Table of contents

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.

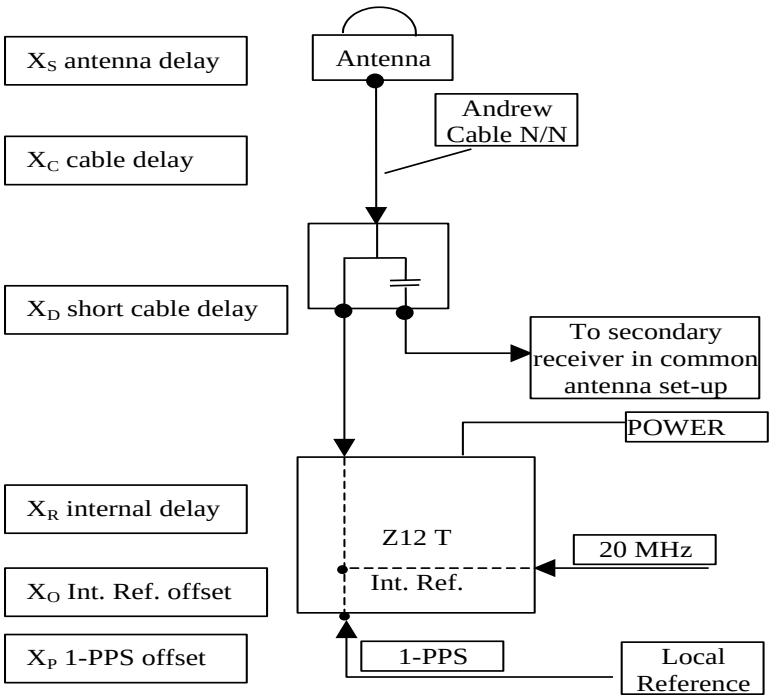


Figure 1: Definition of the different delays used in the most general set-up of a geodetic system (here shown for a Z12-T) from [Petit et al, 2001].

2/ phase 2

Laboratories: BIPM, PTB, ROA, OP

2.1/ BIPM (16259)

Period

MJD 57646 to 57657

Delays

BP0R:

X_O = 226.2 ns	(266.2-48.7+8.7)
X_P = 42.7 ns	(BP1R+C139+BP1S+C72)
REFDLY = 268.9 ns	
CABDLY = 133.4 ns	(C113)

BP1J:

X_O = 132.4 ns	(186.4-53.8)
X_P = 47.6 ns	(BP1R+C139+BP1S+C172)
REFDLY = 180.0 ns	
CABDLY = 128.7 ns	(C138)

BP1X:

REFDLY = 42.6 ns	(BP1R+C139+BP1S+C126)
CABDLY = 129.7 ns	(C178)
INT DLY = -27.5 ns (GPS C1) -33.5 ns (GPS P1) -37.4 ns (GPS P2)	

BP0U:

REFDLY = 52.6 ns	(BP1R+C166+BP1I+C153)
CABDLY = 181.7 ns	(C134)

BP1C:

X_O = 203.8 ns	(219.2-15.4)
X_P = 52.6 ns	(BP1R+C166+BP1I+C157)
REFDLY = 256.4 ns	
CABDLY = 235.7 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 57646
Date and hour of the end of measurements:	MJD 57657

Information on the system

	Local:	Travelling:
4-character BIPM code	BP0R	BP1C
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx2e 3113	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:	Ashtech Chokering 701945-2 CR6200539014	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:	42.7 ns	52.6 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	226.2 ns	203.8 ns
• Antenna cable delay:	133.4 ns	235.7 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 57646
Date and hour of the end of measurements:	MJD 57657

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:	47.6 ns	52.6
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	132.4 ns	
• Antenna cable delay:	128.7 ns	181.7
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 57646
Date and hour of the end of measurements:	MJD 57657

Information on the system

	Local:	Travelling:
4-character BIPM code	BP1X	
• Receiver maker and type: Receiver serial number:	Dicom GTR51 1306001	
1 PPS trigger level /V:	1 V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):		
Length outside the building /m:	~15 m	
• Antenna maker and type: Antenna serial number:	Novatel 703-GG NEG13160018	
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:	42.6 ns	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)		
• Antenna cable delay:	129.7 ns	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

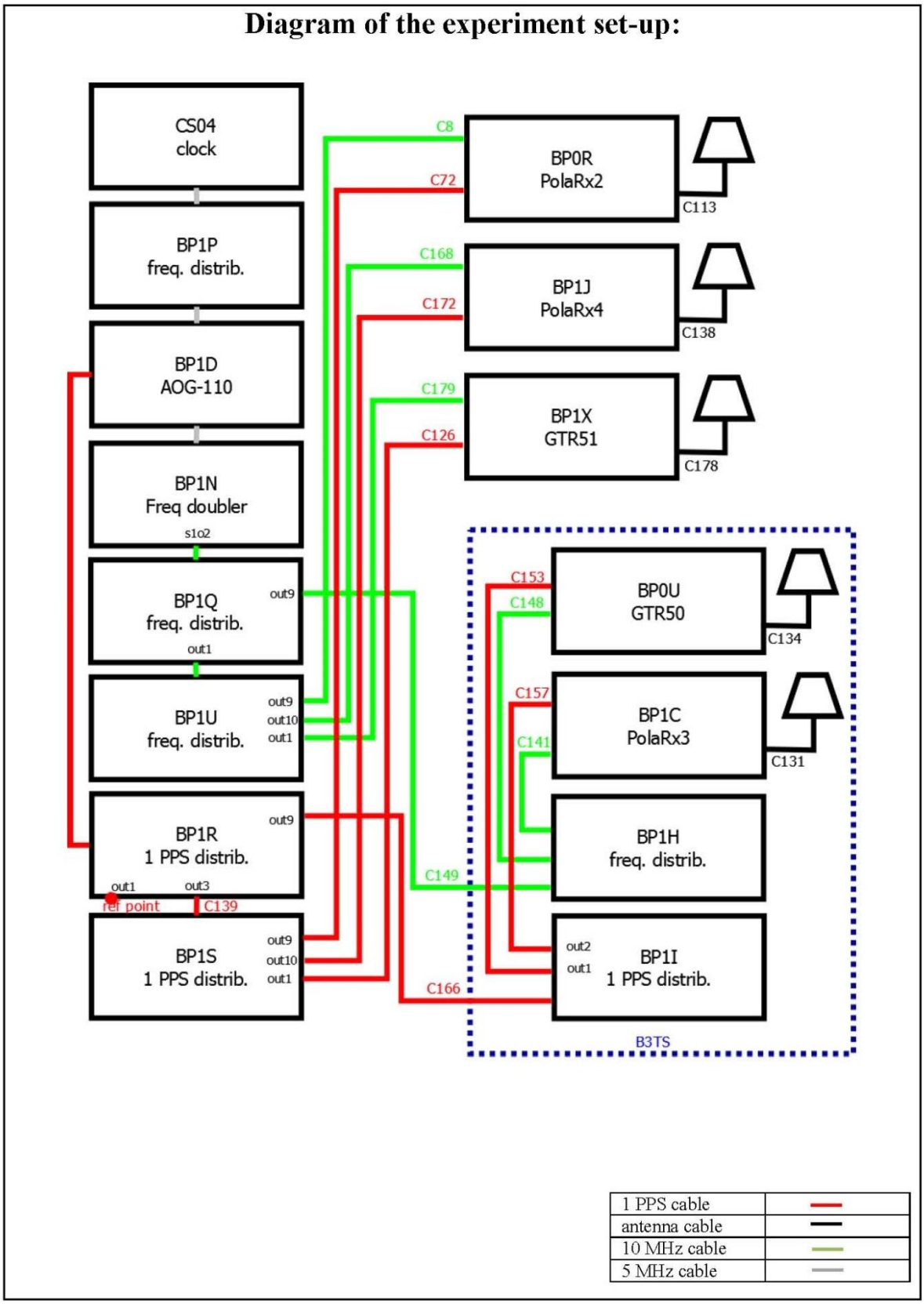
• INT DLY (GPS) /ns:	-27.5 ns (GPS C1), -33.5 ns (GPS P1), -37.4 ns (GPS P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	
• REF DLY /ns:	
• Coordinates reference frame:	
Latitude or X /m:	
Longitude or Y /m:	
Height or Z /m:	

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:



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-BP0R

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 77132
Computed code bias (P1/P2)/m = -28.321 -27.132
Computed baseline (X,Y,Z)/m = -5.281 -0.779 4.287
RMS of residuals /m = 0.701

Number of phase differences to fit baseline = 53472
A priori baseline (X,Y,Z)/m = -5.281 -0.779 4.287
13322 clock jitters computed out of 13604 intervals
AVE jitter /ps = 2.9 RMS jitter /ps = 41.9

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.199 -0.222 0.223
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.058 0.246 0.189
RMS of residuals L2 /m = 0.004

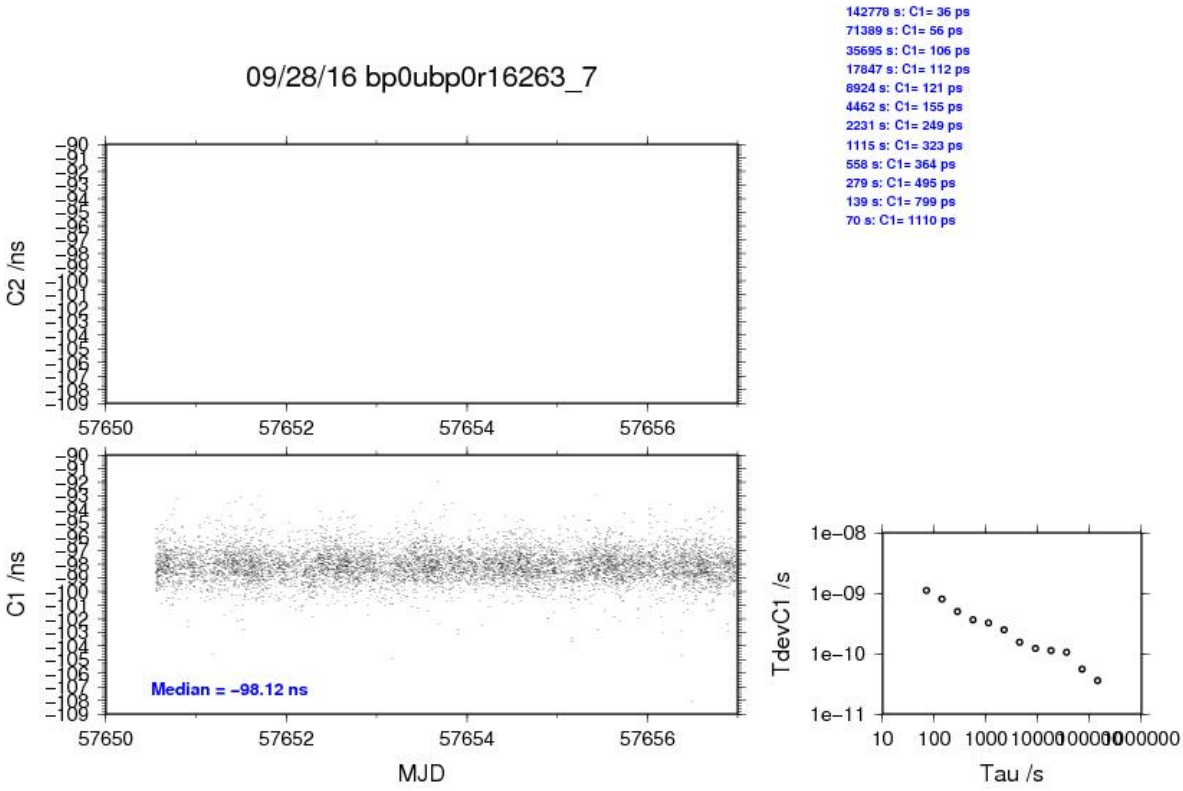
Final baseline L1 (X,Y,Z)/m = -5.083 -1.001 4.510
Final baseline L2 (X,Y,Z)/m = -5.223 -0.533 4.476

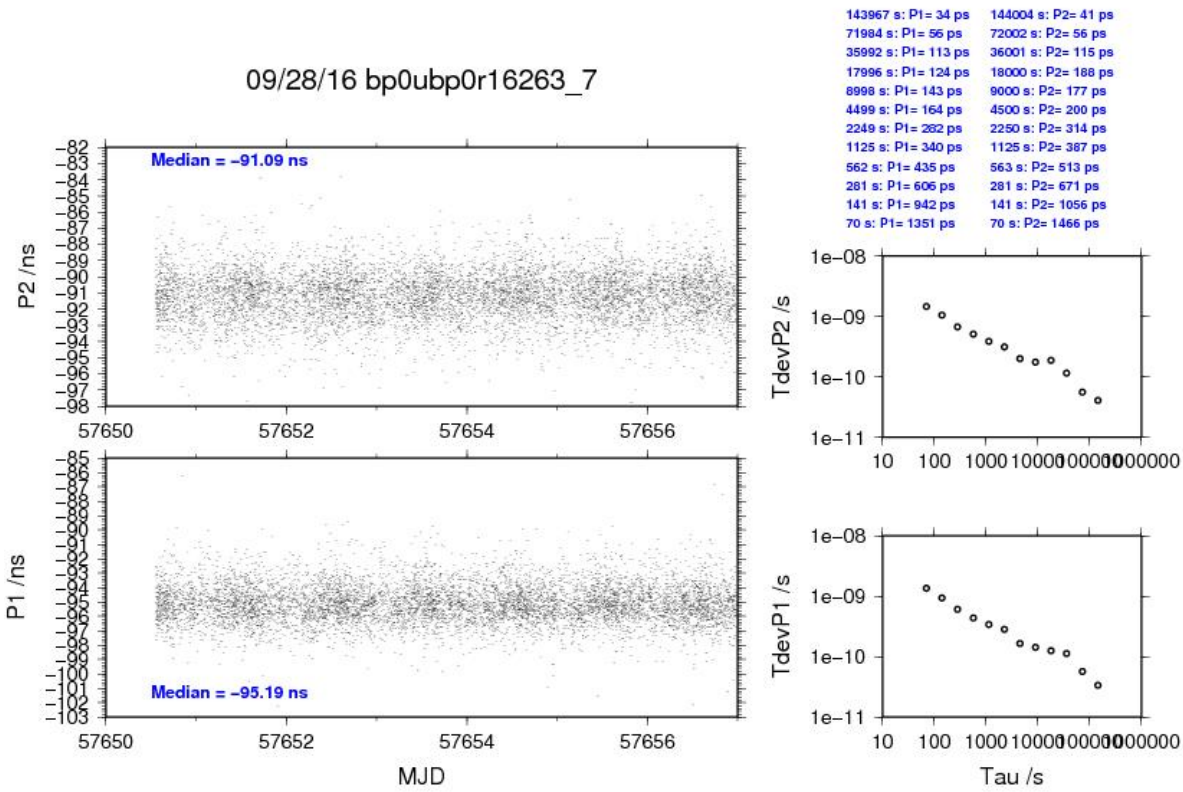
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 78500

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 77814 -98.067 1.790
C2: 0 NaN NaN
P1: 77050 -95.067 2.518
P2: 77037 -91.136 2.682

Number of 300s epochs in out file = 1858
Code #pts, median/ns, ave/ns, rms/ns
C1: 7992 -98.116 -98.093 1.115
C2: 0 0.000 NaN NaN
P1: 7926 -95.194 -95.121 1.328
P2: 7924 -91.091 -91.132 1.479


09/28/16 bp0ubp0r16263_7
142778 s: C1= 36 ps
71389 s: C1= 56 ps
35695 s: C1= 106 ps
17847 s: C1= 112 ps
8924 s: C1= 121 ps
4462 s: C1= 155 ps
2231 s: C1= 249 ps
1115 s: C1= 323 ps
558 s: C1= 364 ps
279 s: C1= 495 ps
139 s: C1= 799 ps
70 s: C1= 1110 ps
C2 /ns
C1 /ns
Median = -98.12 ns
MJD
TdevC1 /s
Tau /s


09/28/16 bp0ubp0r16263_7
143967 s: P1= 34 ps
71984 s: P1= 56 ps
35992 s: P1= 113 ps
17996 s: P1= 124 ps
8998 s: P1= 143 ps
4499 s: P1= 164 ps
2249 s: P1= 282 ps
1125 s: P1= 340 ps
562 s: P1= 435 ps
281 s: P1= 606 ps
141 s: P1= 942 ps
70 s: P1= 1351 ps
144004 s: P2= 41 ps
72002 s: P2= 56 ps
36001 s: P2= 115 ps
18000 s: P2= 188 ps
9000 s: P2= 177 ps
4500 s: P2= 200 ps
2250 s: P2= 314 ps
1125 s: P2= 387 ps
563 s: P2= 513 ps
281 s: P2= 671 ps
141 s: P2= 1056 ps
70 s: P2= 1466 ps
P2 /ns
Median = -91.09 ns
P1 /ns
Median = -95.19 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP0R

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 170683
Computed code bias (P1/P2)/m = -17.173 -16.093
Computed baseline (X,Y,Z)/m = -4.934 -1.161 3.249
RMS of residuals /m = 0.717

Number of phase differences to fit baseline = 132025
A priori baseline (X,Y,Z)/m = -4.934 -1.161 3.249
23196 clock jitters computed out of 23322 intervals
AVE jitter /ps = 2.8 RMS jitter /ps = 7.8

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 8
Computed baseline L1 (X,Y,Z)/m = 0.557 0.131 0.545
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.361 0.588 0.493
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 8
Computed baseline L1 (X,Y,Z)/m = 0.557 0.131 0.545
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.361 0.588 0.493
RMS of residuals L2 /m = 0.005

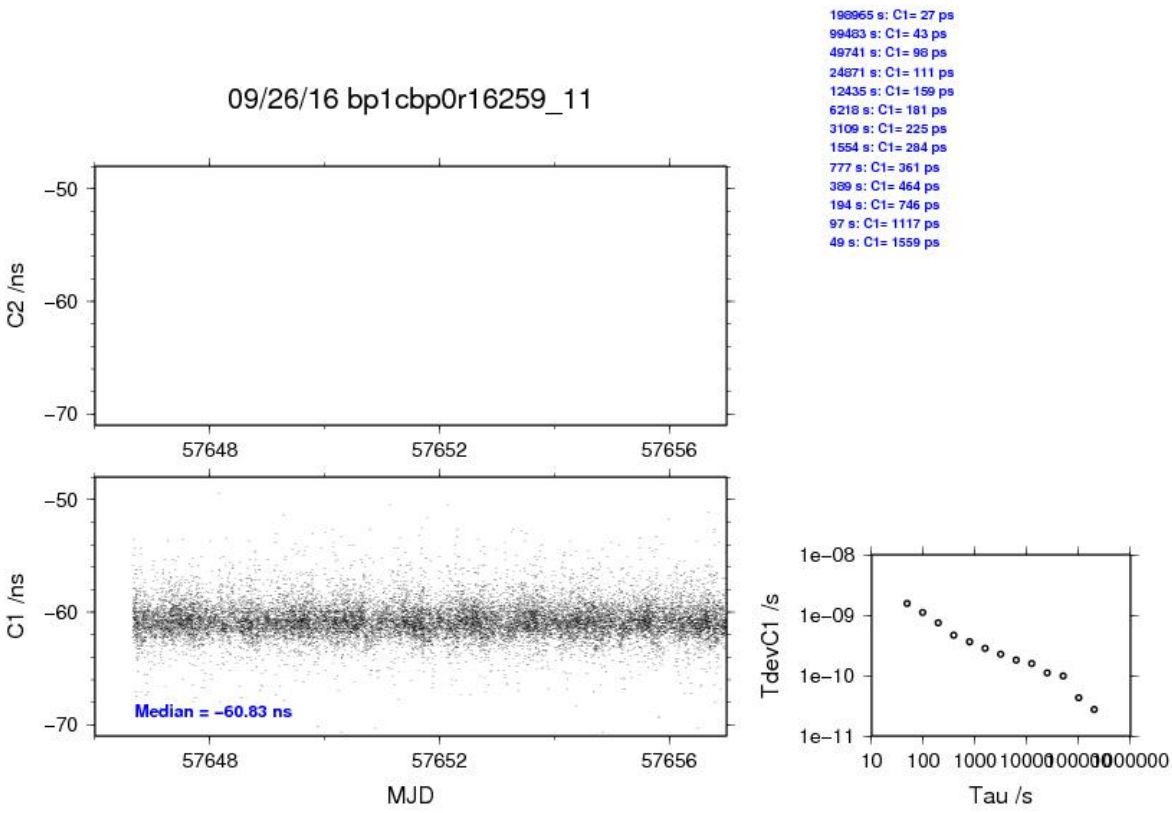
Final baseline L1 (X,Y,Z)/m = -4.378 -1.029 3.795
Final baseline L2 (X,Y,Z)/m = -4.574 -0.572 3.742

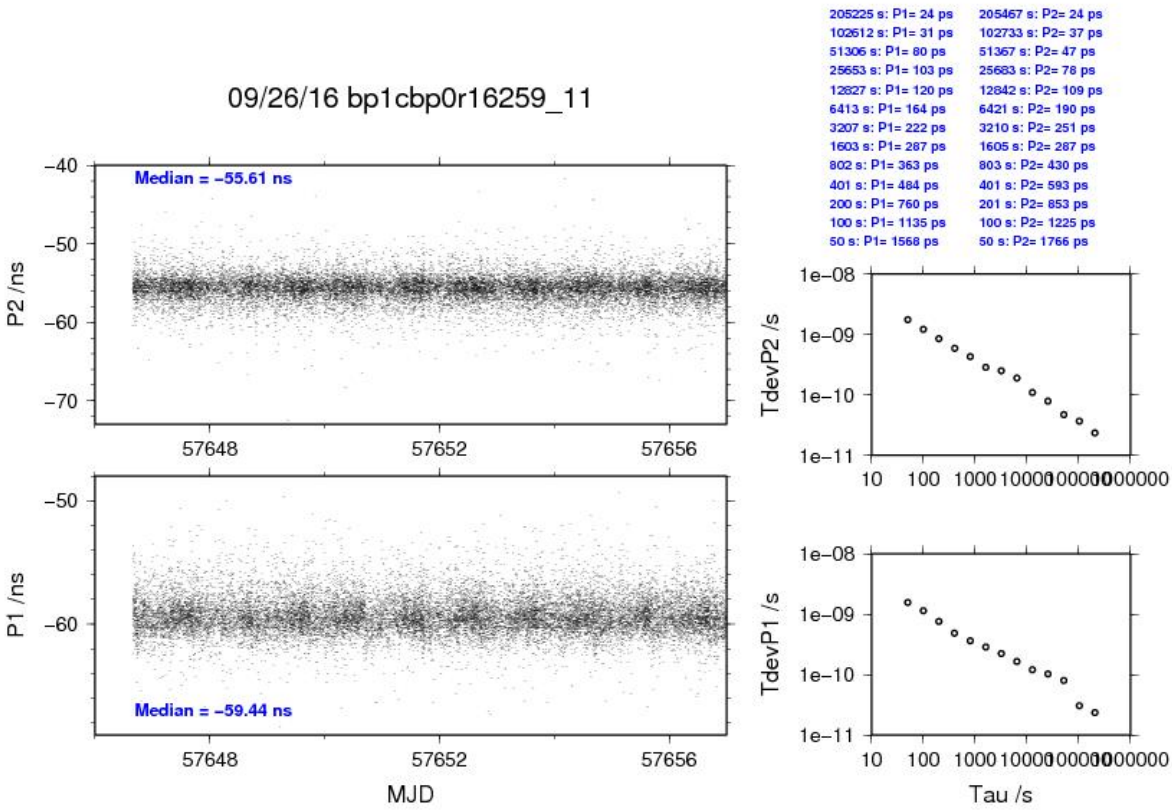
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 180378

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 177849 -60.732 2.561
C2: 0 NaN NaN
P1: 169931 -59.273 2.767
P2: 169749 -55.668 3.051

Number of 300s epochs in out file = 2979
Code #pts, median/ns, ave/ns, rms/ns
C1: 18393 -60.827 -60.715 1.547
C2: 0 0.000 NaN NaN
P1: 17832 -59.443 -59.297 1.562
P2: 17811 -55.611 -55.683 1.741


198965 s: C1= 27 ps
99483 s: C1= 43 ps
49741 s: C1= 98 ps
24871 s: C1= 111 ps
12435 s: C1= 159 ps
6218 s: C1= 181 ps
3109 s: C1= 225 ps
1554 s: C1= 284 ps
777 s: C1= 361 ps
389 s: C1= 464 ps
194 s: C1= 746 ps
97 s: C1= 1117 ps
49 s: C1= 1559 ps
09/26/16 bp1cbp0r16259_11
C2 /ns
C1 /ns
Median = -60.83 ns
MJD
TdevC1 /s
Tau /s


205225 s: P1= 24 ps
102612 s: P1= 31 ps
51306 s: P1= 80 ps
25653 s: P1= 103 ps
12827 s: P1= 120 ps
6413 s: P1= 164 ps
3207 s: P1= 222 ps
1603 s: P1= 287 ps
802 s: P1= 363 ps
401 s: P1= 484 ps
200 s: P1= 760 ps
100 s: P1= 1135 ps
50 s: P1= 1568 ps
205467 s: P2= 24 ps
102733 s: P2= 37 ps
51367 s: P2= 47 ps
25683 s: P2= 78 ps
12842 s: P2= 109 ps
6421 s: P2= 190 ps
3210 s: P2= 251 ps
1605 s: P2= 287 ps
803 s: P2= 430 ps
401 s: P2= 593 ps
201 s: P2= 853 ps
100 s: P2= 1225 ps
50 s: P2= 1766 ps
09/26/16 bp1cbp0r16259_11
P2 /ns
Median = -55.61 ns
P1 /ns
Median = -59.44 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-BP1J

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 82055
Computed code bias (P1/P2)/m = -2.899 -1.008
Computed baseline (X,Y,Z)/m = -2.307 -0.326 1.895
RMS of residuals /m = 0.619

Number of phase differences to fit baseline = 73394
A priori baseline (X,Y,Z)/m = -2.307 -0.326 1.895
17621 clock jitters computed out of 17821 intervals
AVE jitter /ps = -0.7 RMS jitter /ps = 41.6

Iter 1 Large residuals L1= 5
Iter 1 Large residuals L2= 5
Computed baseline L1 (X,Y,Z)/m = 0.128 0.021 0.095
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.133 0.007 0.091
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 5
Iter 2 Large residuals L2= 5
Computed baseline L1 (X,Y,Z)/m = 0.128 0.021 0.095
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.133 0.007 0.091
RMS of residuals L2 /m = 0.003

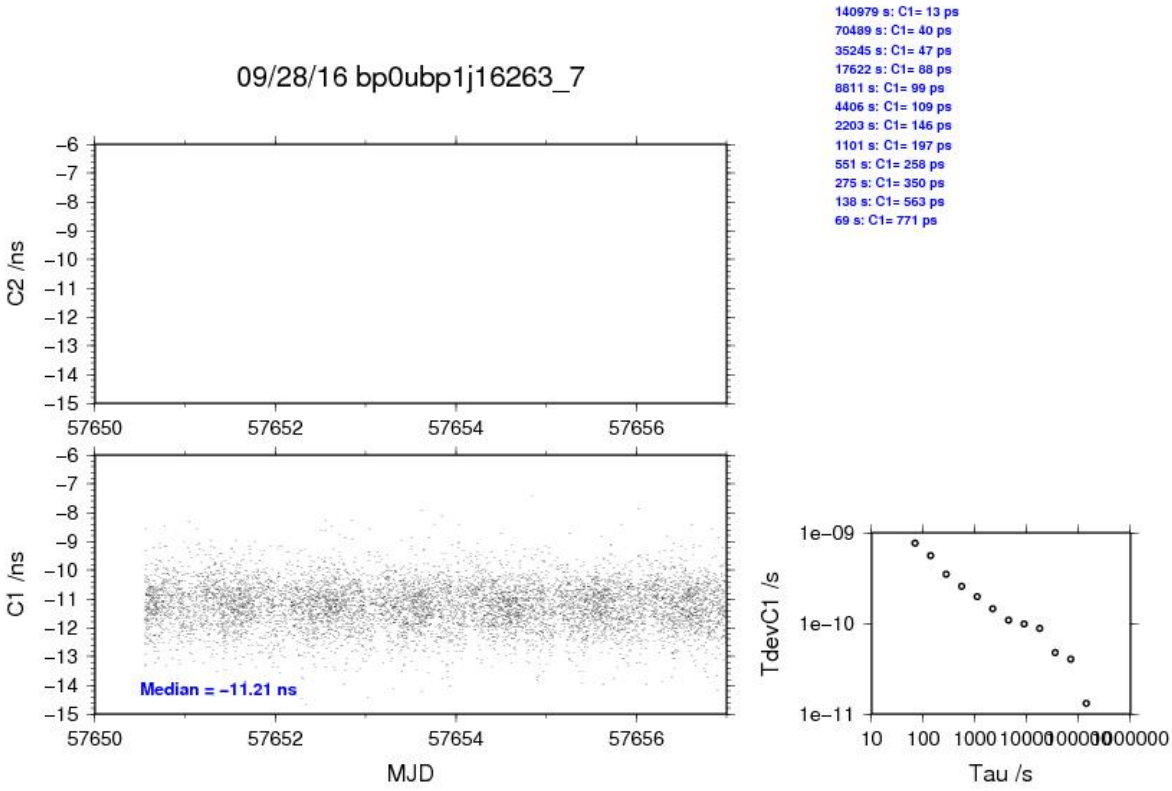
Final baseline L1 (X,Y,Z)/m = -2.180 -0.305 1.989
Final baseline L2 (X,Y,Z)/m = -2.175 -0.318 1.986

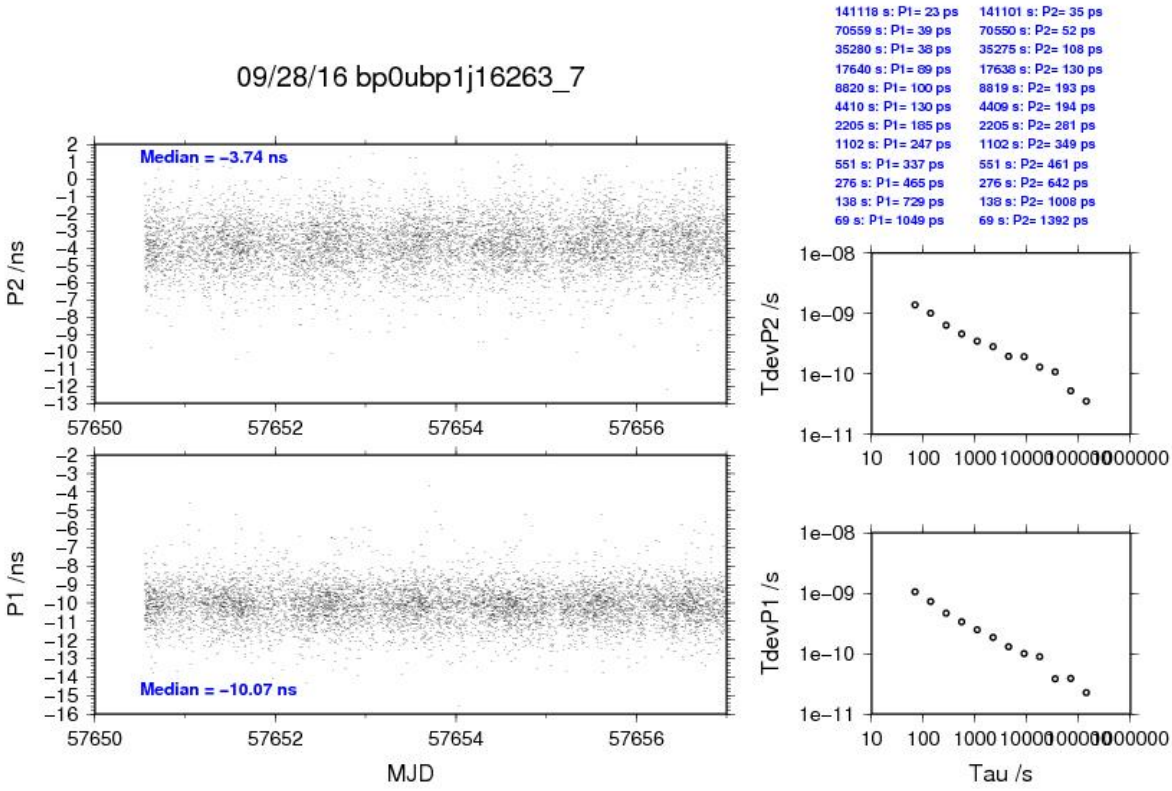
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 82216

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 82072 -11.223 1.387
C2: 0 NaN NaN
P1: 81963 -10.074 1.932
P2: 81963 -3.762 2.419

Number of 300s epochs in out file = 1858
Code #pts, median/ns, ave/ns, rms/ns
C1: 8094 -11.205 -11.222 0.773
C2: 0 0.000 NaN NaN
P1: 8086 -10.071 -10.091 1.019
P2: 8087 -3.744 -3.745 1.396


09/28/16 bp0ubp1j16263_7
140979 s: C1= 13 ps
70489 s: C1= 40 ps
35245 s: C1= 47 ps
17622 s: C1= 88 ps
8811 s: C1= 99 ps
4406 s: C1= 109 ps
2203 s: C1= 146 ps
1101 s: C1= 197 ps
551 s: C1= 258 ps
275 s: C1= 350 ps
138 s: C1= 563 ps
69 s: C1= 771 ps
C2 /ns
C1 /ns
Median = -11.21 ns
MJD
TdevC1 /s
Tau /s


09/28/16 bp0ubp1j16263_7
141118 s: P1= 23 ps
70559 s: P1= 39 ps
35280 s: P1= 38 ps
17640 s: P1= 89 ps
8820 s: P1= 100 ps
4410 s: P1= 130 ps
2205 s: P1= 185 ps
1102 s: P1= 247 ps
551 s: P1= 337 ps
276 s: P1= 465 ps
138 s: P1= 729 ps
69 s: P1= 1049 ps
141101 s: P2= 35 ps
70550 s: P2= 52 ps
35275 s: P2= 108 ps
17638 s: P2= 130 ps
8819 s: P2= 193 ps
4409 s: P2= 194 ps
2205 s: P2= 281 ps
1102 s: P2= 349 ps
551 s: P2= 461 ps
276 s: P2= 642 ps
138 s: P2= 1008 ps
69 s: P2= 1392 ps
P2 /ns
P1 /ns
Median = -3.74 ns
Median = -10.07 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP1J

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 183334
Computed code bias (P1/P2)/m = 7.518 9.272
Computed baseline (X,Y,Z)/m = -1.450 -0.193 1.517
RMS of residuals /m = 0.585

Number of phase differences to fit baseline = 178543
A priori baseline (X,Y,Z)/m = -1.450 -0.193 1.517
29780 clock jitters computed out of 29780 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 5.1

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 15
Computed baseline L1 (X,Y,Z)/m = -0.039 -0.032 -0.206
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.026 -0.034 -0.205
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 15
Computed baseline L1 (X,Y,Z)/m = -0.039 -0.032 -0.206
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.026 -0.034 -0.205
RMS of residuals L2 /m = 0.004

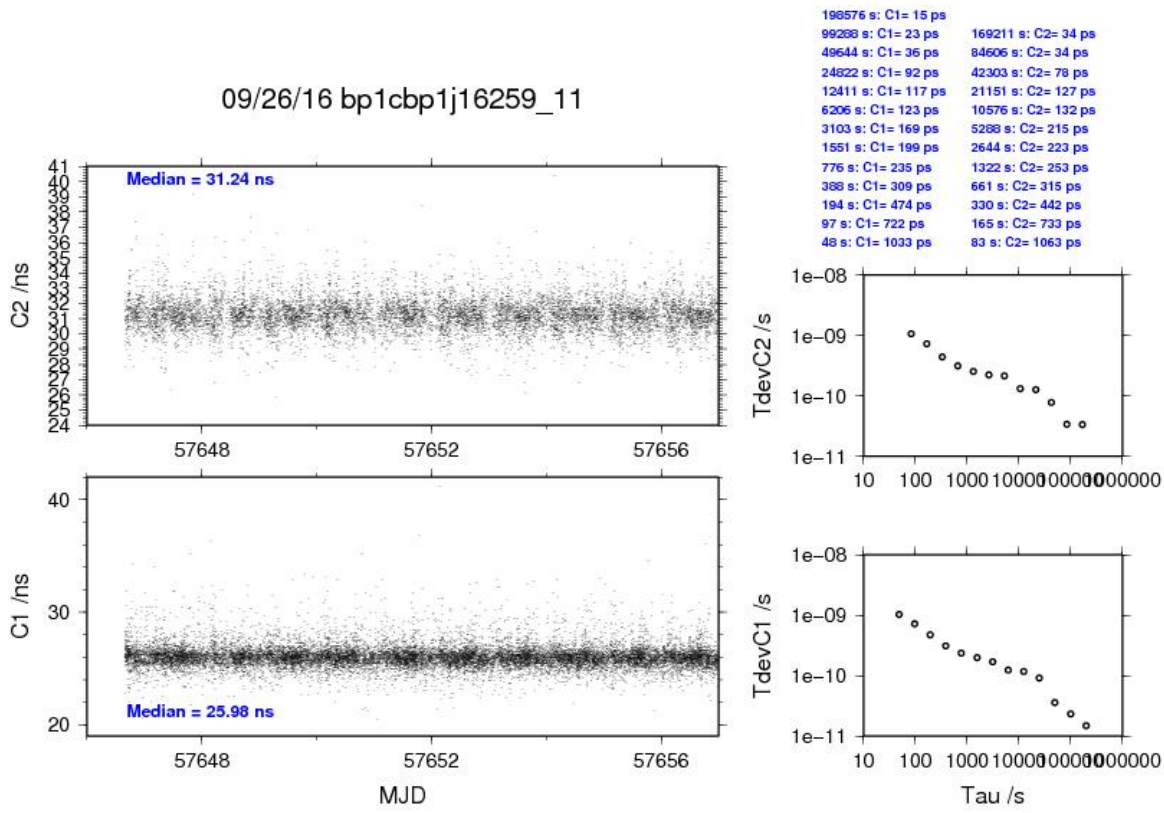
Final baseline L1 (X,Y,Z)/m = -1.489 -0.225 1.311
Final baseline L2 (X,Y,Z)/m = -1.476 -0.227 1.312

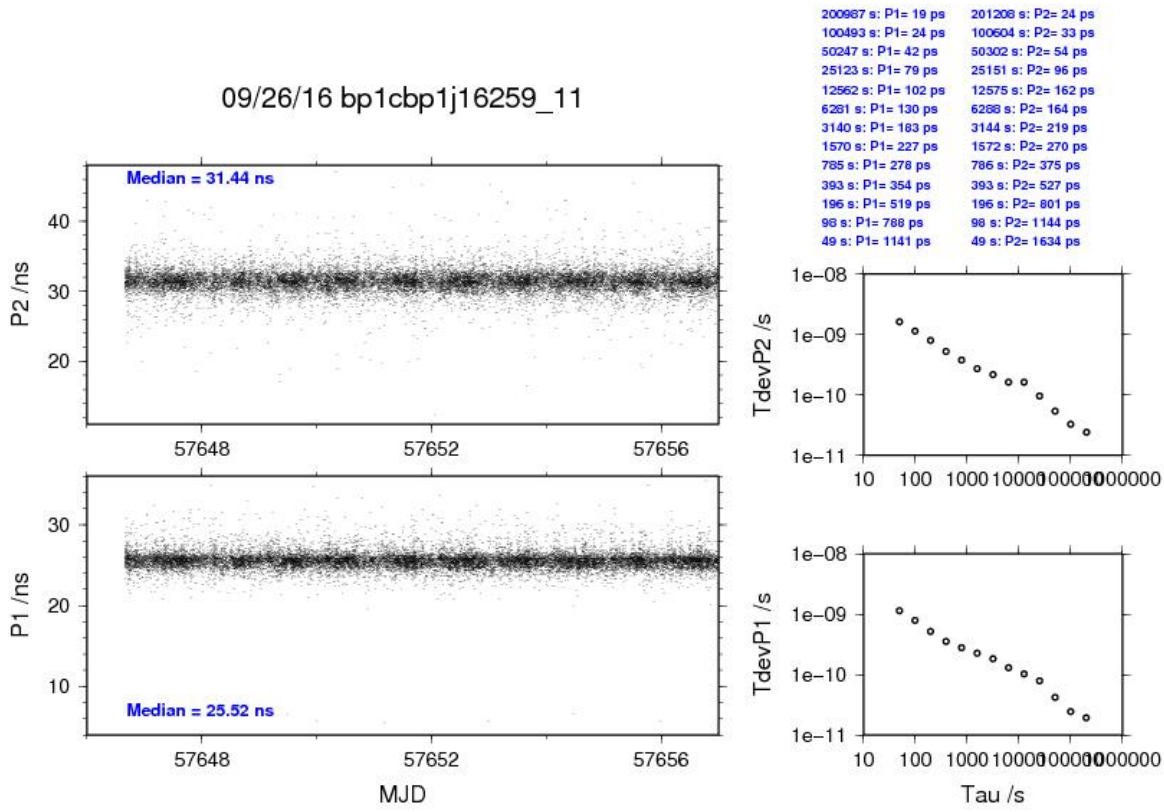
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 187104

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 184739 26.049 1.904
C2: 108180 31.256 1.904
P1: 182570 25.553 1.982
P2: 182272 31.428 2.665

Number of 300s epochs in out file = 2979
Code #pts, median/ns, ave/ns, rms/ns
C1: 18429 25.977 26.041 1.016
C2: 10814 31.239 31.265 1.036
P1: 18208 25.517 25.553 1.119
P2: 18188 31.440 31.424 1.612


09/26/16 bp1cbp1j16259_11
Median = 31.24 ns
C2 /ns
Median = 25.98 ns
C1 /ns
57648
57652
57656
MJD
198576 s: C1= 15 ps
99288 s: C1= 23 ps
49644 s: C1= 36 ps
24822 s: C1= 92 ps
12411 s: C1= 117 ps
6206 s: C1= 123 ps
3103 s: C1= 169 ps
1551 s: C1= 199 ps
776 s: C1= 235 ps
388 s: C1= 309 ps
194 s: C1= 474 ps
97 s: C1= 722 ps
48 s: C1= 1033 ps
169211 s: C2= 34 ps
84606 s: C2= 34 ps
42303 s: C2= 78 ps
21151 s: C2= 127 ps
10576 s: C2= 132 ps
5288 s: C2= 215 ps
2644 s: C2= 223 ps
1322 s: C2= 253 ps
661 s: C2= 315 ps
330 s: C2= 442 ps
165 s: C2= 733 ps
83 s: C2= 1063 ps
TdevC2 /s
TdevC1 /s
1e−08
1e−09
1e−10
1e−11
10
100
Tau /s


09/26/16 bp1cbp1j16259_11
Median = 31.44 ns
P2 /ns
Median = 25.52 ns
P1 /ns
57648
57652
57656
MJD
200987 s: P1= 19 ps
100493 s: P1= 24 ps
50247 s: P1= 42 ps
25123 s: P1= 79 ps
12562 s: P1= 102 ps
6281 s: P1= 130 ps
3140 s: P1= 183 ps
1570 s: P1= 227 ps
785 s: P1= 278 ps
393 s: P1= 354 ps
196 s: P1= 519 ps
98 s: P1= 788 ps
49 s: P1= 1141 ps
201208 s: P2= 24 ps
100604 s: P2= 33 ps
50302 s: P2= 54 ps
25151 s: P2= 96 ps
12575 s: P2= 162 ps
6288 s: P2= 164 ps
3144 s: P2= 219 ps
1572 s: P2= 270 ps
786 s: P2= 375 ps
393 s: P2= 527 ps
196 s: P2= 801 ps
98 s: P2= 1144 ps
49 s: P2= 1634 ps
TdevP2 /s
TdevP1 /s
1e−08
1e−09
1e−10
1e−11
10
100
Tau /s

BP0U-BP1X

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 81733
Computed code bias (P1/P2)/m = -0.988 0.084
Computed baseline (X,Y,Z)/m = -3.166 -0.519 2.329
RMS of residuals /m = 0.653

Number of phase differences to fit baseline = 72636
A priori baseline (X,Y,Z)/m = -3.166 -0.519 2.329
17604 clock jitters computed out of 17837 intervals
AVE jitter /ps = -0.4 RMS jitter /ps = 41.5

Iter 1 Large residuals L1= 5
Iter 1 Large residuals L2= 6
Computed baseline L1 (X,Y,Z)/m = 0.247 0.072 0.275
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.241 0.070 0.269
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 5
Iter 2 Large residuals L2= 6
Computed baseline L1 (X,Y,Z)/m = 0.247 0.072 0.275
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.242 0.070 0.269
RMS of residuals L2 /m = 0.004

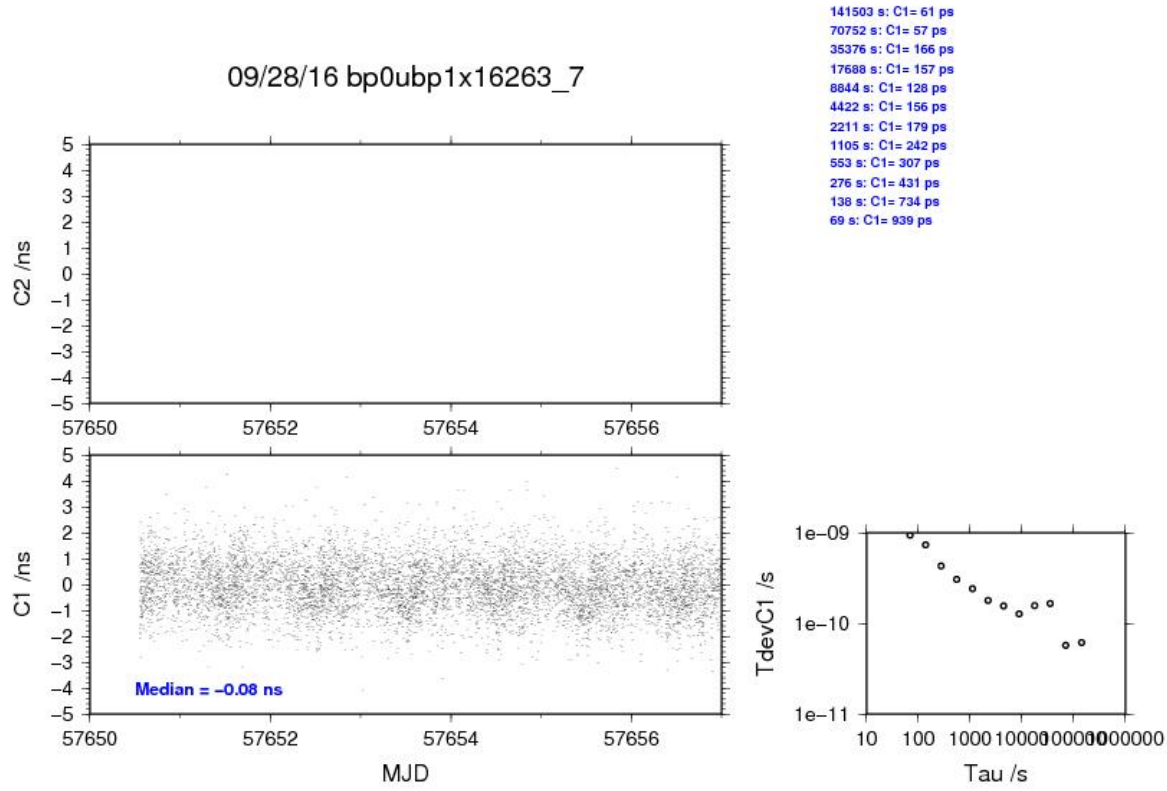
Final baseline L1 (X,Y,Z)/m = -2.918 -0.447 2.604
Final baseline L2 (X,Y,Z)/m = -2.924 -0.449 2.598

