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Notations

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

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

(X_P + X_o) = REFDLY.

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

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

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

(X_R + X_S) = INTDLY.

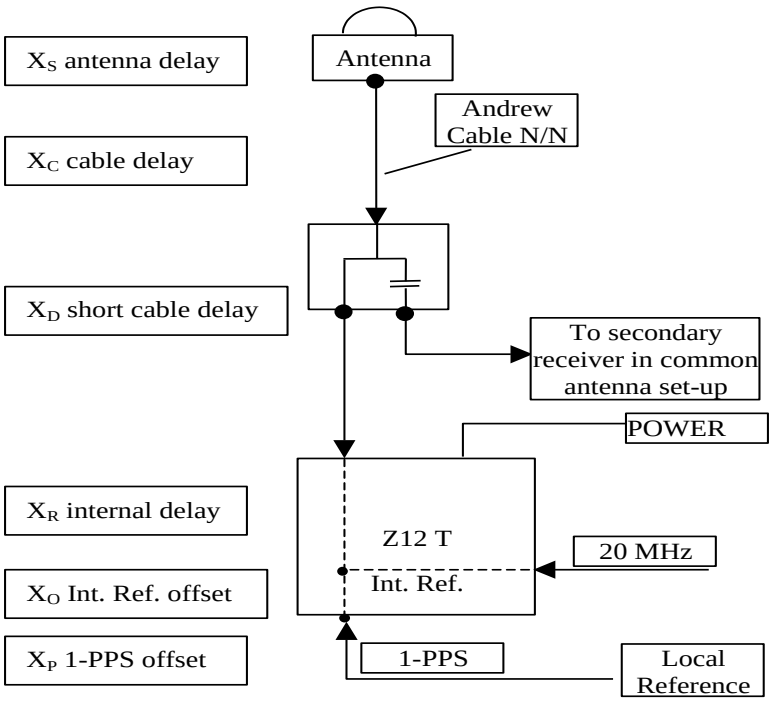


Figure 1: Definition of the different delays used in the most general set-up of a geodetic system (here shown for a Z12-T) from [Petit et al, 2001].

1/ phase 1

Laboratories: BIPM, TL, NICT, NIM

1.1/ BIPM (18054)

Period

MJD 58172 to 58184

Delays

BP1J:

X_O = 133.94 ns	(187.82-53.88)
X_P = 47.60 ns	(BP1R+C139+BP1S+C172)
REFDLY = 181.54 ns	
CABDLY = 128.73 ns	(C138)

BP0U:

REFDLY = 52.60 ns	(BP1R+C166+BP1I+C153)
CABDLY = 181.70 ns	(C134)

BP1C:

X_O = 185.17 ns	(200.65-15.48)
X_P = 52.60 ns	(BP1R+C166+BP1I+C157)
REFDLY = 237.77 ns	
CABDLY = 235.70 ns	(C131)

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 58172
Date and hour of the end of measurements:	MJD 58184

Information on the system

	Local:	Travelling:
4-character BIPM code	BP1J	BP1C
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx4proTR 27	Septentrio PolaRx3eTR S9000169176
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):		
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio Sepchoke_MC 5131	Ashtech Chokering 701945-2 CR62000323008
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	47.60 ns	52.60 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	133.94 ns	185.17 ns
• Antenna cable delay:	128.73 ns	235.70 ns
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	
• INT DLY (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) 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 58172
Date and hour of the end of measurements:	MJD 58184

Information on the system

	Local:	Travelling:
4-character BIPM code	BP1J	BP0U
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx4proTR 27	Dicom GTR50 0801068
1 PPS trigger level /V:		1 V
• Antenna cable maker and type: Phase stabilised cable (Y/N):		
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio Sepchoke_MC 5131	Novatel 702-GG NAE10190011
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	47.60 ns	52.60
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	133.94 ns	
• Antenna cable delay:	128.73 ns	181.70
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	
• INT DLY (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) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

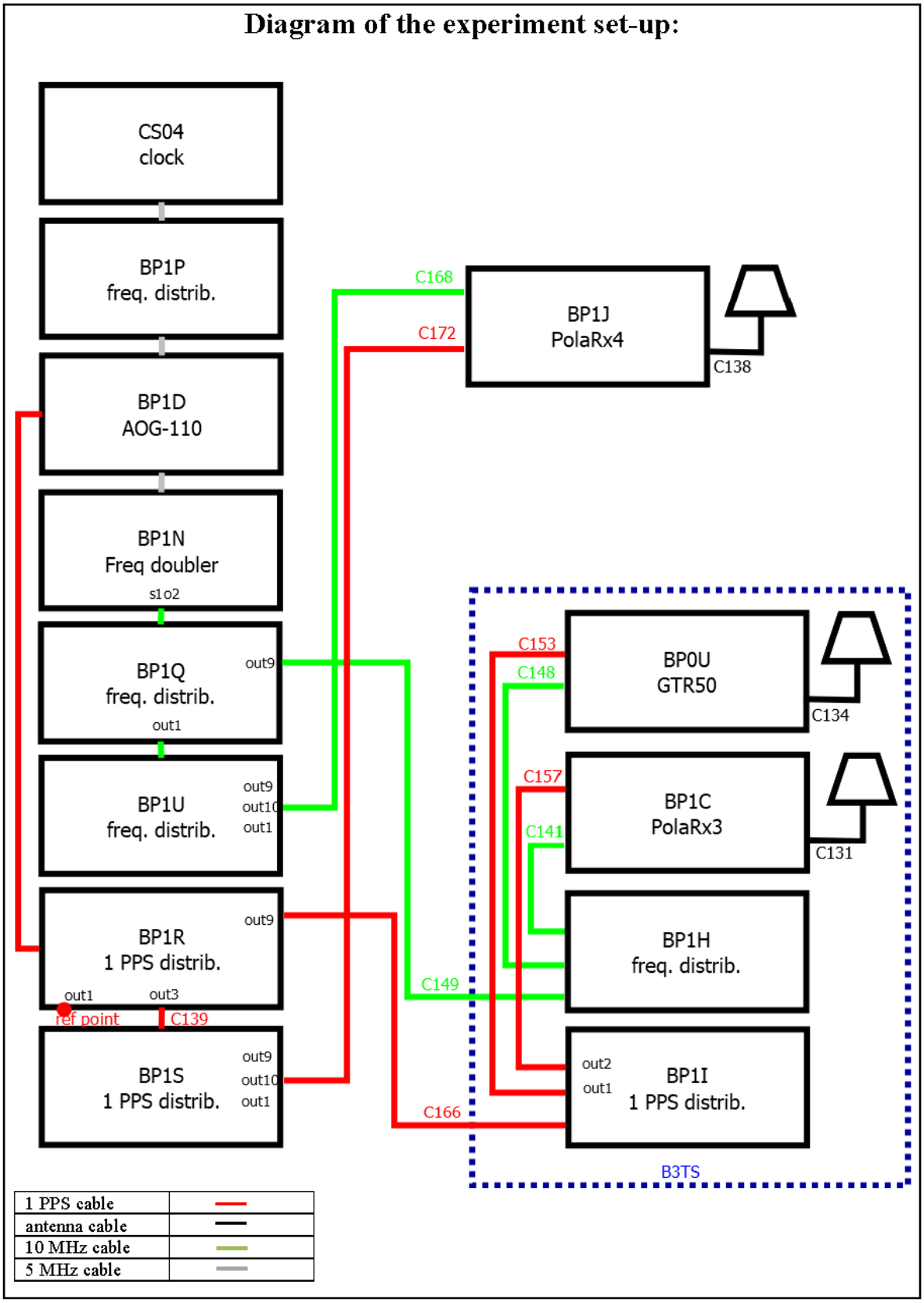


Diagram of the experiment set-up:
CS04
clock
BP1P
freq. distrib.
BP1D
AOG-110
BP1N
Freq doubler
s1o2
BP1Q
freq. distrib.
out9
out1
BP1U
freq. distrib.
out9
out10
out1
BP1R
1 PPS distrib.
out9
out1
out3
ref point
C139
BP1S
1 PPS distrib.
out9
out10
out1
C168
C172
BP1J
PolaRx4
C138
C153
C148
BP0U
GTR50
C134
C157
C141
BP1C
PolaRx3
C131
BP1H
freq. distrib.
C149
out2
out1
BP1I
1 PPS distrib.
C166
B3TS
1 PPS cable
antenna cable
10 MHz cable
5 MHz cable

Log of Events / Additional Information :

All measurements at BIPM carried out by L. Tisserand.

Equipment used to measure delays are two Time Interval Counter (TIC), model SR620, maker Stanford Research Systems, with measurement uncertainty typically less than 0.5 ns (using external reference frequency as timebase).

TIC serial number 4680 used for local receivers.
TIC serial number 5482 used for traveling receivers.

BP1J-BP0U

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 155740
Number of huge residuals = 16. New iteration
Computed code bias (P1/P2)/m = 2.431 0.487
Computed baseline (X,Y,Z)/m = 2.314 0.376 -1.840
RMS of residuals /m = 0.621

Number of phase differences to fit baseline = 139924
A priori baseline (X,Y,Z)/m = 2.314 0.376 -1.840
31078 clock jitters computed out of 31284 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 38.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = -0.135 -0.047 -0.151
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.149 -0.040 -0.151
RMS of residuals L2 /m = 0.004

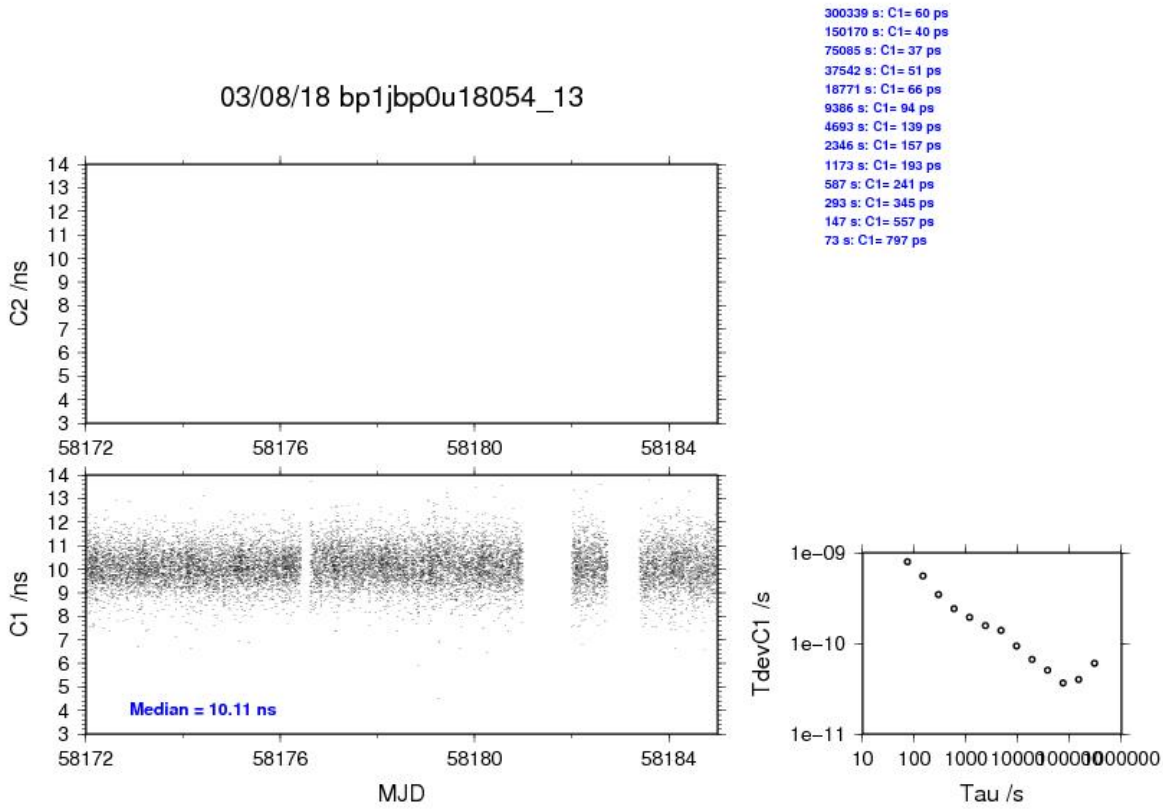
Final baseline L1 (X,Y,Z)/m = 2.180 0.328 -1.992
Final baseline L2 (X,Y,Z)/m = 2.165 0.336 -1.991

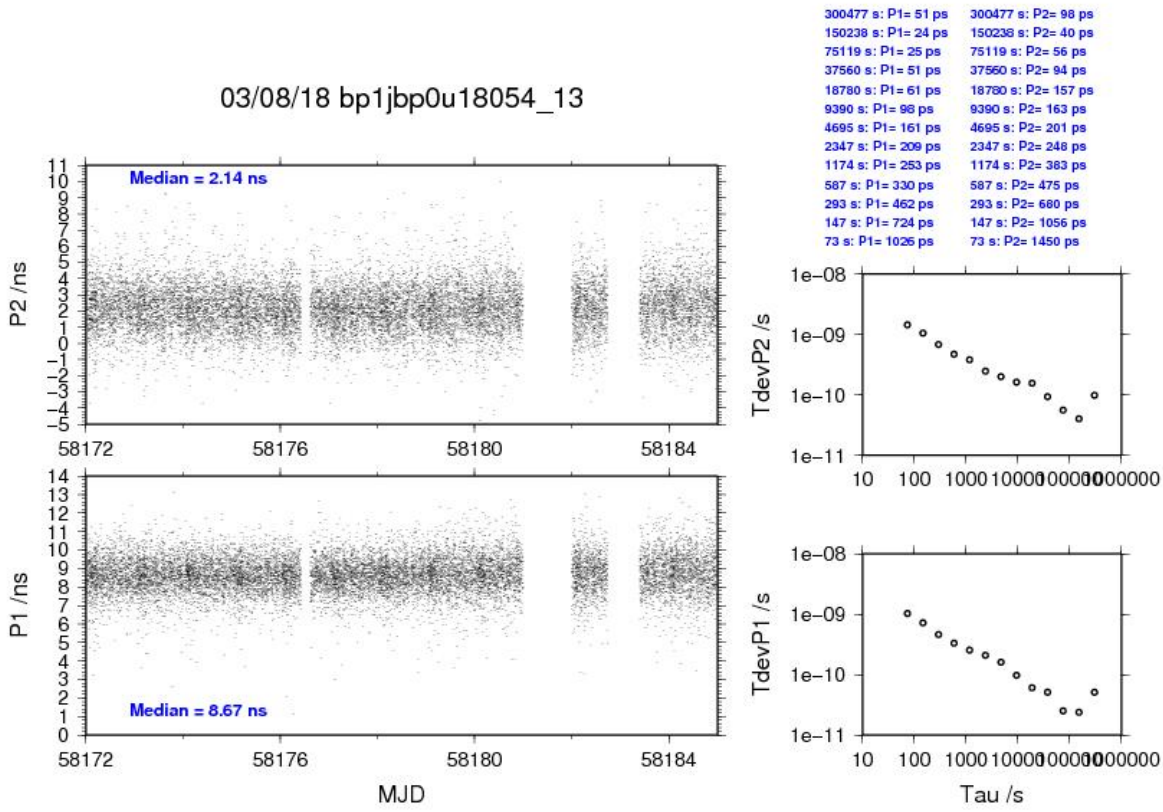
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 155928

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 155868 10.127 1.372
C2: 0 NaN NaN
P1: 155693 8.638 1.916
P2: 155693 2.176 2.508

Number of 300s epochs in out file = 3210
Code #pts, median/ns, ave/ns, rms/ns
C1: 15315 10.111 10.125 0.779
C2: 0 0.000 NaN NaN
P1: 15308 8.666 8.658 1.011
P2: 15308 2.143 2.162 1.457


03/08/18 bp1jbp0u18054_13
300339 s: C1= 60 ps
150170 s: C1= 40 ps
75085 s: C1= 37 ps
37542 s: C1= 51 ps
18771 s: C1= 66 ps
9386 s: C1= 94 ps
4693 s: C1= 139 ps
2346 s: C1= 157 ps
1173 s: C1= 193 ps
587 s: C1= 241 ps
293 s: C1= 345 ps
147 s: C1= 557 ps
73 s: C1= 797 ps
C2 /ns
C1 /ns
Median = 10.11 ns
MJD
TdevC1 /s
Tau /s


03/08/18 bp1jbp0u18054_13
300477 s: P1= 51 ps
150238 s: P1= 24 ps
75119 s: P1= 25 ps
37560 s: P1= 51 ps
18780 s: P1= 61 ps
9390 s: P1= 98 ps
4695 s: P1= 161 ps
2347 s: P1= 209 ps
1174 s: P1= 253 ps
587 s: P1= 330 ps
293 s: P1= 462 ps
147 s: P1= 724 ps
73 s: P1= 1026 ps
300477 s: P2= 98 ps
150238 s: P2= 40 ps
75119 s: P2= 56 ps
37560 s: P2= 94 ps
18780 s: P2= 157 ps
9390 s: P2= 163 ps
4695 s: P2= 201 ps
2347 s: P2= 248 ps
1174 s: P2= 383 ps
587 s: P2= 475 ps
293 s: P2= 680 ps
147 s: P2= 1056 ps
73 s: P2= 1450 ps
Median = 2.14 ns
Median = 8.67 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1J-BP1C

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 258351
Computed code bias (P1/P2)/m = -13.646 -15.415
Computed baseline (X,Y,Z)/m = 1.441 0.189 -1.397
RMS of residuals /m = 0.588

Number of phase differences to fit baseline = 252625
A priori baseline (X,Y,Z)/m = 1.441 0.189 -1.397
37411 clock jitters computed out of 37414 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.8

Iter 1 Large residuals L1= 5
Iter 1 Large residuals L2= 12
Computed baseline L1 (X,Y,Z)/m = 0.030 0.028 0.080
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.028 0.033 0.082
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 5
Iter 2 Large residuals L2= 12
Computed baseline L1 (X,Y,Z)/m = 0.030 0.028 0.080
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.028 0.033 0.082
RMS of residuals L2 /m = 0.005

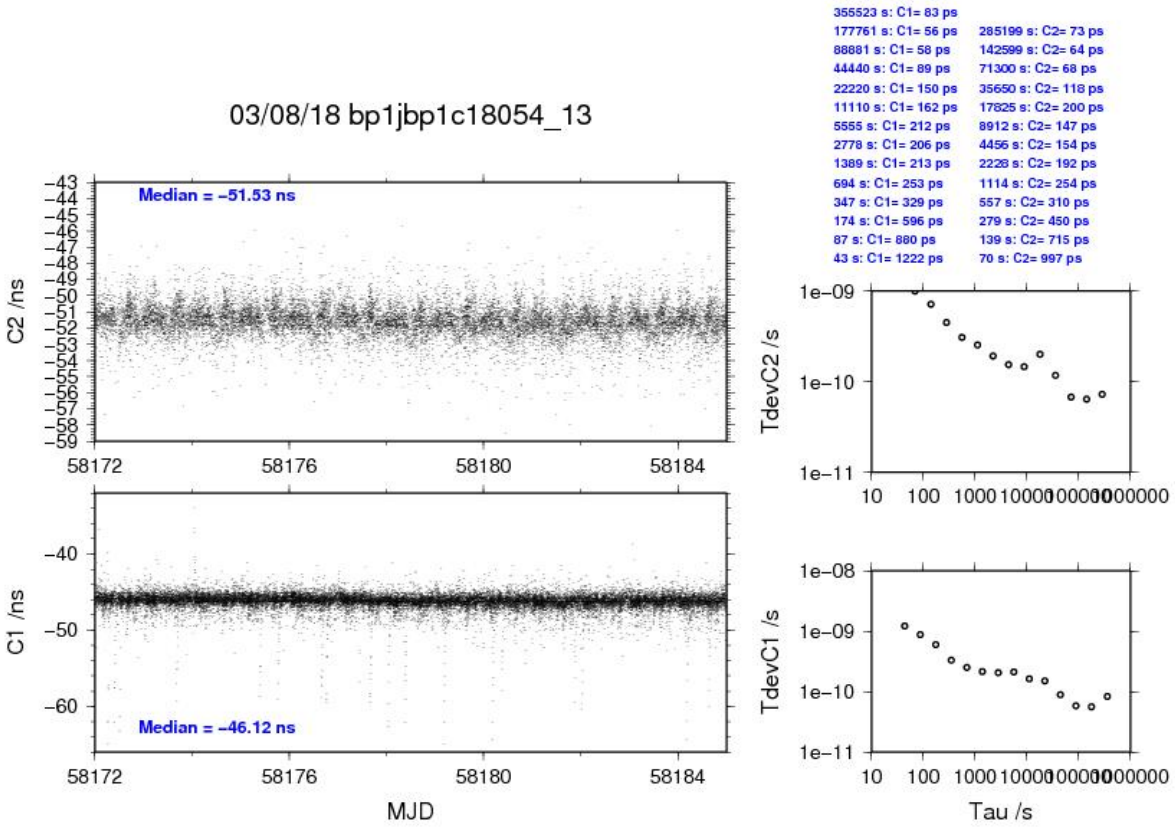
Final baseline L1 (X,Y,Z)/m = 1.472 0.217 -1.317
Final baseline L2 (X,Y,Z)/m = 1.470 0.222 -1.315

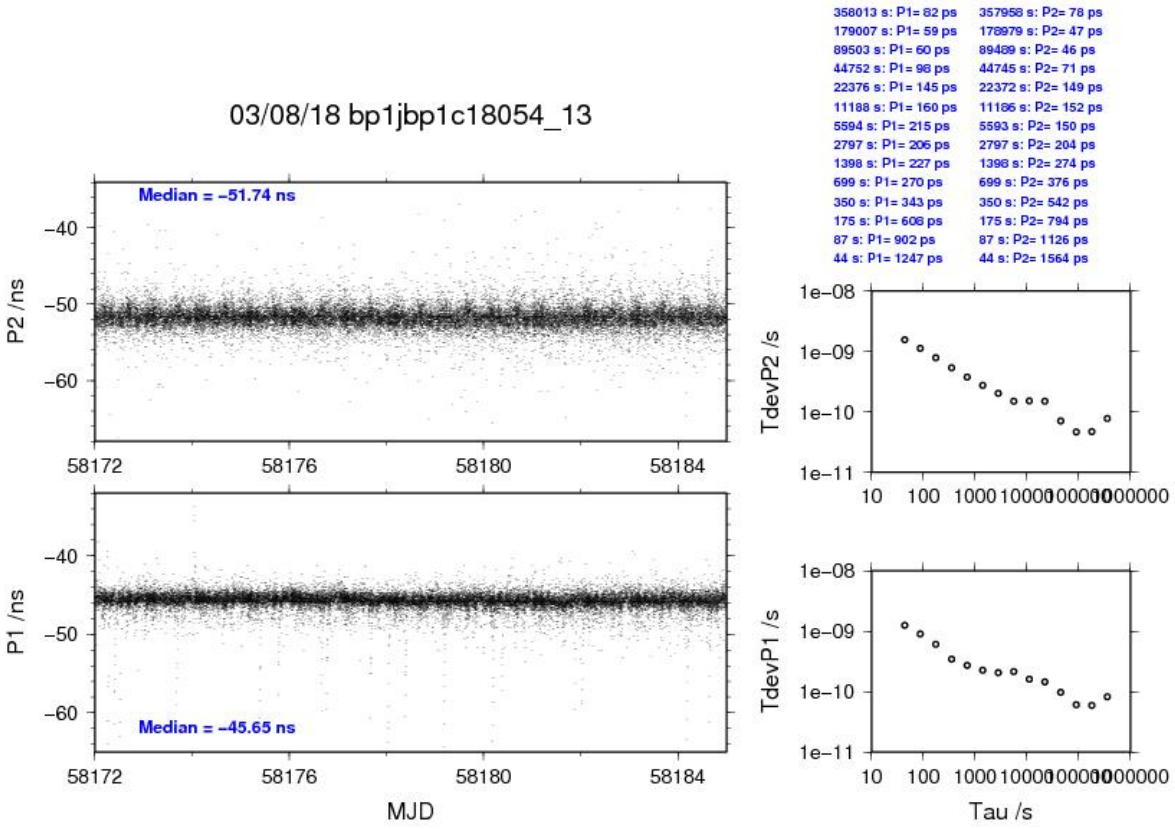
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 263421

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 259225 -46.263 1.979
C2: 161831 -51.525 1.934
P1: 257592 -45.775 1.999
P2: 257608 -51.711 2.700

Number of 300s epochs in out file = 3744
Code #pts, median/ns, ave/ns, rms/ns
C1: 25875 -46.123 -46.256 1.231
C2: 16128 -51.528 -51.536 1.012
P1: 25695 -45.653 -45.768 1.259
P2: 25699 -51.737 -51.714 1.581


03/08/18 bp1jbp1c18054_13
Median = −51.53 ns
Median = −46.12 ns
C2 /ns
C1 /ns
MJD
TdevC2 /s
TdevC1 /s
Tau /s
355523 s: C1= 83 ps
177761 s: C1= 56 ps
88881 s: C1= 58 ps
44440 s: C1= 89 ps
22220 s: C1= 150 ps
11110 s: C1= 162 ps
5555 s: C1= 212 ps
2778 s: C1= 206 ps
1389 s: C1= 213 ps
694 s: C1= 253 ps
347 s: C1= 329 ps
174 s: C1= 596 ps
87 s: C1= 880 ps
43 s: C1= 1222 ps
285199 s: C2= 73 ps
142599 s: C2= 64 ps
71300 s: C2= 68 ps
35650 s: C2= 118 ps
17825 s: C2= 200 ps
8912 s: C2= 147 ps
4456 s: C2= 154 ps
2228 s: C2= 192 ps
1114 s: C2= 254 ps
557 s: C2= 310 ps
279 s: C2= 450 ps
139 s: C2= 715 ps
70 s: C2= 997 ps


03/08/18 bp1jbp1c18054_13
Median = −51.74 ns
Median = −45.65 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s
358013 s: P1= 82 ps
179007 s: P1= 59 ps
89503 s: P1= 60 ps
44752 s: P1= 98 ps
22376 s: P1= 145 ps
11188 s: P1= 160 ps
5594 s: P1= 215 ps
2797 s: P1= 206 ps
1398 s: P1= 227 ps
699 s: P1= 270 ps
350 s: P1= 343 ps
175 s: P1= 608 ps
87 s: P1= 902 ps
44 s: P1= 1247 ps
357958 s: P2= 78 ps
178979 s: P2= 47 ps
89489 s: P2= 46 ps
44745 s: P2= 71 ps
22372 s: P2= 149 ps
11186 s: P2= 152 ps
5593 s: P2= 150 ps
2797 s: P2= 204 ps
1398 s: P2= 274 ps
699 s: P2= 376 ps
350 s: P2= 542 ps
175 s: P2= 794 ps
87 s: P2= 1126 ps
44 s: P2= 1564 ps

1.2/ TL (18111)

Period

MJD 58229 to 58248

Delays

BP0U:

REFDLY = 52.60 ns (0 + 52.60 (cf page 3 & 13))
CABDLY = 181.70 ns (C134 (cf page 3))

BP1C:

X_O = 188.11 ns (203.565-15.456 (cf page 15))
X_P = 52.60 ns (0 + 52.6 (cf page 3 & 13))
REFDLY = 240.71 ns
CABDLY = 235.70 ns (C131 (cf page 3))

TLT1: (CGGTTS values page 13, INTDLY=TOTDLY)
REFDLY = 0.0 ns
CABDLY = 0.0 ns
INTDLY: C1=414.9 ns, P1=415.0 ns, P2=424.1 ns

TLT2: (CGGTTS values page 16)
REFDLY = 24.46 ns
CABDLY = 140.32 ns
INTDLY: C1=-33.4 ns, P1=-35.2 ns, P2=-36.2 ns

TLT4: (CGGTTS values page 19, INTDLY=TOTDLY)
REFDLY = 0.0 ns
CABDLY = 0.0 ns
INTDLY: C1=119.225, P1=117.872 ns, P2=117.348 ns

Setup at the TL

Annex A - Information Sheet

Laboratory: TL	
Date and hour of the beginning of measurements:	2018-04-21 00:00:00 UTC
Date and hour of the end of measurements:	2018-05-10 23:59:00 UTC

Information on the system

	Local:	Travelling:
4-character BIPM code	TLT1	BP0U/BP1C
● Receiver maker and type: Receiver serial number:	Ashtech Z-XII3T Metronome RT919994504	-
1 PPS trigger level /V:	1 V	1 V
● Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew FSJ, Yes	-
Length outside the building /m:	~ 30	~5
● Antenna maker and type: Antenna serial number:	SEPCHOKE_B3E6 SPKE 5006	-
Temperature (if stabilised) /°C	23	23

Measured delays/ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
● Delay from local UTC to receiver 1 PPS-in:	[1]18.47	0[2]
Delay from 1 PPS-in to internal Reference (if different):	-	-
● Antenna cable delay:	-	(1)
Splitter delay (if any):	Null	(1)
Additional cable delay (if any):	Null	(1)

Data used for the generation of CGGTTS files

● INT DLY (GPS) /ns:	C1: 414.9, P1: 415.0, P2: 424.1
● INT DLY (GLONASS) /ns:	No measurement
● CAB DLY /ns:	included in INT DLY
● REF DLY /ns:	included in INT DLY
● Coordinates reference frame:	
Latitude or X /m:	-2994425.48
Longitude or Y /m:	4951311.89
Height or Z /m:	2674498.36

General information

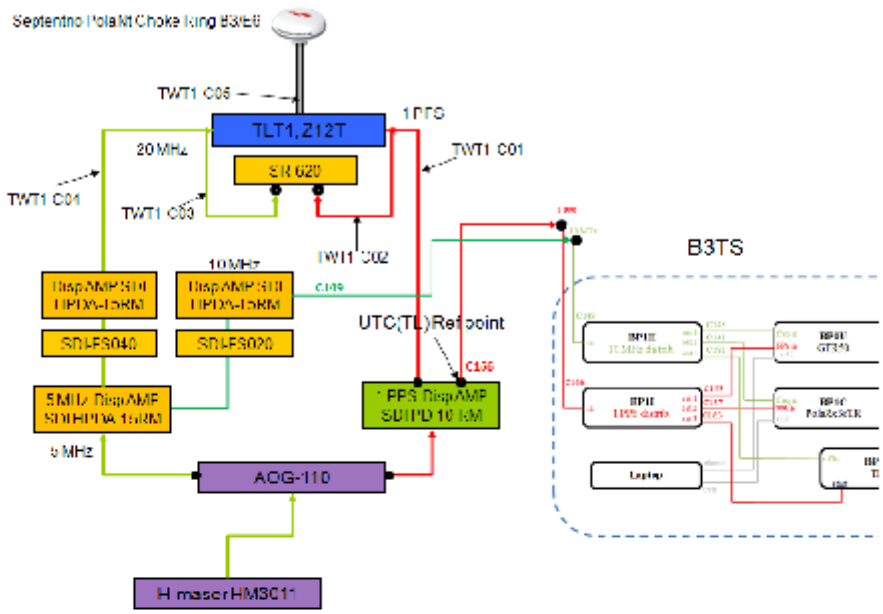
● Rise time of the local UTC pulse:	3 ns
● Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	23 ± 1 °C
Set humidity value and uncertainty:	No humidity control

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

[1] See Additional information

[2] The Cable C166 of B3TS is connected to the UTC(TL) definition point, the delay from UTC(TL) to the input of cable C166 is 0 ns.

Diagram of the experiment set-up:



Log of Events / Additional Information:

- The latch points of the TLT1 are re-defined from its external 20 MHz frequency input to be the external 1 PPS reference. The time difference between its external reference 1 PPS and 20 MHz frequency inputs were measured by a time interval counter (SR-620) and compensated into the pseudorange measurement of the RINEX files of TLT1. (reference paper: Shinn-Yan Lin et al, "A Modification of Z12T Metronome Time Transfer System", 2014 EFTF)
- measured the "PPS in/PPS out" delay of the BP1C according to Annex E- PolaRx measurement procedure

– Since the 1 PPS_in-BP1C-1 PPS_out measurements showed obvious daily pattern (Figure 1), we covered BP1C by sponge mats in B3TS package (Figure 2a), the measurements became stable (Figure 2b).

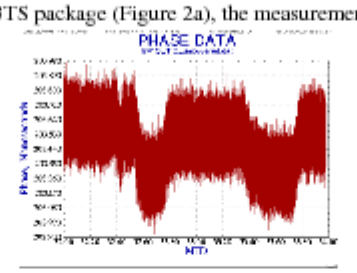


Figure 1

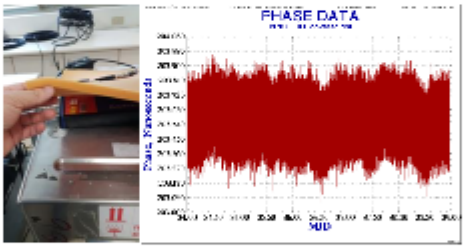


Figure 2a, 2b

The averaged measurements of C157-BP1C-C155 = 203.565 ns

– averaged measurements of C157-Adaptor-C155 = 15.456 (Figure 3)

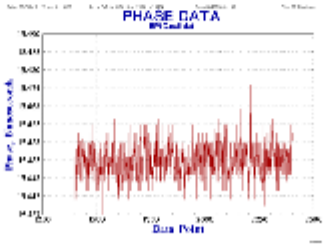


Figure 3

Annex A - Information Sheet

Laboratory: TL	
Date and hour of the beginning of measurements:	2018-04-21 00:00:00 UTC
Date and hour of the end of measurements:	2018-05-10 23:59:00 UTC

Information on the system

	Local:	Travelling:
4-character BIPM code	TLT2	BP0U/BP1C
● Receiver maker and type: Receiver serial number:	PikTime TTS-4 134	-
1 PPS trigger level /V:	1 V	1 V
● Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew FSJ, yes	-
Length outside the building /m:	~ 30	~5
● Antenna maker and type: Antenna serial number:	JAV_RINGANT_G3T 01-570800-01	-
Temperature (if stabilised) /°C	23	23

Measured delays/ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
● Delay from local UTC to receiver 1 PPS-in:	24.46	0[1]
Delay from 1 PPS-in to internal Reference (if different):	-	-
● Antenna cable delay:	140.32	(1)
Splitter delay (if any):	Null	(1)
Additional cable delay (if any):	Null	(1)

Data used for the generation of CGGTTS files

● INT DLY (GPS) /ns:	C1: -33.4, P1: -35.2, P2: -36.2
● INT DLY (GLONASS) /ns:	C1: -224.40
● CAB DLY /ns:	140.32
● REF DLY /ns:	24.46
● Coordinates reference frame:	
Latitude or X /m:	-2994426.03
Longitude or Y /m:	4951312.40
Height or Z /m:	2674497.16

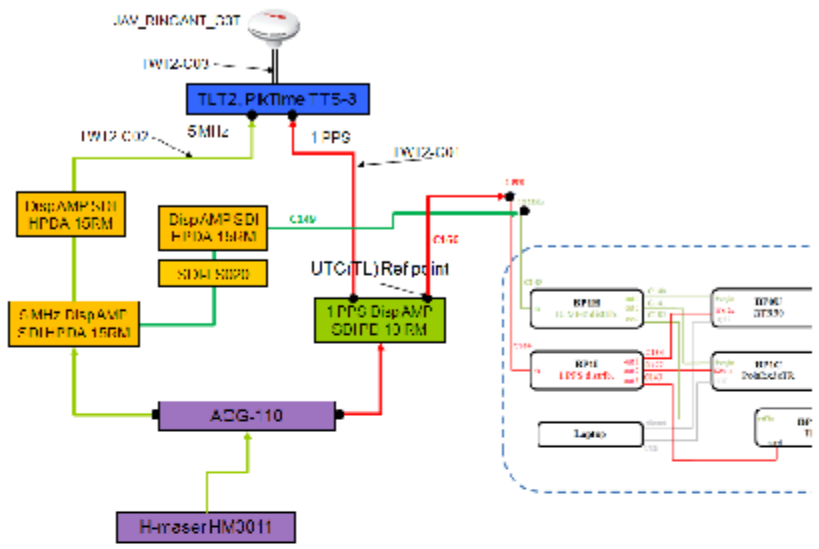
General information

● Rise time of the local UTC pulse:	3 ns
● Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	23 ± 1 °C
Set humidity value and uncertainty:	No humidity control

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

[1] The Cable C166 of B3TS is connected to the UTC(TL) definition point, the delay from UTC(TL) to the input of cable C166 is 0 ns.

Diagram of the experiment set-up:



Log of Events / Additional Information:

- measured the "PPS in/PPS out" delay of the BP1C according to Annex E- PolaRx measurement procedure
  - Since the 1 PPS_in-BP1C-1 PPS_out measurements showed obvious daily pattern (Figure 1), we covered BP1C by sponge mats in B3TS package (Figure 2a), the measurements became stable (Figure 2b).

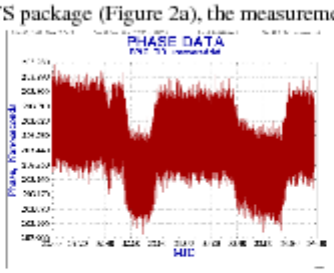


Figure 1

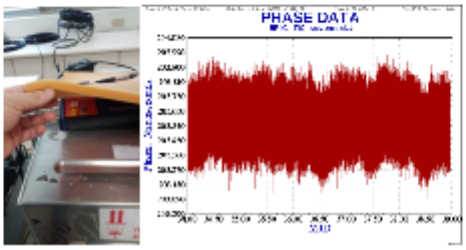


Figure 2a, 2b

The averaged measurements of C157-BP1C-C155 = 203.565 ns

  - averaged measurements of C157-Adaptor-C155 = 15.456 (Figure 3)

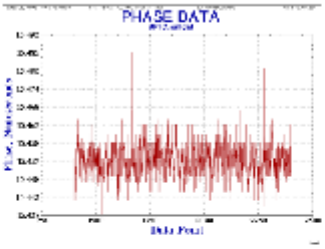


Figure 3

Annex A - Information Sheet

Laboratory: TL	
Date and hour of the beginning of measurements:	2018-04-21 00:00:00 UTC
Date and hour of the end of measurements:	2018-05-10 23:59:00 UTC

Information on the system

	Local:	Travelling:
4-character BIPM code	TLT4	BP0U/BP1C
● Receiver maker and type: Receiver serial number:	Septentrio PolaRx4TR Pro 14413008014	-
1 PPS trigger level /V:	1 V	1 V
● Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew FSJ, yes	-
Length outside the building /m:	~ 50	~5
● Antenna maker and type: Antenna serial number:	SEPCHOKE_B3E6 SPKE 5303	-
Temperature (if stabilised) /°C	23	23

Measured delays/ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
● Delay from local UTC to receiver 1 PPS-in:	-	0[1]
Delay from 1 PPS-in to internal Reference (if different):	-	-
● Antenna cable delay:	202.37	(1)
Splitter delay (if any):	Null	(1)
Additional cable delay (if any):	Null	(1)

Data used for the generation of CGGTTS files

● INT DLY (GPS) /ns:	C1: 119.225, P1:117.872, P2: 117.348
● INT DLY (GLONASS) /ns:	No measurement
● CAB DLY /ns:	Included in INTDLY
● REF DLY /ns:	Included in INTDLY
● Coordinates reference frame:	WGS-84
Latitude or X /m:	-2994424.8497
Longitude or Y /m:	+4951310.0303
Height or Z /m:	+2674501.4838

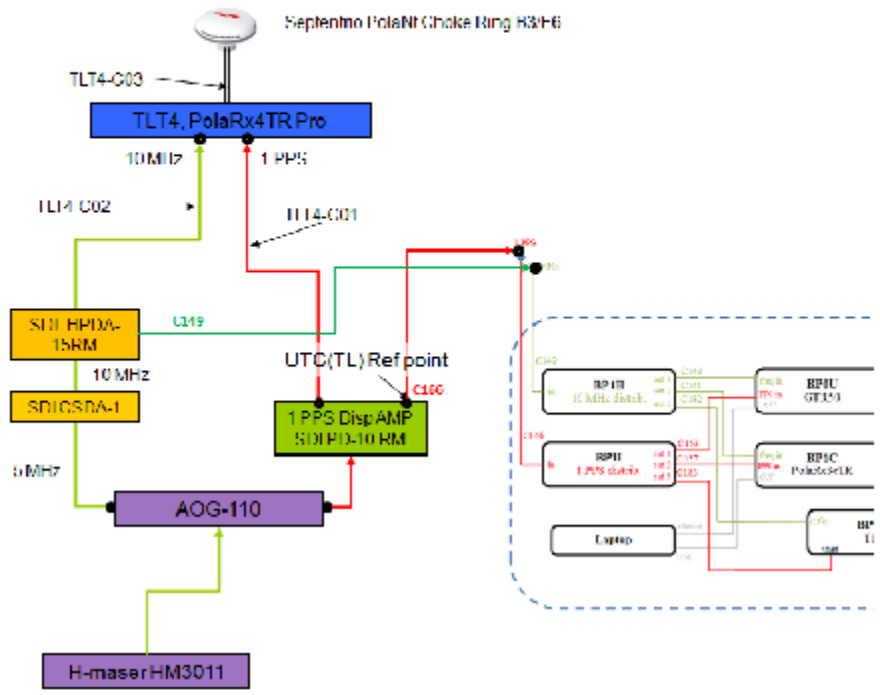
General information

● Rise time of the local UTC pulse:	3 ns
● Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	23 ± 1 °C
Set humidity value and uncertainty:	No humidity control

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

[1] The Cable C166 of B3TS is connected to the UTC(TL) definition point, the delay from UTC(TL) to the input of cable C166 is 0 ns.

Diagram of the experiment set-up:



Log of Events / Additional Information:

- measured the "PPS in/PPS out" delay of the BP1C according to Annex E- PolaRx measurement procedure
  - Since the 1 PPS_in-BP1C-1 PPS_out measurements showed obvious daily pattern (Figure 1), we covered BP1C by sponge mats in B3TS package (Figure 2a), the measurements became stable (Figure 2b).

