

ML006B Correlation Report

General information

- A part of [C181A](#)
- no KVN participation in this subproject
- Targets: 3C273, 3C279
- Session info: <http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/>
- Station feedback: http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/apr18/feedback_apr18.asc
- GBT calibration info (Tsys files for download) and other related information for this session can be found here:
<https://safe.nrao.edu/wiki/bin/view/GB/Observing/WbandVLBACal/C181>
- *Special processing* was applied to all data in order to correlate mismatching frequency setups of ALMA and other GMVA stations. See details [here](#).

Current Status

Correlation finished, data **released** on 12/12/2018.

A **second** data release, with a problem, spotted in the original release, corrected, was made on 31/01/2019.

A **third** data release, rerunning PolConvert with the latest (25.06.2019) ALMA QA2 release, was made on 01/10/2019.

Fringes

Station	Code	Fringes	Plots	Comments
Ef	B	yes	<p>Fringe overview of all baselines (all of C181A) including Ef in LL (left for each baseline) and RR (right for each baseline). Legend: white - scheduled, but no data, blue - no fringe, red-green - fringes of different quality. D -- fourfit error, in this case due to mixing upper and lower subbands in the KVN compatibility mode, no real problem with the data.</p> <p>Scans 209, 210, 213-214 are missing from all diagnostic plots due to a difx2mark4 error. They are present in the final correlation products.</p> <p>c181a FRINGE RfAnt Ef LLRR AllSrc.pdf</p> <p>Examples of fourfit fringe plots:</p> <p>c181a_No0199_3C273_AB_LL.pdf, c181a_No0199_3C273_AB_LR.pdf, c181a_No0199_3C273_AB_RL.pdf, c181a_No0199_3C273_AB_RR.pdf</p> <p>c181a_No0208_3C273_AB_LL.pdf, c181a_No0208_3C273_AB_LR.pdf, c181a_No0208_3C273_AB_RL.pdf, c181a_No0208_3C273_AB_RR.pdf</p> <p>Same for all antennas below unless otherwise noted.</p>	In the plots EVN is "missing" all the baselines except to ALMA or GLT. This is due to a fourfit error, the baselines are missing only from some of the diagnostic plots, but are present in the final correlation products.
On	X	yes	<p>c181a FRINGE RfAnt On LLRR AllSrc.pdf</p> <p>c181a_No0208_3C273_AX_LL.pdf, c181a_No0208_3C273_AX_LR.pdf, c181a_No0208_3C273_AX_RL.pdf, c181a_No0208_3C273_AX_RR.pdf</p>	In the plots EVN is "missing" all the baselines except to ALMA or GLT. This is due to a fourfit

Station	Code	Fringes	Plots	Comments
				error, the baselines are missing only from some of the diagnostic plots, but are present in the final correlation products.
Ys	Y	yes	<p>c181a FRINGE RfAnt Ys LLRR AllSrc.pdf</p> <p>c181a_No0208_3C273_AY_LL.pdf, c181a_No0208_3C273_AY_LR.pdf, c181a_No0208_3C273_AY_RL.pdf, c181a_No0208_3C273_AY_RR.pdf c181a_No0220_3C273_gY_LL.pdf, c181a_No0220_3C273_gY_LR.pdf, no RL or RR fringes</p>	<p>As usual, Ys observed LCP only, but it was also recorded as fake RCP, that's why there are common Ys "right" to other antenna's left fringes.</p> <p>In the plots EVN is "missing" all the baselines except to ALMA or GLT. This is due to a fourfit error, the baselines are missing only from some of the diagnostic plots, but are present in the final correlation products.</p>
Mh	Z	yes	<p>c181a FRINGE RfAnt Mh LLRR AllSrc.pdf</p> <p>c181a_No0208_3C273_AZ_LL.pdf, c181a_No0208_3C273_AZ_LR.pdf, c181a_No0208_3C273_AZ_RL.pdf, c181a_No0208_3C273_AZ_RR.pdf</p>	<p>In the plots EVN is "missing" all the baselines except to ALMA or GLT. This is due to a fourfit error, the baselines are missing only from some of the diagnostic plots,</p>