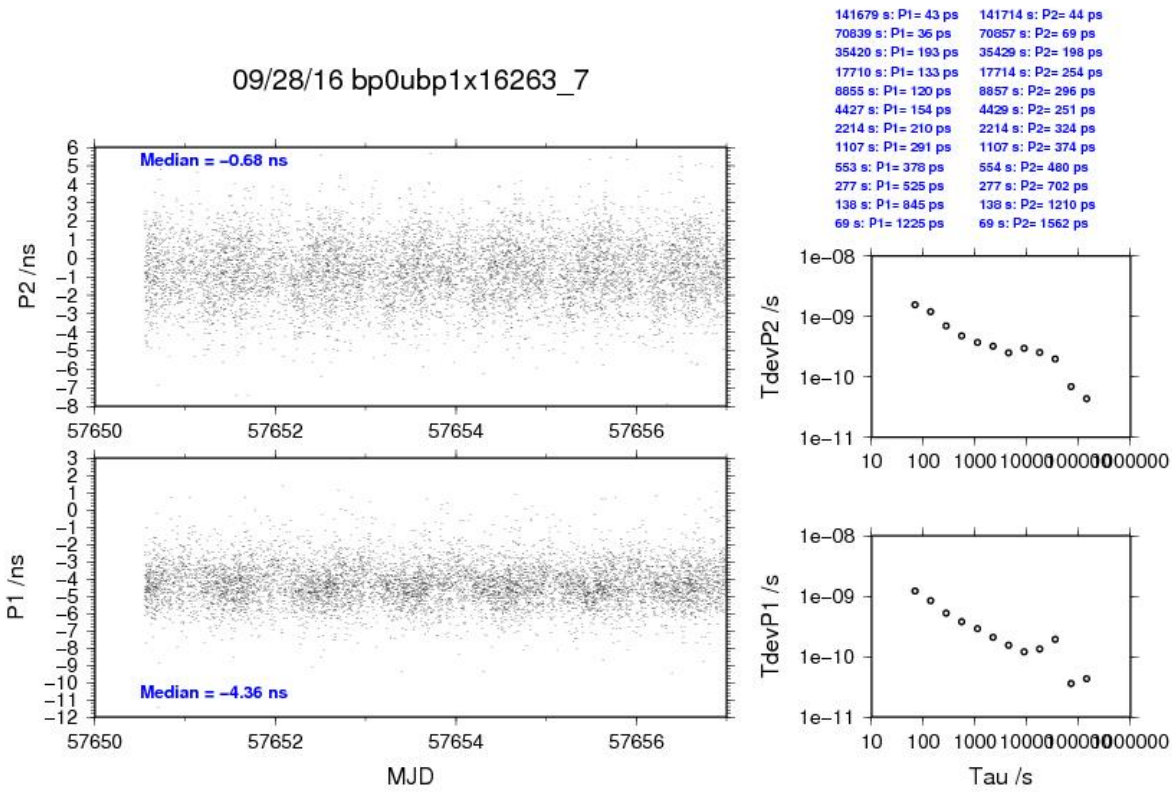
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 81840

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 81750 -0.035 1.541
C2: 0 NaN NaN
P1: 81642 -4.271 2.156
P2: 81630 -0.669 2.558

Number of 300s epochs in out file = 1858
Code #pts, median/ns, ave/ns, rms/ns
C1: 8064 -0.077 -0.043 0.980
C2: 0 0.000 NaN NaN
P1: 8054 -4.357 -4.306 1.190
P2: 8052 -0.679 -0.660 1.610


09/28/16 bp0ubp1x16263_7
141503 s: C1= 61 ps
70752 s: C1= 57 ps
35376 s: C1= 166 ps
17688 s: C1= 157 ps
8844 s: C1= 128 ps
4422 s: C1= 156 ps
2211 s: C1= 179 ps
1105 s: C1= 242 ps
553 s: C1= 307 ps
276 s: C1= 431 ps
138 s: C1= 734 ps
69 s: C1= 939 ps
C2 /ns
C1 /ns
Median = -0.08 ns
MJD
TdevC1 /s
Tau /s


09/28/16 bp0ubp1x16263_7
141679 s: P1= 43 ps
70839 s: P1= 36 ps
35420 s: P1= 193 ps
17710 s: P1= 133 ps
8855 s: P1= 120 ps
4427 s: P1= 154 ps
2214 s: P1= 210 ps
1107 s: P1= 291 ps
553 s: P1= 378 ps
277 s: P1= 525 ps
138 s: P1= 845 ps
69 s: P1= 1225 ps
141714 s: P2= 44 ps
70857 s: P2= 69 ps
35429 s: P2= 198 ps
17714 s: P2= 254 ps
8857 s: P2= 296 ps
4429 s: P2= 251 ps
2214 s: P2= 324 ps
1107 s: P2= 374 ps
554 s: P2= 480 ps
277 s: P2= 702 ps
138 s: P2= 1210 ps
69 s: P2= 1562 ps
P2 /ns
Median = -0.68 ns
P1 /ns
Median = -4.36 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP1X

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 179353
Computed code bias (P1/P2)/m = 9.709 10.655
Computed baseline (X,Y,Z)/m = -2.516 -0.562 1.706
RMS of residuals /m = 0.628

Number of phase differences to fit baseline = 174161
A priori baseline (X,Y,Z)/m = -2.516 -0.562 1.706
29780 clock jitters computed out of 29780 intervals
AVE jitter /ps = 0.4 RMS jitter /ps = 5.9

Iter 1 Large residuals L1= 4
Iter 1 Large residuals L2= 8
Computed baseline L1 (X,Y,Z)/m = 0.295 0.167 0.198
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.275 0.169 0.193
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 4
Iter 2 Large residuals L2= 8
Computed baseline L1 (X,Y,Z)/m = 0.295 0.167 0.198
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.276 0.170 0.193
RMS of residuals L2 /m = 0.005

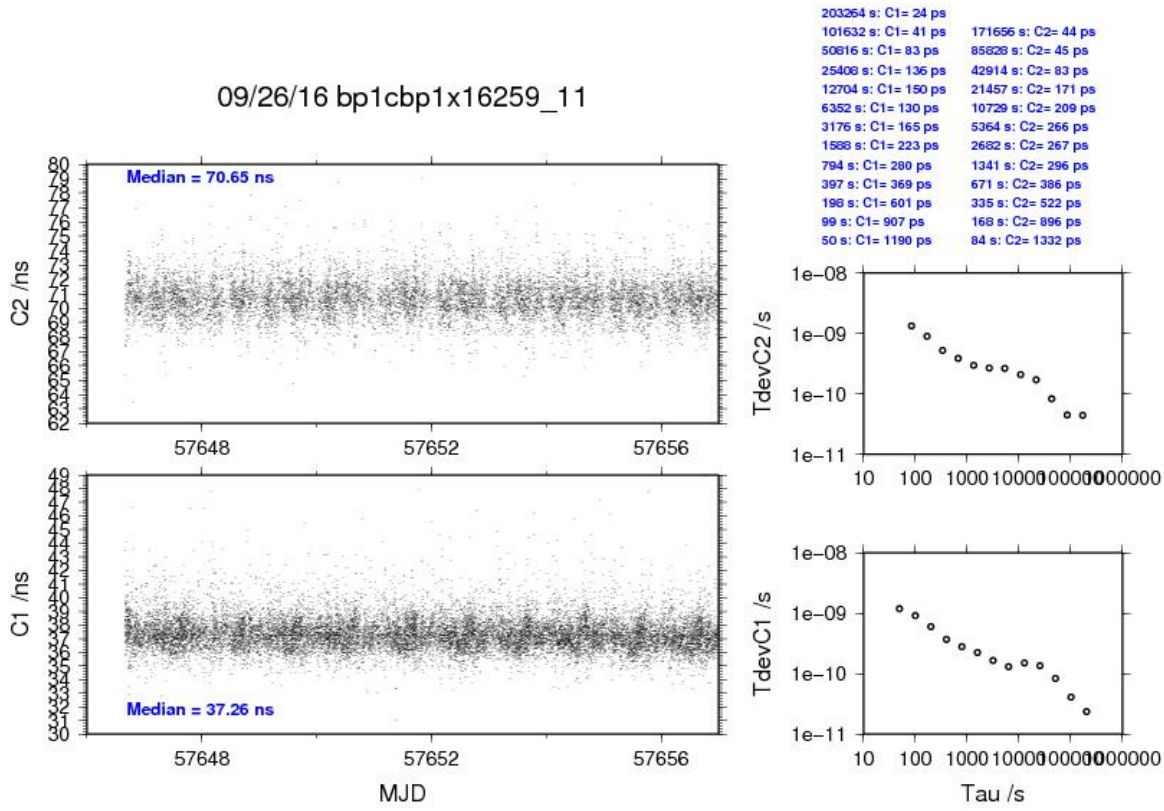
Final baseline L1 (X,Y,Z)/m = -2.221 -0.395 1.904
Final baseline L2 (X,Y,Z)/m = -2.240 -0.393 1.899

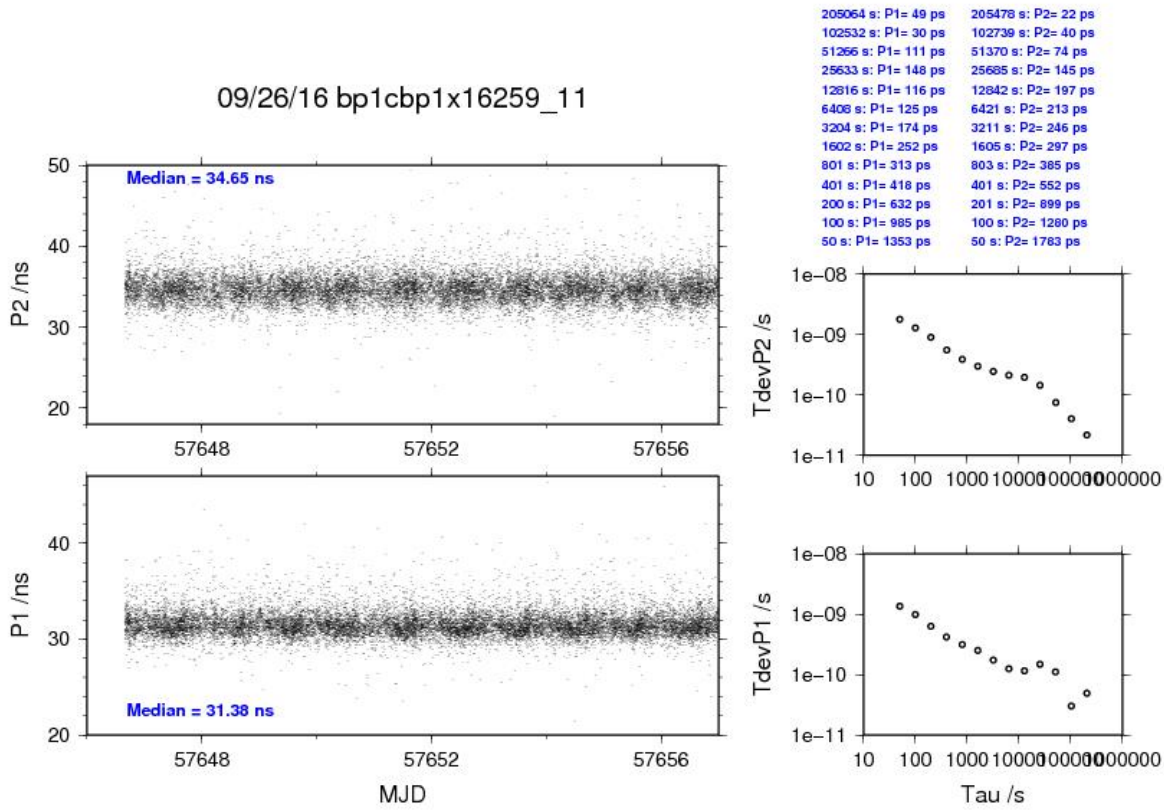
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 181752

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 180707 37.403 1.986
C2: 106872 70.708 2.030
P1: 179001 31.550 2.343
P2: 178792 34.738 2.936

Number of 300s epochs in out file = 2979
Code #pts, median/ns, ave/ns, rms/ns
C1: 18004 37.262 37.370 1.225
C2: 10660 70.649 70.700 1.278
P1: 17846 31.379 31.521 1.348
P2: 17810 34.647 34.713 1.779


09/26/16 bp1cbp1x16259_11
Median = 70.65 ns
Median = 37.26 ns
C2 /ns
C1 /ns
MJD
57648
57652
57656
203264 s: C1= 24 ps
101632 s: C1= 41 ps
50816 s: C1= 83 ps
25408 s: C1= 136 ps
12704 s: C1= 150 ps
6352 s: C1= 130 ps
3176 s: C1= 165 ps
1588 s: C1= 223 ps
794 s: C1= 280 ps
397 s: C1= 369 ps
198 s: C1= 601 ps
99 s: C1= 907 ps
50 s: C1= 1190 ps
171656 s: C2= 44 ps
85828 s: C2= 45 ps
42914 s: C2= 83 ps
21457 s: C2= 171 ps
10729 s: C2= 209 ps
5364 s: C2= 266 ps
2682 s: C2= 267 ps
1341 s: C2= 296 ps
671 s: C2= 386 ps
335 s: C2= 522 ps
168 s: C2= 896 ps
84 s: C2= 1332 ps
TdevC2 /s
TdevC1 /s
Tau /s
1e−08
1e−09
1e−10
1e−11
10
100
1000


09/26/16 bp1cbp1x16259_11
Median = 34.65 ns
Median = 31.38 ns
P2 /ns
P1 /ns
MJD
57648
57652
57656
205064 s: P1= 49 ps
102532 s: P1= 30 ps
51266 s: P1= 111 ps
25633 s: P1= 148 ps
12816 s: P1= 116 ps
6408 s: P1= 125 ps
3204 s: P1= 174 ps
1602 s: P1= 252 ps
801 s: P1= 313 ps
401 s: P1= 418 ps
200 s: P1= 632 ps
100 s: P1= 985 ps
50 s: P1= 1353 ps
205478 s: P2= 22 ps
102739 s: P2= 40 ps
51370 s: P2= 74 ps
25685 s: P2= 145 ps
12842 s: P2= 197 ps
6421 s: P2= 213 ps
3211 s: P2= 246 ps
1605 s: P2= 297 ps
803 s: P2= 385 ps
401 s: P2= 552 ps
201 s: P2= 899 ps
100 s: P2= 1280 ps
50 s: P2= 1763 ps
TdevP2 /s
TdevP1 /s
Tau /s
1e−08
1e−09
1e−10
1e−11
10
100
1000

2.2/ PTB (16284)

Period

MJD 57671 to 57678

Delays

BP0U:

REFDLY = 24.64+52.6 = 77.24 ns	(PTB report page 7)
CABDLY = 181.7 ns	(C134)

BP1C:

X_O = 203.95 ns	(PTB report page 8)
X_P = 24.64+52.6 = 77.24 ns	(PTB report page 7)
REFDLY = 281.19 ns	
CABDLY = 235.7 ns	(C131)

PTBB:

X_O = 38.2+15.8 = 54.0 ns	(PTB report page 11)
X_P = 19.85 ns	(PTB report page 10)
REFDLY = 73.85 ns	
CABDLY = 301.7 ns	(from cggtts file gzpt0257.671)

PTBG:

X_O = 10.3+15.8 = 26.1 ns	(PTB report page 11)
X_P = 19.98 ns	(PTB report page 10)
REFDLY = 46.08 ns	
CABDLY = 251.4 ns	(from cggtts file gzpt0357.671)

PT07:

REFDLY = 43.25 ns	(PTB report page 10)
CABDLY = 245.8 ns	(from cggtts file gzpt0757.671)

PT09:

X_O = 145.23 ns	(PTB report page 9)
X_P = 16.56 ns	(PTB report page 9)
REFDLY = 161.79 ns	
CABDLY = 223.7 ns	(email from Dr Bauch, 18/10/16)

PT10:

REFDLY = 51.98 ns	(PTB report page 10)
CABDLY = 250.0 ns	(from cggtts file gzpt1057.671)

Setup at the PTB

Laboratory:	PTB
Date and hour of the beginning of measurements:	2016-10-07 (approx. 10:00 UTC)
Date and hour of the end of measurements:	2016-10-17 (approx. 07:00 UTC)

Information on the system

	Local: (1) PTBB (2) PTBG	**Travelling:** (1) BPOU, (2) BP1C
• Receiver maker:	(1)+(2) ASHTECH	(1) Dicom, (2) Septentrio
Receiver type:	(1)+(2) Z-XII3T	(1) GTR50, (2) PolaRx3e TR
Receiver serial number:	(1) RT820013901, (2) RT920032501	(1) 0801068, (2) S9000169176
1 PPS trigger level /V:	1 V	1 V
• Antenna cable maker:	(1) Nokia, (2) Belden	
Antenna cable type :	(1) RG214, (2) RG8	LMR600
Phase stabilised cable (Y/N):		
Length outside the building /m:	approx. 25 m	approx. 25 m
• Antenna maker:	(1) Ashtech, (2) Ashtech	(1) Novatel, (2) Ashtech
Antenna type:	(1) ASH700936 SNOW	(1) GPS-702 GG
Antenna serial number:	(1) CR15930	(1) NAE 10190011, (2) CR 6200323008
Temperature (if stabilised) /°C		

Measured delays /ns

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in (X_P)	see report for details	see report for details
Delay from 1 PPS-in to internal Reference (if different): (X_O)		
• Antenna cable delay: (X_C)		
Splitter delay (if any):		
Additional cable delay (if any):		

Data used for the generation of CGGTTS files

	LOCAL:	Travelling
• INT DLY (or X_R+X_S) (GPS) /ns:		
• INT DLY (or X_R+X_S) (GLONASS) /ns:		
• CAB DLY (or X_C) /ns:		
• REF DLY (or X_P+X_O) /ns:		
• Coordinates reference frame:		
Latitude or X /m:		
Longitude or Y /m:		
Height or Z /m:		

General information

Rise time of the local UTC pulse:	< 5 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	23 °C ± 0.5 °C
Set humidity value and uncertainty:	

Laboratory:	PTB
Date and hour of the beginning of measurements:	2016-10-07 (approx. 10:00 UTC)
Date and hour of the end of measurements:	2016-10-17 (approx. 07:00 UTC)

Information on the system

	Local: (3) PT09 (4) PT10	**Travelling:** (1) BPOU, (2) BP1C
• Receiver maker:	(3) Septentrio (4) Dicom (mesit)	(1) Dicom, (2) Septentrio
Receiver type:	(3) PolaRx4TR PRO (4) GTR51	(1) GTR50, (2) PolaRx3e TR
Receiver serial number:	(3) 3001148, (4) 1309042	(1) 0801068, (2) S9000169176
1 PPS trigger level /V:	1 V	1 V
• Antenna cable maker:	(3) ??, (4) Belden	
Antenna cable type :	(3) Ecoflex 15plus, (4) 8214 RG-8/U	LMR600
Phase stabilised cable (Y/N):	y	
Length outside the building /m:	approx. 25 m	approx. 25 m
• Antenna maker:	(3) Novatel, (4) NavExperience	(1) Novatel, (2) Ashtech
Antenna type:	(3) NOV750.R4 NOVS (4) 3G+C	(1) GPS-702 GG
Antenna serial number:	(3) n/a (4) NA 0121	(1) NAE 10190011, (2) CR 6200323008
Temperature (if stabilised) /°C		

Measured delays /ns

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in (X_P)	see report for details	see report for details
Delay from 1 PPS-in to internal Reference (if different): (X_O)		
• Antenna cable delay: (X_C)		
Splitter delay (if any):		
Additional cable delay (if any):		

Data used for the generation of CGGTTS files

	LOCAL:	Travelling
• INT DLY (or X_R+X_S) (GPS) /ns:		
• INT DLY (or X_R+X_S) (GLONASS) /ns:		
• CAB DLY (or X_C) /ns:		
• REF DLY (or X_P+X_O) /ns:		
• Coordinates reference frame:		
Latitude or X /m:		
Longitude or Y /m:		
Height or Z /m:		

General information

Rise time of the local UTC pulse:	< 5 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	23 °C ± 0.5 °C
Set humidity value and uncertainty:	

Laboratory:	PTB
Date and hour of the beginning of measurements:	2016-10-07 (approx. 10:00 UTC)
Date and hour of the end of measurements:	2016-10-17 (approx. 07:00 UTC)

Information on the system

	Local: (5) PT07 (6) PT05	**Travelling:** (1) BPOU, (2) BP1C
• Receiver maker:	(5) Dicom (mesit) (6) Piktime	(1) Dicom, (2) Septentrio
Receiver type:	(5) GTR50 (6) TTS-3	(1) GTR50, (2) PolaRx3e TR
Receiver serial number:	(3) 806091, (4) 14	(1) 0801068, (2) S9000169176
1 PPS trigger level /V:	1 V	1 V
• Antenna cable maker:	(5) Andrews, (6)	
Antenna cable type :	(5) FSJ-1, (6)	LMR600
Phase stabilised cable (Y/N):	y	
Length outside the building /m:	approx. 25 m	approx. 25 m
• Antenna maker:	(5) Novatel, (6) Javad	(1) Novatel, (2) Ashtech
Antenna type:	(5) GPS-702-PP, (6) MarAnt+	(1) GPS-702 GG
Antenna serial number:	(3) SN 01017577 (6) MAG#3095	(1) NAE 10190011, (2) CR 6200323008
Temperature (if stabilised) /°C		

Measured delays /ns

	Local:	**Travelling:**
• Delay from local UTC to receiver 1 PPS-in (X_P)	see report for details	see report for details
Delay from 1 PPS-in to internal Reference (if different): (X_O)		
• Antenna cable delay: (X_C)		
Splitter delay (if any):		
Additional cable delay (if any):		

Data used for the generation of CGGTTS files

	LOCAL:	Travelling
• INT DLY (or X_R+X_S) (GPS) /ns:		
• INT DLY (or X_R+X_S) (GLONASS) /ns:		
• CAB DLY (or X_C) /ns:		
• REF DLY (or X_P+X_O) /ns:		
• Coordinates reference frame:		
Latitude or X /m:		
Longitude or Y /m:		
Height or Z /m:		

General information

Rise time of the local UTC pulse:	< 5 ns
• Is the laboratory air conditioned:	yes
Set temperature value and uncertainty:	23 °C ± 0.5 °C
Set humidity value and uncertainty:	

Diagram of the experiment set-up:

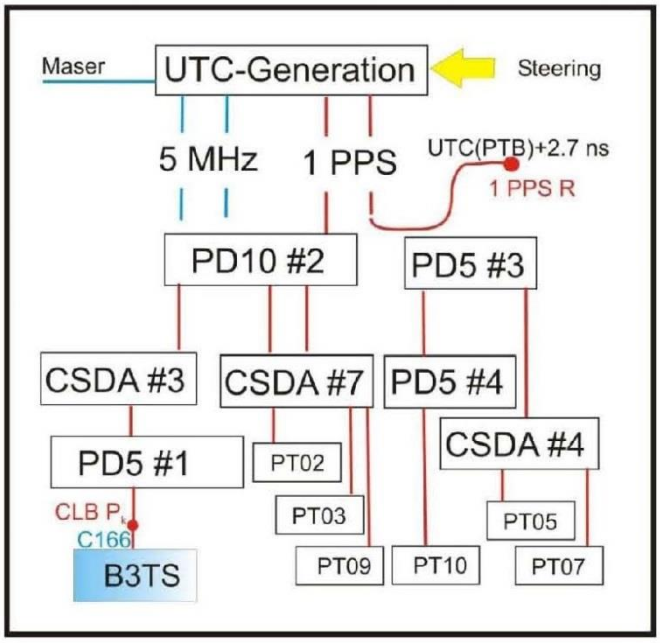


Figure 1: Signal distribution (1pps) to PTBB, PTBG and B3TS

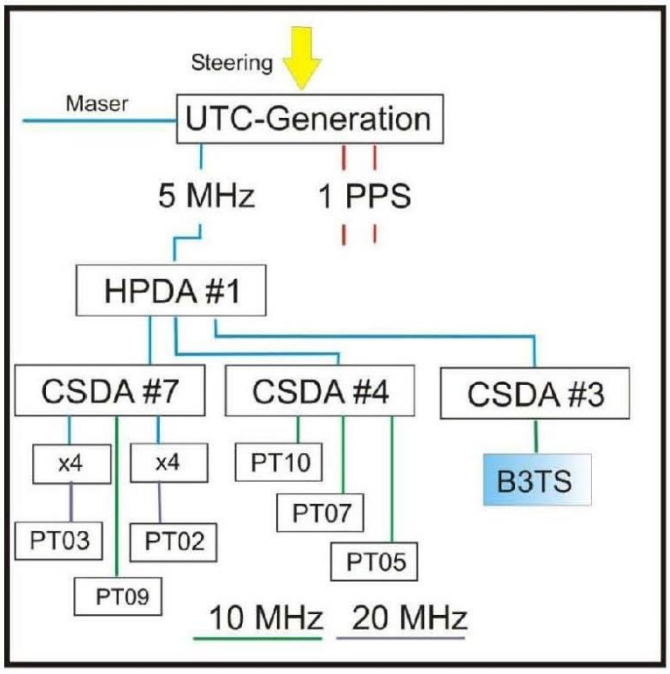


Figure 2: Signal distribution (5 MHz, 10 MHz, 20 MHz) to PTBB, PTBG and B3TS

Log of Events / Additional Information :

PTB report: "Relative calibration of internal delays of PTB GNSS receivers by means of B3TS – October 2016, v. 0.1, 2016-10-12, A. Bauch, D. Piester, T. Polewka" received by email on October 27th 2016, filename: "PTB_GNSS_Calibration_Report_2016-10-27.docx".

BP0U-PTBB

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 118820
Computed code bias (P1/P2)/m = -169.275 -172.048
Computed baseline (X,Y,Z)/m = -3.709 2.863 2.307
RMS of residuals /m = 0.616

Number of phase differences to fit baseline = 110472
A priori baseline (X,Y,Z)/m = -3.709 2.863 2.307
22183 clock jitters computed out of 22244 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 30.4

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.114 0.011 0.174
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.111 0.014 0.179
RMS of residuals L2 /m = 0.003

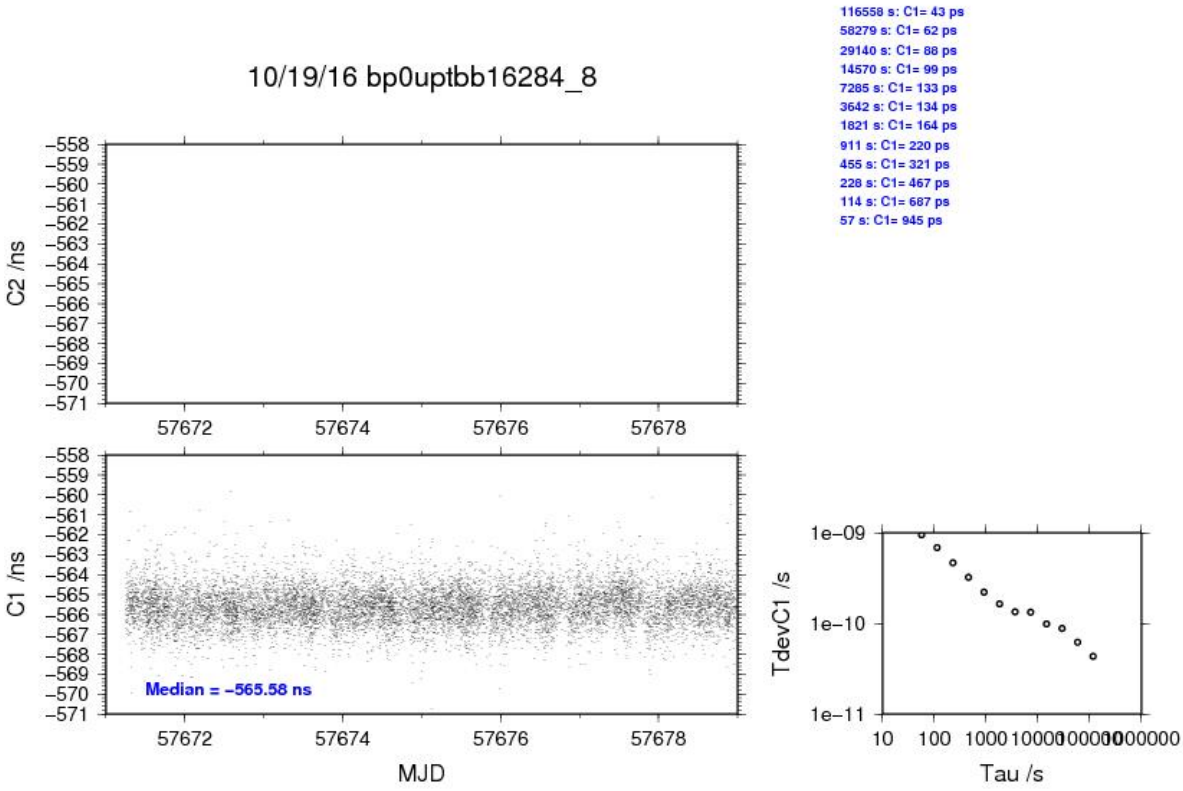
Final baseline L1 (X,Y,Z)/m = -3.595 2.874 2.481
Final baseline L2 (X,Y,Z)/m = -3.598 2.876 2.486

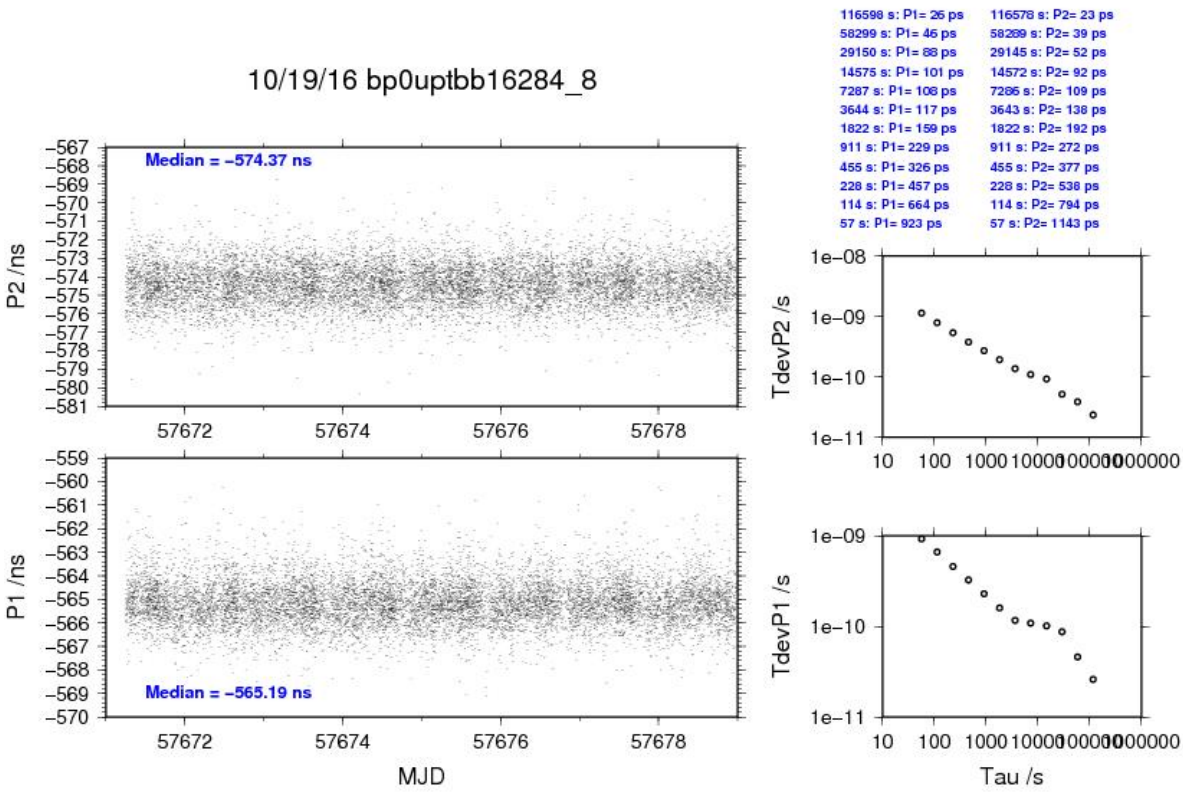
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 118867

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 118820 -565.549 2.307
C2: 0 NaN NaN
P1: 118773 -565.130 2.053
P2: 118780 -574.385 2.314

Number of 300s epochs in out file = 2232
Code #pts, median/ns, ave/ns, rms/ns
C1: 11761 -565.580 -565.567 0.959
C2: 0 0.000 NaN NaN
P1: 11757 -565.186 -565.144 0.934
P2: 11759 -574.373 -574.379 1.119


10/19/16 bp0uptbb16284_8
C2 /ns
C1 /ns
Median = -565.58 ns
MJD
116558 s: C1= 43 ps
58279 s: C1= 62 ps
29140 s: C1= 88 ps
14570 s: C1= 99 ps
7285 s: C1= 133 ps
3642 s: C1= 134 ps
1821 s: C1= 164 ps
911 s: C1= 220 ps
455 s: C1= 321 ps
228 s: C1= 467 ps
114 s: C1= 687 ps
57 s: C1= 945 ps
TdevC1 /s
Tau /s


10/19/16 bp0uptbb16284_8
P2 /ns
Median = -574.37 ns
P1 /ns
Median = -565.19 ns
MJD
116598 s: P1= 26 ps
58299 s: P1= 46 ps
29150 s: P1= 88 ps
14575 s: P1= 101 ps
7287 s: P1= 108 ps
3644 s: P1= 117 ps
1822 s: P1= 159 ps
911 s: P1= 229 ps
455 s: P1= 326 ps
228 s: P1= 457 ps
114 s: P1= 664 ps
57 s: P1= 923 ps
116578 s: P2= 23 ps
58289 s: P2= 39 ps
29145 s: P2= 52 ps
14572 s: P2= 92 ps
7286 s: P2= 109 ps
3643 s: P2= 138 ps
1822 s: P2= 192 ps
911 s: P2= 272 ps
455 s: P2= 377 ps
228 s: P2= 538 ps
114 s: P2= 794 ps
57 s: P2= 1143 ps
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-PTBB

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 170657
Number of huge residuals = 1336. New iteration
Computed code bias (P1/P2)/m = -158.804 -161.693
Computed baseline (X,Y,Z)/m = 2.050 -1.827 -1.523
RMS of residuals /m = 0.579

Number of phase differences to fit baseline = 169259
A priori baseline (X,Y,Z)/m = 2.050 -1.827 -1.523
22316 clock jitters computed out of 22316 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 4.3

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 3
Computed baseline L1 (X,Y,Z)/m = 0.047 0.036 0.064
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.046 0.038 0.064
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 3
Computed baseline L1 (X,Y,Z)/m = 0.047 0.036 0.064
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.046 0.038 0.064
RMS of residuals L2 /m = 0.004

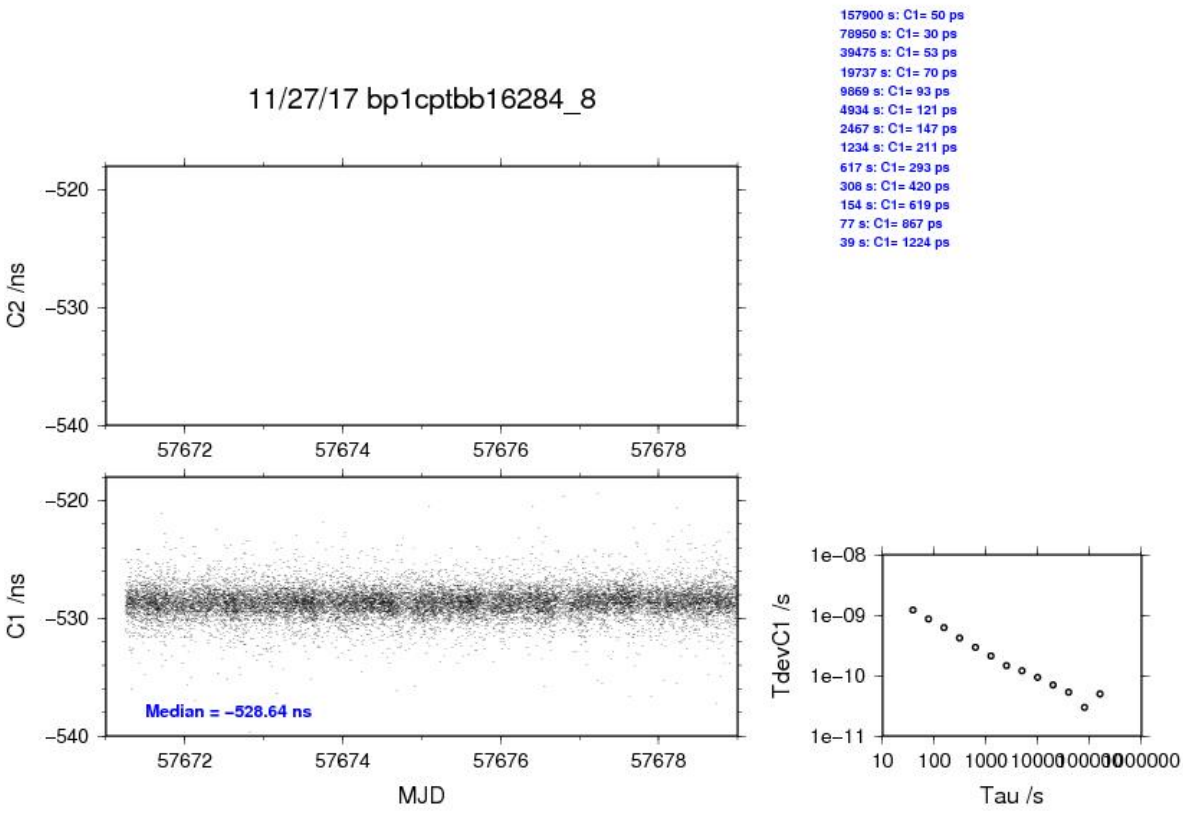
Final baseline L1 (X,Y,Z)/m = 2.097 -1.791 -1.459
Final baseline L2 (X,Y,Z)/m = 2.096 -1.789 -1.459

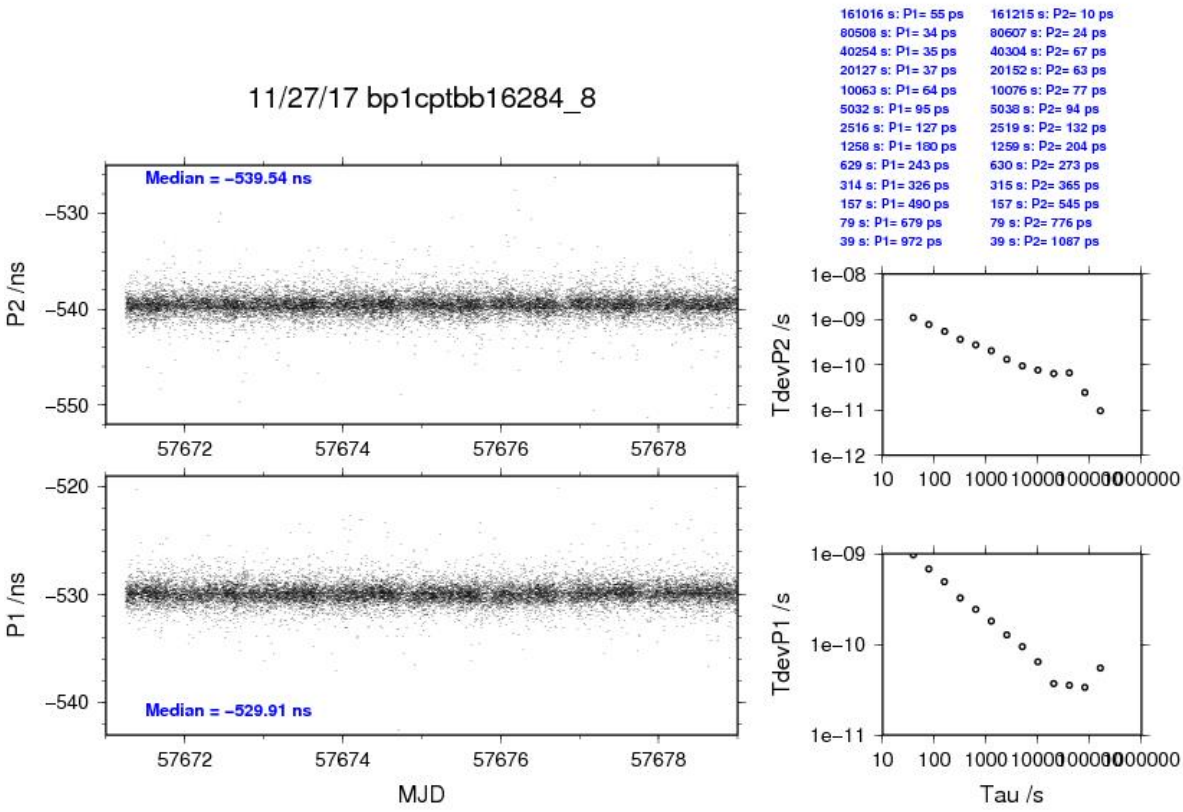
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 175222

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 173676 -528.613 3.135
C2: 0 NaN NaN
P1: 170504 -529.872 2.288
P2: 170207 -539.507 2.383

Number of 300s epochs in out file = 2232
Code #pts, median/ns, ave/ns, rms/ns
C1: 17363 -528.636 -528.642 1.225
C2: 0 0.000 NaN NaN
P1: 17027 -529.911 -529.889 0.970
P2: 17006 -539.544 -539.525 1.089


11/27/17 bp1cptbb16284_8
157900 s: C1= 50 ps
78950 s: C1= 30 ps
39475 s: C1= 53 ps
19737 s: C1= 70 ps
9869 s: C1= 93 ps
4934 s: C1= 121 ps
2467 s: C1= 147 ps
1234 s: C1= 211 ps
617 s: C1= 293 ps
308 s: C1= 420 ps
154 s: C1= 619 ps
77 s: C1= 867 ps
39 s: C1= 1224 ps
C2 /ns
C1 /ns
Median = -528.64 ns
MJD
TdevC1 /s
Tau /s


11/27/17 bp1cptbb16284_8
161016 s: P1= 55 ps
80508 s: P1= 34 ps
40254 s: P1= 35 ps
20127 s: P1= 37 ps
10063 s: P1= 64 ps
5032 s: P1= 95 ps
2516 s: P1= 127 ps
1258 s: P1= 180 ps
629 s: P1= 243 ps
314 s: P1= 326 ps
157 s: P1= 490 ps
79 s: P1= 679 ps
39 s: P1= 972 ps
161215 s: P2= 10 ps
80607 s: P2= 24 ps
40304 s: P2= 67 ps
20152 s: P2= 63 ps
10076 s: P2= 77 ps
5038 s: P2= 94 ps
2519 s: P2= 132 ps
1259 s: P2= 204 ps
630 s: P2= 273 ps
315 s: P2= 365 ps
157 s: P2= 545 ps
79 s: P2= 776 ps
39 s: P2= 1087 ps
P2 /ns
P1 /ns
Median = -539.54 ns
Median = -529.91 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-PTBG

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 118818
Computed code bias (P1/P2)/m = -161.607 -166.525
Computed baseline (X,Y,Z)/m = 0.694 -0.838 -0.729
RMS of residuals /m = 0.633

Number of phase differences to fit baseline = 110518
A priori baseline (X,Y,Z)/m = 0.694 -0.838 -0.729
22184 clock jitters computed out of 22249 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 30.4

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.125 0.011 0.177
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.122 0.014 0.184
RMS of residuals L2 /m = 0.003

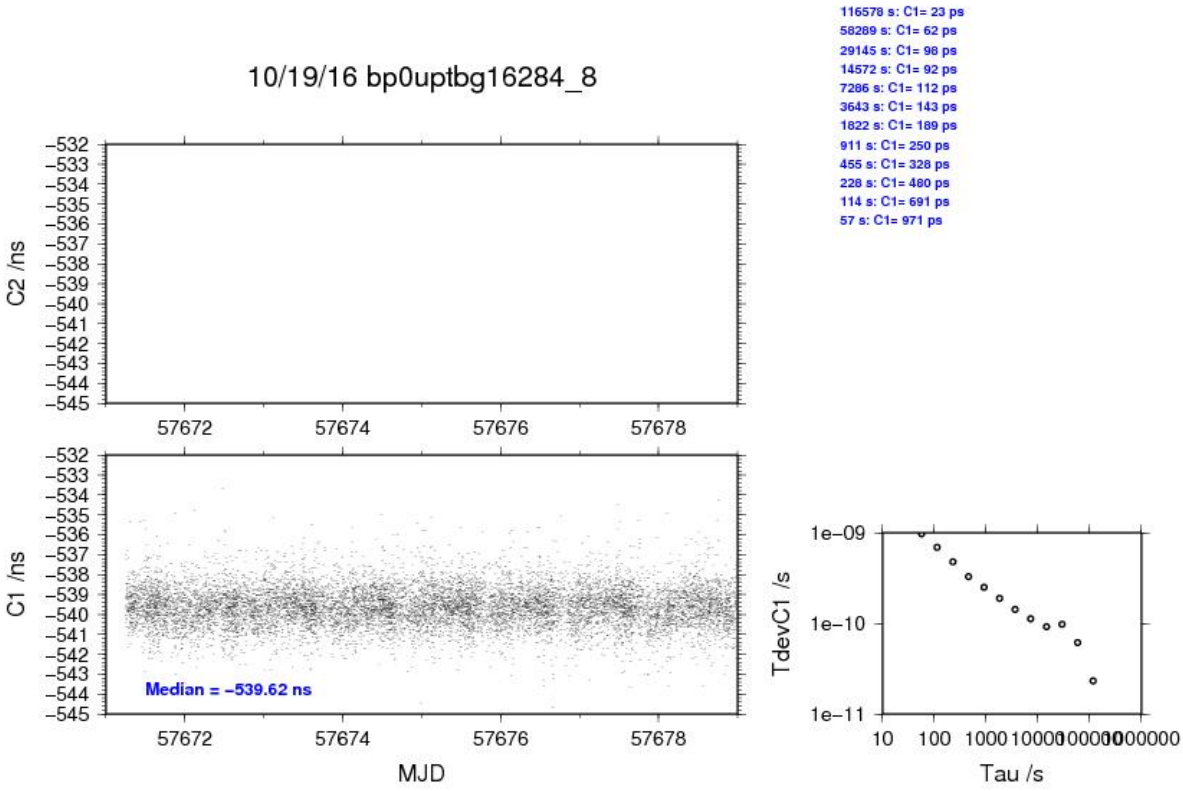
Final baseline L1 (X,Y,Z)/m = 0.819 -0.827 -0.552
Final baseline L2 (X,Y,Z)/m = 0.816 -0.824 -0.545

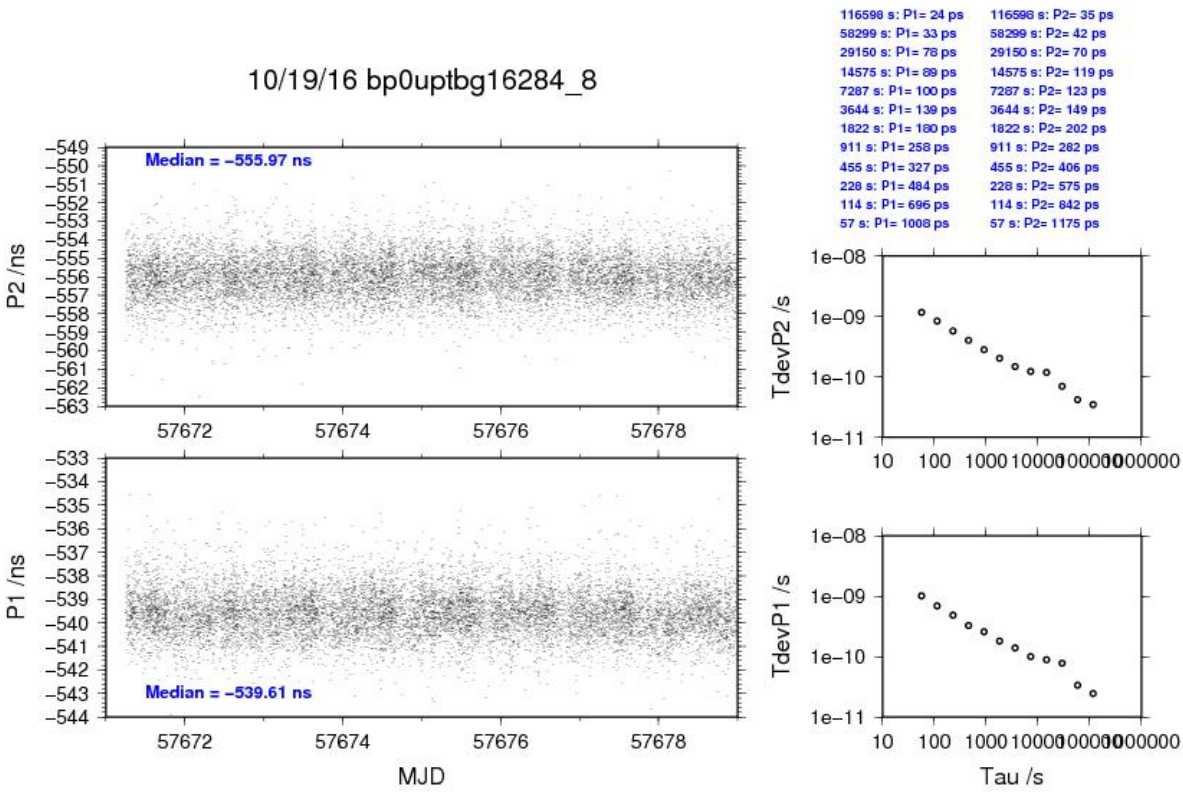
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 118863

