

ML006A Correlation Report

General information

- A part of [C181A](#)
- no GLT or KVN participation in this subproject
- Target: 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>c181a_FRINGE_RfAnt_Ef_LLRR_AllSrc.pdf</p> <p>Examples of fourfit fringe plots:</p> <p>c181a_No0035_3C279_AB_LL.pdf, c181a_No0035_3C279_AB_LR.pdf, c181a_No0035_3C279_AB_RL.pdf, c181a_No0035_3C279_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. 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_No0032_3C279_AX_LL.pdf, c181a_No0032_3C279_AX_LR.pdf, c181a_No0032_3C279_AX_RL.pdf, c181a_No0032_3C279_AX_RR.pdf</p>	In the plots EVN is "missing" all the baselines except to

Station	Code	Fringes	Plots	Comments
				ALMA. 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.
Ys	Y	n/a	c181a FRINGE RfAnt Ys LLRR AllSrc.pdf	no observation in this subproject due to bad weather
Mh	Z	yes	c181a FRINGE RfAnt Mh LLRR AllSrc.pdf c181a No0024 3C279 AZ LL.pdf , c181a No0024 3C279 AZ LR.pdf , c181a No0024 3C279 AZ RL.pdf , c181a No0024 3C279 AZ RR.pdf	In the plots EVN is "missing" all the baselines except to ALMA. 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.
Pv	P	n/a	c181a FRINGE RfAnt Pv LLRR AllSrc.pdf	no observation in this subproject due to snow
VLBA: Br	b	yes	c181a FRINGE RfAnt Br LLRR AllSrc.pdf	all VLBA stations were

Station	Code	Fringes	Plots	Comments
			<p>preliminary:</p> <p>c181a_No0039_3C279_bG_LL.pdf, c181a_No0039_3C279_bG_LR.pdf, no RLfringe, c181a_No0039_3C279_bG_RR.pdf</p> <p>final:</p> <p>c181a_No0035_3C279_Ab_LL.pdf, c181a_No0035_3C279_Ab_LR.pdf, c181a_No0035_3C279_Ab_RL.pdf, c181a_No0035_3C279_Ab_RR.pdf</p> <p>c181a_No0052_3C279_bf_LL.pdf, c181a_No0052_3C279_bf_LR.pdf, c181a_No0052_3C279_bf_RL.pdf, c181a_No0052_3C279_bf_RR.pdf</p> <p>c181a_No0052_3C279_bG_LL.pdf, c181a_No0052_3C279_bG_LR.pdf, c181a_No0052_3C279_bG_RL.pdf, c181a_No0052_3C279_bG_RR.pdf</p> <p>c181a_No0052_3C279_bn_LL.pdf, c181a_No0052_3C279_bn_LR.pdf, c181a_No0052_3C279_bn_RL.pdf, c181a_No0052_3C279_bn_RR.pdf</p> <p>c181a_No0052_3C279_bo_LL.pdf, no LR fringe, c181a_No0052_3C279_bo_RL.pdf, c181a_No0052_3C279_bo_RR.pdf</p>	<p>starting recording late, software glitch: low data weight, possible other problems</p>
VLBA: Fd	f	yes	<p>c181a_FRINGE_RfAnt_Fd_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0039_3C279_fG_LL.pdf, c181a_No0039_3C279_fG_LR.pdf, c181a_No0039_3C279_fG_RL.pdf, c181a_No0039_3C279_fG_RR.pdf</p> <p>final:</p> <p>c181a_No0035_3C279_Af_LL.pdf, c181a_No0035_3C279_Af_LR.pdf, c181a_No0035_3C279_Af_RL.pdf, c181a_No0035_3C279_Af_RR.pdf</p> <p>c181a_No0047_3C279_fm_LL.pdf, c181a_No0047_3C279_fm_RR.pdf, no LR or RL fringes</p> <p>c181a_No0052_3C279_bf_LL.pdf, c181a_No0052_3C279_bf_LR.pdf, c181a_No0052_3C279_bf_RL.pdf, c181a_No0052_3C279_bf_RR.pdf</p>	<p>all VLBA stations were starting recording late, software glitch: low data weight, possible other problems</p>
VLBA: Kp	k	no	<p>c181a_FRINGE_RfAnt_Kp_LLRR_AllSrc.pdf</p> <p>-----</p>	<p>all VLBA stations were starting recording late, software glitch: low data weight,</p>