Station	Code	Fringes	Plots	Comments
				but are present in the final correlation products.
Pv	P	yes	c181a FRINGE RfAnt Pv LLRR AllSrc.pdf c181a No0208 3C273 AP LL.pdf , c181a No0208 3C273 AP LR.pdf , c181a No0208 3C273 AP RL.pdf , c181a No0208 3C273 AP RR.pdf c181a No0220 3C273 AP LL.pdf , c181a No0220 3C273 AP LR.pdf , c181a No0220 3C273 AP RL.pdf , c181a No0220 3C273 AP RR.pdf c181a No0220 3C273 gP LL.pdf , c181a No0220 3C273 gP LR.pdf , c181a No0220 3C273 gP RL.pdf , c181a No0220 3C273 gP RR.pdf	In the plots EVN is "missing" all the baselines except to ALMA or GLT. This is due to a fourfit error, the baselines are missing only from some of the diagnostic plots, but are present in the final correlation products.
VLBA: Br	b	yes	c181a FRINGE RfAnt Br LLRR AllSrc.pdf preliminary: c181a No0225 3C273 bg LL.pdf , c181a No0225 3C273 bg LR.pdf , c181a No0225 3C273 bg RL.pdf , c181a No0225 3C273 bg RR.pdf final: c181a No0215 3C273 Ab LL.pdf , c181a No0215 3C273 Ab LR.pdf , c181a No0215 3C273 Ab RL.pdf , c181a No0215 3C273 Ab RR.pdf c181a No0220 3C273 bG LL.pdf , c181a No0220 3C273 bG LR.pdf , c181a No0220 3C273 bG RL.pdf , c181a No0220 3C273 bG RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Fd	f	yes	c181a FRINGE RfAnt Fd LLRR AllSrc.pdf c181a No0208 3C273 Af LL.pdf , c181a No0208 3C273 Af LR.pdf , c181a No0208 3C273 Af RL.pdf , c181a No0208 3C273 Af RR.pdf c181a No0220 3C273 fG LL.pdf , c181a No0220 3C273 fG LR.pdf , c181a No0220 3C273 fG RL.pdf , c181a No0220 3C273 fG RR.pdf c181a No0230 3C273 fp LL.pdf , c181a No0230 3C273 fp LR.pdf , c181a No0230 3C273 fp RL.pdf , c181a No0230 3C273 fp RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Kp	k	yes	c181a FRINGE RfAnt Kp LLRR AllSrc.pdf	all VLBA stations were starting