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 118817 -539.578 2.285
C2: 0 NaN NaN
P1: 118771 -539.576 2.123
P2: 118782 -555.988 2.373

Number of 300s epochs in out file = 2232
Code #pts, median/ns, ave/ns, rms/ns
C1: 11759 -539.624 -539.611 0.980
C2: 0 0.000 NaN NaN
P1: 11757 -539.614 -539.588 0.996
P2: 11757 -555.973 -555.981 1.177


10/19/16 bp0uptbg16284_8
116578 s: C1= 23 ps
58289 s: C1= 62 ps
29145 s: C1= 98 ps
14572 s: C1= 92 ps
7286 s: C1= 112 ps
3643 s: C1= 143 ps
1822 s: C1= 189 ps
911 s: C1= 250 ps
455 s: C1= 328 ps
228 s: C1= 480 ps
114 s: C1= 691 ps
57 s: C1= 971 ps
C2 /ns
C1 /ns
Median = −539.62 ns
TdevC1 /s
Tau /s
MJD


10/19/16 bp0uptbg16284_8
116598 s: P1= 24 ps
58299 s: P1= 33 ps
29150 s: P1= 78 ps
14575 s: P1= 89 ps
7287 s: P1= 100 ps
3644 s: P1= 139 ps
1822 s: P1= 180 ps
911 s: P1= 258 ps
455 s: P1= 327 ps
228 s: P1= 484 ps
114 s: P1= 696 ps
57 s: P1= 1008 ps
116598 s: P2= 35 ps
58299 s: P2= 42 ps
29150 s: P2= 70 ps
14575 s: P2= 119 ps
7287 s: P2= 123 ps
3644 s: P2= 149 ps
1822 s: P2= 202 ps
911 s: P2= 282 ps
455 s: P2= 406 ps
228 s: P2= 575 ps
114 s: P2= 842 ps
57 s: P2= 1175 ps
P2 /ns
P1 /ns
Median = −555.97 ns
Median = −539.61 ns
TdevP2 /s
TdevP1 /s
Tau /s
MJD

BP1C-PTBG

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 170641
Number of huge residuals = 430. New iteration
Computed code bias (P1/P2)/m = -151.137 -156.184
Computed baseline (X,Y,Z)/m = 6.444 -5.529 -4.537
RMS of residuals /m = 0.593

Number of phase differences to fit baseline = 169316
A priori baseline (X,Y,Z)/m = 6.444 -5.529 -4.537
22316 clock jitters computed out of 22316 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 4.4

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.064 0.049 0.048
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.061 0.044 0.048
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.064 0.049 0.048
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.061 0.044 0.048
RMS of residuals L2 /m = 0.004

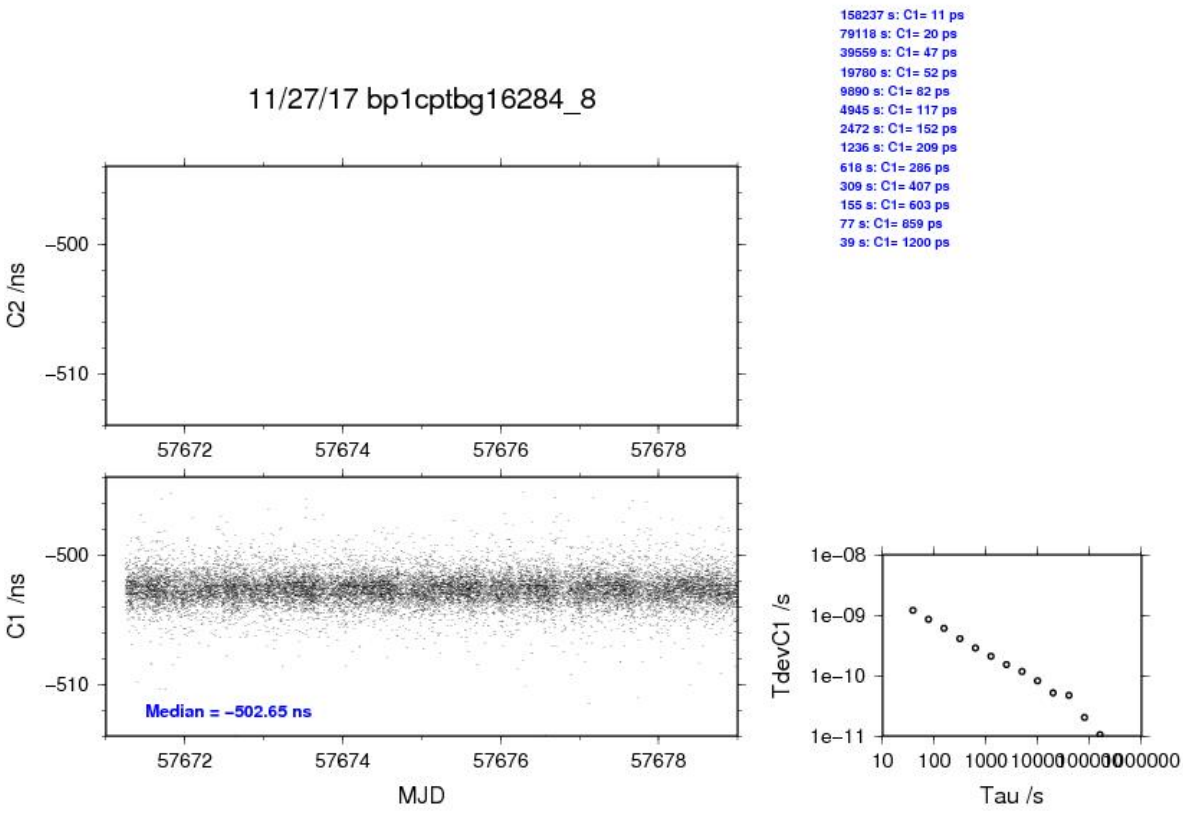
Final baseline L1 (X,Y,Z)/m = 6.508 -5.480 -4.489
Final baseline L2 (X,Y,Z)/m = 6.505 -5.485 -4.489

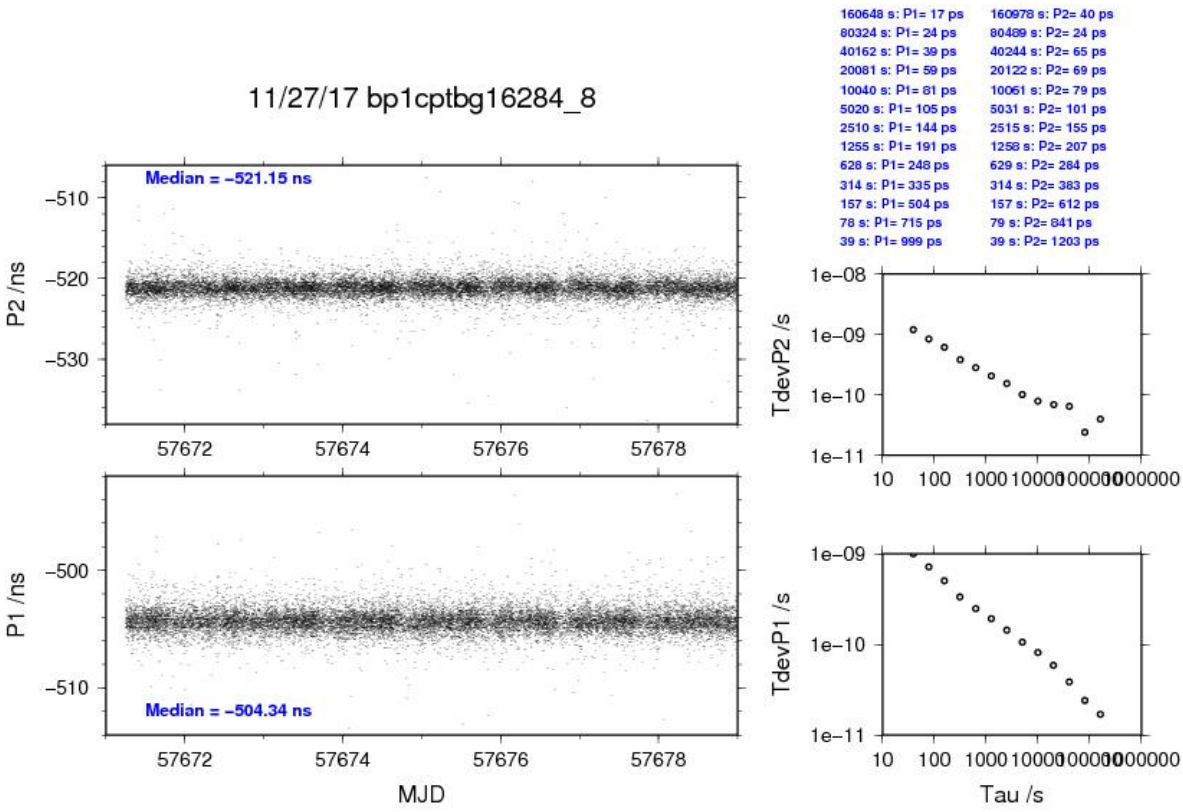
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 174742

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 173440 -502.621 3.003
C2: 0 NaN NaN
P1: 170899 -504.296 2.312
P2: 170549 -521.128 2.461

Number of 300s epochs in out file = 2232
Code #pts, median/ns, ave/ns, rms/ns
C1: 17326 -502.652 -502.638 1.201
C2: 0 0.000 NaN NaN
P1: 17066 -504.342 -504.312 1.005
P2: 17031 -521.148 -521.140 1.192


11/27/17 bp1cptbg16284_8
158237 s: C1= 11 ps
79118 s: C1= 20 ps
39559 s: C1= 47 ps
19780 s: C1= 52 ps
9890 s: C1= 82 ps
4945 s: C1= 117 ps
2472 s: C1= 152 ps
1236 s: C1= 209 ps
618 s: C1= 286 ps
309 s: C1= 407 ps
155 s: C1= 603 ps
77 s: C1= 859 ps
39 s: C1= 1200 ps
C2 /ns
C1 /ns
Median = −502.65 ns
MJD
TdevC1 /s
Tau /s


11/27/17 bp1cptbg16284_8
160648 s: P1= 17 ps
80324 s: P1= 24 ps
40162 s: P1= 39 ps
20081 s: P1= 59 ps
10040 s: P1= 81 ps
5020 s: P1= 105 ps
2510 s: P1= 144 ps
1255 s: P1= 191 ps
628 s: P1= 248 ps
314 s: P1= 335 ps
157 s: P1= 504 ps
78 s: P1= 715 ps
39 s: P1= 999 ps
160978 s: P2= 40 ps
80489 s: P2= 24 ps
40244 s: P2= 65 ps
20122 s: P2= 69 ps
10061 s: P2= 79 ps
5031 s: P2= 101 ps
2515 s: P2= 155 ps
1258 s: P2= 207 ps
629 s: P2= 284 ps
314 s: P2= 383 ps
157 s: P2= 612 ps
79 s: P2= 841 ps
39 s: P2= 1203 ps
P2 /ns
Median = −521.15 ns
P1 /ns
Median = −504.34 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-PT07

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 123502
Computed code bias (P1/P2)/m = -9.798 -8.002
Computed baseline (X,Y,Z)/m = -1.152 0.386 0.666
RMS of residuals /m = 0.633

Number of phase differences to fit baseline = 110891
A priori baseline (X,Y,Z)/m = -1.152 0.386 0.666
22359 clock jitters computed out of 22606 intervals
AVE jitter /ps = -0.4 RMS jitter /ps = 39.1

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.090 0.011 0.120
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.073 0.012 0.109
RMS of residuals L2 /m = 0.003

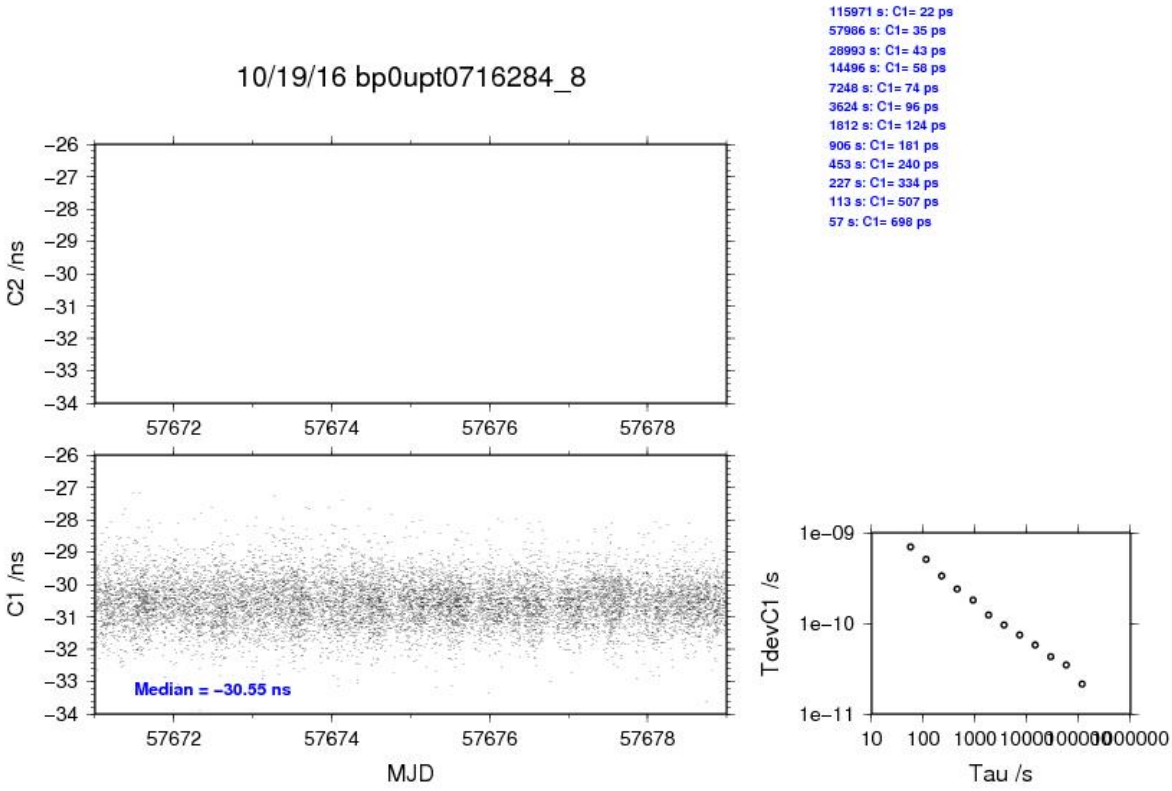
Final baseline L1 (X,Y,Z)/m = -1.062 0.397 0.786
Final baseline L2 (X,Y,Z)/m = -1.079 0.398 0.775

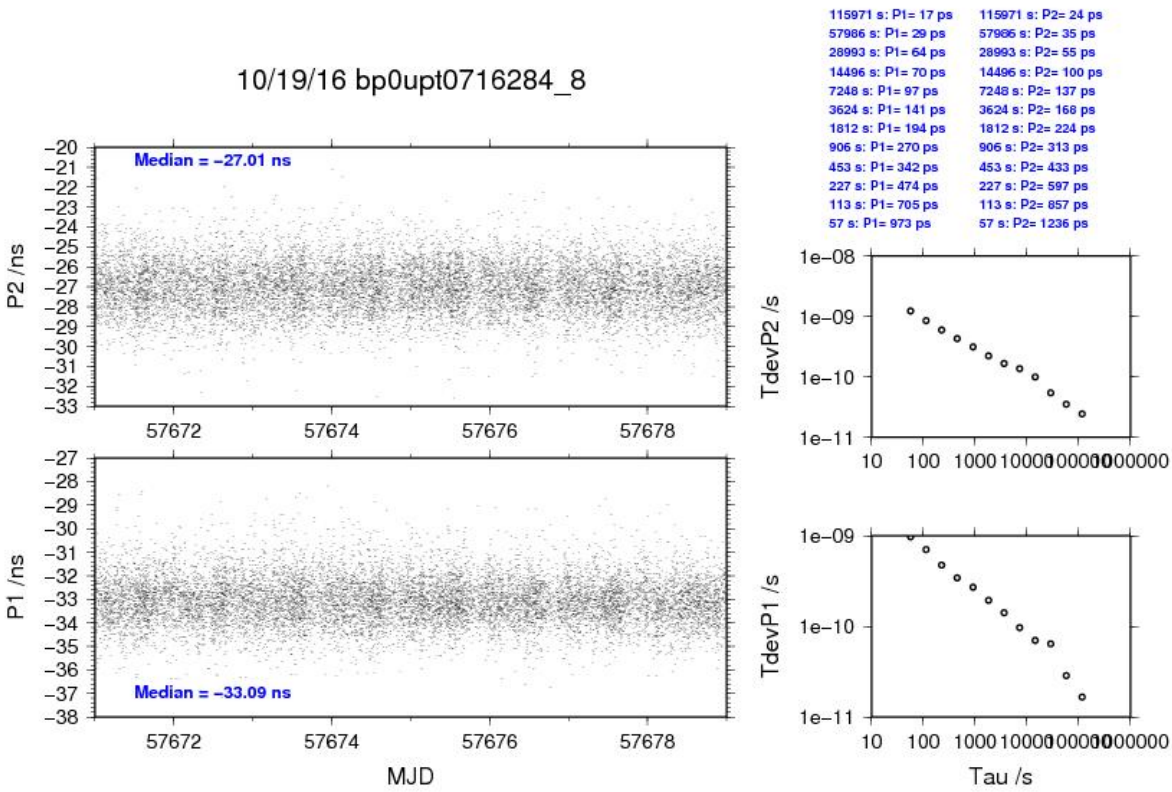
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 123522

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 123454 -30.527 1.382
C2: 0 NaN NaN
P1: 123434 -33.043 2.073
P2: 123434 -27.005 2.399

Number of 300s epochs in out file = 2304
Code #pts, median/ns, ave/ns, rms/ns
C1: 12202 -30.546 -30.540 0.702
C2: 0 0.000 NaN NaN
P1: 12202 -33.090 -33.064 0.986
P2: 12202 -27.006 -26.995 1.227


10/19/16 bp0upt0716284_8
115971 s: C1= 22 ps
57986 s: C1= 35 ps
28993 s: C1= 43 ps
14496 s: C1= 58 ps
7248 s: C1= 74 ps
3624 s: C1= 96 ps
1812 s: C1= 124 ps
906 s: C1= 181 ps
453 s: C1= 240 ps
227 s: C1= 334 ps
113 s: C1= 507 ps
57 s: C1= 698 ps
C2 /ns
C1 /ns
Median = -30.55 ns
MJD
TdevC1 /s
Tau /s


10/19/16 bp0upt0716284_8
115971 s: P1= 17 ps
57986 s: P1= 29 ps
28993 s: P1= 64 ps
14496 s: P1= 70 ps
7248 s: P1= 97 ps
3624 s: P1= 141 ps
1812 s: P1= 194 ps
906 s: P1= 270 ps
453 s: P1= 342 ps
227 s: P1= 474 ps
113 s: P1= 705 ps
57 s: P1= 973 ps
115971 s: P2= 24 ps
57986 s: P2= 35 ps
28993 s: P2= 55 ps
14496 s: P2= 100 ps
7248 s: P2= 137 ps
3624 s: P2= 168 ps
1812 s: P2= 224 ps
906 s: P2= 313 ps
453 s: P2= 433 ps
227 s: P2= 597 ps
113 s: P2= 857 ps
57 s: P2= 1236 ps
P2 /ns
P1 /ns
Median = -27.01 ns
Median = -33.09 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-PT07

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 173023
Computed code bias (P1/P2)/m = 0.662 2.310
Computed baseline (X,Y,Z)/m = 4.606 -4.299 -3.115
RMS of residuals /m = 0.570

Number of phase differences to fit baseline = 169094
A priori baseline (X,Y,Z)/m = 4.606 -4.299 -3.115
22978 clock jitters computed out of 23001 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 29.5

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = 0.008 0.032 -0.048
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = -0.005 0.029 -0.066
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 = 0.008 0.032 -0.048
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = -0.005 0.029 -0.066
RMS of residuals L2 /m = 0.004

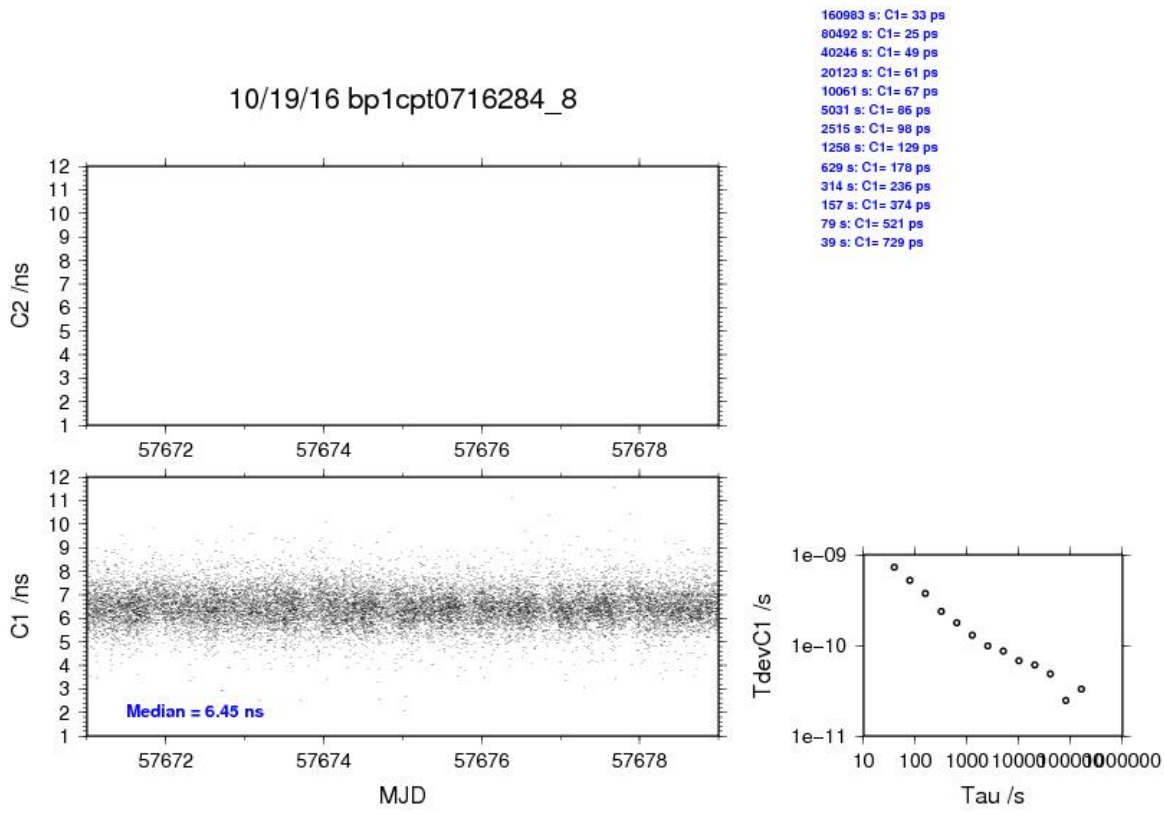
Final baseline L1 (X,Y,Z)/m = 4.614 -4.267 -3.163
Final baseline L2 (X,Y,Z)/m = 4.602 -4.270 -3.182

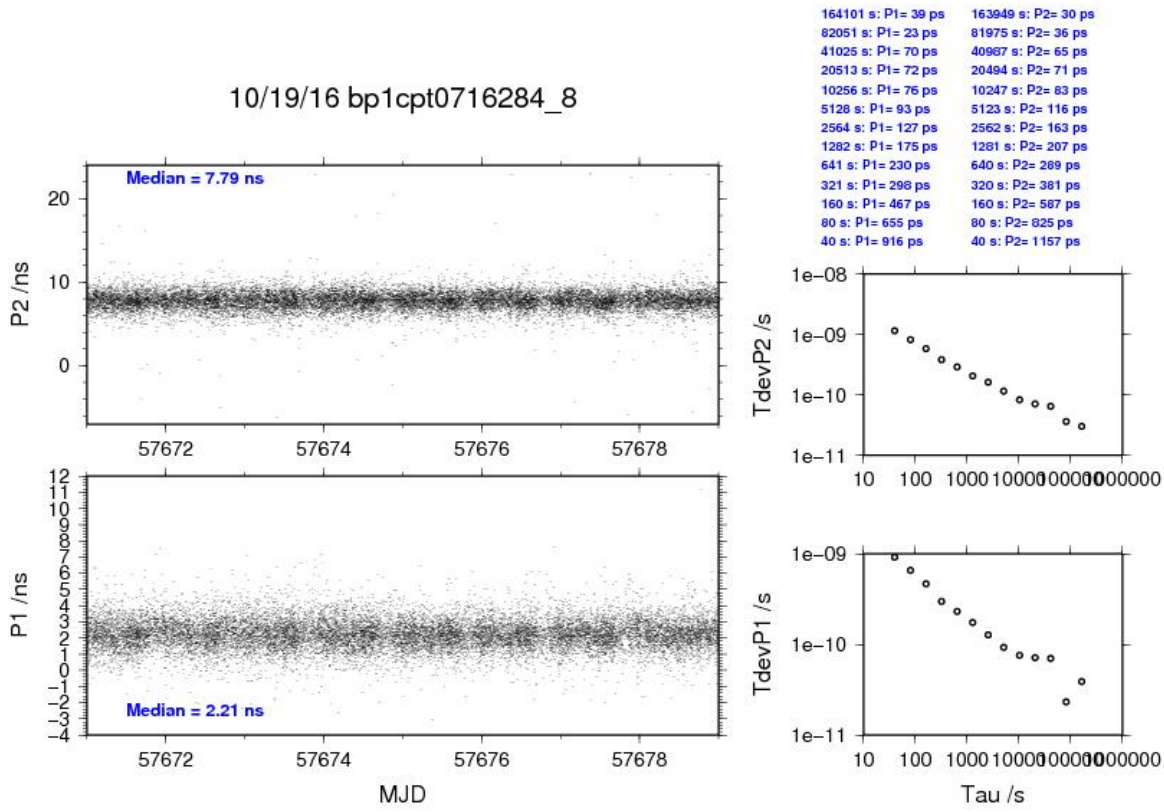
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 176391

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 175896 6.478 1.461
C2: 0 NaN NaN
P1: 172754 2.236 1.922
P2: 172913 7.799 2.231

Number of 300s epochs in out file = 2304
Code #pts, median/ns, ave/ns, rms/ns
C1: 17580 6.452 6.470 0.735
C2: 0 0.000 NaN NaN
P1: 17246 2.205 2.218 0.924
P2: 17262 7.793 7.778 1.161


10/19/16 bp1cpt0716284_8
160983 s: C1= 33 ps
80492 s: C1= 25 ps
40246 s: C1= 49 ps
20123 s: C1= 61 ps
10061 s: C1= 67 ps
5031 s: C1= 86 ps
2515 s: C1= 98 ps
1258 s: C1= 129 ps
629 s: C1= 178 ps
314 s: C1= 236 ps
157 s: C1= 374 ps
79 s: C1= 521 ps
39 s: C1= 729 ps
C2 /ns
C1 /ns
Median = 6.45 ns
MJD
TdevC1 /s
Tau /s


10/19/16 bp1cpt0716284_8
164101 s: P1= 39 ps
82051 s: P1= 23 ps
41025 s: P1= 70 ps
20513 s: P1= 72 ps
10256 s: P1= 76 ps
5128 s: P1= 93 ps
2564 s: P1= 127 ps
1282 s: P1= 175 ps
641 s: P1= 230 ps
321 s: P1= 298 ps
160 s: P1= 467 ps
80 s: P1= 655 ps
40 s: P1= 916 ps
163949 s: P2= 30 ps
81975 s: P2= 36 ps
40987 s: P2= 65 ps
20494 s: P2= 71 ps
10247 s: P2= 83 ps
5123 s: P2= 116 ps
2562 s: P2= 163 ps
1281 s: P2= 207 ps
640 s: P2= 289 ps
320 s: P2= 381 ps
160 s: P2= 587 ps
80 s: P2= 825 ps
40 s: P2= 1157 ps
Median = 7.79 ns
P2 /ns
P1 /ns
Median = 2.21 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-PT09

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 52014
Computed code bias (P1/P2)/m = -45.075 -43.033
Computed baseline (X,Y,Z)/m = -6.245 5.166 4.257
RMS of residuals /m = 0.543

Number of phase differences to fit baseline = 48435
A priori baseline (X,Y,Z)/m = -6.245 5.166 4.257
9985 clock jitters computed out of 10032 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 30.3

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.075 -0.003 0.120
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.056 -0.003 0.107
RMS of residuals L2 /m = 0.003

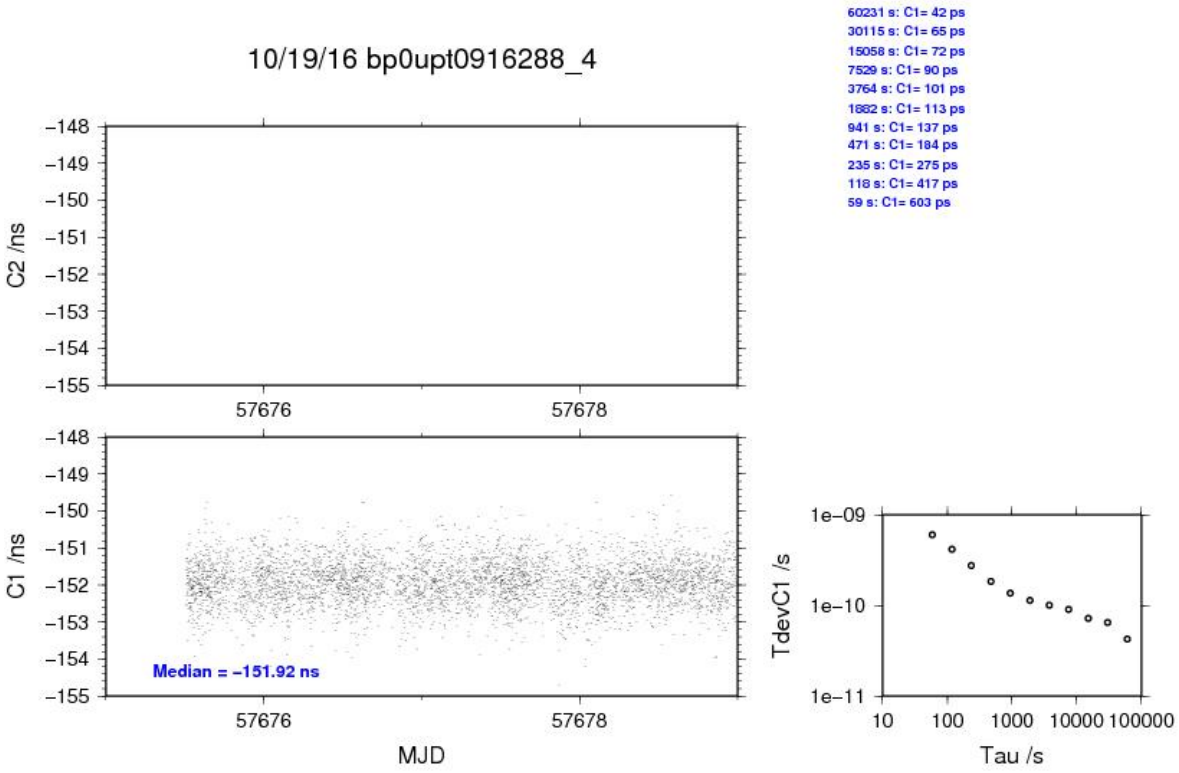
Final baseline L1 (X,Y,Z)/m = -6.170 5.162 4.377
Final baseline L2 (X,Y,Z)/m = -6.189 5.163 4.364

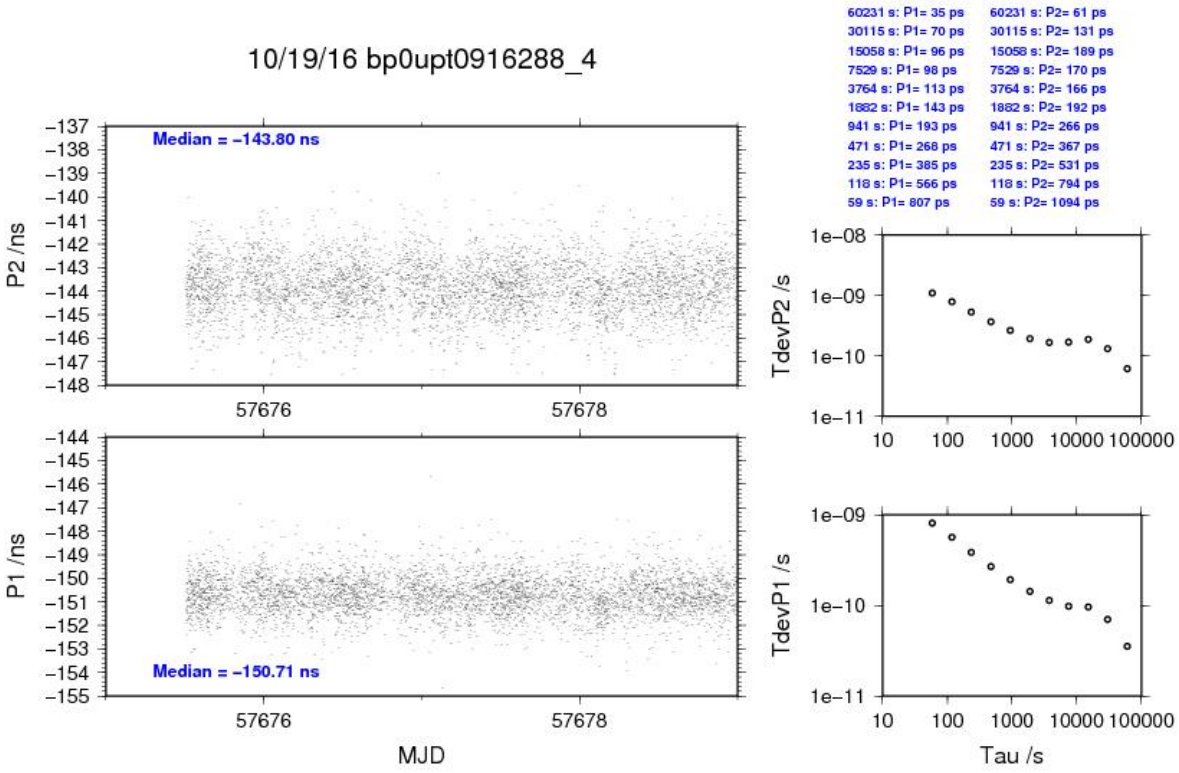
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 52019

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 51911 -151.916 1.200
C2: 0 NaN NaN
P1: 51904 -150.685 1.682
P2: 51905 -143.818 2.037

Number of 300s epochs in out file = 1007
Code #pts, median/ns, ave/ns, rms/ns
C1: 5132 -151.917 -151.918 0.593
C2: 0 0.000 NaN NaN
P1: 5132 -150.711 -150.694 0.801
P2: 5132 -143.796 -143.796 1.113


10/19/16 bp0upt0916288_4
60231 s: C1= 42 ps
30115 s: C1= 65 ps
15058 s: C1= 72 ps
7529 s: C1= 90 ps
3764 s: C1= 101 ps
1882 s: C1= 113 ps
941 s: C1= 137 ps
471 s: C1= 184 ps
235 s: C1= 275 ps
118 s: C1= 417 ps
59 s: C1= 603 ps
C2 /ns
C1 /ns
Median = −151.92 ns
MJD
TdevC1 /s
Tau /s


10/19/16 bp0upt0916288_4
60231 s: P1= 35 ps
30115 s: P1= 70 ps
15058 s: P1= 96 ps
7529 s: P1= 98 ps
3764 s: P1= 113 ps
1882 s: P1= 143 ps
941 s: P1= 193 ps
471 s: P1= 268 ps
235 s: P1= 385 ps
118 s: P1= 566 ps
59 s: P1= 807 ps
60231 s: P2= 61 ps
30115 s: P2= 131 ps
15058 s: P2= 189 ps
7529 s: P2= 170 ps
3764 s: P2= 166 ps
1882 s: P2= 192 ps
941 s: P2= 266 ps
471 s: P2= 367 ps
235 s: P2= 531 ps
118 s: P2= 794 ps
59 s: P2= 1094 ps
P2 /ns
Median = −143.80 ns
P1 /ns
Median = −150.71 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-PT09

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 75574
Computed code bias (P1/P2)/m = -34.383 -32.475
Computed baseline (X,Y,Z)/m = -0.773 0.499 0.310
RMS of residuals /m = 0.437

Number of phase differences to fit baseline = 74646
A priori baseline (X,Y,Z)/m = -0.773 0.499 0.310
10061 clock jitters computed out of 10061 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 4.9

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.266 0.009 0.108
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.263 0.005 0.094
RMS of residuals L2 /m = 0.004

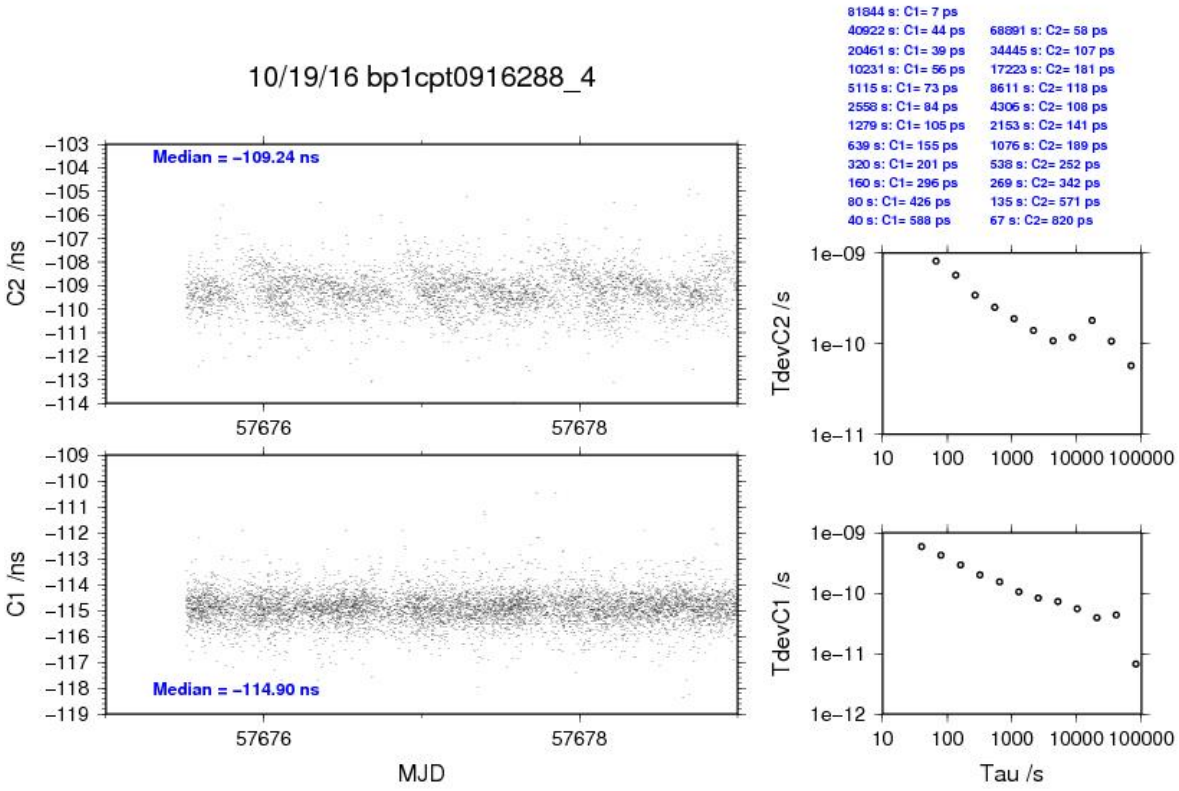
Final baseline L1 (X,Y,Z)/m = -0.507 0.508 0.418
Final baseline L2 (X,Y,Z)/m = -0.510 0.504 0.405

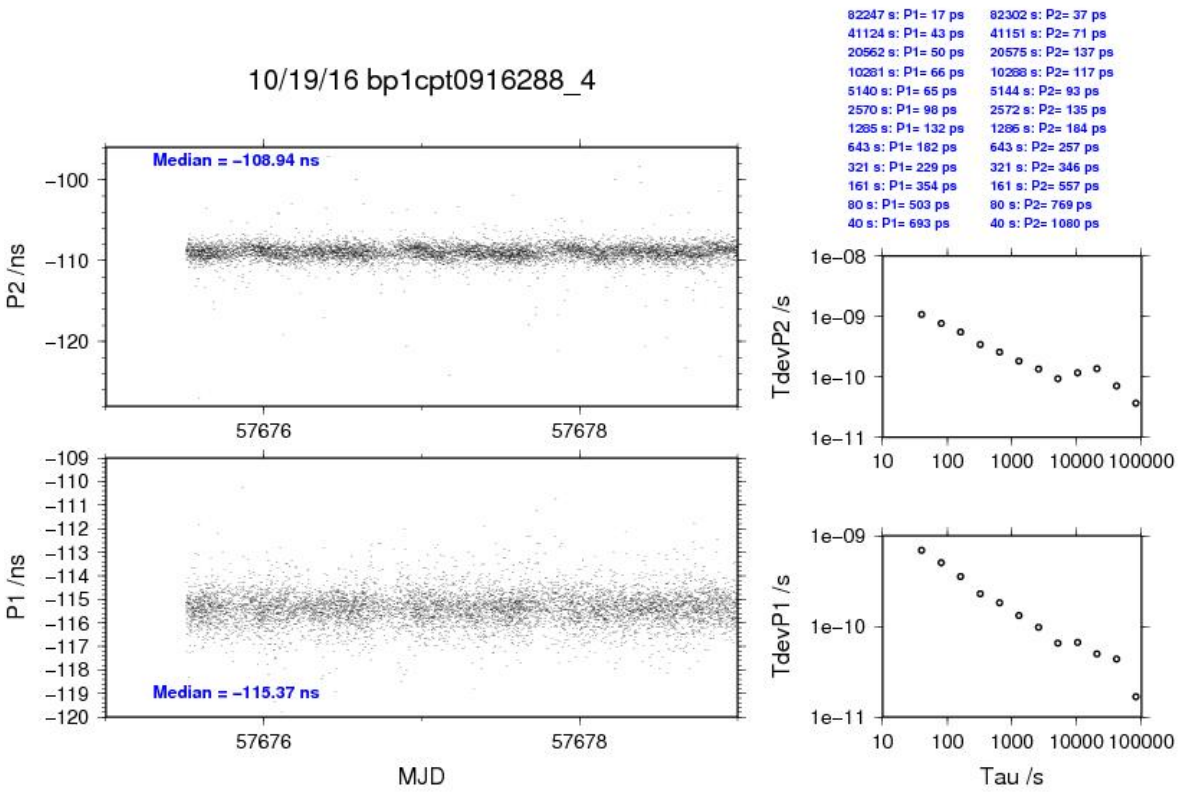
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 76055

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 75637 -114.903 1.259
C2: 45048 -109.251 1.592
P1: 75329 -115.384 1.342
P2: 75292 -108.982 1.702

Number of 300s epochs in out file = 1007
Code #pts, median/ns, ave/ns, rms/ns
C1: 7553 -114.896 -114.898 0.597
C2: 4487 -109.236 -109.244 0.806
P1: 7516 -115.369 -115.377 0.703
P2: 7511 -108.941 -108.983 1.085


10/19/16 bp1cpt0916288_4
Median = −109.24 ns
Median = −114.90 ns
C2 /ns
C1 /ns
MJD
81844 s: C1= 7 ps
40922 s: C1= 44 ps
20461 s: C1= 39 ps
10231 s: C1= 56 ps
5115 s: C1= 73 ps
2558 s: C1= 84 ps
1279 s: C1= 105 ps
639 s: C1= 155 ps
320 s: C1= 201 ps
160 s: C1= 296 ps
80 s: C1= 426 ps
40 s: C1= 588 ps
68891 s: C2= 58 ps
34445 s: C2= 107 ps
17223 s: C2= 181 ps
8611 s: C2= 118 ps
4306 s: C2= 108 ps
2153 s: C2= 141 ps
1076 s: C2= 189 ps
538 s: C2= 252 ps
269 s: C2= 342 ps
135 s: C2= 571 ps
67 s: C2= 820 ps
TdevC2 /s
TdevC1 /s
Tau /s


10/19/16 bp1cpt0916288_4
Median = −108.94 ns
Median = −115.37 ns
P2 /ns
P1 /ns
MJD
82247 s: P1= 17 ps
41124 s: P1= 43 ps
20562 s: P1= 50 ps
10281 s: P1= 66 ps
5140 s: P1= 65 ps
2570 s: P1= 98 ps
1285 s: P1= 132 ps
643 s: P1= 182 ps
321 s: P1= 229 ps
161 s: P1= 354 ps
80 s: P1= 503 ps
40 s: P1= 693 ps
82302 s: P2= 37 ps
41151 s: P2= 71 ps
20575 s: P2= 137 ps
10288 s: P2= 117 ps
5144 s: P2= 93 ps
2572 s: P2= 135 ps
1286 s: P2= 184 ps
643 s: P2= 257 ps
321 s: P2= 346 ps
161 s: P2= 557 ps
80 s: P2= 769 ps
40 s: P2= 1080 ps
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-PT10

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 123387
Computed code bias (P1/P2)/m = -9.831 -7.955
Computed baseline (X,Y,Z)/m = -8.774 7.212 5.607
RMS of residuals /m = 0.662

Number of phase differences to fit baseline = 114714
A priori baseline (X,Y,Z)/m = -8.774 7.212 5.607
22897 clock jitters computed out of 22970 intervals
AVE jitter /ps = -0.0 RMS jitter /ps = 30.4

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.126 0.015 0.162
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.111 0.015 0.153
RMS of residuals L2 /m = 0.004