Station	Code	Fringes	Plots	Comments
				possible other problems no fringes detected
VLBA: La	l	no	c181a FRINGE RfAnt La LLRR AllSrc.pdf <hr/>	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems no fringes detected
VLBA: Mk	m	yes	c181a FRINGE RfAnt Mk LLRR AllSrc.pdf c181a No0047 3C279 Am LL.pdf , c181a No0047 3C279 Am LR.pdf , c181a No0047 3C279 Am RL.pdf , c181a No0047 3C279 Am RR.pdf c181a No0047 3C279 fm LL.pdf , c181a No0047 3C279 fm 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 preliminary: c181a No0039 3C279 Gn LL.pdf , c181a No0039 3C279 Gn RR.pdf , no LR or RL fringe final: c181a No0035 3C279 An LL.pdf , c181a No0035 3C279 An LR.pdf , c181a No0035 3C279 An RL.pdf , c181a No0035 3C279 An RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems

Station	Code	Fringes	Plots	Comments
			c181a_No0052_3C279_bn_LL.pdf , c181a_No0052_3C279_bn_LR.pdf , c181a_No0052_3C279_bn_RL.pdf , c181a_No0052_3C279_bn_RR.pdf	
VLBA: Ov	o	yes	c181a_FRINGE_RfAnt_Ov_LLRR_AllSrc.pdf preliminary: c181a_No0039_3C279_Go_LL.pdf , no LR fringe, c181a_No0039_3C279_Go_RL.pdf , c181a_No0039_3C279_Go_RR.pdf final: c181a_No0035_3C279_Ao_LL.pdf , c181a_No0035_3C279_Ao_LR.pdf , c181a_No0035_3C279_Ao_RL.pdf , c181a_No0035_3C279_Ao_RR.pdf c181a_No0052_3C279_bo_LL.pdf , no LR fringe, c181a_No0052_3C279_bo_RL.pdf , c181a_No0052_3C279_bo_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 c181a_No0029_3C279_Ap_LL.pdf , c181a_No0029_3C279_Ap_LR.pdf , c181a_No0029_3C279_Ap_RL.pdf , c181a_No0029_3C279_Ap_RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems Taken out for several scans because of USNO observing.
GBT: Gb	G	yes	c181a_FRINGE_RfAnt_Gb_LLRR_AllSrc.pdf preliminary: c181a_No0039_3C279_bG_LL.pdf , c181a_No0039_3C279_bG_LR.pdf , no RL fringe, c181a_No0039_3C279_bG_RR.pdf	