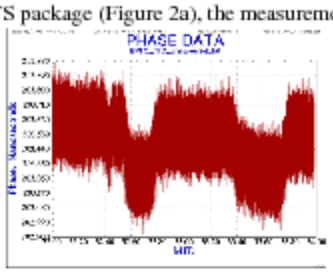


Figure 1

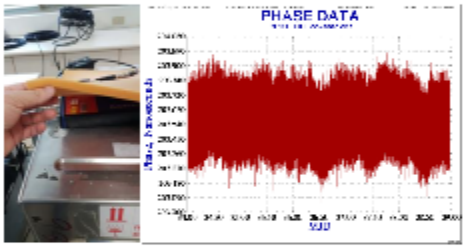


Figure 2a, 2b

The averaged measurements of C157-BP1C-C155 = 203.565 ns

  - averaged measurements of C157-Adaptor-C155 = 15.456 (Figure 3)

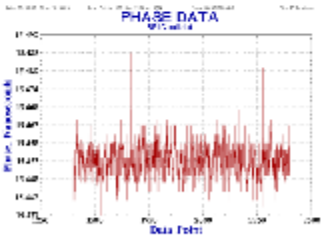


Figure 3

BP0U-TLT1

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 337245
Computed code bias (P1/P2)/m = -126.899 -127.793
Computed baseline (X,Y,Z)/m = 11.020 8.499 3.538
RMS of residuals /m = 0.517

Number of phase differences to fit baseline = 151853
A priori baseline (X,Y,Z)/m = 11.020 8.499 3.538
27129 clock jitters computed out of 29016 intervals
AVE jitter /ps = 1.9 RMS jitter /ps = 74.1

Iter 1 Large residuals L1= 2849
Iter 1 Large residuals L2= 2844
Computed baseline L1 (X,Y,Z)/m = -0.044 0.129 0.091
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.037 0.140 0.107
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 2850
Iter 2 Large residuals L2= 2844
Computed baseline L1 (X,Y,Z)/m = -0.045 0.132 0.094
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.037 0.142 0.108
RMS of residuals L2 /m = 0.004

Iter 3 Large residuals L1= 2850
Iter 3 Large residuals L2= 2844
Computed baseline L1 (X,Y,Z)/m = -0.045 0.132 0.094
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.037 0.142 0.108
RMS of residuals L2 /m = 0.004

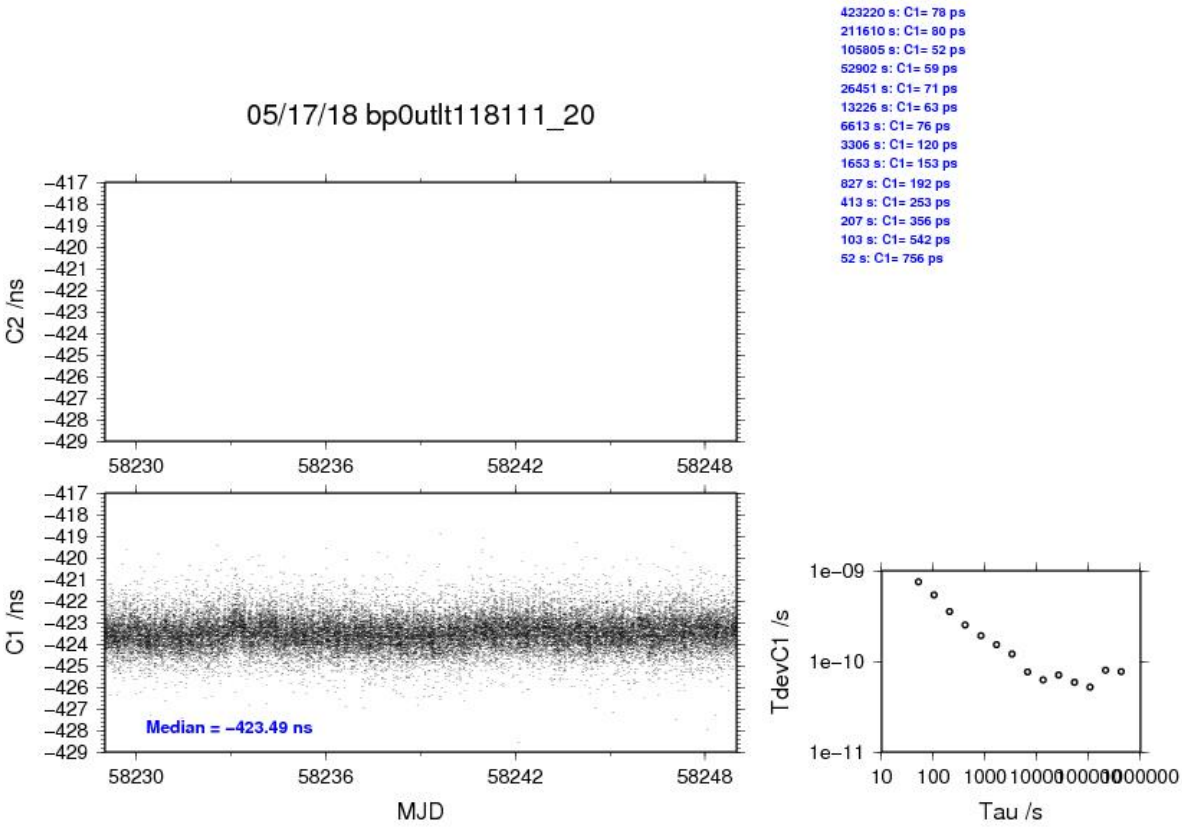
Final baseline L1 (X,Y,Z)/m = 10.975 8.631 3.632
Final baseline L2 (X,Y,Z)/m = 10.983 8.641 3.646

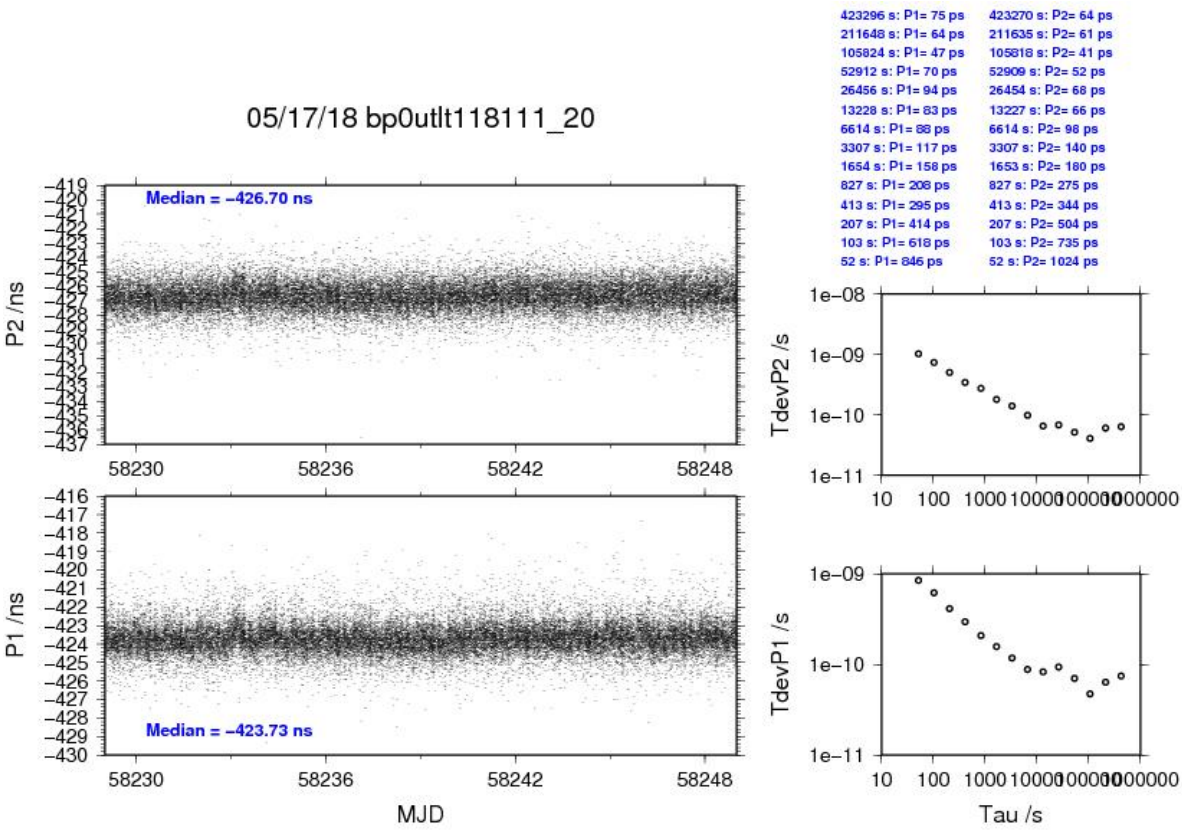
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 337366

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 337230 -423.464 1.482
C2: 0 NaN NaN
P1: 337199 -423.688 1.691
P2: 337212 -426.698 1.948

Number of 300s epochs in out file = 5752
Code #pts, median/ns, ave/ns, rms/ns
C1: 33443 -423.494 -423.476 0.765
C2: 0 0.000 NaN NaN
P1: 33437 -423.730 -423.706 0.863
P2: 33439 -426.698 -426.688 1.032


423220 s: C1= 78 ps
211610 s: C1= 80 ps
105805 s: C1= 52 ps
52902 s: C1= 59 ps
26451 s: C1= 71 ps
13226 s: C1= 63 ps
6613 s: C1= 76 ps
3306 s: C1= 120 ps
1653 s: C1= 153 ps
827 s: C1= 192 ps
413 s: C1= 253 ps
207 s: C1= 356 ps
103 s: C1= 542 ps
52 s: C1= 756 ps
05/17/18 bp0utlt118111_20
C2 /ns
C1 /ns
Median = −423.49 ns
MJD
TdevC1 /s
Tau /s


423296 s: P1= 75 ps
211648 s: P1= 64 ps
105824 s: P1= 47 ps
52912 s: P1= 70 ps
26456 s: P1= 94 ps
13228 s: P1= 83 ps
6614 s: P1= 88 ps
3307 s: P1= 117 ps
1654 s: P1= 158 ps
827 s: P1= 208 ps
413 s: P1= 295 ps
207 s: P1= 414 ps
103 s: P1= 618 ps
52 s: P1= 846 ps
423270 s: P2= 64 ps
211635 s: P2= 61 ps
105818 s: P2= 41 ps
52909 s: P2= 52 ps
26454 s: P2= 68 ps
13227 s: P2= 66 ps
6614 s: P2= 98 ps
3307 s: P2= 140 ps
1653 s: P2= 180 ps
827 s: P2= 275 ps
413 s: P2= 344 ps
207 s: P2= 504 ps
103 s: P2= 735 ps
52 s: P2= 1024 ps
05/17/18 bp0utlt118111_20
P2 /ns
Median = −426.70 ns
P1 /ns
Median = −423.73 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-TLT1

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 532201
Number of huge residuals = 4438. New iteration
Computed code bias (P1/P2)/m = -111.610 -112.639
Computed baseline (X,Y,Z)/m = 10.616 9.097 2.080
RMS of residuals /m = 0.547

Number of phase differences to fit baseline = 533205
A priori baseline (X,Y,Z)/m = 10.616 9.097 2.080
57579 clock jitters computed out of 57579 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 4.4

Iter 1 Large residuals L1= 23
Iter 1 Large residuals L2= 23
Computed baseline L1 (X,Y,Z)/m = -0.023 0.071 0.048
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.018 0.071 0.049
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 23
Iter 2 Large residuals L2= 23
Computed baseline L1 (X,Y,Z)/m = -0.023 0.071 0.048
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.018 0.071 0.049
RMS of residuals L2 /m = 0.004

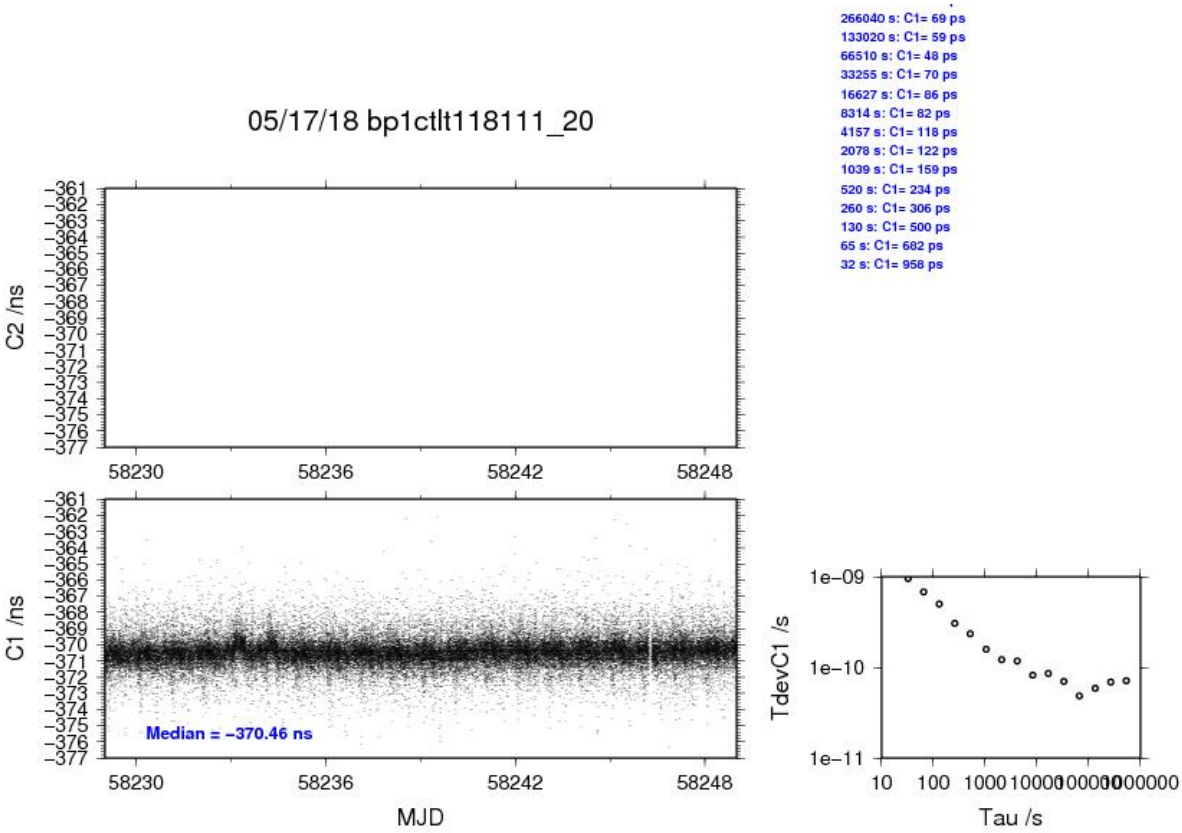
Final baseline L1 (X,Y,Z)/m = 10.593 9.168 2.128
Final baseline L2 (X,Y,Z)/m = 10.598 9.168 2.128

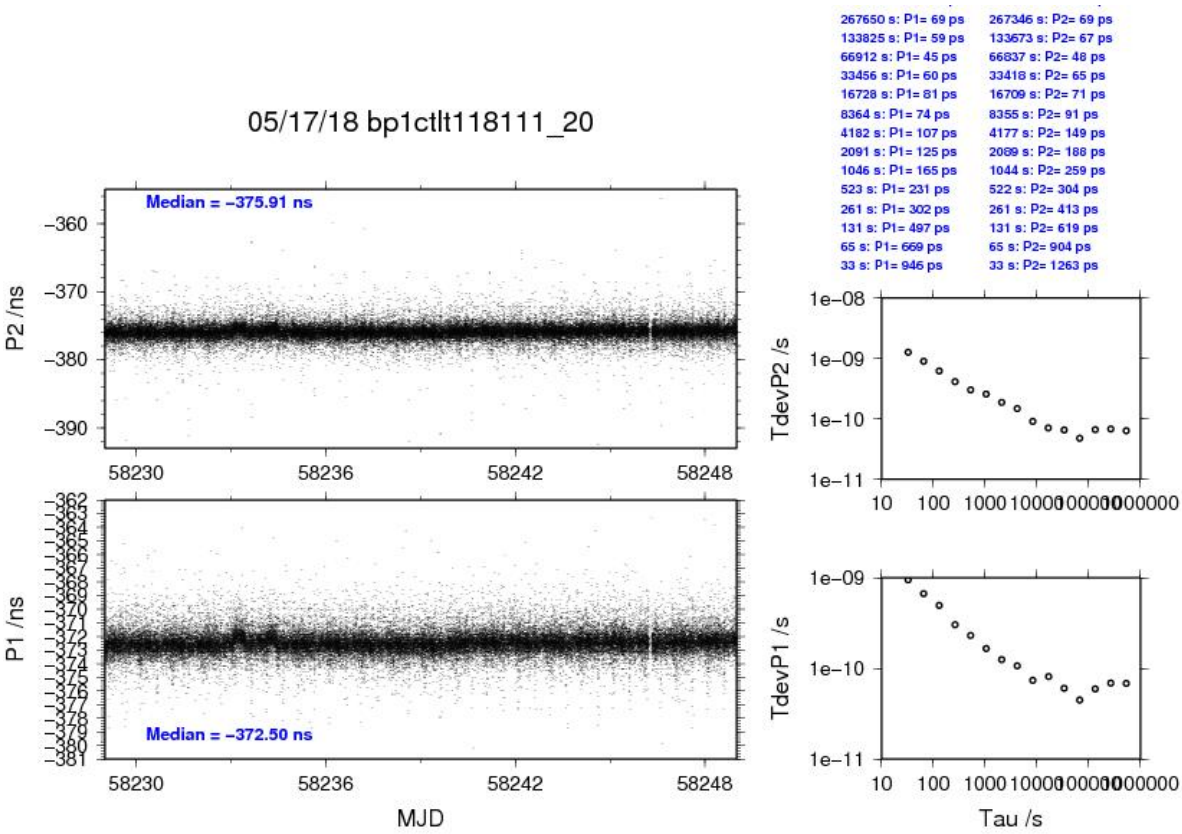
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 540406

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 532822 -370.424 2.025
C2: 0 NaN NaN
P1: 529898 -372.455 1.911
P2: 530464 -375.884 2.389

Number of 300s epochs in out file = 5760
Code #pts, median/ns, ave/ns, rms/ns
C1: 53201 -370.460 -370.439 0.969
C2: 0 0.000 NaN NaN
P1: 52881 -372.504 -372.468 0.956
P2: 52941 -375.907 -375.897 1.269


05/17/18 bp1ctlt118111_20
266040 s: C1= 69 ps
133020 s: C1= 59 ps
66510 s: C1= 48 ps
33255 s: C1= 70 ps
16627 s: C1= 86 ps
8314 s: C1= 82 ps
4157 s: C1= 118 ps
2078 s: C1= 122 ps
1039 s: C1= 159 ps
520 s: C1= 234 ps
260 s: C1= 306 ps
130 s: C1= 500 ps
65 s: C1= 682 ps
32 s: C1= 958 ps
C2 /ns
C1 /ns
Median = −370.46 ns
MJD
TdevC1 /s
Tau /s


05/17/18 bp1ctlt118111_20
267650 s: P1= 69 ps
133825 s: P1= 59 ps
66912 s: P1= 45 ps
33456 s: P1= 60 ps
16728 s: P1= 81 ps
8364 s: P1= 74 ps
4182 s: P1= 107 ps
2091 s: P1= 125 ps
1046 s: P1= 165 ps
523 s: P1= 231 ps
261 s: P1= 302 ps
131 s: P1= 497 ps
65 s: P1= 669 ps
33 s: P1= 946 ps
267346 s: P2= 69 ps
133673 s: P2= 67 ps
66837 s: P2= 48 ps
33418 s: P2= 65 ps
16709 s: P2= 71 ps
8355 s: P2= 91 ps
4177 s: P2= 149 ps
2089 s: P2= 188 ps
1044 s: P2= 259 ps
522 s: P2= 304 ps
261 s: P2= 413 ps
131 s: P2= 619 ps
65 s: P2= 904 ps
33 s: P2= 1263 ps
Median = −375.91 ns
P2 /ns
P1 /ns
Median = −372.50 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-TLT2

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 287467
Computed code bias (P1/P2)/m = -26.341 -24.288
Computed baseline (X,Y,Z)/m = 10.690 8.932 2.316
RMS of residuals /m = 0.516

Number of phase differences to fit baseline = 127328
A priori baseline (X,Y,Z)/m = 10.690 8.932 2.316
25472 clock jitters computed out of 27798 intervals
AVE jitter /ps = 2.2 RMS jitter /ps = 73.7

Iter 1 Large residuals L1= 2341
Iter 1 Large residuals L2= 2336
Computed baseline L1 (X,Y,Z)/m = -0.138 0.215 0.114
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = -0.126 0.213 0.126
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 2341
Iter 2 Large residuals L2= 2336
Computed baseline L1 (X,Y,Z)/m = -0.139 0.218 0.116
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = -0.129 0.217 0.128
RMS of residuals L2 /m = 0.005

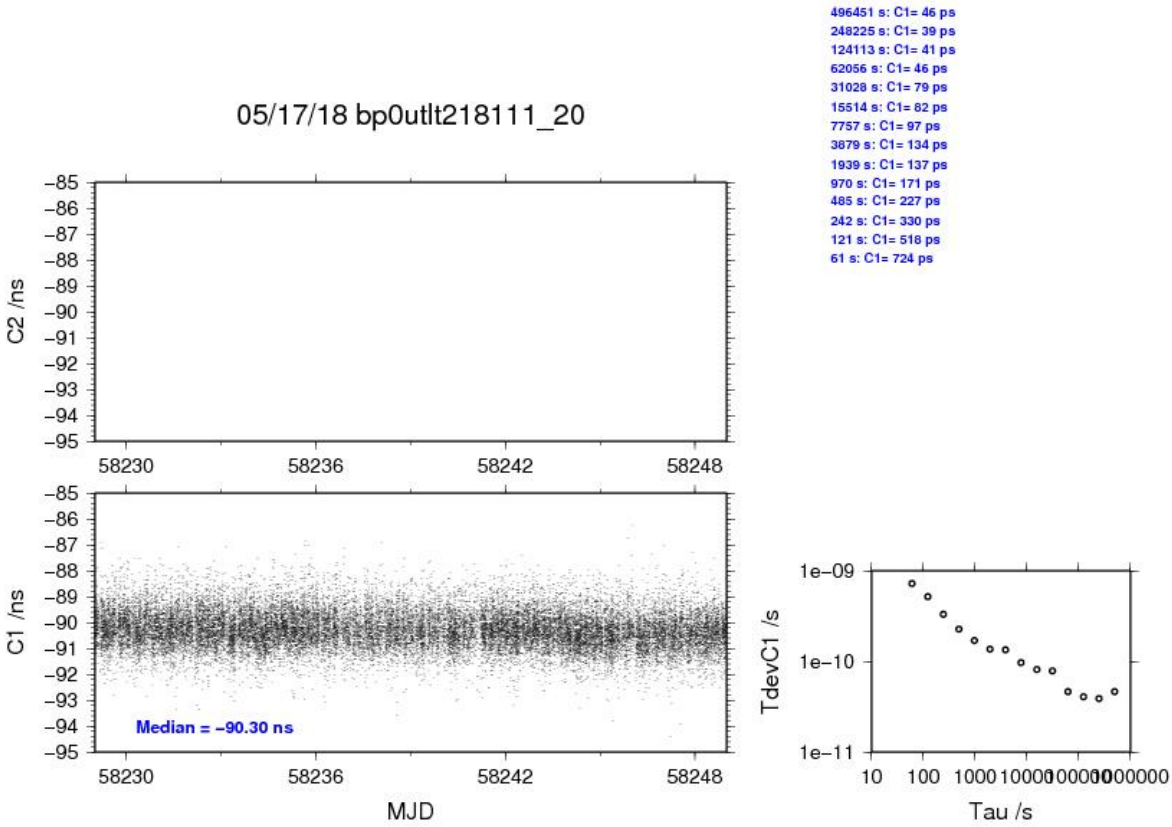
Final baseline L1 (X,Y,Z)/m = 10.551 9.150 2.432
Final baseline L2 (X,Y,Z)/m = 10.561 9.149 2.444

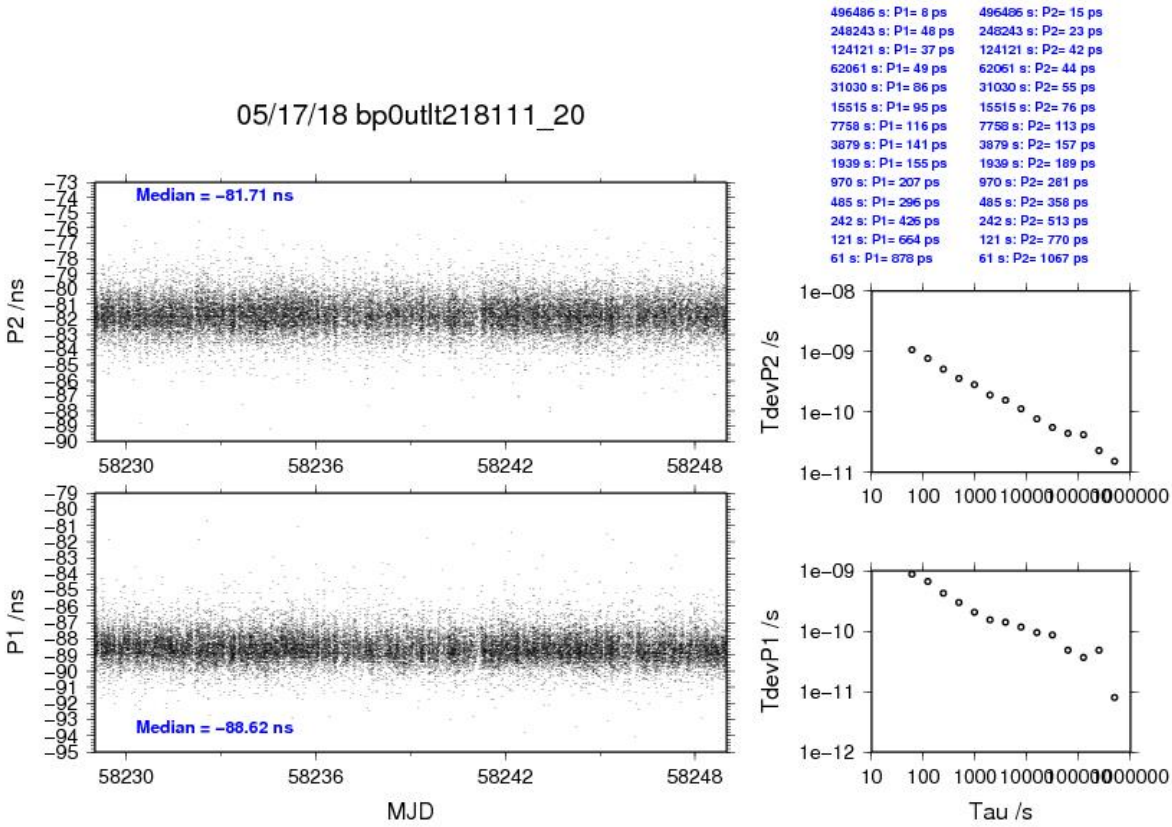
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 287793

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 287437 -90.267 1.308
C2: 0 NaN NaN
P1: 287421 -88.534 1.714
P2: 287418 -81.689 2.006

Number of 300s epochs in out file = 5629
Code #pts, median/ns, ave/ns, rms/ns
C1: 28510 -90.303 -90.272 0.729
C2: 0 0.000 NaN NaN
P1: 28508 -88.619 -88.557 0.900
P2: 28508 -81.712 -81.683 1.070


496451 s: C1= 46 ps
248225 s: C1= 39 ps
124113 s: C1= 41 ps
62056 s: C1= 46 ps
31028 s: C1= 79 ps
15514 s: C1= 82 ps
7757 s: C1= 97 ps
3879 s: C1= 134 ps
1939 s: C1= 137 ps
970 s: C1= 171 ps
485 s: C1= 227 ps
242 s: C1= 330 ps
121 s: C1= 518 ps
61 s: C1= 724 ps
05/17/18 bp0utlt218111_20
C2 /ns
C1 /ns
Median = −90.30 ns
MJD
TdevC1 /s
Tau /s


496486 s: P1= 8 ps
248243 s: P1= 48 ps
124121 s: P1= 37 ps
62061 s: P1= 49 ps
31030 s: P1= 86 ps
15515 s: P1= 95 ps
7758 s: P1= 116 ps
3879 s: P1= 141 ps
1939 s: P1= 155 ps
970 s: P1= 207 ps
485 s: P1= 296 ps
242 s: P1= 426 ps
121 s: P1= 664 ps
61 s: P1= 878 ps
496486 s: P2= 15 ps
248243 s: P2= 23 ps
124121 s: P2= 42 ps
62061 s: P2= 44 ps
31030 s: P2= 55 ps
15515 s: P2= 76 ps
7758 s: P2= 113 ps
3879 s: P2= 157 ps
1939 s: P2= 189 ps
970 s: P2= 281 ps
485 s: P2= 358 ps
242 s: P2= 513 ps
121 s: P2= 770 ps
61 s: P2= 1067 ps
05/17/18 bp0utlt218111_20
Median = −81.71 ns
P2 /ns
P1 /ns
Median = −88.62 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-TLT2

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 441406
Number of huge residuals = 3279. New iteration
Computed code bias (P1/P2)/m = -11.108 -9.202
Computed baseline (X,Y,Z)/m = 10.262 9.600 0.901
RMS of residuals /m = 0.579

Number of phase differences to fit baseline = 432066
A priori baseline (X,Y,Z)/m = 10.262 9.600 0.901
54935 clock jitters computed out of 54955 intervals
AVE jitter /ps = 0.3 RMS jitter /ps = 5.1

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = -0.121 0.109 0.035
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.103 0.095 0.034
RMS of residuals L2 /m = 0.005

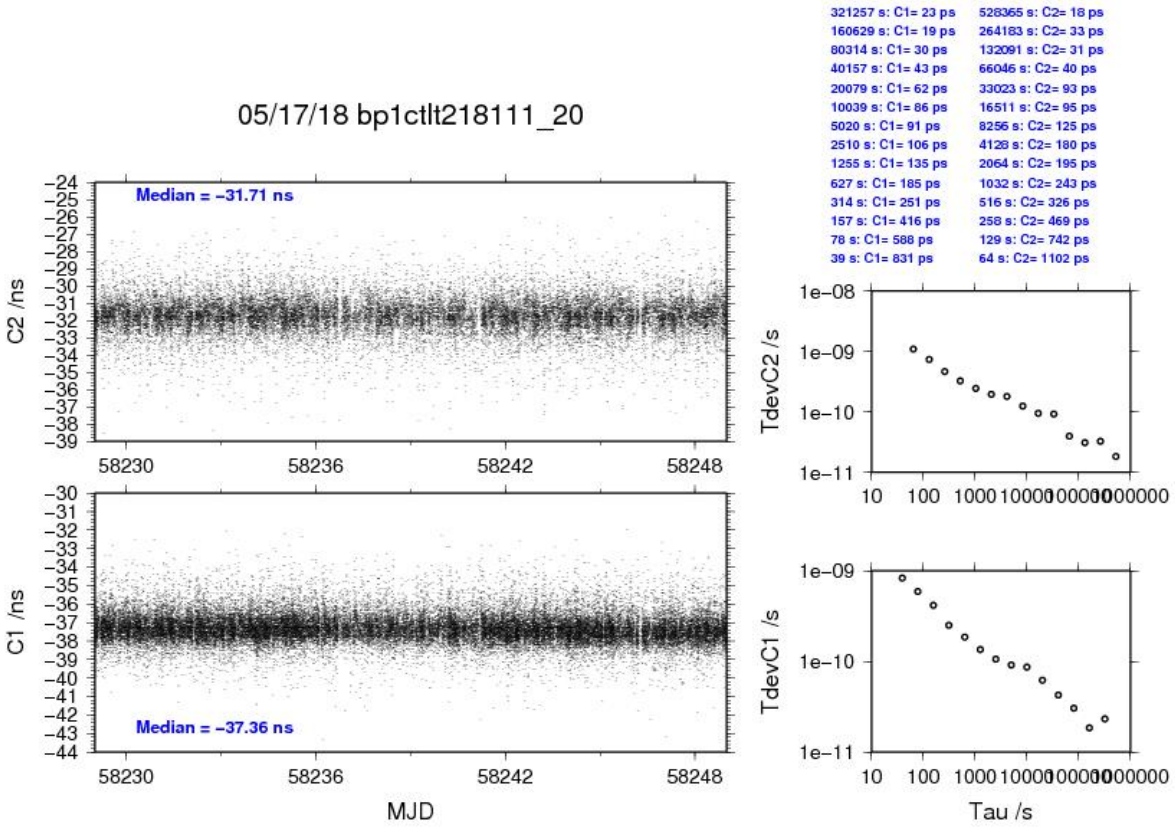
Final baseline L1 (X,Y,Z)/m = 10.141 9.709 0.936
Final baseline L2 (X,Y,Z)/m = 10.160 9.695 0.935

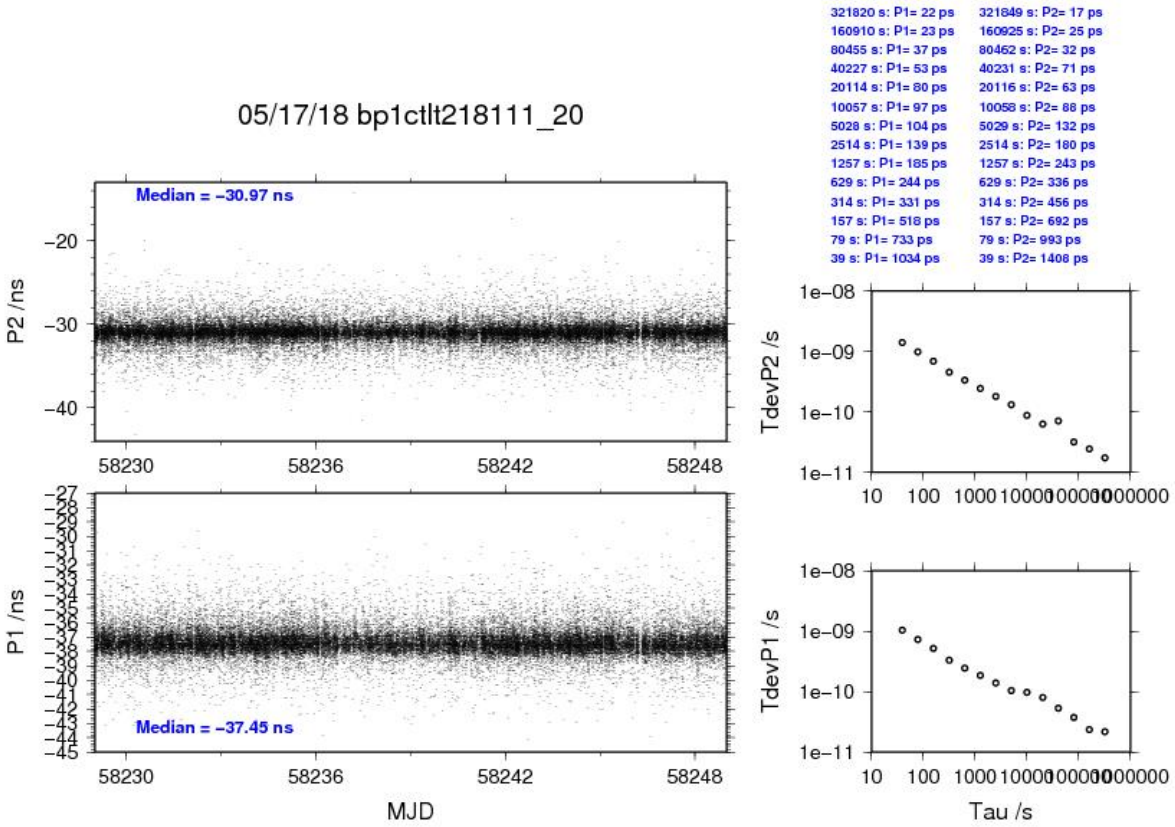
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 442997

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 440396 -37.289 1.635
C2: 267743 -31.714 2.063
P1: 439681 -37.356 2.284
P2: 439624 -30.962 2.842

Number of 300s epochs in out file = 5637
Code #pts, median/ns, ave/ns, rms/ns
C1: 44057 -37.360 -37.300 0.826
C2: 26788 -31.712 -31.720 1.055
P1: 43980 -37.451 -37.365 1.031
P2: 43976 -30.974 -30.965 1.393


05/17/18 bp1ctlt218111_20
Median = −31.71 ns
Median = −37.36 ns
C2 /ns
C1 /ns
MJD
321257 s: C1= 23 ps
160629 s: C1= 19 ps
80314 s: C1= 30 ps
40157 s: C1= 43 ps
20079 s: C1= 62 ps
10039 s: C1= 86 ps
5020 s: C1= 91 ps
2510 s: C1= 106 ps
1255 s: C1= 135 ps
627 s: C1= 185 ps
314 s: C1= 251 ps
157 s: C1= 416 ps
78 s: C1= 588 ps
39 s: C1= 831 ps
528365 s: C2= 18 ps
264183 s: C2= 33 ps
132091 s: C2= 31 ps
66046 s: C2= 40 ps
33023 s: C2= 93 ps
16511 s: C2= 95 ps
8256 s: C2= 125 ps
4128 s: C2= 180 ps
2064 s: C2= 195 ps
1032 s: C2= 243 ps
516 s: C2= 326 ps
258 s: C2= 469 ps
129 s: C2= 742 ps
64 s: C2= 1102 ps
TdevC2 /s
TdevC1 /s
Tau /s


05/17/18 bp1ctlt218111_20
Median = −30.97 ns
Median = −37.45 ns
P2 /ns
P1 /ns
MJD
321820 s: P1= 22 ps
160910 s: P1= 23 ps
80455 s: P1= 37 ps
40227 s: P1= 53 ps
20114 s: P1= 80 ps
10057 s: P1= 97 ps
5028 s: P1= 104 ps
2514 s: P1= 139 ps
1257 s: P1= 185 ps
629 s: P1= 244 ps
314 s: P1= 331 ps
157 s: P1= 518 ps
79 s: P1= 733 ps
39 s: P1= 1034 ps
321849 s: P2= 17 ps
160925 s: P2= 25 ps
80462 s: P2= 32 ps
40231 s: P2= 71 ps
20116 s: P2= 63 ps
10058 s: P2= 88 ps
5029 s: P2= 132 ps
2514 s: P2= 180 ps
1257 s: P2= 243 ps
629 s: P2= 336 ps
314 s: P2= 456 ps
157 s: P2= 692 ps
79 s: P2= 993 ps
39 s: P2= 1408 ps
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-TLT4

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 337954
Computed code bias (P1/P2)/m = -37.756 -35.799
Computed baseline (X,Y,Z)/m = 11.748 6.764 6.779
RMS of residuals /m = 0.468

Number of phase differences to fit baseline = 152482
A priori baseline (X,Y,Z)/m = 11.748 6.764 6.779
27155 clock jitters computed out of 29051 intervals
AVE jitter /ps = 2.0 RMS jitter /ps = 74.1

Iter 1 Large residuals L1= 3020
Iter 1 Large residuals L2= 3022
Computed baseline L1 (X,Y,Z)/m = -0.053 0.112 0.036
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.049 0.119 0.051
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 3020
Iter 2 Large residuals L2= 3022
Computed baseline L1 (X,Y,Z)/m = -0.055 0.113 0.037
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.050 0.120 0.051
RMS of residuals L2 /m = 0.004

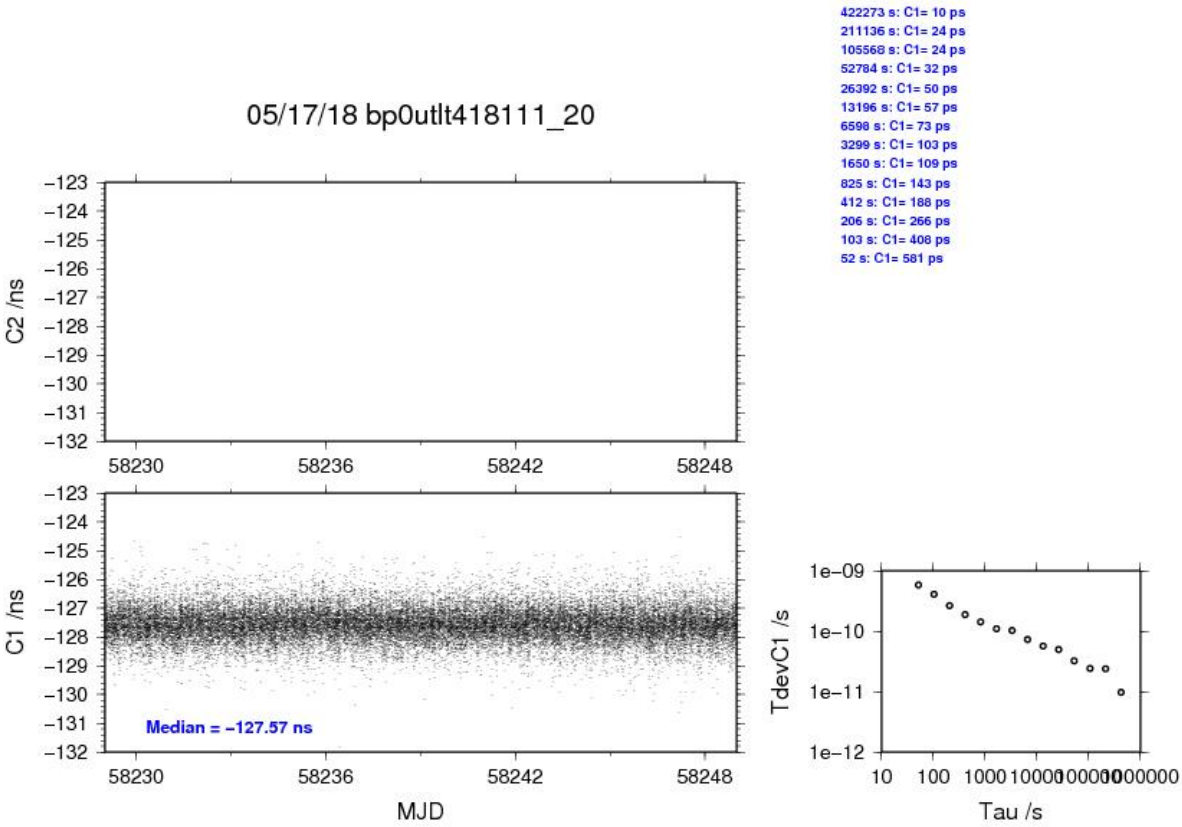
Final baseline L1 (X,Y,Z)/m = 11.693 6.877 6.816
Final baseline L2 (X,Y,Z)/m = 11.698 6.884 6.830