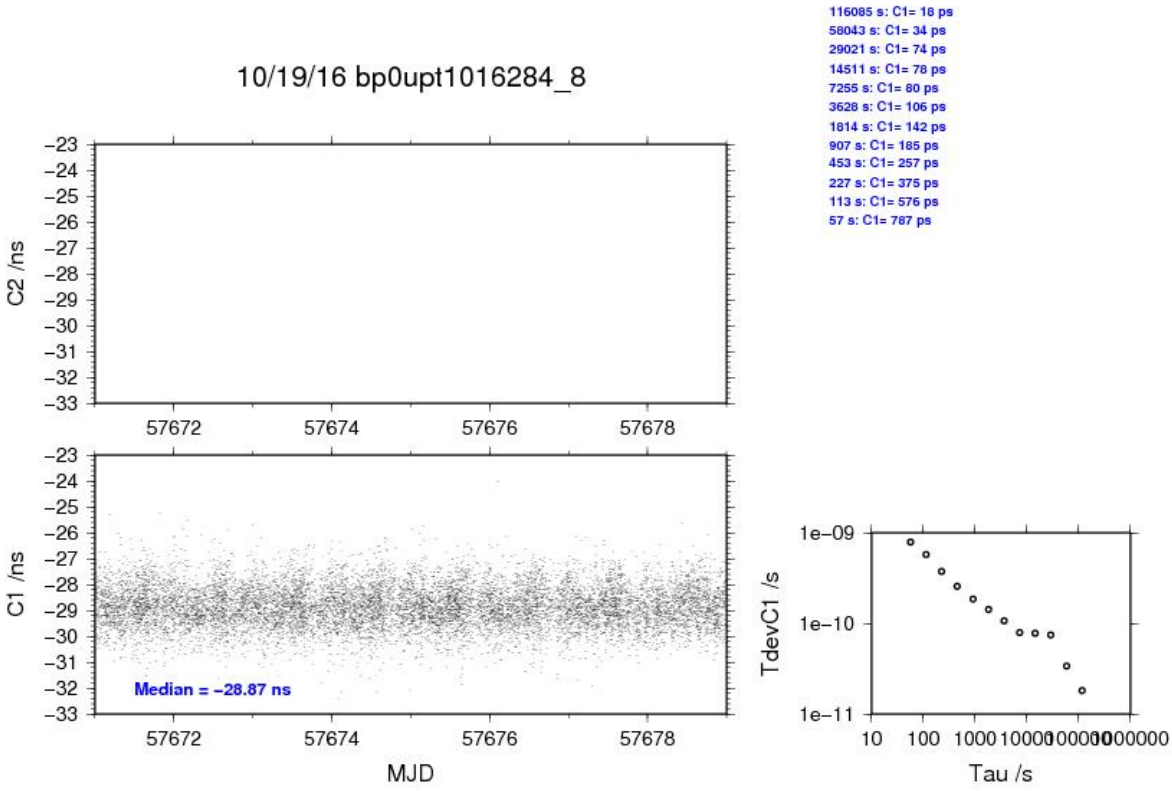
Final baseline L1 (X,Y,Z)/m = -8.648 7.226 5.768
Final baseline L2 (X,Y,Z)/m = -8.663 7.226 5.760

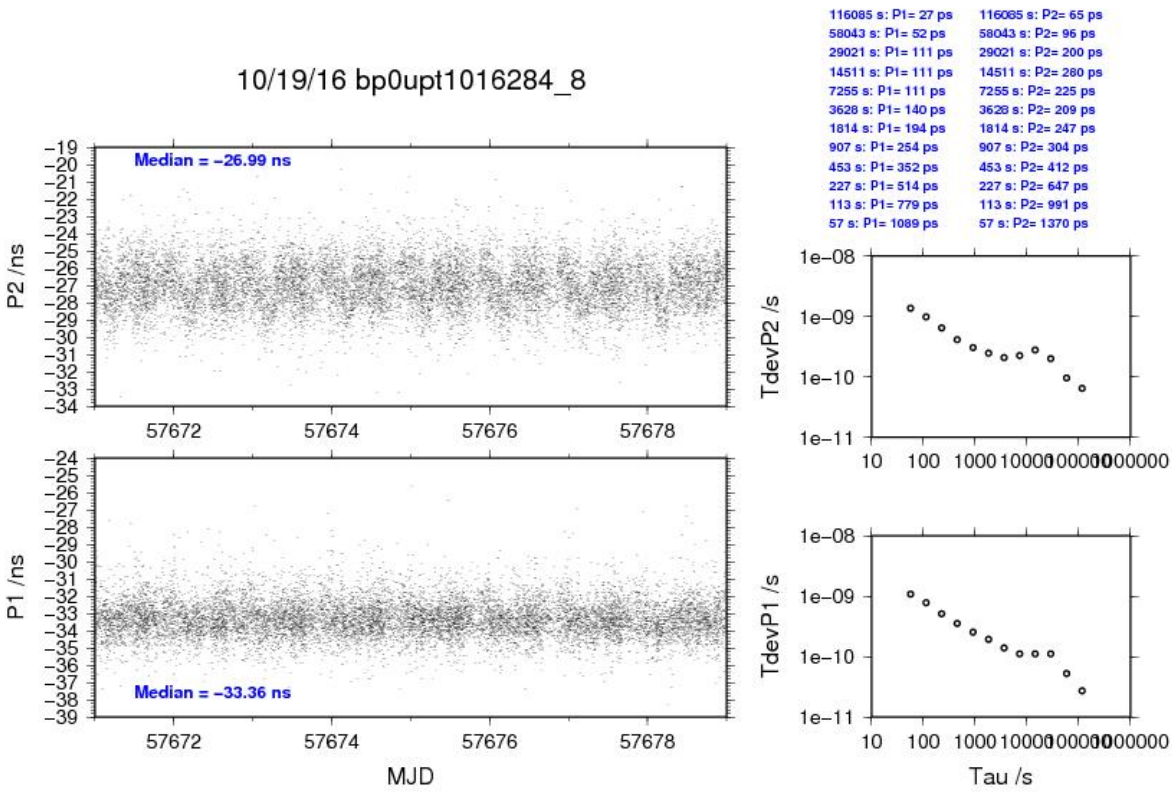
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 123407

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 123345 -28.837 1.657
C2: 0 NaN NaN
P1: 123321 -33.281 2.312
P2: 123324 -26.983 2.625

Number of 300s epochs in out file = 2304
Code #pts, median/ns, ave/ns, rms/ns
C1: 12190 -28.873 -28.849 0.790
C2: 0 0.000 NaN NaN
P1: 12190 -33.358 -33.300 1.083
P2: 12190 -26.990 -26.976 1.389


10/19/16 bp0upt1016284_8
116085 s: C1= 18 ps
58043 s: C1= 34 ps
29021 s: C1= 74 ps
14511 s: C1= 78 ps
7255 s: C1= 80 ps
3628 s: C1= 106 ps
1814 s: C1= 142 ps
907 s: C1= 185 ps
453 s: C1= 257 ps
227 s: C1= 375 ps
113 s: C1= 576 ps
57 s: C1= 787 ps
C2 /ns
C1 /ns
Median = -28.87 ns
MJD
TdevC1 /s
Tau /s


10/19/16 bp0upt1016284_8
116085 s: P1= 27 ps
58043 s: P1= 52 ps
29021 s: P1= 111 ps
14511 s: P1= 111 ps
7255 s: P1= 111 ps
3628 s: P1= 140 ps
1814 s: P1= 194 ps
907 s: P1= 254 ps
453 s: P1= 352 ps
227 s: P1= 514 ps
113 s: P1= 779 ps
57 s: P1= 1089 ps
116085 s: P2= 65 ps
58043 s: P2= 96 ps
29021 s: P2= 200 ps
14511 s: P2= 280 ps
7255 s: P2= 225 ps
3628 s: P2= 209 ps
1814 s: P2= 247 ps
907 s: P2= 304 ps
453 s: P2= 412 ps
227 s: P2= 647 ps
113 s: P2= 991 ps
57 s: P2= 1370 ps
P2 /ns
P1 /ns
Median = -26.99 ns
Median = -33.36 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-PT10

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 172643
Computed code bias (P1/P2)/m = 0.736 2.502
Computed baseline (X,Y,Z)/m = -3.086 2.498 1.675
RMS of residuals /m = 0.666

Number of phase differences to fit baseline = 170541
A priori baseline (X,Y,Z)/m = -3.086 2.498 1.675
23036 clock jitters computed out of 23036 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 4.9

Iter 1 Large residuals L1= 1
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = 0.119 0.060 0.139
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.111 0.061 0.129
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 1
Iter 2 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = 0.119 0.060 0.139
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.111 0.061 0.129
RMS of residuals L2 /m = 0.005

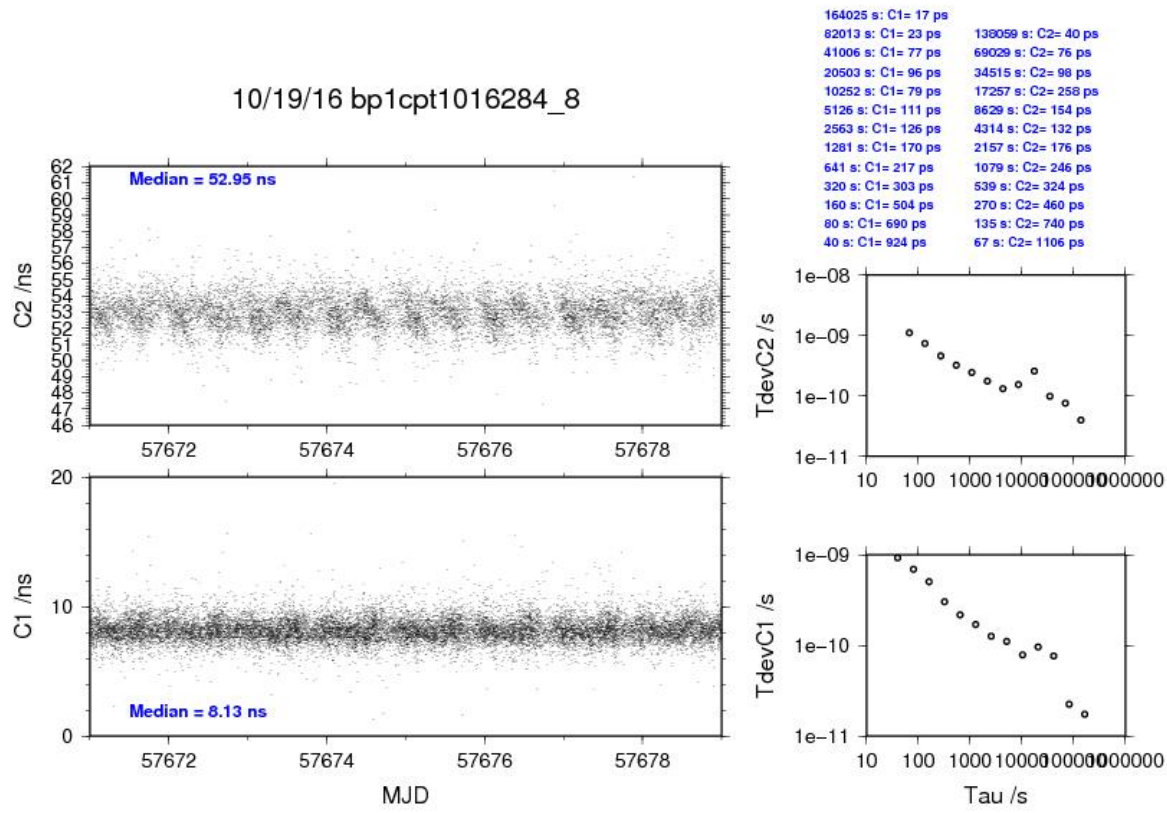
Final baseline L1 (X,Y,Z)/m = -2.967 2.558 1.813
Final baseline L2 (X,Y,Z)/m = -2.975 2.560 1.803

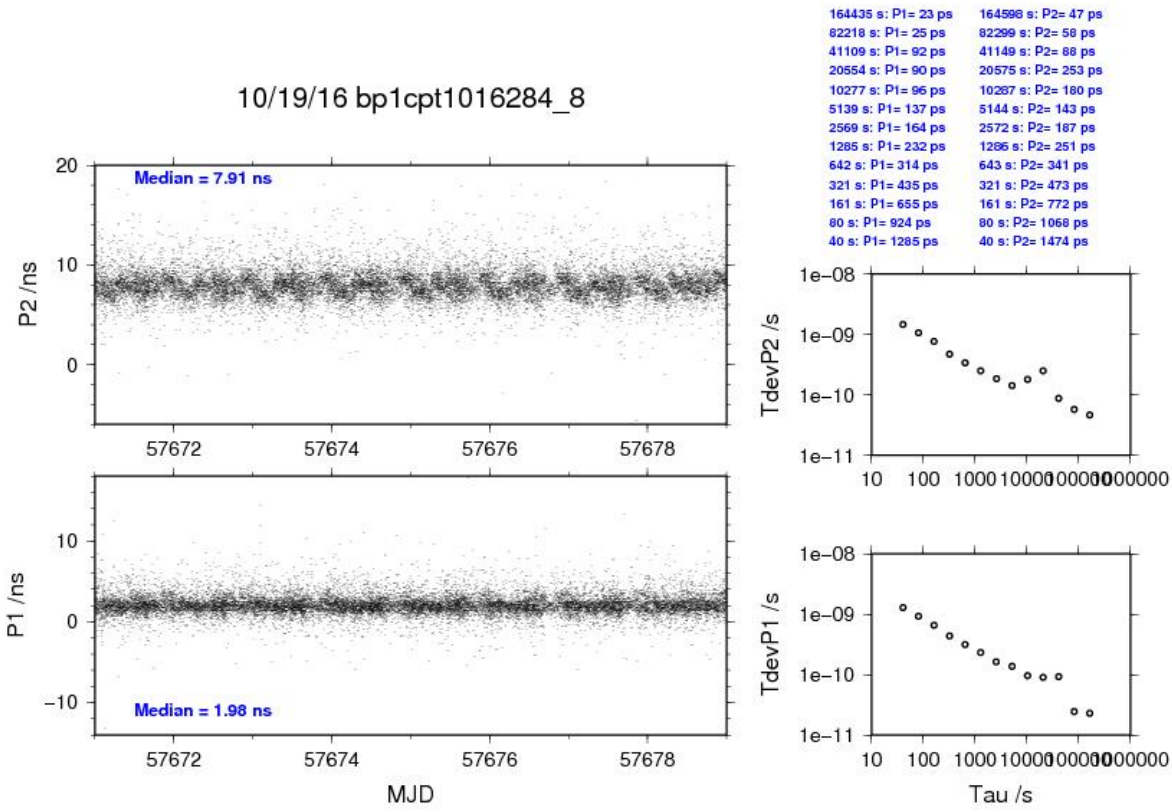
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 173134

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 172873 8.191 2.092
C2: 102885 52.966 2.259
P1: 172468 2.081 2.996
P2: 172375 7.994 3.180

Number of 300s epochs in out file = 2304
Code #pts, median/ns, ave/ns, rms/ns
C1: 17254 8.133 8.178 0.953
C2: 10250 52.950 52.956 1.067
P1: 17211 1.982 2.076 1.296
P2: 17194 7.910 7.983 1.499


10/19/16 bp1cpt1016284_8
Median = 52.95 ns
C2 /ns
Median = 8.13 ns
C1 /ns
MJD
164025 s: C1= 17 ps
82013 s: C1= 23 ps
41006 s: C1= 77 ps
20503 s: C1= 96 ps
10252 s: C1= 79 ps
5126 s: C1= 111 ps
2563 s: C1= 126 ps
1281 s: C1= 170 ps
641 s: C1= 217 ps
320 s: C1= 303 ps
160 s: C1= 504 ps
80 s: C1= 690 ps
40 s: C1= 924 ps
138059 s: C2= 40 ps
69029 s: C2= 76 ps
34515 s: C2= 98 ps
17257 s: C2= 258 ps
8629 s: C2= 154 ps
4314 s: C2= 132 ps
2157 s: C2= 176 ps
1079 s: C2= 246 ps
539 s: C2= 324 ps
270 s: C2= 460 ps
135 s: C2= 740 ps
67 s: C2= 1106 ps
TdevC2 /s
TdevC1 /s
Tau /s


10/19/16 bp1cpt1016284_8
Median = 7.91 ns
P2 /ns
Median = 1.98 ns
P1 /ns
MJD
164435 s: P1= 23 ps
82218 s: P1= 25 ps
41109 s: P1= 92 ps
20554 s: P1= 90 ps
10277 s: P1= 96 ps
5139 s: P1= 137 ps
2569 s: P1= 164 ps
1285 s: P1= 232 ps
642 s: P1= 314 ps
321 s: P1= 435 ps
161 s: P1= 655 ps
80 s: P1= 924 ps
40 s: P1= 1285 ps
164598 s: P2= 47 ps
82299 s: P2= 58 ps
41149 s: P2= 88 ps
20575 s: P2= 253 ps
10287 s: P2= 180 ps
5144 s: P2= 143 ps
2572 s: P2= 187 ps
1286 s: P2= 251 ps
643 s: P2= 341 ps
321 s: P2= 473 ps
161 s: P2= 772 ps
80 s: P2= 1068 ps
40 s: P2= 1474 ps
TdevP2 /s
TdevP1 /s
Tau /s

2.3/ ROA (16302)

Period

MJD 57689 to 57696

Delays

BP0U:

REFDLY = 162.82 ns (110.22+52.6, cf page 54)
CABDLY = 181.7 ns (C134)

BP1C:

X_O = 199.0 ns (214.49-15.49, cf page 54)
X_P = 162.82 ns (100.22+52.6, cf page 54)
REFDLY = 361.82 ns
CABDLY = 235.7 ns (C131)

RO_5: (cf page 48)

REFDLY = 36.5 ns
CABDLY = 127.5 ns
INT DLY = 18.6 ns (GPS P1)
32.6 ns (GPS P2)

RO_6: (cf page 49)

REFDLY = 234.4 ns
CABDLY = 66.7 ns
INT DLY = 50.0 ns (GPS P1)
48.4 ns (GPS P2)

RO_7: (cf page 50)

REFDLY = 194.6 ns
CABDLY = 81.9 ns
INT DLY = 54.9 ns (GPS P1)
53.2 ns (GPS P2)

RO_8: (cf page 51)

REFDLY = 38.0 ns
CABDLY = 126.6 ns
INT DLY = -71.6 ns (GPS P1)
-75.4 ns (GPS P2)

RO_9: (cf page 52)

REFDLY = 112.4 ns
CABDLY = 118.7 ns
INT DLY = 55.8 ns (GPS P1)
54.5 ns (GPS P2)

Setup at the ROA

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	28-10-2016, 12:15 UTC	
Date and hour end of measurements		
Information on the system		
	Local	**Traveling**
4-character BIPM code	RO_5	BP0U/BP1C
Receiver maker and type Receiver serial number	DICOM GTR50 0601012 V1.6.1	DICOM GTR50 S/N 0801068 Septentrio PolaRx3eTR SN 2000785
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type Phase stabilized cable (Y/N)	LMR400+H155	H155
Cable length outside building /m	Approximately 8 m	Approximately 25 m
Antenna maker and type Antenna serial number	LEICA AR25 S/N 725232	GPS-702-GGG Ashtech ASH701945E_M
Temperature if stabilized /°C	N/A	N/A
Measured delays / ns		
	Local	**Traveling**
Delay from local UTC(k) to receiver 1 PPS_IN	36.5	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	N/A
Antenna cable delay	N/A	N/A
Splitter delay	N/A	N/A
Additional cable delay	N/A	N/A
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns	18.6 (GPS P1), 32.6 (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	127.5	
REF DLY /ns	36.5	
Coordinate reference frame	ITRF	
Latitude or X /m	5105510.60	
Longitude or Y /m	-555200.98	
Height or Z /m	3769791.03	
General information		
Rise time of local UTC pulse	< 3 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(23 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	28-10-2016, 12:15 UTC	
Date and hour end of measurements		
Information on the system		
	Local	**Traveling**
4-character BIPM code	RO_6	BP0U/BP1C
Receiver maker and type Receiver serial number	Septentrio PolaRx3eTR 200805 v2.1	DICOM GTR50 S/N 0801068 Septentrio PolaRx3eTR SN 2000785
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type Phase stabilized cable (Y/N)	H155	H155
Cable length outside building /m	Approximately 8 m	Approximately 25 m
Antenna maker and type Antenna serial number	LEICA AR25 S/N 725233	GPS-702-GGG Ashtech ASH701945E_M
Temperature if stabilized /°C	N/A	N/A
Measured delays / ns		
	Local	**Traveling**
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	N/A
Antenna cable delay	N/A	N/A
Splitter delay	N/A	N/A
Additional cable delay	N/A	N/A
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns	50.0 (GPS P1), 48.4 (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	66.7	
REF DLY /ns	234.4	
Coordinate reference frame	ITRF	
Latitude or X /m	5105511.23	
Longitude or Y /m	-555201.07	
Height or Z /m	3769790.27	
General information		
Rise time of local UTC pulse	< 3 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(23 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	28-10-2016, 12:15 UTC	
Date and hour end of measurements		
Information on the system		
	Local	**Traveling**
4-character BIPM code	RO_7	BP0U/BP1C
Receiver maker and type Receiver serial number	Septentrio PolaRx4TR PRO 3007633 v2.9.0	DICOM GTR50 S/N 0801068 Septentrio PolaRx3eTR SN 2000785
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type Phase stabilized cable (Y/N)	LMR400	H155
Cable length outside building /m	Approximately 8 m	Approximately 25 m
Antenna maker and type Antenna serial number	LEICA AR25 S/N 725232	GPS-702-GGG Ashtech ASH701945E_M
Temperature if stabilized /°C	N/A	N/A
Measured delays / ns		
	Local	**Traveling**
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	N/A
Antenna cable delay	N/A	N/A
Splitter delay	N/A	N/A
Additional cable delay	N/A	N/A
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns	54.9 (GPS P1), 53.2 (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	81.9	
REF DLY /ns	194.6	
Coordinate reference frame	ITRF	
Latitude or X /m	5105510.60	
Longitude or Y /m	-555200.98	
Height or Z /m	3769791.03	
General information		
Rise time of local UTC pulse	< 3 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(23 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	28-10-2016, 12:15 UTC	
Date and hour end of measurements		
Information on the system		
	Local	**Traveling**
4-character BIPM code	RO_8	BP0U/BP1C
Receiver maker and type Receiver serial number	DICOM GTR51 1509257 v1.2.2	DICOM GTR50 S/N 0801068 Septentrio PolaRx3eTR SN 2000785
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type Phase stabilized cable (Y/N)	LMR400	H155
Cable length outside building /m	Approximately 8 m	Approximately 25 m
Antenna maker and type Antenna serial number	LEICA AR25 S/N 725232	GPS-702-GGG Ashtech ASH701945E_M
Temperature if stabilized /°C	N/A	N/A
Measured delays / ns		
	Local	**Traveling**
Delay from local UTC(k) to receiver 1 PPS_IN	38.0	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	N/A
Antenna cable delay	N/A	N/A
Splitter delay	N/A	N/A
Additional cable delay	N/A	N/A
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns	-71.6 ns (GPS P1), -75.4 ns (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	126.6	
REF DLY /ns	38.0	
Coordinate reference frame	ITRF	
Latitude or X /m	5105510.60	
Longitude or Y /m	-555200.98	
Height or Z /m	3769791.03	
General information		
Rise time of local UTC pulse	< 3 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(23 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	ROA	
Date and hour beginning of measurements	28-10-2016, 12:15 UTC	
Date and hour end of measurements		
Information on the system		
	Local	**Traveling**
4-character BIPM code	RO_9	BP0U/BP1C
Receiver maker and type Receiver serial number	Septentrio PolaRx4TR PRO 3008013 v2.9.0	DICOM GTR50 S/N 0801068 Septentrio PolaRx3eTR SN 2000785
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type Phase stabilized cable (Y/N)	LMR400	H155
Cable length outside building /m	Approximately 15 m	Approximately 20 m
Antenna maker and type Antenna serial number	LEICA AR25 S/N 726362	GPS-702-GGG Ashtech ASH701945E_M
Temperature if stabilized /°C	N/A	N/A
Measured delays / ns		
	Local	**Traveling**
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	N/A
Antenna cable delay	N/A	N/A
Splitter delay	N/A	N/A
Additional cable delay	N/A	N/A
Data used for the generation of CGGTTS files		
	Local	
INT DLY (GPS) /ns	55.8 (GPS P1), 54.5 (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	118.7	
REF DLY /ns	112.4	
Coordinate reference frame	ITRF	
Latitude or X /m	5105510.76	
Longitude or Y /m	-555191.33	
Height or Z /m	3769793.98	
General information		
Rise time of local UTC pulse	< 3 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	(23 ± 2) °C	
Set humidity value and uncertainty	< 70 %	

Diagram of the experiment set-up:

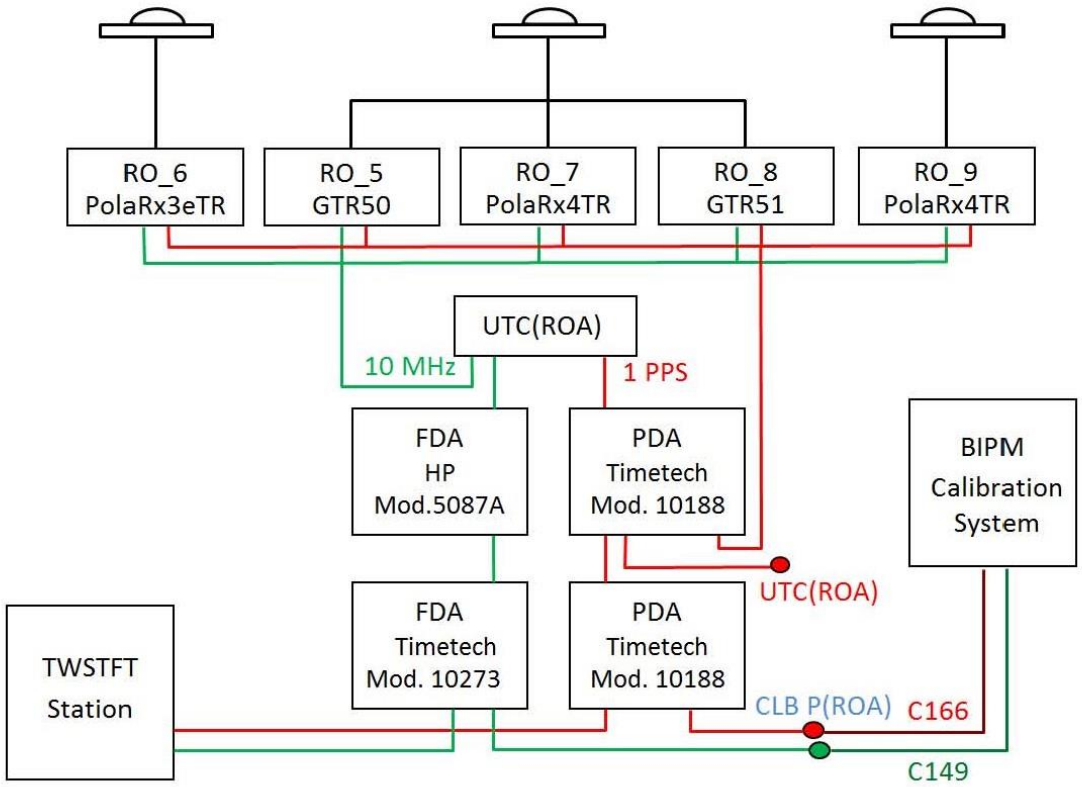


Fig. Scheme of signal distribution and definition of the reference point CLB P(ROA).

Log of Events / Additional Information :

Start data logging at 12:15 UTC.

Monday 31 October 2016

Delay Measurement, 07:00 UTC:

UTC(ROA) – CLB P(ROA) = (110.21 ± 0.01) ns

Delay Measurement at each receiver:

BP1C (PolaRx3eTR):

Channel A [C183], channel B [C157 (PPS IN)+(Female BNC-BNC)+C155] = (15.48 ± 0.01) ns
Channel A [C183], channel B [PPS OUT+C155] = (214.39 ± 0.09) ns

BP0U (GTR50):

Channel A [C183], channel B [C153 (PPS IN)]= (17 ± 6) ps

Friday 4 November 2016

Delay Measurement, 07:00 UTC:

UTC(ROA) – CLB P(ROA) = (110.23 ± 0.01) ns

Delay Measurement at each receiver:

BP1C (PolaRx3eTR):

Channel A [C183], channel B [C157 (PPS IN)+(Female BNC-BNC)+C155] = (15.49 ± 0.01) ns
Channel A [C183], channel B [PPS OUT+C155] = (214.58 ± 0.09) ns

BP0U (GTR50):

Channel A [C183], channel B [C153 (PPS IN)]= (19 ± 7) ps

BP0U-RO_5

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 115740
Computed code bias (P1/P2)/m = -35.459 -33.735
Computed baseline (X,Y,Z)/m = -2.086 -9.923 -0.467
RMS of residuals /m = 0.535

Number of phase differences to fit baseline = 107910
A priori baseline (X,Y,Z)/m = -2.086 -9.923 -0.467
20999 clock jitters computed out of 21091 intervals
AVE jitter /ps = 0.0 RMS jitter /ps = 38.0

Iter 1 Large residuals L1= 5
Iter 1 Large residuals L2= 5
Computed baseline L1 (X,Y,Z)/m = -0.001 -0.001 -0.036
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = -0.013 0.004 -0.053
RMS of residuals L2 /m = 0.002

Iter 2 Large residuals L1= 5
Iter 2 Large residuals L2= 5
Computed baseline L1 (X,Y,Z)/m = -0.001 -0.001 -0.036
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = -0.013 0.004 -0.053
RMS of residuals L2 /m = 0.002

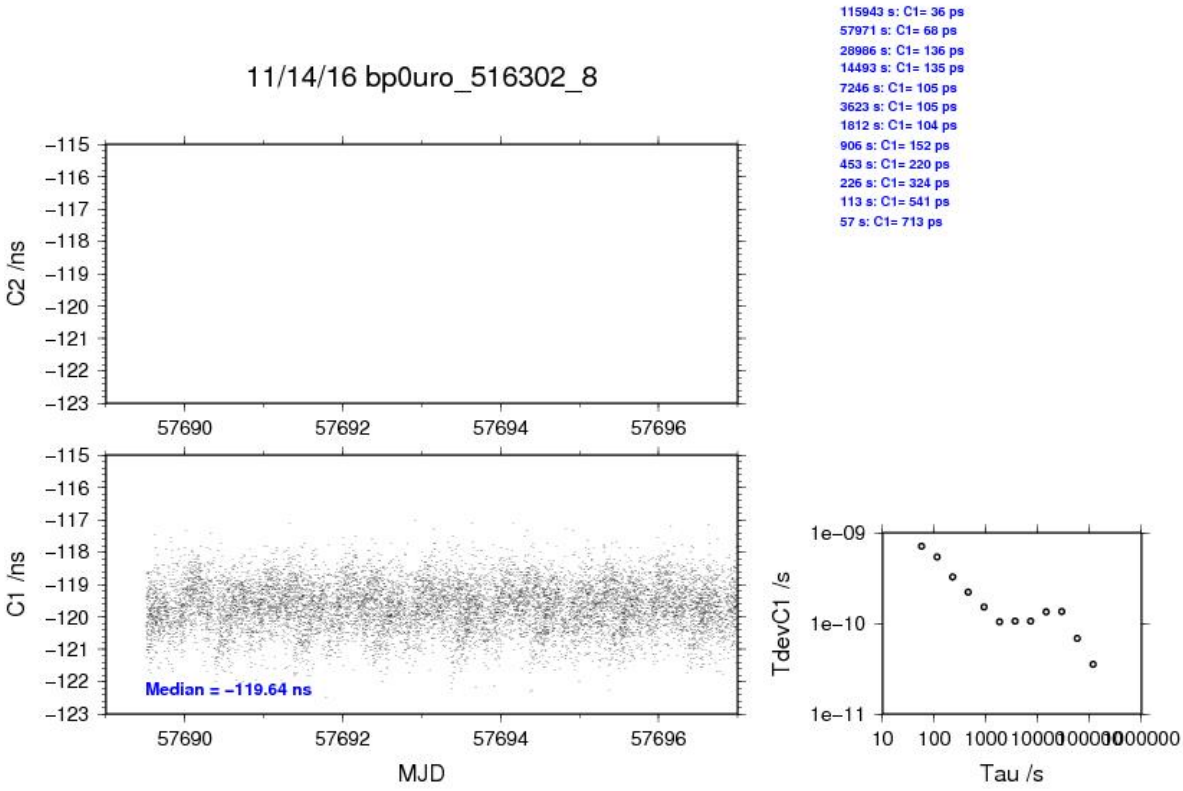
Final baseline L1 (X,Y,Z)/m = -2.087 -9.925 -0.503
Final baseline L2 (X,Y,Z)/m = -2.098 -9.919 -0.520

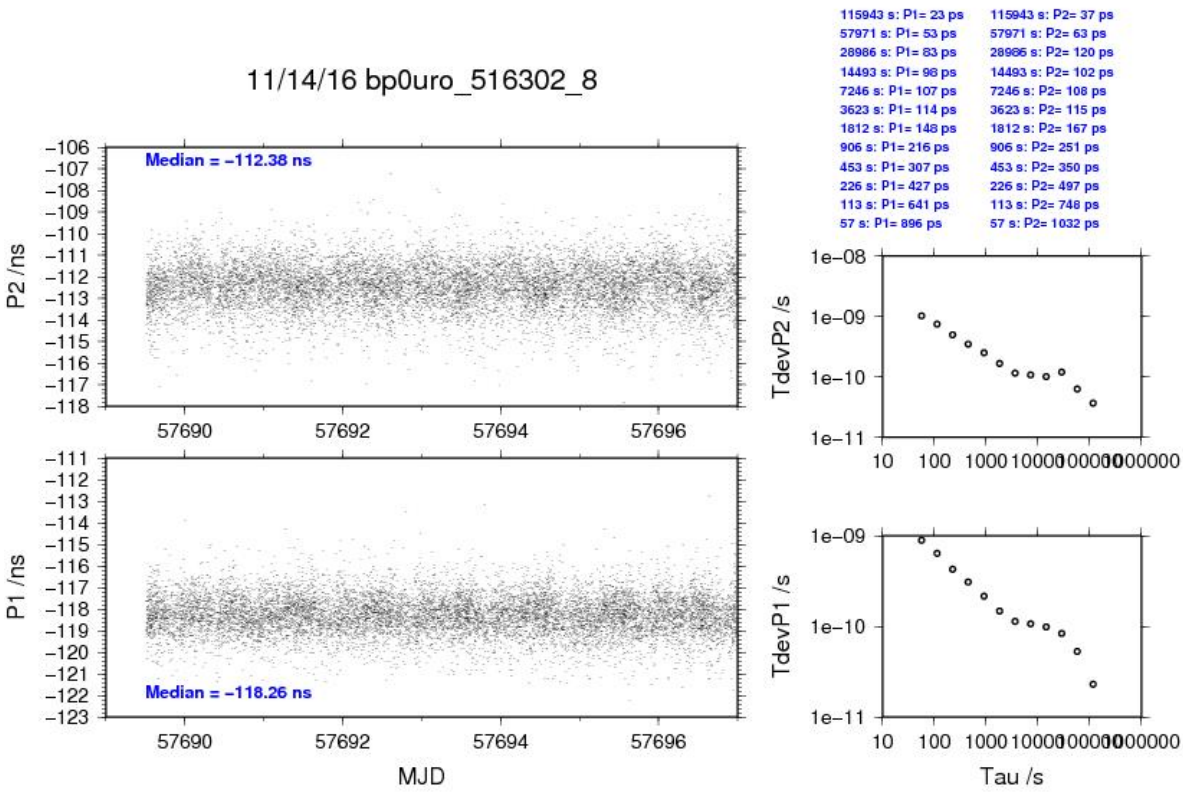
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 115743

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 115690 -119.656 1.296
C2: 0 NaN NaN
P1: 115687 -118.223 1.863
P2: 115687 -112.423 1.818

Number of 300s epochs in out file = 2152
Code #pts, median/ns, ave/ns, rms/ns
C1: 11426 -119.644 -119.667 0.730
C2: 0 0.000 NaN NaN
P1: 11426 -118.260 -118.258 0.897
P2: 11426 -112.379 -112.422 1.037


11/14/16 bp0uro_516302_8
115943 s: C1= 36 ps
57971 s: C1= 68 ps
28986 s: C1= 136 ps
14493 s: C1= 135 ps
7246 s: C1= 105 ps
3623 s: C1= 105 ps
1812 s: C1= 104 ps
906 s: C1= 152 ps
453 s: C1= 220 ps
226 s: C1= 324 ps
113 s: C1= 541 ps
57 s: C1= 713 ps
C2 /ns
C1 /ns
Median = −119.64 ns
MJD
TdevC1 /s
Tau /s


11/14/16 bp0uro_516302_8
115943 s: P1= 23 ps
57971 s: P1= 53 ps
28986 s: P1= 83 ps
14493 s: P1= 98 ps
7246 s: P1= 107 ps
3623 s: P1= 114 ps
1812 s: P1= 148 ps
906 s: P1= 216 ps
453 s: P1= 307 ps
226 s: P1= 427 ps
113 s: P1= 641 ps
57 s: P1= 896 ps
115943 s: P2= 37 ps
57971 s: P2= 63 ps
28986 s: P2= 120 ps
14493 s: P2= 102 ps
7246 s: P2= 108 ps
3623 s: P2= 115 ps
1812 s: P2= 167 ps
906 s: P2= 251 ps
453 s: P2= 350 ps
226 s: P2= 497 ps
113 s: P2= 748 ps
57 s: P2= 1032 ps
P2 /ns
P1 /ns
Median = −112.38 ns
Median = −118.26 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-RO_5

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 162128
Computed code bias (P1/P2)/m = -23.520 -21.884
Computed baseline (X,Y,Z)/m = -1.693 -9.566 -0.669
RMS of residuals /m = 0.524

Number of phase differences to fit baseline = 134673
A priori baseline (X,Y,Z)/m = -1.693 -9.566 -0.669
18581 clock jitters computed out of 18876 intervals
AVE jitter /ps = -2.7 RMS jitter /ps = 46.7

Iter 1 Large residuals L1= 337
Iter 1 Large residuals L2= 339
Computed baseline L1 (X,Y,Z)/m = -0.151 -0.007 -0.095
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.154 -0.004 -0.097
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 337
Iter 2 Large residuals L2= 339
Computed baseline L1 (X,Y,Z)/m = -0.151 -0.007 -0.095
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.155 -0.004 -0.097
RMS of residuals L2 /m = 0.003

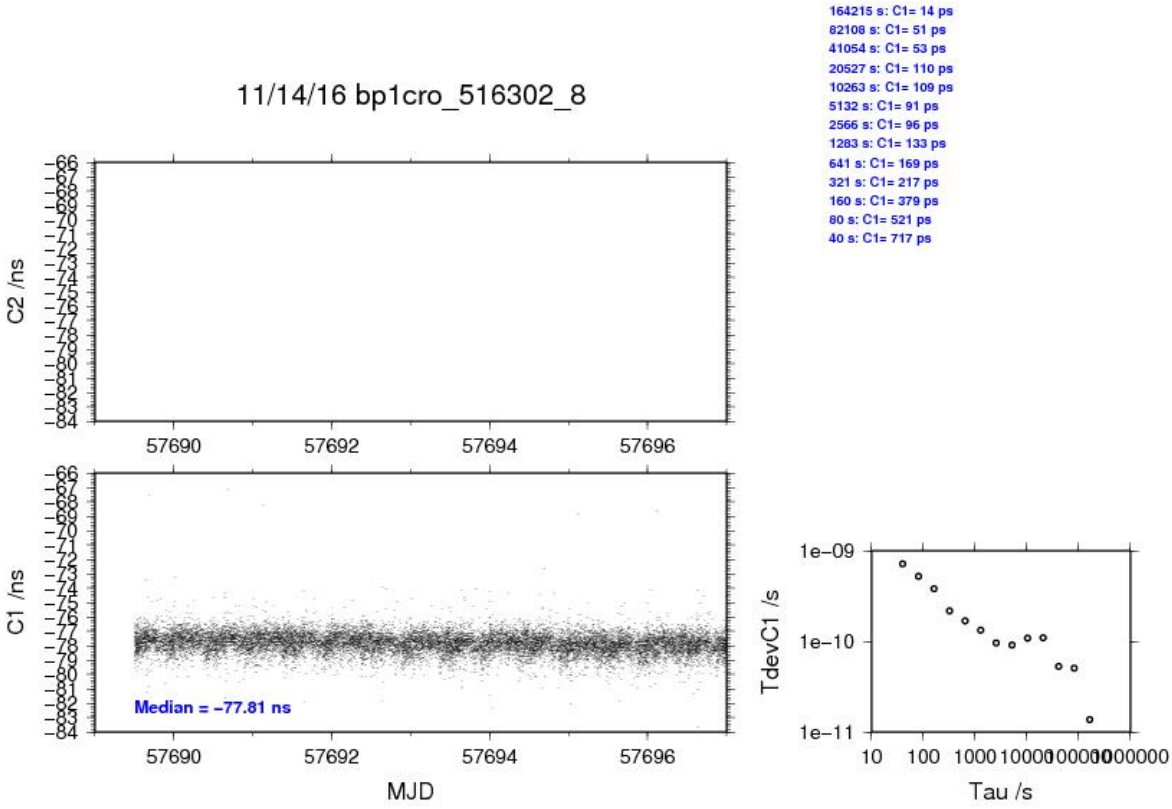
Final baseline L1 (X,Y,Z)/m = -1.844 -9.574 -0.765
Final baseline L2 (X,Y,Z)/m = -1.848 -9.571 -0.766

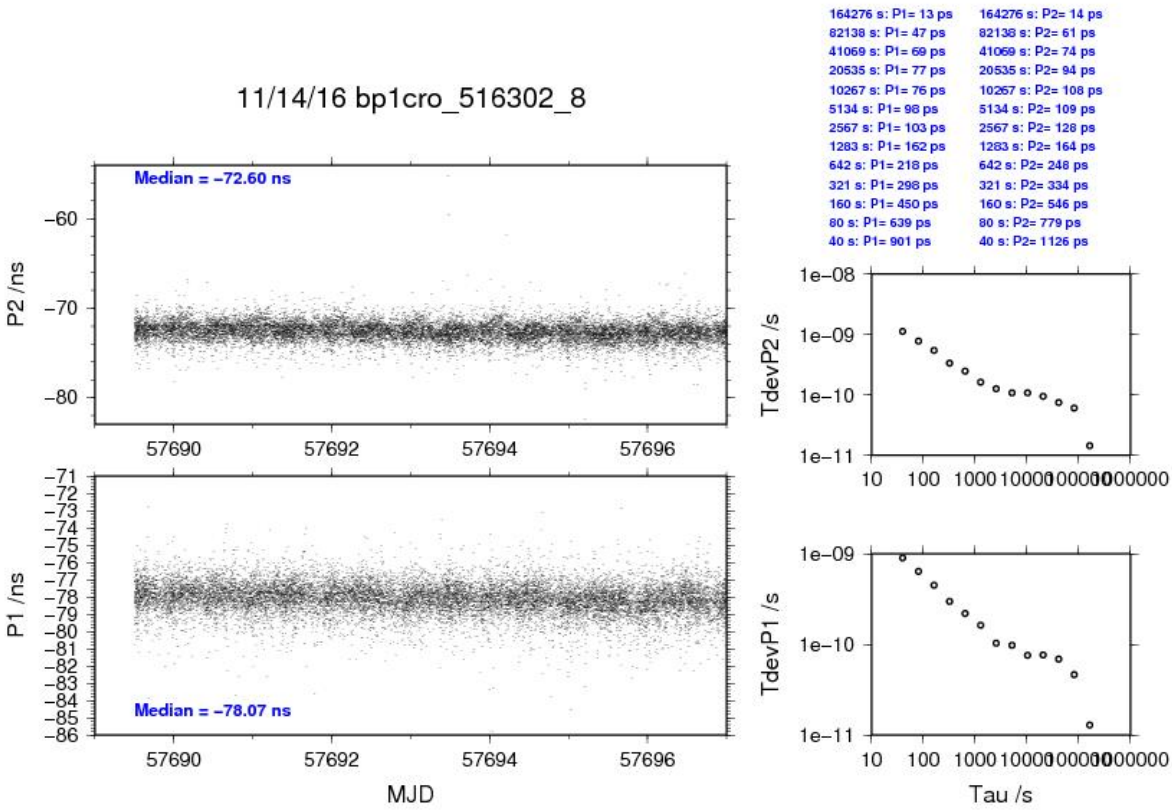
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 162213

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 162061 -77.824 1.265
C2: 0 NaN NaN
P1: 161975 -78.092 1.821
P2: 161972 -72.629 1.855

Number of 300s epochs in out file = 2160
Code #pts, median/ns, ave/ns, rms/ns
C1: 16164 -77.813 -77.835 0.745
C2: 0 0.000 NaN NaN
P1: 16158 -78.071 -78.100 0.912
P2: 16158 -72.602 -72.631 1.108


11/14/16 bp1cro_516302_8
164215 s: C1= 14 ps
82108 s: C1= 51 ps
41054 s: C1= 53 ps
20527 s: C1= 110 ps
10263 s: C1= 109 ps
5132 s: C1= 91 ps
2566 s: C1= 96 ps
1283 s: C1= 133 ps
641 s: C1= 169 ps
321 s: C1= 217 ps
160 s: C1= 379 ps
80 s: C1= 521 ps
40 s: C1= 717 ps
C2 /ns
C1 /ns
Median = -77.81 ns
MJD
TdevC1 /s
Tau /s


11/14/16 bp1cro_516302_8
164276 s: P1= 13 ps
82138 s: P1= 47 ps
41069 s: P1= 69 ps
20535 s: P1= 77 ps
10267 s: P1= 76 ps
5134 s: P1= 98 ps
2567 s: P1= 103 ps
1283 s: P1= 162 ps
642 s: P1= 218 ps
321 s: P1= 298 ps
160 s: P1= 450 ps
80 s: P1= 639 ps
40 s: P1= 901 ps
164276 s: P2= 14 ps
82138 s: P2= 61 ps
41069 s: P2= 74 ps
20535 s: P2= 94 ps
10267 s: P2= 108 ps
5134 s: P2= 109 ps
2567 s: P2= 128 ps
1283 s: P2= 164 ps
642 s: P2= 248 ps
321 s: P2= 334 ps
160 s: P2= 546 ps
80 s: P2= 779 ps
40 s: P2= 1126 ps
P2 /ns
P1 /ns
Median = -72.60 ns
Median = -78.07 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-RO_6

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 115256
Computed code bias (P1/P2)/m = -0.091 2.051
Computed baseline (X,Y,Z)/m = -1.511 -10.021 -1.279
RMS of residuals /m = 0.446

Number of phase differences to fit baseline = 91894
A priori baseline (X,Y,Z)/m = -1.511 -10.021 -1.279
18057 clock jitters computed out of 18409 intervals
AVE jitter /ps = 2.4 RMS jitter /ps = 48.4

Iter 1 Large residuals L1= 281
Iter 1 Large residuals L2= 281
Computed baseline L1 (X,Y,Z)/m = -0.009 0.004 -0.025
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.017 0.012 -0.041
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 281
Iter 2 Large residuals L2= 281
Computed baseline L1 (X,Y,Z)/m = -0.009 0.004 -0.025
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.017 0.012 -0.041
RMS of residuals L2 /m = 0.003

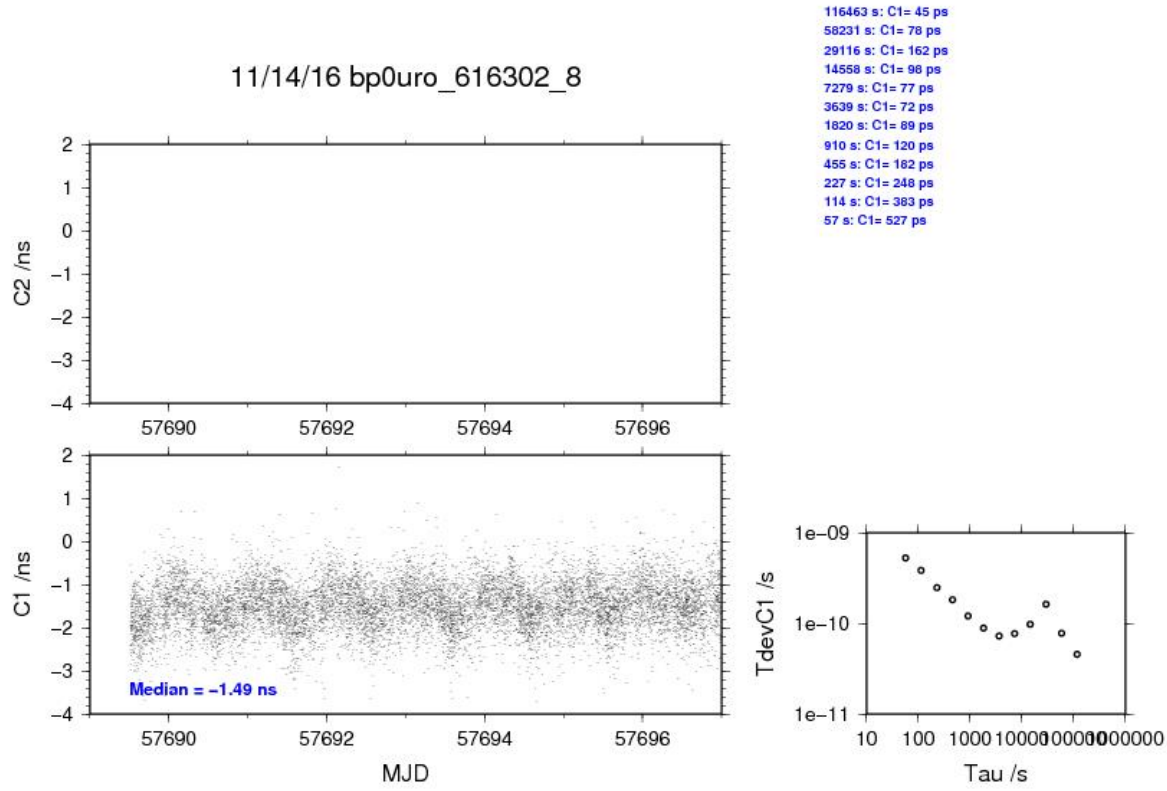
Final baseline L1 (X,Y,Z)/m = -1.520 -10.017 -1.305
Final baseline L2 (X,Y,Z)/m = -1.528 -10.010 -1.321