Station	Code	Fringes	Plots	Comments
			<p>c181a No0039 3C279 fG LL.pdf, c181a No0039 3C279 fG LR.pdf, c181a No0039 3C279 fG RL.pdf, c181a No0039 3C279 fG RR.pdf.</p> <p>c181a No0039 3C279 Gn LL.pdf, c181a No0039 3C279 Gn RR.pdf, no LR or RL fringe</p> <p>c181a No0039 3C279 Go LL.pdf, no LR fringe, c181a No0039 3C279 Go RL.pdf, c181a No0039 3C279 Go RR.pdf.</p> <p>final:</p> <p>c181a No0035 3C279 AG LL.pdf, c181a No0035 3C279 AG LR.pdf, c181a No0035 3C279 AG RL.pdf, c181a No0035 3C279 AG RR.pdf</p> <p>c181a No0052 3C279 bG LL.pdf, c181a No0052 3C279 bG LR.pdf, c181a No0052 3C279 bG RL.pdf, c181a No0052 3C279 bG RR.pdf</p>	
ALMA: Aa	A	yes	<p>c181a FRINGE RfAnt Aa LLRR AllSrc.pdf</p> <p>c181a No0024 3C279 AZ LL.pdf, c181a No0024 3C279 AZ LR.pdf, c181a No0024 3C279 AZ RL.pdf, c181a No0024 3C279 AZ RR.pdf</p> <p>c181a No0029 3C279 Ap LL.pdf, c181a No0029 3C279 Ap LR.pdf, c181a No0029 3C279 Ap RL.pdf, c181a No0029 3C279 Ap RR.pdf</p> <p>c181a No0032 3C279 AX LL.pdf, c181a No0032 3C279 AX LR.pdf, c181a No0032 3C279 AX RL.pdf, c181a No0032 3C279 AX RR.pdf</p> <p>c181a No0035 3C279 AB LL.pdf, c181a No0035 3C279 AB LR.pdf, c181a No0035 3C279 AB RL.pdf, c181a No0035 3C279 AB RR.pdf</p> <p>c181a No0035 3C279 Ab LL.pdf, c181a No0035 3C279 Ab LR.pdf, c181a No0035 3C279 Ab RL.pdf, c181a No0035 3C279 Ab RR.pdf</p> <p>c181a No0035 3C279 Af LL.pdf, c181a No0035 3C279 Af LR.pdf, c181a No0035 3C279 Af RL.pdf, c181a No0035 3C279 Af RR.pdf</p> <p>c181a No0035 3C279 AG LL.pdf, c181a No0035 3C279 AG LR.pdf, c181a No0035 3C279 AG RL.pdf, c181a No0035 3C279 AG RR.pdf</p> <p>c181a No0035 3C279 An LL.pdf, c181a No0035 3C279 An LR.pdf, c181a No0035 3C279 An RL.pdf, c181a No0035 3C279 An RR.pdf</p> <p>c181a No0035 3C279 Ao LL.pdf, c181a No0035 3C279 Ao LR.pdf, c181a No0035 3C279 Ao RL.pdf, c181a No0035 3C279 Ao RR.pdf</p> <p>c181a No0047 3C279 Am LL.pdf, c181a No0047 3C279 Am LR.pdf, c181a No0047 3C279 Am RL.pdf, c181a No0047 3C279 Am RR.pdf</p>	<p>Observed in linear polarization, converted to circular polarization in post-correlation using PolConvert. For technical reasons the atmospheric 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</p>

