

C192A/MC004 Correlation Report

General information

- Consists of only one science project: **MC004**
- PI: Cui
- Target: 1803+784
- Session info: <http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/>
- Station feedback: http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/oct19/feedback_oct19.asc
- Text files with detailed antenna statistics, scroll down to get to the cumulative statistics for the whole experiment:
[c192a_ALL.antrep](#)
[c192a_PV_ALL.antrep](#)
- Two correlations were done, the main with P3 = Pico Veleta DBBC3 (16 x 32 MHz per pol) and another with PV = Pico Veleta DBBC2 (8 x 64 MHz per pol).
 All files without additional mark refer to the P3 correlation, and those marked with PV -- to the PV one.

Current Status

Correlation finished, data **released to PI** on 14.04.2020.

Fringes

Station	Code	Fringes	Plots	Comments
Ef	B	yes	<p>Fringe overview of all baselines (all of C192A) including this antenna in LL(left for each baseline) and RR (right for each baseline).</p> <p>Legend: white box - scheduled, but no data, blue - no fringe, green -- good fringe, red -- false fringe found by fourfit (detected by very large SBD).</p> <p>c192a_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</p> <p>c192aPV_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</p> <p>Examples of fourfit fringe plots can be found in (all fringe plots with baselines including the given antenna):</p> <p>No0001_Ef.pdf, No0001_PV_Ef.pdf</p> <p>Antenna statistics:</p> <p>c192a_Ef.antrep, c192a_PV_Ef.antrep</p>	<p>3 scans at 3C345, 48 fringes out of 76 baselines, mean SNR 109</p> <p>37 scans at 1803+784, 456 fringes out of 1104 baselines, mean SNR 36</p>

Station	Code	Fringes	Plots	Comments
			Same for all antennas below unless otherwise noted.	
On	X	yes	c192a_SBD_RfAnt_On_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_On_LLRR_AllSrc.pdf No0001_On.pdf , No0001_PV_On.pdf c192a_On.antrep , c192a_PV_On.antrep	<p>3 scans at 3C345, 41 fringes out of 76 baselines, mean SNR 103</p> <p>37 scans at 1803+784, 581 fringes out of 1104 baselines, mean SNR 41</p>
Ys	Y	yes	c192a_SBD_RfAnt_Ys_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Ys_LLRR_AllSrc.pdf No0001_Ys.pdf , No0001_PV_Ys.pdf c192a_Ys.antrep , c192a_PV_Ys.antrep	<p>3 scans at 3C345, 34 fringes out of 76 baselines, mean SNR 76</p> <p>37 scans at 1803+784, 507 fringes out of 1104 baselines, mean SNR 42</p>
Mh	Z	yes	c192a_SBD_RfAnt_Mh_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Mh_LLRR_AllSrc.pdf No0001_Mh.pdf , No0001_PV_Mh.pdf c192a_Mh.antrep , c192a_PV_Mh.antrep	<p>3 scans at 3C345, 28 fringes out of 76 baselines, mean SNR 42</p> <p>37 scans at 1803+784, 313 fringes out of 1104 baselines, mean SNR 18</p>
Pv	P	yes	c192aPV_SBD_RfAnt_Pv_LLRR_AllSrc.pdf No0001_PV_Pv.pdf c192a_PV_Pv.antrep	<p>Pv is Pico Veleta with DBBC2</p> <p>Due to an undetermined problem both polarization channels recorded RCP and LCP was completely lost for the whole experiment. That's why only a secondary correlation was made with this backend, primary production correlation was done with DBBC3 backend, P3.</p> <p>3 scans at 3C345, 46 fringes out of 76 baselines, mean SNR 106</p> <p>36 scans at 1803+784, 416 fringes out of 1080 baselines, mean SNR 57</p> <p>One scan (No0030) is missed in correlation because of problems reading the diskpack</p>
P3	i	yes	c192a_SBD_RfAnt_P3_LLRR_AllSrc.pdf No0001_P3.pdf c192a_P3.antrep	<p>P3 is Pico Veleta with DBBC3</p> <p>Because of problems with DBBC2 data this was used in the primary production correlation.</p> <p>3 scans at 3C345, 59 fringes out of 76 baselines, mean SNR 92</p>