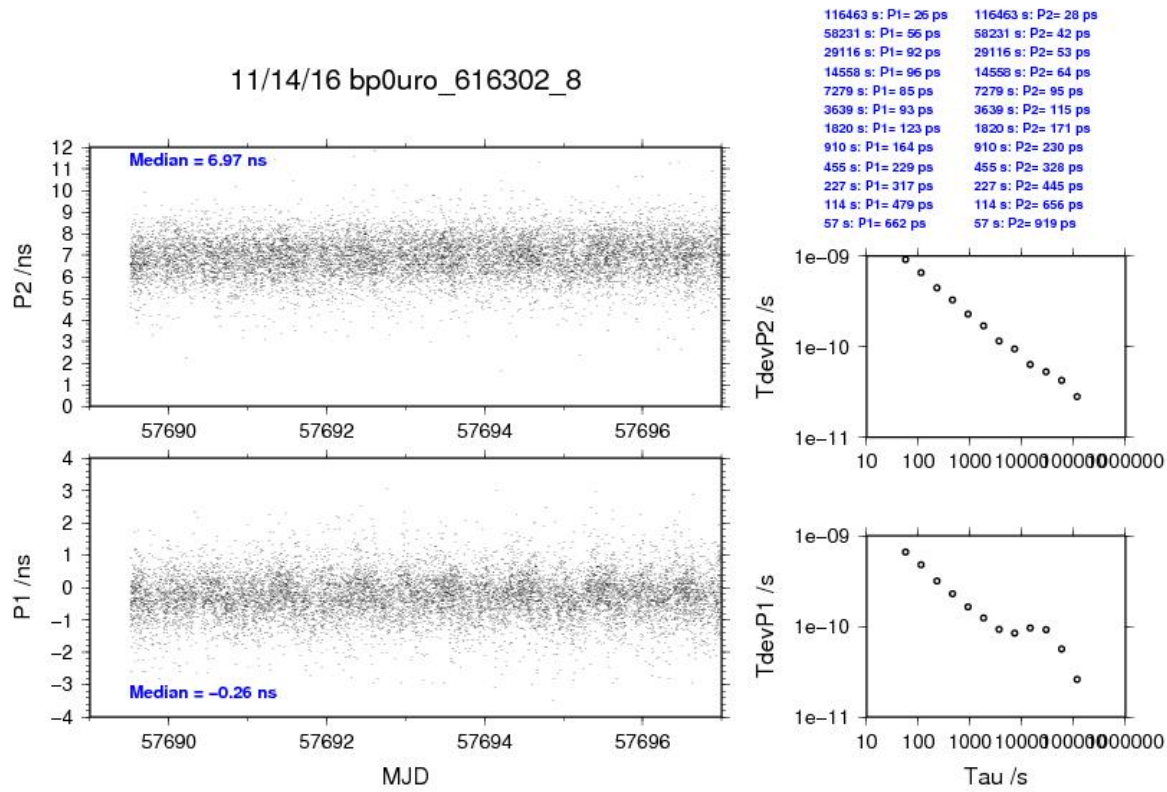
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 115259

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 115206 -1.492 1.048
C2: 0 NaN NaN
P1: 115203 -0.248 1.309
P2: 115203 6.938 1.686

Number of 300s epochs in out file = 2153
Code #pts, median/ns, ave/ns, rms/ns
C1: 11375 -1.493 -1.496 0.555
C2: 0 0.000 NaN NaN
P1: 11375 -0.255 -0.262 0.674
P2: 11375 6.968 6.946 0.923


11/14/16 bp0uro_616302_8
116463 s: C1= 45 ps
58231 s: C1= 78 ps
29116 s: C1= 162 ps
14558 s: C1= 98 ps
7279 s: C1= 77 ps
3639 s: C1= 72 ps
1820 s: C1= 89 ps
910 s: C1= 120 ps
455 s: C1= 182 ps
227 s: C1= 248 ps
114 s: C1= 383 ps
57 s: C1= 527 ps
C2 /ns
C1 /ns
Median = -1.49 ns
TdevC1 /s
MJD
Tau /s


11/14/16 bp0uro_616302_8
116463 s: P1= 26 ps
58231 s: P1= 56 ps
29116 s: P1= 92 ps
14558 s: P1= 96 ps
7279 s: P1= 85 ps
3639 s: P1= 93 ps
1820 s: P1= 123 ps
910 s: P1= 164 ps
455 s: P1= 229 ps
227 s: P1= 317 ps
114 s: P1= 479 ps
57 s: P1= 662 ps
116463 s: P2= 28 ps
58231 s: P2= 42 ps
29116 s: P2= 53 ps
14558 s: P2= 64 ps
7279 s: P2= 95 ps
3639 s: P2= 115 ps
1820 s: P2= 171 ps
910 s: P2= 230 ps
455 s: P2= 328 ps
227 s: P2= 445 ps
114 s: P2= 656 ps
57 s: P2= 919 ps
P2 /ns
P1 /ns
Median = 6.97 ns
Median = -0.26 ns
TdevP2 /s
TdevP1 /s
MJD
Tau /s

BP1C-RO_6

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 188533
Computed code bias (P1/P2)/m = 11.866 13.913
Computed baseline (X,Y,Z)/m = -1.133 -9.664 -1.491
RMS of residuals /m = 0.417

Number of phase differences to fit baseline = 186941
A priori baseline (X,Y,Z)/m = -1.133 -9.664 -1.491
21569 clock jitters computed out of 21574 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.6

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = -0.116 -0.001 -0.063
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.126 -0.002 -0.070
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = -0.116 -0.001 -0.063
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.126 -0.002 -0.070
RMS of residuals L2 /m = 0.004

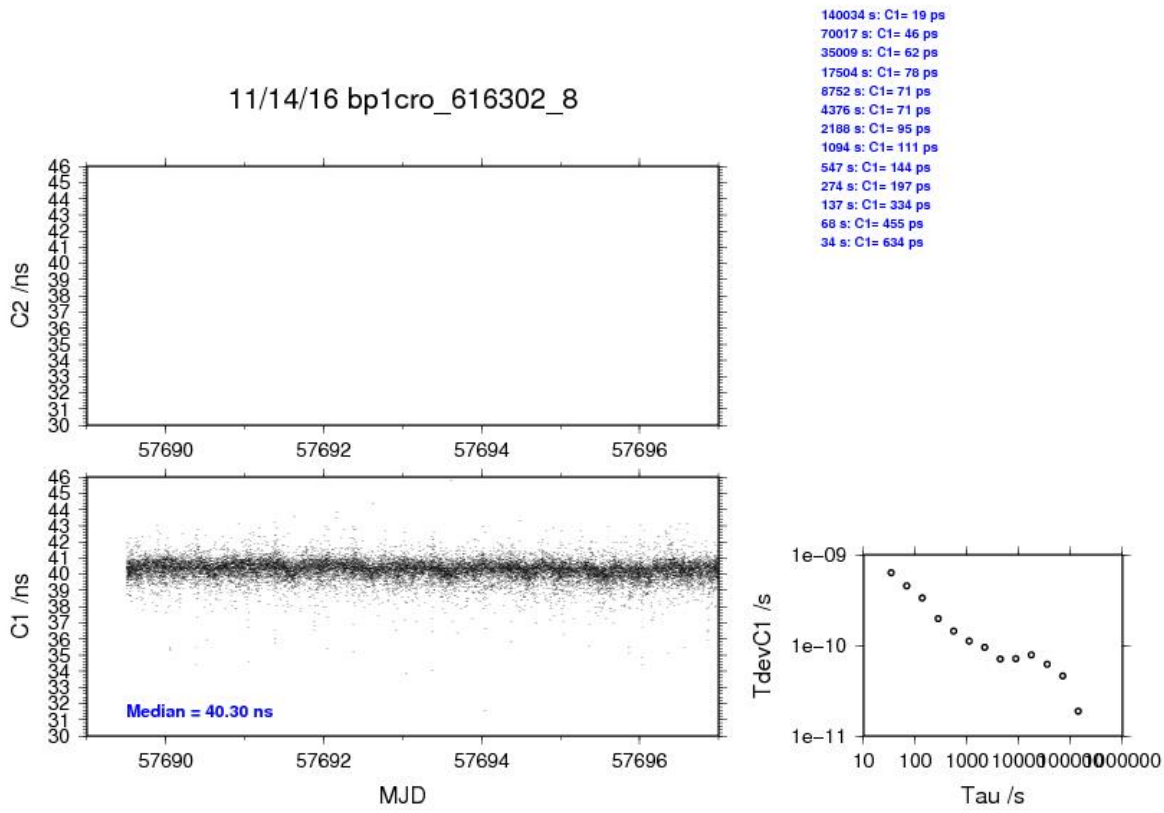
Final baseline L1 (X,Y,Z)/m = -1.249 -9.665 -1.554
Final baseline L2 (X,Y,Z)/m = -1.258 -9.666 -1.561

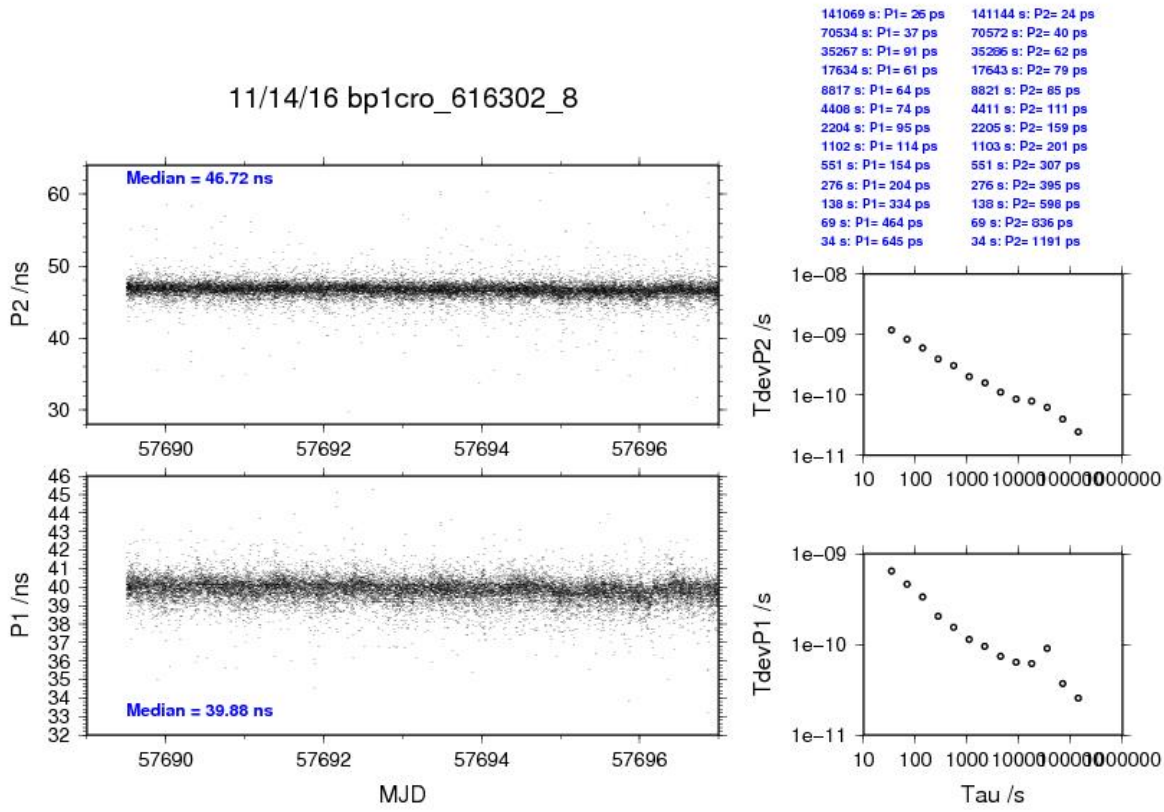
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 190101

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 189796 40.247 1.217
C2: 0 NaN NaN
P1: 188357 39.829 1.229
P2: 188258 46.676 1.773

Number of 300s epochs in out file = 2161
Code #pts, median/ns, ave/ns, rms/ns
C1: 18955 40.300 40.246 0.648
C2: 0 0.000 NaN NaN
P1: 18816 39.879 39.829 0.662
P2: 18806 46.721 46.672 1.194


11/14/16 bp1cro_616302_8
140034 s: C1= 19 ps
70017 s: C1= 46 ps
35009 s: C1= 62 ps
17504 s: C1= 78 ps
8752 s: C1= 71 ps
4376 s: C1= 71 ps
2188 s: C1= 95 ps
1094 s: C1= 111 ps
547 s: C1= 144 ps
274 s: C1= 197 ps
137 s: C1= 334 ps
68 s: C1= 455 ps
34 s: C1= 634 ps
C2 /ns
C1 /ns
Median = 40.30 ns
MJD
TdevC1 /s
Tau /s


11/14/16 bp1cro_616302_8
141069 s: P1= 26 ps
70534 s: P1= 37 ps
35267 s: P1= 91 ps
17634 s: P1= 61 ps
8817 s: P1= 64 ps
4408 s: P1= 74 ps
2204 s: P1= 95 ps
1102 s: P1= 114 ps
551 s: P1= 154 ps
276 s: P1= 204 ps
138 s: P1= 334 ps
69 s: P1= 464 ps
34 s: P1= 645 ps
141144 s: P2= 24 ps
70572 s: P2= 40 ps
35286 s: P2= 62 ps
17643 s: P2= 79 ps
8821 s: P2= 85 ps
4411 s: P2= 111 ps
2205 s: P2= 159 ps
1103 s: P2= 201 ps
551 s: P2= 307 ps
276 s: P2= 395 ps
138 s: P2= 598 ps
69 s: P2= 836 ps
34 s: P2= 1191 ps
Median = 46.72 ns
Median = 39.88 ns
P2 /ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-RO_7

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 115778
Computed code bias (P1/P2)/m = -18.163 -16.012
Computed baseline (X,Y,Z)/m = -2.103 -9.919 -0.479
RMS of residuals /m = 0.430

Number of phase differences to fit baseline = 92501
A priori baseline (X,Y,Z)/m = -2.103 -9.919 -0.479
18077 clock jitters computed out of 18417 intervals
AVE jitter /ps = 2.3 RMS jitter /ps = 48.4

Iter 1 Large residuals L1= 327
Iter 1 Large residuals L2= 327
Computed baseline L1 (X,Y,Z)/m = 0.015 -0.008 -0.022
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.008 -0.001 -0.039
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 327
Iter 2 Large residuals L2= 327
Computed baseline L1 (X,Y,Z)/m = 0.015 -0.008 -0.022
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.008 -0.001 -0.039
RMS of residuals L2 /m = 0.003

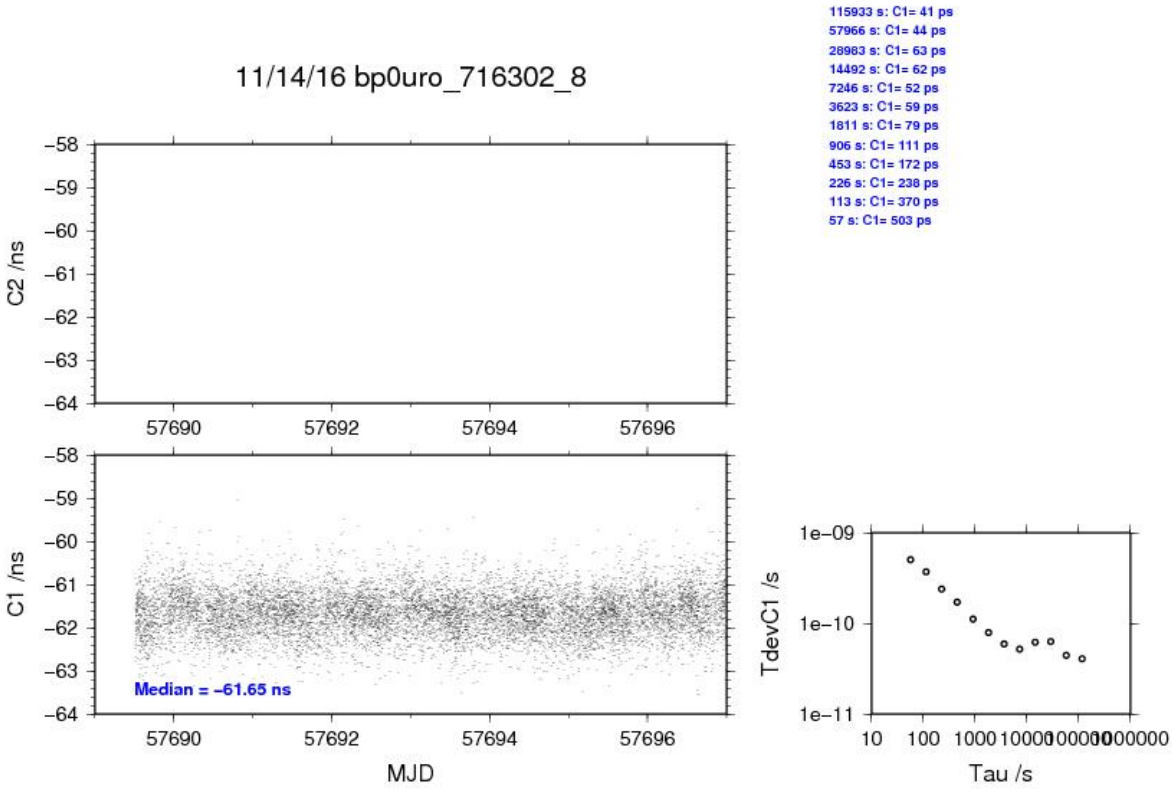
Final baseline L1 (X,Y,Z)/m = -2.088 -9.926 -0.502
Final baseline L2 (X,Y,Z)/m = -2.095 -9.920 -0.518

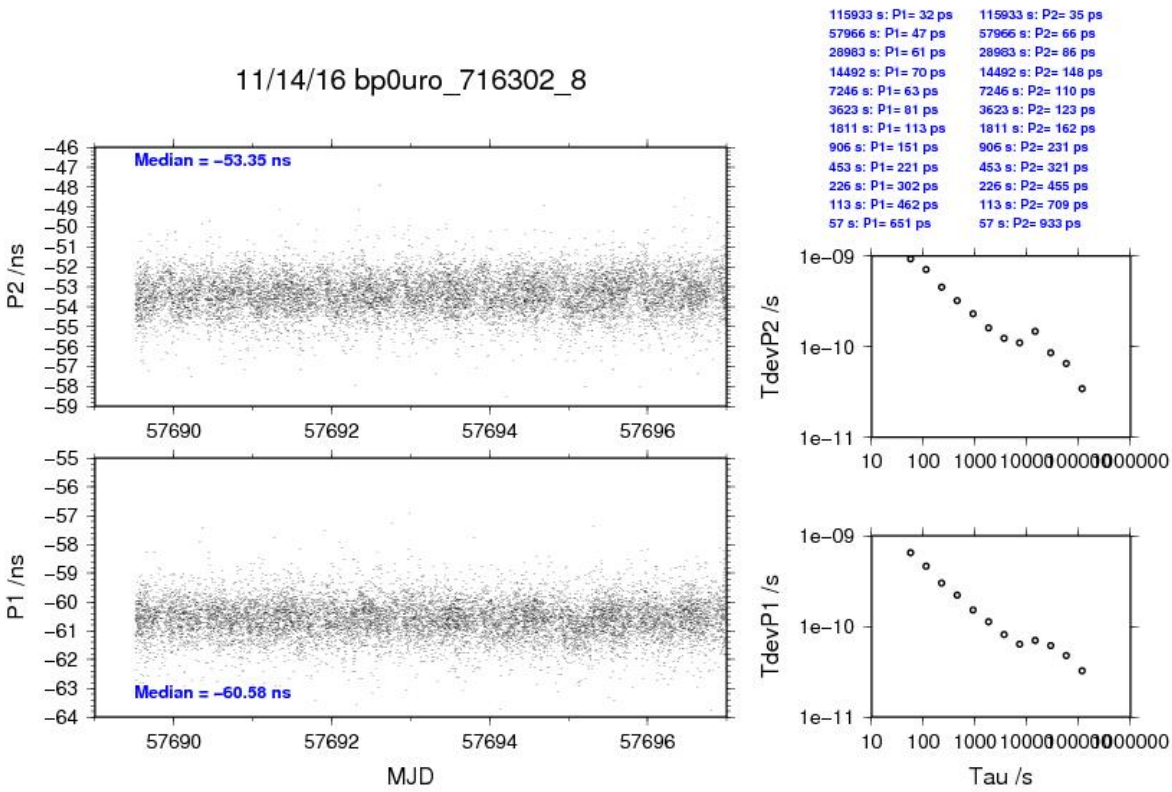
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 115781

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 115728 -61.653 0.997
C2: 0 NaN NaN
P1: 115725 -60.581 1.270
P2: 115725 -53.367 1.616

Number of 300s epochs in out file = 2153
Code #pts, median/ns, ave/ns, rms/ns
C1: 11427 -61.645 -61.654 0.509
C2: 0 0.000 NaN NaN
P1: 11427 -60.576 -60.593 0.646
P2: 11427 -53.352 -53.359 0.962


11/14/16 bp0uro_716302_8
115933 s: C1= 41 ps
57966 s: C1= 44 ps
28983 s: C1= 63 ps
14492 s: C1= 62 ps
7246 s: C1= 52 ps
3623 s: C1= 59 ps
1811 s: C1= 79 ps
906 s: C1= 111 ps
453 s: C1= 172 ps
226 s: C1= 238 ps
113 s: C1= 370 ps
57 s: C1= 503 ps
C2 /ns
C1 /ns
Median = -61.65 ns
MJD
TdevC1 /s
Tau /s


11/14/16 bp0uro_716302_8
115933 s: P1= 32 ps
57966 s: P1= 47 ps
28983 s: P1= 61 ps
14492 s: P1= 70 ps
7246 s: P1= 63 ps
3623 s: P1= 81 ps
1811 s: P1= 113 ps
906 s: P1= 151 ps
453 s: P1= 221 ps
226 s: P1= 302 ps
113 s: P1= 462 ps
57 s: P1= 651 ps
115933 s: P2= 35 ps
57966 s: P2= 66 ps
28983 s: P2= 86 ps
14492 s: P2= 148 ps
7246 s: P2= 110 ps
3623 s: P2= 123 ps
1811 s: P2= 162 ps
906 s: P2= 231 ps
453 s: P2= 321 ps
226 s: P2= 455 ps
113 s: P2= 709 ps
57 s: P2= 933 ps
P2 /ns
P1 /ns
Median = -53.35 ns
Median = -60.58 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-RO_7

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 183546
Computed code bias (P1/P2)/m = -6.201 -4.136
Computed baseline (X,Y,Z)/m = -1.732 -9.563 -0.706
RMS of residuals /m = 0.381

Number of phase differences to fit baseline = 182148
A priori baseline (X,Y,Z)/m = -1.732 -9.563 -0.706
21569 clock jitters computed out of 21574 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.3

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 3
Computed baseline L1 (X,Y,Z)/m = -0.083 -0.016 -0.044
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.089 -0.017 -0.050
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 3
Computed baseline L1 (X,Y,Z)/m = -0.083 -0.016 -0.044
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.089 -0.017 -0.050
RMS of residuals L2 /m = 0.004

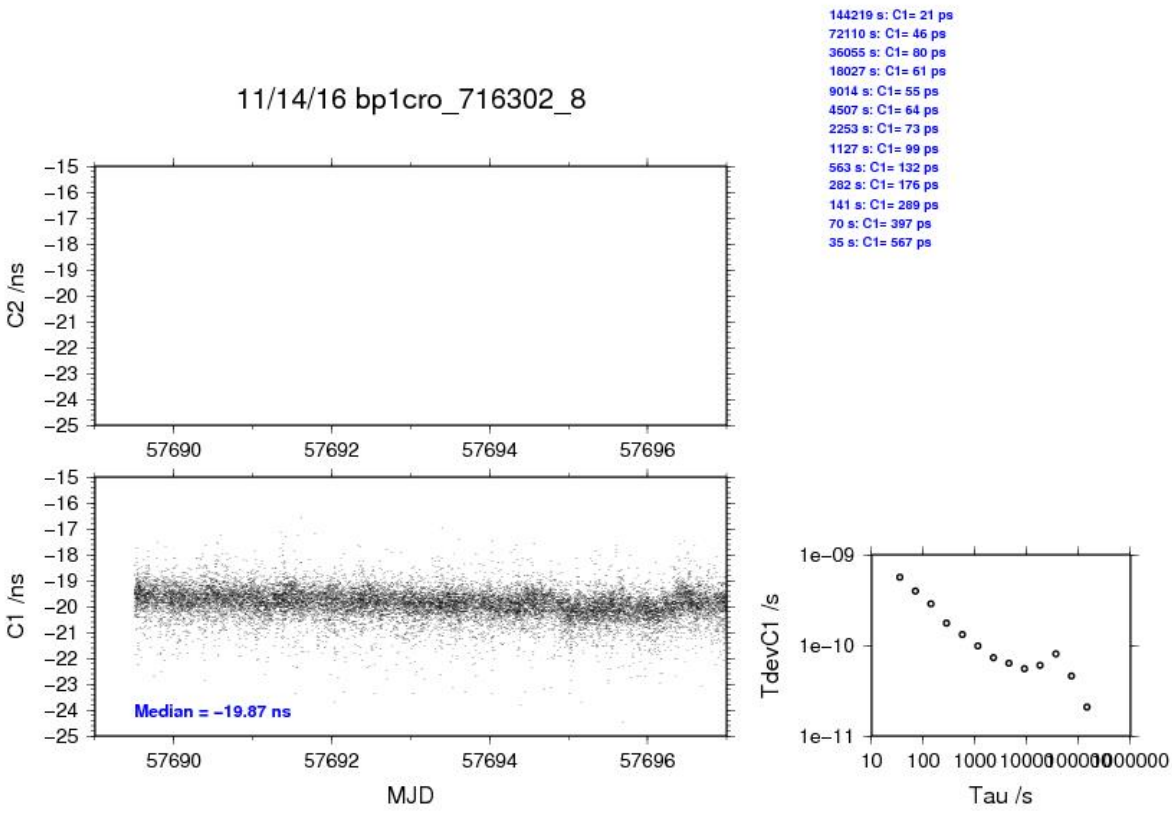
Final baseline L1 (X,Y,Z)/m = -1.815 -9.580 -0.750
Final baseline L2 (X,Y,Z)/m = -1.821 -9.580 -0.757

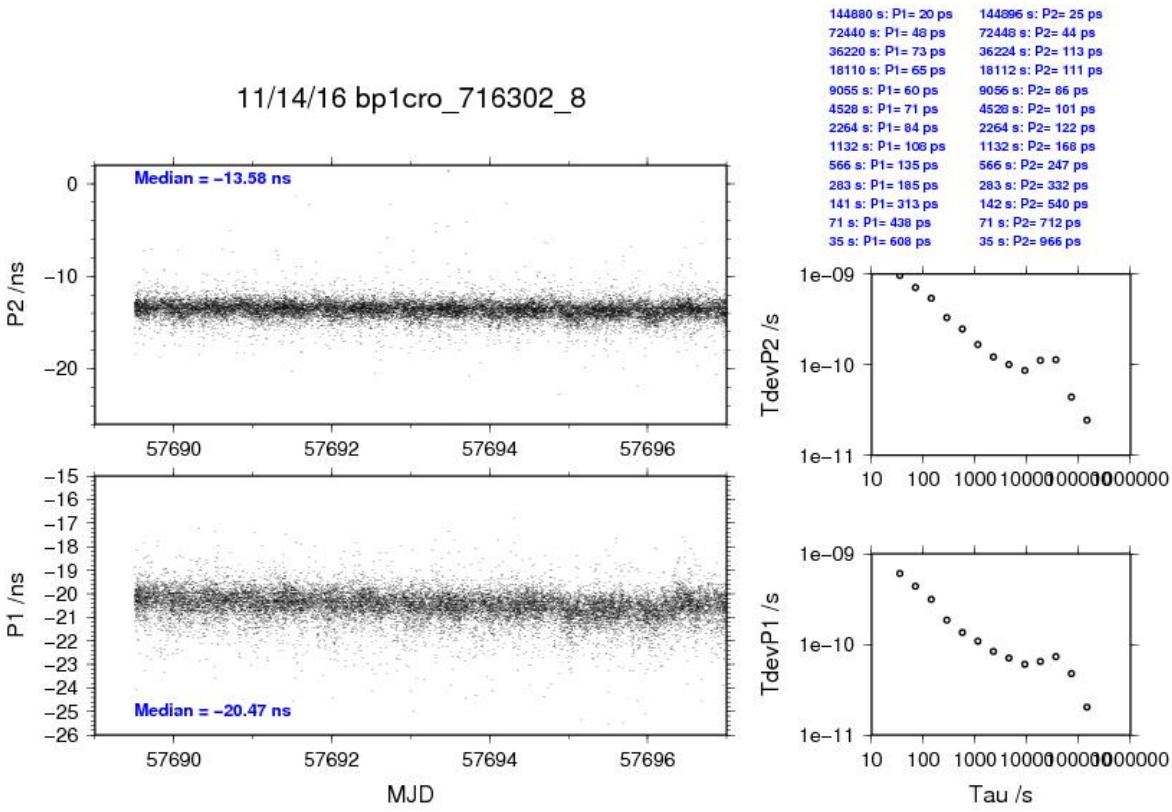
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 184725

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 184291 -19.910 1.121
C2: 0 NaN NaN
P1: 183365 -20.520 1.149
P2: 183333 -13.618 1.482

Number of 300s epochs in out file = 2161
Code #pts, median/ns, ave/ns, rms/ns
C1: 18405 -19.869 -19.902 0.586
C2: 0 0.000 NaN NaN
P1: 18321 -20.466 -20.512 0.630
P2: 18319 -13.583 -13.616 1.010


144219 s: C1= 21 ps
72110 s: C1= 46 ps
36055 s: C1= 80 ps
18027 s: C1= 61 ps
9014 s: C1= 55 ps
4507 s: C1= 64 ps
2253 s: C1= 73 ps
1127 s: C1= 99 ps
563 s: C1= 132 ps
282 s: C1= 176 ps
141 s: C1= 289 ps
70 s: C1= 397 ps
35 s: C1= 567 ps
11/14/16 bp1cro_716302_8
C2 /ns
C1 /ns
Median = −19.87 ns
MJD
TdevC1 /s
Tau /s


144880 s: P1= 20 ps
72440 s: P1= 48 ps
36220 s: P1= 73 ps
18110 s: P1= 65 ps
9055 s: P1= 60 ps
4528 s: P1= 71 ps
2264 s: P1= 84 ps
1132 s: P1= 108 ps
566 s: P1= 135 ps
283 s: P1= 185 ps
141 s: P1= 313 ps
71 s: P1= 438 ps
35 s: P1= 608 ps
144896 s: P2= 25 ps
72448 s: P2= 44 ps
36224 s: P2= 113 ps
18112 s: P2= 111 ps
9056 s: P2= 86 ps
4528 s: P2= 101 ps
2264 s: P2= 122 ps
1132 s: P2= 168 ps
566 s: P2= 247 ps
283 s: P2= 332 ps
142 s: P2= 540 ps
71 s: P2= 712 ps
35 s: P2= 966 ps
11/14/16 bp1cro_716302_8
P2 /ns
Median = −13.58 ns
P1 /ns
Median = −20.47 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-RO_8

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 115821
Computed code bias (P1/P2)/m = -35.307 -33.658
Computed baseline (X,Y,Z)/m = -2.209 -9.912 -0.537
RMS of residuals /m = 0.508

Number of phase differences to fit baseline = 92306
A priori baseline (X,Y,Z)/m = -2.209 -9.912 -0.537
18110 clock jitters computed out of 18483 intervals
AVE jitter /ps = 2.3 RMS jitter /ps = 48.4

Iter 1 Large residuals L1= 304
Iter 1 Large residuals L2= 305
Computed baseline L1 (X,Y,Z)/m = 0.112 -0.018 0.031
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.106 -0.013 0.015
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 304
Iter 2 Large residuals L2= 305
Computed baseline L1 (X,Y,Z)/m = 0.112 -0.018 0.031
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.106 -0.013 0.015
RMS of residuals L2 /m = 0.003

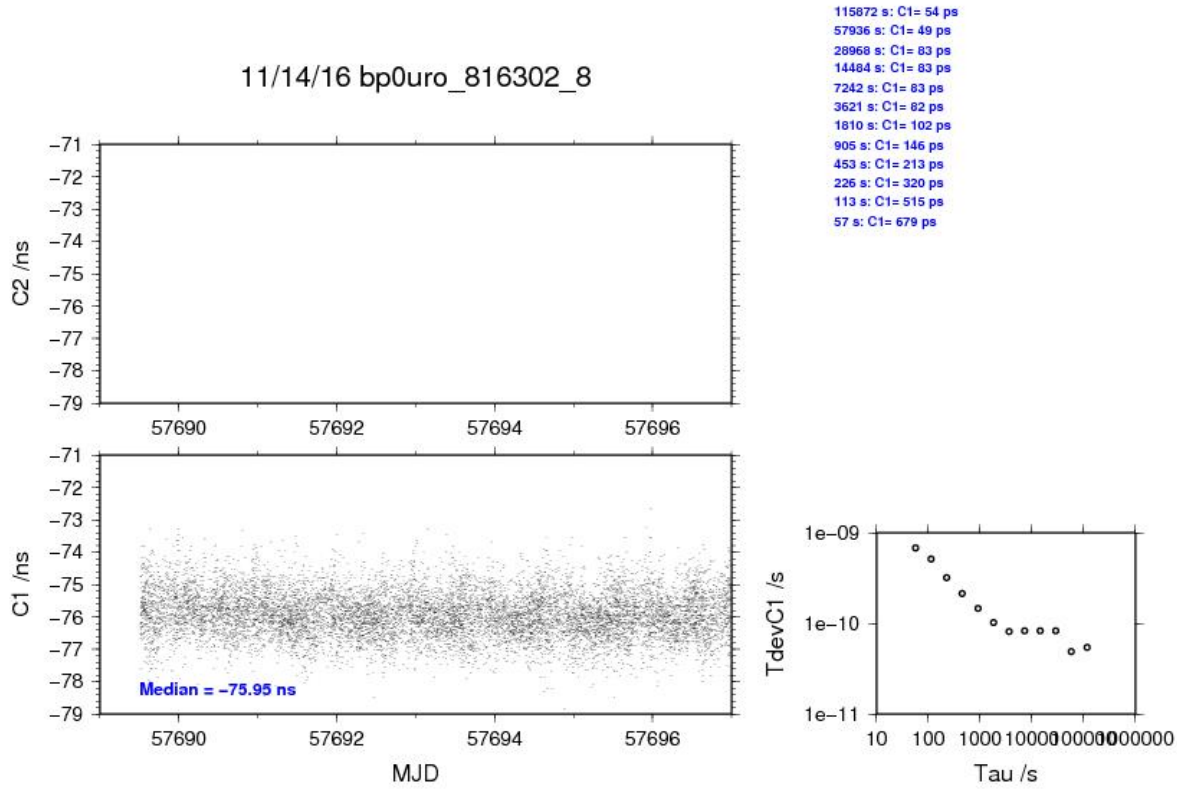
Final baseline L1 (X,Y,Z)/m = -2.097 -9.930 -0.506
Final baseline L2 (X,Y,Z)/m = -2.103 -9.925 -0.522

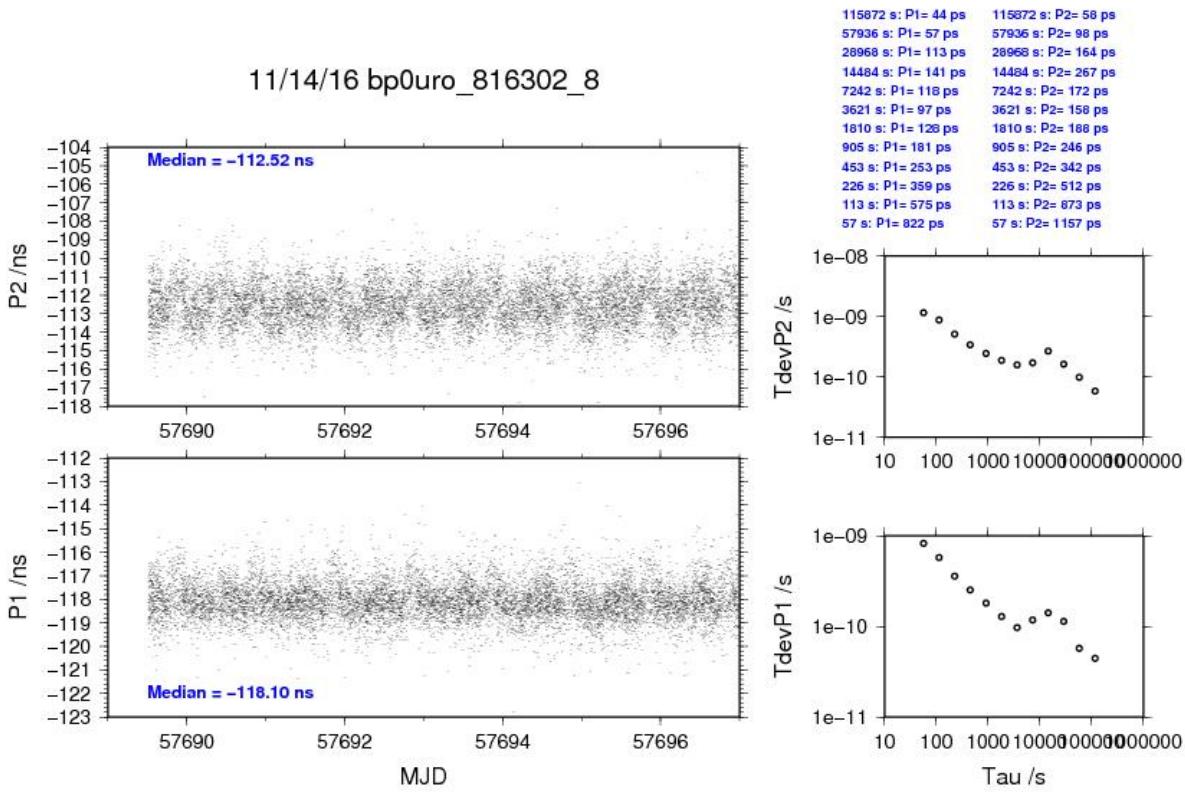
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 115824

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 115771 -75.909 1.347
C2: 0 NaN NaN
P1: 115768 -118.034 1.576
P2: 115768 -112.493 1.909

Number of 300s epochs in out file = 2153
Code #pts, median/ns, ave/ns, rms/ns
C1: 11433 -75.948 -75.921 0.693
C2: 0 0.000 NaN NaN
P1: 11433 -118.096 -118.053 0.807
P2: 11433 -112.517 -112.492 1.174


11/14/16 bp0uro_816302_8
115872 s: C1= 54 ps
57936 s: C1= 49 ps
28968 s: C1= 83 ps
14484 s: C1= 83 ps
7242 s: C1= 83 ps
3621 s: C1= 82 ps
1810 s: C1= 102 ps
905 s: C1= 146 ps
453 s: C1= 213 ps
226 s: C1= 320 ps
113 s: C1= 515 ps
57 s: C1= 679 ps
C2 /ns
C1 /ns
Median = −75.95 ns
MJD
TdevC1 /s
Tau /s


11/14/16 bp0uro_816302_8
115872 s: P1= 44 ps
57936 s: P1= 57 ps
28968 s: P1= 113 ps
14484 s: P1= 141 ps
7242 s: P1= 118 ps
3621 s: P1= 97 ps
1810 s: P1= 128 ps
905 s: P1= 181 ps
453 s: P1= 253 ps
226 s: P1= 359 ps
113 s: P1= 575 ps
57 s: P1= 822 ps
115872 s: P2= 58 ps
57936 s: P2= 98 ps
28968 s: P2= 164 ps
14484 s: P2= 267 ps
7242 s: P2= 172 ps
3621 s: P2= 158 ps
1810 s: P2= 188 ps
905 s: P2= 246 ps
453 s: P2= 342 ps
226 s: P2= 512 ps
113 s: P2= 673 ps
57 s: P2= 1157 ps
P2 /ns
Median = −112.52 ns
P1 /ns
Median = −118.10 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-RO_8

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 165907
Computed code bias (P1/P2)/m = -23.286 -21.724
Computed baseline (X,Y,Z)/m = -1.892 -9.561 -0.815
RMS of residuals /m = 0.537

Number of phase differences to fit baseline = 165042
A priori baseline (X,Y,Z)/m = -1.892 -9.561 -0.815
21577 clock jitters computed out of 21583 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.2

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.052 -0.021 0.054
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.045 -0.018 0.047
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.052 -0.021 0.054
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.045 -0.018 0.047
RMS of residuals L2 /m = 0.004

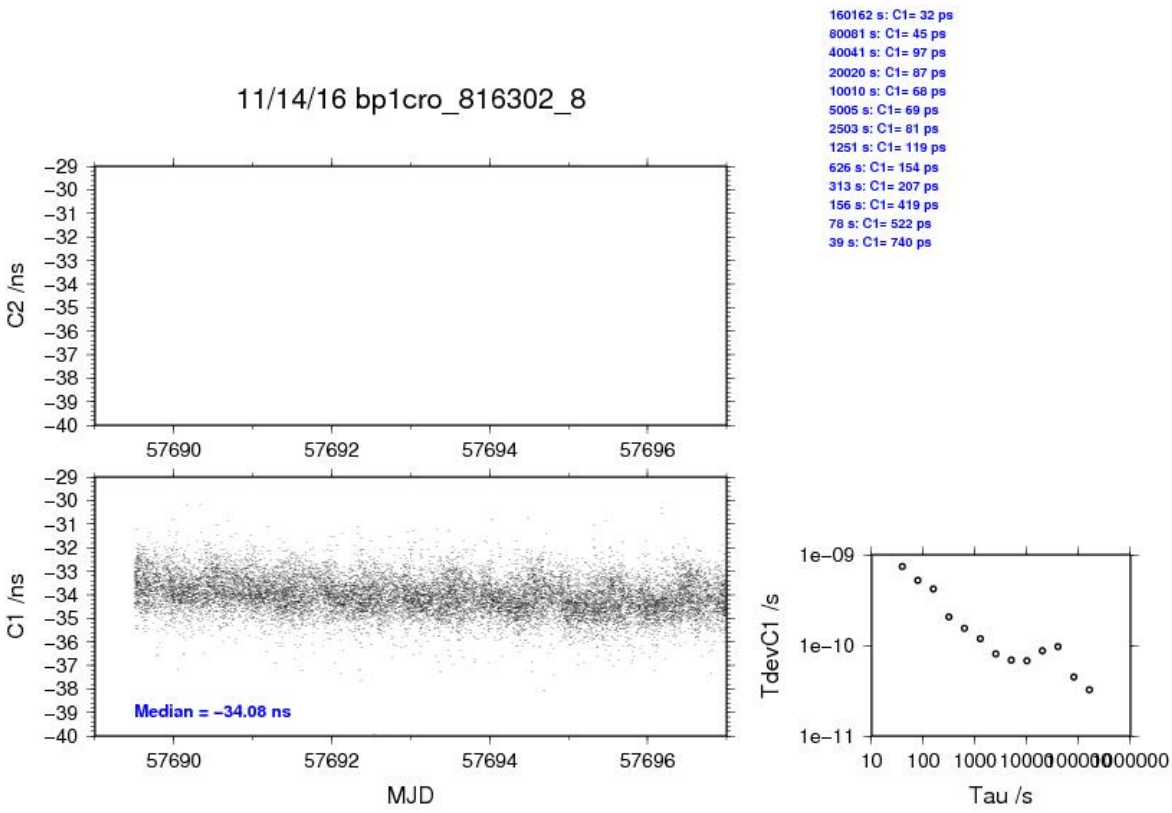
Final baseline L1 (X,Y,Z)/m = -1.841 -9.582 -0.760
Final baseline L2 (X,Y,Z)/m = -1.847 -9.579 -0.768

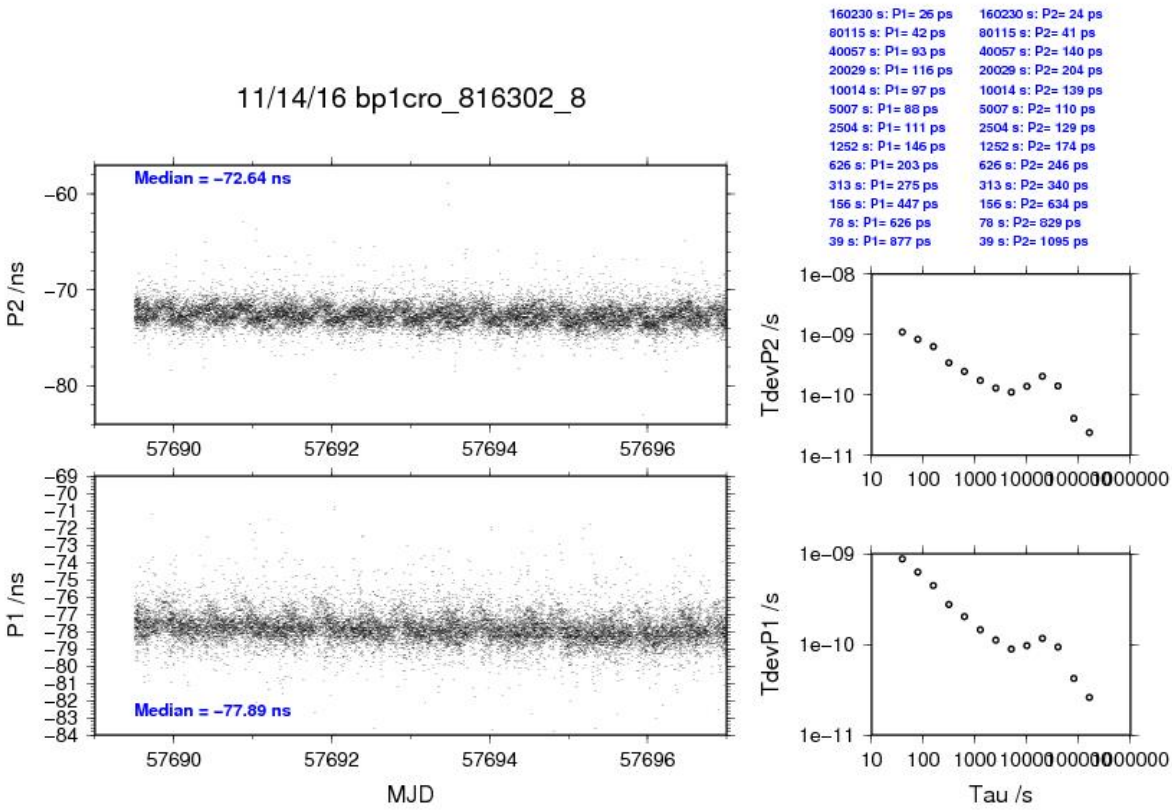
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 165956

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 165807 -34.044 1.502
C2: 0 NaN NaN
P1: 165754 -77.826 1.961
P2: 165748 -72.598 2.230