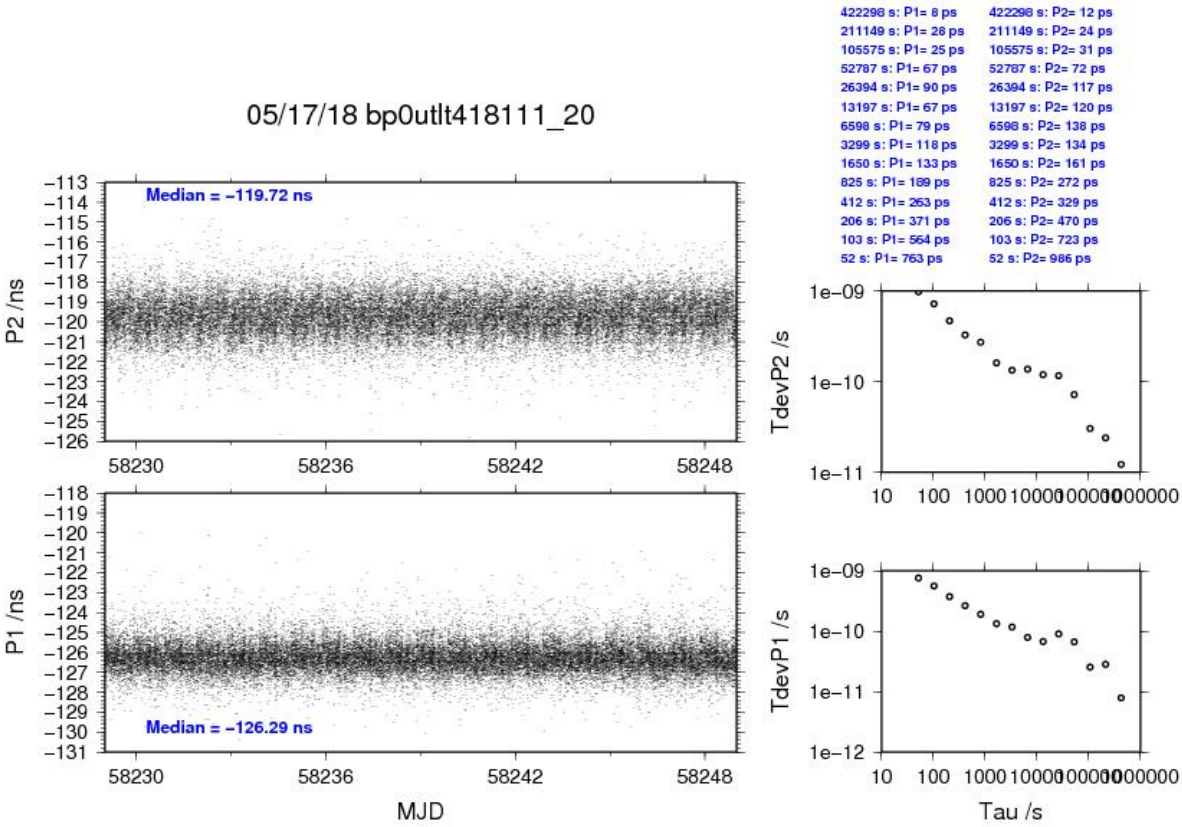
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 337974

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 337928 -127.563 1.031
C2: 0 NaN NaN
P1: 337908 -126.242 1.465
P2: 337906 -119.741 1.739

Number of 300s epochs in out file = 5752
Code #pts, median/ns, ave/ns, rms/ns
C1: 33518 -127.571 -127.562 0.578
C2: 0 0.000 NaN NaN
P1: 33516 -126.293 -126.258 0.778
P2: 33516 -119.722 -119.727 1.002


05/17/18 bp0utlt418111_20
422273 s: C1= 10 ps
211136 s: C1= 24 ps
105568 s: C1= 24 ps
52784 s: C1= 32 ps
26392 s: C1= 50 ps
13196 s: C1= 57 ps
6598 s: C1= 73 ps
3299 s: C1= 103 ps
1650 s: C1= 109 ps
825 s: C1= 143 ps
412 s: C1= 188 ps
206 s: C1= 266 ps
103 s: C1= 408 ps
52 s: C1= 581 ps
C2 /ns
C1 /ns
Median = −127.57 ns
MJD
TdevC1 /s
Tau /s


05/17/18 bp0utlt418111_20
422298 s: P1= 8 ps
211149 s: P1= 28 ps
105575 s: P1= 25 ps
52787 s: P1= 67 ps
26394 s: P1= 90 ps
13197 s: P1= 67 ps
6598 s: P1= 79 ps
3299 s: P1= 118 ps
1650 s: P1= 133 ps
825 s: P1= 189 ps
412 s: P1= 263 ps
206 s: P1= 371 ps
103 s: P1= 564 ps
52 s: P1= 763 ps
422298 s: P2= 12 ps
211149 s: P2= 24 ps
105575 s: P2= 31 ps
52787 s: P2= 72 ps
26394 s: P2= 117 ps
13197 s: P2= 120 ps
6598 s: P2= 138 ps
3299 s: P2= 134 ps
1650 s: P2= 161 ps
825 s: P2= 272 ps
412 s: P2= 329 ps
206 s: P2= 470 ps
103 s: P2= 723 ps
52 s: P2= 986 ps
Median = −119.72 ns
Median = −126.29 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-TLT4

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 551148
Number of huge residuals = 4768. New iteration
Computed code bias (P1/P2)/m = -22.488 -20.678
Computed baseline (X,Y,Z)/m = 11.337 7.405 5.323
RMS of residuals /m = 0.456

Number of phase differences to fit baseline = 547369
A priori baseline (X,Y,Z)/m = 11.337 7.405 5.323
57579 clock jitters computed out of 57579 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 4.4

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.026 0.004 -0.015
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.024 0.004 -0.015
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.026 0.004 -0.015
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.024 0.004 -0.015
RMS of residuals L2 /m = 0.004

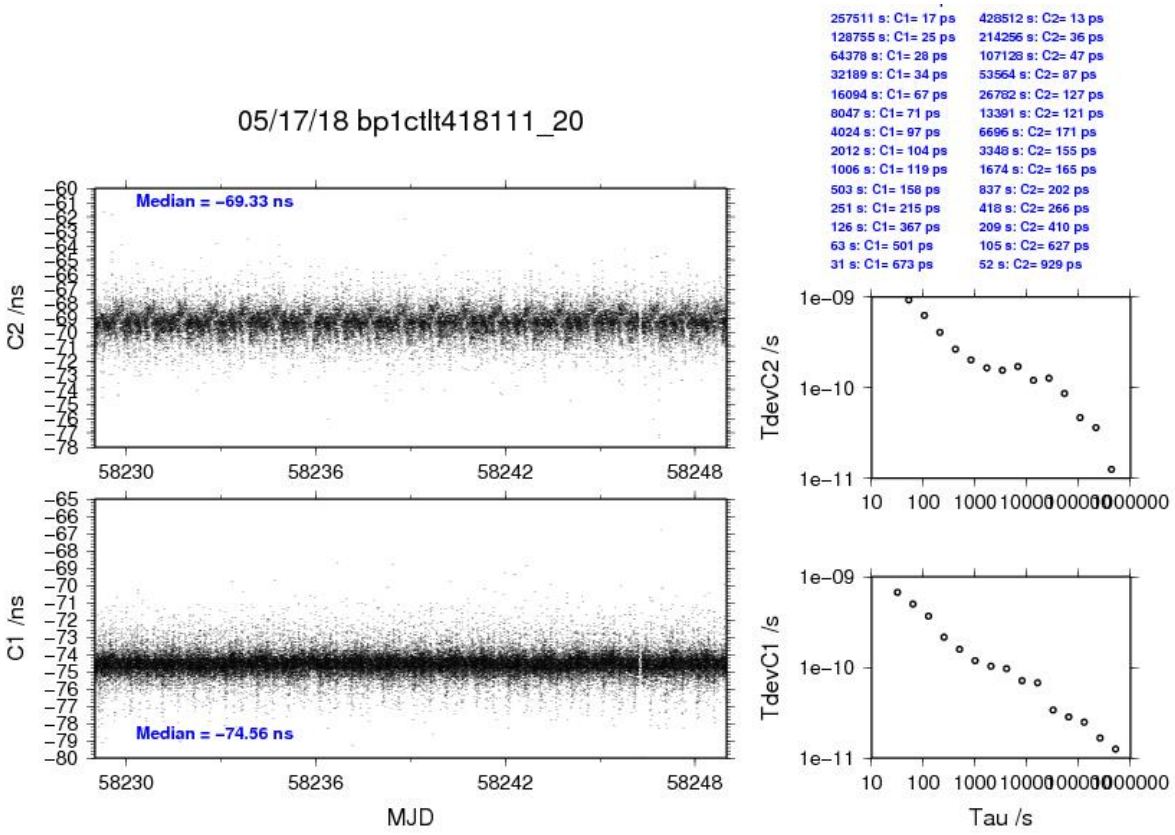
Final baseline L1 (X,Y,Z)/m = 11.311 7.410 5.308
Final baseline L2 (X,Y,Z)/m = 11.313 7.409 5.308

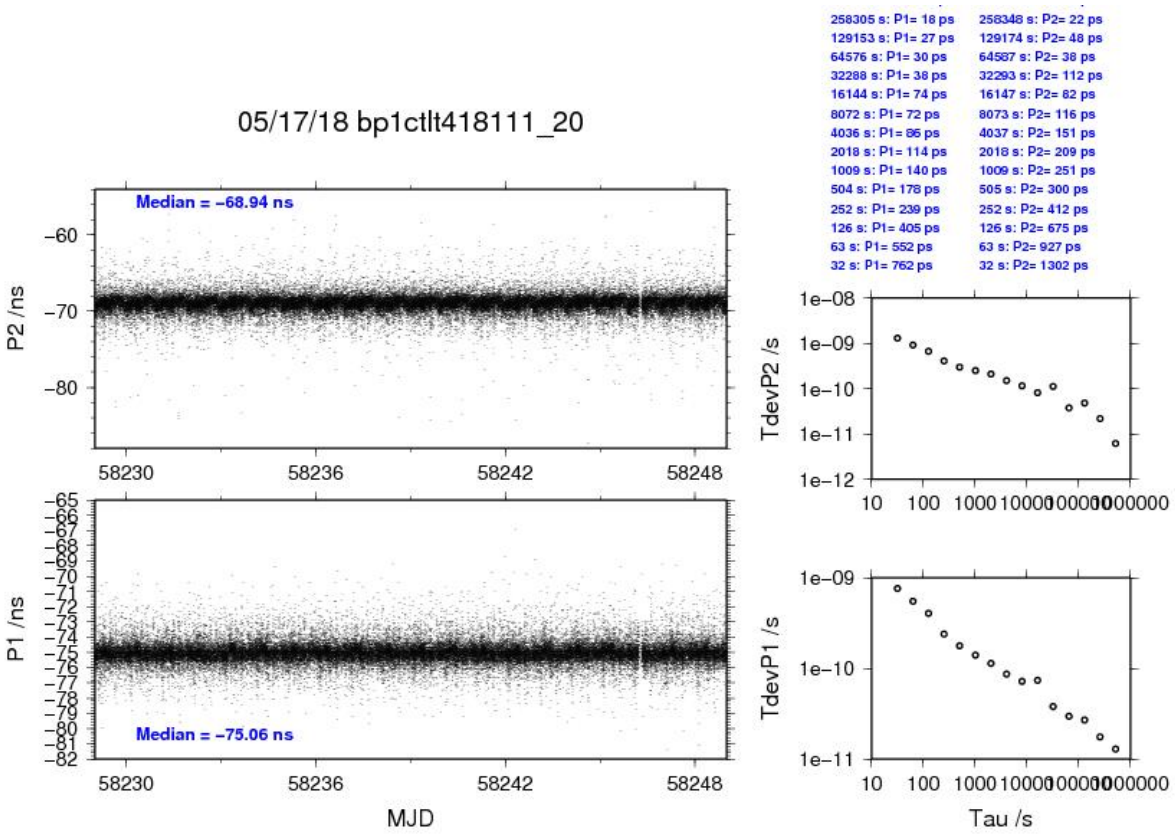
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 554226

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 550439 -74.533 1.291
C2: 330795 -69.342 1.687
P1: 548692 -75.028 1.353
P2: 548619 -68.989 1.891

Number of 300s epochs in out file = 5760
Code #pts, median/ns, ave/ns, rms/ns
C1: 54963 -74.556 -74.541 0.695
C2: 33030 -69.330 -69.342 0.910
P1: 54794 -75.059 -75.037 0.774
P2: 54785 -68.937 -68.987 1.312


05/17/18 bp1ctlt418111_20
Median = −69.33 ns
C2 /ns
Median = −74.56 ns
C1 /ns
MJD
257511 s: C1= 17 ps
128755 s: C1= 25 ps
64378 s: C1= 28 ps
32189 s: C1= 34 ps
16094 s: C1= 67 ps
8047 s: C1= 71 ps
4024 s: C1= 97 ps
2012 s: C1= 104 ps
1006 s: C1= 119 ps
503 s: C1= 158 ps
251 s: C1= 215 ps
126 s: C1= 367 ps
63 s: C1= 501 ps
31 s: C1= 673 ps
428512 s: C2= 13 ps
214256 s: C2= 36 ps
107128 s: C2= 47 ps
53564 s: C2= 87 ps
26782 s: C2= 127 ps
13391 s: C2= 121 ps
6696 s: C2= 171 ps
3348 s: C2= 155 ps
1674 s: C2= 165 ps
837 s: C2= 202 ps
418 s: C2= 266 ps
209 s: C2= 410 ps
105 s: C2= 627 ps
52 s: C2= 929 ps
TdevC2 /s
TdevC1 /s
Tau /s


05/17/18 bp1ctlt418111_20
Median = −68.94 ns
P2 /ns
Median = −75.06 ns
P1 /ns
MJD
258305 s: P1= 18 ps
129153 s: P1= 27 ps
64576 s: P1= 30 ps
32288 s: P1= 38 ps
16144 s: P1= 74 ps
8072 s: P1= 72 ps
4036 s: P1= 86 ps
2018 s: P1= 114 ps
1009 s: P1= 140 ps
504 s: P1= 178 ps
252 s: P1= 239 ps
126 s: P1= 405 ps
63 s: P1= 552 ps
32 s: P1= 762 ps
258348 s: P2= 22 ps
129174 s: P2= 48 ps
64587 s: P2= 38 ps
32293 s: P2= 112 ps
16147 s: P2= 82 ps
8073 s: P2= 116 ps
4037 s: P2= 151 ps
2018 s: P2= 209 ps
1009 s: P2= 251 ps
505 s: P2= 300 ps
252 s: P2= 412 ps
126 s: P2= 675 ps
63 s: P2= 927 ps
32 s: P2= 1302 ps
TdevP2 /s
TdevP1 /s
Tau /s

1.3/ NICT (18150)

Period

MJD 58270 to 58287

Delays

BP0U:

REFDLY = 52.6+199.4 = 252.0 ns (cf page 3 & 38)
CABDLY = 181.70 ns (C134)

BP1C:

X_O = 213.8-15.4 = 198.4 ns (cf page 38)
X_P = 52.6+199.4 = 252.0 ns (cf page 3 & 38)
REFDLY = 435.0 ns
CABDLY = 235.70 ns (C131)

NC01: (cf page 35)

X_O = 234.2 ns
X_P = 163.1+8.7 = 171.8 ns
REFDLY = 406.0 ns
CABDLY = 213.4 ns

NC4S: (cf page 36)

X_O = 148.3 ns
X_P = 164.4 ns
REFDLY = 312.7 ns

NC5G: (cf page 37)

REFDLY = 168.3 ns
CABDLY = 268.7 ns
INT DLY: -29.9 ns GPSL1C, -31.0 ns GPSL1P, -19.2 ns GPSL2P

Setup at the NICT

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	National Institute of Information and Communication Technology
Date and hour of the beginning of measurements:	**01/06/2018 0 h UTC**
Date and hour of the end of measurements:	**18/06/2018 24 h UTC**

Information on the system

	Local:	**Travelling:**
4-character BIPM code	NC01	BP0U / BP1C
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx2 TR S/N: 1354 Rev A	
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	FUJIKURA 8D-SFA-LITE Phase stabilized: No	
Length outside the building /m:		
• Antenna maker and type: Antenna serial number:	ASHTECH 701933-02 Rev A CRN21999080101	
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	163.1 ns	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	234.2 ns (163.1 + 234.2 + 8.7 = 406.0 ns)	
• Antenna cable delay:	213.4 ns	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	221.4 ns (C1), 218.3 ns (P1), 224.4 ns (P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	213.4 ns
• REF DLY /ns:	408.2 ns
• Coordinates reference frame:	
Latitude or X /m:	-3942091.46
Longitude or Y /m:	3368258.70
Height or Z /m:	3701996.20

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	24 degree C
Set humidity value and uncertainty:	40 %

(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:	National Institute of Information and Communication Technology
Date and hour of the beginning of measurements:	**01/06/2018 0 h UTC**
Date and hour of the end of measurements:	**18/06/2018 24 h UTC**

Information on the system

	Local:	**Travelling:**
4-character BIPM code	NC4S	BP0U / BP1C
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx4 TR Pro S/N: 3102252	
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	FUJIKURA 8D-SFA-LITE Phase stabilized: No	
Length outside the building /m:		
• Antenna maker and type: Antenna serial number:	AeroAntenna AT1675-120SW S/N: 5411	
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	164.4 ns	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	148.3 ns (164.4 + 148.3 = 312.7 ns)	
• Antenna cable delay:		(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	278.2 ns (C1), 276.8 ns (P1), 276.3 ns (P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	314.6 ns
• Coordinates reference frame:	
Latitude or X /m:	-3942091.40
Longitude or Y /m:	3368261.97
Height or Z /m:	3701993.34

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	24 degree C
Set humidity value and uncertainty:	40 %

(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:	National Institute of Information and Communication Technology
Date and hour of the beginning of measurements:	**01/06/2018 0 h UTC**
Date and hour of the end of measurements:	**18/06/2018 24 h UTC**

Information on the system

	Local:	**Travelling:**
4-character BIPM code	NC5G	BP0U / BP1C
• Receiver maker and type: Receiver serial number:	Dicom GTR50 S/N: 0801404	
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew Heliax FSJ4-50B Phase stabilized: No	
Length outside the building /m:		
• Antenna maker and type: Antenna serial number:	NovAtel GPS-702-GG P/N: 01017577	
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in:	168.3 ns	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)		
• Antenna cable delay:	268.7 ns	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	-29.9 ns (C1), -31.0 ns (P1), -19.2 ns (P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	268.7 ns
• REF DLY /ns:	170.2 ns
• Coordinates reference frame:	
Latitude or X /m:	-3942088.21
Longitude or Y /m:	3368252.34
Height or Z /m:	3702001.40

General information

• Rise time of the local UTC pulse:	
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	24 degree C
Set humidity value and uncertainty:	40 %

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

Log of Events / Additional Information :

1. UTC(NICT) – each reference points measured by clock transportation, 01/06/2018
   3rd floor reference point = 160.9 ns
   4th floor reference point = 208.0 ns
   TWSTFT reference point = 477.3 ns

UTC(NICT) – B3TS CLB Pk = 199.4 ns
C183 – [BP1C input + C155] = 15.4 ns
C183 – [BP1C output + C155] = 213.8 ns

2. Reference delay measurements, 22/06/2018

UTC(NICT) – B3TS CLB Pk = 199.4 ns
C183 – [BP1C input + C155] = 15.5 ns
C183 – [BP1C output + C155] = 213.8 ns

UTC(NICT) – NC01 input = 163.1 ns
UTC(NICT) – NC01 output = 163.1 ns + 234.3 ns + 8.7 ns = 406.1 ns

UTC(NICT) – NC4S input = 164.4 ns
UTC(NICT) – NC4S output = 164.4 ns + 148.4 = 312.8 ns

UTC(NICT) – NC5G input = 168.3 ns

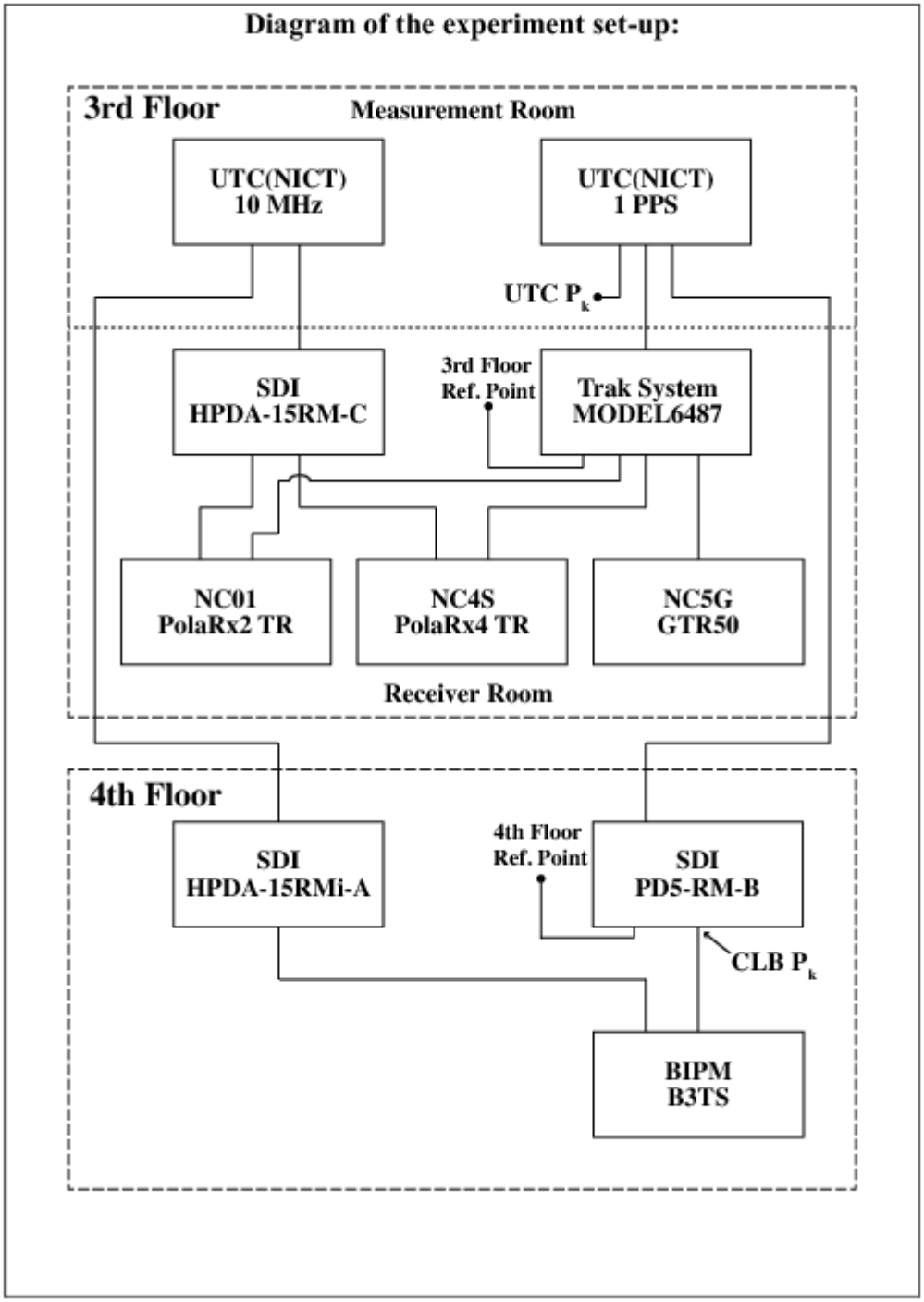


Diagram of the experiment set-up:
3rd Floor
Measurement Room
UTC(NICT)
10 MHz
UTC(NICT)
1 PPS
UTC P k
SDI
HPDA-15RM-C
3rd Floor
Ref. Point
Trak System
MODEL6487
NC01
PolaRx2 TR
NC4S
PolaRx4 TR
NC5G
GTR50
Receiver Room
4th Floor
SDI
HPDA-15RMi-A
4th Floor
Ref. Point
SDI
PD5-RM-B
CLB P k
BIPM
B3TS

BP0U-NC01

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 293571
Computed code bias (P1/P2)/m = -69.750 -69.181
Computed baseline (X,Y,Z)/m = -17.318 -16.379 -0.008
RMS of residuals /m = 0.535

Number of phase differences to fit baseline = 215293
A priori baseline (X,Y,Z)/m = -17.318 -16.379 -0.008
39349 clock jitters computed out of 40420 intervals
AVE jitter /ps = -5.3 RMS jitter /ps = 53.8

Iter 1 Large residuals L1= 454
Iter 1 Large residuals L2= 453
Computed baseline L1 (X,Y,Z)/m = -0.120 0.108 0.149
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.126 0.108 0.159
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 454
Iter 2 Large residuals L2= 453
Computed baseline L1 (X,Y,Z)/m = -0.121 0.109 0.150
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.126 0.108 0.160
RMS of residuals L2 /m = 0.003

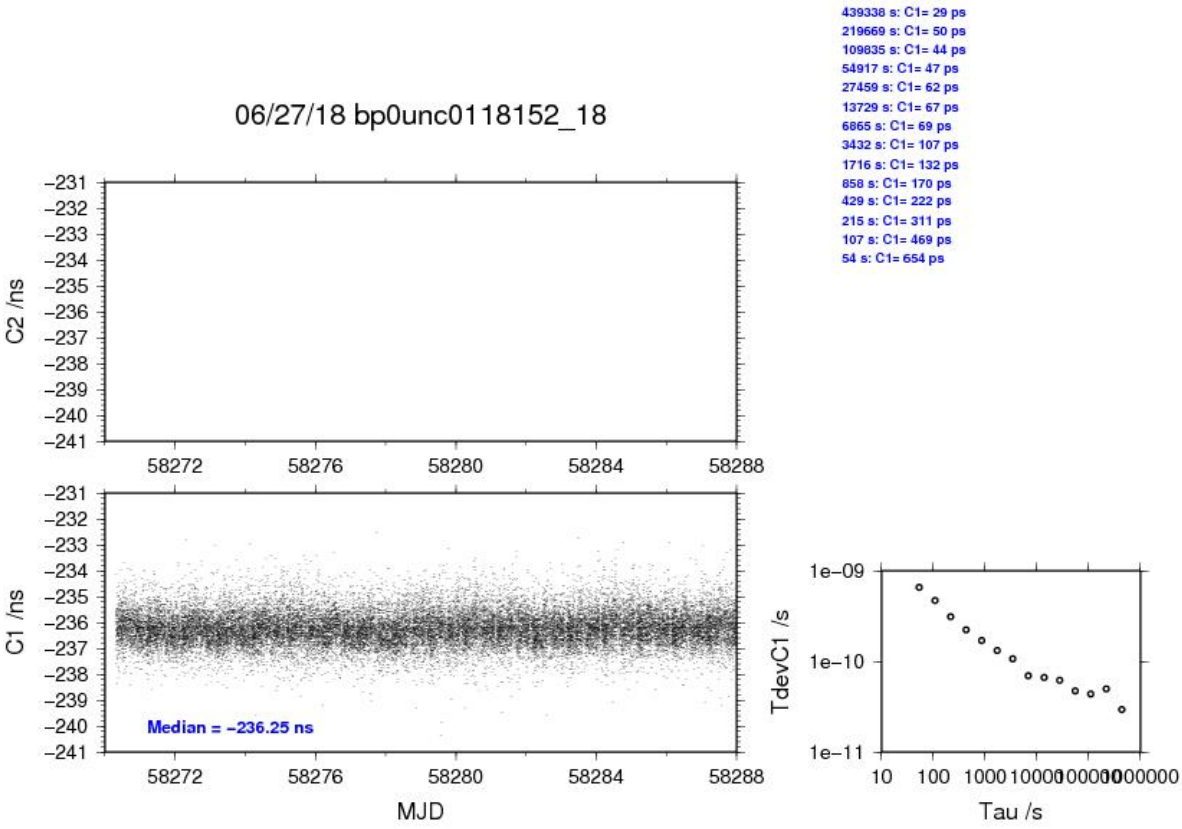
Final baseline L1 (X,Y,Z)/m = -17.439 -16.270 0.142
Final baseline L2 (X,Y,Z)/m = -17.444 -16.271 0.152

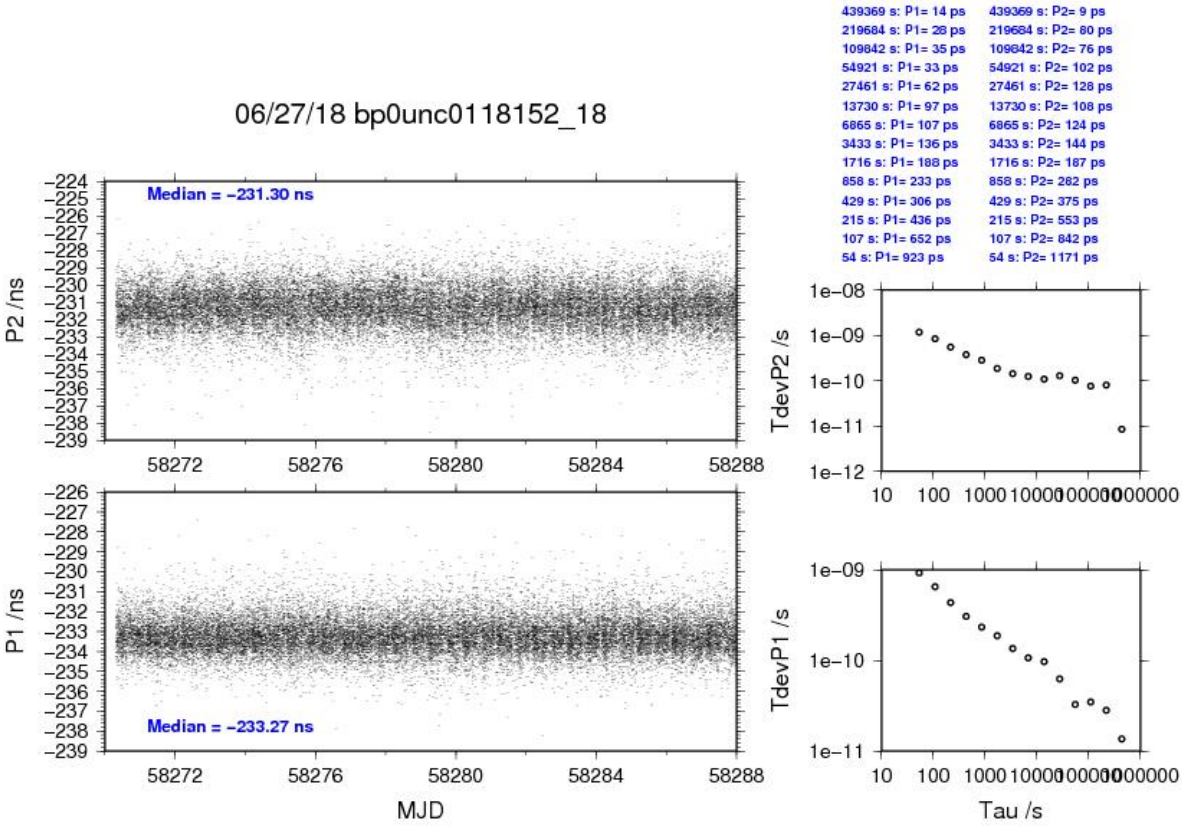
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 298789

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 293511 -236.220 1.180
C2: 0 NaN NaN
P1: 293482 -233.198 1.745
P2: 293482 -231.321 2.009

Number of 300s epochs in out file = 5130
Code #pts, median/ns, ave/ns, rms/ns
C1: 28994 -236.253 -236.225 0.663
C2: 0 0.000 NaN NaN
P1: 28992 -233.274 -233.220 0.921
P2: 28992 -231.297 -231.307 1.170


06/27/18 bp0unc0118152_18
439338 s: C1= 29 ps
219669 s: C1= 50 ps
109835 s: C1= 44 ps
54917 s: C1= 47 ps
27459 s: C1= 62 ps
13729 s: C1= 67 ps
6865 s: C1= 69 ps
3432 s: C1= 107 ps
1716 s: C1= 132 ps
858 s: C1= 170 ps
429 s: C1= 222 ps
215 s: C1= 311 ps
107 s: C1= 469 ps
54 s: C1= 654 ps
C2 /ns
C1 /ns
Median = −236.25 ns
MJD
TdevC1 /s
Tau /s


06/27/18 bp0unc0118152_18
439369 s: P1= 14 ps
219684 s: P1= 28 ps
109842 s: P1= 35 ps
54921 s: P1= 33 ps
27461 s: P1= 62 ps
13730 s: P1= 97 ps
6865 s: P1= 107 ps
3433 s: P1= 136 ps
1716 s: P1= 188 ps
858 s: P1= 233 ps
429 s: P1= 306 ps
215 s: P1= 436 ps
107 s: P1= 652 ps
54 s: P1= 923 ps
439369 s: P2= 9 ps
219684 s: P2= 80 ps
109842 s: P2= 76 ps
54921 s: P2= 102 ps
27461 s: P2= 128 ps
13730 s: P2= 108 ps
6865 s: P2= 124 ps
3433 s: P2= 144 ps
1716 s: P2= 167 ps
858 s: P2= 282 ps
429 s: P2= 375 ps
215 s: P2= 553 ps
107 s: P2= 842 ps
54 s: P2= 1171 ps
Median = −231.30 ns
Median = −233.27 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-NC01

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 494934
Number of huge residuals = 98. New iteration
Computed code bias (P1/P2)/m = -57.803 -57.278
Computed baseline (X,Y,Z)/m = -16.894 -16.252 0.457
RMS of residuals /m = 0.507

Number of phase differences to fit baseline = 490816
A priori baseline (X,Y,Z)/m = -16.894 -16.252 0.457
51828 clock jitters computed out of 51828 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 4.5

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.068 0.035 -0.007
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.070 0.030 -0.007
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.068 0.035 -0.007
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.070 0.030 -0.007
RMS of residuals L2 /m = 0.004

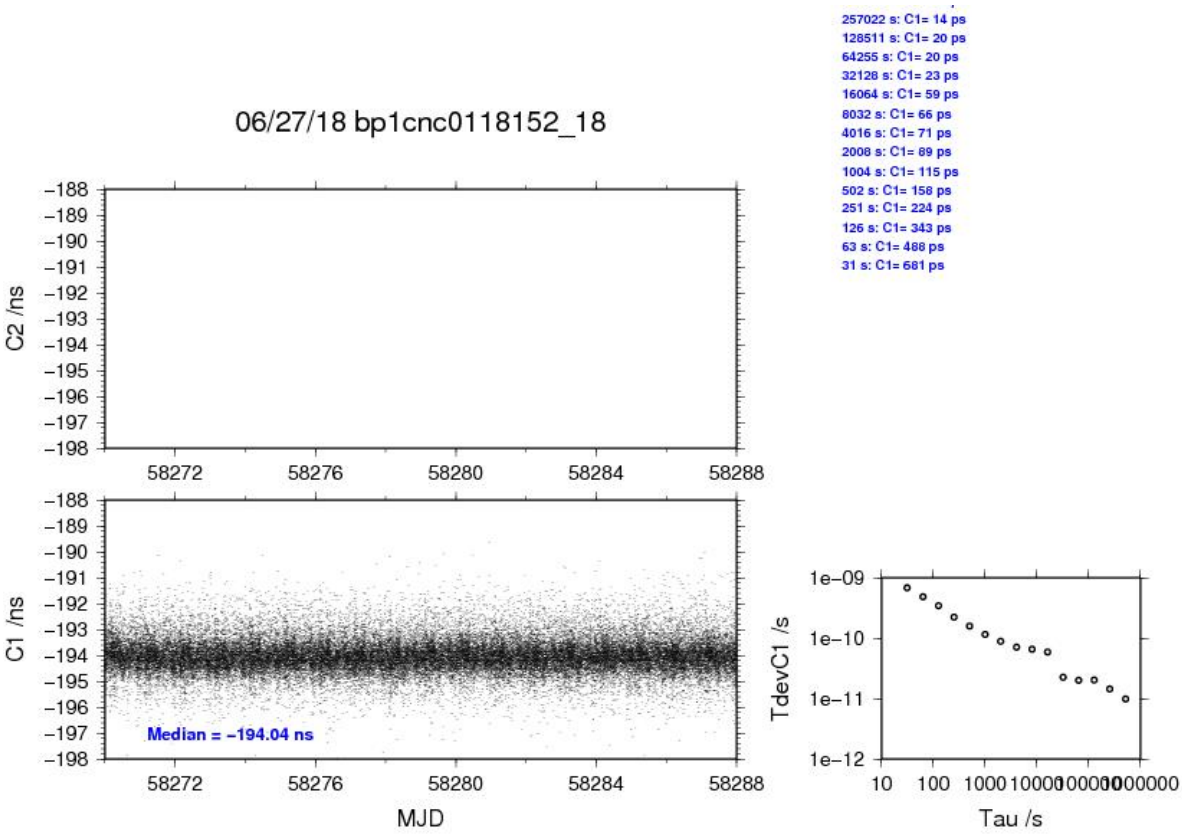
Final baseline L1 (X,Y,Z)/m = -16.961 -16.218 0.450
Final baseline L2 (X,Y,Z)/m = -16.963 -16.222 0.450

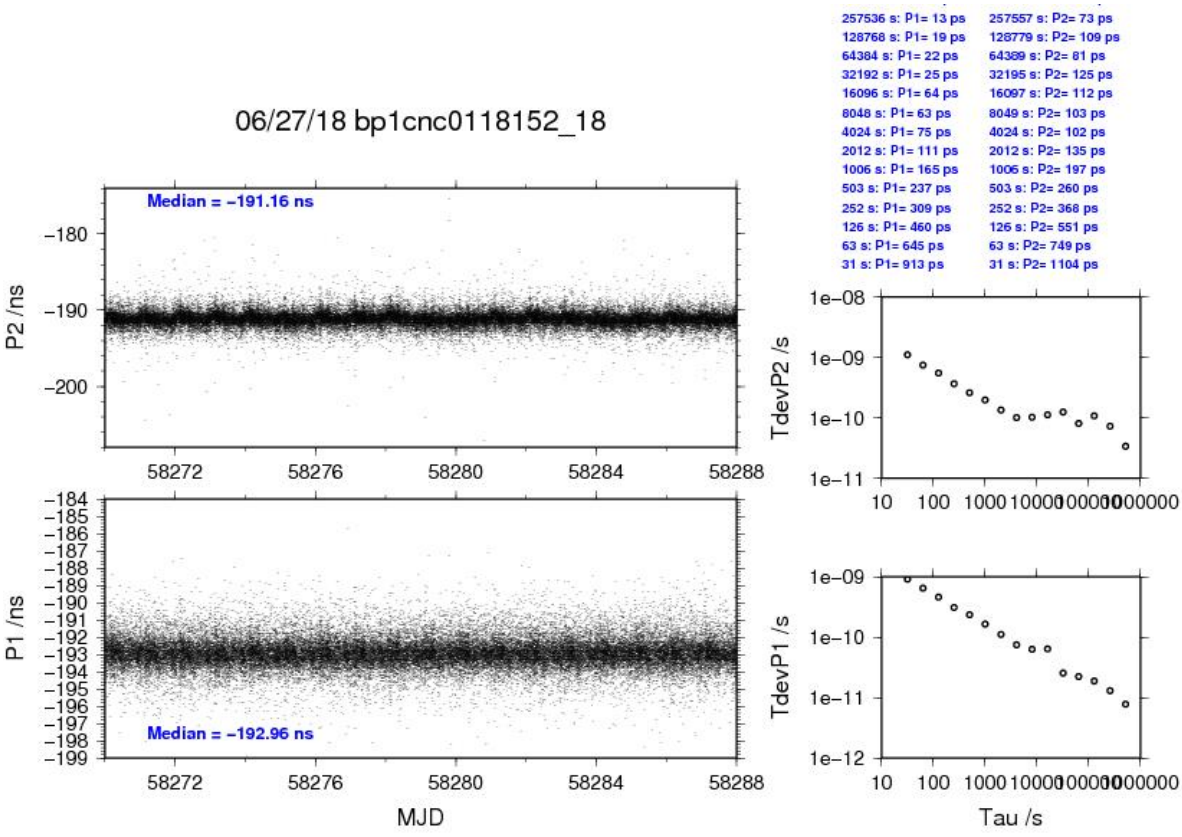
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 496298

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 496082 -194.007 1.356
C2: 0 NaN NaN
P1: 494833 -192.914 1.685
P2: 494788 -191.157 1.846

Number of 300s epochs in out file = 5184
Code #pts, median/ns, ave/ns, rms/ns
C1: 49560 -194.045 -194.011 0.682
C2: 0 0.000 NaN NaN
P1: 49461 -192.955 -192.924 0.913
P2: 49457 -191.165 -191.160 1.098


06/27/18 bp1cnc0118152_18
257022 s: C1= 14 ps
128511 s: C1= 20 ps
64255 s: C1= 20 ps
32128 s: C1= 23 ps
16064 s: C1= 59 ps
8032 s: C1= 66 ps
4016 s: C1= 71 ps
2008 s: C1= 89 ps
1004 s: C1= 115 ps
502 s: C1= 158 ps
251 s: C1= 224 ps
126 s: C1= 343 ps
63 s: C1= 488 ps
31 s: C1= 681 ps
C2 /ns
C1 /ns
Median = −194.04 ns
MJD
TdevC1 /s
Tau /s


06/27/18 bp1cnc0118152_18
257536 s: P1= 13 ps
128768 s: P1= 19 ps
64384 s: P1= 22 ps
32192 s: P1= 25 ps
16096 s: P1= 64 ps
8048 s: P1= 63 ps
4024 s: P1= 75 ps
2012 s: P1= 111 ps
1006 s: P1= 165 ps
503 s: P1= 237 ps
252 s: P1= 309 ps
126 s: P1= 460 ps
63 s: P1= 645 ps
31 s: P1= 913 ps
257557 s: P2= 73 ps
128779 s: P2= 109 ps
64389 s: P2= 81 ps
32195 s: P2= 125 ps
16097 s: P2= 112 ps
8049 s: P2= 103 ps
4024 s: P2= 102 ps
2012 s: P2= 135 ps
1006 s: P2= 197 ps
503 s: P2= 260 ps
252 s: P2= 368 ps
126 s: P2= 551 ps
63 s: P2= 749 ps
31 s: P2= 1104 ps
Median = −191.16 ns
P2 /ns
Median = −192.96 ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-NC4S

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 293412
Computed code bias (P1/P2)/m = -51.266 -49.396
Computed baseline (X,Y,Z)/m = -17.217 -13.092 -2.862
RMS of residuals /m = 0.504

Number of phase differences to fit baseline = 214884
A priori baseline (X,Y,Z)/m = -17.217 -13.092 -2.862
39255 clock jitters computed out of 40292 intervals
AVE jitter /ps = -5.2 RMS jitter /ps = 53.8

Iter 1 Large residuals L1= 415
Iter 1 Large residuals L2= 417
Computed baseline L1 (X,Y,Z)/m = -0.131 0.089 0.135
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.131 0.082 0.138
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 415
Iter 2 Large residuals L2= 417
Computed baseline L1 (X,Y,Z)/m = -0.132 0.089 0.135
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.131 0.082 0.138
RMS of residuals L2 /m = 0.003