Station	Code	Fringes	Plots	Comments
			c181a_No0230_3C273_kp_LL.pdf , c181a_No0230_3C273_kp_LR.pdf , c181a_No0230_3C273_kp_RL.pdf , c181a_No0230_3C273_kp_RR.pdf	recording late, software glitch: low data weight, possible other problems
VLBA: La	l	yes	c181a_FRINGE_RfAnt_La_LLRR_AllSrc.pdf c181a_No0230_3C273_lp_LL.pdf , c181a_No0230_3C273_lp_LR.pdf , c181a_No0230_3C273_lp_RL.pdf , c181a_No0230_3C273_lp_RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Mk	m	yes	c181a_FRINGE_RfAnt_Mk_LLRR_AllSrc.pdf c181a_No0230_3C273_mp_LL.pdf , c181a_No0230_3C273_mp_RR.pdf , no LR or RL fringes c181a_No0220_3C273_Gm_LL.pdf , c181a_No0220_3C273_Gm_RR.pdf , no LR or RL fringes	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Nl	n	yes	c181a_FRINGE_RfAnt_Nl_LLRR_AllSrc.pdf c181a_No0208_3C273_An_LL.pdf , c181a_No0208_3C273_An_LR.pdf , c181a_No0208_3C273_An_RL.pdf , c181a_No0208_3C273_An_RR.pdf c181a_No0220_3C273_gn_LL.pdf , c181a_No0220_3C273_gn_LR.pdf , c181a_No0220_3C273_gn_RL.pdf , c181a_No0220_3C273_gn_RR.pdf c181a_No0220_3C273_Gn_LL.pdf , c181a_No0220_3C273_Gn_LR.pdf , c181a_No0220_3C273_Gn_RL.pdf , c181a_No0220_3C273_Gn_RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Ov	o	yes	c181a_FRINGE_RfAnt_Ov_LLRR_AllSrc.pdf c181a_No0208_3C273_Ao_LL.pdf , c181a_No0208_3C273_Ao_LR.pdf , c181a_No0208_3C273_Ao_RL.pdf , c181a_No0208_3C273_Ao_RR.pdf c181a_No0220_3C273_go_LL.pdf , c181a_No0220_3C273_go_LR.pdf , c181a_No0220_3C273_go_RL.pdf , c181a_No0220_3C273_go_RR.pdf c181a_No0220_3C273_Go_LL.pdf , c181a_No0220_3C273_Go_LR.pdf , c181a_No0220_3C273_Go_RL.pdf , c181a_No0220_3C273_Go_RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Pt	p	yes	c181a_FRINGE_RfAnt_Pt_LLRR_AllSrc.pdf preliminary	all VLBA stations were starting recording late,

Station	Code	Fringes	Plots	Comments
			<p>c181a No0225 3C273 gp LL.pdf, c181a No0225 3C273 gp LR.pdf, c181a No0225 3C273 gp RL.pdf, c181a No0225 3C273 gp RR.pdf</p> <p>final:</p> <p>c181a No0208 3C273 Ap LL.pdf, c181a No0208 3C273 Ap LR.pdf, c181a No0208 3C273 Ap RL.pdf, c181a No0208 3C273 Ap RR.pdf</p> <p>c181a No0230 3C273 mp LL.pdf, c181a No0230 3C273 mp RR.pdf, no LR or RL fringes</p> <p>c181a No0230 3C273 kp LL.pdf, c181a No0230 3C273 kp LR.pdf, c181a No0230 3C273 kp RL.pdf, c181a No0230 3C273 kp RR.pdf</p> <p>c181a No0230 3C273 lp LL.pdf, c181a No0230 3C273 lp LR.pdf, c181a No0230 3C273 lp RL.pdf, c181a No0230 3C273 lp RR.pdf</p> <p>c181a No0230 3C273 fp LL.pdf, c181a No0230 3C273 fp LR.pdf, c181a No0230 3C273 fp RL.pdf, c181a No0230 3C273 fp RR.pdf</p>	<p>software glitch: low data weight, possible other problems</p>
GBT: Gb	G	yes	<p>c181a FRINGE RfAnt Gb LLRR AllSrc.pdf</p> <p>preliminary:</p> <p>c181a No0225 3C273 Gg LL.pdf, c181a No0225 3C273 Gg LR.pdf, c181a No0225 3C273 Gg RL.pdf, c181a No0225 3C273 Gg RR.pdf</p> <p>final:</p> <p>c181a No0215 3C273 AG LL.pdf, c181a No0215 3C273 AG LR.pdf, c181a No0215 3C273 AG RL.pdf, c181a No0215 3C273 AG RR.pdf c181a No0220 3C273 AG LL.pdf, c181a No0220 3C273 AG LR.pdf, c181a No0220 3C273 AG RL.pdf, c181a No0220 3C273 AG RR.pdf</p> <p>c181a No0220 3C273 Gm LL.pdf, c181a No0220 3C273 Gm RR.pdf, no LR or RL fringes</p> <p>c181a No0220 3C273 Gg LL.pdf, c181a No0220 3C273 Gg LR.pdf, c181a No0220 3C273 Gg RL.pdf, c181a No0220 3C273 Gg RR.pdf</p> <p>c181a No0220 3C273 bG LL.pdf, c181a No0220 3C273 bG LR.pdf, c181a No0220 3C273 bG RL.pdf, c181a No0220 3C273 bG RR.pdf</p> <p>c181a No0220 3C273 Gn LL.pdf, c181a No0220 3C273 Gn LR.pdf, c181a No0220 3C273 Gn RL.pdf, c181a No0220 3C273 Gn RR.pdf</p> <p>c181a No0220 3C273 Go LL.pdf, c181a No0220 3C273 Go LR.pdf, c181a No0220 3C273 Go RL.pdf, c181a No0220 3C273 Go RR.pdf</p>	