Station	Code	Fringes	Plots	Comments
				33 scans at 1803+784, 545 fringes out of 984 baselines, mean SNR 48 Special processing was applied to this data, it is described in detail HERE . 4 scans were not recorded with P3.
GLT: Gl	g	yes	c192a_SBD_RfAnt_Gl_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Gl_LLRR_AllSrc.pdf No0001_Gl.pdf , No0001_PV_Gl.pdf c192a_Gl.antrep , c192a_PV_Gl.antrep	6 scans at 3C345, 81 fringes out of 136 baselines, mean SNR 31 34 scans at 1803+784, 581 fringes out of 1074 baselines, mean SNR 23
VLBA: Br	b	yes	c192a_SBD_RfAnt_Br_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Br_LLRR_AllSrc.pdf No0001_Br.pdf , No0001_PV_Br.pdf c192a_Br.antrep , c192a_PV_Br.antrep	6 scans at 3C345, 32 fringes out of 136 baselines, mean SNR 15 33 scans at 1803+784, 53 fringes out of 1046 baselines, mean SNR 13 Poorly performed. A detailed report on VLBA's poor performance in this session is given HERE .
VLBA: Fd	f	yes	c192a_SBD_RfAnt_Fd_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Fd_LLRR_AllSrc.pdf No0001_Fd.pdf , No0001_PV_Fd.pdf c192a_Fd.antrep , c192a_PV_Fd.antrep	6 scans at 3C345, 15 fringes out of 136 baselines, mean SNR 16 34 scans at 1803+784, 27 fringes out of 1074 baselines, mean SNR 10 Poorly performed. A detailed report on VLBA's poor performance in this session is given HERE .
VLBA: Kp	k	yes	c192a_SBD_RfAnt_Kp_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Kp_LLRR_AllSrc.pdf No0001_Kp.pdf , No0001_PV_Kp.pdf c192a_Kp.antrep , c192a_PV_Kp.antrep	6 scans at 3C345, 5 fringes out of 136 baselines, mean SNR 10 34 scans at 1803+784, 10 fringes out of 1074 baselines, mean SNR 17 Poorly performed. A detailed report on VLBA's poor performance in this session is given HERE .
VLBA: La	l	yes	c192a_SBD_RfAnt_La_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_La_LLRR_AllSrc.pdf No0001_La.pdf , No0001_PV_La.pdf c192a_La.antrep , c192a_PV_La.antrep	6 scans at 3C345, 29 fringes out of 136 baselines, mean SNR 16 33 scans at 1803+784, 38 fringes out of 1046 baselines, mean SNR 19 Poorly performed. A detailed report on VLBA's poor performance in this session is given HERE .
VLBA: Mk	m	yes	c192a_SBD_RfAnt_Mk_LLRR_AllSrc.pdf	5 scans at 3C345, 39 fringes out of 112 baselines, mean SNR 20