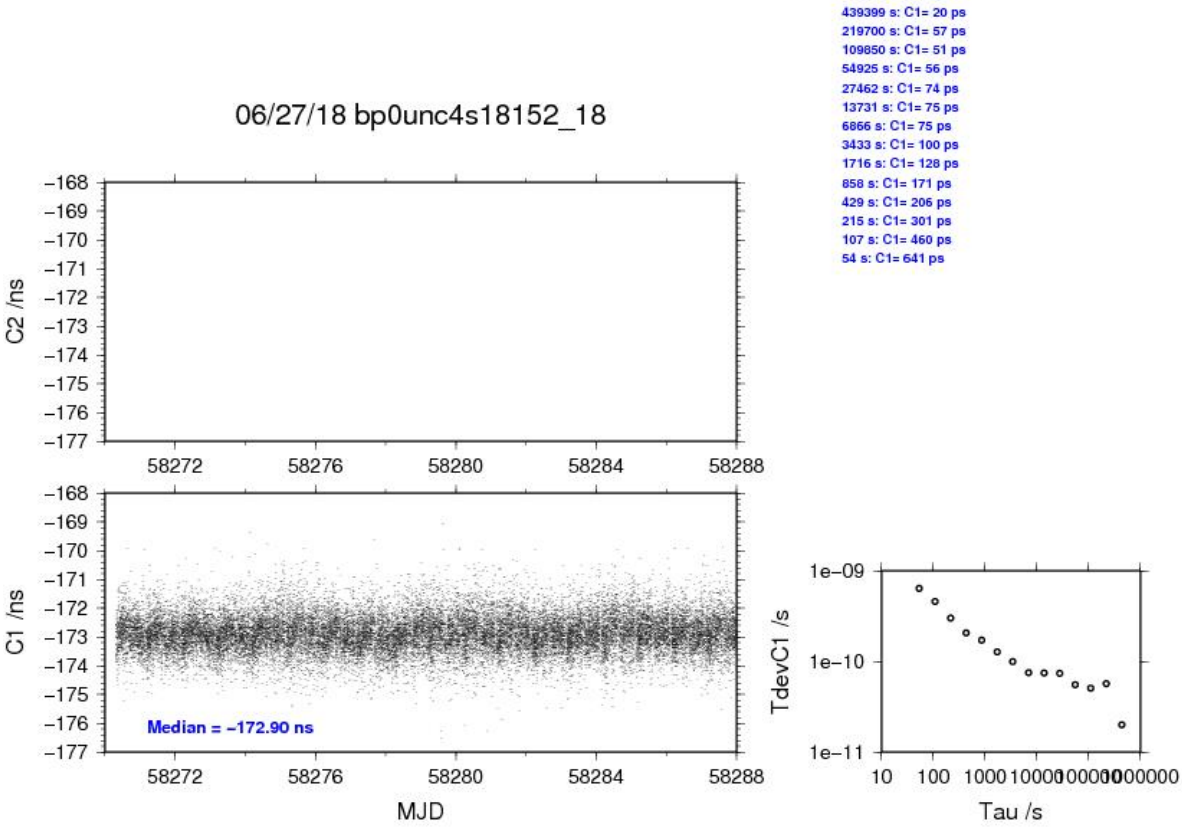
Final baseline L1 (X,Y,Z)/m = -17.348 -13.003 -2.727
Final baseline L2 (X,Y,Z)/m = -17.347 -13.010 -2.724

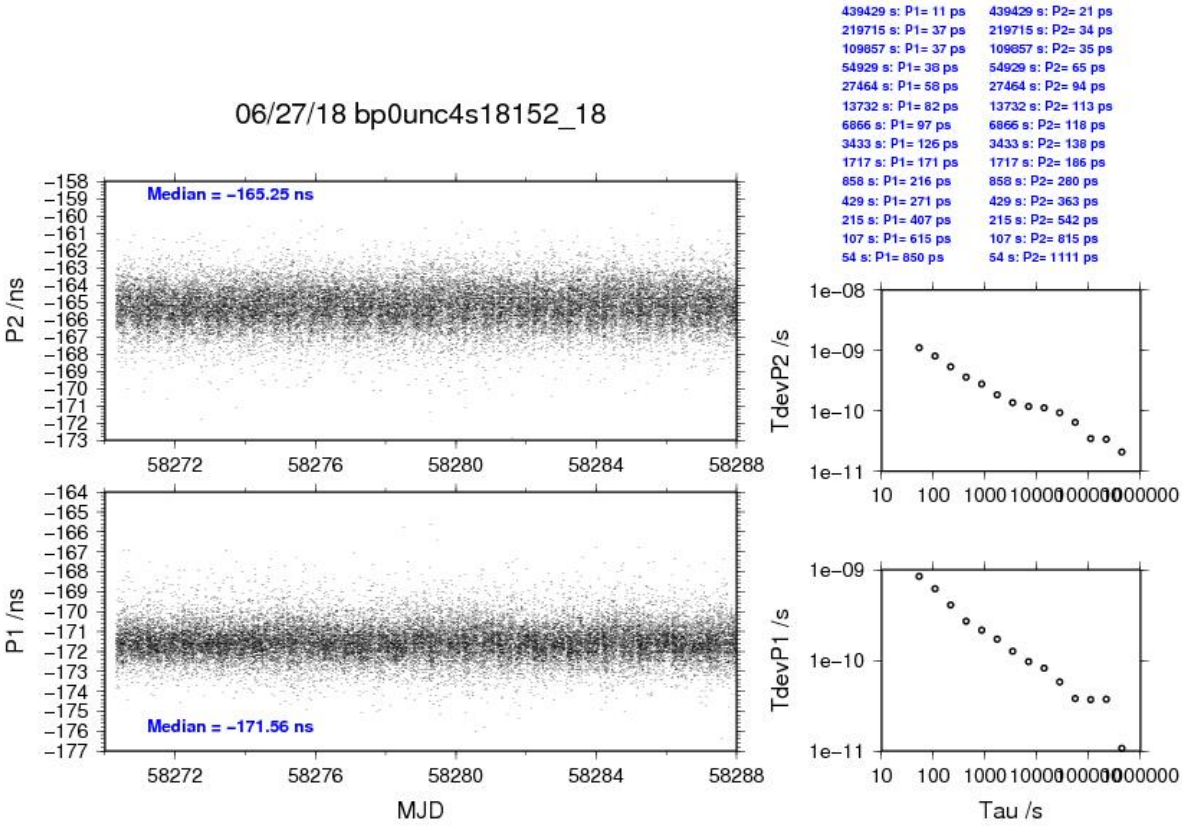
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 297167

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 293349 -172.885 1.187
C2: 0 NaN NaN
P1: 293321 -171.509 1.596
P2: 293323 -165.265 1.892

Number of 300s epochs in out file = 5109
Code #pts, median/ns, ave/ns, rms/ns
C1: 28990 -172.897 -172.885 0.648
C2: 0 0.000 NaN NaN
P1: 28988 -171.560 -171.525 0.854
P2: 28988 -165.250 -165.248 1.121


06/27/18 bp0unc4s18152_18
439399 s: C1= 20 ps
219700 s: C1= 57 ps
109850 s: C1= 51 ps
54925 s: C1= 56 ps
27462 s: C1= 74 ps
13731 s: C1= 75 ps
6866 s: C1= 75 ps
3433 s: C1= 100 ps
1716 s: C1= 128 ps
858 s: C1= 171 ps
429 s: C1= 206 ps
215 s: C1= 301 ps
107 s: C1= 460 ps
54 s: C1= 641 ps
C2 /ns
C1 /ns
Median = −172.90 ns
MJD
TdevC1 /s
Tau /s


06/27/18 bp0unc4s18152_18
439429 s: P1= 11 ps
219715 s: P1= 37 ps
109857 s: P1= 37 ps
54929 s: P1= 38 ps
27464 s: P1= 58 ps
13732 s: P1= 82 ps
6866 s: P1= 97 ps
3433 s: P1= 126 ps
1717 s: P1= 171 ps
858 s: P1= 216 ps
429 s: P1= 271 ps
215 s: P1= 407 ps
107 s: P1= 615 ps
54 s: P1= 850 ps
439429 s: P2= 21 ps
219715 s: P2= 34 ps
109857 s: P2= 35 ps
54929 s: P2= 65 ps
27464 s: P2= 94 ps
13732 s: P2= 113 ps
6866 s: P2= 118 ps
3433 s: P2= 138 ps
1717 s: P2= 186 ps
858 s: P2= 280 ps
429 s: P2= 363 ps
215 s: P2= 542 ps
107 s: P2= 815 ps
54 s: P2= 1111 ps
Median = −165.25 ns
Median = −171.56 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-NC4S

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 492766
Number of huge residuals = 8. New iteration
Computed code bias (P1/P2)/m = -39.340 -37.540
Computed baseline (X,Y,Z)/m = -16.818 -12.950 -2.372
RMS of residuals /m = 0.449

Number of phase differences to fit baseline = 488802
A priori baseline (X,Y,Z)/m = -16.818 -12.950 -2.372
51559 clock jitters computed out of 51559 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 4.5

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.051 -0.016 -0.058
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.051 -0.018 -0.059
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.051 -0.016 -0.058
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.051 -0.018 -0.059
RMS of residuals L2 /m = 0.004

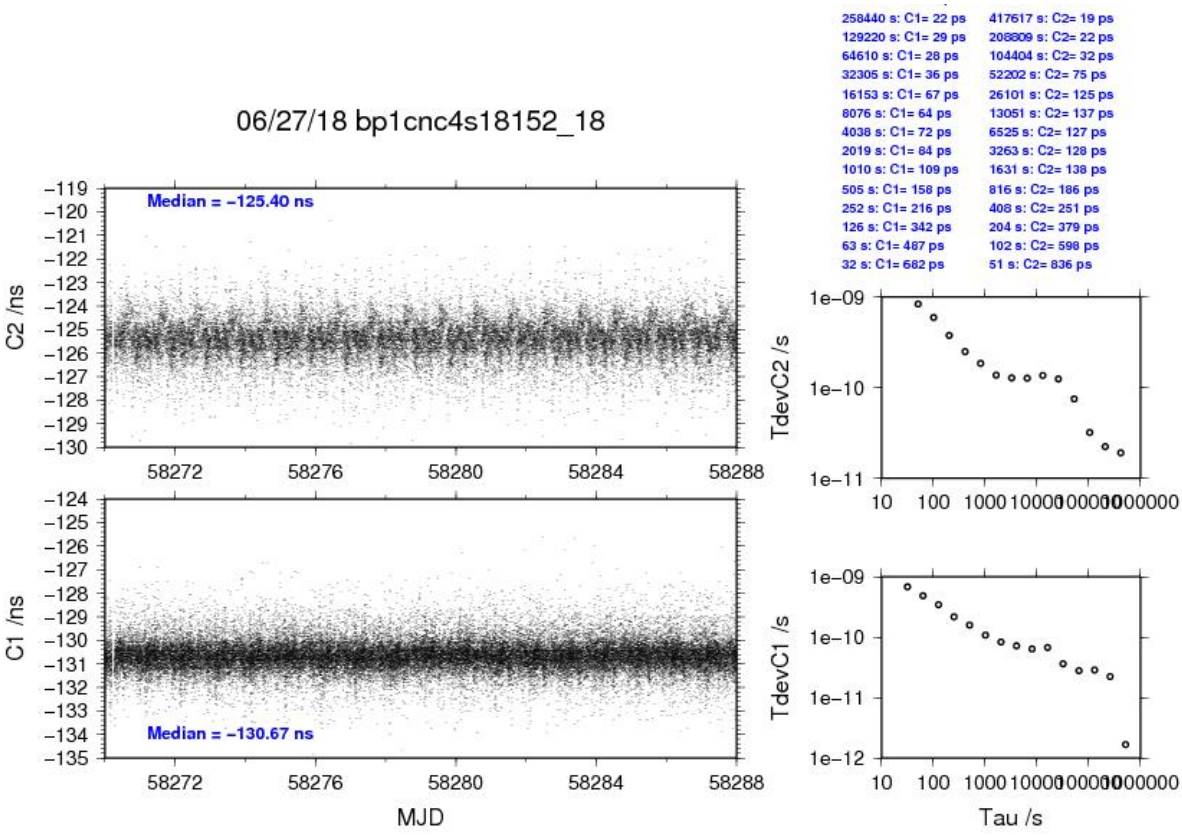
Final baseline L1 (X,Y,Z)/m = -16.868 -12.966 -2.429
Final baseline L2 (X,Y,Z)/m = -16.868 -12.968 -2.431

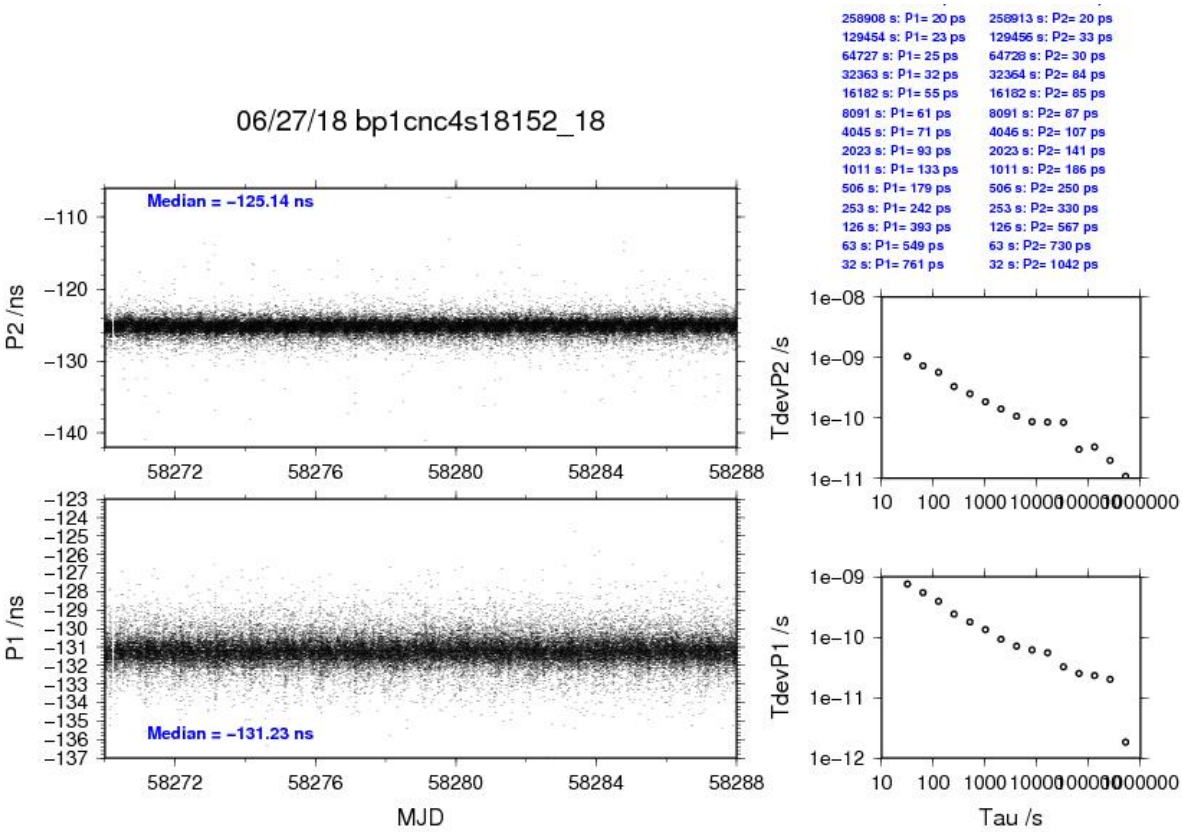
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 496100

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 493677 -130.649 1.456
C2: 305541 -125.412 1.643
P1: 492675 -131.205 1.520
P2: 492664 -125.195 1.616

Number of 300s epochs in out file = 5163
Code #pts, median/ns, ave/ns, rms/ns
C1: 49288 -130.669 -130.650 0.680
C2: 30502 -125.396 -125.411 0.837
P1: 49199 -131.230 -131.207 0.764
P2: 49198 -125.145 -125.194 1.051


06/27/18 bp1cnc4s18152_18
Median = −125.40 ns
Median = −130.67 ns
C2 /ns
C1 /ns
MJD
TdevC2 /s
TdevC1 /s
Tau /s
258440 s: C1= 22 ps
129220 s: C1= 29 ps
64610 s: C1= 28 ps
32305 s: C1= 36 ps
16153 s: C1= 67 ps
8076 s: C1= 64 ps
4038 s: C1= 72 ps
2019 s: C1= 84 ps
1010 s: C1= 109 ps
505 s: C1= 158 ps
252 s: C1= 216 ps
126 s: C1= 342 ps
63 s: C1= 487 ps
32 s: C1= 682 ps
417617 s: C2= 19 ps
208809 s: C2= 22 ps
104404 s: C2= 32 ps
52202 s: C2= 75 ps
26101 s: C2= 125 ps
13051 s: C2= 137 ps
6525 s: C2= 127 ps
3263 s: C2= 128 ps
1631 s: C2= 138 ps
816 s: C2= 186 ps
408 s: C2= 251 ps
204 s: C2= 379 ps
102 s: C2= 598 ps
51 s: C2= 836 ps


06/27/18 bp1cnc4s18152_18
Median = −125.14 ns
Median = −131.23 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s
258908 s: P1= 20 ps
129454 s: P1= 23 ps
64727 s: P1= 25 ps
32363 s: P1= 32 ps
16182 s: P1= 55 ps
8091 s: P1= 61 ps
4045 s: P1= 71 ps
2023 s: P1= 93 ps
1011 s: P1= 133 ps
506 s: P1= 179 ps
253 s: P1= 242 ps
126 s: P1= 393 ps
63 s: P1= 549 ps
32 s: P1= 761 ps
258913 s: P2= 20 ps
129456 s: P2= 33 ps
64728 s: P2= 30 ps
32364 s: P2= 84 ps
16182 s: P2= 85 ps
8091 s: P2= 87 ps
4046 s: P2= 107 ps
2023 s: P2= 141 ps
1011 s: P2= 186 ps
506 s: P2= 250 ps
253 s: P2= 330 ps
126 s: P2= 567 ps
63 s: P2= 730 ps
32 s: P2= 1042 ps

BP0U-NC5G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 292400
Computed code bias (P1/P2)/m = -62.708 -60.975
Computed baseline (X,Y,Z)/m = -14.199 -22.802 5.243
RMS of residuals /m = 0.618

Number of phase differences to fit baseline = 270408
A priori baseline (X,Y,Z)/m = -14.199 -22.802 5.243
48945 clock jitters computed out of 49186 intervals
AVE jitter /ps = -0.3 RMS jitter /ps = 37.6

Iter 1 Large residuals L1= 130
Iter 1 Large residuals L2= 130
Computed baseline L1 (X,Y,Z)/m = -0.057 0.086 0.079
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.045 0.069 0.074
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 130
Iter 2 Large residuals L2= 130
Computed baseline L1 (X,Y,Z)/m = -0.057 0.086 0.079
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.045 0.069 0.074
RMS of residuals L2 /m = 0.003

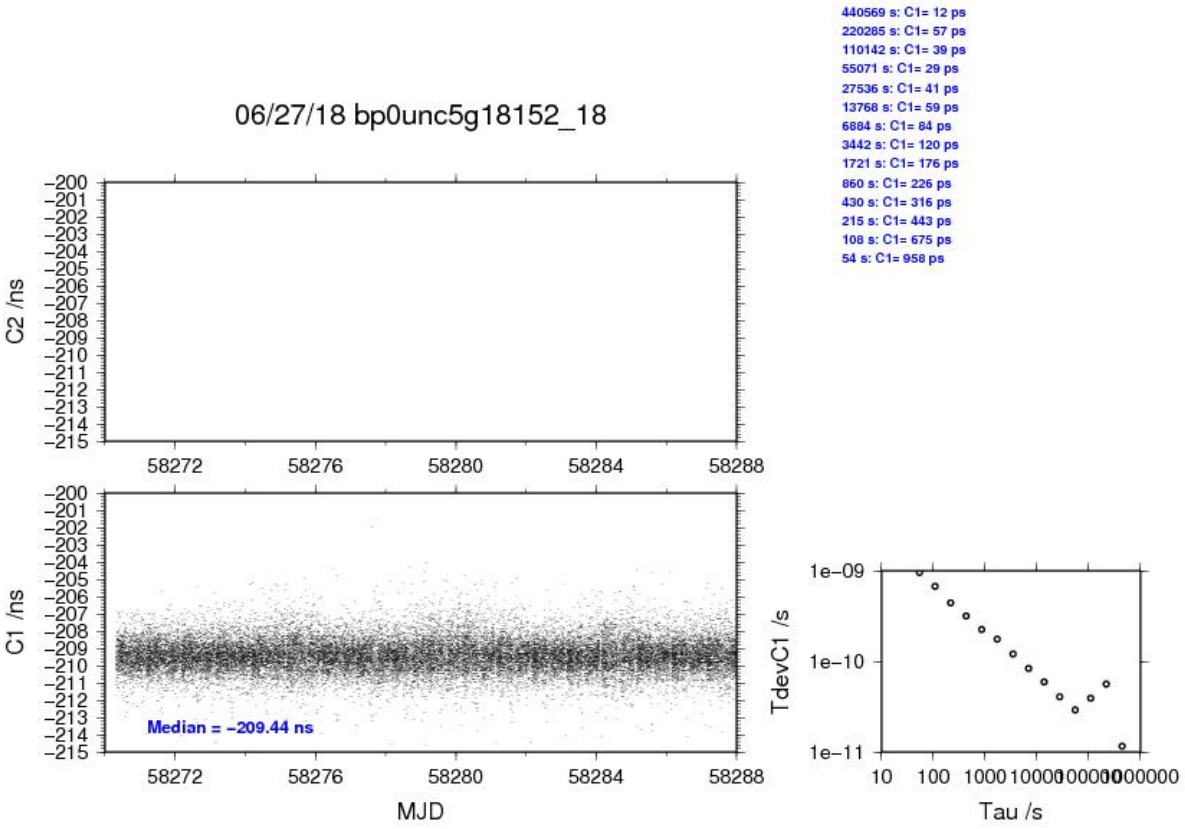
Final baseline L1 (X,Y,Z)/m = -14.257 -22.716 5.322
Final baseline L2 (X,Y,Z)/m = -14.245 -22.733 5.317

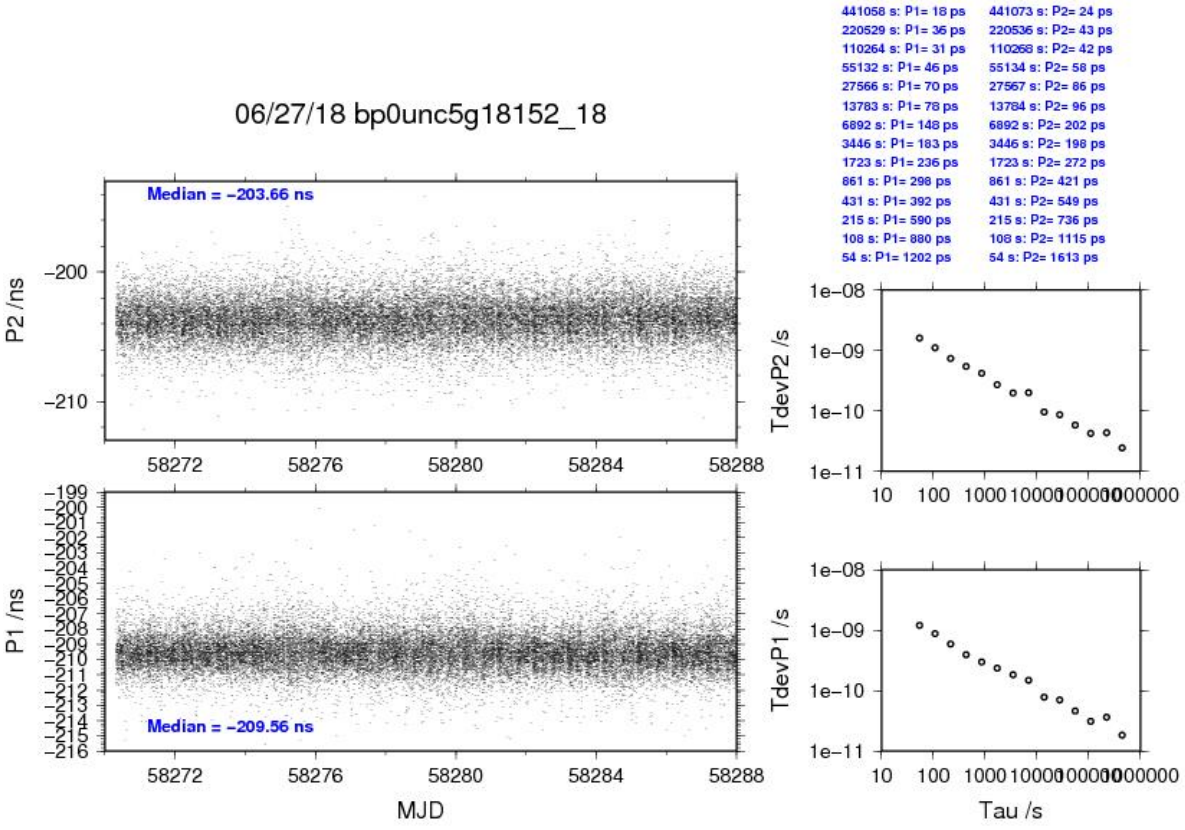
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 298013

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 292738 -209.401 1.469
C2: 0 NaN NaN
P1: 292311 -209.484 1.996
P2: 292310 -203.658 2.422

Number of 300s epochs in out file = 5129
Code #pts, median/ns, ave/ns, rms/ns
C1: 28913 -209.440 -209.408 0.942
C2: 0 0.000 NaN NaN
P1: 28881 -209.557 -209.515 1.214
P2: 28880 -203.664 -203.648 1.585


06/27/18 bp0unc5g18152_18
440569 s: C1= 12 ps
220285 s: C1= 57 ps
110142 s: C1= 39 ps
55071 s: C1= 29 ps
27536 s: C1= 41 ps
13768 s: C1= 59 ps
6884 s: C1= 84 ps
3442 s: C1= 120 ps
1721 s: C1= 176 ps
860 s: C1= 226 ps
430 s: C1= 316 ps
215 s: C1= 443 ps
108 s: C1= 675 ps
54 s: C1= 958 ps
C2 /ns
C1 /ns
Median = −209.44 ns
MJD
TdevC1 /s
Tau /s


06/27/18 bp0unc5g18152_18
441058 s: P1= 18 ps
220529 s: P1= 36 ps
110264 s: P1= 31 ps
55132 s: P1= 46 ps
27566 s: P1= 70 ps
13783 s: P1= 78 ps
6892 s: P1= 148 ps
3446 s: P1= 183 ps
1723 s: P1= 236 ps
861 s: P1= 298 ps
431 s: P1= 392 ps
215 s: P1= 590 ps
108 s: P1= 880 ps
54 s: P1= 1202 ps
441073 s: P2= 24 ps
220536 s: P2= 43 ps
110268 s: P2= 42 ps
55134 s: P2= 58 ps
27567 s: P2= 86 ps
13784 s: P2= 96 ps
6892 s: P2= 202 ps
3446 s: P2= 198 ps
1723 s: P2= 272 ps
861 s: P2= 421 ps
431 s: P2= 549 ps
215 s: P2= 736 ps
108 s: P2= 1115 ps
54 s: P2= 1613 ps
Median = −203.66 ns
P2 /ns
Median = −209.56 ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-NC5G

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 439034
Number of huge residuals = 28. New iteration
Computed code bias (P1/P2)/m = -50.750 -49.080
Computed baseline (X,Y,Z)/m = -13.768 -22.687 5.712
RMS of residuals /m = 0.612

Number of phase differences to fit baseline = 330918
A priori baseline (X,Y,Z)/m = -13.768 -22.687 5.712
41057 clock jitters computed out of 42210 intervals
AVE jitter /ps = 5.2 RMS jitter /ps = 54.4

Iter 1 Large residuals L1= 269
Iter 1 Large residuals L2= 266
Computed baseline L1 (X,Y,Z)/m = 0.003 0.012 -0.093
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.017 -0.001 -0.102
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 269
Iter 2 Large residuals L2= 266
Computed baseline L1 (X,Y,Z)/m = 0.003 0.012 -0.093
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.017 -0.001 -0.103
RMS of residuals L2 /m = 0.004

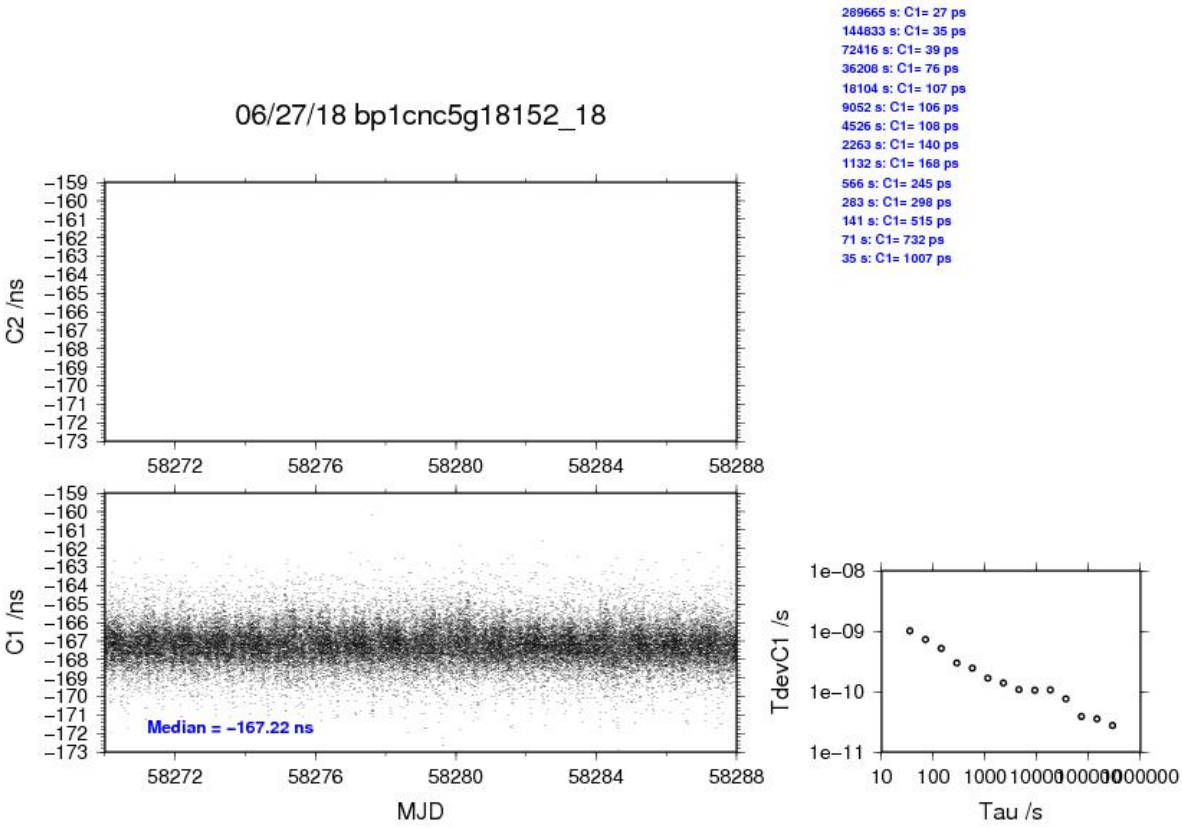
Final baseline L1 (X,Y,Z)/m = -13.765 -22.674 5.619
Final baseline L2 (X,Y,Z)/m = -13.752 -22.688 5.609

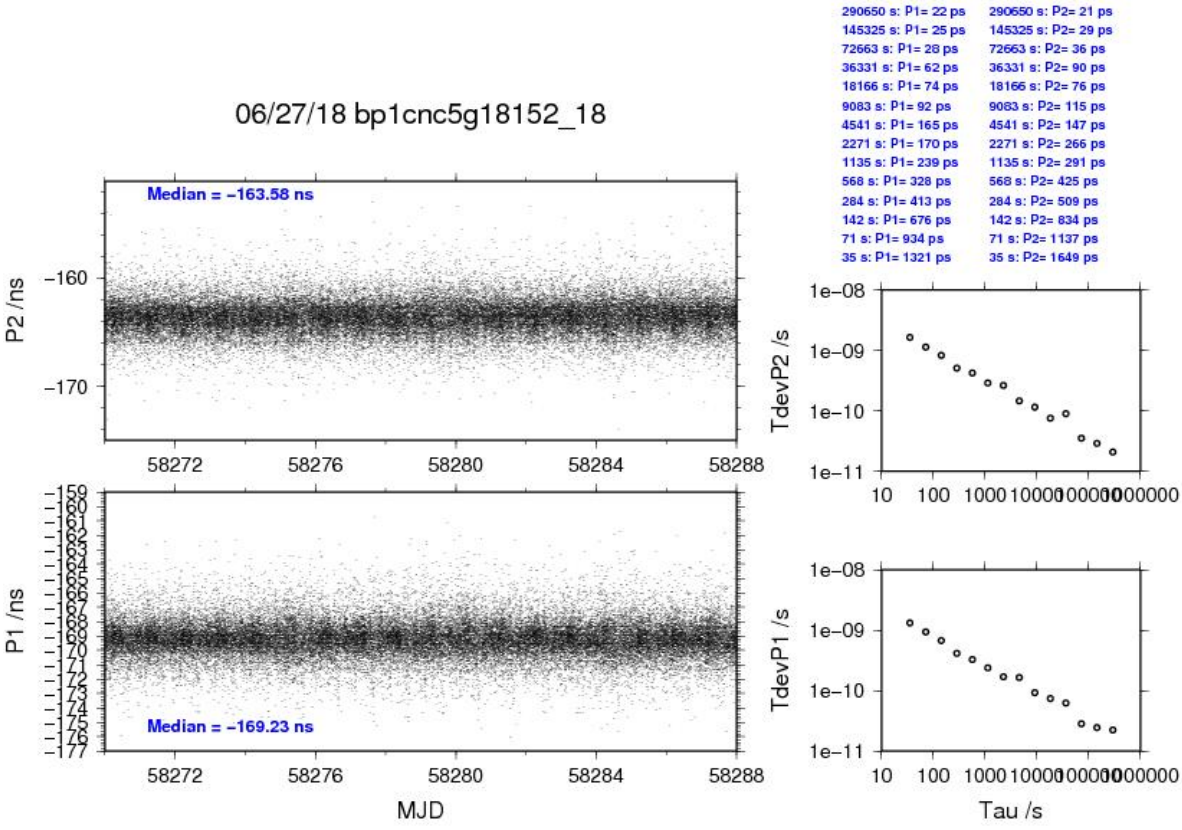
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 440752

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 440613 -167.193 1.565
C2: 0 NaN NaN
P1: 438960 -169.183 2.056
P2: 438957 -163.569 2.478

Number of 300s epochs in out file = 5183
Code #pts, median/ns, ave/ns, rms/ns
C1: 43975 -167.217 -167.203 1.013
C2: 0 0.000 NaN NaN
P1: 43826 -169.233 -169.213 1.319
P2: 43826 -163.577 -163.586 1.633


06/27/18 bp1cnc5g18152_18
289665 s: C1= 27 ps
144833 s: C1= 35 ps
72416 s: C1= 39 ps
36208 s: C1= 76 ps
18104 s: C1= 107 ps
9052 s: C1= 106 ps
4526 s: C1= 108 ps
2263 s: C1= 140 ps
1132 s: C1= 168 ps
566 s: C1= 245 ps
283 s: C1= 298 ps
141 s: C1= 515 ps
71 s: C1= 732 ps
35 s: C1= 1007 ps
C2 /ns
C1 /ns
Median = −167.22 ns
MJD
TdevC1 /s
Tau /s


06/27/18 bp1cnc5g18152_18
290650 s: P1= 22 ps
145325 s: P1= 25 ps
72663 s: P1= 28 ps
36331 s: P1= 62 ps
18166 s: P1= 74 ps
9083 s: P1= 92 ps
4541 s: P1= 165 ps
2271 s: P1= 170 ps
1135 s: P1= 239 ps
568 s: P1= 328 ps
284 s: P1= 413 ps
142 s: P1= 676 ps
71 s: P1= 934 ps
35 s: P1= 1321 ps
290650 s: P2= 21 ps
145325 s: P2= 29 ps
72663 s: P2= 36 ps
36331 s: P2= 90 ps
18166 s: P2= 76 ps
9083 s: P2= 115 ps
4541 s: P2= 147 ps
2271 s: P2= 266 ps
1135 s: P2= 291 ps
568 s: P2= 425 ps
284 s: P2= 509 ps
142 s: P2= 834 ps
71 s: P2= 1137 ps
35 s: P2= 1649 ps
Median = −163.58 ns
P2 /ns
TdevP2 /s
Median = −169.23 ns
P1 /ns
MJD
TdevP1 /s
Tau /s

1.4/ NIM (18227)

Period

MJD 58345 to 58356

Delays

BP0U:

REFDLY = 132.1+52.6 = 184.7 ns	(cf page 3 & page 56)
CABDLY = 181.70 ns	(C134)

BP1C:

X_O = 193.7 ns	(cf page 56)
X_P = 132.1+52.6 = 184.7 ns	(cf page 3 & page 56)
REFDLY = 378.4 ns	
CABDLY = 235.70 ns	(C131)

IMEU (IM03):

REFDLY = 120.1 ns	(cf page 56)
CABDLY = 250.3 ns	(cf page 57)

BJNM (IM05):

X_O = 208.3 ns	(cf page 56)
X_P = 123.3 ns	(cf page 56)
REFDLY = 331.63 ns	
CABDLY = 125.0 ns	(cf page 57)

IMEJ (IM06):

REFDLY = 121.7 ns	(cf page 56)
CABDLY = 248.7 ns	(cf page 57)
INT DLY : GPS P1 = -31.3 ns, GPS P2 = -17.9 ns	(cf page 58)

IM21:

REFDLY = 131.5 ns	(cf page 56)
CABDLY = 215.0 ns	(cf page 57)

IMEL (IM12):

REFDLY = 147.1 ns	(cf page 56)
CABDLY = 201.4 ns	(cf page 57)
INT DLY : GPS P1 = -33.53 ns, GPS P2 = -17.9 ns	(cf page 59)

IM20:

REFDLY = 147.1 ns (cf page 56)
CABDLY = 205.1 ns (cf page 57)

TF10:

REFDLY = 153.0 ns (cf page 56)
CABDLY = 215.0 ns (cf page 57)

TF11:

REFDLY = 130.5 ns (cf page 56)
CABDLY = 215.0 ns (cf page 57)

Setup at the NIM

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	NIM
Date and hour of the beginning of measurements:	MJD 58345
Date and hour of the end of measurements:	MJD 58356

Information on the system

	Local:	**Travelling:**
4-character BIPM code	(1)IM03 (2)IM05 (3)IM06 (4)IM21 (5)IM12 (6)IM20 (7)TF10 (8)TF11	(1)BP0U (2)BP1C
Receiver maker and type: Receiver serial number:	(1)NIM ,NIM-TF-GNSS-2J; SN:20071107003213/001 (2)Septentrio ,PolaRx3eTR; SN:2001087 (3)Dicom ,GTR50 SN:1007011 (4)NIM ,NIM-TF-GNSS-3; SN:2016006 (5)Dicom ,GTR51 SN:1506132	(1)Dicom ,GTR50; SN:0801068 (2)Septentrio ,PolaRx3eTR; SN:2000785

	(6)NIM ,NIM-TF-GNSS-2J; SN:2016005 (7)NIM ,NIM-TF-GNSS-3; SN:2016010 (8)NIM ,NIM-TF-GNSS-3; SN:2016011	
1 PPS trigger level /V:	1	1
Antenna cable maker and type: Phase stabilised cable (Y/N):	(1)JiangXi Linktrend Cable Tech Co., Ltd., 5DFB (2) unknown (3) unknown (4)JiangXi Linktrend Cable Tech Co., Ltd., 5DFB (5) unknown (6) Samtec Inc., RG58 (7)JiangXi Linktrend Cable Tech Co., Ltd., 5DFB (8)JiangXi Linktrend Cable Tech Co., Ltd., 5DFB	
Length outside the building /m:	(1) 10m (2) 10m (3) 10m (4) 10m (5) 10m (6) 10m (7) 10m (8) 10m	(1) 7m (2) 7m
Antenna maker and type: Antenna serial number:	(1)Javad ,JNSMARANT_GGD; SN:0155	(1)NovAtel ,NOV702; SN:NAE07460010

	(2)NovAtel ,NOV702GG; SN: NAE09190046 (3)NovAtel ,NOV702; SN: NAE10220060 (4)Harxon, HXCCSX601A; SN: 2016050147 (5)NovAtel ,NOV703; SN: NEG15210020 (6)NovAtel ,NOV702GG; SN: NAE16270022 (7)Harxon, HXCCSX601A; SN: 2016050146 (8)Harxon, HXCCSX601A; SN: 2016050150	(2)Ashtech ,ASH701945E_M; SN: cr6200323008
Temperature (if stabilised) /°C	23±0.5	

Measured delays /ns		
	Local:	**Travelling:**
Delay from local UTC to receiver 1 PPS-in:	(1)120.1 (2)123.3 (3)121.7 (4)131.5 (5)147.1 (6)147.1 (7)153.0 (8)130.5	132.1
Delay from 1 PPS-in to internal	(2)208.3	(2)193.7(before calibration)

Reference (if different):		/193.7(after calibration)
Antenna cable delay:	(1)250.3 (2)125.0 (3)248.7 (4)215.0 (5)201.4 (6)205.1 (7)215.0 (8)215.0	
Splitter delay (if any):		
Additional cable delay (if any):		

Data used for the generation of CGGTTS files (IM03)	
INT DLY (GPS) /ns:	-44.4
INT DLY (GLONASS) /ns:	0.0
CAB DLY /ns:	250.3
REF DLY /ns:	120.7
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154288.619
Longitude or Y /m:	+4373441.259
Height or Z /m:	+4098883.749

Data used for the generation of CGGTTS files (IM05)	
INT DLY (GPS) /ns:	74.0 (P1), 81.7 (P2)
INT DLY (GLONASS) /ns:	
CAB DLY /ns:	125.0
REF DLY /ns:	325.9

Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154287.41
Longitude or Y /m:	+4373440.05
Height or Z /m:	+4098885.63

Data used for the generation of CGGTTS files (IM06)

INT DLY (GPS) /ns:	-31.3(P1), -17.9 (P2)
INT DLY (GLONASS) /ns:	
CAB DLY /ns:	248.7
REF DLY /ns:	122.2
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154288.06
Longitude or Y /m:	+4373440.56
Height or Z /m:	+4098884.94

Data used for the generation of CGGTTS files (IM21)

INT DLY (GPS) /ns:	-16.1 (P1), -16.1 (P2)
INT DLY (GLONASS) /ns:	0.0
CAB DLY /ns:	215.0
REF DLY /ns:	132.0
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154288.05
Longitude or Y /m:	+4373443.59
Height or Z /m:	+4098885.13

Data used for the generation of CGGTTS files (IM12)

INT DLY (GPS) /ns:	-33.5 (P1)，-35.2 (P2)
INT DLY (GLONASS) /ns:	
CAB DLY /ns:	201.4
REF DLY /ns:	148.5
Coordinates reference frame:	ITRF
Latitude or X /m:	-2154283.45
Longitude or Y /m:	+4373442.66
Height or Z /m:	+4098885.13

Data used for the generation of CGGTTS files (IM20)	
INT DLY (GPS) /ns:	0.0 (P1), 0.0 (P2)
INT DLY (GLONASS) /ns:	0.0
CAB DLY /ns:	205.1
REF DLY /ns:	146.9
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154283.45
Longitude or Y /m:	+4373442.66
Height or Z /m:	+4098885.13