Station	Code	Fringes	Plots	Comments
			c181a No0220 3C273 fG LL.pdf , c181a No0220 3C273 fG LR.pdf , c181a No0220 3C273 fG RL.pdf , c181a No0220 3C273 fG RR.pdf	
GLT: Gl	g	yes	c181a FRINGE RfAnt Gl LLRR AllSrc.pdf preliminary: c181a No0225 3C273 bg LL.pdf , c181a No0225 3C273 bg LR.pdf , c181a No0225 3C273 bg RL.pdf , c181a No0225 3C273 bg RR.pdf c181a No0225 3C273 Gg LL.pdf , c181a No0225 3C273 Gg LR.pdf , c181a No0225 3C273 Gg RL.pdf , c181a No0225 3C273 Gg RR.pdf c181a No0225 3C273 gp LL.pdf , c181a No0225 3C273 gp LR.pdf , c181a No0225 3C273 gp RL.pdf , c181a No0225 3C273 gp RR.pdf final: c181a No0215 3C273 Ag LL.pdf , c181a No0215 3C273 Ag LR.pdf , c181a No0215 3C273 Ag RL.pdf , c181a No0215 3C273 Ag RR.pdf c181a No0220 3C273 Ag LL.pdf , c181a No0220 3C273 Ag LR.pdf , c181a No0220 3C273 Ag RL.pdf , c181a No0220 3C273 Ag RR.pdf c181a No0220 3C273 gY LL.pdf , c181a No0220 3C273 gY LR.pdf , no RL or RR fringes c181a No0220 3C273 gP LL.pdf , c181a No0220 3C273 gP LR.pdf , c181a No0220 3C273 gP RL.pdf , c181a No0220 3C273 gP RR.pdf c181a No0220 3C273 Gg LL.pdf , c181a No0220 3C273 Gg LR.pdf , c181a No0220 3C273 Gg RL.pdf , c181a No0220 3C273 Gg RR.pdf c181a No0220 3C273 gn LL.pdf , c181a No0220 3C273 gn LR.pdf , c181a No0220 3C273 gn RL.pdf , c181a No0220 3C273 gn RR.pdf c181a No0220 3C273 go LL.pdf , c181a No0220 3C273 go LR.pdf , c181a No0220 3C273 go RL.pdf , c181a No0220 3C273 go RR.pdf	Data analysis has shown that GLT recorded in unknown polarization instead of circular (most probably unknown elliptic). At this moment IT SHOULD NOT BE USED FOR ANY POLARIMETRY and in general dealt with very carefully.
ALMA: Aa	A	yes	c181a FRINGE RfAnt Aa LLRR AllSrc.pdf c181a No0199 3C273 AB LL.pdf , c181a No0199 3C273 AB LR.pdf , c181a No0199 3C273 AB RL.pdf , c181a No0199 3C273 AB RR.pdf c181a No0208 3C273 AB LL.pdf , c181a No0208 3C273 AB LR.pdf , c181a No0208 3C273 AB RL.pdf , c181a No0208 3C273 AB RR.pdf	Observed in linear polarization, converted to circular polarization in post-correlation using PolConvert. For technical reasons the atmospheric