Station	Code	Fringes	Plots	Comments
			c192aPV_SBD_RfAnt_Mk_LLRR_AllSrc.pdf No0009_Mk.pdf, No0009_PV_Mk.pdf c192a_Mk.antrep, c192a_PV_Mk.antrep	<p>34 scans at 1803+784, 194 fringes out of 1074 baselines, mean SNR 12</p> <p>Relatively well performed compared to other VLBA stations. A detailed report on VLBA's poor performance in this session is given HERE.</p>
VLBA: Nl	n	yes	c192a_SBD_RfAnt_Nl_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Nl_LLRR_AllSrc.pdf No0001_Nl.pdf, No0001_PV_Nl.pdf c192a_Nl.antrep, c192a_PV_Nl.antrep	<p>6 scans at 3C345, 22 fringes out of 136 baselines, mean SNR 12</p> <p>34 scans at 1803+784, 38 fringes out of 1074 baselines, mean SNR 12</p> <p>Poorly performed. A detailed report on VLBA's poor performance in this session is given HERE.</p>
VLBA: Ov	o	yes	c192a_SBD_RfAnt_Ov_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Ov_LLRR_AllSrc.pdf No0001_Ov.pdf, No0001_PV_Ov.pdf c192a_Ov.antrep, c192a_PV_Ov.antrep	<p>6 scans at 3C345, 63 fringes out of 136 baselines, mean SNR 21</p> <p>34 scans at 1803+784, 105 fringes out of 1074 baselines, mean SNR 15</p> <p>Poorly performed, but slightly better than others except Mk. A detailed report on VLBA's poor performance in this session is given HERE.</p>
VLBA: Pt	p	yes	c192a_SBD_RfAnt_Pt_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Pt_LLRR_AllSrc.pdf No0023_Pt.pdf, No0023_PV_Pt.pdf c192a_Pt.antrep, c192a_PV_Pt.antrep	<p>6 scans at 3C345, 18 fringes out of 136 baselines, mean SNR 16</p> <p>34 scans at 1803+784, 13 fringes out of 1074 baselines, mean SNR 17</p> <p>Poorly performed. A detailed report on VLBA's poor performance in this session is given HERE.</p> <p>Problems with data in scan No0019, it should be flagged.</p>
KVN: Kt	t	yes	c192a_SBD_RfAnt_Kt_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Kt_LLRR_AllSrc.pdf No0041_Kt.pdf, No0041_PV_Kt.pdf c192a_Kt.antrep, c192a_PV_Kt.antrep	<p>KVN observed in 8 x 64 MHz mode for the first time (correlated as 16 x 32 MHz with P3). Some loss of data due to bad weather and operational mistakes, but in general performance is much better than in any previous session,</p> <p>2 scans at 3C345, 14 fringes out of 44 baselines, mean SNR 97</p> <p>35 scans at 1803+784, 443 fringes out of 1088 baselines, mean SNR 18</p>
KVN: Ku	u	yes	c192a_SBD_RfAnt_Ku_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Ku_LLRR_AllSrc.pdf No0041_Ku.pdf, No0041_PV_Ku.pdf c192a_Ku.antrep, c192a_PV_Ku.antrep	<p>KVN observed in 8 x 64 MHz mode for the first time (correlated as 16 x 32 MHz with P3). Some loss of data due to bad weather and operational mistakes, but in general performance is much better than in any previous session,</p> <p>2 scans at 3C345, 17 fringes out of 44 baselines, mean SNR 67</p> <p>34 scans at 1803+784, 323 fringes out of 1058 baselines, mean SNR 15</p>

Station	Code	Fringes	Plots	Comments
KVN: Ky	y	yes	c192a_SBD_RfAnt_Ky_LLRR_AllSrc.pdf c192aPV_SBD_RfAnt_Ky_LLRR_AllSrc.pdf No0041_Ky.pdf, No0041_PV_Ky.pdf c192a_Ky.antrep, c192a_PV_Ky.antrep	KVN observed in 8 x 64 MHz mode for the first time (correlated as 16 x 32 MHz with P3). Some loss of data due to bad weather and operational mistakes, but in general performance is much better than in any previous session, 2 scans at 3C345, 17 fringes out of 44 baselines, mean SNR 87 35 scans at 1803+784, 453 fringes out of 1088 baselines, mean SNR 20

Notes

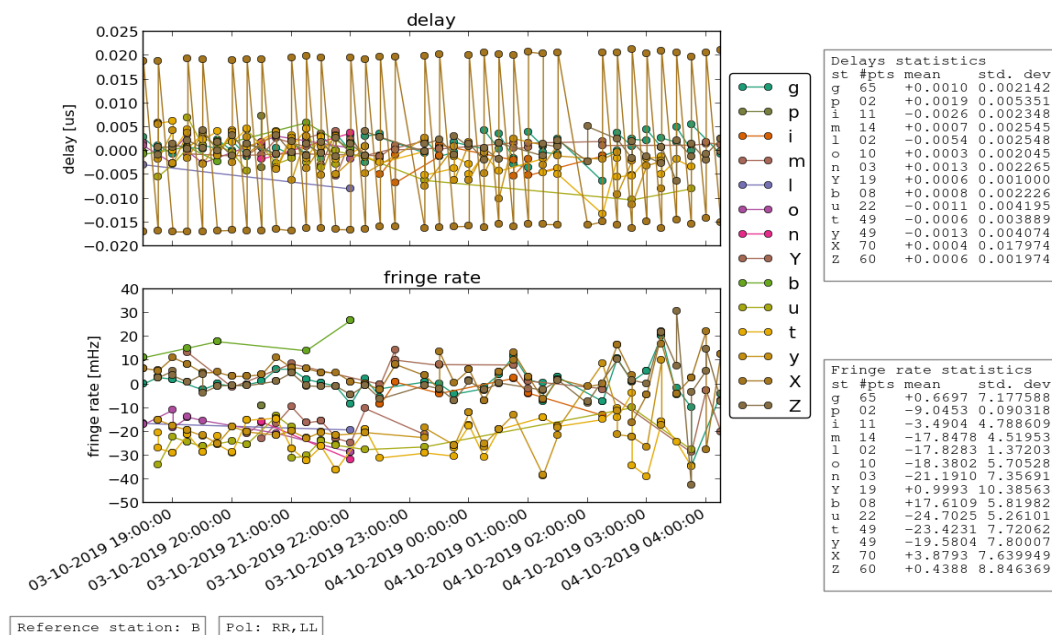
[Special processing of the P3 data](#)

