= 137 ps	13036 s: C2= 294 ps
5304 s: C1= 160 ps	6518 s: C2= 186 ps
2652 s: C1= 172 ps	3259 s: C2= 237 ps
1326 s: C1= 212 ps	1630 s: C2= 257 ps
663 s: C1= 263 ps	815 s: C2= 285 ps
332 s: C1= 319 ps	407 s: C2= 390 ps
166 s: C1= 553 ps	204 s: C2= 591 ps
83 s: C1= 793 ps	102 s: C2= 962 ps
41 s: C1= 1081 ps	51 s: C2= 1365 ps





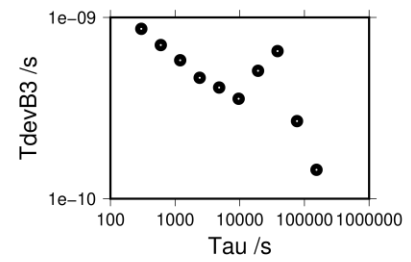
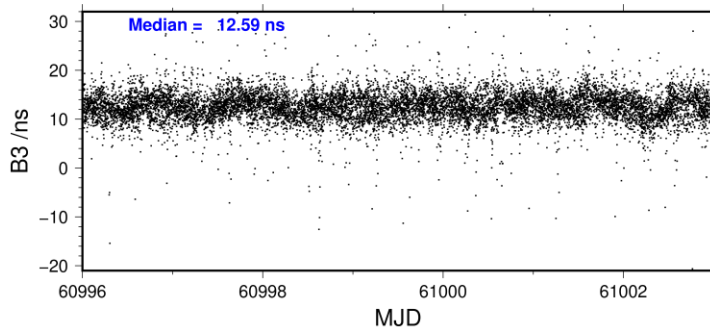


2025-11-26 BP2DBP2125321_7



198178 s: B5= 8 ps
 101527 s: BC= 81 ps 99089 s: B5= 33 ps
 50763 s: BC= 221 ps 49544 s: B5= 112 ps
 25382 s: BC= 279 ps 24772 s: B5= 187 ps
 12691 s: BC= 211 ps 12386 s: B5= 181 ps
 6345 s: BC= 199 ps 6193 s: B5= 187 ps
 3173 s: BC= 213 ps 3097 s: B5= 240 ps
 1586 s: BC= 271 ps 1548 s: B5= 280 ps
 793 s: BC= 300 ps 774 s: B5= 335 ps
 397 s: BC= 362 ps 387 s: B5= 400 ps
 198 s: BC= 608 ps 194 s: B5= 669 ps
 99 s: BC= 943 ps 97 s: B5= 1025 ps
 50 s: BC= 1298 ps 48 s: B5= 1426 ps

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153600 s: B3= 144 ps
 76800 s: B3= 268 ps
 38400 s: B3= 652 ps
 19200 s: B3= 508 ps
 9600 s: B3= 356 ps
 4800 s: B3= 410 ps
 2400 s: B3= 465 ps
 1200 s: B3= 580 ps
 600 s: B3= 704 ps
 300 s: B3= 865 ps