Station	Code	Fringes	Plots	Comments
			<p> c181a No0208 3C273 Af LL.pdf, c181a No0208 3C273 Af LR.pdf, c181a No0208 3C273 Af RL.pdf, c181a No0208 3C273 Af RR.pdf c181a No0208 3C273 An LL.pdf, c181a No0208 3C273 An LR.pdf, c181a No0208 3C273 An RL.pdf, c181a No0208 3C273 An RR.pdf c181a No0208 3C273 Ao LL.pdf, c181a No0208 3C273 Ao LR.pdf, c181a No0208 3C273 Ao RL.pdf, c181a No0208 3C273 Ao RR.pdf c181a No0208 3C273 Ap LL.pdf, c181a No0208 3C273 Ap LR.pdf, c181a No0208 3C273 Ap RL.pdf, c181a No0208 3C273 Ap RR.pdf c181a No0208 3C273 AP LL.pdf, c181a No0208 3C273 AP LR.pdf, c181a No0208 3C273 AP RL.pdf, c181a No0208 3C273 AP RR.pdf c181a No0208 3C273 AX LL.pdf, c181a No0208 3C273 AX LR.pdf, c181a No0208 3C273 AX RL.pdf, c181a No0208 3C273 AX RR.pdf c181a No0208 3C273 AY LL.pdf, c181a No0208 3C273 AY LR.pdf, c181a No0208 3C273 AY RL.pdf, c181a No0208 3C273 AY RR.pdf c181a No0208 3C273 AZ LL.pdf, c181a No0208 3C273 AZ LR.pdf, c181a No0208 3C273 AZ RL.pdf, c181a No0208 3C273 AZ RR.pdf c181a No0215 3C273 Ab LL.pdf, c181a No0215 3C273 Ab LR.pdf, c181a No0215 3C273 Ab RL.pdf, c181a No0215 3C273 Ab RR.pdf c181a No0215 3C273 Ag LL.pdf, c181a No0215 3C273 Ag LR.pdf, c181a No0215 3C273 Ag RL.pdf, c181a No0215 3C273 Ag RR.pdf c181a No0220 3C273 Ag LL.pdf, c181a No0220 3C273 Ag LR.pdf, c181a No0220 3C273 Ag RL.pdf, c181a No0220 3C273 Ag RR.pdf c181a No0215 3C273 AG LL.pdf, c181a No0215 3C273 AG LR.pdf, c181a No0215 3C273 AG RL.pdf, c181a No0215 3C273 AG RR.pdf c181a No0220 3C273 AG LL.pdf, c181a No0220 3C273 AG LR.pdf, c181a No0220 3C273 AG RL.pdf, c181a No0220 3C273 AG RR.pdf c181a No0220 3C273 AP LL.pdf, c181a No0220 3C273 AP LR.pdf, c181a No0220 3C273 AP RL.pdf, c181a No0220 3C273 AP RR.pdf </p> <p>-----</p>	<p>correction was applied twice -- both in original ALMA data and during the correlation. Although a special procedure was developed to compensate for this, we found that its application leads to other difficulties, in particular to abnormally high fringe rate jumps, so in the final production run the double atmospheric correction was left as is.</p>