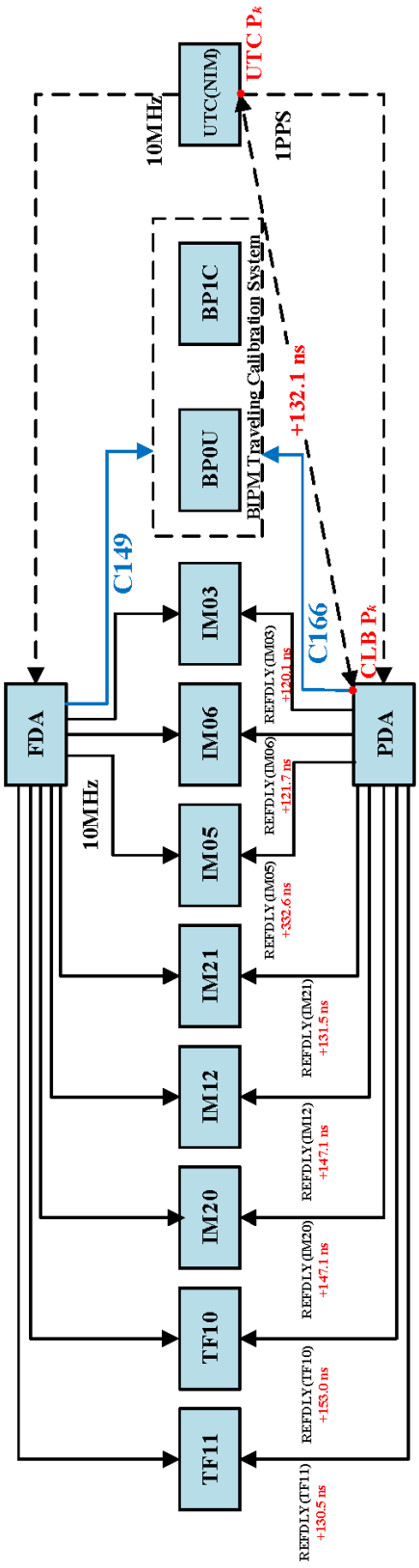
Data used for the generation of CGGTTS files (TF10)	
INT DLY (GPS) /ns:	0.0 (P1), 0.0 (P2)
INT DLY (GLONASS) /ns:	0.0
CAB DLY /ns:	215.0
REF DLY /ns:	153.0
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154286.87

Longitude or Y /m:	+4373440.58
Height or Z /m:	+4098885.55
Data used for the generation of CGGTTS files (TF11)	
INT DLY (GPS) /ns:	-10.6 (P1), -10.6 (P2)
INT DLY (GLONASS) /ns:	0.0
CAB DLY /ns:	215.0
REF DLY /ns:	130.8
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154288.06
Longitude or Y /m:	+4373440.56
Height or Z /m:	+4098884.94
Data used for the generation of CGGTTS files (BP0U)	
INT DLY (GPS) /ns:	0.0
INT DLY (GLONASS) /ns:	
CAB DLY /ns:	0.0
REF DLY /ns:	0.0
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154285.59
Longitude or Y /m:	+4373441.39
Height or Z /m:	+4098885.38
Data used for the generation of CGGTTS files (BP1C)	
INT DLY (GPS) /ns:	0.0
INT DLY (GLONASS) /ns:	

CAB DLY /ns:	0.0
REF DLY /ns:	0.0
Coordinates reference frame:	ITRF Dx = 0.0 m, Dy = 0.0 m, Dz = 0.0 m, ds = 0.0, Rx = 0.0, Ry = 0.0, Rz = 0.000000
Latitude or X /m:	-2154285.12
Longitude or Y /m:	+4373441.55
Height or Z /m:	+4098885.27
General information	
Rise time of the local UTC pulse	4.5ns
Is the laboratory air conditioned	Yes
Set temperature value and uncertainty:	23°C ± 0.5°C
Set humidity value and uncertainty:	45% ± 5%

(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



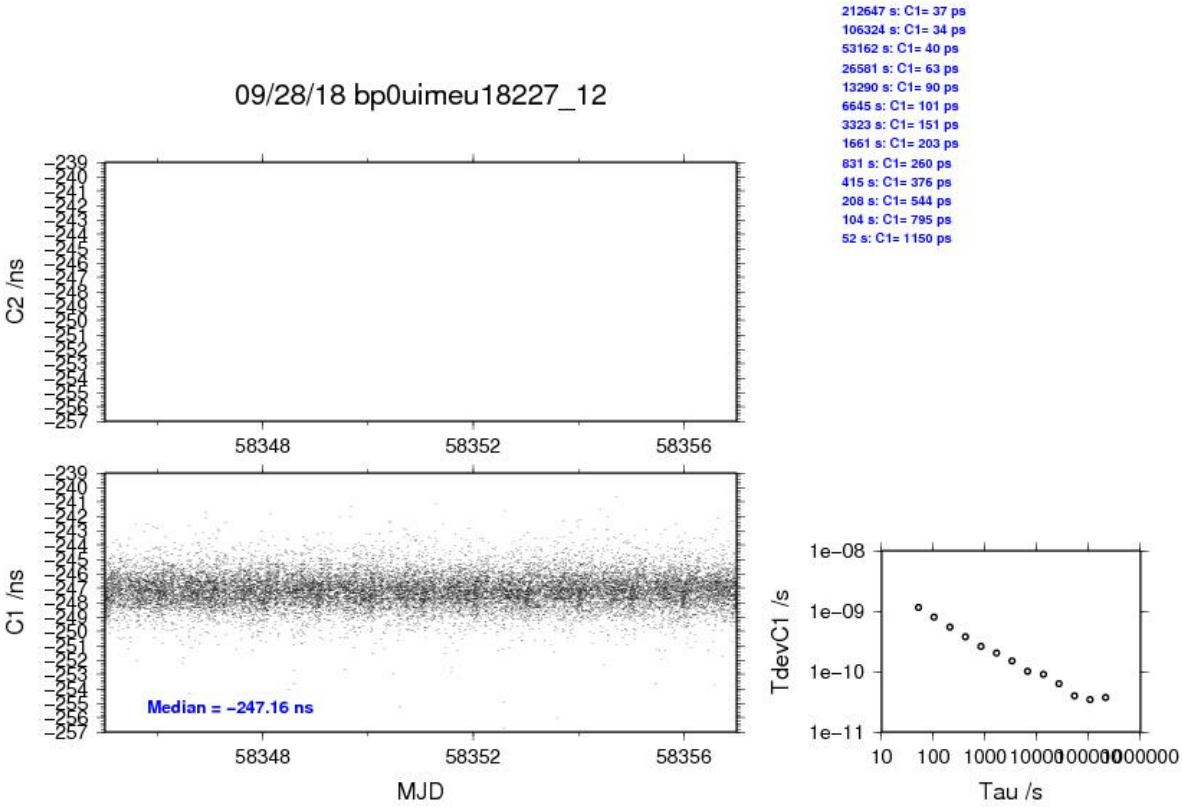
BP0U-IMEU

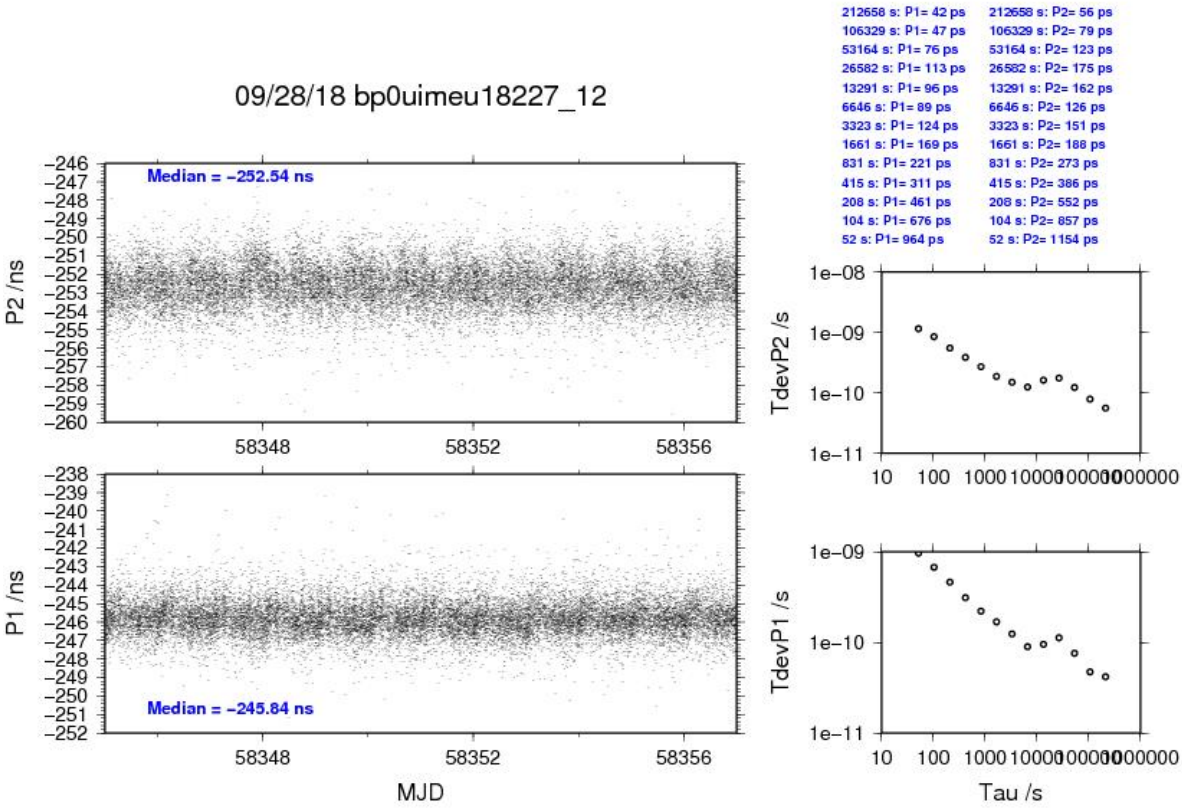
COMPUTATION OF BASELINE

```
Number of codes to fit baseline and biases = 201472
Computed code bias (P1/P2)/m =    -73.667   -75.726
Computed baseline (X,Y,Z)/m =     -5.048    -1.107    -1.678
RMS of residuals /m =      0.549

Number of phase differences to fit baseline = 189040
A priori baseline (X,Y,Z)/m =     -5.048    -1.107    -1.678
34014 clock jitters computed out of  34093 intervals
AVE jitter /ps =   -0.1 RMS jitter /ps =   34.3

Iter  1 Large residuals L1=   46
Iter  1 Large residuals L2=   46
Computed baseline L1 (X,Y,Z)/m =     -0.024     0.028    -0.009
RMS of residuals L1 /m =      0.003
Computed baseline L2 (X,Y,Z)/m =     -0.012     0.002    -0.029
RMS of residuals L2 /m =      0.002

Iter  2 Large residuals L1=   46
Iter  2 Large residuals L2=   46
Computed baseline L1 (X,Y,Z)/m =     -0.024     0.028    -0.009
RMS of residuals L1 /m =      0.003
Computed baseline L2 (X,Y,Z)/m =     -0.012     0.002    -0.029
RMS of residuals L2 /m =      0.002

Final baseline L1 (X,Y,Z)/m =     -5.072    -1.079    -1.687
Final baseline L2 (X,Y,Z)/m =     -5.060    -1.105    -1.707
```

COMPUTATION OF CODE DIFFERENCES

```
Number of code differences = 201483

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 201428  -247.104     2.352
C2:      0       NaN       NaN
P1: 201417  -245.778     1.798
P2: 201416  -252.563     2.029

Number of  300s epochs in out file =  3456
Code #pts, median/ns, ave/ns, rms/ns
C1:  19966  -247.161  -247.140     1.125
C2:      0     0.000       NaN       NaN
P1:  19965  -245.840  -245.801     0.956
P2:  19965  -252.544  -252.559     1.179
```


09/28/18 bp0uimeu18227_12
212647 s: C1= 37 ps
106324 s: C1= 34 ps
53162 s: C1= 40 ps
26581 s: C1= 63 ps
13290 s: C1= 90 ps
6645 s: C1= 101 ps
3323 s: C1= 151 ps
1661 s: C1= 203 ps
831 s: C1= 260 ps
415 s: C1= 376 ps
208 s: C1= 544 ps
104 s: C1= 795 ps
52 s: C1= 1150 ps
C2 /ns
C1 /ns
Median = −247.16 ns
58348
58352
58356
MJD
TdevC1 /s
Tau /s


09/28/18 bp0uimeu18227_12
212658 s: P1= 42 ps
106329 s: P1= 47 ps
53164 s: P1= 76 ps
26582 s: P1= 113 ps
13291 s: P1= 96 ps
6646 s: P1= 89 ps
3323 s: P1= 124 ps
1661 s: P1= 169 ps
831 s: P1= 221 ps
415 s: P1= 311 ps
208 s: P1= 461 ps
104 s: P1= 676 ps
52 s: P1= 964 ps
212658 s: P2= 56 ps
106329 s: P2= 79 ps
53164 s: P2= 123 ps
26582 s: P2= 175 ps
13291 s: P2= 162 ps
6646 s: P2= 126 ps
3323 s: P2= 151 ps
1661 s: P2= 188 ps
831 s: P2= 273 ps
415 s: P2= 386 ps
208 s: P2= 552 ps
104 s: P2= 857 ps
52 s: P2= 1154 ps
P2 /ns
P1 /ns
Median = −252.54 ns
Median = −245.84 ns
58348
58352
58356
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-IMEU

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 257160
Number of huge residuals = 70. New iteration
Computed code bias (P1/P2)/m = -60.180 -62.299
Computed baseline (X,Y,Z)/m = -5.405 -1.770 -0.971
RMS of residuals /m = 0.513

Number of phase differences to fit baseline = 261244
A priori baseline (X,Y,Z)/m = -5.405 -1.770 -0.971
34543 clock jitters computed out of 34543 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.045 -0.073 -0.124
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = 0.050 -0.090 -0.136
RMS of residuals L2 /m = 0.003

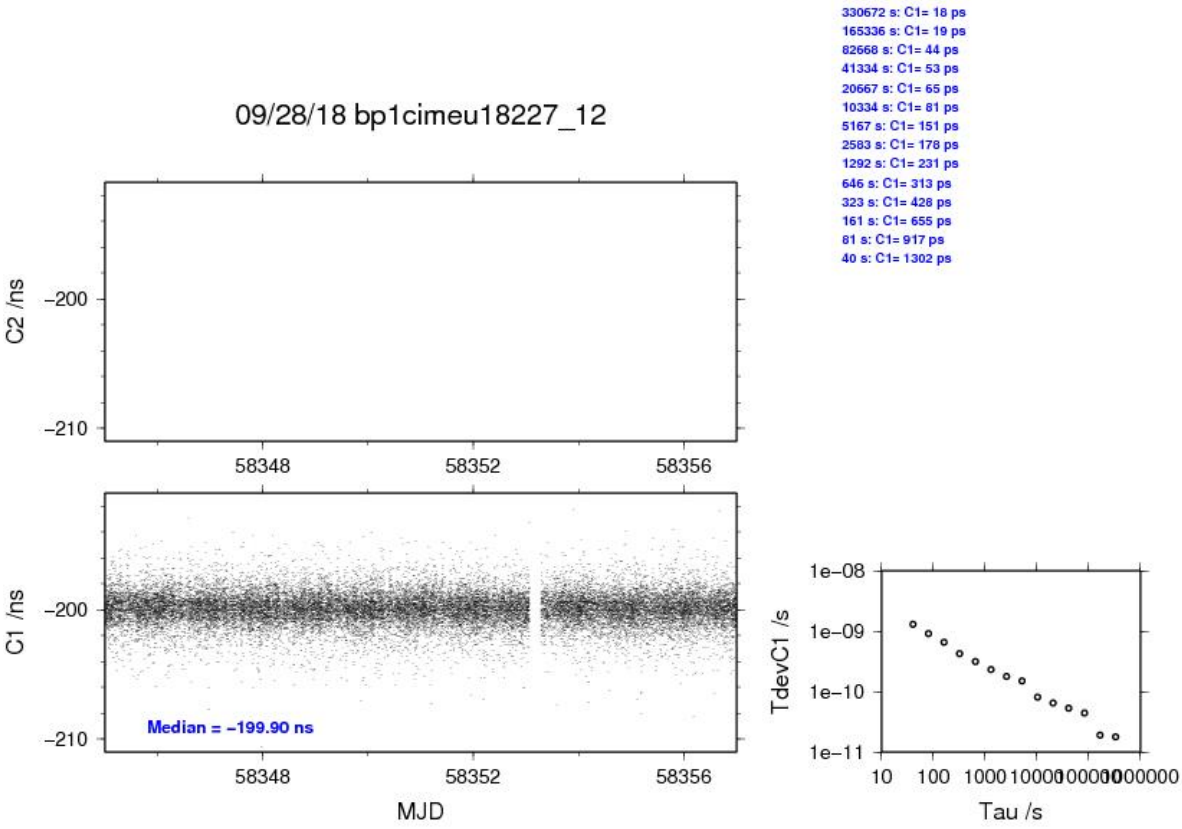
Final baseline L1 (X,Y,Z)/m = -5.360 -1.844 -1.096
Final baseline L2 (X,Y,Z)/m = -5.355 -1.861 -1.107

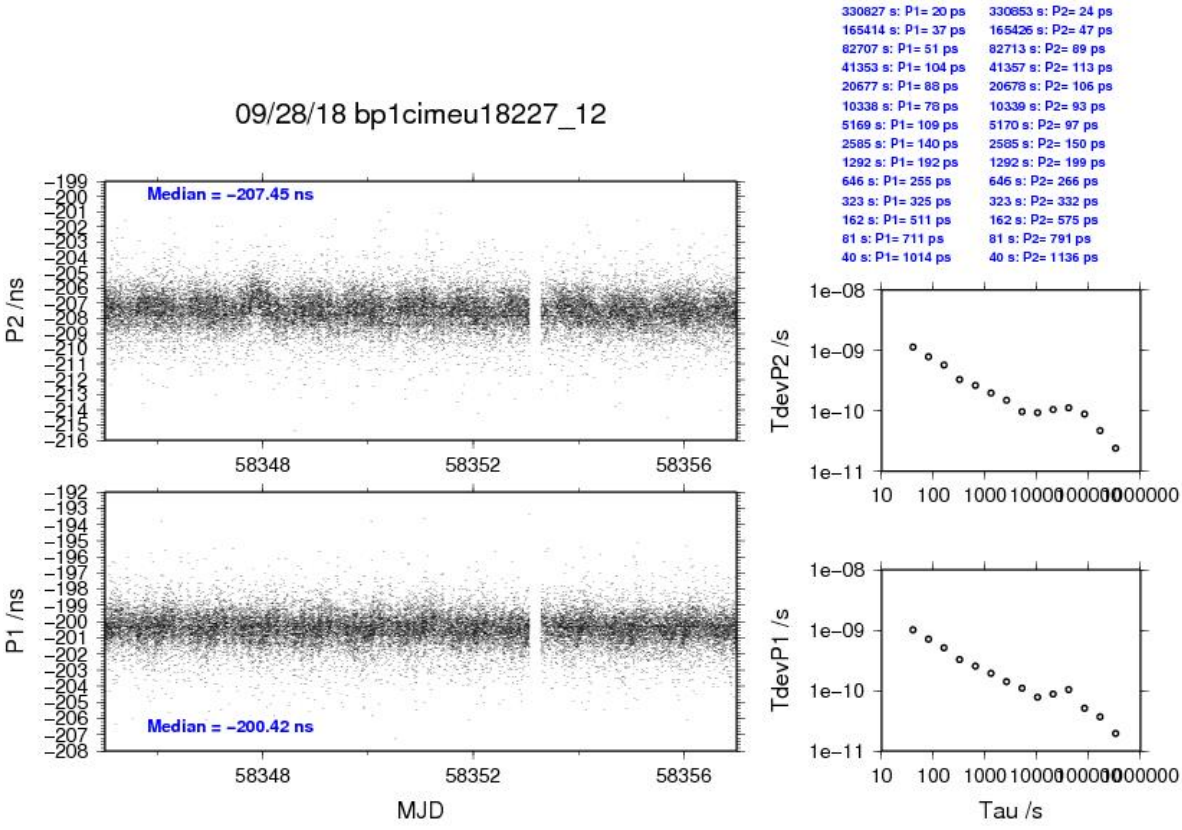
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 262466

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 257166 -199.895 2.658
C2: 0 NaN NaN
P1: 257051 -200.428 1.772
P2: 257048 -207.452 1.841

Number of 300s epochs in out file = 3456
Code #pts, median/ns, ave/ns, rms/ns
C1: 25679 -199.901 -199.939 1.297
C2: 0 0.000 NaN NaN
P1: 25667 -200.419 -200.448 1.017
P2: 25665 -207.450 -207.465 1.126


09/28/18 bp1cimeu18227_12
330672 s: C1= 18 ps
165336 s: C1= 19 ps
82668 s: C1= 44 ps
41334 s: C1= 53 ps
20667 s: C1= 65 ps
10334 s: C1= 81 ps
5167 s: C1= 151 ps
2583 s: C1= 178 ps
1292 s: C1= 231 ps
646 s: C1= 313 ps
323 s: C1= 428 ps
161 s: C1= 655 ps
81 s: C1= 917 ps
40 s: C1= 1302 ps
C2 /ns
C1 /ns
Median = −199.90 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp1cimeu18227_12
330827 s: P1= 20 ps
165414 s: P1= 37 ps
82707 s: P1= 51 ps
41353 s: P1= 104 ps
20677 s: P1= 88 ps
10338 s: P1= 78 ps
5169 s: P1= 109 ps
2585 s: P1= 140 ps
1292 s: P1= 192 ps
646 s: P1= 255 ps
323 s: P1= 325 ps
162 s: P1= 511 ps
81 s: P1= 711 ps
40 s: P1= 1014 ps
330853 s: P2= 24 ps
165426 s: P2= 47 ps
82713 s: P2= 89 ps
41357 s: P2= 113 ps
20678 s: P2= 106 ps
10339 s: P2= 93 ps
5170 s: P2= 97 ps
2585 s: P2= 150 ps
1292 s: P2= 199 ps
646 s: P2= 266 ps
323 s: P2= 332 ps
162 s: P2= 575 ps
81 s: P2= 791 ps
40 s: P2= 1136 ps
Median = −207.45 ns
Median = −200.42 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-BJNM

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 200415
Computed code bias (P1/P2)/m = -2.449 -2.880
Computed baseline (X,Y,Z)/m = -4.014 -2.345 0.179
RMS of residuals /m = 0.527

Number of phase differences to fit baseline = 187322
A priori baseline (X,Y,Z)/m = -4.014 -2.345 0.179
33930 clock jitters computed out of 34026 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 34.1

Iter 1 Large residuals L1= 37
Iter 1 Large residuals L2= 37
Computed baseline L1 (X,Y,Z)/m = -0.019 0.002 -0.004
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.003 -0.019 -0.019
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 37
Iter 2 Large residuals L2= 37
Computed baseline L1 (X,Y,Z)/m = -0.019 0.002 -0.004
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.003 -0.019 -0.019
RMS of residuals L2 /m = 0.003

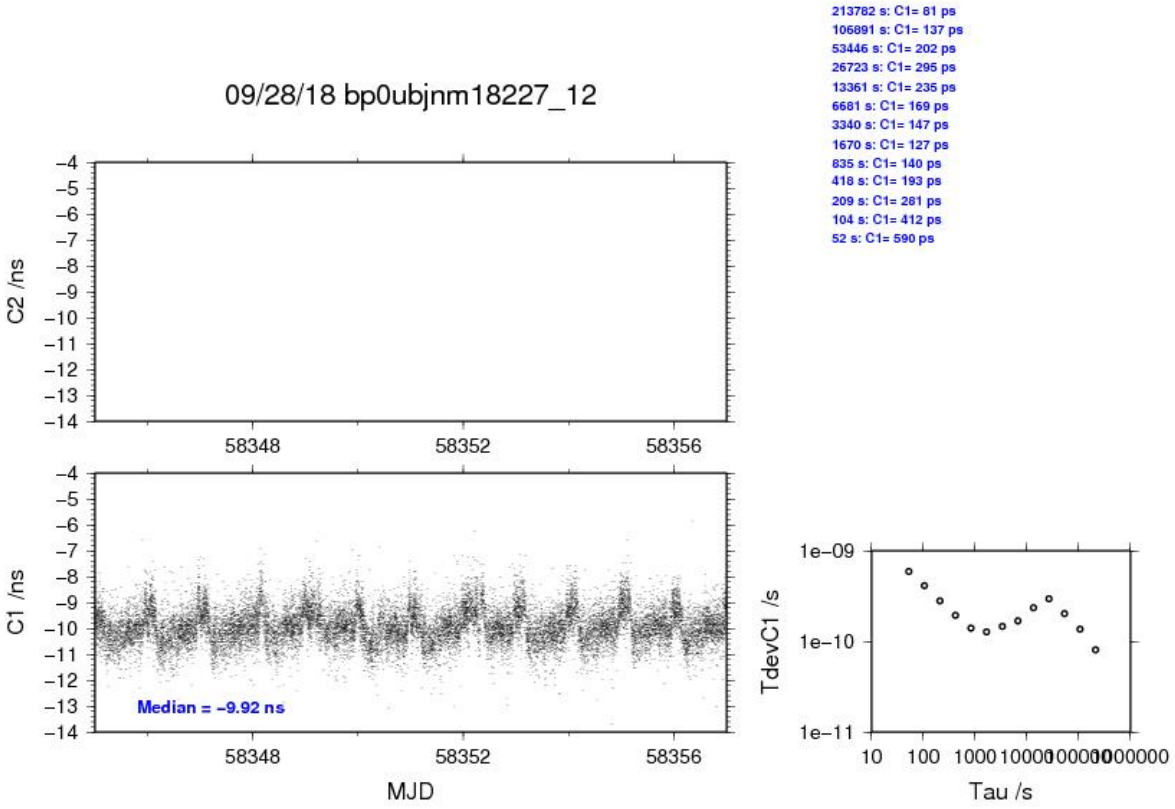
Final baseline L1 (X,Y,Z)/m = -4.033 -2.344 0.176
Final baseline L2 (X,Y,Z)/m = -4.017 -2.364 0.161

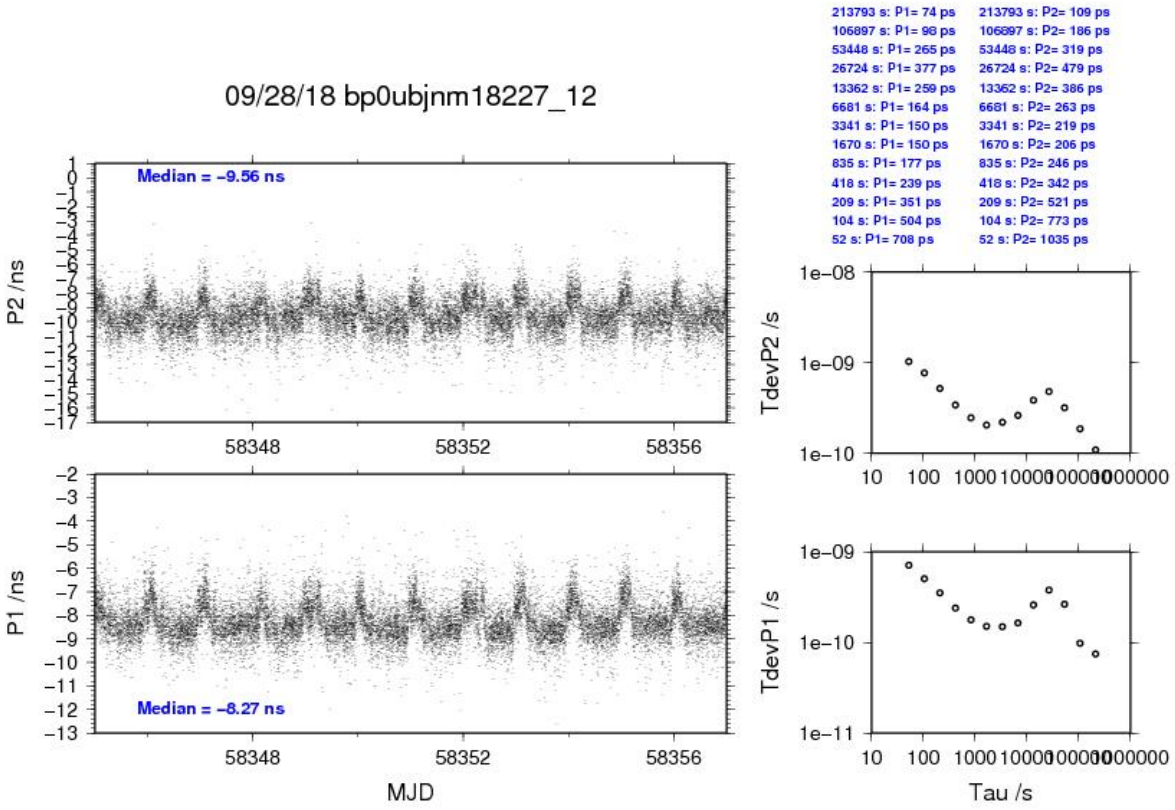
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 200450

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 200395 -9.877 1.231
C2: 0 NaN NaN
P1: 200360 -8.181 1.546
P2: 200360 -9.547 2.070

Number of 300s epochs in out file = 3456
Code #pts, median/ns, ave/ns, rms/ns
C1: 19860 -9.917 -9.885 0.701
C2: 0 0.000 NaN NaN
P1: 19859 -8.273 -8.198 0.841
P2: 19859 -9.560 -9.536 1.218


09/28/18 bp0ubjnm18227_12
213782 s: C1= 81 ps
106891 s: C1= 137 ps
53446 s: C1= 202 ps
26723 s: C1= 295 ps
13361 s: C1= 235 ps
6681 s: C1= 169 ps
3340 s: C1= 147 ps
1670 s: C1= 127 ps
835 s: C1= 140 ps
418 s: C1= 193 ps
209 s: C1= 281 ps
104 s: C1= 412 ps
52 s: C1= 590 ps
C2 /ns
C1 /ns
Median = −9.92 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp0ubjnm18227_12
213793 s: P1= 74 ps
106897 s: P1= 98 ps
53448 s: P1= 265 ps
26724 s: P1= 377 ps
13362 s: P1= 259 ps
6681 s: P1= 164 ps
3341 s: P1= 150 ps
1670 s: P1= 150 ps
835 s: P1= 177 ps
418 s: P1= 239 ps
209 s: P1= 351 ps
104 s: P1= 504 ps
52 s: P1= 708 ps
213793 s: P2= 109 ps
106897 s: P2= 186 ps
53448 s: P2= 319 ps
26724 s: P2= 479 ps
13362 s: P2= 386 ps
6681 s: P2= 263 ps
3341 s: P2= 219 ps
1670 s: P2= 206 ps
835 s: P2= 246 ps
418 s: P2= 342 ps
209 s: P2= 521 ps
104 s: P2= 773 ps
52 s: P2= 1035 ps
Median = −9.56 ns
Median = −8.27 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BJNM

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 309231
Computed code bias (P1/P2)/m = 11.065 10.556
Computed baseline (X,Y,Z)/m = -4.346 -3.058 0.897
RMS of residuals /m = 0.513

Number of phase differences to fit baseline = 311790
A priori baseline (X,Y,Z)/m = -4.346 -3.058 0.897
34456 clock jitters computed out of 34457 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 5.1

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 3
Computed baseline L1 (X,Y,Z)/m = 0.031 -0.060 -0.137
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.042 -0.077 -0.148
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 3
Computed baseline L1 (X,Y,Z)/m = 0.031 -0.060 -0.137
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.042 -0.077 -0.148
RMS of residuals L2 /m = 0.005

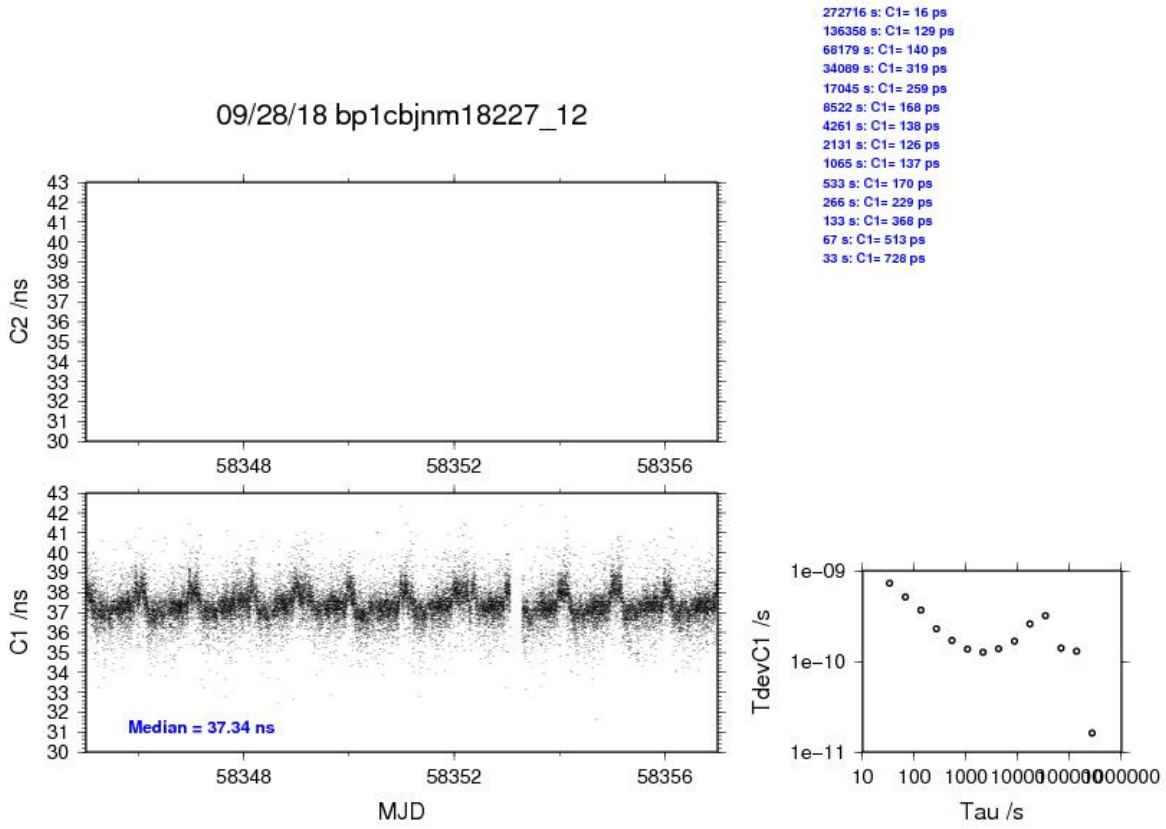
Final baseline L1 (X,Y,Z)/m = -4.315 -3.118 0.760
Final baseline L2 (X,Y,Z)/m = -4.304 -3.135 0.749

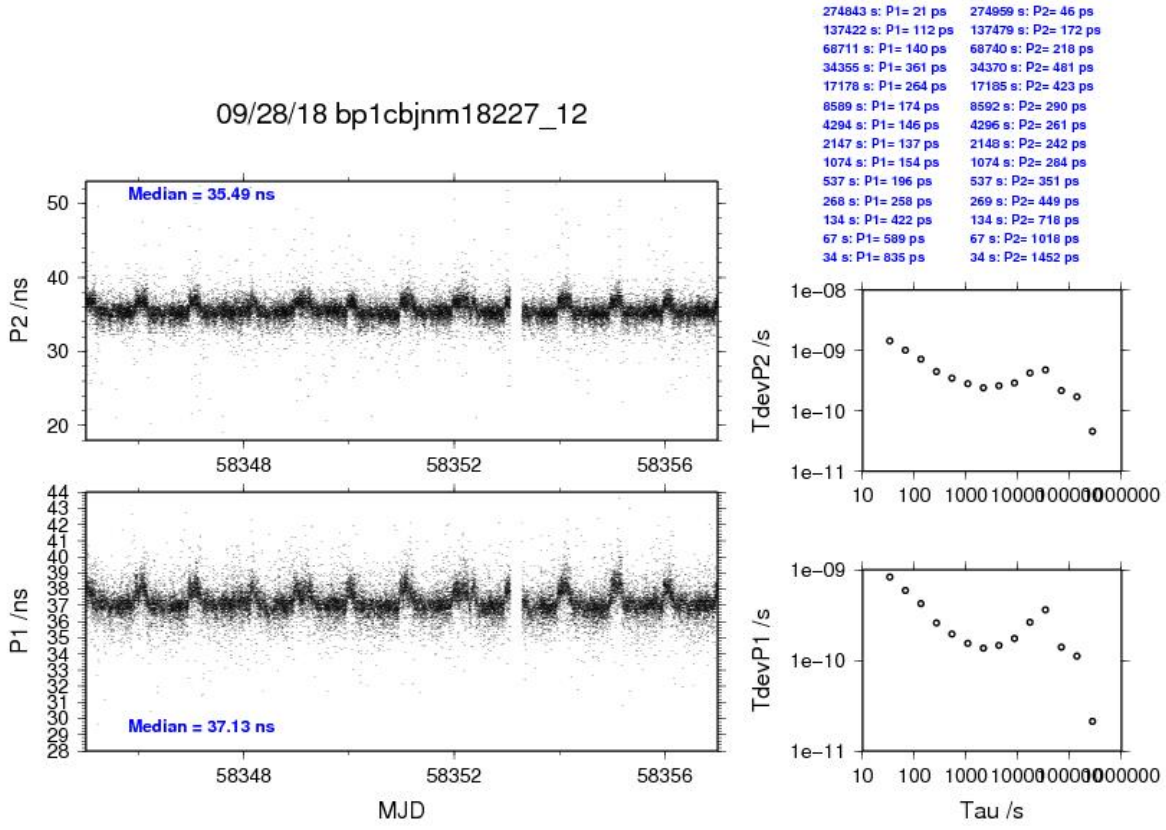
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 317768

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 311499 37.383 1.497
C2: 0 NaN NaN
P1: 309056 37.195 1.578
P2: 308947 35.536 2.106

Number of 300s epochs in out file = 3456
Code #pts, median/ns, ave/ns, rms/ns
C1: 31136 37.345 37.378 0.820
C2: 0 0.000 NaN NaN
P1: 30895 37.134 37.191 0.922
P2: 30882 35.492 35.537 1.562


09/28/18 bp1cbjnm18227_12
272716 s: C1= 16 ps
136358 s: C1= 129 ps
68179 s: C1= 140 ps
34089 s: C1= 319 ps
17045 s: C1= 259 ps
8522 s: C1= 168 ps
4261 s: C1= 138 ps
2131 s: C1= 126 ps
1065 s: C1= 137 ps
533 s: C1= 170 ps
266 s: C1= 229 ps
133 s: C1= 368 ps
67 s: C1= 513 ps
33 s: C1= 728 ps
C2 /ns
C1 /ns
Median = 37.34 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp1cbjnm18227_12
274843 s: P1= 21 ps
137422 s: P1= 112 ps
68711 s: P1= 140 ps
34355 s: P1= 361 ps
17178 s: P1= 264 ps
8589 s: P1= 174 ps
4294 s: P1= 146 ps
2147 s: P1= 137 ps
1074 s: P1= 154 ps
537 s: P1= 196 ps
268 s: P1= 258 ps
134 s: P1= 422 ps
67 s: P1= 589 ps
34 s: P1= 835 ps
274959 s: P2= 46 ps
137479 s: P2= 172 ps
68740 s: P2= 218 ps
34370 s: P2= 481 ps
17185 s: P2= 423 ps
8592 s: P2= 290 ps
4296 s: P2= 261 ps
2148 s: P2= 242 ps
1074 s: P2= 284 ps
537 s: P2= 351 ps
269 s: P2= 449 ps
134 s: P2= 718 ps
67 s: P2= 1018 ps
34 s: P2= 1452 ps
Median = 35.49 ns
P2 /ns
Median = 37.13 ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-IMEJ

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 202061
Number of huge residuals = 14. New iteration
Computed code bias (P1/P2)/m = -41.952 -40.197
Computed baseline (X,Y,Z)/m = -4.397 -1.971 -0.701
RMS of residuals /m = 0.514

Number of phase differences to fit baseline = 187825
A priori baseline (X,Y,Z)/m = -4.397 -1.971 -0.701
33930 clock jitters computed out of 34065 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 37.9

Iter 1 Large residuals L1= 8
Iter 1 Large residuals L2= 8
Computed baseline L1 (X,Y,Z)/m = -0.068 0.110 0.109
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.053 0.092 0.094
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 8
Iter 2 Large residuals L2= 8
Computed baseline L1 (X,Y,Z)/m = -0.068 0.110 0.109
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.053 0.092 0.094
RMS of residuals L2 /m = 0.003

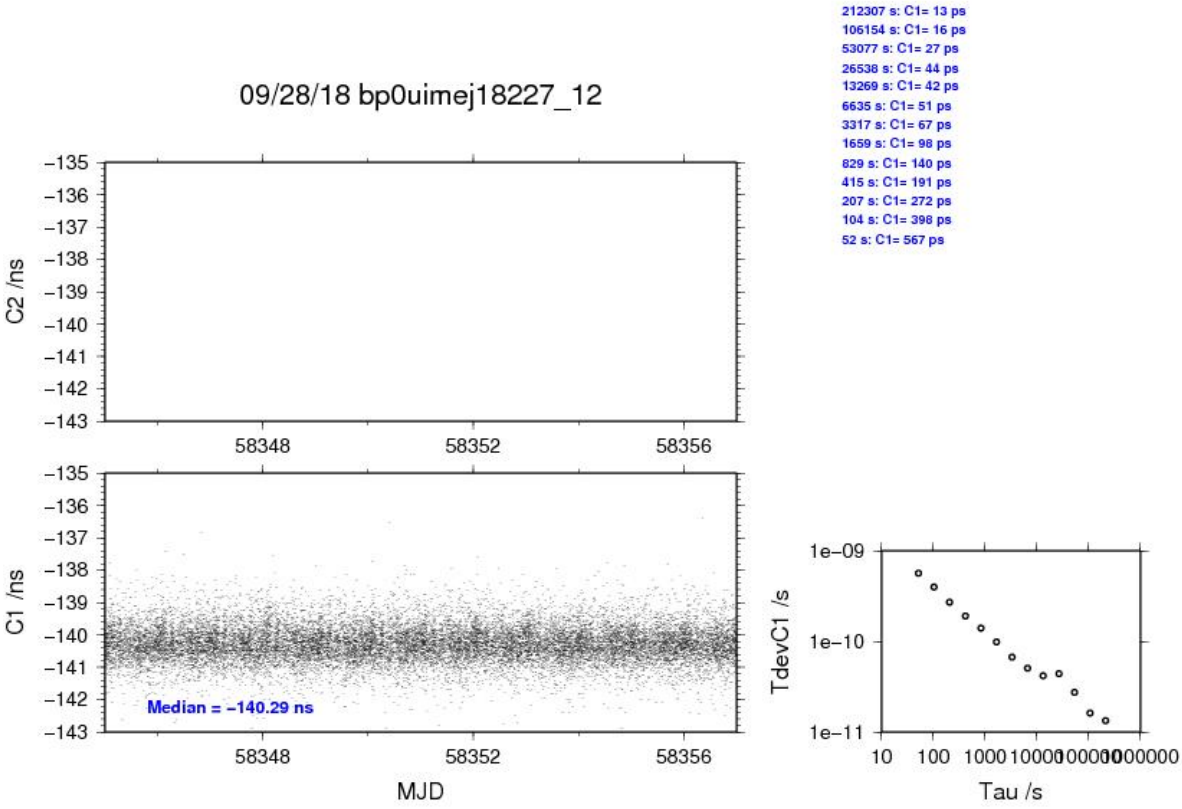
Final baseline L1 (X,Y,Z)/m = -4.465 -1.861 -0.593
Final baseline L2 (X,Y,Z)/m = -4.451 -1.879 -0.607