BP2G-BP21**COMPUTATION OF BASELINE**

Number of codes to fit baseline and biases = 150833

Compute baseline with sin(elev) between 0.05 and 0.90

Apriori codes biases from 28514 high elev obs : 11.004 10.592

Iteration 0: Obs used = 222593; Huge residuals = 4; Large residuals = 24279

Iteration 1: Obs used = 222591; Huge residuals = 0; Large residuals = 24277

Computed code bias (P1/P2)/m = 10.006 9.575

Computed baseline (X,Y,Z)/m = -2.360 1.569 3.677

RMS of residuals /m = 0.798

Number of phase differences to fit baseline

L1/L2 = 143407

L5 = 84137

A priori baseline (X,Y,Z)/m = -2.360 1.569 3.677

20124 clock jitters computed out of 20126 intervals

AVE jitter /ps = -1.7 RMS jitter /ps = 6.7

Iter 1 Large residuals L1= 14

Iter 1 Large residuals L2= 18

Iter 1 Large residuals L5= 14

Computed baseline L1 (X,Y,Z)/m = -0.641 -0.639 -0.929

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.612 -0.634 -0.915

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.658 -0.623 -0.916

RMS of residuals L5 /m = 0.003

Iter 2 Large residuals L1= 14

Iter 2 Large residuals L2= 18

Iter 2 Large residuals L5= 14

Computed baseline L1 (X,Y,Z)/m = -0.641 -0.639 -0.929

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = -0.612 -0.634 -0.916

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.659 -0.623 -0.916

RMS of residuals L5 /m = 0.003

New iteration of baseline

New apriori baseline (X,Y,Z)/m = -2.986 0.933 2.755

20124 clock jitters computed out of 20126 intervals

AVE jitter /ps = 1.1 RMS jitter /ps = 1.9

Iter 3 Large residuals L1= 14

Iter 3 Large residuals L2= 18

Iter 3 Large residuals L5= 13

Computed baseline L1 (X,Y,Z)/m = -0.018 -0.125 -0.031

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = 0.011 -0.120 -0.018

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.015 -0.117 -0.021

RMS of residuals L5 /m = 0.003

Iter 4 Large residuals L1= 14

Iter 4 Large residuals L2= 18

Iter 4 Large residuals L5= 13

Computed baseline L1 (X,Y,Z)/m = -0.018 -0.125 -0.031

RMS of residuals L1 /m = 0.003

Computed baseline L2 (X,Y,Z)/m = 0.011 -0.120 -0.018

RMS of residuals L2 /m = 0.004

Computed baseline L5 (X,Y,Z)/m = -0.015 -0.117 -0.021

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 = -3.004 0.807 2.724

Final baseline L2 (X,Y,Z)/m = -2.975 0.812 2.737

Final baseline L5 (X,Y,Z)/m = -3.002 0.815 2.734

COMPUTATION OF CODE DIFFERENCES

Total number of code differences = 604584

Global average of individual differences

Code	#pts	ave/ns	rms/ns
C1	153179	36.774	2.812
C2	123677	35.294	2.642
P1	146365	36.587	2.236
P2	146149	35.067	3.495
E1	129790	36.691	2.540
E5	131721	35.599	2.362
BC	126429	36.719	2.462
B5	127785	35.613	2.326

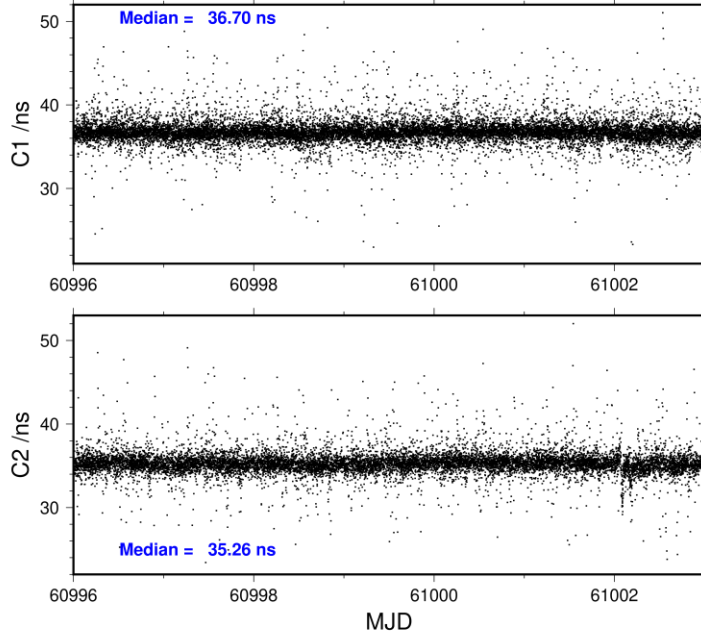
Number of 300s epochs in out file = 2016