[Report on the VLBA problems in this session](#)

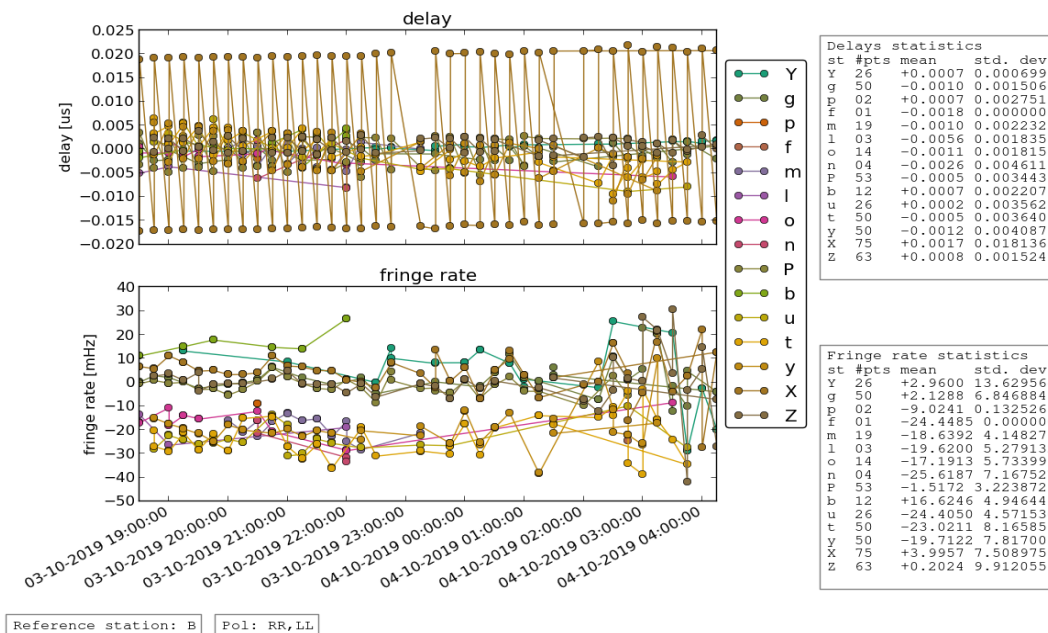
Post-Correlation checks

Residuals

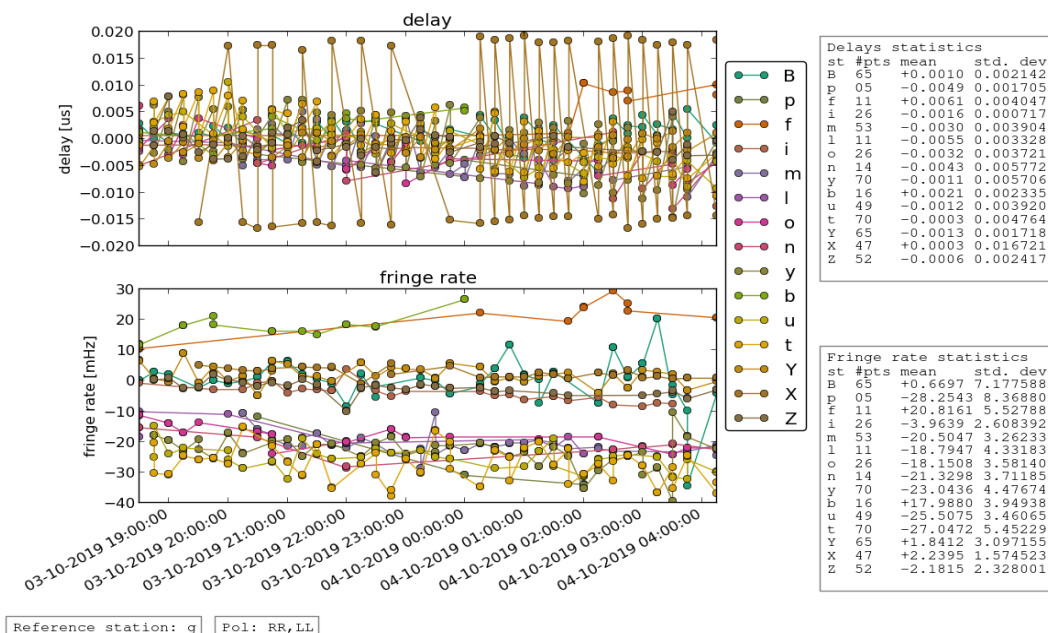
Ef (with P3 = i):