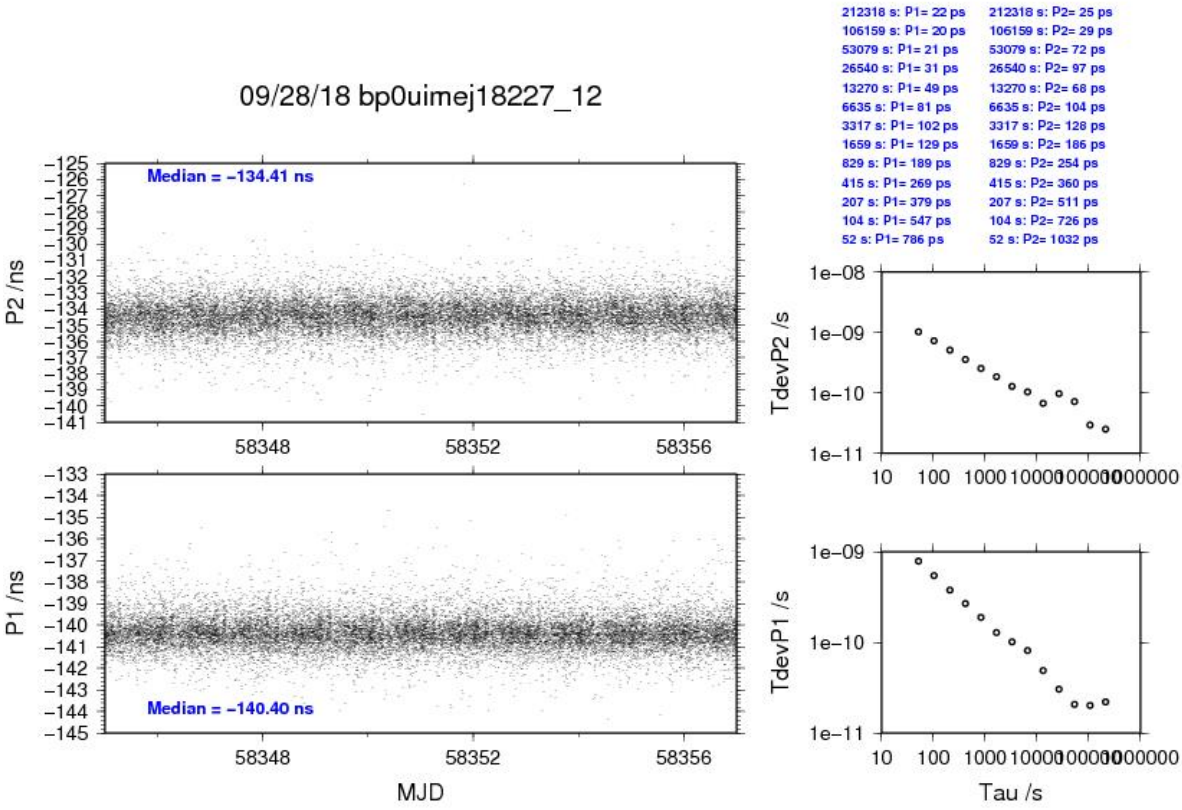
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 202095

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 202040 -140.263 1.120
C2: 0 NaN NaN
P1: 202006 -140.346 1.594
P2: 202006 -134.425 1.973

Number of 300s epochs in out file = 3456
Code #pts, median/ns, ave/ns, rms/ns
C1: 19998 -140.289 -140.272 0.561
C2: 0 0.000 NaN NaN
P1: 19997 -140.395 -140.363 0.776
P2: 19997 -134.415 -134.423 1.033


09/28/18 bp0uimej18227_12
212307 s: C1= 13 ps
106154 s: C1= 16 ps
53077 s: C1= 27 ps
26538 s: C1= 44 ps
13269 s: C1= 42 ps
6635 s: C1= 51 ps
3317 s: C1= 67 ps
1659 s: C1= 98 ps
829 s: C1= 140 ps
415 s: C1= 191 ps
207 s: C1= 272 ps
104 s: C1= 398 ps
52 s: C1= 567 ps
C2 /ns
C1 /ns
Median = −140.29 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp0uimej18227_12
212318 s: P1= 22 ps
106159 s: P1= 20 ps
53079 s: P1= 21 ps
26540 s: P1= 31 ps
13270 s: P1= 49 ps
6635 s: P1= 81 ps
3317 s: P1= 102 ps
1659 s: P1= 129 ps
829 s: P1= 189 ps
415 s: P1= 269 ps
207 s: P1= 379 ps
104 s: P1= 547 ps
52 s: P1= 786 ps
212318 s: P2= 25 ps
106159 s: P2= 29 ps
53079 s: P2= 72 ps
26540 s: P2= 97 ps
13270 s: P2= 68 ps
6635 s: P2= 104 ps
3317 s: P2= 128 ps
1659 s: P2= 186 ps
829 s: P2= 254 ps
415 s: P2= 360 ps
207 s: P2= 511 ps
104 s: P2= 726 ps
52 s: P2= 1032 ps
Median = −134.41 ns
Median = −140.40 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-IMEJ

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 277821
Number of huge residuals = 58. New iteration
Computed code bias (P1/P2)/m = -28.510 -26.826
Computed baseline (X,Y,Z)/m = -4.777 -2.606 0.059
RMS of residuals /m = 0.513

Number of phase differences to fit baseline = 276550
A priori baseline (X,Y,Z)/m = -4.777 -2.606 0.059
34165 clock jitters computed out of 34221 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 33.1

Iter 1 Large residuals L1= 20
Iter 1 Large residuals L2= 20
Computed baseline L1 (X,Y,Z)/m = 0.023 -0.013 -0.056
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.028 -0.032 -0.066
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 20
Iter 2 Large residuals L2= 20
Computed baseline L1 (X,Y,Z)/m = 0.023 -0.013 -0.056
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.028 -0.032 -0.066
RMS of residuals L2 /m = 0.003

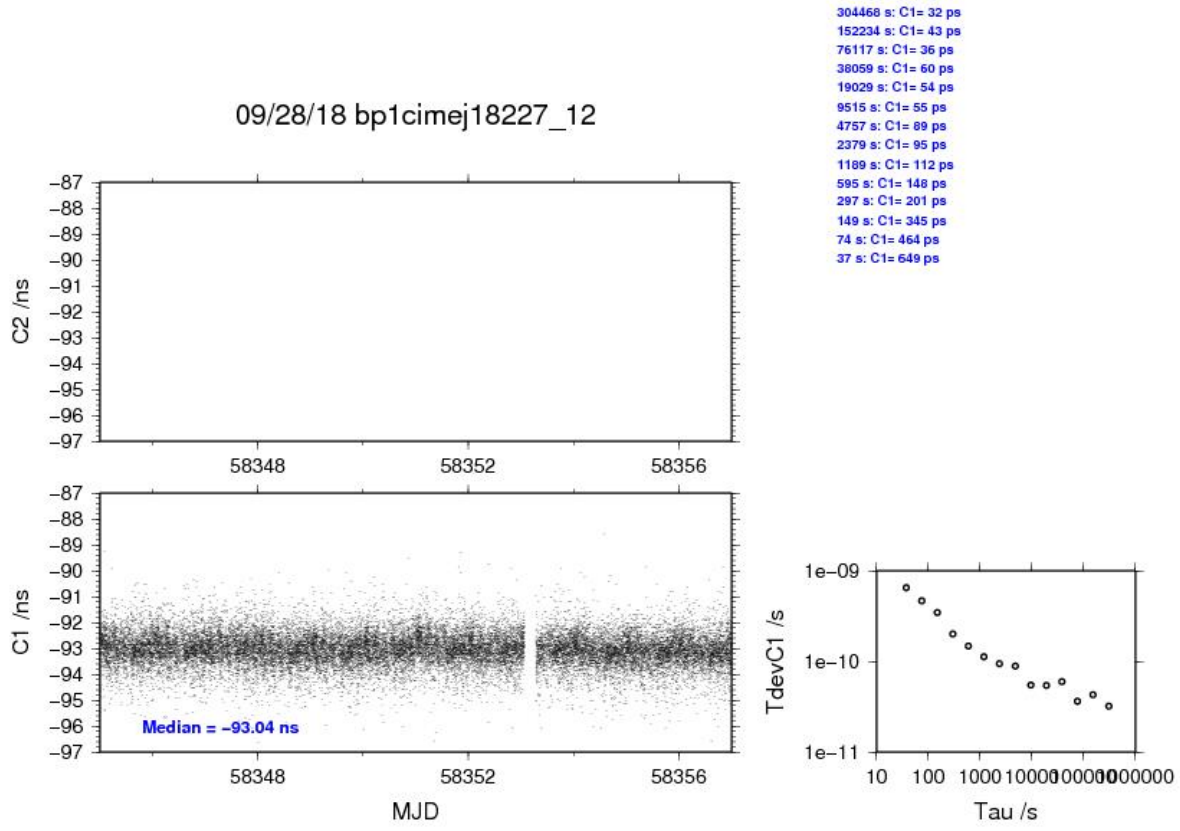
Final baseline L1 (X,Y,Z)/m = -4.754 -2.619 0.003
Final baseline L2 (X,Y,Z)/m = -4.749 -2.638 -0.007

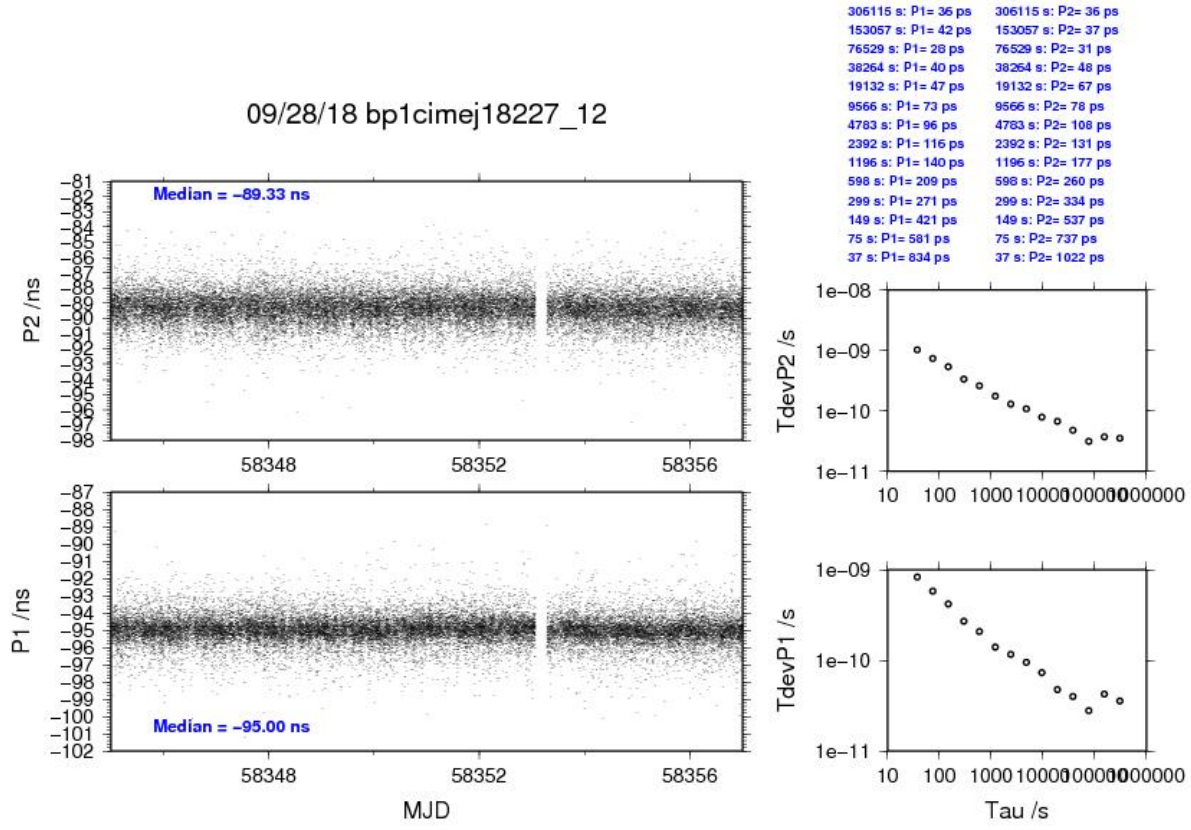
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 284939

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 279252 -93.042 1.261
C2: 0 NaN NaN
P1: 277729 -94.991 1.653
P2: 277728 -89.332 1.966

Number of 300s epochs in out file = 3456
Code #pts, median/ns, ave/ns, rms/ns
C1: 27889 -93.041 -93.047 0.657
C2: 0 0.000 NaN NaN
P1: 27739 -94.995 -95.004 0.831
P2: 27739 -89.332 -89.345 1.035


09/28/18 bp1cimej18227_12
304468 s: C1= 32 ps
152234 s: C1= 43 ps
76117 s: C1= 36 ps
38059 s: C1= 60 ps
19029 s: C1= 54 ps
9515 s: C1= 55 ps
4757 s: C1= 89 ps
2379 s: C1= 95 ps
1189 s: C1= 112 ps
595 s: C1= 148 ps
297 s: C1= 201 ps
149 s: C1= 345 ps
74 s: C1= 464 ps
37 s: C1= 649 ps
C2 /ns
C1 /ns
Median = −93.04 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp1cimej18227_12
306115 s: P1= 36 ps
153057 s: P1= 42 ps
76529 s: P1= 28 ps
38264 s: P1= 40 ps
19132 s: P1= 47 ps
9566 s: P1= 73 ps
4783 s: P1= 96 ps
2392 s: P1= 116 ps
1196 s: P1= 140 ps
598 s: P1= 209 ps
299 s: P1= 271 ps
149 s: P1= 421 ps
75 s: P1= 581 ps
37 s: P1= 834 ps
306115 s: P2= 36 ps
153057 s: P2= 37 ps
76529 s: P2= 31 ps
38264 s: P2= 48 ps
19132 s: P2= 67 ps
9566 s: P2= 78 ps
4783 s: P2= 108 ps
2392 s: P2= 131 ps
1196 s: P2= 177 ps
598 s: P2= 260 ps
299 s: P2= 334 ps
149 s: P2= 537 ps
75 s: P2= 737 ps
37 s: P2= 1022 ps
Median = −89.33 ns
Median = −95.00 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-IM21

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 201155
Computed code bias (P1/P2)/m = -59.380 -55.332
Computed baseline (X,Y,Z)/m = -4.431 1.316 -3.760
RMS of residuals /m = 0.584

Number of phase differences to fit baseline = 188660
A priori baseline (X,Y,Z)/m = -4.431 1.316 -3.760
33950 clock jitters computed out of 34044 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 34.1

Iter 1 Large residuals L1= 33
Iter 1 Large residuals L2= 33
Computed baseline L1 (X,Y,Z)/m = -0.032 0.005 0.023
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.017 -0.017 0.006
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 33
Iter 2 Large residuals L2= 33
Computed baseline L1 (X,Y,Z)/m = -0.032 0.005 0.023
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.017 -0.017 0.006
RMS of residuals L2 /m = 0.003

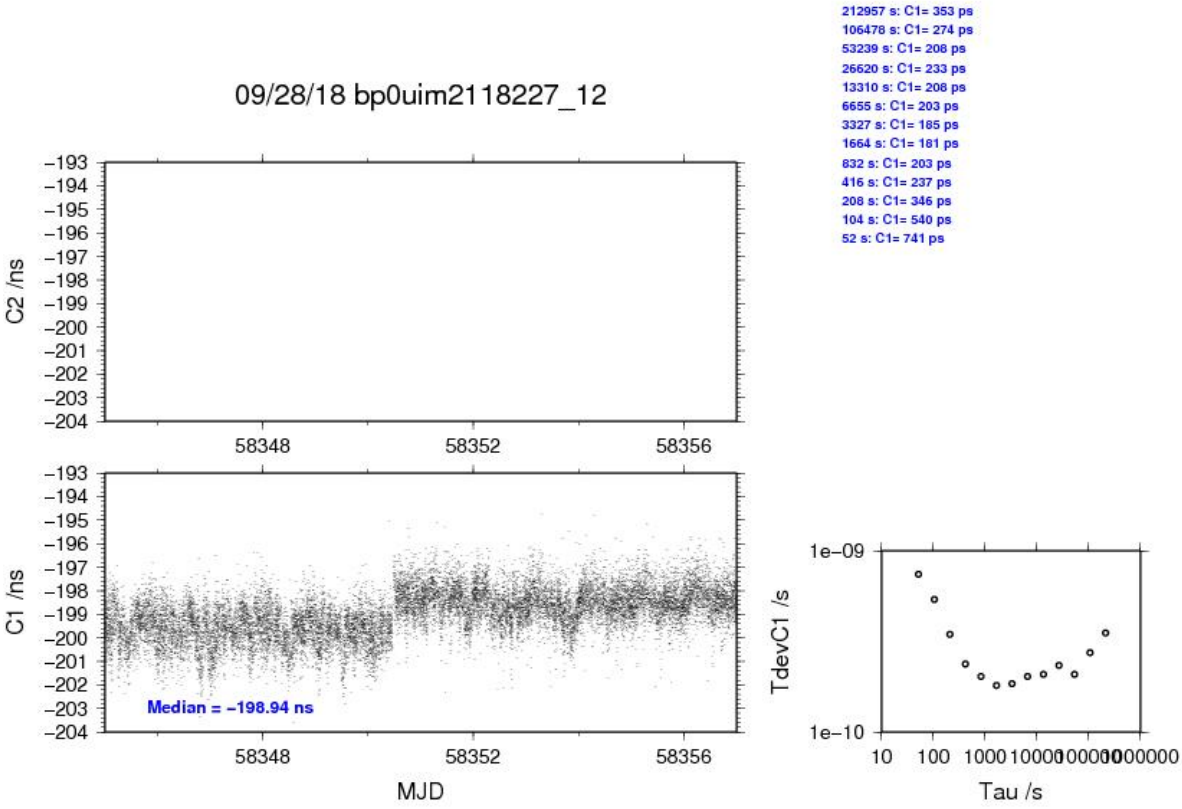
Final baseline L1 (X,Y,Z)/m = -4.464 1.322 -3.737
Final baseline L2 (X,Y,Z)/m = -4.448 1.299 -3.754

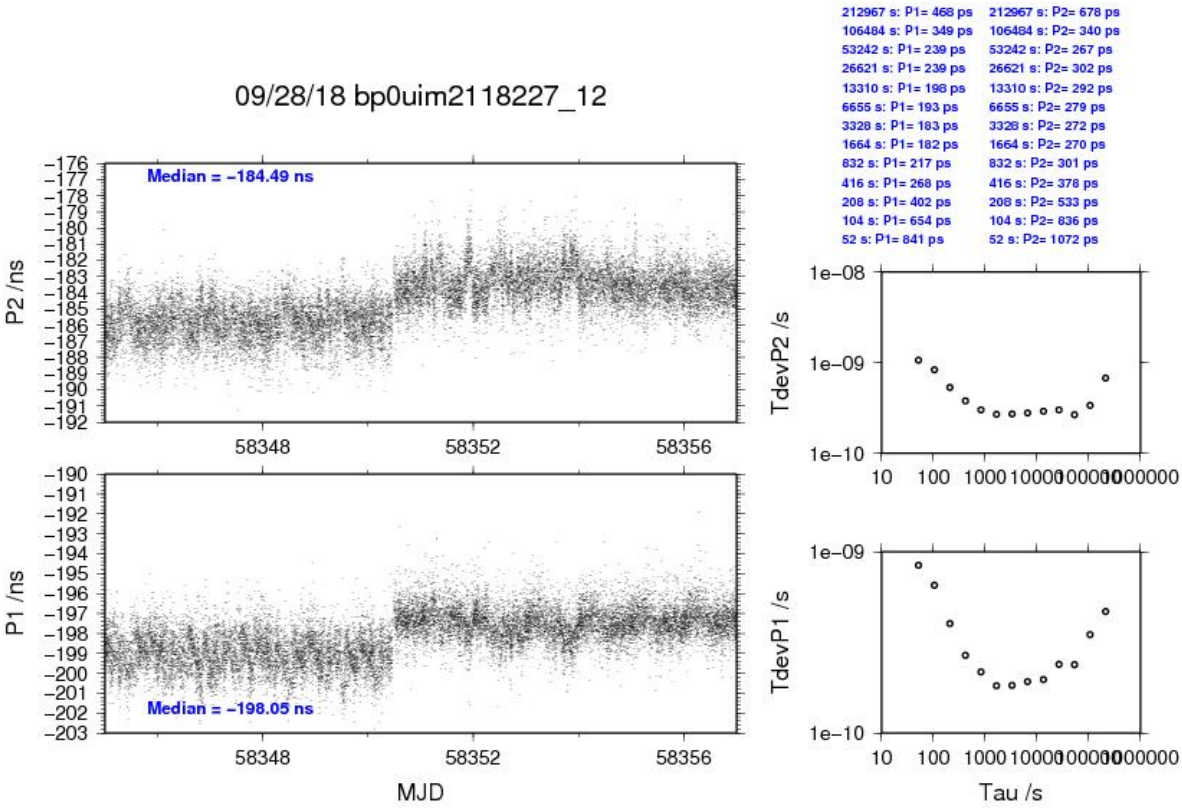
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 201166

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 201111 -198.985 1.481
C2: 0 NaN NaN
P1: 201100 -198.141 1.745
P2: 201100 -184.560 2.247

Number of 300s epochs in out file = 3452
Code #pts, median/ns, ave/ns, rms/ns
C1: 19937 -198.937 -198.996 1.005
C2: 0 0.000 NaN NaN
P1: 19936 -198.050 -198.152 1.207
P2: 19936 -184.488 -184.549 1.709


09/28/18 bp0uim2118227_12
212957 s: C1= 353 ps
106478 s: C1= 274 ps
53239 s: C1= 208 ps
26620 s: C1= 233 ps
13310 s: C1= 208 ps
6655 s: C1= 203 ps
3327 s: C1= 185 ps
1664 s: C1= 181 ps
832 s: C1= 203 ps
416 s: C1= 237 ps
208 s: C1= 346 ps
104 s: C1= 540 ps
52 s: C1= 741 ps
C2 /ns
C1 /ns
Median = −198.94 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp0uim2118227_12
212967 s: P1= 468 ps
106484 s: P1= 349 ps
53242 s: P1= 239 ps
26621 s: P1= 239 ps
13310 s: P1= 198 ps
6655 s: P1= 193 ps
3328 s: P1= 183 ps
1664 s: P1= 182 ps
832 s: P1= 217 ps
416 s: P1= 268 ps
208 s: P1= 402 ps
104 s: P1= 654 ps
52 s: P1= 841 ps
212967 s: P2= 678 ps
106484 s: P2= 340 ps
53242 s: P2= 267 ps
26621 s: P2= 302 ps
13310 s: P2= 292 ps
6655 s: P2= 279 ps
3328 s: P2= 272 ps
1664 s: P2= 270 ps
832 s: P2= 301 ps
416 s: P2= 378 ps
208 s: P2= 533 ps
104 s: P2= 836 ps
52 s: P2= 1072 ps
Median = −184.49 ns
Median = −198.05 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-IM21

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 254074
Computed code bias (P1/P2)/m = -45.907 -41.932
Computed baseline (X,Y,Z)/m = -4.803 0.656 -3.039
RMS of residuals /m = 0.517

Number of phase differences to fit baseline = 258111
A priori baseline (X,Y,Z)/m = -4.803 0.656 -3.039
34483 clock jitters computed out of 34483 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 4.8

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.047 -0.102 -0.106
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.057 -0.123 -0.120
RMS of residuals L2 /m = 0.003

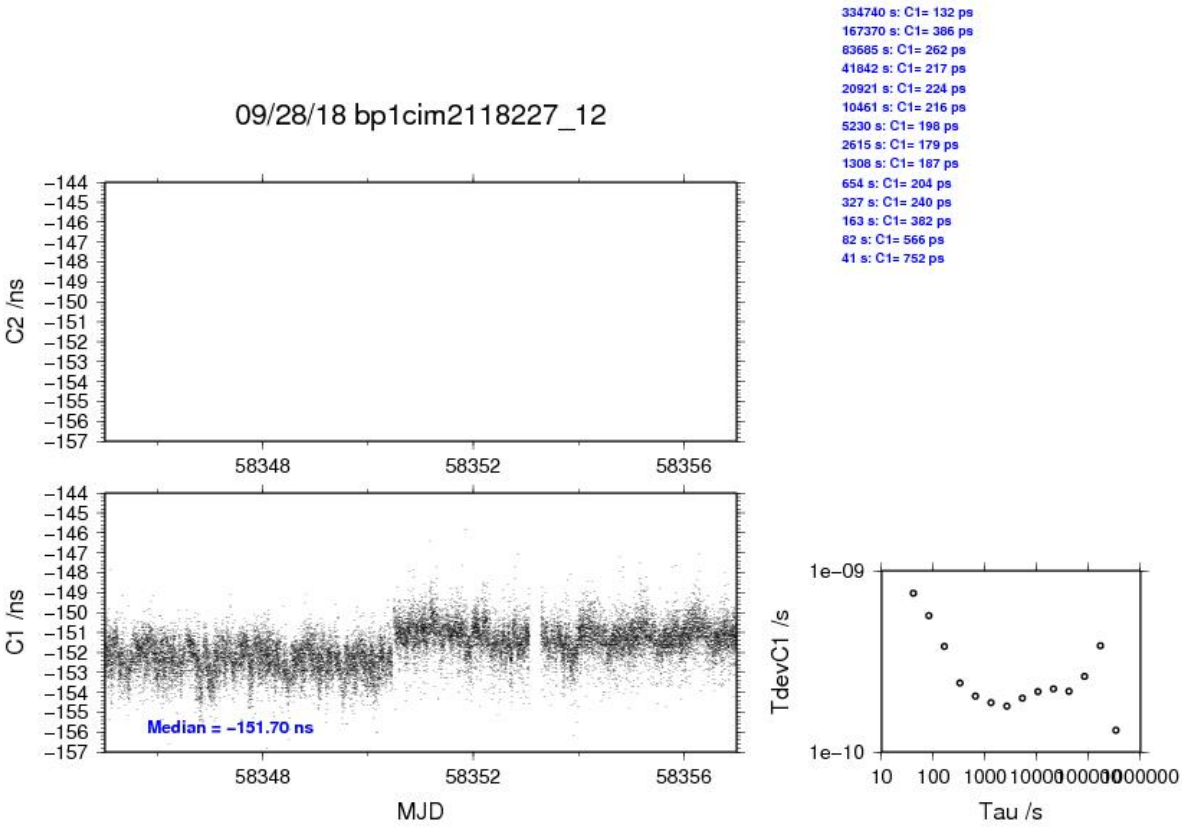
Final baseline L1 (X,Y,Z)/m = -4.756 0.554 -3.146
Final baseline L2 (X,Y,Z)/m = -4.746 0.534 -3.159

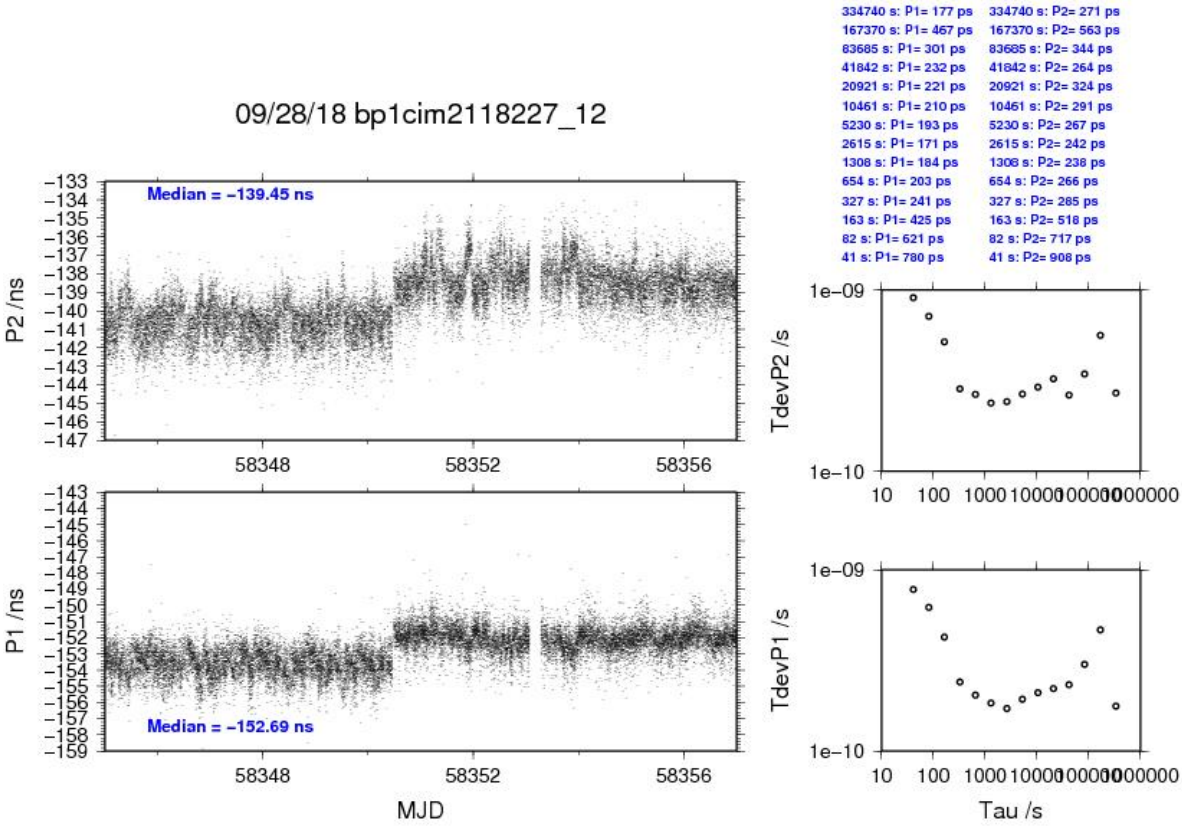
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 259233

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 254014 -151.766 1.521
C2: 0 NaN NaN
P1: 254011 -152.798 1.563
P2: 254011 -139.480 1.920

Number of 300s epochs in out file = 3452
Code #pts, median/ns, ave/ns, rms/ns
C1: 25367 -151.703 -151.772 1.017
C2: 0 0.000 NaN NaN
P1: 25367 -152.688 -152.800 1.171
P2: 25367 -139.448 -139.485 1.573


09/28/18 bp1cim2118227_12
334740 s: C1= 132 ps
167370 s: C1= 386 ps
83685 s: C1= 262 ps
41842 s: C1= 217 ps
20921 s: C1= 224 ps
10461 s: C1= 216 ps
5230 s: C1= 198 ps
2615 s: C1= 179 ps
1308 s: C1= 187 ps
654 s: C1= 204 ps
327 s: C1= 240 ps
163 s: C1= 382 ps
82 s: C1= 566 ps
41 s: C1= 752 ps
C2 /ns
C1 /ns
Median = −151.70 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp1cim2118227_12
334740 s: P1= 177 ps
167370 s: P1= 467 ps
83685 s: P1= 301 ps
41842 s: P1= 232 ps
20921 s: P1= 221 ps
10461 s: P1= 210 ps
5230 s: P1= 193 ps
2615 s: P1= 171 ps
1308 s: P1= 184 ps
654 s: P1= 203 ps
327 s: P1= 241 ps
163 s: P1= 425 ps
82 s: P1= 621 ps
41 s: P1= 780 ps
334740 s: P2= 271 ps
167370 s: P2= 563 ps
83685 s: P2= 344 ps
41842 s: P2= 264 ps
20921 s: P2= 324 ps
10461 s: P2= 291 ps
5230 s: P2= 267 ps
2615 s: P2= 242 ps
1308 s: P2= 238 ps
654 s: P2= 266 ps
327 s: P2= 285 ps
163 s: P2= 518 ps
82 s: P2= 717 ps
41 s: P2= 908 ps
Median = −139.45 ns
Median = −152.69 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

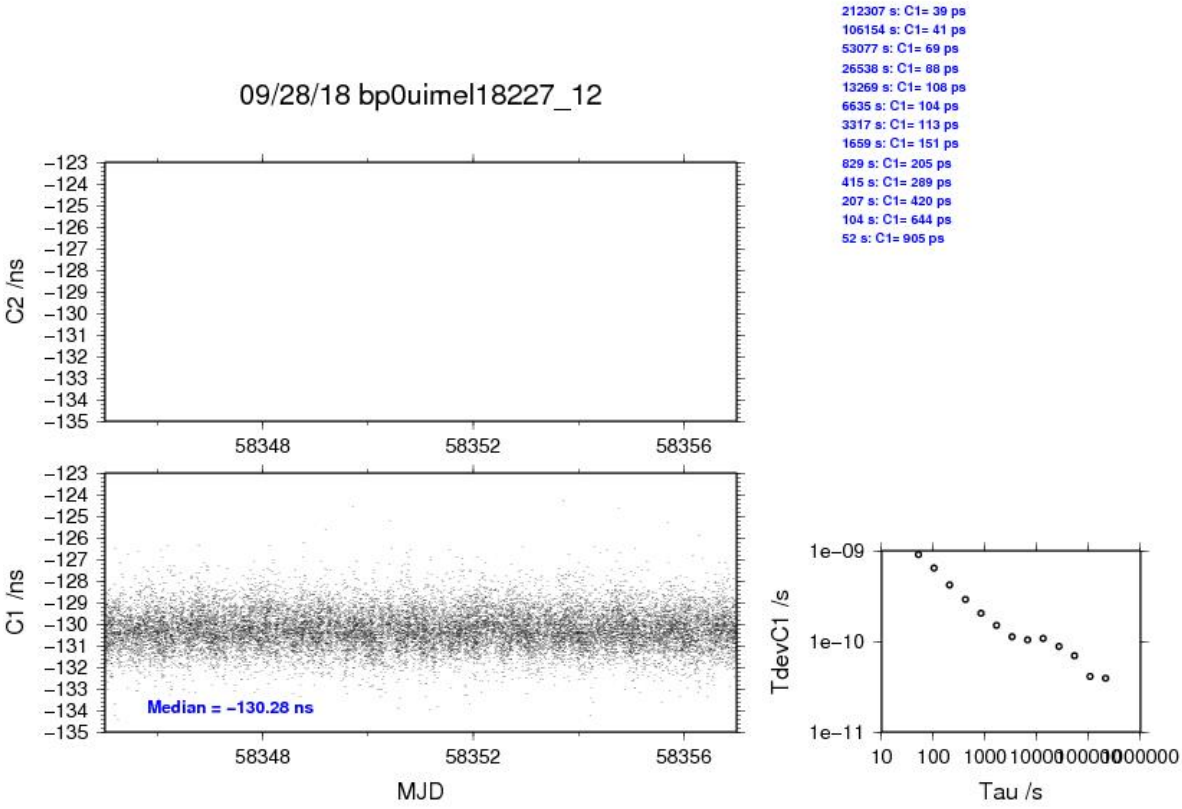
BP0U-IMEL

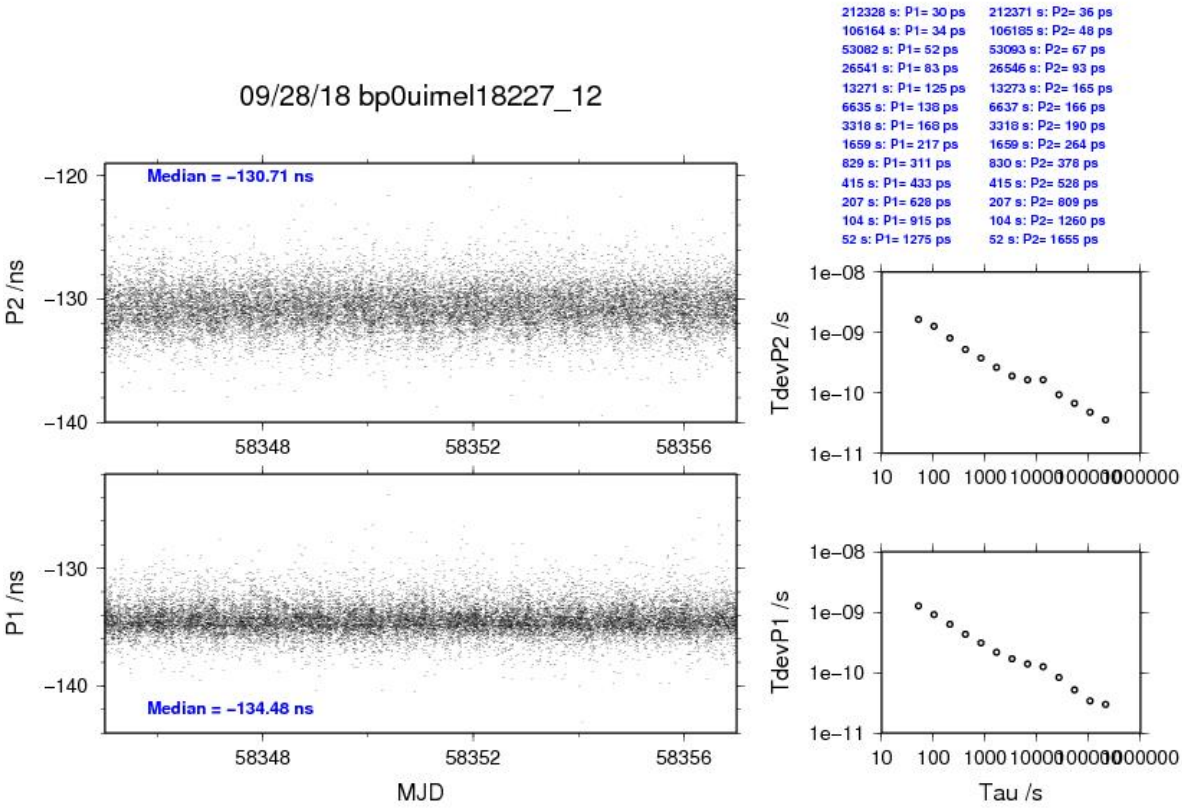
COMPUTATION OF BASELINE

```
Number of codes to fit baseline and biases = 202024
Computed code bias (P1/P2)/m =    -40.079   -39.003
Computed baseline (X,Y,Z)/m =     -1.379    -0.992    -0.299
RMS of residuals /m =      0.764

Number of phase differences to fit baseline = 188247
A priori baseline (X,Y,Z)/m =     -1.379    -0.992    -0.299
34015 clock jitters computed out of  34144 intervals
AVE jitter /ps =   -0.0 RMS jitter /ps =   34.0

Iter  1 Large residuals L1=   26
Iter  1 Large residuals L2=   26
Computed baseline L1 (X,Y,Z)/m =     -0.114     0.206     0.131
RMS of residuals L1 /m =      0.004
Computed baseline L2 (X,Y,Z)/m =     -0.098     0.179     0.111
RMS of residuals L2 /m =      0.004

Iter  2 Large residuals L1=   26
Iter  2 Large residuals L2=   26
Computed baseline L1 (X,Y,Z)/m =     -0.114     0.206     0.131
RMS of residuals L1 /m =      0.004
Computed baseline L2 (X,Y,Z)/m =     -0.098     0.179     0.111
RMS of residuals L2 /m =      0.004

Final baseline L1 (X,Y,Z)/m =     -1.493    -0.786    -0.167
Final baseline L2 (X,Y,Z)/m =     -1.478    -0.813    -0.188
```

COMPUTATION OF CODE DIFFERENCES

```
Number of code differences = 202063

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 202008  -130.220     1.977
C2:      0       NaN       NaN
P1: 201965  -134.333     3.044
P2: 201946  -130.654     3.402

Number of  300s epochs in out file =  3456
Code #pts, median/ns, ave/ns, rms/ns
C1:  19998  -130.277  -130.241     0.895
C2:      0     0.000       NaN       NaN
P1:  19996  -134.483  -134.371     1.278
P2:  19992  -130.714  -130.668     1.673
```


09/28/18 bp0uimel18227_12
212307 s: C1= 39 ps
106154 s: C1= 41 ps
53077 s: C1= 69 ps
26538 s: C1= 88 ps
13269 s: C1= 108 ps
6635 s: C1= 104 ps
3317 s: C1= 113 ps
1659 s: C1= 151 ps
829 s: C1= 205 ps
415 s: C1= 289 ps
207 s: C1= 420 ps
104 s: C1= 644 ps
52 s: C1= 905 ps
C2 /ns
C1 /ns
Median = −130.28 ns
MJD
TdevC1 /s
Tau /s


09/28/18 bp0uimel18227_12
212328 s: P1= 30 ps
106164 s: P1= 34 ps
53082 s: P1= 52 ps
26541 s: P1= 83 ps
13271 s: P1= 125 ps
6635 s: P1= 138 ps
3318 s: P1= 168 ps
1659 s: P1= 217 ps
829 s: P1= 311 ps
415 s: P1= 433 ps
207 s: P1= 628 ps
104 s: P1= 915 ps
52 s: P1= 1275 ps
212371 s: P2= 36 ps
106185 s: P2= 48 ps
53093 s: P2= 67 ps
26546 s: P2= 93 ps
13273 s: P2= 165 ps
6637 s: P2= 166 ps
3318 s: P2= 190 ps
1659 s: P2= 264 ps
830 s: P2= 378 ps
415 s: P2= 528 ps
207 s: P2= 809 ps
104 s: P2= 1260 ps
52 s: P2= 1655 ps
Median = −130.71 ns
Median = −134.48 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-IMEL

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 278995
Number of huge residuals = 2. New iteration
Computed code bias (P1/P2)/m = -26.502 -25.483
Computed baseline (X,Y,Z)/m = -1.705 -1.757 0.357
RMS of residuals /m = 0.818

Number of phase differences to fit baseline = 282863
A priori baseline (X,Y,Z)/m = -1.705 -1.757 0.357
34540 clock jitters computed out of 34540 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.4

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = -0.074 0.202 0.068
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = -0.070 0.184 0.052
RMS of residuals L2 /m = 0.006