Code	#pts	median/ns	ave/ns	rms/ns
C1	15349	36.700	36.785	1.402
C2	12394	35.256	35.289	1.456
P1	14592	36.532	36.593	1.160
P2	14569	35.106	35.053	1.927
E1	13022	36.639	36.687	1.389
E5	13190	35.568	35.608	1.444
BC	12674	36.639	36.719	1.367
B5	12802	35.586	35.621	1.444

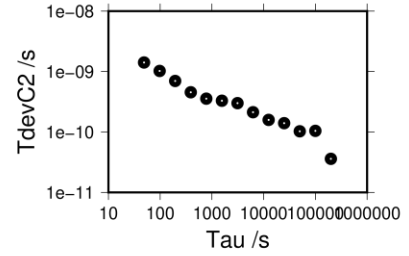
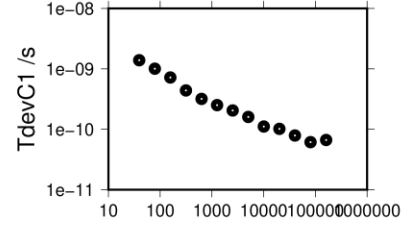
Ionofree combinations

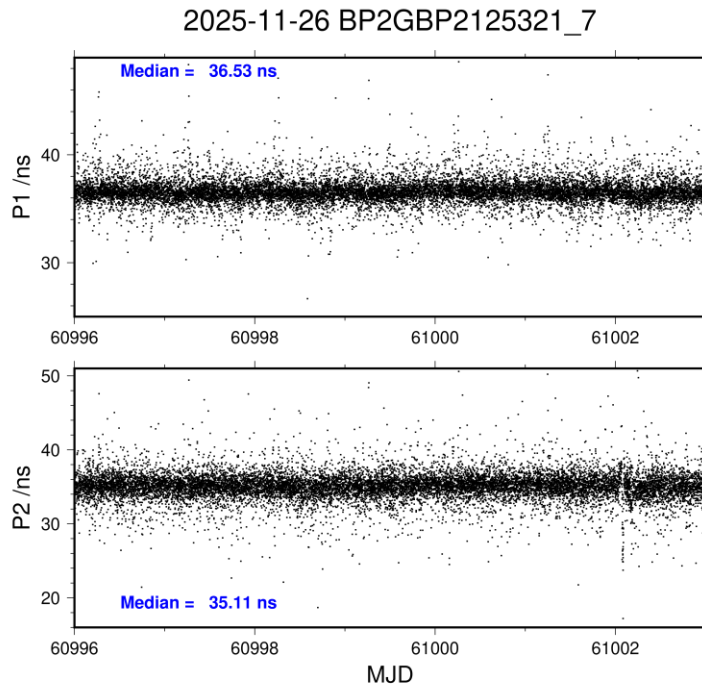
Code	#pts	median/ns	ave/ns	rms/ns
P3	2013	38.786	38.751	0.911
E3	2008	37.984	37.960	0.681
B3	2002	37.997	37.983	0.654