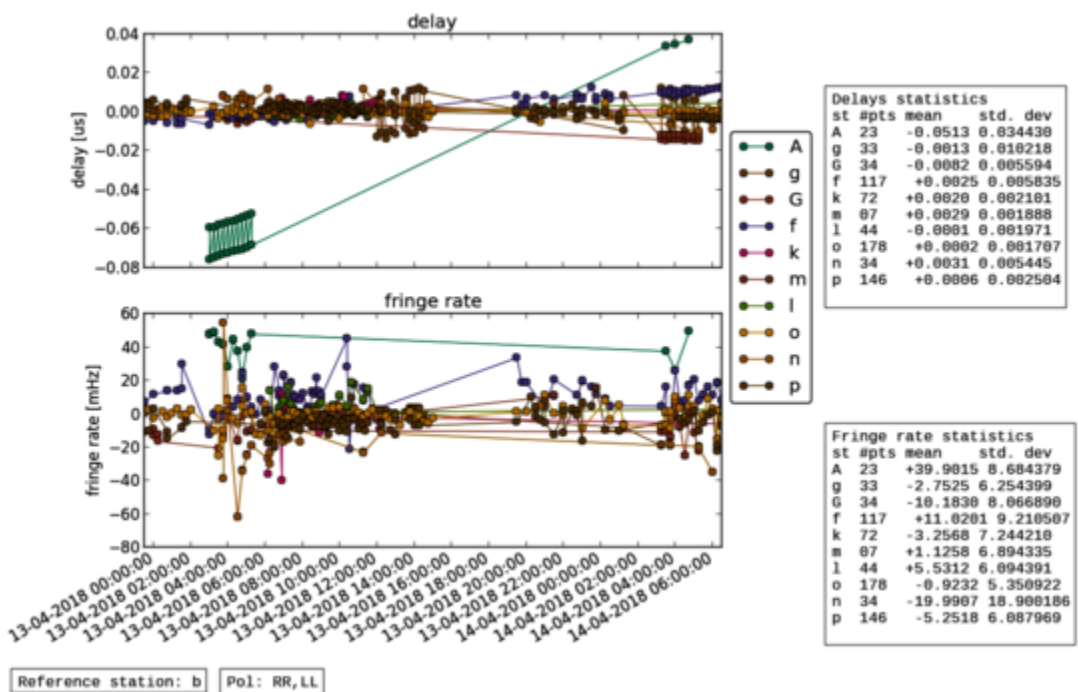
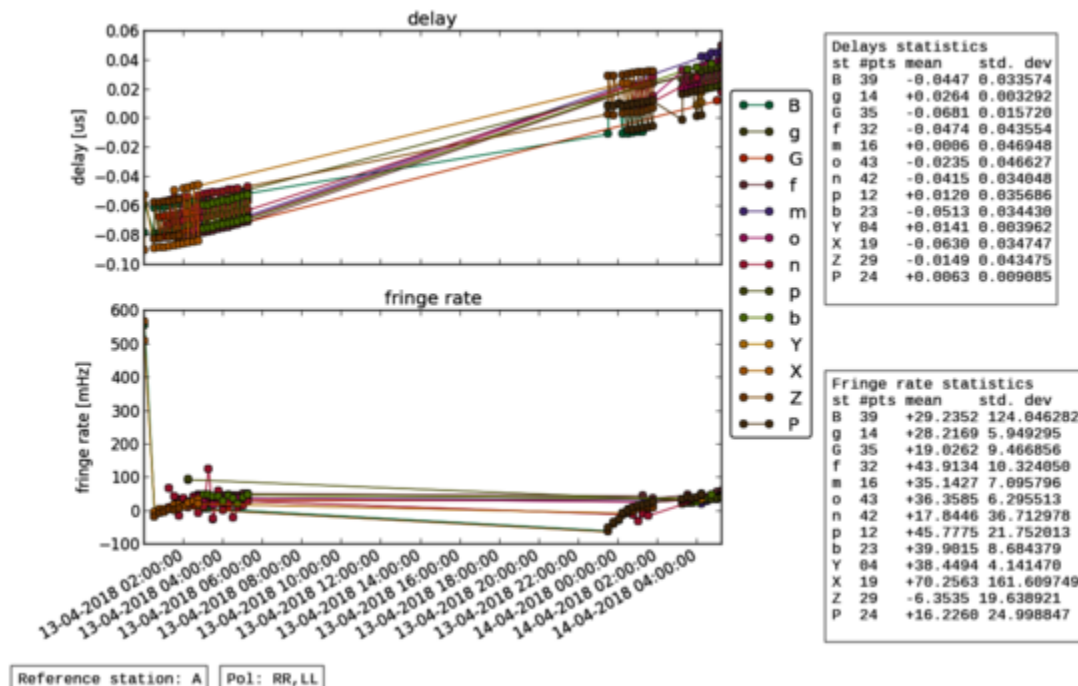
Notes