Number of 300s epochs in out file = 2161
Code #pts, median/ns, ave/ns, rms/ns
C1: 16573 -34.081 -34.051 0.772
C2: 0 0.000 NaN NaN
P1: 16566 -77.887 -77.829 0.895
P2: 16566 -72.643 -72.597 1.157


160162 s: C1= 32 ps
80081 s: C1= 45 ps
40041 s: C1= 97 ps
20020 s: C1= 87 ps
10010 s: C1= 68 ps
5005 s: C1= 69 ps
2503 s: C1= 81 ps
1251 s: C1= 119 ps
626 s: C1= 154 ps
313 s: C1= 207 ps
156 s: C1= 419 ps
78 s: C1= 522 ps
39 s: C1= 740 ps
11/14/16 bp1cro_816302_8
C2 /ns
C1 /ns
Median = −34.08 ns
MJD
TdevC1 /s
Tau /s


160230 s: P1= 26 ps
80115 s: P1= 42 ps
40057 s: P1= 93 ps
20029 s: P1= 116 ps
10014 s: P1= 97 ps
5007 s: P1= 88 ps
2504 s: P1= 111 ps
1252 s: P1= 146 ps
626 s: P1= 203 ps
313 s: P1= 275 ps
156 s: P1= 447 ps
78 s: P1= 626 ps
39 s: P1= 877 ps
160230 s: P2= 24 ps
80115 s: P2= 41 ps
40057 s: P2= 140 ps
20029 s: P2= 204 ps
10014 s: P2= 139 ps
5007 s: P2= 110 ps
2504 s: P2= 129 ps
1252 s: P2= 174 ps
626 s: P2= 246 ps
313 s: P2= 340 ps
156 s: P2= 634 ps
78 s: P2= 829 ps
39 s: P2= 1095 ps
11/14/16 bp1cro_816302_8
Median = −72.64 ns
P2 /ns
P1 /ns
Median = −77.89 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-RO_9

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 115778
Computed code bias (P1/P2)/m = -54.106 -52.069
Computed baseline (X,Y,Z)/m = -1.912 -0.313 2.377
RMS of residuals /m = 0.424

Number of phase differences to fit baseline = 92515
A priori baseline (X,Y,Z)/m = -1.912 -0.313 2.377
18095 clock jitters computed out of 18396 intervals
AVE jitter /ps = 2.4 RMS jitter /ps = 48.4

Iter 1 Large residuals L1= 332
Iter 1 Large residuals L2= 332
Computed baseline L1 (X,Y,Z)/m = 0.011 -0.005 0.019
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.004 -0.001 0.006
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 332
Iter 2 Large residuals L2= 332
Computed baseline L1 (X,Y,Z)/m = 0.011 -0.005 0.019
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.004 -0.001 0.006
RMS of residuals L2 /m = 0.003

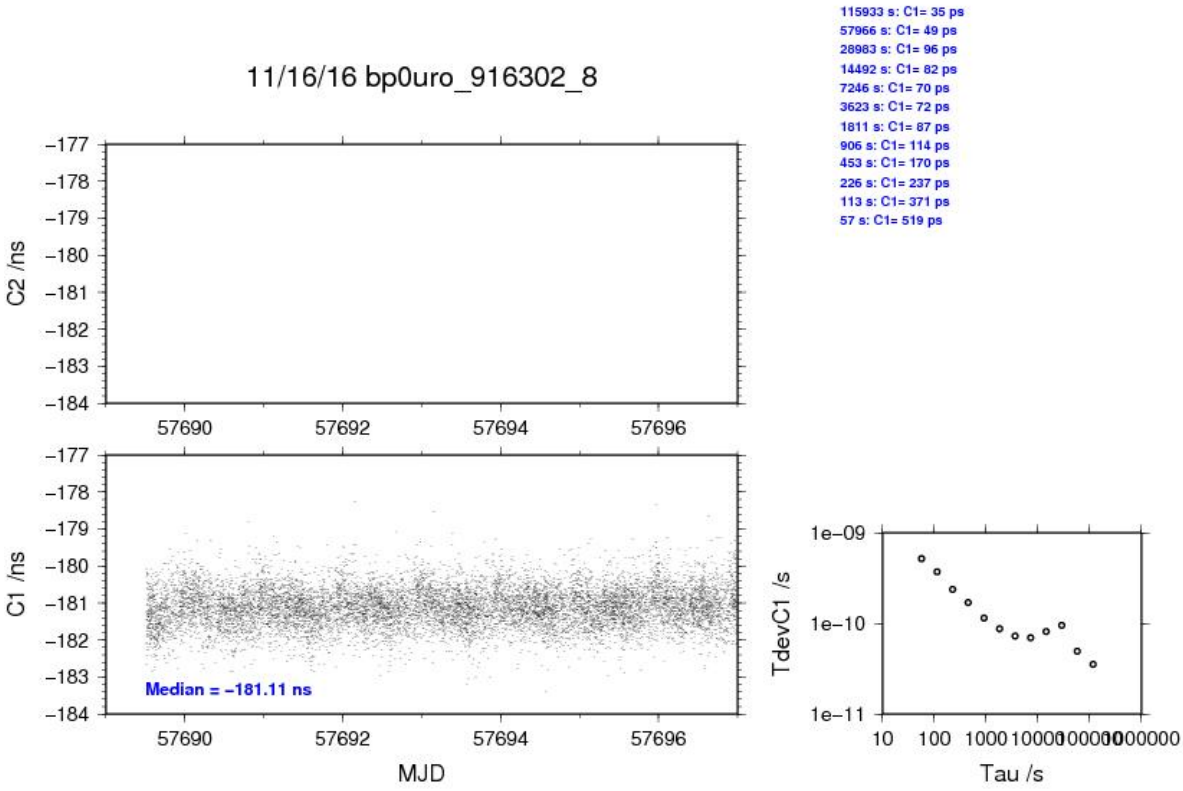
Final baseline L1 (X,Y,Z)/m = -1.901 -0.318 2.396
Final baseline L2 (X,Y,Z)/m = -1.908 -0.314 2.383

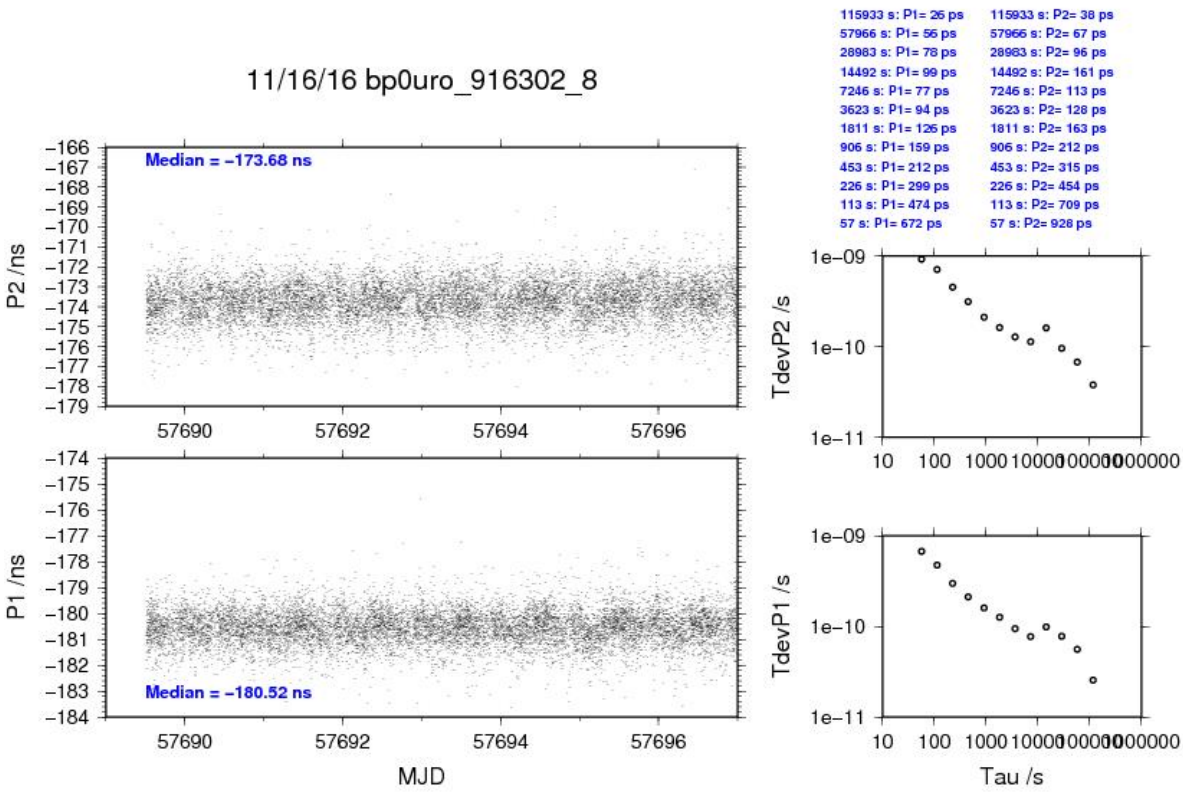
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 115781

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 115728 -181.105 0.981
C2: 0 NaN NaN
P1: 115725 -180.528 1.263
P2: 115725 -173.701 1.577

Number of 300s epochs in out file = 2153
Code #pts, median/ns, ave/ns, rms/ns
C1: 11427 -181.111 -181.107 0.525
C2: 0 0.000 NaN NaN
P1: 11427 -180.522 -180.541 0.665
P2: 11427 -173.675 -173.693 0.959


11/16/16 bp0uro_916302_8
115933 s: C1= 35 ps
57966 s: C1= 49 ps
28983 s: C1= 96 ps
14492 s: C1= 82 ps
7246 s: C1= 70 ps
3623 s: C1= 72 ps
1811 s: C1= 87 ps
906 s: C1= 114 ps
453 s: C1= 170 ps
226 s: C1= 237 ps
113 s: C1= 371 ps
57 s: C1= 519 ps
C2 /ns
C1 /ns
Median = −181.11 ns
MJD
TdevC1 /s
Tau /s


11/16/16 bp0uro_916302_8
115933 s: P1= 26 ps
57966 s: P1= 56 ps
28983 s: P1= 78 ps
14492 s: P1= 99 ps
7246 s: P1= 77 ps
3623 s: P1= 94 ps
1811 s: P1= 126 ps
906 s: P1= 159 ps
453 s: P1= 212 ps
226 s: P1= 299 ps
113 s: P1= 474 ps
57 s: P1= 672 ps
115933 s: P2= 38 ps
57966 s: P2= 67 ps
28983 s: P2= 96 ps
14492 s: P2= 161 ps
7246 s: P2= 113 ps
3623 s: P2= 128 ps
1811 s: P2= 163 ps
906 s: P2= 212 ps
453 s: P2= 315 ps
226 s: P2= 454 ps
113 s: P2= 709 ps
57 s: P2= 928 ps
P2 /ns
Median = −173.68 ns
P1 /ns
Median = −180.52 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-RO_9

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 186279
Computed code bias (P1/P2)/m = -42.093 -40.154
Computed baseline (X,Y,Z)/m = -1.603 0.039 2.130
RMS of residuals /m = 0.358

Number of phase differences to fit baseline = 185053
A priori baseline (X,Y,Z)/m = -1.603 0.039 2.130
21569 clock jitters computed out of 21574 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 5.2

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = -0.052 -0.010 0.006
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = -0.062 -0.010 -0.002
RMS of residuals L2 /m = 0.003

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = -0.052 -0.010 0.006
RMS of residuals L1 /m = 0.002
Computed baseline L2 (X,Y,Z)/m = -0.062 -0.010 -0.002
RMS of residuals L2 /m = 0.003

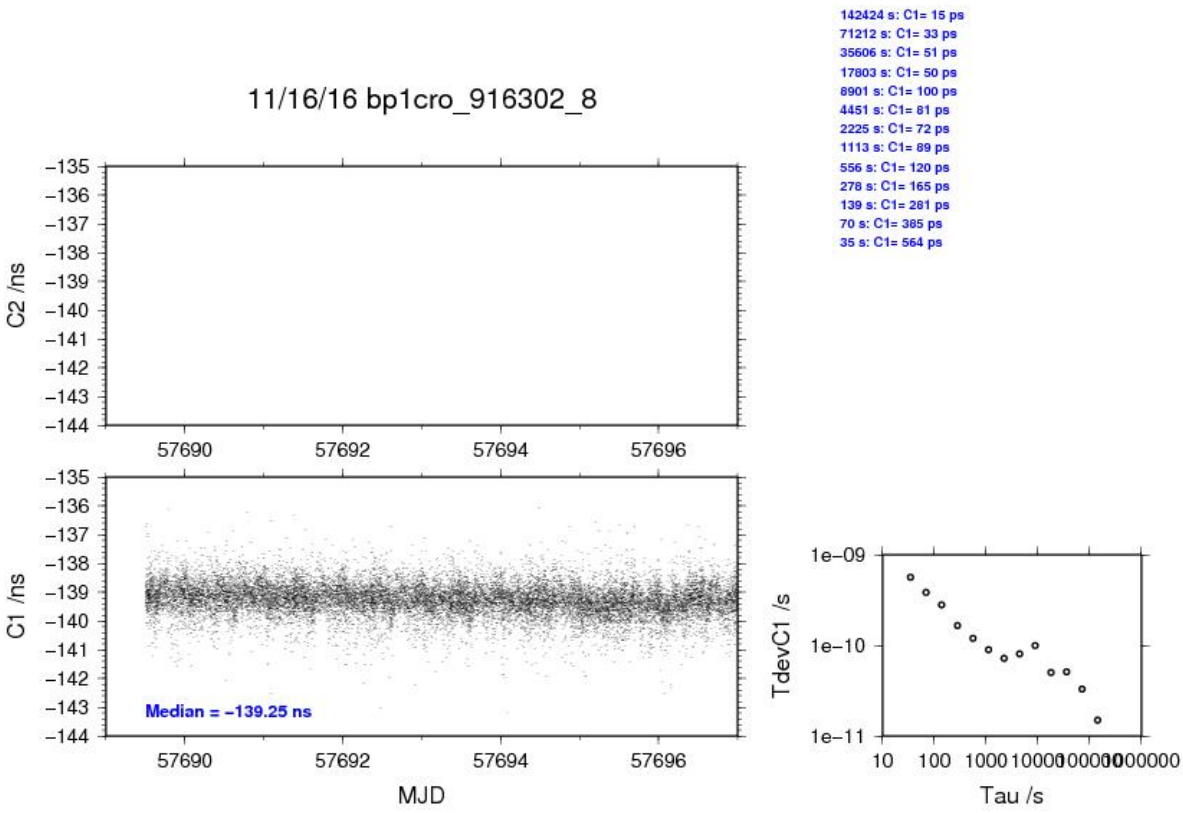
Final baseline L1 (X,Y,Z)/m = -1.655 0.029 2.136
Final baseline L2 (X,Y,Z)/m = -1.665 0.029 2.128

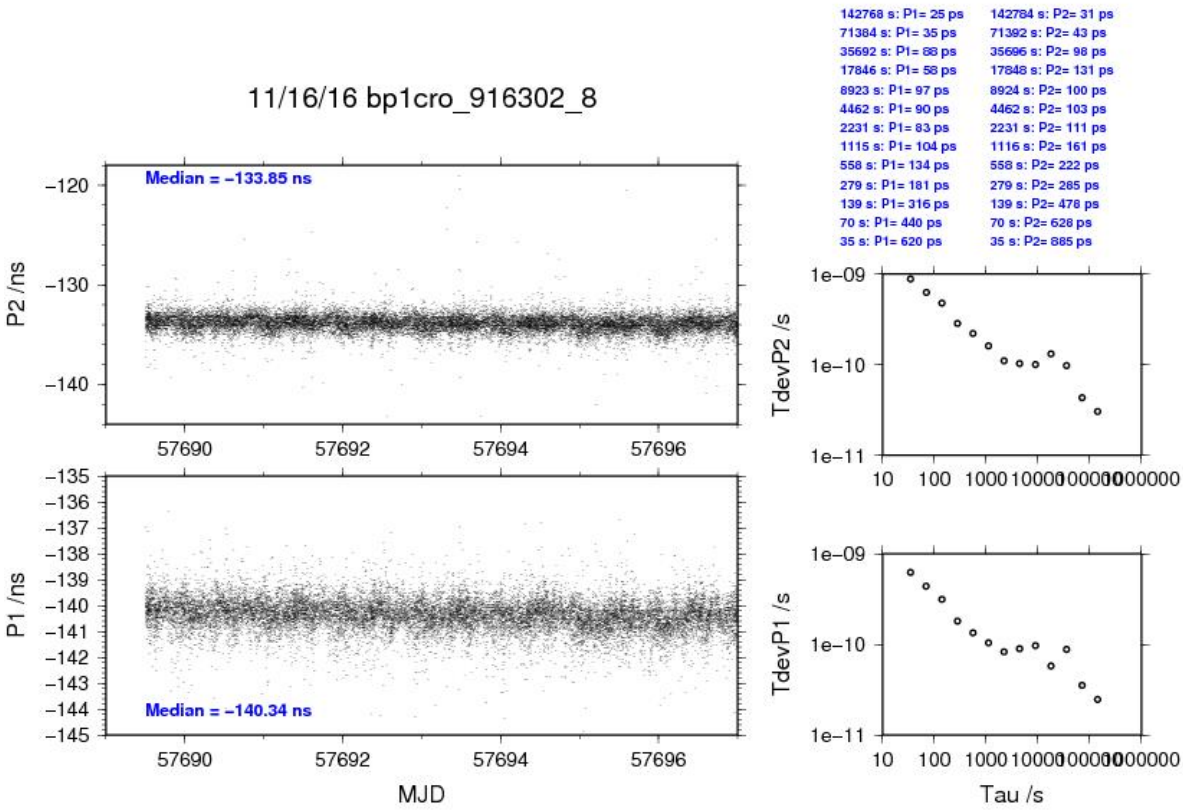
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 186838

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 186556 -139.263 1.058
C2: 0 NaN NaN
P1: 186080 -140.369 1.107
P2: 186059 -133.878 1.348

Number of 300s epochs in out file = 2161
Code #pts, median/ns, ave/ns, rms/ns
C1: 18637 -139.248 -139.258 0.566
C2: 0 0.000 NaN NaN
P1: 18592 -140.343 -140.365 0.633
P2: 18590 -133.855 -133.877 0.911


11/16/16 bp1cro_916302_8
142424 s: C1= 15 ps
71212 s: C1= 33 ps
35606 s: C1= 51 ps
17803 s: C1= 50 ps
8901 s: C1= 100 ps
4451 s: C1= 81 ps
2225 s: C1= 72 ps
1113 s: C1= 89 ps
556 s: C1= 120 ps
278 s: C1= 165 ps
139 s: C1= 281 ps
70 s: C1= 385 ps
35 s: C1= 564 ps
C2 /ns
C1 /ns
Median = −139.25 ns
MJD
TdevC1 /s
Tau /s


11/16/16 bp1cro_916302_8
142768 s: P1= 25 ps
71384 s: P1= 35 ps
35692 s: P1= 88 ps
17846 s: P1= 58 ps
8923 s: P1= 97 ps
4462 s: P1= 90 ps
2231 s: P1= 83 ps
1115 s: P1= 104 ps
558 s: P1= 134 ps
279 s: P1= 181 ps
139 s: P1= 316 ps
70 s: P1= 440 ps
35 s: P1= 620 ps
142784 s: P2= 31 ps
71392 s: P2= 43 ps
35696 s: P2= 98 ps
17848 s: P2= 131 ps
8924 s: P2= 100 ps
4462 s: P2= 103 ps
2231 s: P2= 111 ps
1116 s: P2= 161 ps
558 s: P2= 222 ps
279 s: P2= 285 ps
139 s: P2= 478 ps
70 s: P2= 628 ps
35 s: P2= 885 ps
P2 /ns
Median = −133.85 ns
P1 /ns
Median = −140.34 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

2.4/ OP (16324)

Period

MJD 57711 to 57721

Delays

BP0U:

REFDLY = 104.55 ns (51.95+52.6 (cf page 80))
CABDLY = 181.75 ns (C134)

BP1C:

X_O = 180.11 ns (email 24/11/16 & 30/11/16 from Dr Ulrich)
X_P = 104.55 ns (51.95+52.6 (cf page 80))
REFDLY = 284.66 ns
CABDLY = 235.7 ns (C131)

OPMT: (cf page 76)

X_O = 11.78+15.8 = 27.58 ns
X_P = 128.37 ns
REFDLY = 155.95 ns
CABDLY = 156.5 ns
INT DLY = 310.2 ns (GPS P1)
321.6 ns (GPS P2)

OPM9: (cf page 77)

REFDLY = 60.54 ns
CABDLY = 173.3 ns
INT DLY = -32.1 ns (GPS P1)
-36.0 ns (GPS P2)

OP71: (cf page 78)

REFDLY = 191.59 ns
CABDLY = 128.7 ns
INT DLY = 57.0 ns (GPS P1)
55.2 ns (GPS P2)

Setup at the OP

Cal_Id 1002-2016 [Texte] Version / date 1/2013-12-01

Information Sheet (to be repeated for each calibrated system)

Laboratory:	OP
Date and hour of the beginning of measurements:	2016-11-19 (57711) 00h00
Date and hour of the end of measurements:	2016-11-30 (57722) 24h00

Information on the system

	Local:	Travelling:
4-character BIPM code	OPMT	B3TS
• Receiver maker and type: Receiver serial number:	ASHTECH Z-XII3T LP02942	
1 PPS trigger level /V:	1.0	1.0
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew N	
Length outside the building /m:	≈ 6	≈ 20
• Antenna maker and type: Antenna serial number:	3S-02-TSADM 19	
Temperature (if stabilised) /°C	40.5	

Measured delays /ns if needed fill box "Additional Information" further below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	128.37	51.95 (CLB_Pk)
from 1 PPS-in to internal reference (if different) (see section 2 for details)	11.78 inverted 20 MHz_IN - PPS_IN	
• Antenna cable delay:	156.5	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	310.21 (P1) 321.60 (P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	156.5
• REF DLY /ns:	155.95
• Coordinates reference frame:	ITRF
Latitude or X /m:	4 202 777.359
Longitude or Y /m:	171 368.219
Height or Z /m:	4 778 660.474

General information

• Rise time of the local UTC pulse:	2.0 ns
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	22 ± 2 °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.

Cal_Id 1002-2016 [Texte] Version / date 1/2016-12-01

Information Sheet (to be repeated for each calibrated system)

Laboratory:	OP
Date and hour of the beginning of measurements:	2016-11-19 (57711) at 00h00
Date and hour of the end of measurements:	2016-11-30 (57722) at 24h00

Information on the system

	Local:	Travelling:
4-character BIPM code	OPM9	B3TS
• Receiver maker and type: Receiver serial number:	DICOM GTR51 1 402 025	
1 PPS trigger level /V:	1.0	1.0
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew 42394-24 N	
Length outside the building /m:	≈ 10	≈ 20
• Antenna maker and type: Antenna serial number:	Leica AR25 ??	
Temperature (if stabilised) /°C		

Measured delays /ns if needed fill box "Additional Information" further below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	60.54	51.95 (CLB_Pk)
from 1 PPS-in to internal reference (if different) (see section 2 for details)		
• Antenna cable delay:	173.3	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

• INT DLY (GPS) /ns:	- 32.1 (P1) - 36.0 (P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	173.3
• REF DLY /ns:	60.54
• Coordinates reference frame:	ITRF
Latitude or X /m:	4 202 777.502
Longitude or Y /m:	171 367.059
Height or Z /m:	4 778 660.675

General information

• Rise time of the local UTC pulse:	0.5 ns
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	22 ± 2 °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.

Cal_Id 1002-2016 [Texte] Version / date 1/2016-12-01

Information Sheet (to be repeated for each calibrated system)

Laboratory:	OP
Date and hour of the beginning of measurements:	2016-11-19 (57711) at 00h00
Date and hour of the end of measurements:	2016-11-30 (57722) at 24h00

Information on the system

	Local:	Travelling:
4-character BIPM code	OP71	B3TS
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx4 3 102 320	
1 PPS trigger level /V:	1.0	1.0
• Antenna cable maker and type: Phase stabilised cable (Y/N):	Andrew FSJ2P-50 N	
Length outside the building /m:	≈ 6	≈ 20
• Antenna maker and type: Antenna serial number:	Leica AR25 725498	
Temperature (if stabilised) /°C		

Measured delays /ns if needed fill box "Additional Information" further below)

	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	191.59 (PPS_OUT)	51.95 (CLB_Pk)
from 1 PPS-in to internal reference (if different) (see section 2 for details)		
• Antenna cable delay:	128.70	(1)
Splitter delay (if any):		(1)
Additional cable delay (if any):		(1)

Data used for the generation of CGGTTS files

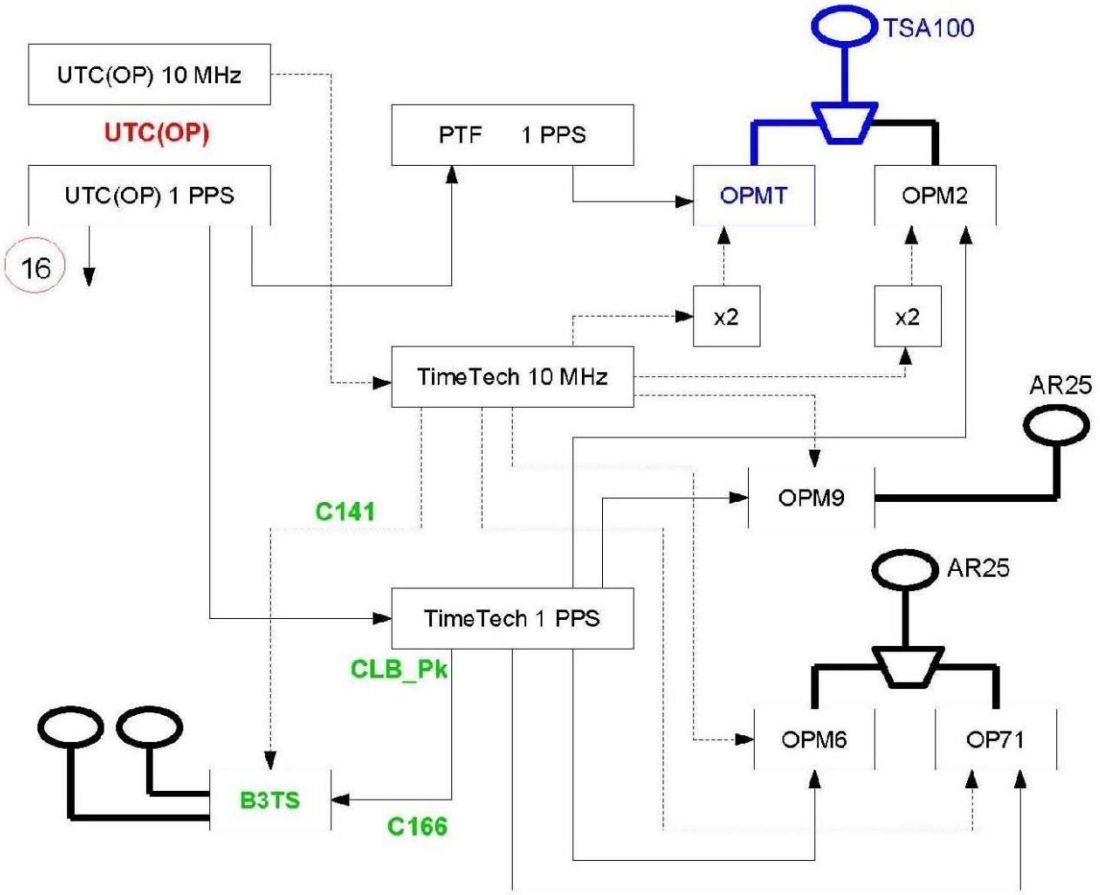
• INT DLY (GPS) /ns:	57.0 (P1) 55.2 (P2)
• INT DLY (GLONASS) /ns:	
• CAB DLY /ns:	128.70
• REF DLY /ns:	191.59
• Coordinates reference frame:	ITRF
Latitude or X /m:	4 202 779.885
Longitude or Y /m:	171 370.744
Height or Z /m:	4 778 660.808

General information

• Rise time of the local UTC pulse:	0.5 ns
• Is the laboratory air conditioned:	Yes
Set temperature value and uncertainty:	22 ± 2 °C
Set humidity value and uncertainty:	

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

Diagram of the experiment set-up:



Log of Events / Additional Information :

- All PPS-IN or PPS-OUTdelay measurements achieved against the output 16 of the UTC(OP) distribution amplifier.
- When two measurements were made (begining and end on site), only the mean value is given below.
- Except stated otherwise, the uncertainty is estimated at 200 ps (one sigma).

B3TS : **CLB_Pk– UTC(OP)_16 = 51.95 ns**
PPS-OUT_BP1C – UTC(OP)_16 = 285.59 ns [uncertainty = 220 ps]
PPS-IN_BP0U – UTC(OP)_16 = 105.35 ns

OPMT : **PPS-IN_OPMT – UTC(OP)_16 = 128.37 ns**
Inverted_20 Mhz-IN_OPMT – PPS-IN_OPMT = 11.78 ns [uncertainty = 300 ps]
[*Do not forget to add 15.8 ns for REFDLY computation*]
CABDLY_OPMT_TSA = 156.5 ns [uncertainty = 300 ps]

OPM2 : PPS-IN_OPM2 – UTC(OP)_16 = 108.06 ns
Inverted_20 Mhz-IN_OPM2 – PPS-IN_OPM2 = 7.21 ns [uncertainty = 300 ps]
[*Do not forget to add 15.8 ns for REFDLY computation*]
CABDLY_OPM2_TSA = 157.7 ns [uncertainty = 300 ps]

OPM9 : **PPS-IN_OPM9 – UTC(OP)_16 = 60.54 ns**
CABDLY_OPM9_AR25 = 173.3 ns [uncertainty = 300 ps]

OPM6 : PPS-OUT_OPM6 – UTC(OP)_16 = 244.12 ns [uncertainty = 220 ps]
CABDLY_OPM6_AR25 = 128.70 ns

OP71 : **PPS-OUT_OP71 – UTC(OP)_16 = 191.59 ns** [uncertainty = 220 ps]
CABDLY_OP71_AR25 = 128.70 ns

OPMT : Achtech Z12-T (current IGS station)
OPM2 : Ashtech Z12-T
OPM9 : DICOM GTR51
OPM6 : Septentrio PolaRx3
OP71 : Septentrio PolaRx4

2016-12-01

BP0U-OPMT

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 168776
Computed code bias (P1/P2)/m = -110.486 -112.311
Computed baseline (X,Y,Z)/m = -4.047 -0.771 0.961
RMS of residuals /m = 0.587

Number of phase differences to fit baseline = 161297
A priori baseline (X,Y,Z)/m = -4.047 -0.771 0.961
31620 clock jitters computed out of 31634 intervals
AVE jitter /ps = 0.2 RMS jitter /ps = 28.5

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.242 0.013 0.286
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.248 0.014 0.296
RMS of residuals L2 /m = 0.002

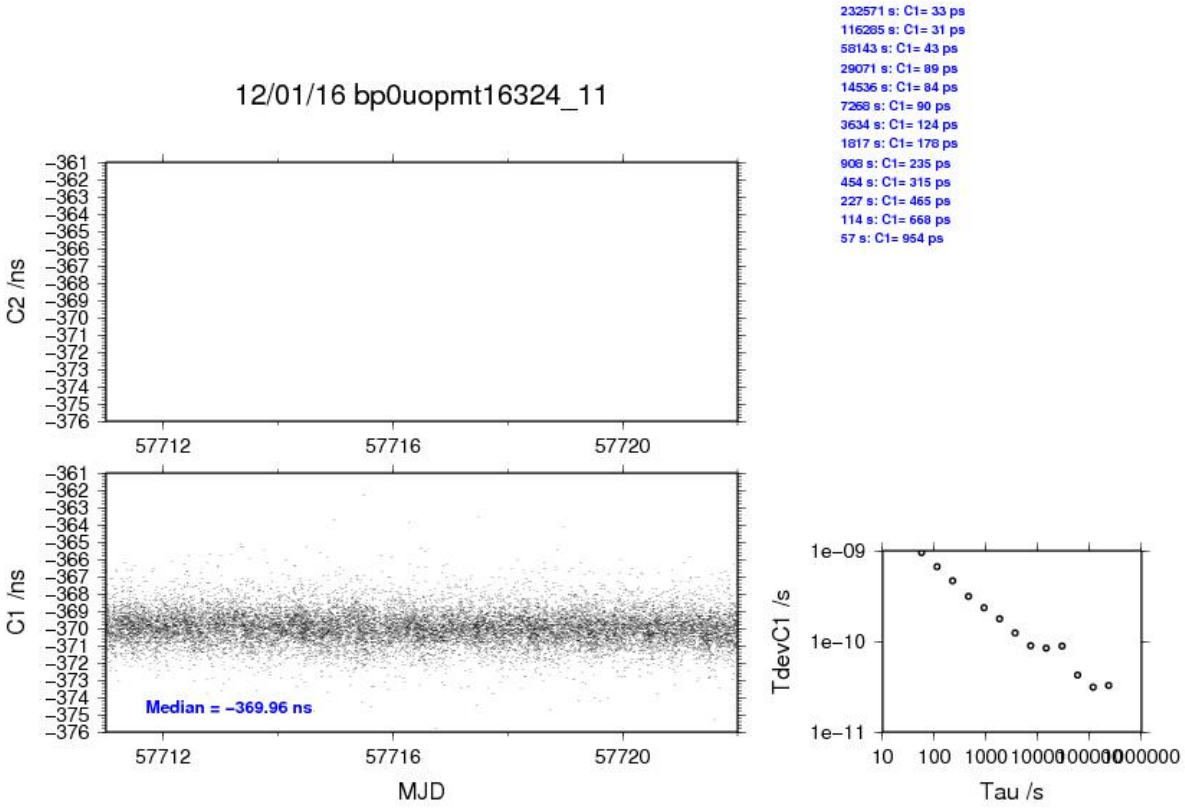
Final baseline L1 (X,Y,Z)/m = -3.805 -0.758 1.248
Final baseline L2 (X,Y,Z)/m = -3.799 -0.757 1.258

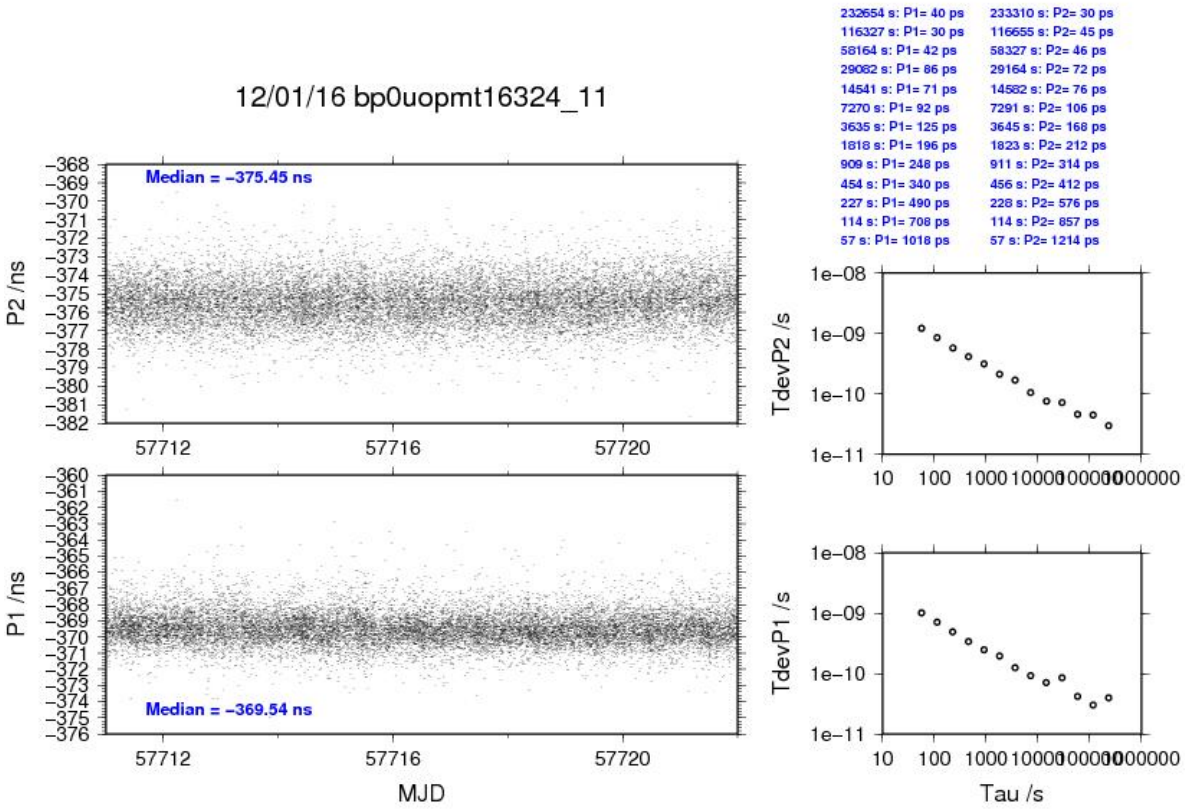
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 168854

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 168812 -369.937 2.047
C2: 0 NaN NaN
P1: 168740 -369.455 1.962
P2: 168263 -375.426 2.174

Number of 300s epochs in out file = 3168
Code #pts, median/ns, ave/ns, rms/ns
C1: 16734 -369.964 -369.943 0.951
C2: 0 0.000 NaN NaN
P1: 16728 -369.541 -369.483 1.010
P2: 16681 -375.447 -375.423 1.206


12/01/16 bp0uopmt16324_11
232571 s: C1= 33 ps
116285 s: C1= 31 ps
58143 s: C1= 43 ps
29071 s: C1= 89 ps
14536 s: C1= 84 ps
7268 s: C1= 90 ps
3634 s: C1= 124 ps
1817 s: C1= 178 ps
908 s: C1= 235 ps
454 s: C1= 315 ps
227 s: C1= 465 ps
114 s: C1= 668 ps
57 s: C1= 954 ps
C2 /ns
C1 /ns
Median = −369.96 ns
MJD
TdevC1 /s
Tau /s


12/01/16 bp0uopmt16324_11
232654 s: P1= 40 ps
116327 s: P1= 30 ps
58164 s: P1= 42 ps
29082 s: P1= 86 ps
14541 s: P1= 71 ps
7270 s: P1= 92 ps
3635 s: P1= 125 ps
1818 s: P1= 196 ps
909 s: P1= 248 ps
454 s: P1= 340 ps
227 s: P1= 490 ps
114 s: P1= 708 ps
57 s: P1= 1018 ps
233310 s: P2= 30 ps
116655 s: P2= 45 ps
58327 s: P2= 46 ps
29164 s: P2= 72 ps
14582 s: P2= 76 ps
7291 s: P2= 106 ps
3645 s: P2= 168 ps
1823 s: P2= 212 ps
911 s: P2= 314 ps
456 s: P2= 412 ps
228 s: P2= 576 ps
114 s: P2= 857 ps
57 s: P2= 1214 ps
P2 /ns
Median = −375.45 ns
P1 /ns
Median = −369.54 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-OPMT

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 243267
Computed code bias (P1/P2)/m = -93.039 -94.948
Computed baseline (X,Y,Z)/m = -4.302 -1.084 1.414
RMS of residuals /m = 0.598

Number of phase differences to fit baseline = 242289
A priori baseline (X,Y,Z)/m = -4.302 -1.084 1.414
30441 clock jitters computed out of 30441 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 4.0

Iter 1 Large residuals L1= 2
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.144 0.059 0.072
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.138 0.055 0.068
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 2
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.144 0.059 0.072
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.138 0.055 0.068
RMS of residuals L2 /m = 0.004

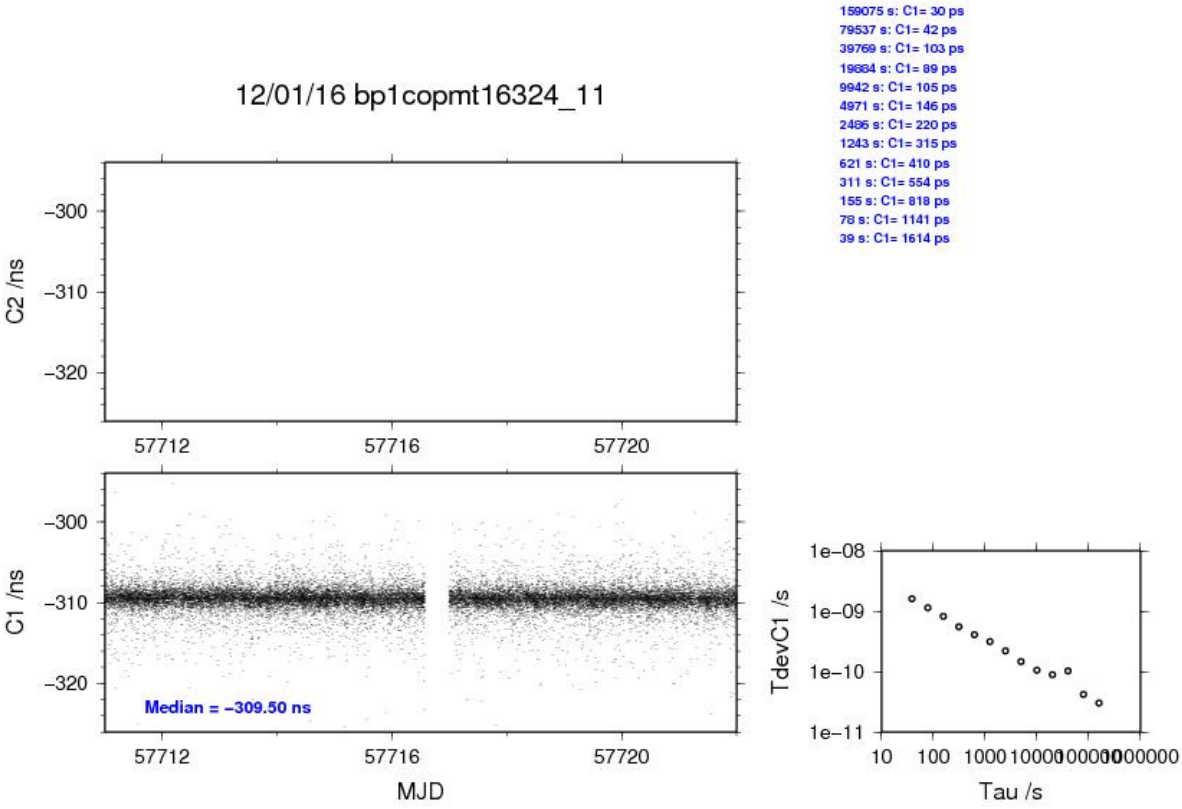
Final baseline L1 (X,Y,Z)/m = -4.158 -1.025 1.487
Final baseline L2 (X,Y,Z)/m = -4.165 -1.028 1.482

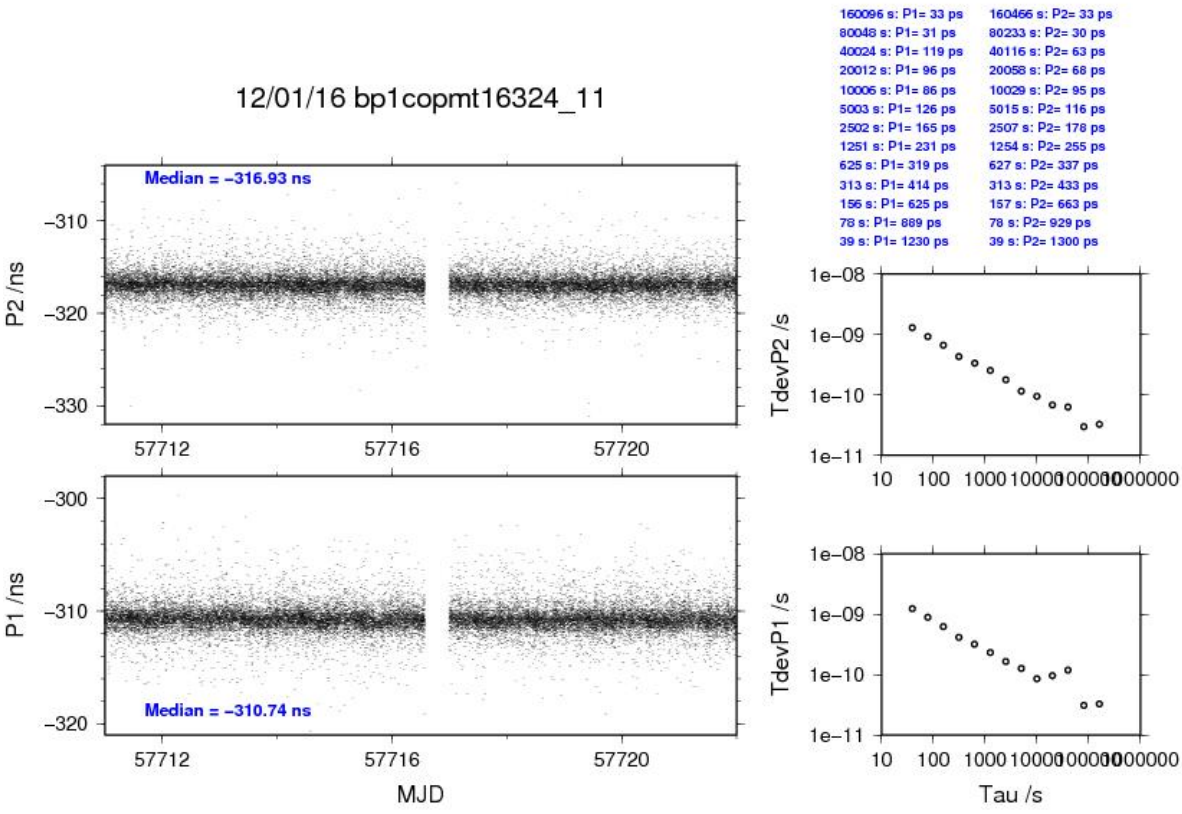
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 245495

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 244411 -309.514 3.383
C2: 0 NaN NaN
P1: 243431 -310.672 2.496
P2: 242832 -316.889 2.509

Number of 300s epochs in out file = 3045
Code #pts, median/ns, ave/ns, rms/ns
C1: 24465 -309.500 -309.538 1.623
C2: 0 0.000 NaN NaN
P1: 24309 -310.737 -310.694 1.247
P2: 24253 -316.930 -316.907 1.310


159075 s: C1= 30 ps
79537 s: C1= 42 ps
39769 s: C1= 103 ps
19884 s: C1= 89 ps
9942 s: C1= 105 ps
4971 s: C1= 146 ps
2486 s: C1= 220 ps
1243 s: C1= 315 ps
621 s: C1= 410 ps
311 s: C1= 554 ps
155 s: C1= 818 ps
78 s: C1= 1141 ps
39 s: C1= 1614 ps
12/01/16 bp1copmt16324_11
C2 /ns
C1 /ns
Median = -309.50 ns
MJD
TdevC1 /s
Tau /s


160096 s: P1= 33 ps
80048 s: P1= 31 ps
40024 s: P1= 119 ps
20012 s: P1= 96 ps
10006 s: P1= 86 ps
5003 s: P1= 126 ps
2502 s: P1= 165 ps
1251 s: P1= 231 ps
625 s: P1= 319 ps
313 s: P1= 414 ps
156 s: P1= 625 ps
78 s: P1= 889 ps
39 s: P1= 1230 ps
160466 s: P2= 33 ps
80233 s: P2= 30 ps
40116 s: P2= 63 ps
20058 s: P2= 68 ps
10029 s: P2= 95 ps
5015 s: P2= 116 ps
2507 s: P2= 178 ps
1254 s: P2= 255 ps
627 s: P2= 337 ps
313 s: P2= 433 ps
157 s: P2= 663 ps
78 s: P2= 929 ps
39 s: P2= 1300 ps
12/01/16 bp1copmt16324_11
Median = -316.93 ns
P2 /ns
P1 /ns
Median = -310.74 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-OPM9

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 169601
Computed code bias (P1/P2)/m = -41.426 -38.645
Computed baseline (X,Y,Z)/m = -3.938 -1.876 1.114
RMS of residuals /m = 0.578

Number of phase differences to fit baseline = 161772
A priori baseline (X,Y,Z)/m = -3.938 -1.876 1.114
31592 clock jitters computed out of 31619 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 28.5