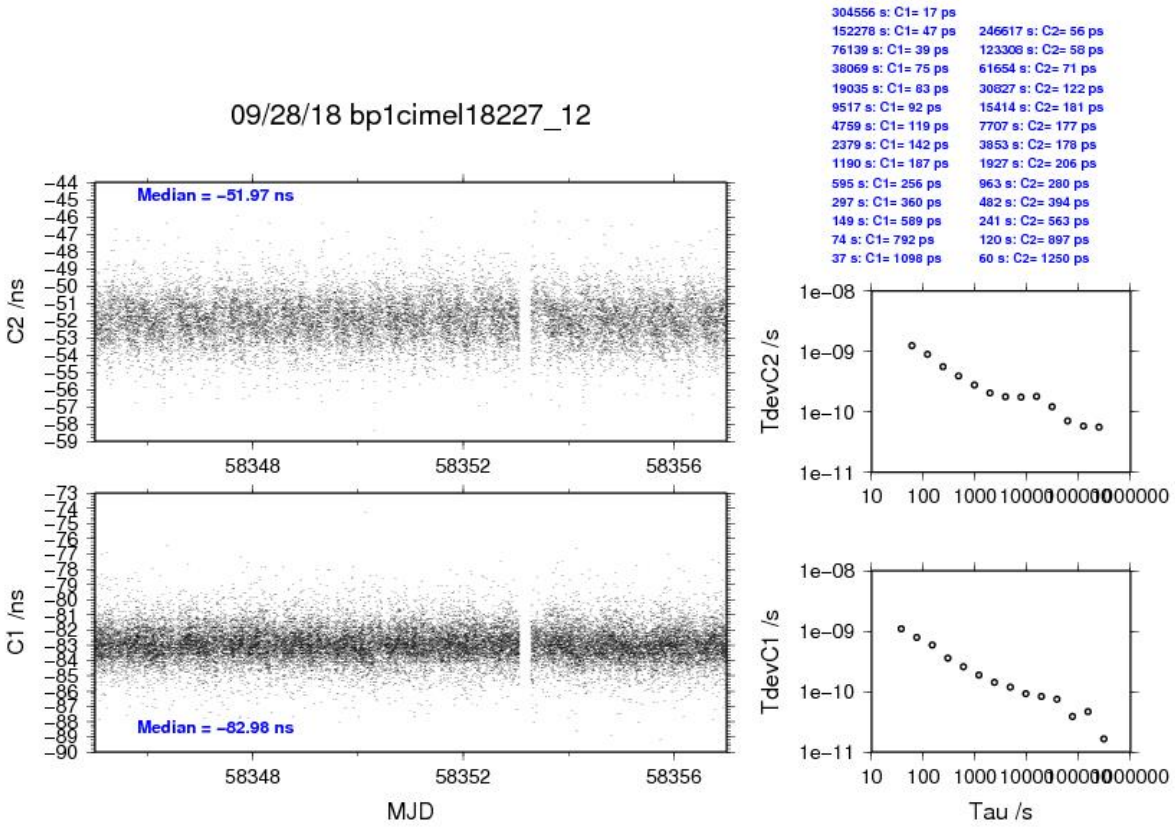
Final baseline L1 (X,Y,Z)/m = -1.779 -1.556 0.425
Final baseline L2 (X,Y,Z)/m = -1.776 -1.573 0.409

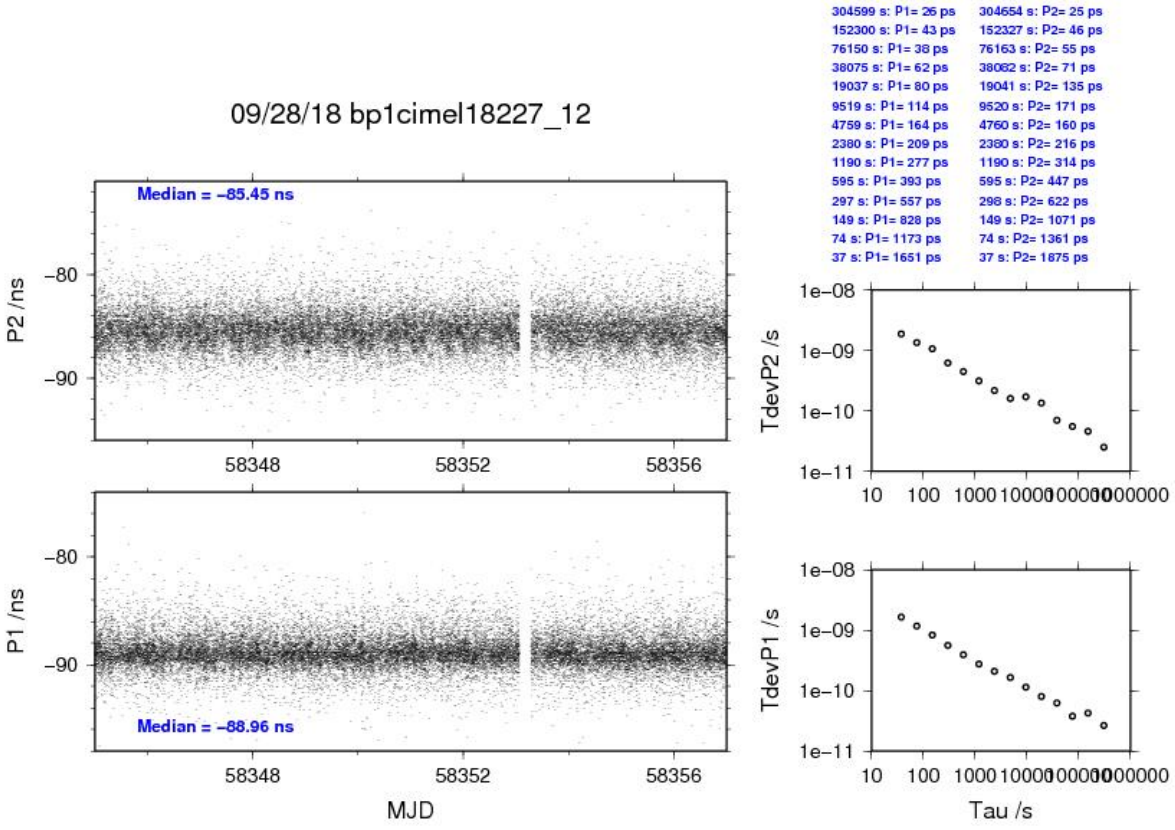
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 284656

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 278983 -82.917 2.569
C2: 172297 -51.949 2.631
P1: 278775 -88.830 3.957
P2: 278632 -85.389 4.250

Number of 300s epochs in out file = 3456
Code #pts, median/ns, ave/ns, rms/ns
C1: 27881 -82.976 -82.936 1.113
C2: 17216 -51.969 -51.970 1.240
P1: 27877 -88.961 -88.841 1.646
P2: 27872 -85.451 -85.398 1.920


09/28/18 bp1cimel18227_12
Median = −51.97 ns
Median = −82.98 ns
C2 /ns
C1 /ns
MJD
TdevC2 /s
TdevC1 /s
Tau /s
304556 s: C1= 17 ps
152278 s: C1= 47 ps
76139 s: C1= 39 ps
38069 s: C1= 75 ps
19035 s: C1= 83 ps
9517 s: C1= 92 ps
4759 s: C1= 119 ps
2379 s: C1= 142 ps
1190 s: C1= 187 ps
595 s: C1= 256 ps
297 s: C1= 360 ps
149 s: C1= 589 ps
74 s: C1= 792 ps
37 s: C1= 1098 ps
246617 s: C2= 56 ps
123308 s: C2= 58 ps
61654 s: C2= 71 ps
30827 s: C2= 122 ps
15414 s: C2= 181 ps
7707 s: C2= 177 ps
3853 s: C2= 178 ps
1927 s: C2= 206 ps
963 s: C2= 280 ps
482 s: C2= 394 ps
241 s: C2= 563 ps
120 s: C2= 897 ps
60 s: C2= 1250 ps


09/28/18 bp1cimel18227_12
Median = −85.45 ns
Median = −88.96 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s
304599 s: P1= 26 ps
152300 s: P1= 43 ps
76150 s: P1= 38 ps
38075 s: P1= 62 ps
19037 s: P1= 80 ps
9519 s: P1= 114 ps
4759 s: P1= 164 ps
2380 s: P1= 209 ps
1190 s: P1= 277 ps
595 s: P1= 393 ps
297 s: P1= 557 ps
149 s: P1= 828 ps
74 s: P1= 1173 ps
37 s: P1= 1651 ps
304654 s: P2= 25 ps
152327 s: P2= 46 ps
76163 s: P2= 55 ps
38082 s: P2= 71 ps
19041 s: P2= 135 ps
9520 s: P2= 171 ps
4760 s: P2= 160 ps
2380 s: P2= 216 ps
1190 s: P2= 314 ps
595 s: P2= 447 ps
298 s: P2= 622 ps
149 s: P2= 1071 ps
74 s: P2= 1361 ps
37 s: P2= 1675 ps

BP0U-IM20

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 117123
Number of huge residuals = 2. New iteration
Computed code bias (P1/P2)/m = -52.897 -56.676
Computed baseline (X,Y,Z)/m = -0.698 -0.172 -0.189
RMS of residuals /m = 0.624

Number of phase differences to fit baseline = 109776
A priori baseline (X,Y,Z)/m = -0.698 -0.172 -0.189
19861 clock jitters computed out of 19902 intervals
AVE jitter /ps = -0.2 RMS jitter /ps = 34.0

Iter 1 Large residuals L1= 19
Iter 1 Large residuals L2= 19
Computed baseline L1 (X,Y,Z)/m = 0.007 -0.023 0.008
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.013 -0.033 -0.001
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 19
Iter 2 Large residuals L2= 19
Computed baseline L1 (X,Y,Z)/m = 0.007 -0.023 0.008
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.013 -0.033 -0.001
RMS of residuals L2 /m = 0.003

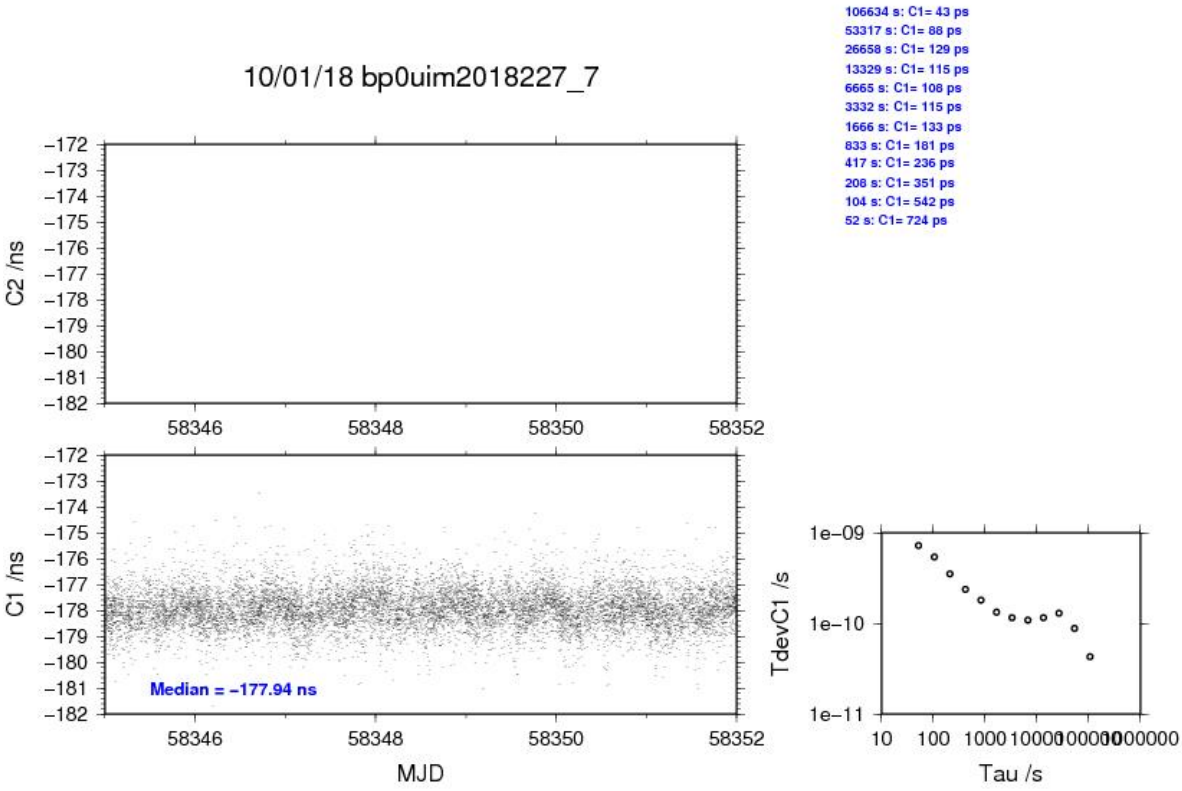
Final baseline L1 (X,Y,Z)/m = -0.691 -0.196 -0.180
Final baseline L2 (X,Y,Z)/m = -0.685 -0.206 -0.190

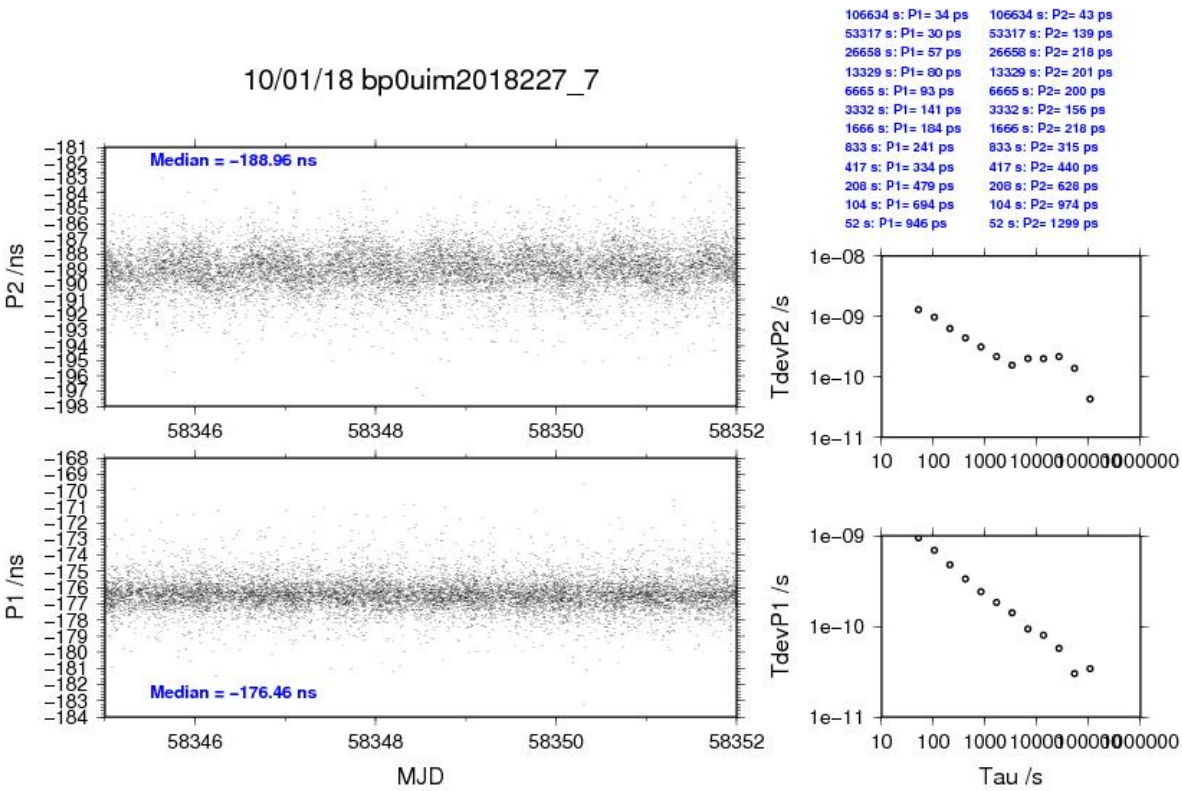
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 117126

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 117071 -177.905 1.512
C2: 0 NaN NaN
P1: 117067 -176.409 2.170
P2: 117065 -188.981 2.536

Number of 300s epochs in out file = 2016
Code #pts, median/ns, ave/ns, rms/ns
C1: 11611 -177.935 -177.917 0.752
C2: 0 0.000 NaN NaN
P1: 11611 -176.464 -176.430 0.965
P2: 11611 -188.960 -188.980 1.342


10/01/18 bp0uim2018227_7
106634 s: C1= 43 ps
53317 s: C1= 88 ps
26658 s: C1= 129 ps
13329 s: C1= 115 ps
6665 s: C1= 108 ps
3332 s: C1= 115 ps
1666 s: C1= 133 ps
833 s: C1= 181 ps
417 s: C1= 236 ps
208 s: C1= 351 ps
104 s: C1= 542 ps
52 s: C1= 724 ps
C2 /ns
C1 /ns
Median = −177.94 ns
MJD
TdevC1 /s
Tau /s


10/01/18 bp0uim2018227_7
106634 s: P1= 34 ps
53317 s: P1= 30 ps
26658 s: P1= 57 ps
13329 s: P1= 80 ps
6665 s: P1= 93 ps
3332 s: P1= 141 ps
1666 s: P1= 184 ps
833 s: P1= 241 ps
417 s: P1= 334 ps
208 s: P1= 479 ps
104 s: P1= 694 ps
52 s: P1= 946 ps
106634 s: P2= 43 ps
53317 s: P2= 139 ps
26658 s: P2= 218 ps
13329 s: P2= 201 ps
6665 s: P2= 200 ps
3332 s: P2= 156 ps
1666 s: P2= 218 ps
833 s: P2= 315 ps
417 s: P2= 440 ps
208 s: P2= 628 ps
104 s: P2= 974 ps
52 s: P2= 1299 ps
P2 /ns
Median = −188.96 ns
P1 /ns
Median = −176.46 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-IM20

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 151167
Number of huge residuals = 5. New iteration
Computed code bias (P1/P2)/m = -39.360 -43.197
Computed baseline (X,Y,Z)/m = -1.026 -0.887 0.508
RMS of residuals /m = 0.660

Number of phase differences to fit baseline = 150539
A priori baseline (X,Y,Z)/m = -1.026 -0.887 0.508
20152 clock jitters computed out of 20152 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 6.0

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = 0.048 -0.069 -0.096
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.056 -0.088 -0.109
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = 0.048 -0.069 -0.096
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.056 -0.088 -0.109
RMS of residuals L2 /m = 0.004

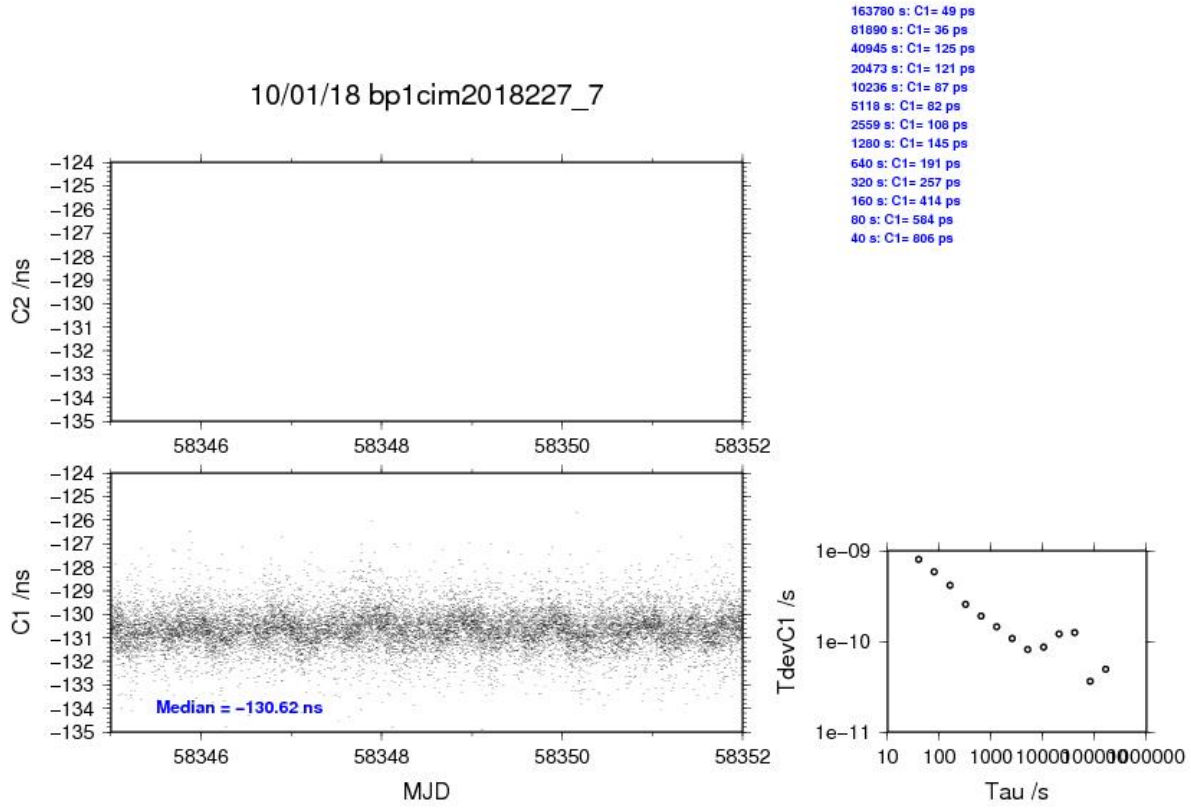
Final baseline L1 (X,Y,Z)/m = -0.978 -0.957 0.412
Final baseline L2 (X,Y,Z)/m = -0.970 -0.975 0.399

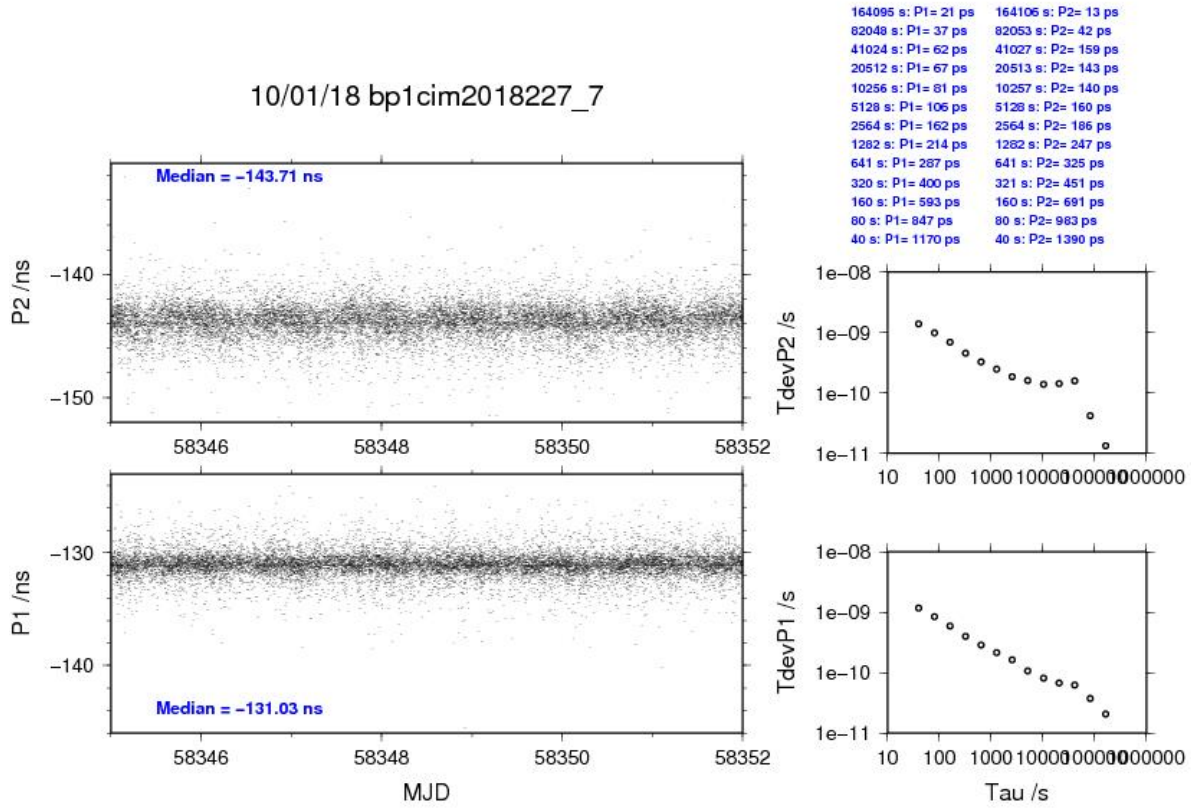
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 151472

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 151409 -130.607 1.713
C2: 0 NaN NaN
P1: 151062 -131.021 2.805
P2: 151067 -143.766 2.928

Number of 300s epochs in out file = 2016
Code #pts, median/ns, ave/ns, rms/ns
C1: 15119 -130.625 -130.624 0.822
C2: 0 0.000 NaN NaN
P1: 15090 -131.026 -131.041 1.181
P2: 15089 -143.714 -143.781 1.391


10/01/18 bp1cim2018227_7
163780 s: C1= 49 ps
81890 s: C1= 36 ps
40945 s: C1= 125 ps
20473 s: C1= 121 ps
10236 s: C1= 87 ps
5118 s: C1= 82 ps
2559 s: C1= 108 ps
1280 s: C1= 145 ps
640 s: C1= 191 ps
320 s: C1= 257 ps
160 s: C1= 414 ps
80 s: C1= 584 ps
40 s: C1= 806 ps
C2 /ns
C1 /ns
Median = −130.62 ns
MJD
TdevC1 /s
Tau /s


10/01/18 bp1cim2018227_7
164095 s: P1= 21 ps
82048 s: P1= 37 ps
41024 s: P1= 62 ps
20512 s: P1= 67 ps
10256 s: P1= 81 ps
5128 s: P1= 106 ps
2564 s: P1= 162 ps
1282 s: P1= 214 ps
641 s: P1= 287 ps
320 s: P1= 400 ps
160 s: P1= 593 ps
80 s: P1= 847 ps
40 s: P1= 1170 ps
164106 s: P2= 13 ps
82053 s: P2= 42 ps
41027 s: P2= 159 ps
20513 s: P2= 143 ps
10257 s: P2= 140 ps
5128 s: P2= 160 ps
2564 s: P2= 186 ps
1282 s: P2= 247 ps
641 s: P2= 325 ps
321 s: P2= 451 ps
160 s: P2= 691 ps
80 s: P2= 983 ps
40 s: P2= 1390 ps
Median = −143.71 ns
P2 /ns
Median = −131.03 ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-TF10

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 117125
Computed code bias (P1/P2)/m = -52.657 -47.522
Computed baseline (X,Y,Z)/m = -3.160 -1.836 0.009
RMS of residuals /m = 0.471

Number of phase differences to fit baseline = 110025
A priori baseline (X,Y,Z)/m = -3.160 -1.836 0.009
19870 clock jitters computed out of 19914 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 33.8

Iter 1 Large residuals L1= 25
Iter 1 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = -0.031 0.021 0.043
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.014 -0.006 0.020
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 25
Iter 2 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = -0.031 0.021 0.043
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.014 -0.006 0.020
RMS of residuals L2 /m = 0.003

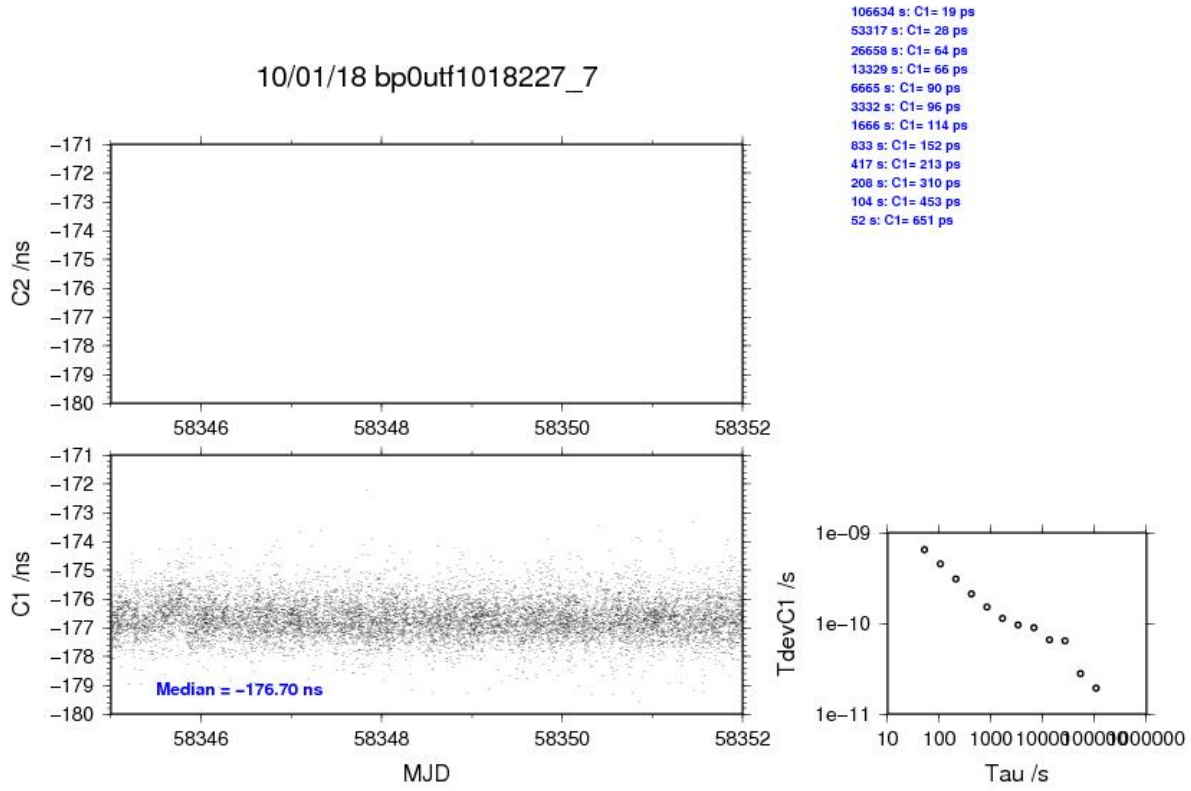
Final baseline L1 (X,Y,Z)/m = -3.191 -1.815 0.052
Final baseline L2 (X,Y,Z)/m = -3.174 -1.842 0.029

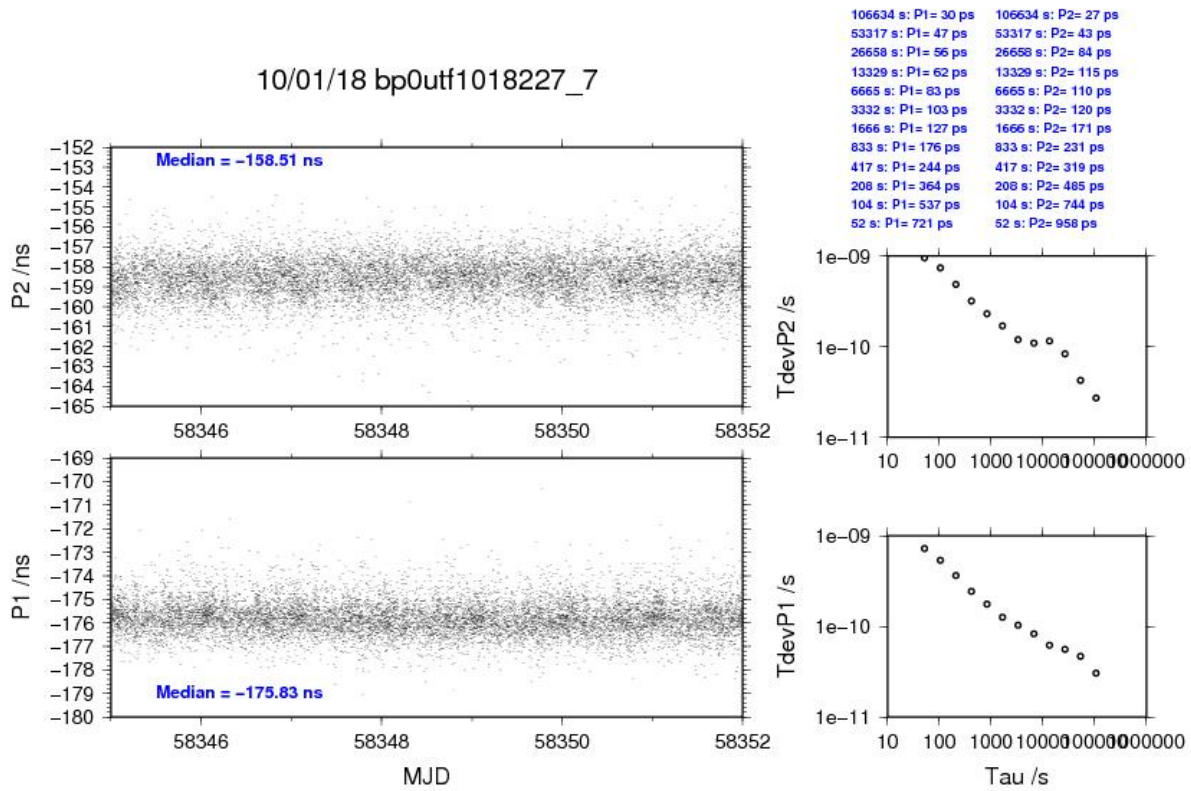
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 117129

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 117074 -176.657 1.261
C2: 0 NaN NaN
P1: 117070 -175.772 1.445
P2: 117070 -158.545 1.767

Number of 300s epochs in out file = 2016
Code #pts, median/ns, ave/ns, rms/ns
C1: 11611 -176.703 -176.669 0.647
C2: 0 0.000 NaN NaN
P1: 11611 -175.826 -175.786 0.738
P2: 11611 -158.514 -158.533 0.992


10/01/18 bp0utf1018227_7
106634 s: C1= 19 ps
53317 s: C1= 28 ps
26658 s: C1= 64 ps
13329 s: C1= 66 ps
6665 s: C1= 90 ps
3332 s: C1= 96 ps
1666 s: C1= 114 ps
833 s: C1= 152 ps
417 s: C1= 213 ps
208 s: C1= 310 ps
104 s: C1= 453 ps
52 s: C1= 651 ps
C2 /ns
C1 /ns
Median = −176.70 ns
MJD
TdevC1 /s
Tau /s


10/01/18 bp0utf1018227_7
106634 s: P1= 30 ps
53317 s: P1= 47 ps
26658 s: P1= 56 ps
13329 s: P1= 62 ps
6665 s: P1= 83 ps
3332 s: P1= 103 ps
1666 s: P1= 127 ps
833 s: P1= 176 ps
417 s: P1= 244 ps
208 s: P1= 364 ps
104 s: P1= 537 ps
52 s: P1= 721 ps
106634 s: P2= 27 ps
53317 s: P2= 43 ps
26658 s: P2= 84 ps
13329 s: P2= 115 ps
6665 s: P2= 110 ps
3332 s: P2= 120 ps
1666 s: P2= 171 ps
833 s: P2= 231 ps
417 s: P2= 319 ps
208 s: P2= 485 ps
104 s: P2= 744 ps
52 s: P2= 958 ps
Median = −158.51 ns
Median = −175.83 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-TF10

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 155592
Computed code bias (P1/P2)/m = -39.160 -34.088
Computed baseline (X,Y,Z)/m = -3.526 -2.517 0.733
RMS of residuals /m = 0.392

Number of phase differences to fit baseline = 154980
A priori baseline (X,Y,Z)/m = -3.526 -2.517 0.733
20152 clock jitters computed out of 20152 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 3.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.042 -0.065 -0.089
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.051 -0.083 -0.104
RMS of residuals L2 /m = 0.003

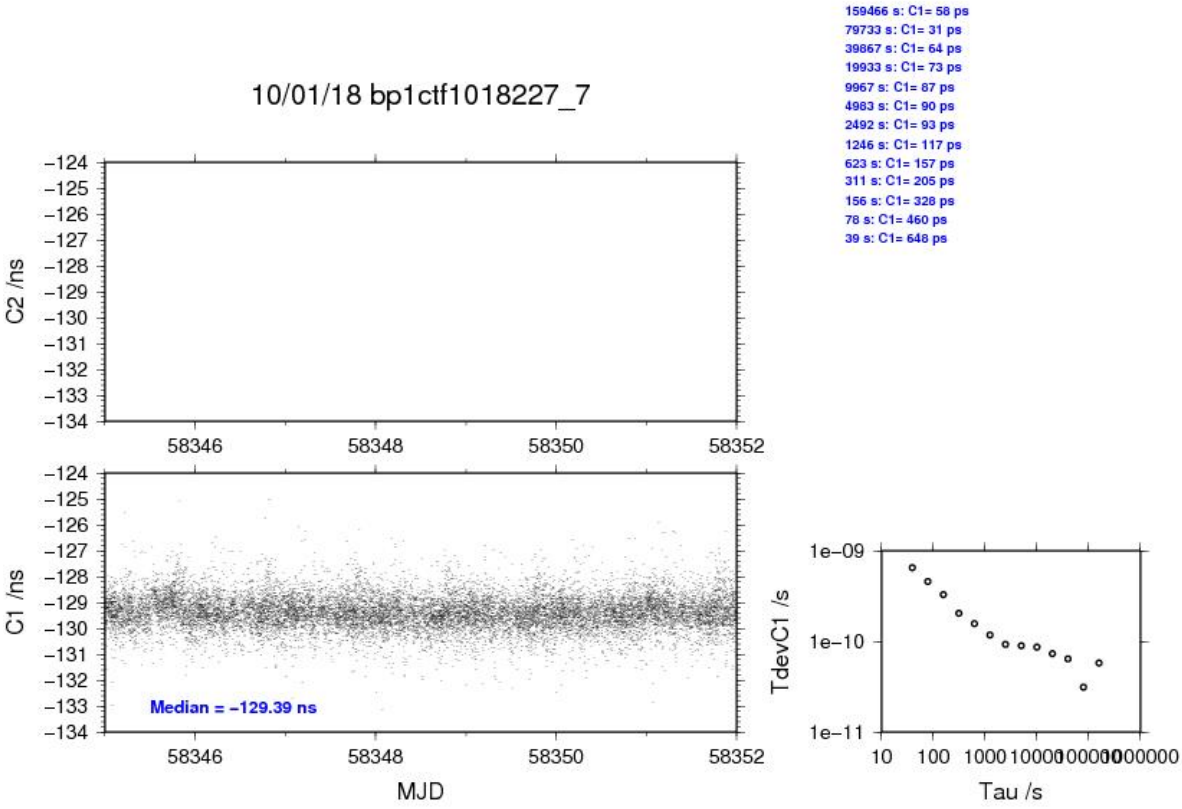
Final baseline L1 (X,Y,Z)/m = -3.484 -2.582 0.644
Final baseline L2 (X,Y,Z)/m = -3.476 -2.599 0.629

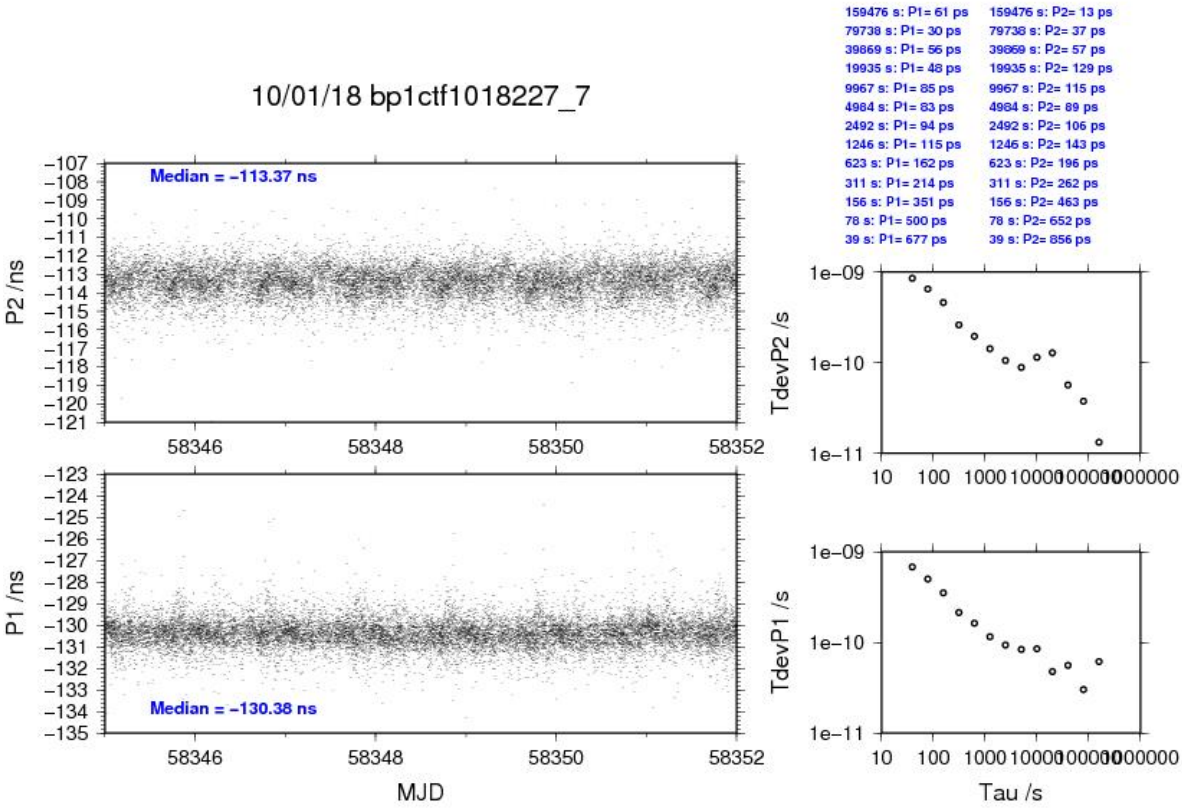
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 155603

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 155540 -129.367 1.286
C2: 0 NaN NaN
P1: 155529 -130.373 1.208
P2: 155529 -113.399 1.430

Number of 300s epochs in out file = 2016
Code #pts, median/ns, ave/ns, rms/ns
C1: 15528 -129.388 -129.377 0.658
C2: 0 0.000 NaN NaN
P1: 15527 -130.382 -130.379 0.691
P2: 15527 -113.370 -113.404 0.884


10/01/18 bp1ctf1018227_7
159466 s: C1= 58 ps
79733 s: C1= 31 ps
39867 s: C1= 64 ps
19933 s: C1= 73 ps
9967 s: C1= 87 ps
4983 s: C1= 90 ps
2492 s: C1= 93 ps
1246 s: C1= 117 ps
623 s: C1= 157 ps
311 s: C1= 205 ps
156 s: C1= 328 ps
78 s: C1= 460 ps
39 s: C1= 648 ps
C2 /ns
C1 /ns
Median = −129.39 ns
MJD
TdevC1 /s
Tau /s