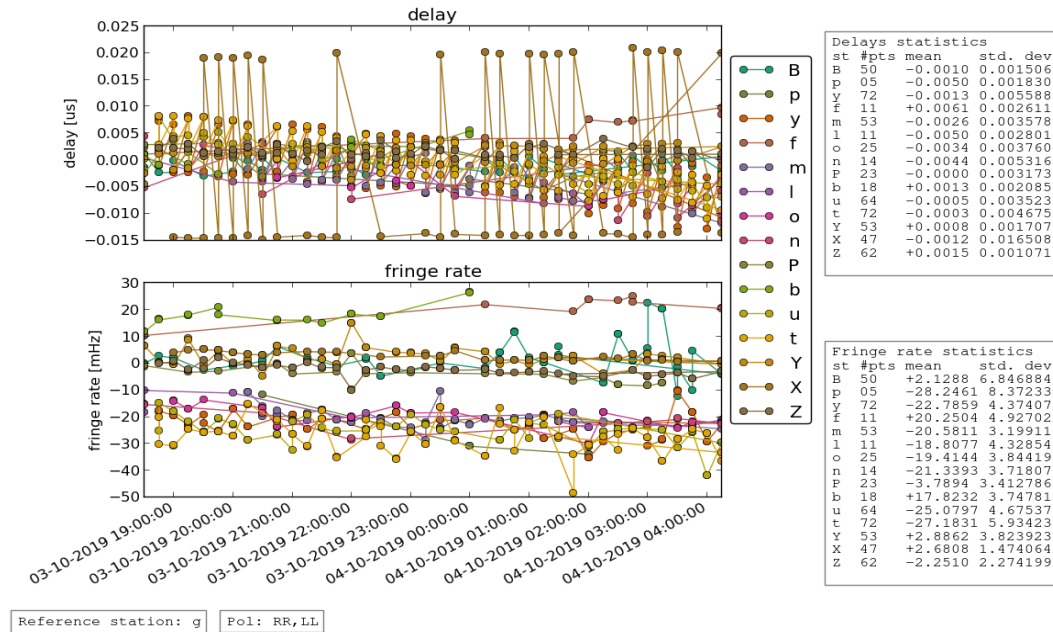
Ef (with PV = P):



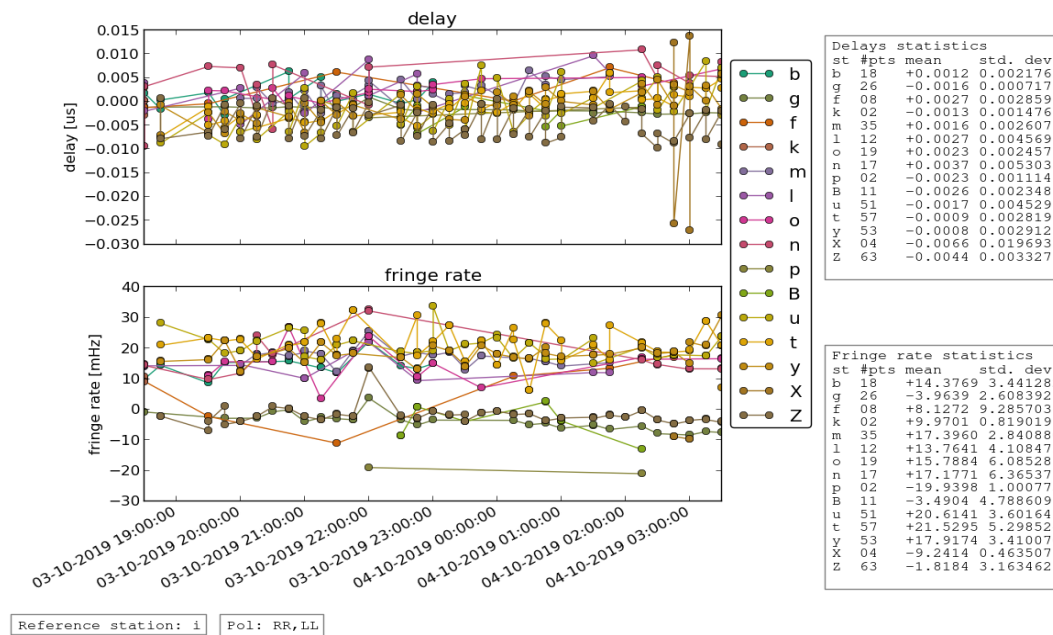
GLT (with P3 = i):