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.216 -0.011 0.249
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.207 -0.011 0.243
RMS of residuals L2 /m = 0.003

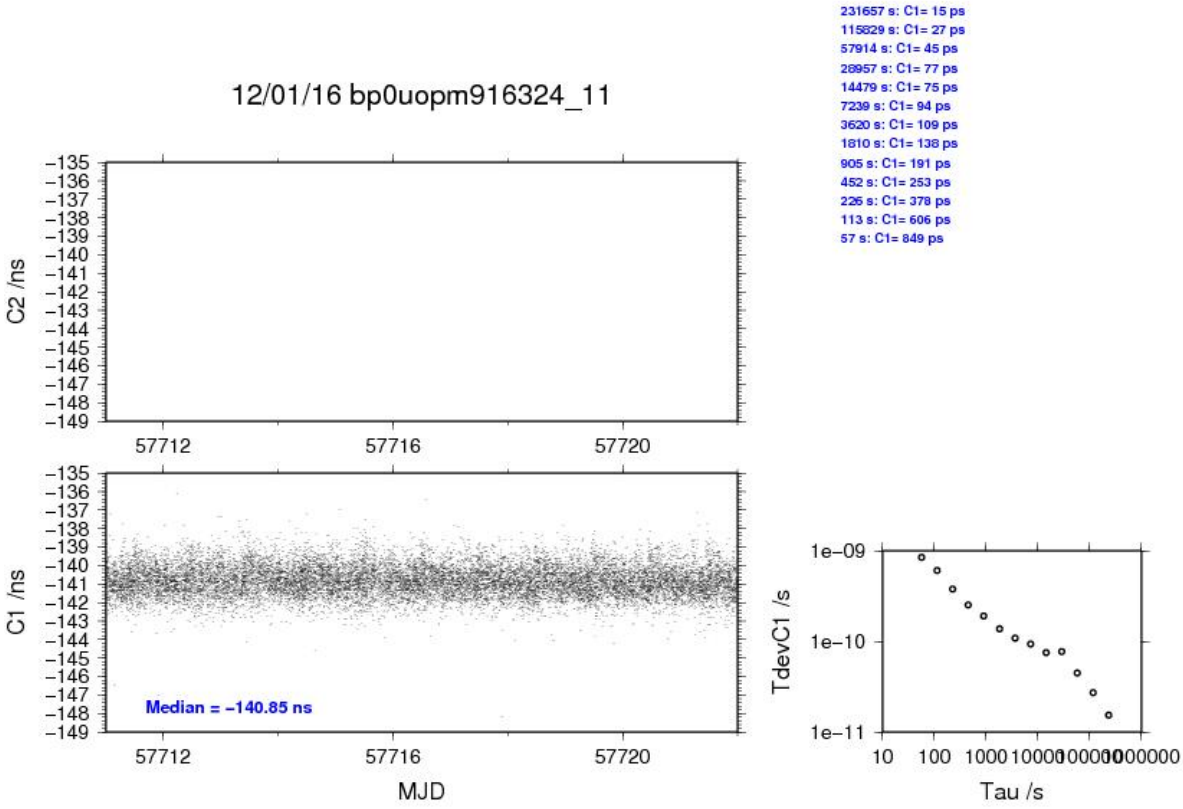
Final baseline L1 (X,Y,Z)/m = -3.723 -1.887 1.364
Final baseline L2 (X,Y,Z)/m = -3.731 -1.887 1.357

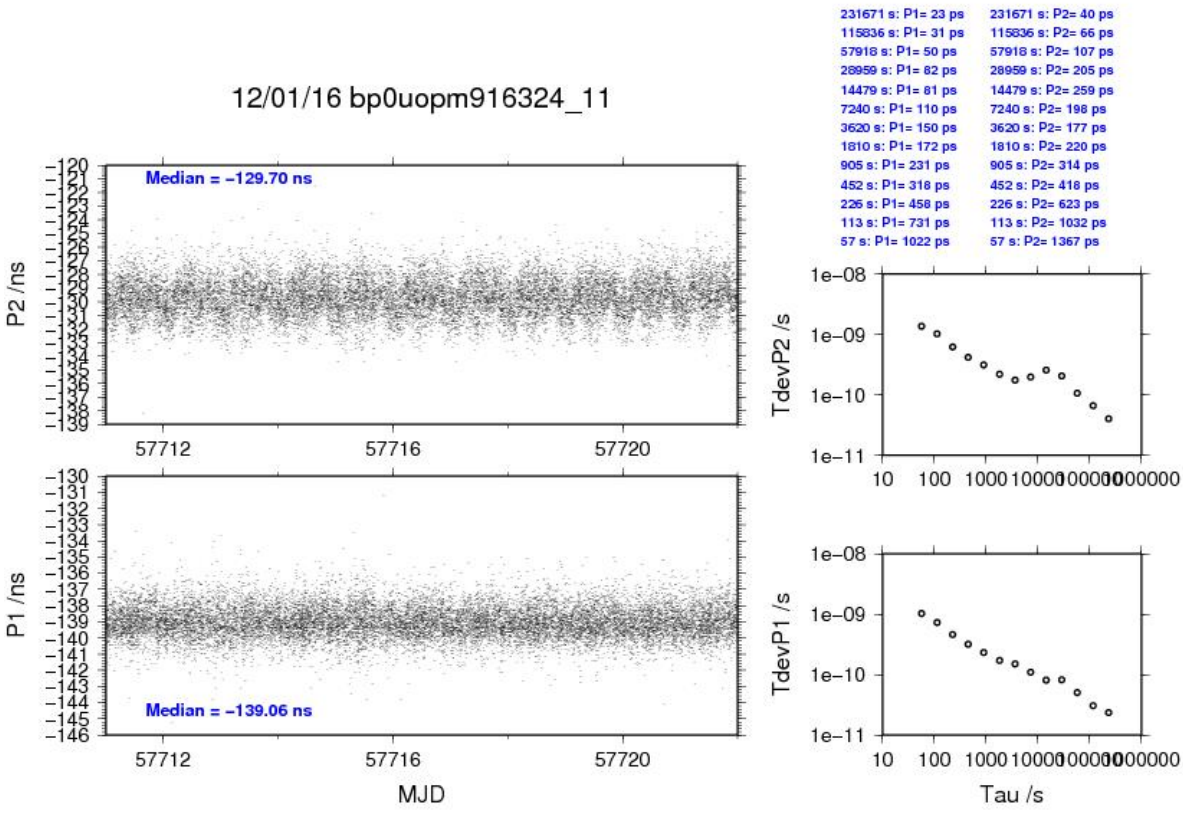
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 169609

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 169572 -140.813 1.501
C2: 0 NaN NaN
P1: 169563 -138.985 1.863
P2: 169560 -129.681 2.219

Number of 300s epochs in out file = 3168
Code #pts, median/ns, ave/ns, rms/ns
C1: 16800 -140.850 -140.819 0.831
C2: 0 0.000 NaN NaN
P1: 16799 -139.064 -139.012 1.004
P2: 16799 -129.699 -129.674 1.394


231657 s: C1= 15 ps
115829 s: C1= 27 ps
57914 s: C1= 45 ps
28957 s: C1= 77 ps
14479 s: C1= 75 ps
7239 s: C1= 94 ps
3620 s: C1= 109 ps
1810 s: C1= 138 ps
905 s: C1= 191 ps
452 s: C1= 253 ps
226 s: C1= 378 ps
113 s: C1= 606 ps
57 s: C1= 849 ps
12/01/16 bp0uopm916324_11
C2 /ns
C1 /ns
Median = -140.85 ns
MJD
TdevC1 /s
Tau /s


231671 s: P1= 23 ps
115836 s: P1= 31 ps
57918 s: P1= 50 ps
28959 s: P1= 82 ps
14479 s: P1= 81 ps
7240 s: P1= 110 ps
3620 s: P1= 150 ps
1810 s: P1= 172 ps
905 s: P1= 231 ps
452 s: P1= 318 ps
226 s: P1= 458 ps
113 s: P1= 731 ps
57 s: P1= 1022 ps
231671 s: P2= 40 ps
115836 s: P2= 66 ps
57918 s: P2= 107 ps
28959 s: P2= 205 ps
14479 s: P2= 259 ps
7240 s: P2= 198 ps
3620 s: P2= 177 ps
1810 s: P2= 220 ps
905 s: P2= 314 ps
452 s: P2= 418 ps
226 s: P2= 623 ps
113 s: P2= 1032 ps
57 s: P2= 1367 ps
12/01/16 bp0uopm916324_11
P2 /ns
Median = -129.70 ns
P1 /ns
Median = -139.06 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-OPM9

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 228218
Computed code bias (P1/P2)/m = -23.997 -21.306
Computed baseline (X,Y,Z)/m = -4.153 -2.199 1.560
RMS of residuals /m = 0.549

Number of phase differences to fit baseline = 226689
A priori baseline (X,Y,Z)/m = -4.153 -2.199 1.560
30419 clock jitters computed out of 30428 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 4.0

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.063 0.022 0.034
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.063 0.022 0.028
RMS of residuals L2 /m = 0.004

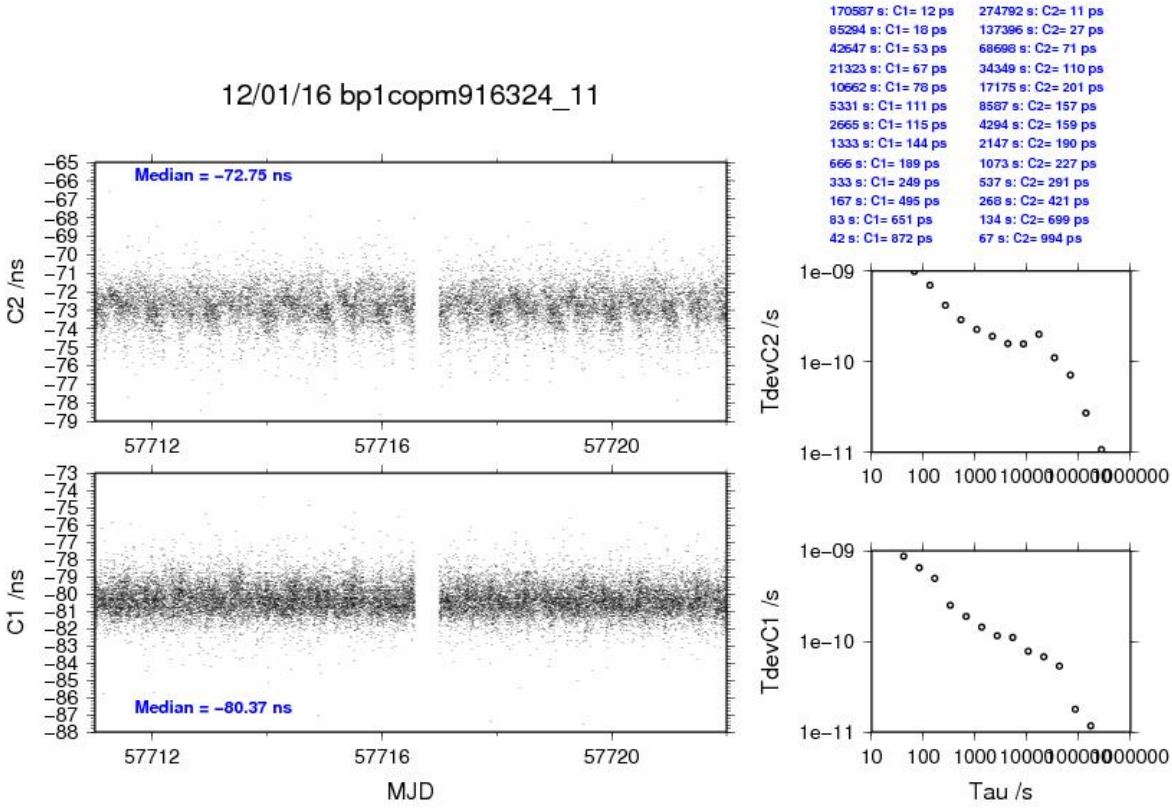
Final baseline L1 (X,Y,Z)/m = -4.090 -2.178 1.594
Final baseline L2 (X,Y,Z)/m = -4.090 -2.177 1.588

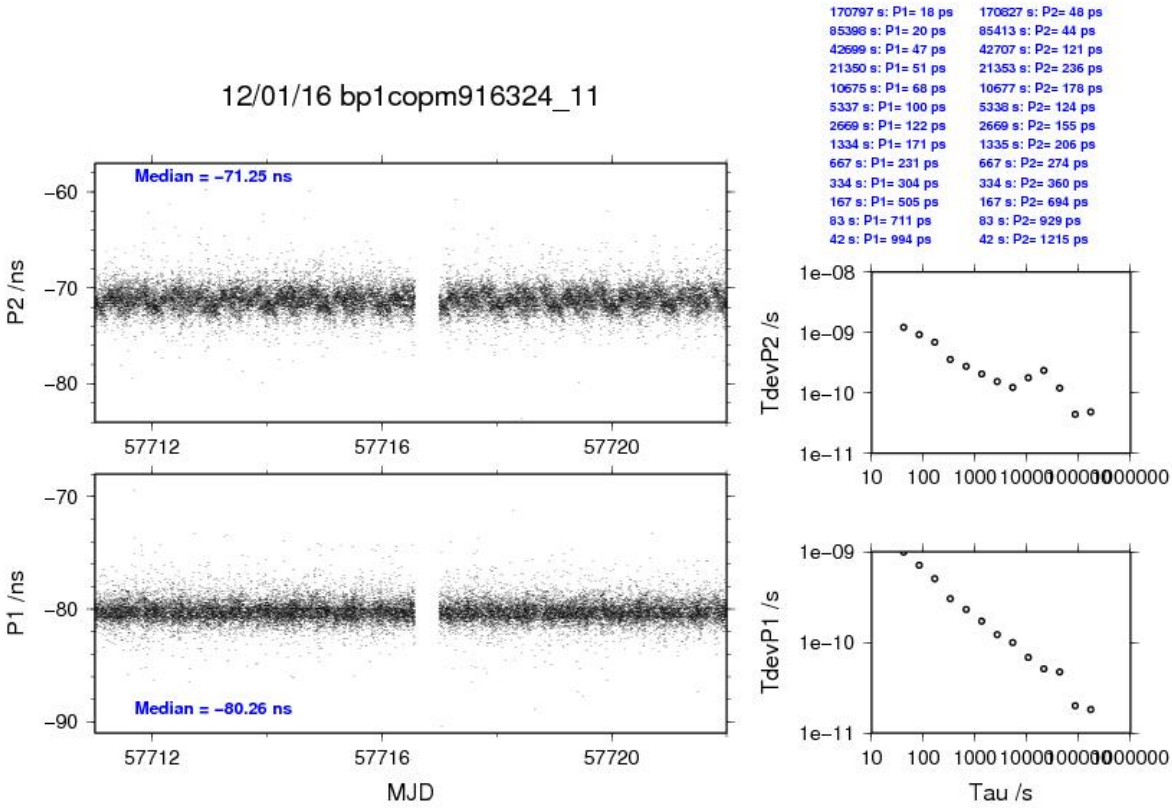
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 228444

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 228372 -80.309 1.658
C2: 141761 -72.742 1.989
P1: 228115 -80.194 2.071
P2: 228072 -71.211 2.320

Number of 300s epochs in out file = 3045
Code #pts, median/ns, ave/ns, rms/ns
C1: 22814 -80.372 -80.324 0.893
C2: 14163 -72.755 -72.758 0.980
P1: 22786 -80.258 -80.205 0.988
P2: 22782 -71.247 -71.219 1.275


12/01/16 bp1copm916324_11
Median = -72.75 ns
Median = -80.37 ns
C2 /ns
C1 /ns
MJD
57712
57716
57720
170587 s: C1= 12 ps
85294 s: C1= 18 ps
42647 s: C1= 53 ps
21323 s: C1= 67 ps
10662 s: C1= 78 ps
5331 s: C1= 111 ps
2665 s: C1= 115 ps
1333 s: C1= 144 ps
666 s: C1= 189 ps
333 s: C1= 249 ps
167 s: C1= 495 ps
83 s: C1= 651 ps
42 s: C1= 872 ps
274792 s: C2= 11 ps
137396 s: C2= 27 ps
68698 s: C2= 71 ps
34349 s: C2= 110 ps
17175 s: C2= 201 ps
8587 s: C2= 157 ps
4294 s: C2= 159 ps
2147 s: C2= 190 ps
1073 s: C2= 227 ps
537 s: C2= 291 ps
268 s: C2= 421 ps
134 s: C2= 699 ps
67 s: C2= 994 ps
TdevC2 /s
TdevC1 /s
Tau /s


12/01/16 bp1copm916324_11
Median = -71.25 ns
Median = -80.26 ns
P2 /ns
P1 /ns
MJD
57712
57716
57720
170797 s: P1= 18 ps
85398 s: P1= 20 ps
42699 s: P1= 47 ps
21350 s: P1= 51 ps
10675 s: P1= 68 ps
5337 s: P1= 100 ps
2669 s: P1= 122 ps
1334 s: P1= 171 ps
667 s: P1= 231 ps
334 s: P1= 304 ps
167 s: P1= 505 ps
83 s: P1= 711 ps
42 s: P1= 994 ps
170827 s: P2= 48 ps
85413 s: P2= 44 ps
42707 s: P2= 121 ps
21353 s: P2= 236 ps
10677 s: P2= 178 ps
5338 s: P2= 124 ps
2669 s: P2= 155 ps
1335 s: P2= 206 ps
667 s: P2= 274 ps
334 s: P2= 360 ps
167 s: P2= 694 ps
83 s: P2= 929 ps
42 s: P2= 1215 ps
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-OP71

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 169866
Computed code bias (P1/P2)/m = -15.597 -13.443
Computed baseline (X,Y,Z)/m = -1.722 2.136 1.573
RMS of residuals /m = 0.507

Number of phase differences to fit baseline = 162073
A priori baseline (X,Y,Z)/m = -1.722 2.136 1.573
31585 clock jitters computed out of 31602 intervals
AVE jitter /ps = -0.3 RMS jitter /ps = 28.5

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 0
Computed baseline L1 (X,Y,Z)/m = 0.175 -0.019 0.190
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = 0.170 -0.020 0.181
RMS of residuals L2 /m = 0.002

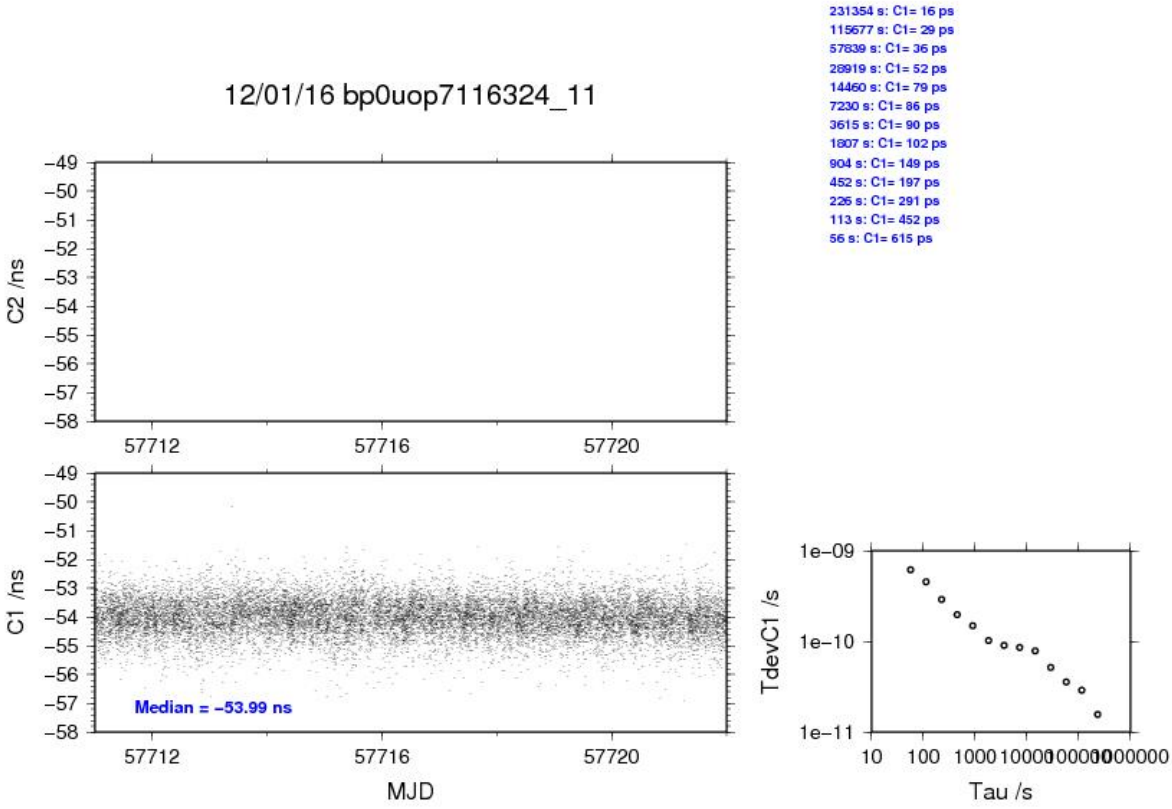
Final baseline L1 (X,Y,Z)/m = -1.546 2.117 1.763
Final baseline L2 (X,Y,Z)/m = -1.552 2.115 1.754

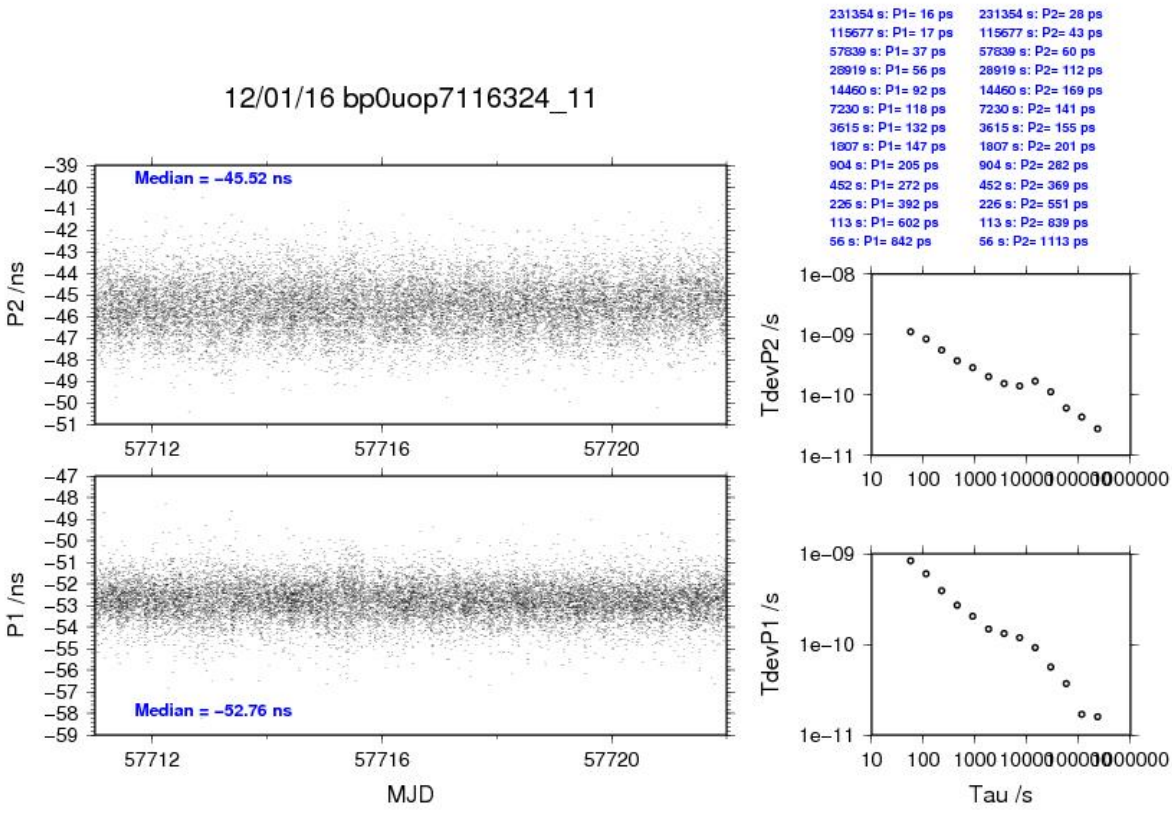
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 169866

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 169828 -54.003 1.163
C2: 0 NaN NaN
P1: 169828 -52.740 1.558
P2: 169828 -45.524 1.896

Number of 300s epochs in out file = 3168
Code #pts, median/ns, ave/ns, rms/ns
C1: 16822 -53.991 -54.001 0.621
C2: 0 0.000 NaN NaN
P1: 16822 -52.756 -52.762 0.840
P2: 16822 -45.519 -45.513 1.147


231354 s: C1= 16 ps
115677 s: C1= 29 ps
57839 s: C1= 36 ps
28919 s: C1= 52 ps
14460 s: C1= 79 ps
7230 s: C1= 86 ps
3615 s: C1= 90 ps
1807 s: C1= 102 ps
904 s: C1= 149 ps
452 s: C1= 197 ps
226 s: C1= 291 ps
113 s: C1= 452 ps
56 s: C1= 615 ps
12/01/16 bp0uop7116324_11
C2 /ns
C1 /ns
Median = -53.99 ns
MJD
TdevC1 /s
Tau /s


231354 s: P1= 16 ps
115677 s: P1= 17 ps
57839 s: P1= 37 ps
28919 s: P1= 56 ps
14460 s: P1= 92 ps
7230 s: P1= 118 ps
3615 s: P1= 132 ps
1807 s: P1= 147 ps
904 s: P1= 205 ps
452 s: P1= 272 ps
226 s: P1= 392 ps
113 s: P1= 602 ps
56 s: P1= 842 ps
231354 s: P2= 28 ps
115677 s: P2= 43 ps
57839 s: P2= 60 ps
28919 s: P2= 112 ps
14460 s: P2= 169 ps
7230 s: P2= 141 ps
3615 s: P2= 155 ps
1807 s: P2= 201 ps
904 s: P2= 282 ps
452 s: P2= 369 ps
226 s: P2= 551 ps
113 s: P2= 839 ps
56 s: P2= 1113 ps
12/01/16 bp0uop7116324_11
P2 /ns
P1 /ns
Median = -45.52 ns
Median = -52.76 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-OP71

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 259688
Computed code bias (P1/P2)/m = 1.688 3.776
Computed baseline (X,Y,Z)/m = -1.788 1.692 2.063
RMS of residuals /m = 0.423

Number of phase differences to fit baseline = 258149
A priori baseline (X,Y,Z)/m = -1.788 1.692 2.063
30410 clock jitters computed out of 30410 intervals
AVE jitter /ps = -0.1 RMS jitter /ps = 4.0

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 1
Computed baseline L1 (X,Y,Z)/m = -0.107 -0.002 -0.168
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.112 -0.008 -0.179
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 = -0.107 -0.002 -0.168
RMS of residuals L1 /m = 0.003
Computed baseline L2 (X,Y,Z)/m = -0.112 -0.008 -0.179
RMS of residuals L2 /m = 0.004

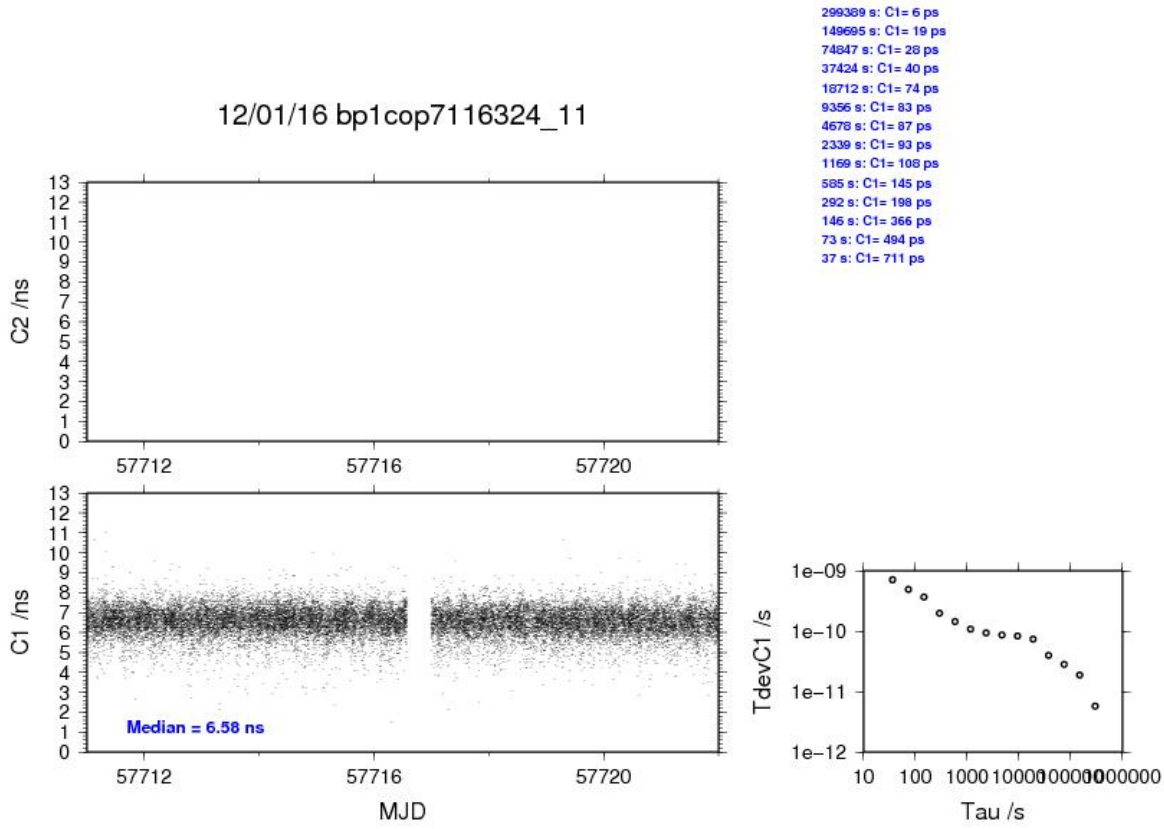
Final baseline L1 (X,Y,Z)/m = -1.896 1.690 1.895
Final baseline L2 (X,Y,Z)/m = -1.900 1.684 1.884

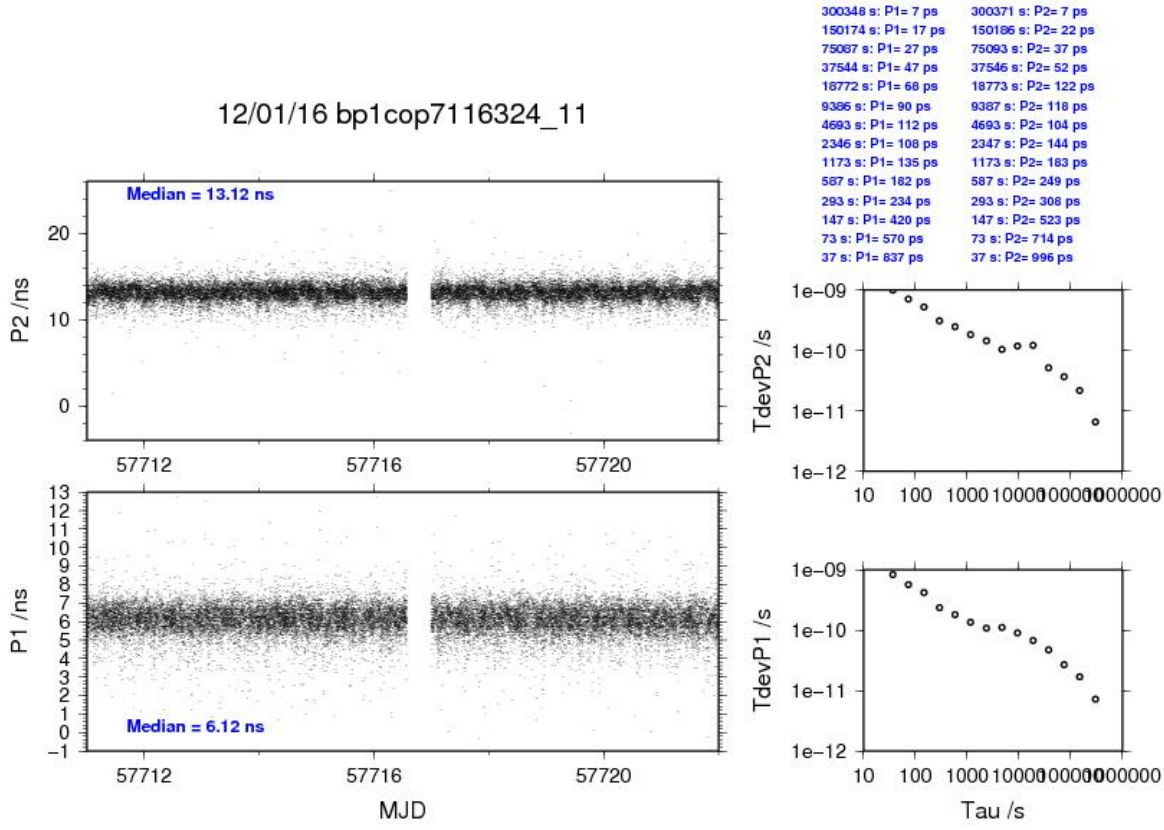
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 260547

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 260395 6.545 1.310
C2: 0 NaN NaN
P1: 259614 6.082 1.422
P2: 259600 13.075 1.535

Number of 300s epochs in out file = 3045
Code #pts, median/ns, ave/ns, rms/ns
C1: 25998 6.580 6.544 0.700
C2: 0 0.000 NaN NaN
P1: 25915 6.120 6.083 0.817
P2: 25913 13.116 13.074 1.010


12/01/16 bp1cop7116324_11
299389 s: C1= 6 ps
149695 s: C1= 19 ps
74847 s: C1= 28 ps
37424 s: C1= 40 ps
18712 s: C1= 74 ps
9356 s: C1= 83 ps
4678 s: C1= 87 ps
2339 s: C1= 93 ps
1169 s: C1= 108 ps
585 s: C1= 145 ps
292 s: C1= 198 ps
146 s: C1= 366 ps
73 s: C1= 494 ps
37 s: C1= 711 ps
C2 /ns
C1 /ns
Median = 6.58 ns
57712
57716
57720
MJD
TdevC1 /s
Tau /s


12/01/16 bp1cop7116324_11
300348 s: P1= 7 ps
150174 s: P1= 17 ps
75087 s: P1= 27 ps
37544 s: P1= 47 ps
18772 s: P1= 68 ps
9386 s: P1= 90 ps
4693 s: P1= 112 ps
2346 s: P1= 108 ps
1173 s: P1= 135 ps
587 s: P1= 182 ps
293 s: P1= 234 ps
147 s: P1= 420 ps
73 s: P1= 570 ps
37 s: P1= 837 ps
300371 s: P2= 7 ps
150186 s: P2= 22 ps
75093 s: P2= 37 ps
37546 s: P2= 52 ps
18773 s: P2= 122 ps
9387 s: P2= 118 ps
4693 s: P2= 104 ps
2347 s: P2= 144 ps
1173 s: P2= 183 ps
587 s: P2= 249 ps
293 s: P2= 308 ps
147 s: P2= 523 ps
73 s: P2= 714 ps
37 s: P2= 996 ps
P2 /ns
Median = 13.12 ns
P1 /ns
Median = 6.12 ns
57712
57716
57720
MJD
TdevP2 /s
TdevP1 /s
Tau /s

2.5/ BIPM (16340)

Period

MJD 57727 to 57733

Delays

BP0R:

X_O = 226.3 ns (266.3-48.7+8.7)
X_P = 42.7 ns (BP1R+C139+BP1S+C72)
REFDLY = 269.0 ns
CABDLY = 133.4 ns (C113)

BP1J:

X_O = 132.3 ns (186.3-53.8)
X_P = 47.6 ns (BP1R+C139+BP1S+C172)
REFDLY = 179.9 ns
CABDLY = 128.7 ns (C138)

BP1X:

REFDLY = 42.6 ns (BP1R+C139+BP1S+C126)
CABDLY = 129.7 ns (C178)
INT DLY = -27.5 ns (GPS C1)
-33.5 ns (GPS P1)
-37.4 ns (GPS P2)

BP0U:

REFDLY = 52.6 ns (BP1R+C166+BP1I+C153)
CABDLY = 181.7 ns (C134)

BP1C:

X_O = 203.9 ns (219.3-15.4)
X_P = 52.6 ns (BP1R+C166+BP1I+C157)
REFDLY = 256.5 ns
CABDLY = 235.7 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 57727
Date and hour of the end of measurements:	MJD 57733

Information on the system

	Local:	Travelling:
4-character BIPM code	BP0R	BP1C
• Receiver maker and type: Receiver serial number:	Septentrio PolaRx2e 3113	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:	Ashtech Chokering 701945-2 CR6200539014	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:	42.7 ns	52.6 ns
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	226.3 ns	203.9 ns
• Antenna cable delay:	133.4 ns	235.7 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 57727
Date and hour of the end of measurements:	MJD 57733

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:	47.6 ns	52.6
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)	132.3 ns	
• Antenna cable delay:	128.7 ns	181.7
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 57727
Date and hour of the end of measurements:	MJD 57733

Information on the system

	Local:	Travelling:
4-character BIPM code	BP1X	
• Receiver maker and type: Receiver serial number:	Dicom GTR51 1306001	
1 PPS trigger level /V:	1 V	
• Antenna cable maker and type: Phase stabilised cable (Y/N):		
Length outside the building /m:	~15 m	
• Antenna maker and type: Antenna serial number:	Novatel 703-GG NEG13160018	
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:	42.6 ns	
Delay from 1 PPS-in to internal Reference (if different): (see section 2 for details)		
• Antenna cable delay:	129.7 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:	-27.5 ns (GPS C1), -33.5 ns (GPS P1), -37.4 ns (GPS P2)
• 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.

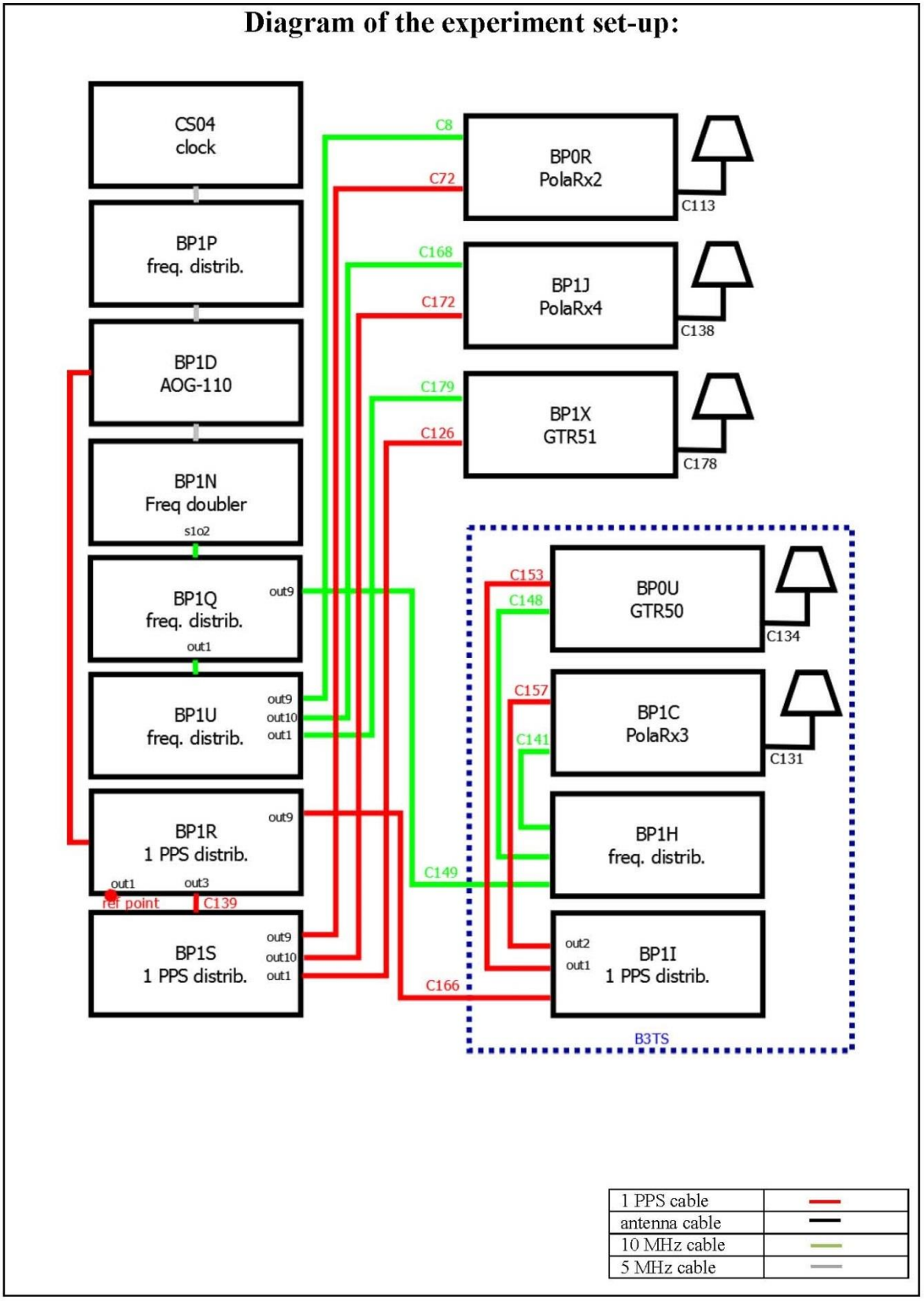


Diagram of the experiment set-up:
CS04
clock
BP1P
freq. distrib.
BP1D
AOG-110
BP1N
Freq doubler
s1o2
BP1Q
freq. distrib.
out9
out1
BP1U
freq. distrib.
out9
out10
out1
BP1R
1 PPS distrib.
out9
out1
out3
ref point
C139
BP1S
1 PPS distrib.
out9
out10
out1
C8
C72
C168
C172
C179
C126
C149
C166
BP0R
PolaRx2
C113
BP1J
PolaRx4
C138
BP1X
GTR51
C178
C153
C148
BP0U
GTR50
C134
C157
C141
BP1C
PolaRx3
C131
BP1H
freq. distrib.
out2
out1
BP1I
1 PPS distrib.
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.