10/01/18 bp1ctf1018227_7
159476 s: P1= 61 ps
79738 s: P1= 30 ps
39869 s: P1= 56 ps
19935 s: P1= 48 ps
9967 s: P1= 85 ps
4984 s: P1= 83 ps
2492 s: P1= 94 ps
1246 s: P1= 115 ps
623 s: P1= 162 ps
311 s: P1= 214 ps
156 s: P1= 351 ps
78 s: P1= 500 ps
39 s: P1= 677 ps
159476 s: P2= 13 ps
79738 s: P2= 37 ps
39869 s: P2= 57 ps
19935 s: P2= 129 ps
9967 s: P2= 115 ps
4984 s: P2= 89 ps
2492 s: P2= 106 ps
1246 s: P2= 143 ps
623 s: P2= 196 ps
311 s: P2= 262 ps
156 s: P2= 463 ps
78 s: P2= 652 ps
39 s: P2= 856 ps
P2 /ns
P1 /ns
Median = −113.37 ns
Median = −130.38 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-TF11

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 98795
Computed code bias (P1/P2)/m = -58.435 -53.520
Computed baseline (X,Y,Z)/m = -5.472 -0.550 -2.436
RMS of residuals /m = 0.486

Number of phase differences to fit baseline = 92485
A priori baseline (X,Y,Z)/m = -5.472 -0.550 -2.436
16629 clock jitters computed out of 16677 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 34.6

Iter 1 Large residuals L1= 24
Iter 1 Large residuals L2= 23
Computed baseline L1 (X,Y,Z)/m = -0.054 0.045 0.062
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.039 0.026 0.046
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 24
Iter 2 Large residuals L2= 23
Computed baseline L1 (X,Y,Z)/m = -0.054 0.045 0.062
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.039 0.026 0.047
RMS of residuals L2 /m = 0.003

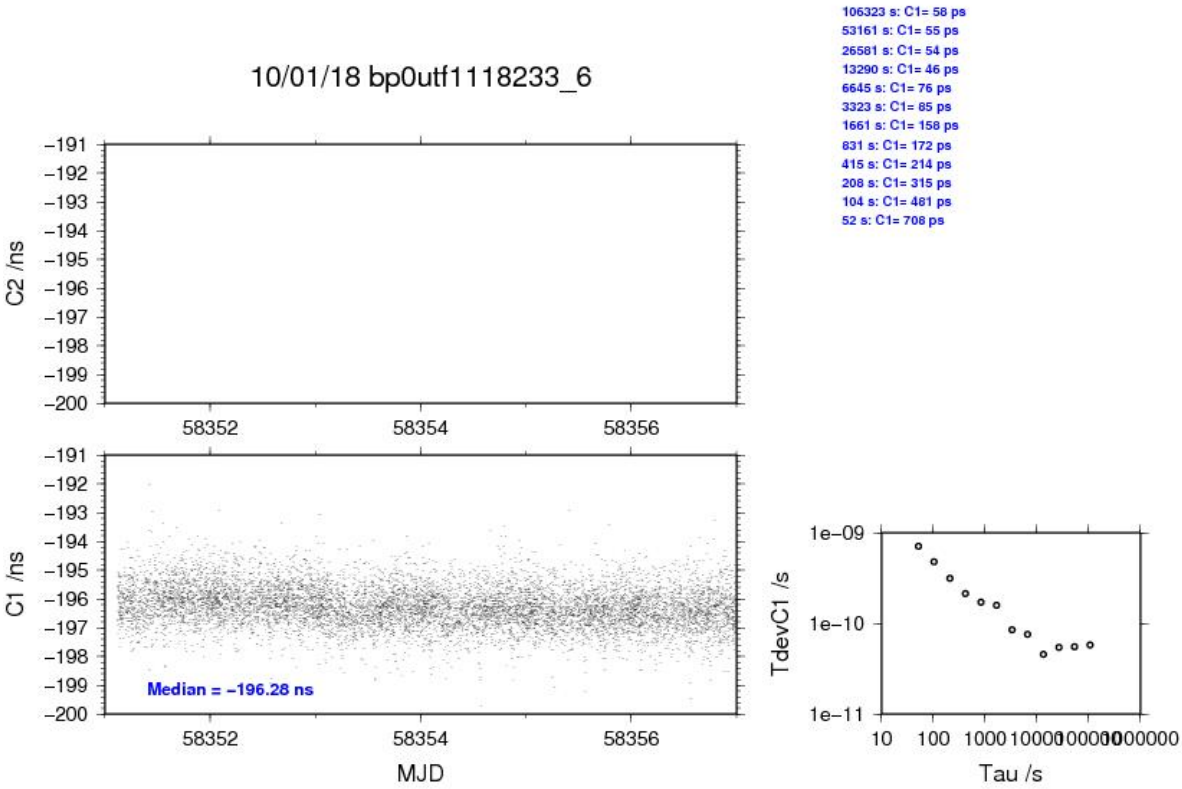
Final baseline L1 (X,Y,Z)/m = -5.526 -0.505 -2.374
Final baseline L2 (X,Y,Z)/m = -5.510 -0.524 -2.389

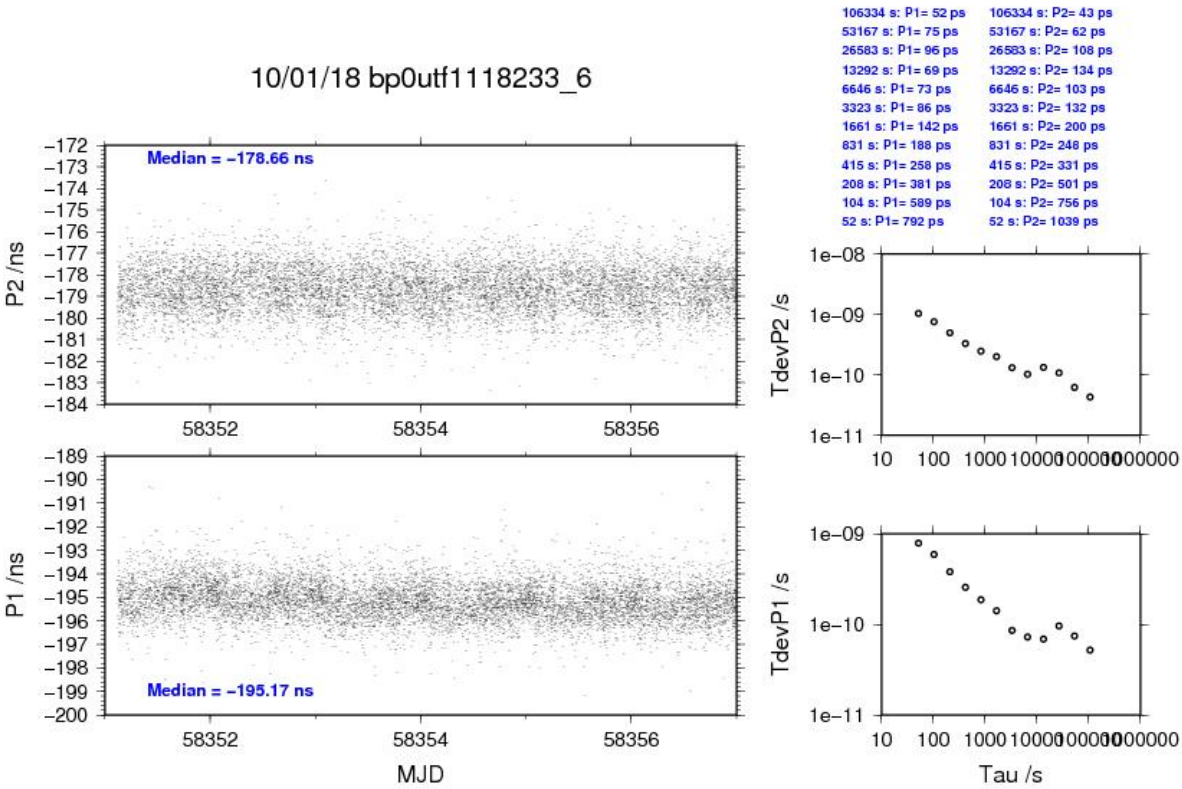
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 98802

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 98721 -196.251 1.296
C2: 0 NaN NaN
P1: 98714 -195.134 1.514
P2: 98714 -178.671 1.810

Number of 300s epochs in out file = 1695
Code #pts, median/ns, ave/ns, rms/ns
C1: 9790 -196.284 -196.260 0.705
C2: 0 0.000 NaN NaN
P1: 9789 -195.174 -195.142 0.815
P2: 9789 -178.656 -178.662 1.046


10/01/18 bp0utf1118233_6
106323 s: C1= 58 ps
53161 s: C1= 55 ps
26581 s: C1= 54 ps
13290 s: C1= 46 ps
6645 s: C1= 76 ps
3323 s: C1= 85 ps
1661 s: C1= 158 ps
831 s: C1= 172 ps
415 s: C1= 214 ps
208 s: C1= 315 ps
104 s: C1= 481 ps
52 s: C1= 708 ps
C2 /ns
C1 /ns
Median = −196.28 ns
MJD
TdevC1 /s
Tau /s


10/01/18 bp0utf1118233_6
106334 s: P1= 52 ps
53167 s: P1= 75 ps
26583 s: P1= 96 ps
13292 s: P1= 69 ps
6646 s: P1= 73 ps
3323 s: P1= 86 ps
1661 s: P1= 142 ps
831 s: P1= 188 ps
415 s: P1= 258 ps
208 s: P1= 381 ps
104 s: P1= 589 ps
52 s: P1= 792 ps
106334 s: P2= 43 ps
53167 s: P2= 62 ps
26583 s: P2= 108 ps
13292 s: P2= 134 ps
6646 s: P2= 103 ps
3323 s: P2= 132 ps
1661 s: P2= 200 ps
831 s: P2= 248 ps
415 s: P2= 331 ps
208 s: P2= 501 ps
104 s: P2= 756 ps
52 s: P2= 1039 ps
Median = −178.66 ns
Median = −195.17 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-TF11

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 121788
Computed code bias (P1/P2)/m = -44.944 -40.118
Computed baseline (X,Y,Z)/m = -5.851 -1.247 -1.707
RMS of residuals /m = 0.411

Number of phase differences to fit baseline = 126366
A priori baseline (X,Y,Z)/m = -5.851 -1.247 -1.707
16931 clock jitters computed out of 16931 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 3.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.022 -0.029 -0.073
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.029 -0.046 -0.086
RMS of residuals L2 /m = 0.003

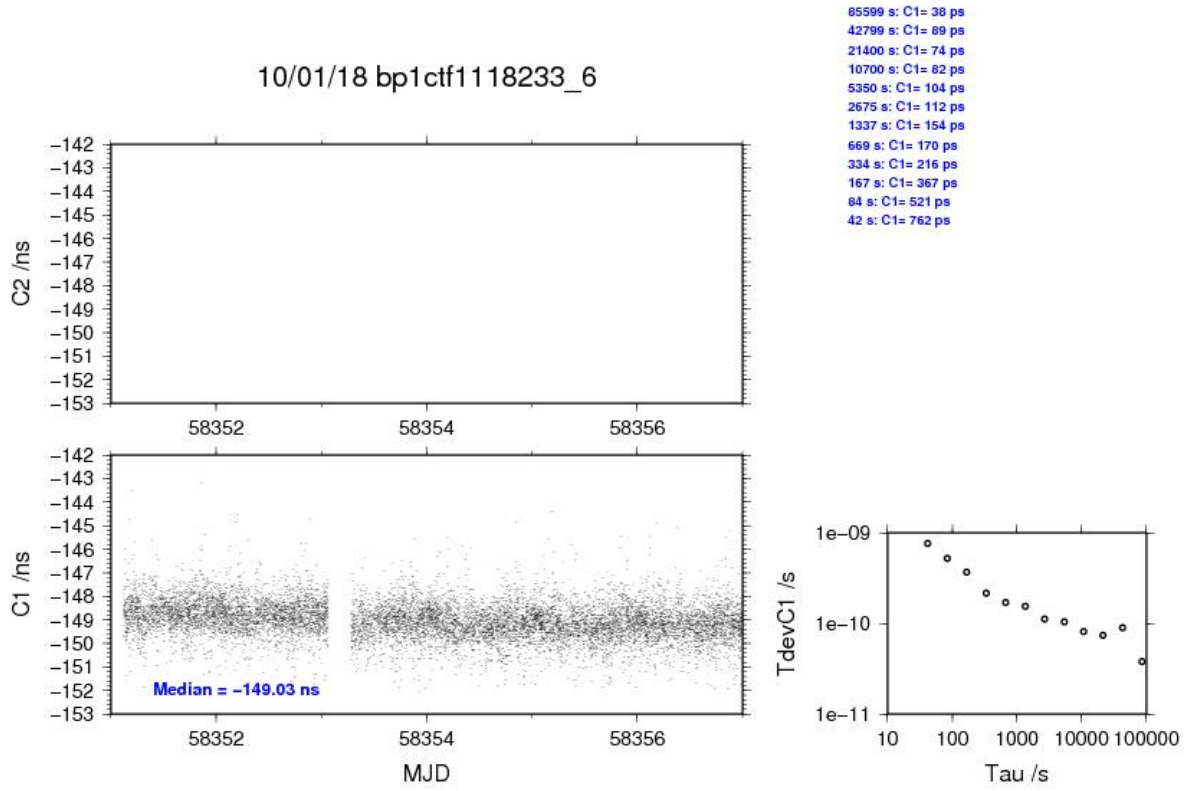
Final baseline L1 (X,Y,Z)/m = -5.830 -1.276 -1.780
Final baseline L2 (X,Y,Z)/m = -5.823 -1.293 -1.793

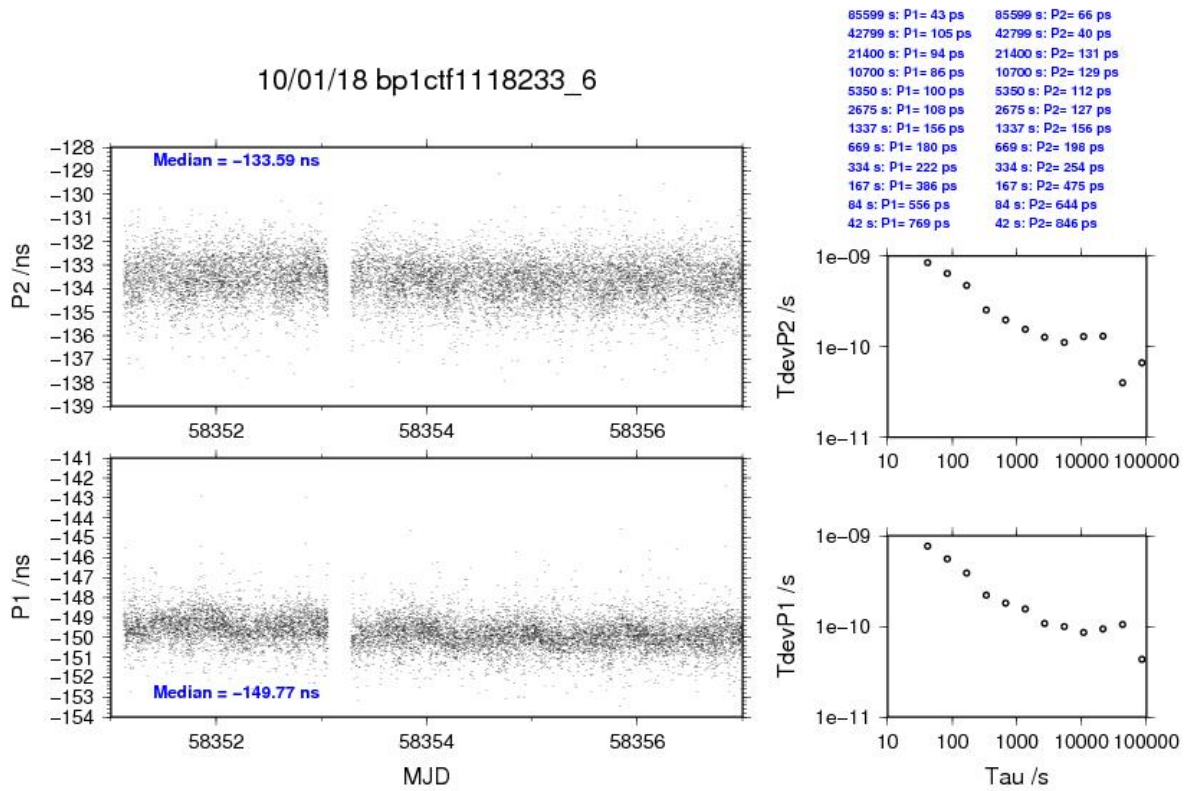
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 126945

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 121695 -149.018 1.362
C2: 0 NaN NaN
P1: 121693 -149.759 1.323
P2: 121693 -133.611 1.450

Number of 300s epochs in out file = 1695
Code #pts, median/ns, ave/ns, rms/ns
C1: 12160 -149.030 -149.022 0.776
C2: 0 0.000 NaN NaN
P1: 12160 -149.769 -149.759 0.804
P2: 12160 -133.595 -133.620 0.891


10/01/18 bp1ctf1118233_6
85599 s: C1= 38 ps
42799 s: C1= 89 ps
21400 s: C1= 74 ps
10700 s: C1= 82 ps
5350 s: C1= 104 ps
2675 s: C1= 112 ps
1337 s: C1= 154 ps
669 s: C1= 170 ps
334 s: C1= 216 ps
167 s: C1= 367 ps
84 s: C1= 521 ps
42 s: C1= 762 ps
C2 /ns
C1 /ns
Median = −149.03 ns
MJD
TdevC1 /s
Tau /s


10/01/18 bp1ctf1118233_6
85599 s: P1= 43 ps
42799 s: P1= 105 ps
21400 s: P1= 94 ps
10700 s: P1= 86 ps
5350 s: P1= 100 ps
2675 s: P1= 108 ps
1337 s: P1= 156 ps
669 s: P1= 180 ps
334 s: P1= 222 ps
167 s: P1= 386 ps
84 s: P1= 556 ps
42 s: P1= 769 ps
85599 s: P2= 66 ps
42799 s: P2= 40 ps
21400 s: P2= 131 ps
10700 s: P2= 129 ps
5350 s: P2= 112 ps
2675 s: P2= 127 ps
1337 s: P2= 156 ps
669 s: P2= 198 ps
334 s: P2= 254 ps
167 s: P2= 475 ps
84 s: P2= 644 ps
42 s: P2= 846 ps
Median = −133.59 ns
P2 /ns
P1 /ns
Median = −149.77 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

1.5/ BIPM (18271)

Period

MJD 58389 to 58401

Delays

BP1J:

X_O = 133.96 ns	(187.84-53.88)
X_P = 47.60 ns	(cf page 96)
REFDLY = 181.56 ns	
CABDLY = 128.73 ns	(C138)

BP0U:

REFDLY = 52.60 ns	(cf page 97)
CABDLY = 181.70 ns	(C134)

BP1C:

X_O = 185.35 ns	(200.84-15.49)
X_P = 52.60 ns	(cf page 96)
REFDLY = 237.95 ns	
CABDLY = 235.70 ns	(C131)

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 58389
Date and hour of the end of measurements:	MJD 58401

Information on the system

	Local:	Travelling:
4-character BIPM code	BP1J	BP1C
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx4proTR 27	Septentrio PolaRx3eTR S9000169176
1 PPS trigger level /V:		
• Antenna cable maker and type: Phase stabilised cable (Y/N):		
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio Sepchoke_MC 5131	Ashtech Chokering 701945-2 CR62000323008
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	47.60 ns	52.60 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	133.96 ns	185.35 ns
• Antenna cable delay:	128.73 ns	235.70 ns
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	
• INT DLY (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) 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 58389
Date and hour of the end of measurements:	MJD 58401

Information on the system

	Local:	Travelling:
4-character BIPM code	BP1J	BP0U
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx4proTR 27	Dicom GTR50 0801068
1 PPS trigger level /V:		1 V
• Antenna cable maker and type: Phase stabilised cable (Y/N):		
Length outside the building /m:	~ 15 m	~ 15 m
• Antenna maker and type: Antenna serial number:	Septentrio Sepchoke_MC 5131	Novatel 702-GG NAE10190011
Temperature (if stabilised) /°C		

Measured delays /ns

(if needed fill box "Additional Information" below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	47.60 ns	52.60
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	133.96 ns	
• Antenna cable delay:	128.73 ns	181.70
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	
• INT DLY (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) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

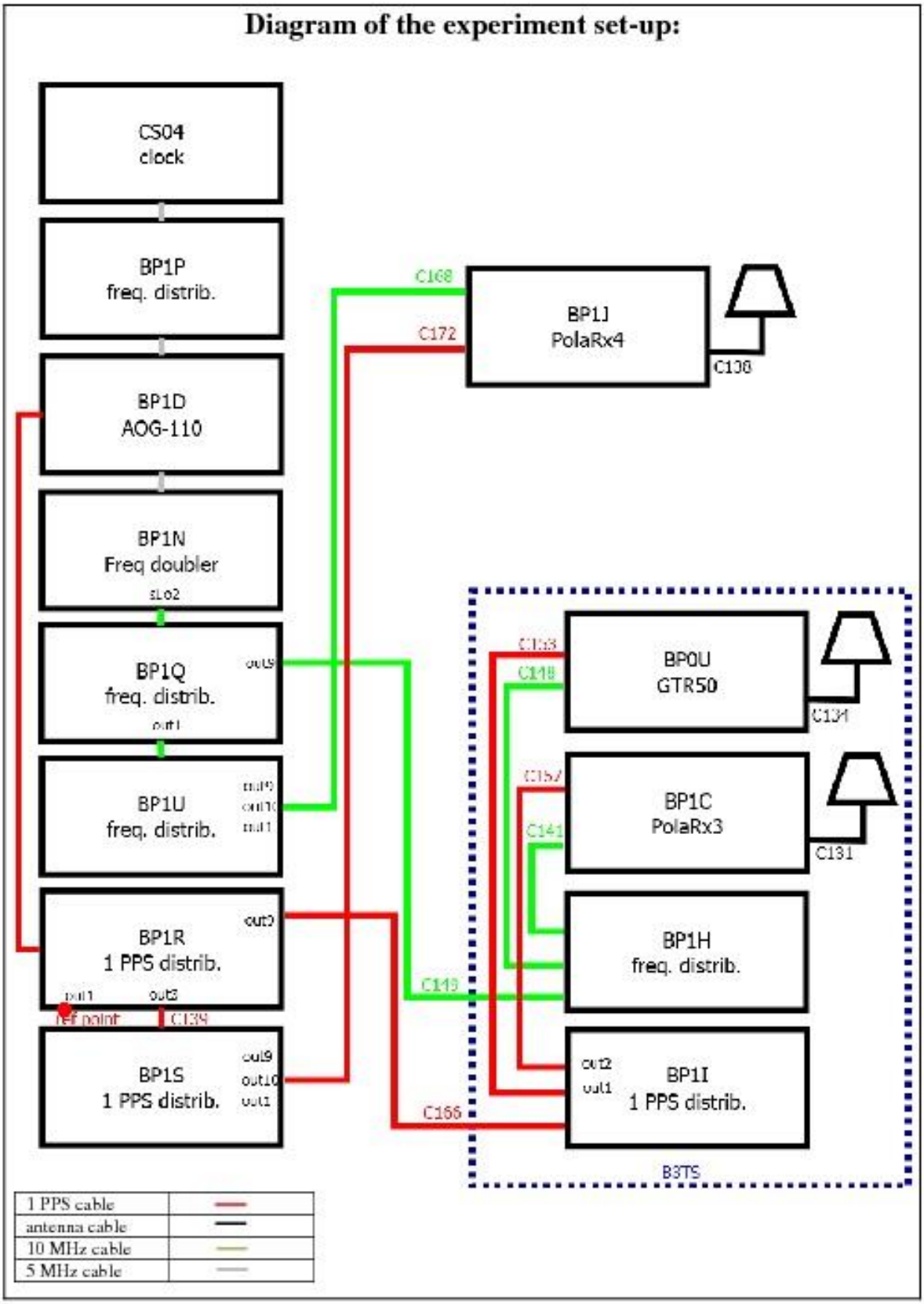


Diagram of the experiment set-up:
CS04
clock
BP1P
freq. distrib.
BP1D
AOG-110
BP1N
Freq doubler
BP1Q
freq. distrib.
BP1U
freq. distrib.
BP1R
1 PPS distrib.
BP1S
1 PPS distrib.
BP1J
PolaRx4
BP0U
GTR50
BP1C
PolaRx3
BP1H
freq. distrib.
BP1I
1 PPS distrib.
B3TS
C168
C172
C130
C131
C141
C143
C166
1 PPS cable
antenna cable
10 MHz cable
5 MHz cable

Log of Events / Additional Information :

All measurements at BIPM carried out by L. Tisserand.

Equipment used to measure delays are two Time Interval Counter (TIC), model SR620, maker Stanford Research Systems, with measurement uncertainty typically less than 0.5 ns (using external reference frequency as timebase).

TIC serial number 4680 used for local receivers.
TIC serial number 5482 used for traveling receivers.

BP0U-BP1J

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 185640
Computed code bias (P1/P2)/m = -2.405 -0.506
Computed baseline (X,Y,Z)/m = -2.328 -0.377 1.886
RMS of residuals /m = 0.622

Number of phase differences to fit baseline = 167949
A priori baseline (X,Y,Z)/m = -2.328 -0.377 1.886
36126 clock jitters computed out of 36353 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 38.1

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.151 0.046 0.103
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.157 0.037 0.099
RMS of residuals L2 /m = 0.003

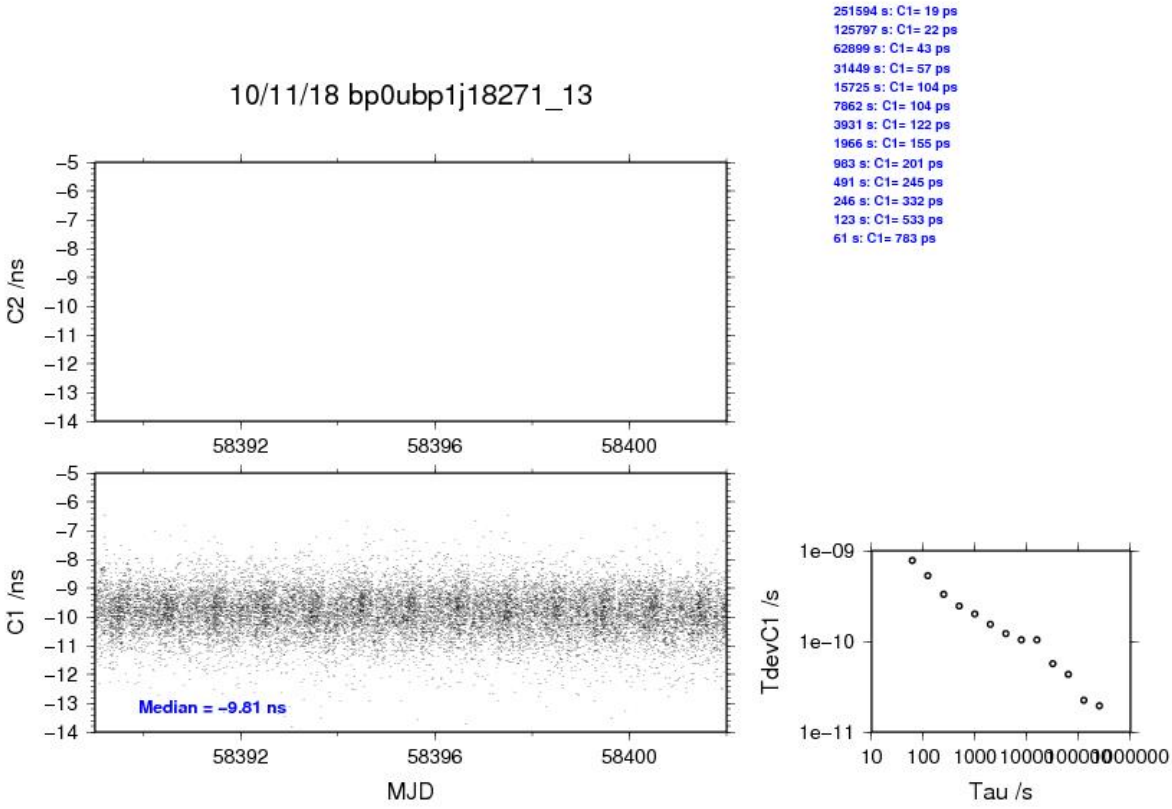
Final baseline L1 (X,Y,Z)/m = -2.177 -0.331 1.989
Final baseline L2 (X,Y,Z)/m = -2.172 -0.340 1.985

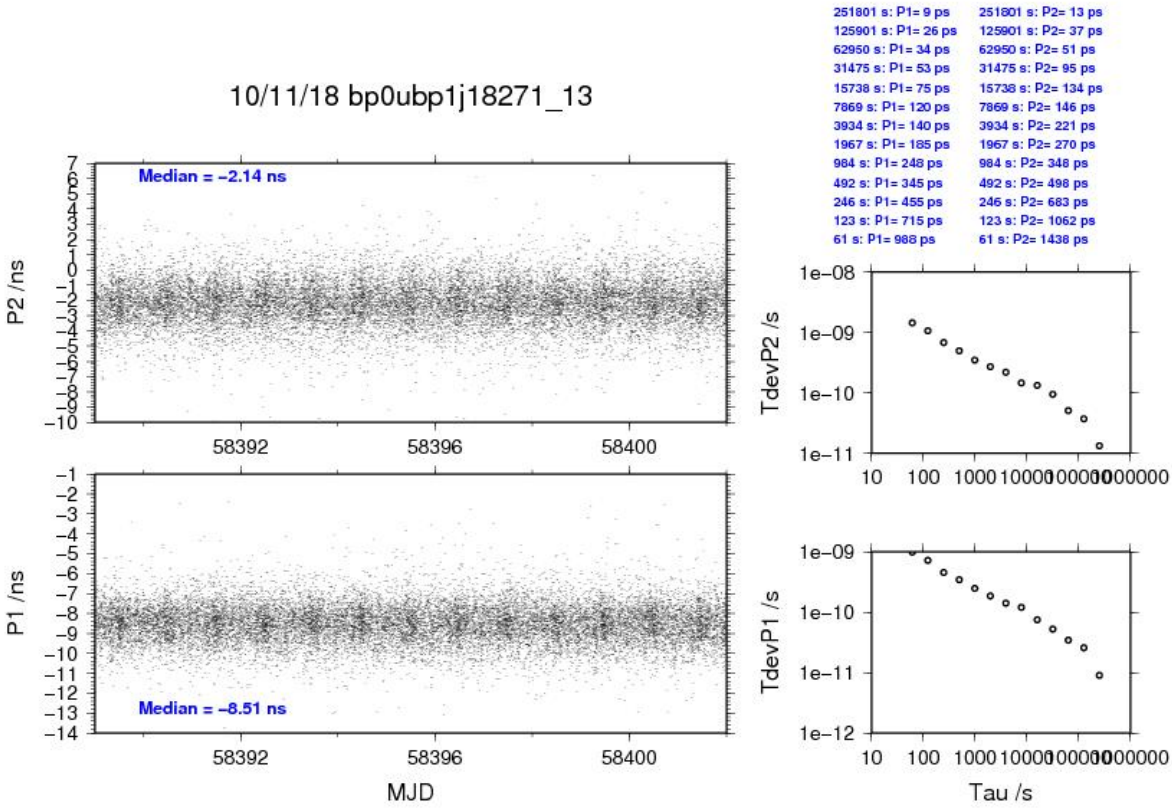
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 186041

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 185907 -9.836 1.364
C2: 0 NaN NaN
P1: 185593 -8.501 1.914
P2: 185592 -2.163 2.517

Number of 300s epochs in out file = 3744
Code #pts, median/ns, ave/ns, rms/ns
C1: 18282 -9.806 -9.833 0.764
C2: 0 0.000 NaN NaN
P1: 18267 -8.507 -8.521 0.988
P2: 18267 -2.141 -2.148 1.453


10/11/18 bp0ubp1j18271_13
251594 s: C1= 19 ps
125797 s: C1= 22 ps
62899 s: C1= 43 ps
31449 s: C1= 57 ps
15725 s: C1= 104 ps
7862 s: C1= 104 ps
3931 s: C1= 122 ps
1966 s: C1= 155 ps
983 s: C1= 201 ps
491 s: C1= 245 ps
246 s: C1= 332 ps
123 s: C1= 533 ps
61 s: C1= 783 ps
C2 /ns
C1 /ns
Median = −9.81 ns
MJD
TdevC1 /s
Tau /s


10/11/18 bp0ubp1j18271_13
251801 s: P1= 9 ps
125901 s: P1= 26 ps
62950 s: P1= 34 ps
31475 s: P1= 53 ps
15738 s: P1= 75 ps
7869 s: P1= 120 ps
3934 s: P1= 140 ps
1967 s: P1= 185 ps
984 s: P1= 248 ps
492 s: P1= 345 ps
246 s: P1= 455 ps
123 s: P1= 715 ps
61 s: P1= 988 ps
251801 s: P2= 13 ps
125901 s: P2= 37 ps
62950 s: P2= 51 ps
31475 s: P2= 95 ps
15738 s: P2= 134 ps
7869 s: P2= 146 ps
3934 s: P2= 221 ps
1967 s: P2= 270 ps
984 s: P2= 348 ps
492 s: P2= 498 ps
246 s: P2= 683 ps
123 s: P2= 1062 ps
61 s: P2= 1438 ps
Median = −2.14 ns
P2 /ns
P1 /ns
Median = −8.51 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP1J

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 251601
Number of huge residuals = 2. New iteration
Computed code bias (P1/P2)/m = 13.411 15.156
Computed baseline (X,Y,Z)/m = -1.409 -0.133 1.565
RMS of residuals /m = 0.575

Number of phase differences to fit baseline = 245315
A priori baseline (X,Y,Z)/m = -1.409 -0.133 1.565
37436 clock jitters computed out of 37436 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.2

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 7
Computed baseline L1 (X,Y,Z)/m = -0.079 -0.066 -0.243
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.069 -0.068 -0.245
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 7
Computed baseline L1 (X,Y,Z)/m = -0.079 -0.066 -0.243
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.069 -0.068 -0.245
RMS of residuals L2 /m = 0.005

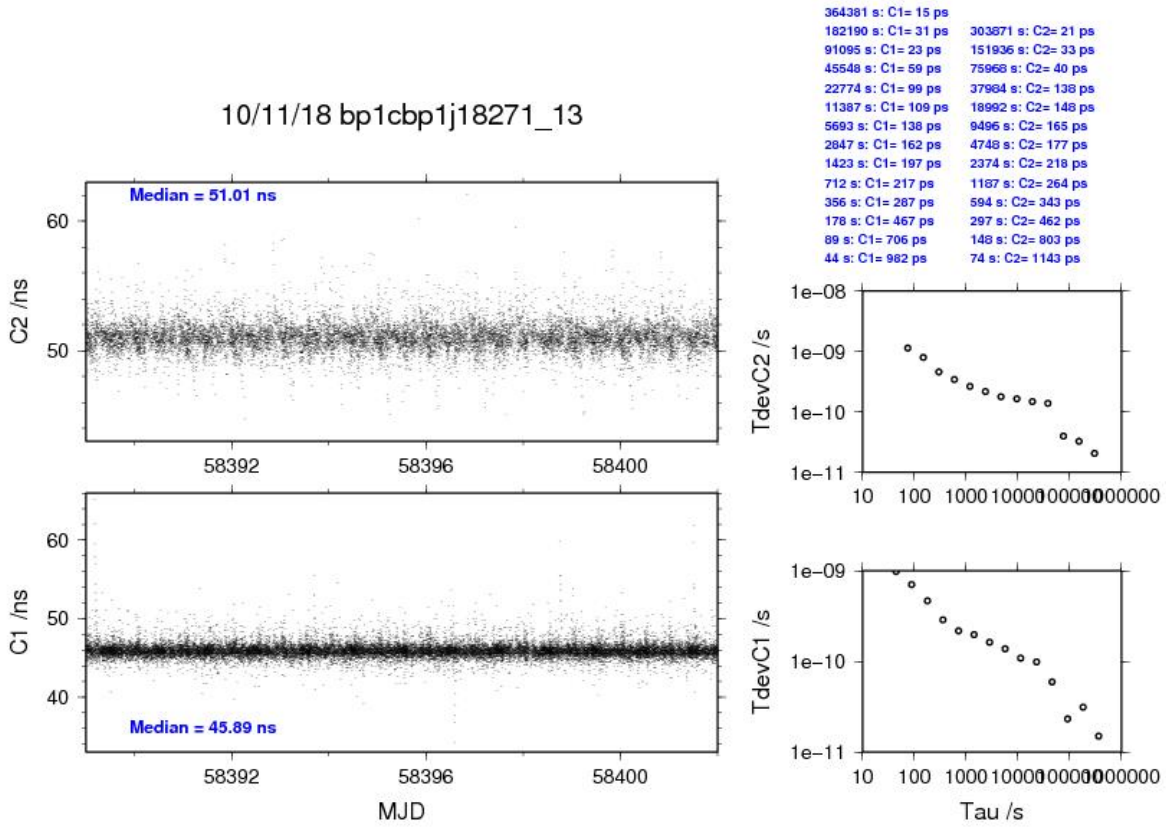
Final baseline L1 (X,Y,Z)/m = -1.488 -0.199 1.322
Final baseline L2 (X,Y,Z)/m = -1.478 -0.201 1.320

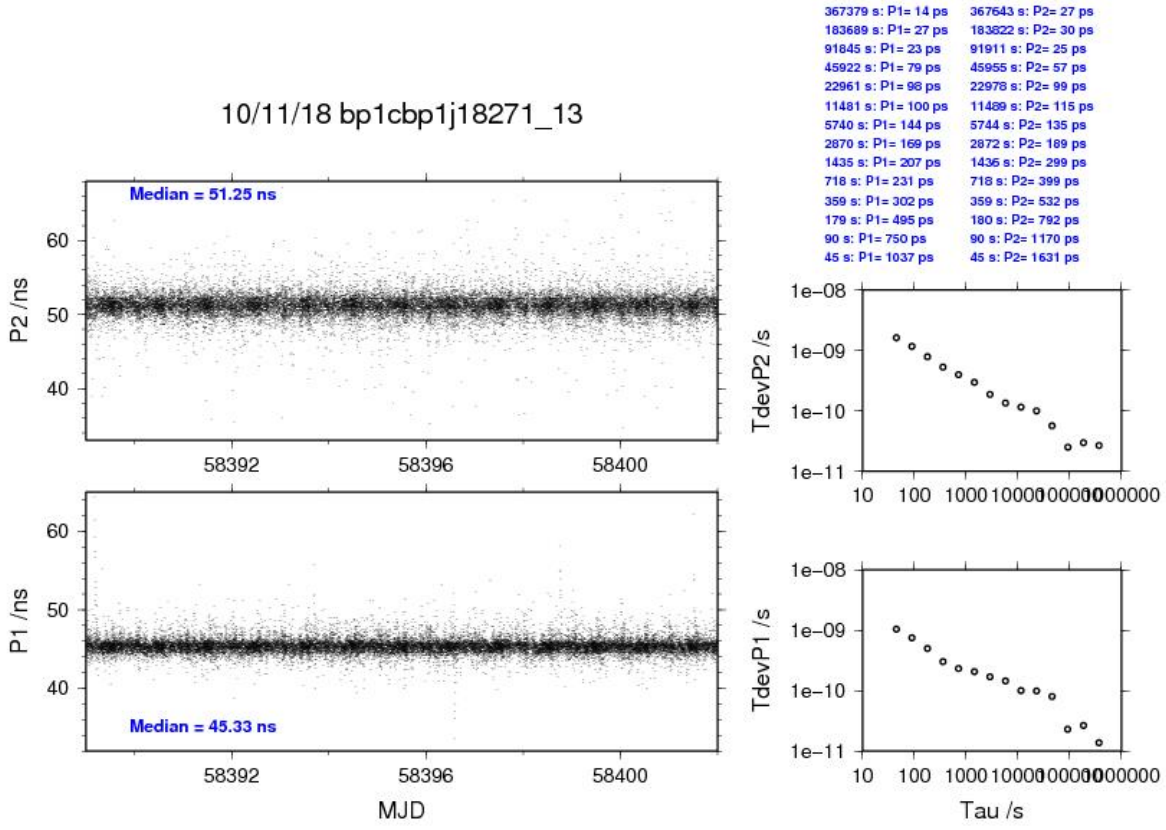
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 256206

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 252784 45.945 1.807
C2: 151543 51.047 1.987
P1: 250734 45.388 1.834
P2: 250584 51.220 2.688

Number of 300s epochs in out file = 3744
Code #pts, median/ns, ave/ns, rms/ns
C1: 25246 45.886 45.938 0.982
C2: 15137 51.014 51.051 1.113
P1: 25040 45.330 45.383 1.038
P2: 25022 51.248 51.219 1.622


10/11/18 bp1cbp1j18271_13
Median = 51.01 ns
C2 /ns
Median = 45.89 ns
C1 /ns
MJD
364381 s: C1= 15 ps
182190 s: C1= 31 ps
91095 s: C1= 23 ps
45548 s: C1= 59 ps
22774 s: C1= 99 ps
11387 s: C1= 109 ps
5693 s: C1= 138 ps
2847 s: C1= 162 ps
1423 s: C1= 197 ps
712 s: C1= 217 ps
356 s: C1= 287 ps
178 s: C1= 467 ps
89 s: C1= 706 ps
44 s: C1= 982 ps
303871 s: C2= 21 ps
151936 s: C2= 33 ps
75968 s: C2= 40 ps
37984 s: C2= 138 ps
18992 s: C2= 148 ps
9496 s: C2= 165 ps
4748 s: C2= 177 ps
2374 s: C2= 218 ps
1187 s: C2= 264 ps
594 s: C2= 343 ps
297 s: C2= 462 ps
148 s: C2= 803 ps
74 s: C2= 1143 ps
TdevC2 /s
TdevC1 /s
Tau /s


10/11/18 bp1cbp1j18271_13
Median = 51.25 ns
P2 /ns
Median = 45.33 ns
P1 /ns
MJD
367379 s: P1= 14 ps
183689 s: P1= 27 ps
91845 s: P1= 23 ps
45922 s: P1= 79 ps
22961 s: P1= 98 ps
11481 s: P1= 100 ps
5740 s: P1= 144 ps
2870 s: P1= 169 ps
1435 s: P1= 207 ps
718 s: P1= 231 ps
359 s: P1= 302 ps
179 s: P1= 495 ps
90 s: P1= 750 ps
45 s: P1= 1037 ps
367643 s: P2= 27 ps
183822 s: P2= 30 ps
91911 s: P2= 25 ps
45955 s: P2= 57 ps
22978 s: P2= 99 ps
11489 s: P2= 115 ps
5744 s: P2= 135 ps
2872 s: P2= 189 ps
1436 s: P2= 299 ps
718 s: P2= 399 ps
359 s: P2= 532 ps
180 s: P2= 792 ps
90 s: P2= 1170 ps
45 s: P2= 1631 ps
TdevP2 /s
TdevP1 /s
Tau /s