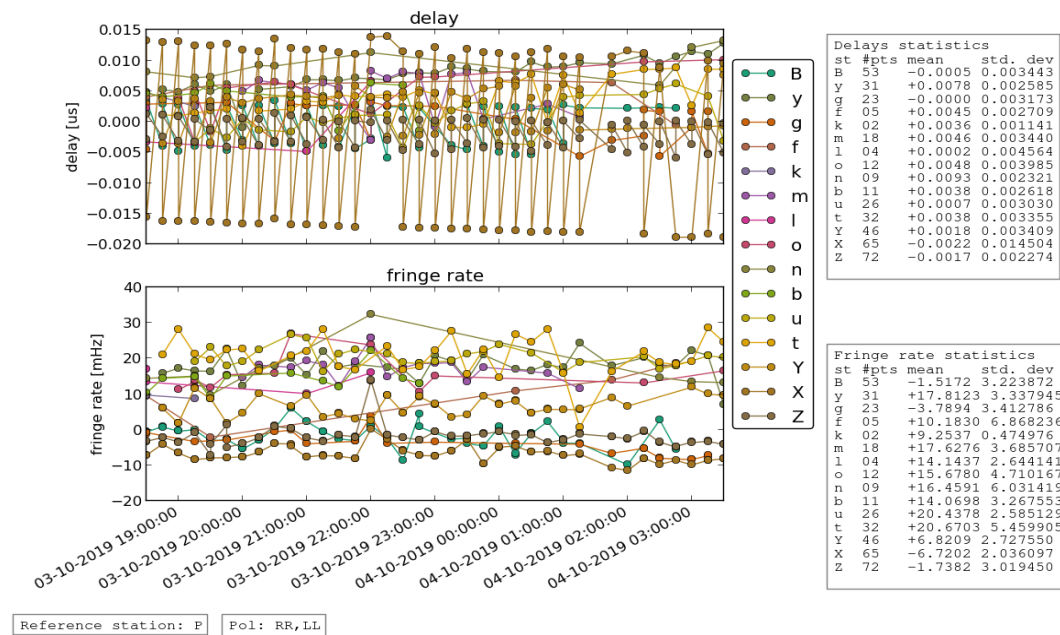
GLT (with PV = P):



Pico Veleta (with P3 = i):



Pico Veleta (with PV = P):



FITS completeness (plist)

legend:

- o -- station scheduled and fully accounted for in the fits file
- 42 (or another number) -- station scheduled, but data found only for 42% of the scheduled interval
- x -- station scheduled, but corresponding entry not found in the fits file
- . -- station not scheduled

mc004.fits (version with P3):

				EF	P3	YS	ON	MH	GL	NL	FD	PT	LA	OV	KP	BR	MK	KY	KU	KT
c192a_01	No0001	3C345	3mm_ddc	o	76	o	o	o	o	o	o	33	o	o	o	o
c192a_02	No0002	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_03	No0003	1803+784	3mm_ddc	o	x	90	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_04	No0004	1803+784	3mm_ddc	o	x	33	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_05	No0005	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_06	No0006	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_07	No0007	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_08	No0008	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	x	o	o	x	o	o	o	o
c192a_09	No0009	3C345	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	.	.	.
c192a_10	No0010	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_11	No0011	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_12	No0012	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c192a_13	No0013	1803+784	3mm_ddc	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o