BP0U-BP0R

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 79925
Number of huge residuals = 476. New iteration
Computed code bias (P1/P2)/m = -28.362 -27.117
Computed baseline (X,Y,Z)/m = -5.310 -0.826 4.315
RMS of residuals /m = 0.699

Number of phase differences to fit baseline = 68435
A priori baseline (X,Y,Z)/m = -5.310 -0.826 4.315
15696 clock jitters computed out of 15988 intervals
AVE jitter /ps = -0.5 RMS jitter /ps = 40.7

Iter 1 Large residuals L1= 25
Iter 1 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = 0.143 0.027 0.181
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.147 0.048 0.189
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 25
Iter 2 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = 0.143 0.027 0.181
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.147 0.048 0.189
RMS of residuals L2 /m = 0.004

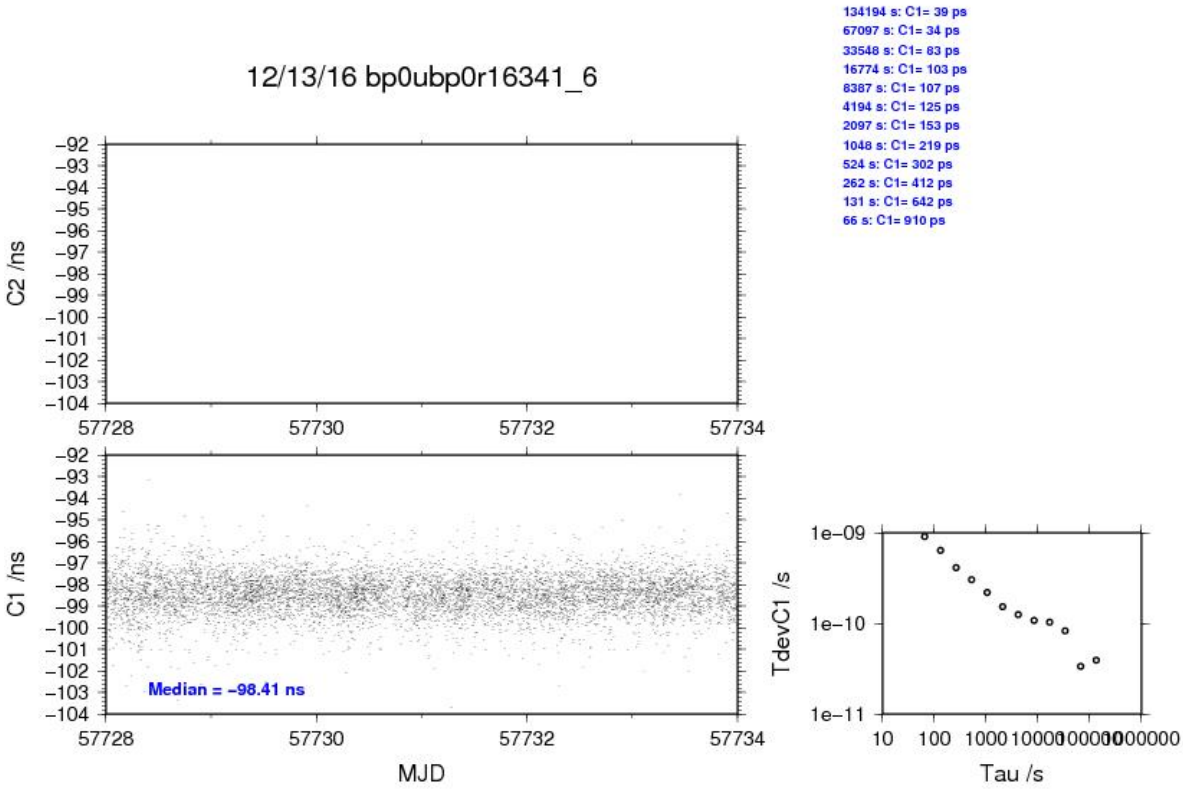
Final baseline L1 (X,Y,Z)/m = -5.167 -0.799 4.495
Final baseline L2 (X,Y,Z)/m = -5.163 -0.778 4.504

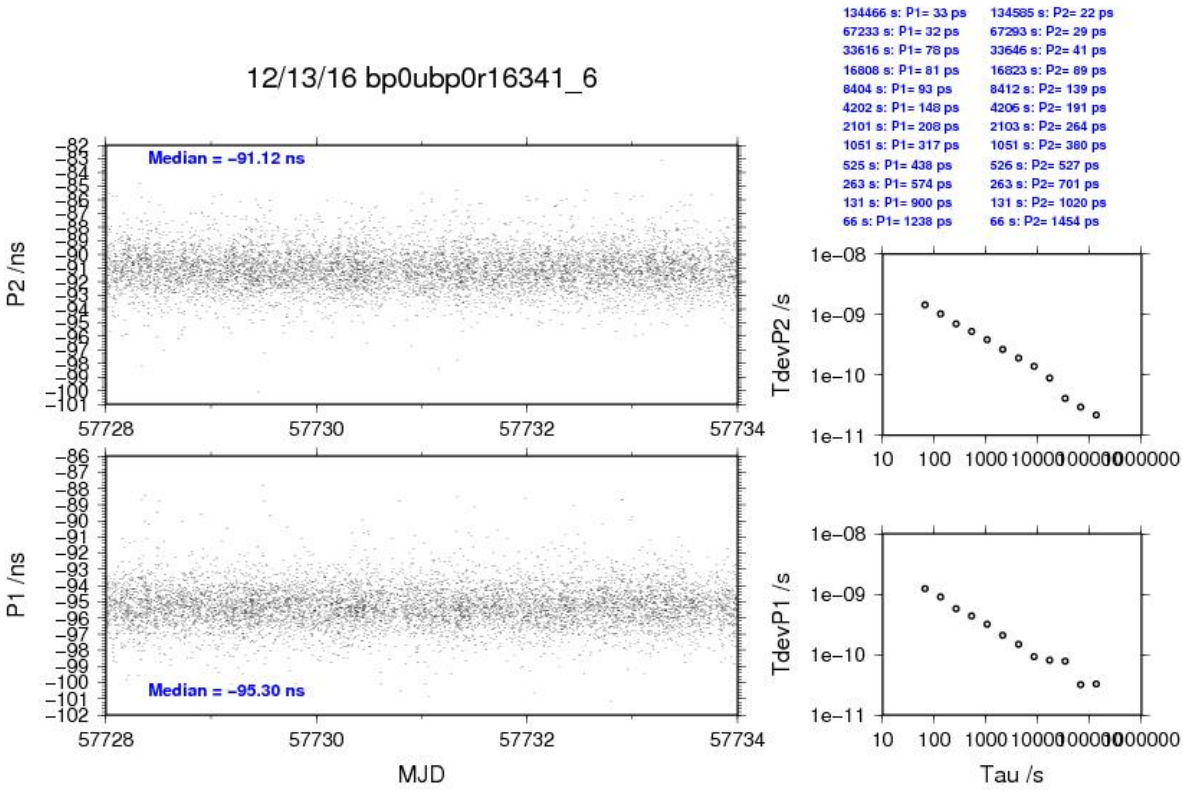
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 80221

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 79638 -98.391 2.013
C2: 0 NaN NaN
P1: 79363 -95.208 2.762
P2: 79337 -91.089 2.897

Number of 300s epochs in out file = 1725
Code #pts, median/ns, ave/ns, rms/ns
C1: 7908 -98.411 -98.430 0.899
C2: 0 0.000 NaN NaN
P1: 7892 -95.297 -95.271 1.234
P2: 7885 -91.125 -91.087 1.450


12/13/16 bp0ubp0r16341_6
134194 s: C1= 39 ps
67097 s: C1= 34 ps
33548 s: C1= 83 ps
16774 s: C1= 103 ps
8387 s: C1= 107 ps
4194 s: C1= 125 ps
2097 s: C1= 153 ps
1048 s: C1= 219 ps
524 s: C1= 302 ps
262 s: C1= 412 ps
131 s: C1= 642 ps
66 s: C1= 910 ps
C2 /ns
C1 /ns
Median = -98.41 ns
MJD
TdevC1 /s
Tau /s


12/13/16 bp0ubp0r16341_6
134466 s: P1= 33 ps
67233 s: P1= 32 ps
33616 s: P1= 78 ps
16808 s: P1= 81 ps
8404 s: P1= 93 ps
4202 s: P1= 148 ps
2101 s: P1= 208 ps
1051 s: P1= 317 ps
525 s: P1= 438 ps
263 s: P1= 574 ps
131 s: P1= 900 ps
66 s: P1= 1238 ps
134585 s: P2= 22 ps
67293 s: P2= 29 ps
33646 s: P2= 41 ps
16823 s: P2= 89 ps
8412 s: P2= 139 ps
4206 s: P2= 191 ps
2103 s: P2= 264 ps
1051 s: P2= 380 ps
526 s: P2= 527 ps
263 s: P2= 701 ps
131 s: P2= 1020 ps
66 s: P2= 1454 ps
P2 /ns
Median = -91.12 ns
P1 /ns
Median = -95.30 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP0R

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 121206
Number of huge residuals = 338. New iteration
Number of huge residuals = 7. New iteration
Computed code bias (P1/P2)/m = -17.706 -16.602
Computed baseline (X,Y,Z)/m = -4.578 -0.877 3.631
RMS of residuals /m = 0.712

Number of phase differences to fit baseline = 114277
A priori baseline (X,Y,Z)/m = -4.578 -0.877 3.631
17622 clock jitters computed out of 17639 intervals
AVE jitter /ps = 0.7 RMS jitter /ps = 6.0

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.145 0.107 0.182
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.121 0.176 0.182
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.145 0.107 0.182
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.121 0.176 0.182
RMS of residuals L2 /m = 0.005

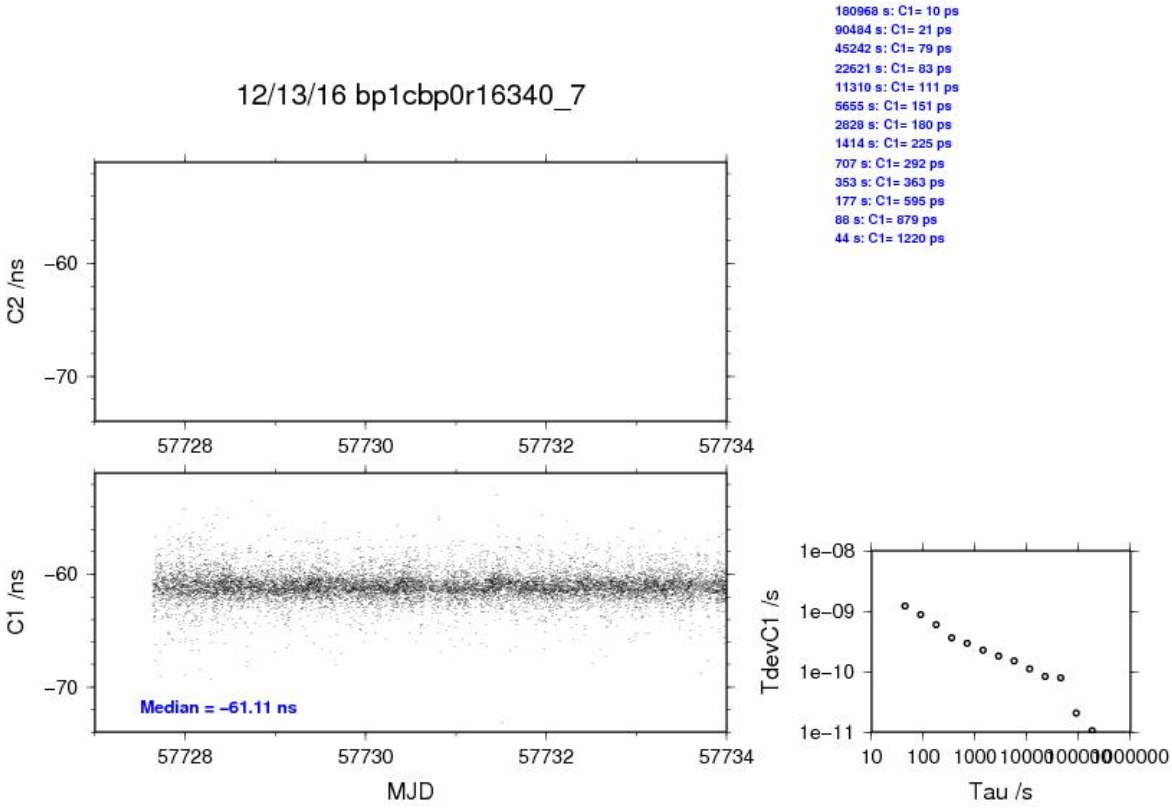
Final baseline L1 (X,Y,Z)/m = -4.433 -0.770 3.813
Final baseline L2 (X,Y,Z)/m = -4.457 -0.701 3.813

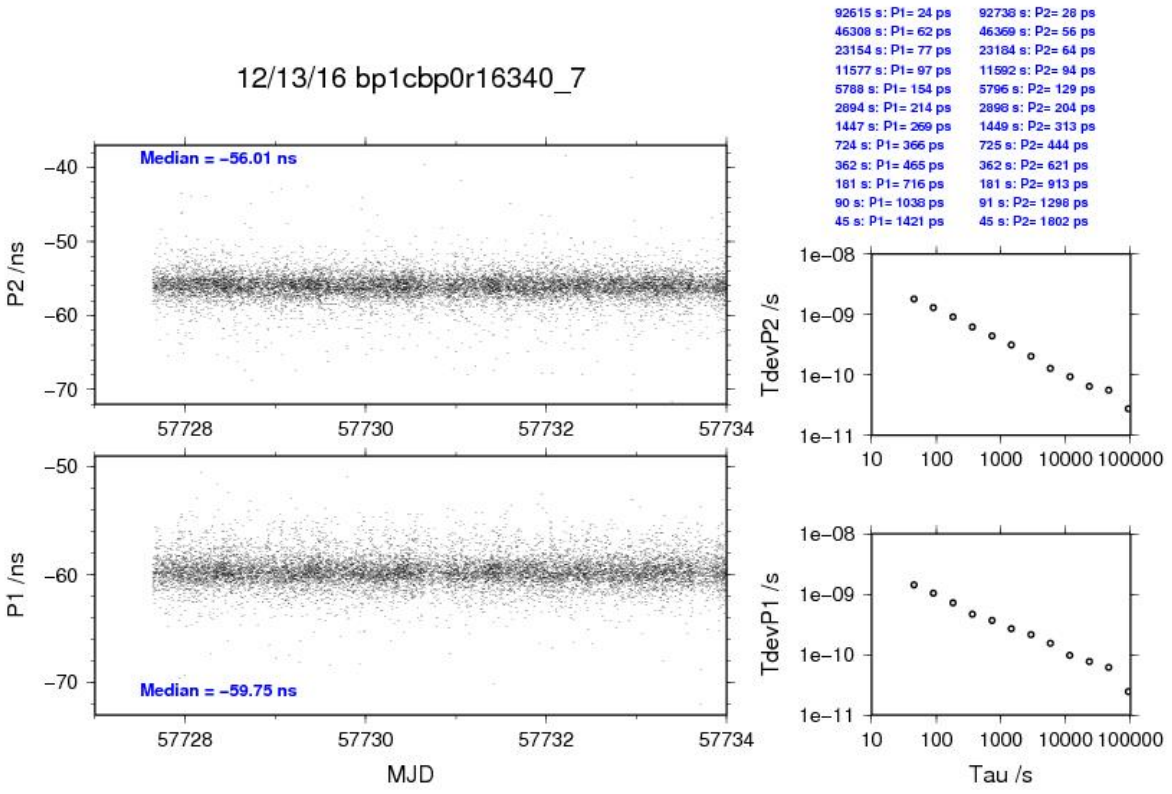
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 124993

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 124050 -61.059 2.269
C2: 0 NaN NaN
P1: 120871 -59.661 2.767
P2: 120707 -56.026 3.150

Number of 300s epochs in out file = 1830
Code #pts, median/ns, ave/ns, rms/ns
C1: 12427 -61.111 -61.069 1.218
C2: 0 0.000 NaN NaN
P1: 12141 -59.752 -59.684 1.438
P2: 12125 -56.005 -56.031 1.807


12/13/16 bp1cbp0r16340_7
180968 s: C1= 10 ps
90484 s: C1= 21 ps
45242 s: C1= 79 ps
22621 s: C1= 83 ps
11310 s: C1= 111 ps
5655 s: C1= 151 ps
2828 s: C1= 180 ps
1414 s: C1= 225 ps
707 s: C1= 292 ps
353 s: C1= 363 ps
177 s: C1= 595 ps
88 s: C1= 879 ps
44 s: C1= 1220 ps
C2 /ns
C1 /ns
Median = -61.11 ns
MJD
TdevC1 /s
Tau /s


12/13/16 bp1cbp0r16340_7
92615 s: P1= 24 ps
46308 s: P1= 62 ps
23154 s: P1= 77 ps
11577 s: P1= 97 ps
5788 s: P1= 154 ps
2894 s: P1= 214 ps
1447 s: P1= 269 ps
724 s: P1= 366 ps
362 s: P1= 465 ps
181 s: P1= 716 ps
90 s: P1= 1038 ps
45 s: P1= 1421 ps
92738 s: P2= 28 ps
46369 s: P2= 56 ps
23184 s: P2= 64 ps
11592 s: P2= 94 ps
5796 s: P2= 129 ps
2898 s: P2= 204 ps
1449 s: P2= 313 ps
725 s: P2= 444 ps
362 s: P2= 621 ps
181 s: P2= 913 ps
91 s: P2= 1298 ps
45 s: P2= 1802 ps
P2 /ns
Median = -56.01 ns
P1 /ns
Median = -59.75 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP0U-BP1J

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 80717
Number of huge residuals = 500. New iteration
Computed code bias (P1/P2)/m = -2.821 -0.896
Computed baseline (X,Y,Z)/m = -2.369 -0.359 1.854
RMS of residuals /m = 0.622

Number of phase differences to fit baseline = 70533
A priori baseline (X,Y,Z)/m = -2.369 -0.359 1.854
16005 clock jitters computed out of 16273 intervals
AVE jitter /ps = -0.6 RMS jitter /ps = 40.8

Iter 1 Large residuals L1= 25
Iter 1 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = 0.173 0.044 0.134
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.188 0.040 0.132
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 = 0.173 0.044 0.134
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = 0.188 0.040 0.132
RMS of residuals L2 /m = 0.003

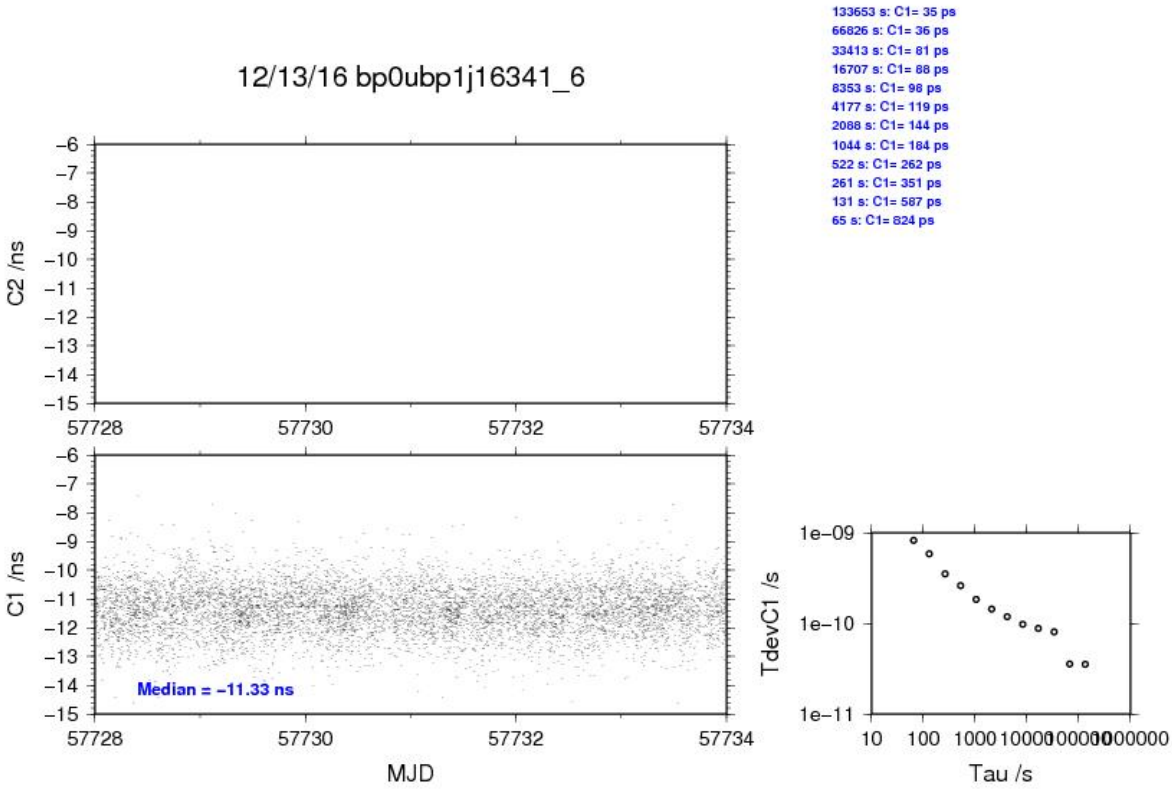
Final baseline L1 (X,Y,Z)/m = -2.197 -0.316 1.988
Final baseline L2 (X,Y,Z)/m = -2.181 -0.320 1.986

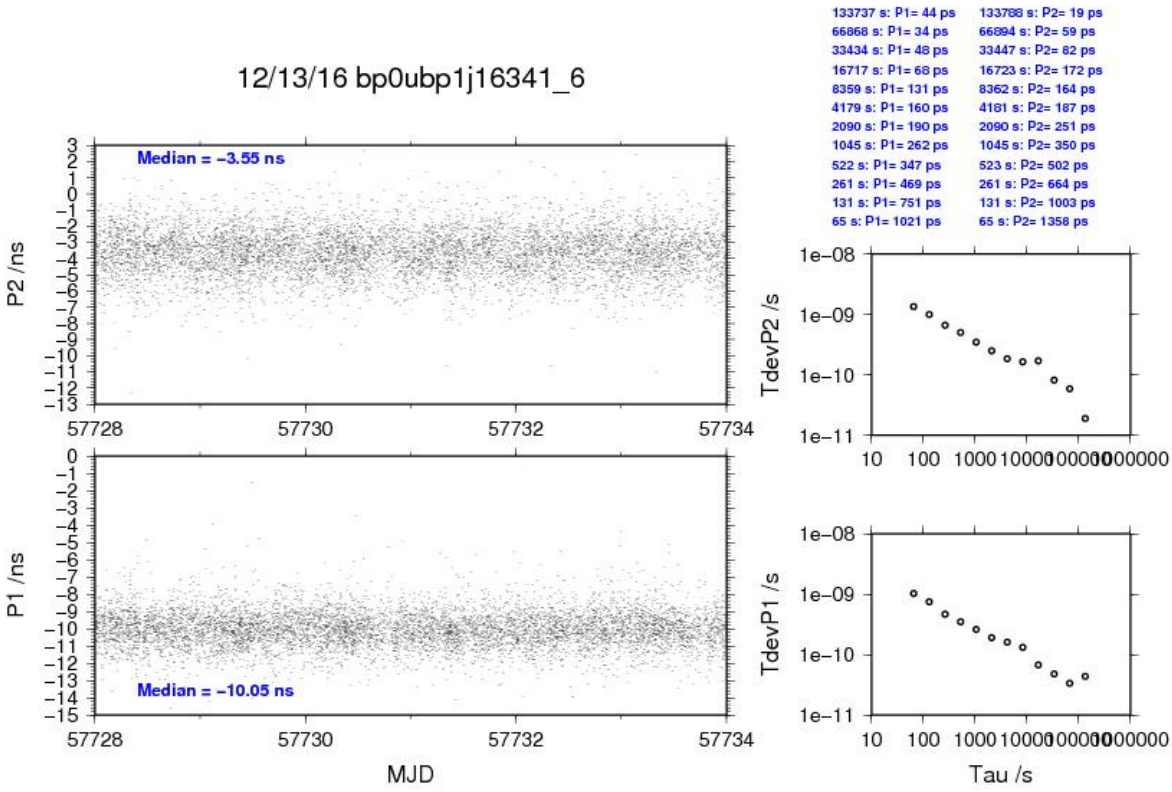
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 80784

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 80241 -11.319 1.940
C2: 0 NaN NaN
P1: 80164 -9.986 2.312
P2: 80114 -3.591 2.721

Number of 300s epochs in out file = 1725
Code #pts, median/ns, ave/ns, rms/ns
C1: 7940 -11.334 -11.349 0.805
C2: 0 0.000 NaN NaN
P1: 7935 -10.050 -10.033 1.026
P2: 7932 -3.553 -3.592 1.389


12/13/16 bp0ubp1j16341_6
133653 s: C1= 35 ps
66826 s: C1= 36 ps
33413 s: C1= 81 ps
16707 s: C1= 88 ps
8353 s: C1= 98 ps
4177 s: C1= 119 ps
2088 s: C1= 144 ps
1044 s: C1= 184 ps
522 s: C1= 262 ps
261 s: C1= 351 ps
131 s: C1= 587 ps
65 s: C1= 824 ps
C2 /ns
C1 /ns
Median = -11.33 ns
MJD
TdevC1 /s
Tau /s


12/13/16 bp0ubp1j16341_6
133737 s: P1= 44 ps
66868 s: P1= 34 ps
33434 s: P1= 48 ps
16717 s: P1= 68 ps
8359 s: P1= 131 ps
4179 s: P1= 160 ps
2090 s: P1= 190 ps
1045 s: P1= 262 ps
522 s: P1= 347 ps
261 s: P1= 469 ps
131 s: P1= 751 ps
65 s: P1= 1021 ps
133788 s: P2= 19 ps
66894 s: P2= 59 ps
33447 s: P2= 82 ps
16723 s: P2= 172 ps
8362 s: P2= 164 ps
4181 s: P2= 187 ps
2090 s: P2= 251 ps
1045 s: P2= 350 ps
523 s: P2= 502 ps
261 s: P2= 664 ps
131 s: P2= 1003 ps
65 s: P2= 1358 ps
P2 /ns
Median = -3.55 ns
P1 /ns
Median = -10.05 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP1J

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 121555
Computed code bias (P1/P2)/m = 7.516 9.290
Computed baseline (X,Y,Z)/m = -1.431 -0.181 1.479
RMS of residuals /m = 0.601

Number of phase differences to fit baseline = 118867
A priori baseline (X,Y,Z)/m = -1.431 -0.181 1.479
18289 clock jitters computed out of 18290 intervals
AVE jitter /ps = 0.1 RMS jitter /ps = 4.8

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 4
Computed baseline L1 (X,Y,Z)/m = -0.042 -0.044 -0.164
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.027 -0.045 -0.162
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 4
Computed baseline L1 (X,Y,Z)/m = -0.042 -0.044 -0.164
RMS of residuals L1 /m = 0.004
Computed baseline L2 (X,Y,Z)/m = -0.027 -0.045 -0.162
RMS of residuals L2 /m = 0.004

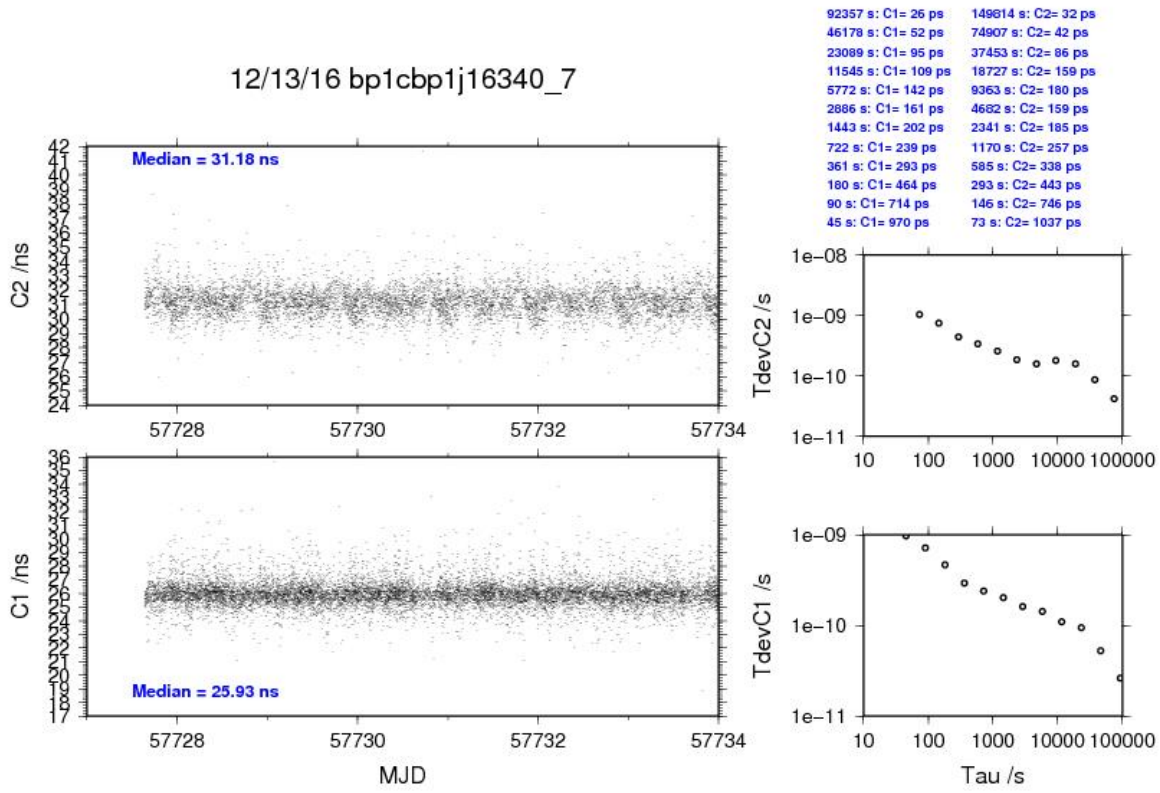
Final baseline L1 (X,Y,Z)/m = -1.472 -0.225 1.315
Final baseline L2 (X,Y,Z)/m = -1.458 -0.226 1.316

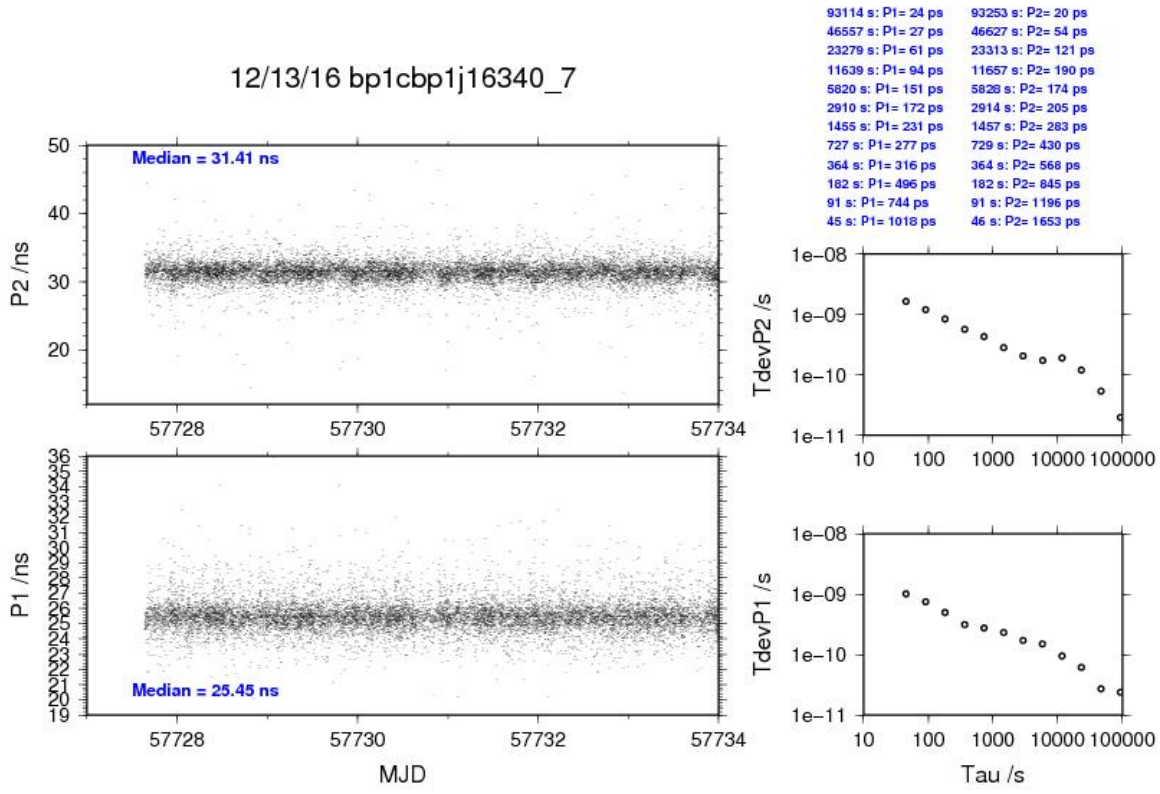
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 123575

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 122392 25.997 1.932
C2: 75297 31.179 1.917
P1: 121131 25.474 1.996
P2: 120884 31.397 2.832

Number of 300s epochs in out file = 1830
Code #pts, median/ns, ave/ns, rms/ns
C1: 12175 25.930 25.981 0.982
C2: 7506 31.179 31.196 1.037
P1: 12076 25.445 25.487 1.036
P2: 12058 31.409 31.387 1.677


12/13/16 bp1cbp1j16340_7
92357 s: C1= 26 ps
46178 s: C1= 52 ps
23089 s: C1= 95 ps
11545 s: C1= 109 ps
5772 s: C1= 142 ps
2886 s: C1= 161 ps
1443 s: C1= 202 ps
722 s: C1= 239 ps
361 s: C1= 293 ps
180 s: C1= 464 ps
90 s: C1= 714 ps
45 s: C1= 970 ps
149814 s: C2= 32 ps
74907 s: C2= 42 ps
37453 s: C2= 86 ps
18727 s: C2= 159 ps
9363 s: C2= 180 ps
4682 s: C2= 159 ps
2341 s: C2= 185 ps
1170 s: C2= 257 ps
585 s: C2= 338 ps
293 s: C2= 443 ps
146 s: C2= 746 ps
73 s: C2= 1037 ps
Median = 31.18 ns
C2 /ns
TdevC2 /s
Median = 25.93 ns
C1 /ns
TdevC1 /s
57728
57730
57732
57734
MJD
10
100
1000
10000
100000
Tau /s


12/13/16 bp1cbp1j16340_7
93114 s: P1= 24 ps
46557 s: P1= 27 ps
23279 s: P1= 61 ps
11639 s: P1= 94 ps
5820 s: P1= 151 ps
2910 s: P1= 172 ps
1455 s: P1= 231 ps
727 s: P1= 277 ps
364 s: P1= 316 ps
182 s: P1= 496 ps
91 s: P1= 744 ps
45 s: P1= 1018 ps
93253 s: P2= 20 ps
46627 s: P2= 54 ps
23313 s: P2= 121 ps
11657 s: P2= 190 ps
5828 s: P2= 174 ps
2914 s: P2= 205 ps
1457 s: P2= 283 ps
729 s: P2= 430 ps
364 s: P2= 568 ps
182 s: P2= 845 ps
91 s: P2= 1196 ps
46 s: P2= 1653 ps
Median = 31.41 ns
P2 /ns
TdevP2 /s
Median = 25.45 ns
P1 /ns
TdevP1 /s
57728
57730
57732
57734
MJD
10
100
1000
10000
100000
Tau /s

BP0U-BP1X

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 80621
Number of huge residuals = 501. New iteration
Computed code bias (P1/P2)/m = -0.822 0.265
Computed baseline (X,Y,Z)/m = -3.272 -0.580 2.275
RMS of residuals /m = 0.648

Number of phase differences to fit baseline = 69972
A priori baseline (X,Y,Z)/m = -3.272 -0.580 2.275
15989 clock jitters computed out of 16295 intervals
AVE jitter /ps = -0.2 RMS jitter /ps = 40.6

Iter 1 Large residuals L1= 25
Iter 1 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = 0.325 0.106 0.321
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.332 0.106 0.318
RMS of residuals L2 /m = 0.004

Iter 2 Large residuals L1= 25
Iter 2 Large residuals L2= 25
Computed baseline L1 (X,Y,Z)/m = 0.325 0.106 0.321
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.332 0.106 0.318
RMS of residuals L2 /m = 0.004

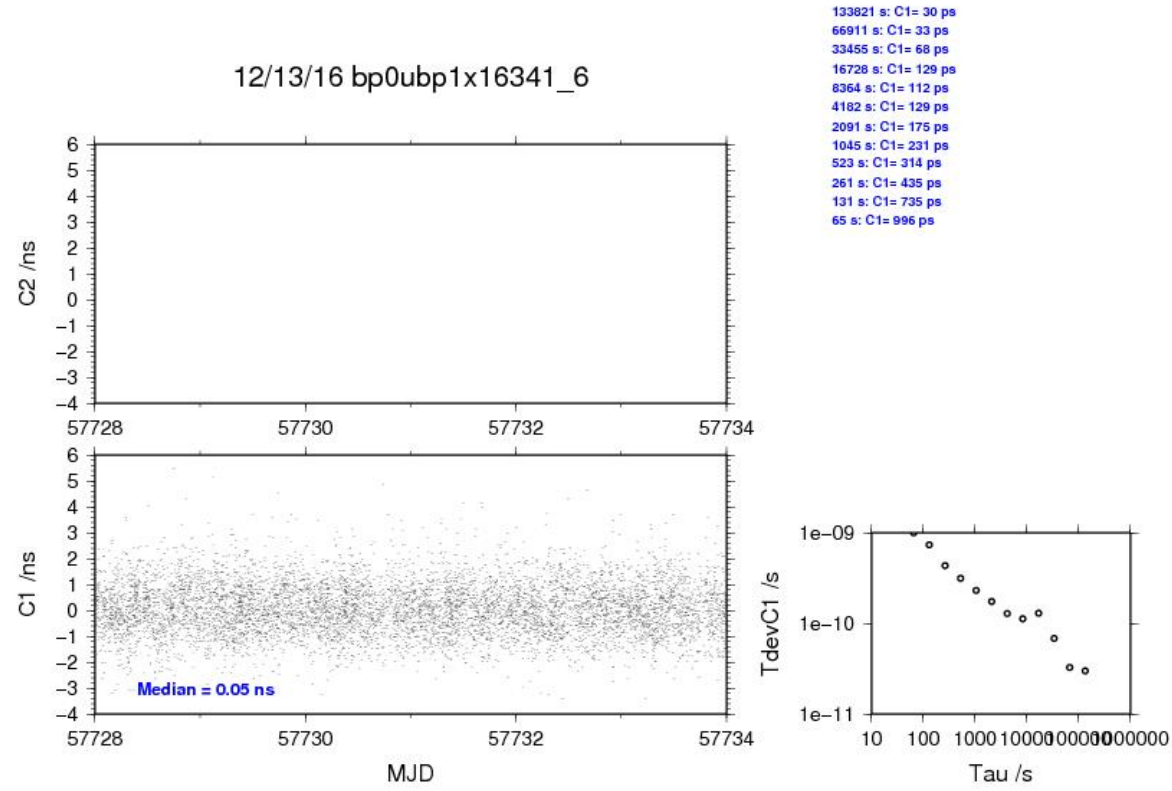
Final baseline L1 (X,Y,Z)/m = -2.947 -0.474 2.596
Final baseline L2 (X,Y,Z)/m = -2.940 -0.474 2.593

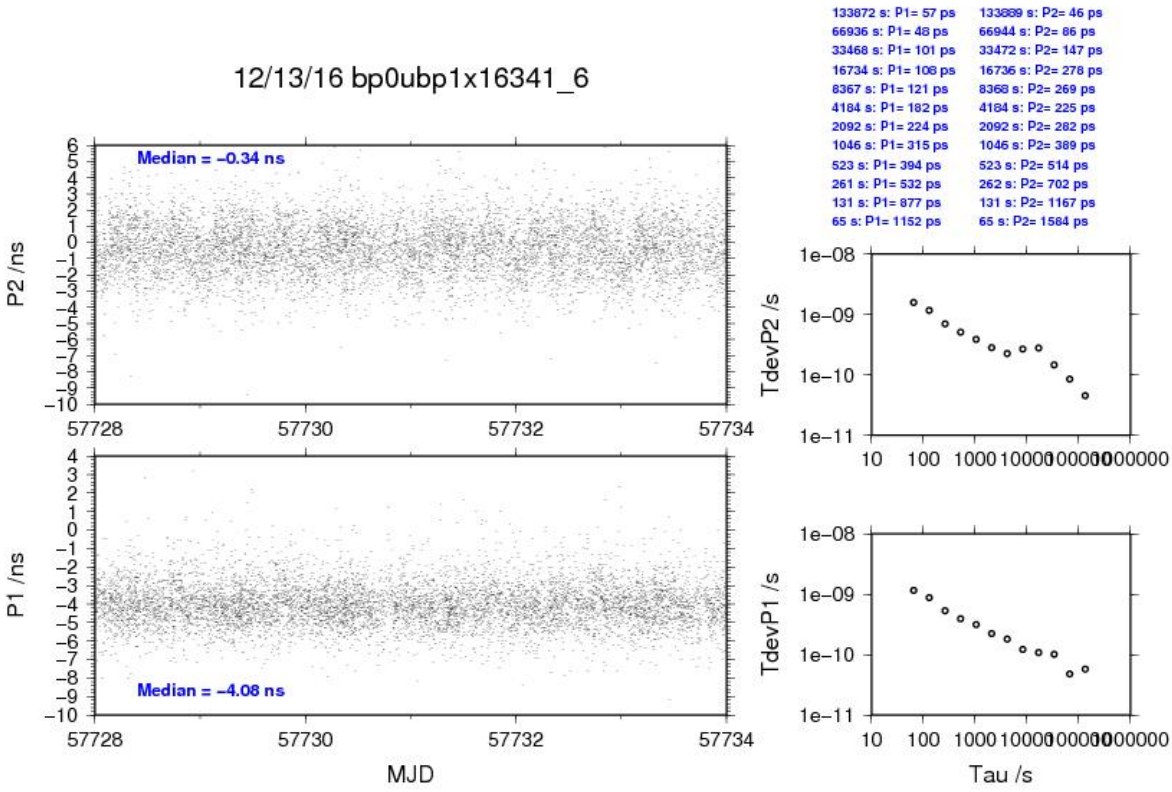
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 80683

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 80133 0.125 2.038
C2: 0 NaN NaN
P1: 80046 -3.952 2.449
P2: 80014 -0.336 2.798

Number of 300s epochs in out file = 1725
Code #pts, median/ns, ave/ns, rms/ns
C1: 7930 0.050 0.074 0.986
C2: 0 0.000 NaN NaN
P1: 7927 -4.084 -4.026 1.176
P2: 7926 -0.335 -0.345 1.598


12/13/16 bp0ubp1x16341_6
133821 s: C1= 30 ps
66911 s: C1= 33 ps
33455 s: C1= 68 ps
16728 s: C1= 129 ps
8364 s: C1= 112 ps
4182 s: C1= 129 ps
2091 s: C1= 175 ps
1045 s: C1= 231 ps
523 s: C1= 314 ps
261 s: C1= 435 ps
131 s: C1= 735 ps
65 s: C1= 996 ps
C2 /ns
C1 /ns
Median = 0.05 ns
MJD
TdevC1 /s
Tau /s


12/13/16 bp0ubp1x16341_6
133872 s: P1= 57 ps
66936 s: P1= 48 ps
33468 s: P1= 101 ps
16734 s: P1= 108 ps
8367 s: P1= 121 ps
4184 s: P1= 182 ps
2092 s: P1= 224 ps
1046 s: P1= 315 ps
523 s: P1= 394 ps
261 s: P1= 532 ps
131 s: P1= 877 ps
65 s: P1= 1152 ps
133889 s: P2= 46 ps
66944 s: P2= 86 ps
33472 s: P2= 147 ps
16736 s: P2= 278 ps
8368 s: P2= 269 ps
4184 s: P2= 225 ps
2092 s: P2= 282 ps
1046 s: P2= 389 ps
523 s: P2= 514 ps
262 s: P2= 702 ps
131 s: P2= 1167 ps
65 s: P2= 1584 ps
P2 /ns
Median = -0.34 ns
P1 /ns
Median = -4.08 ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s

BP1C-BP1X

COMPUTATION OF BASELINE

Number of codes to fit baseline and biases = 119598
Number of huge residuals = 2. New iteration
Computed code bias (P1/P2)/m = 9.766 10.709
Computed baseline (X,Y,Z)/m = -2.507 -0.558 1.658
RMS of residuals /m = 0.637

Number of phase differences to fit baseline = 116892
A priori baseline (X,Y,Z)/m = -2.507 -0.558 1.658
18289 clock jitters computed out of 18290 intervals
AVE jitter /ps = 0.5 RMS jitter /ps = 5.6

Iter 1 Large residuals L1= 0
Iter 1 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.295 0.157 0.251
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.283 0.168 0.247
RMS of residuals L2 /m = 0.005

Iter 2 Large residuals L1= 0
Iter 2 Large residuals L2= 2
Computed baseline L1 (X,Y,Z)/m = 0.295 0.157 0.251
RMS of residuals L1 /m = 0.005
Computed baseline L2 (X,Y,Z)/m = 0.283 0.168 0.247
RMS of residuals L2 /m = 0.005

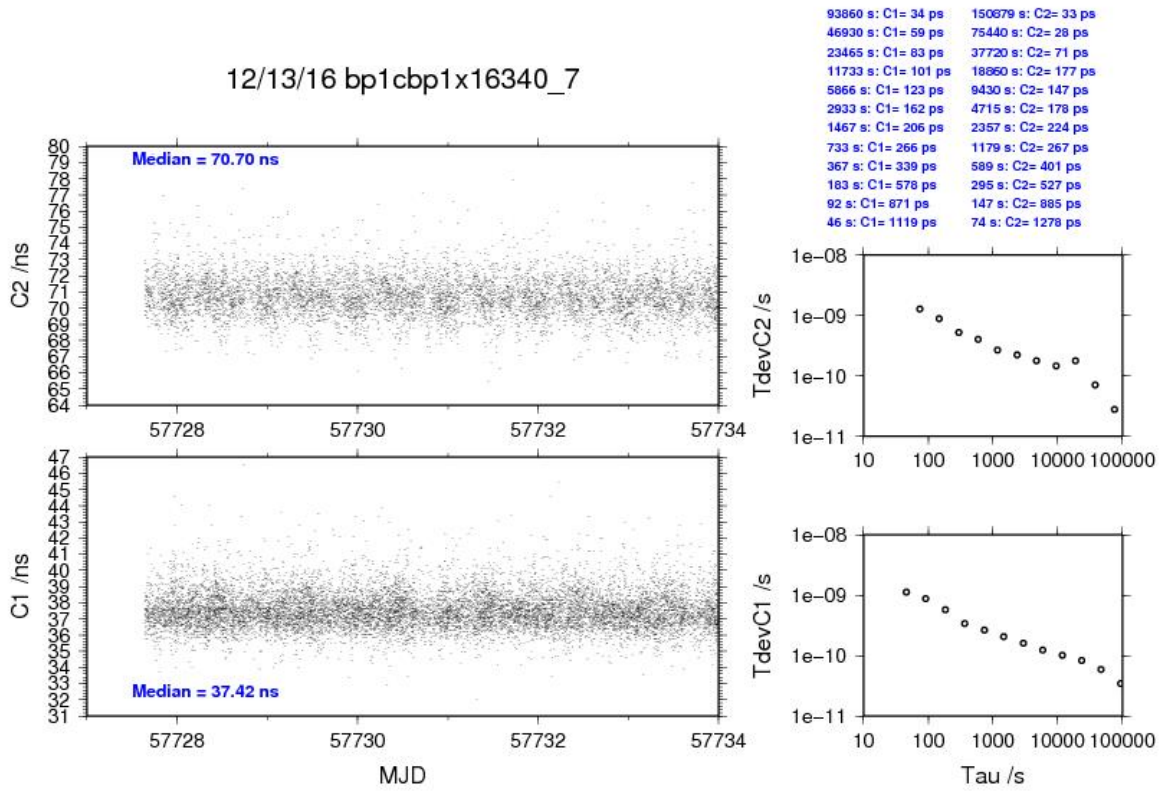
Final baseline L1 (X,Y,Z)/m = -2.212 -0.402 1.909
Final baseline L2 (X,Y,Z)/m = -2.224 -0.390 1.905

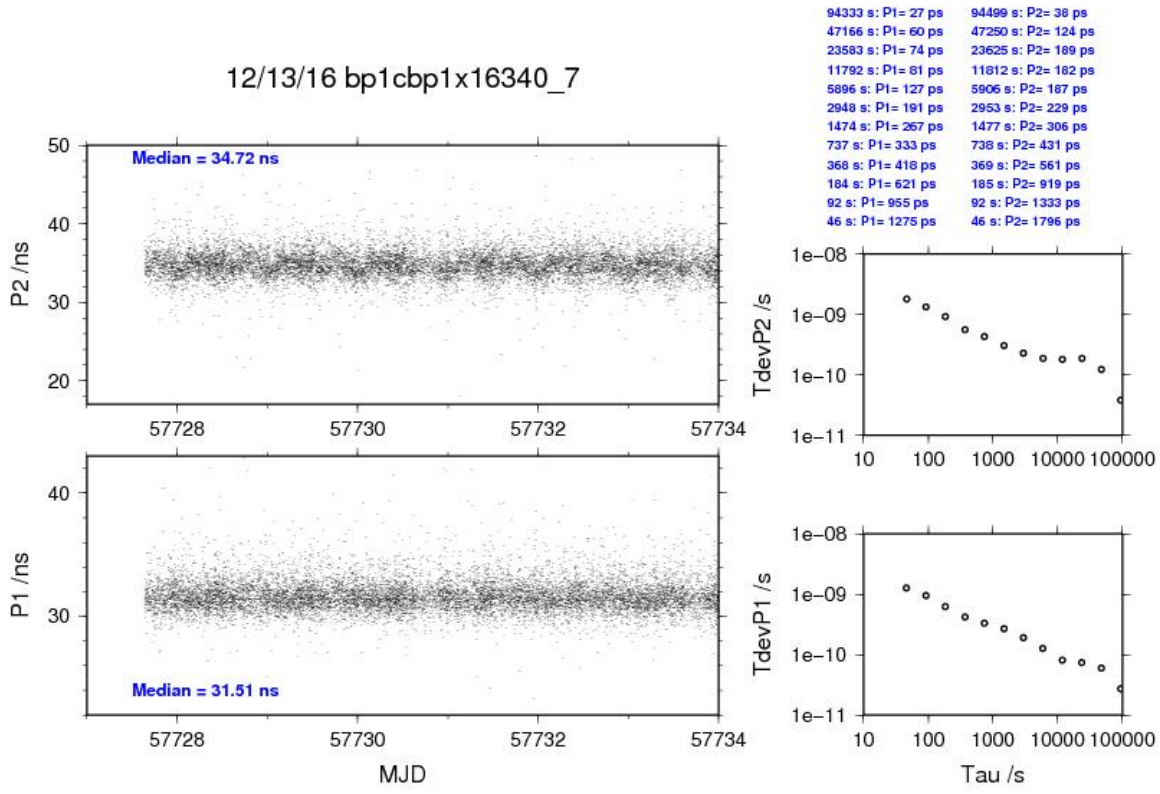
COMPUTATION OF CODE DIFFERENCES

Number of code differences = 120802

Global average of individual differences
Code #pts, ave/ns, rms/ns
C1: 120352 37.568 1.982
C2: 74769 70.771 2.006
P1: 119464 31.679 2.336
P2: 119277 34.812 3.023

Number of 300s epochs in out file = 1830
Code #pts, median/ns, ave/ns, rms/ns
C1: 11980 37.424 37.540 1.154
C2: 7453 70.701 70.755 1.232
P1: 11920 31.510 31.649 1.298
P2: 11899 34.721 34.807 1.822


12/13/16 bp1cbp1x16340_7
93860 s: C1= 34 ps
46930 s: C1= 59 ps
23465 s: C1= 83 ps
11733 s: C1= 101 ps
5866 s: C1= 123 ps
2933 s: C1= 162 ps
1467 s: C1= 206 ps
733 s: C1= 266 ps
367 s: C1= 339 ps
183 s: C1= 578 ps
92 s: C1= 871 ps
46 s: C1= 1119 ps
150679 s: C2= 33 ps
75440 s: C2= 28 ps
37720 s: C2= 71 ps
18860 s: C2= 177 ps
9430 s: C2= 147 ps
4715 s: C2= 178 ps
2357 s: C2= 224 ps
1179 s: C2= 267 ps
589 s: C2= 401 ps
295 s: C2= 527 ps
147 s: C2= 885 ps
74 s: C2= 1278 ps
Median = 70.70 ns
C2 /ns
Median = 37.42 ns
C1 /ns
MJD
TdevC2 /s
TdevC1 /s
Tau /s


12/13/16 bp1cbp1x16340_7
94333 s: P1= 27 ps
47166 s: P1= 60 ps
23583 s: P1= 74 ps
11792 s: P1= 81 ps
5896 s: P1= 127 ps
2948 s: P1= 191 ps
1474 s: P1= 267 ps
737 s: P1= 333 ps
368 s: P1= 418 ps
184 s: P1= 621 ps
92 s: P1= 955 ps
46 s: P1= 1275 ps
94499 s: P2= 38 ps
47250 s: P2= 124 ps
23625 s: P2= 189 ps
11812 s: P2= 182 ps
5906 s: P2= 167 ps
2953 s: P2= 229 ps
1477 s: P2= 306 ps
738 s: P2= 431 ps
369 s: P2= 561 ps
185 s: P2= 919 ps
92 s: P2= 1333 ps
46 s: P2= 1796 ps
Median = 34.72 ns
P2 /ns
Median = 31.51 ns
P1 /ns
MJD
TdevP2 /s
TdevP1 /s
Tau /s