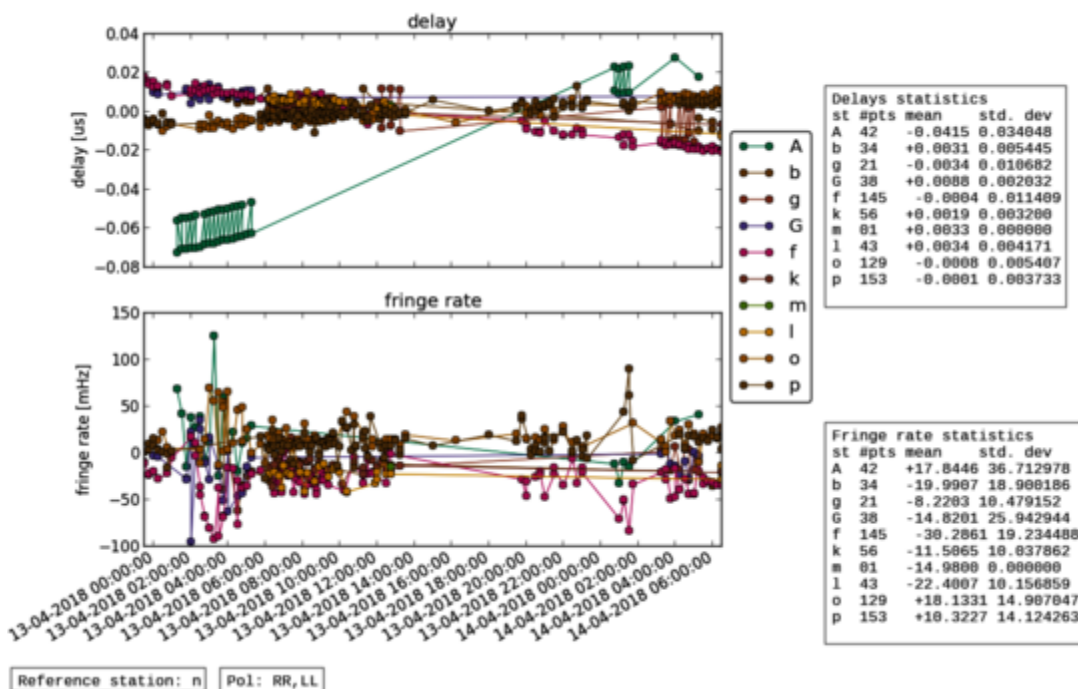
There were problems with some diagnostic plots of this experiment due to yet poorly understood errors of fourfit and other HOPS components. But this does not change the quality of the final correlation products. *(These issues were **fixed** in the second data release of 31/01/2019)*

GLT participated in this session for the first time as a test, and serious problems were detected when analysing its data. Be very carerful when using them.

Post-Correlation checks

Residuals





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

ml006b.fits:

			GB	EF	ON	YS	PV	MH	AA	AA	GL	NL	FD	PT	LA	OV	KP	BR	MK
c181a_146D2D	No0159	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_148D2D	No0161	3C279 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_150D2D	No0163	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_152D2D	No0165	3C279 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_154D2D	No0167	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_156D2D	No0169	3C279 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_158D2D	No0171	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_160D2D	No0173	3C279 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_162D2D	No0175	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_164D2D	No0177	3C279 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_166D2D	No0179	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_168D2D	No0181	3C279 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_170D2D	No0183	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_172D2D	No0185	3C273 3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c181a_173D2D	No0187	3C273 3mm_RDBE	o	o	o	o	o	o	o	o	.	.	.	.	.	.	.	.	.
c181a_175D2D	No0189	3C273 3mm_RDBE	o	o	o	o	o	o	o	o	.	.	.	.	.	.	.	.	.