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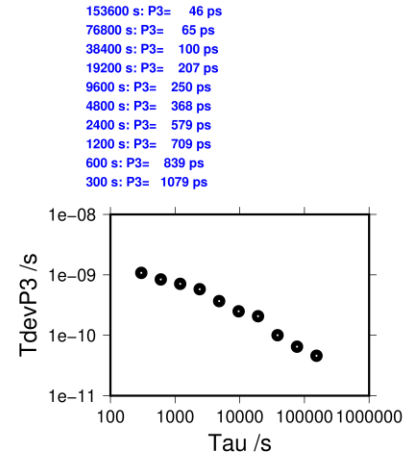
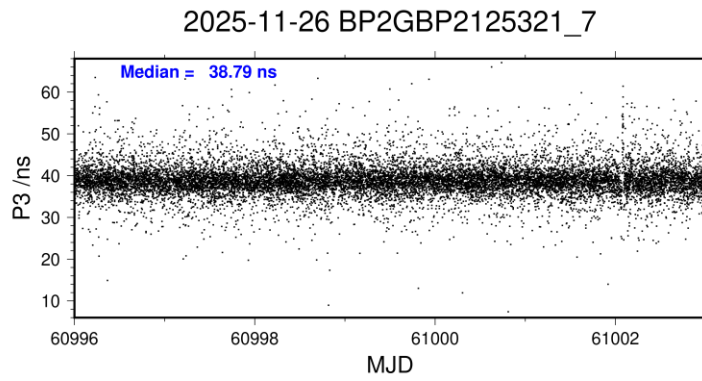
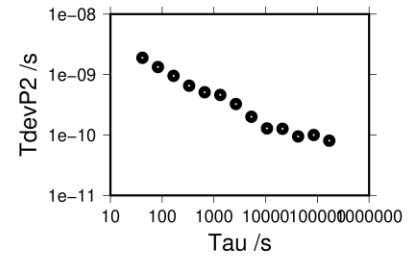
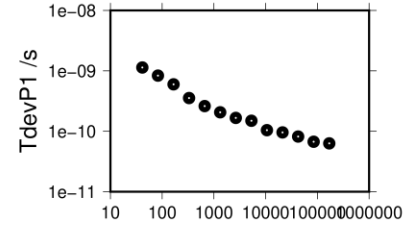


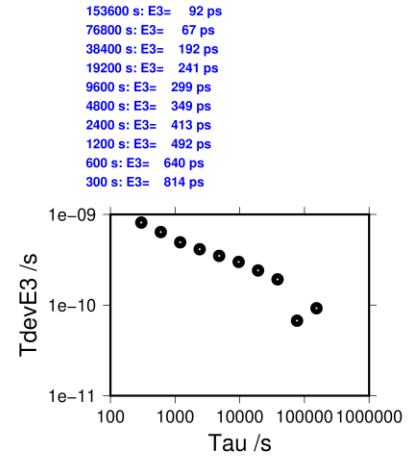
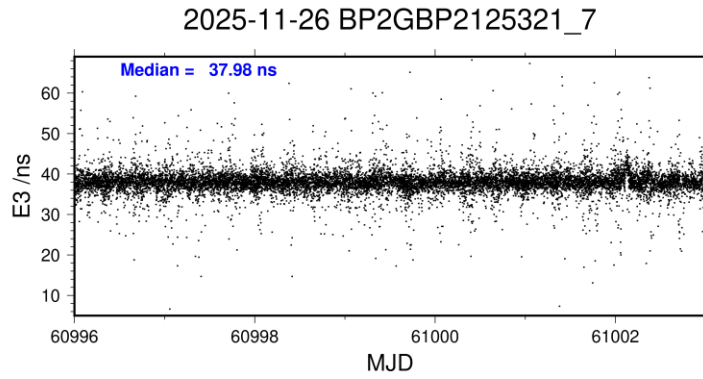
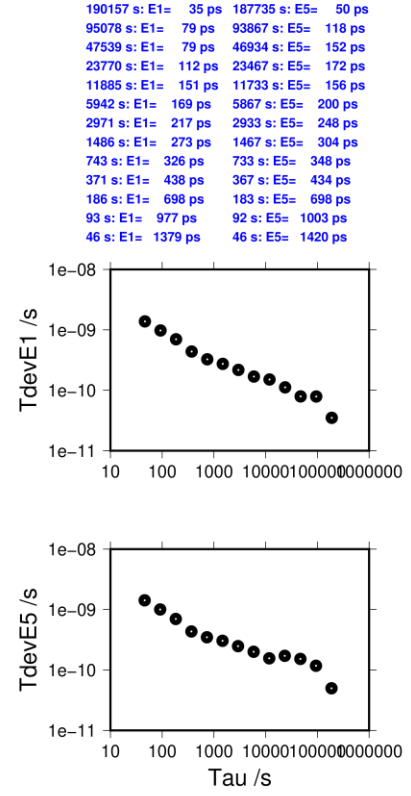
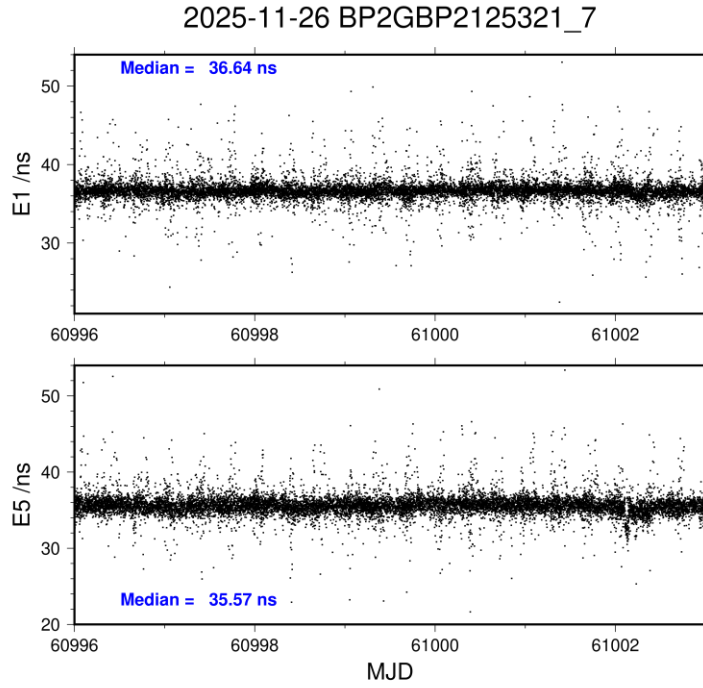
161326 s: C1= 66 ps 199793 s: C2= 36 ps
 80663 s: C1= 61 ps 99896 s: C2= 104 ps
 40332 s: C1= 79 ps 49948 s: C2= 103 ps
 20166 s: C1= 102 ps 24974 s: C2= 140 ps
 10083 s: C1= 111 ps 12487 s: C2= 159 ps
 5041 s: C1= 160 ps 6244 s: C2= 212 ps
 2521 s: C1= 205 ps 3122 s: C2= 300 ps
 1260 s: C1= 251 ps 1561 s: C2= 329 ps
 630 s: C1= 318 ps 780 s: C2= 356 ps
 315 s: C1= 439 ps 390 s: C2= 454 ps
 158 s: C1= 720 ps 195 s: C2= 699 ps
 79 s: C1= 1007 ps 98 s: C2= 1023 ps
 39 s: C1= 1390 ps 49 s: C2= 1414 ps