c181a_177D2D	No0192	3C279	3mm_RDBE	o	o	o	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.
c181a_179D2D	No0194	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	77	.	.	.	.	.	.	.	.
c181a_181D2D	No0197	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	80	.	.	.	.	.	.	.	.
c181a_183D2D	No0199	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	77	.	.	.	.	.	.	.	.
c181a_185D2D	No0202	3C273	3mm_RDBE	95	o	o	o	o	o	o	o	.	85	85	.	.	.	.	.	.	.
c181a_187D2D	No0204	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	77	77	77	77	.	.	.	.	.
c181a_189D2D	No0207	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	80	80	80	80	.	80	.	.	.
c181a_190D2D	No0208	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	80	80	80	80	80	80	.	.	.
c181a_191D2D	No0209	3C273	3mm_RDBE	o	o	o	o	o	o	o	o	.	80	80	80	80	80	80	80	.	.
c181a_192D2D	No0210	3C273	3mm_RDBE	o	o	o	o	o	.	o	o	o	83	83	83	83	77	83	77	.	.
c181a_193D2D	No0212	3C273	3mm_RDBE	o	o	o	o	o	.	o	o	o	71	71	04	71	80	71	80	.	.
c181a_194D2D	No0213	3C273	3mm_RDBE	o	o	o	o	o	.	o	o	o	71	71	x	71	80	71	80	.	.
c181a_195D2D	No0214	3C273	3mm_RDBE	o	o	o	o	o	.	o	o	o	71	71	47	71	85	71	85	.	.
c181a_196D2D	No0215	3C273	3mm_RDBE	o	.	.	o	o	.	o	o	o	66	66	44	66	83	66	83	.	.
c181a_197D2D	No0217	3C273	3mm_RDBE	o	.	.	o	o	.	o	o	o	71	71	42	71	71	71	71	.	.
c181a_198D2D	No0218	3C273	3mm_RDBE	o	.	.	o	o	.	o	o	o	71	71	52	71	71	71	71	.	.
c181a_199D2D	No0219	3C273	3mm_RDBE	o	.	.	o	o	.	o	o	o	71	71	09	71	85	71	85	23	.
c181a_200D2D	No0220	3C273	3mm_RDBE	o	.	.	o	o	.	o	o	o	66	66	66	66	83	66	83	83	.
c181a_201D2D	No0222	3C273	3mm_RDBE	o	.	.	.	.	.	o	o	o	71	71	71	71	90	71	90	90	.
c181a_202D2D	No0223	3C273	3mm_RDBE	o	.	.	.	.	.	o	o	o	71	71	71	71	85	71	85	85	.
c181a_203D2D	No0224	3C273	3mm_RDBE	o	.	.	.	.	.	o	o	o	71	71	71	71	85	71	85	85	.
c181a_204D2D	No0225	3C273	3mm_RDBE	o	.	.	.	.	.	o	o	o	71	71	71	71	71	71	71	71	.
c181a_205D2D	No0226	3C273	3mm_RDBE	.	.	.	.	.	.	.	.	.	80	80	80	80	80	80	80	80	.
c181a_206D2D	No0227	3C273	3mm_RDBE	.	.	.	.	.	.	.	.	.	80	80	80	80	80	80	80	80	.
c181a_207D2D	No0228	3C273	3mm_RDBE	.	.	.	.	.	.	.	.	.	80	80	80	80	80	80	80	80	.
c181a_208D2D	No0229	3C273	3mm_RDBE	.	.	.	.	.	.	.	.	.	80	80	80	80	80	80	80	80	.
c181a_209D2D	No0230	3C273	3mm_RDBE	.	.	.	.	.	.	.	.	.	60	60	60	60	60	60	60	60	.