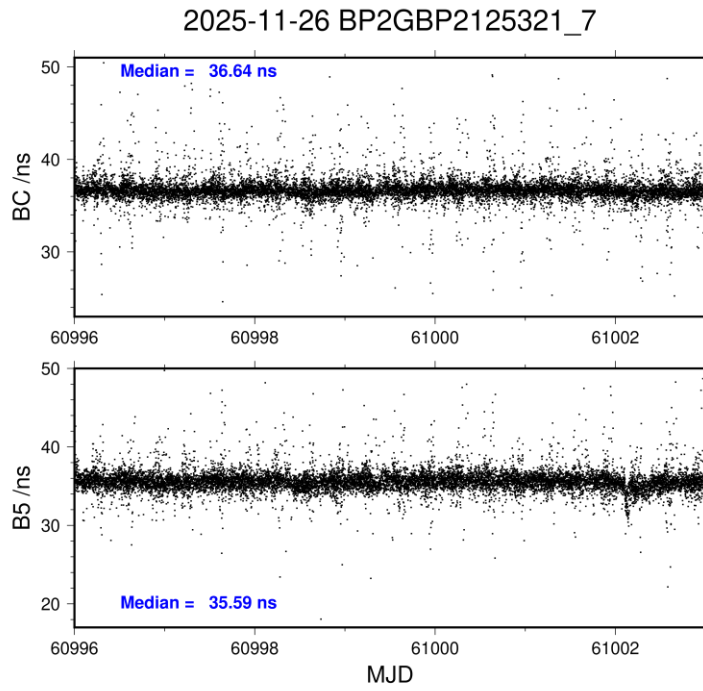




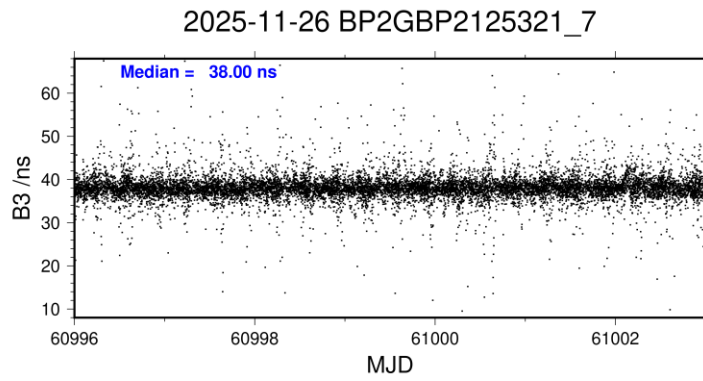
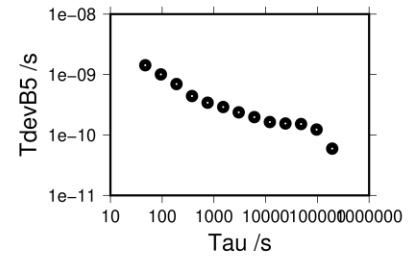
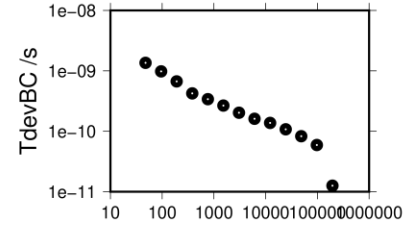
169696 s: P1= 63 ps 169964 s: P2= 80 ps
 84848 s: P1= 67 ps 84982 s: P2= 100 ps
 42424 s: P1= 82 ps 42491 s: P2= 95 ps
 21212 s: P1= 96 ps 21245 s: P2= 127 ps
 10606 s: P1= 105 ps 10623 s: P2= 128 ps
 5303 s: P1= 149 ps 5311 s: P2= 200 ps
 2652 s: P1= 166 ps 2656 s: P2= 326 ps
 1326 s: P1= 206 ps 1328 s: P2= 460 ps
 663 s: P1= 261 ps 664 s: P2= 509 ps
 331 s: P1= 355 ps 332 s: P2= 654 ps
 166 s: P1= 599 ps 166 s: P2= 952 ps
 83 s: P1= 835 ps 83 s: P2= 1333 ps
 41 s: P1= 1138 ps 42 s: P2= 1894 ps







195379 s: BC= 13 ps 193425 s: B5= 60 ps
 97689 s: BC= 59 ps 96712 s: B5= 123 ps
 48845 s: BC= 83 ps 48356 s: B5= 152 ps
 24422 s: BC= 108 ps 24178 s: B5= 155 ps
 12211 s: BC= 137 ps 12089 s: B5= 164 ps
 6106 s: BC= 161 ps 6045 s: B5= 198 ps
 3053 s: BC= 203 ps 3022 s: B5= 237 ps
 1526 s: BC= 266 ps 1511 s: B5= 290 ps
 763 s: BC= 340 ps 756 s: B5= 342 ps
 382 s: BC= 424 ps 378 s: B5= 440 ps
 191 s: BC= 670 ps 189 s: B5= 695 ps
 95 s: BC= 979 ps 94 s: B5= 1008 ps
 48 s: BC= 1357 ps 47 s: B5= 1427 ps



153600 s: B3= 43 ps
 76800 s: B3= 77 ps
 38400 s: B3= 153 ps
 19200 s: B3= 170 ps
 9600 s: B3= 249 ps
 4800 s: B3= 313 ps
 2400 s: B3= 368 ps
 1200 s: B3= 473 ps
 600 s: B3= 646 ps
 300 s: B3= 806 ps