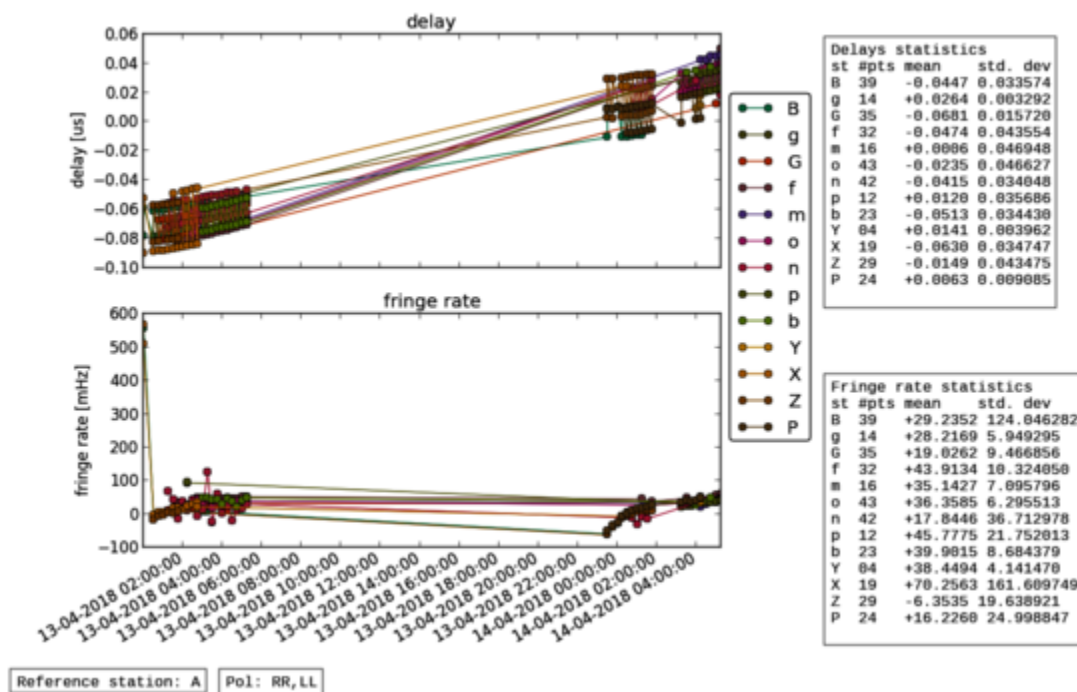
Station	Code	Fringes	Plots	Comments
				leads to other difficulties, in particular to abnormally high fringe rate jumps, so in the final production run the double atmospheric correction was left as is.

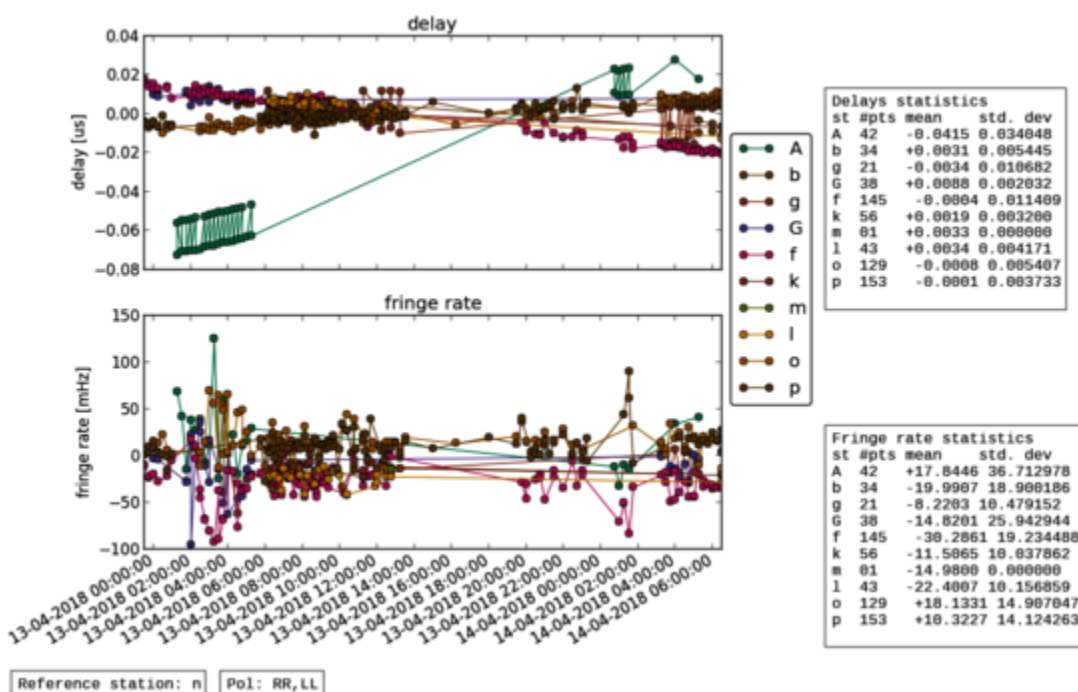
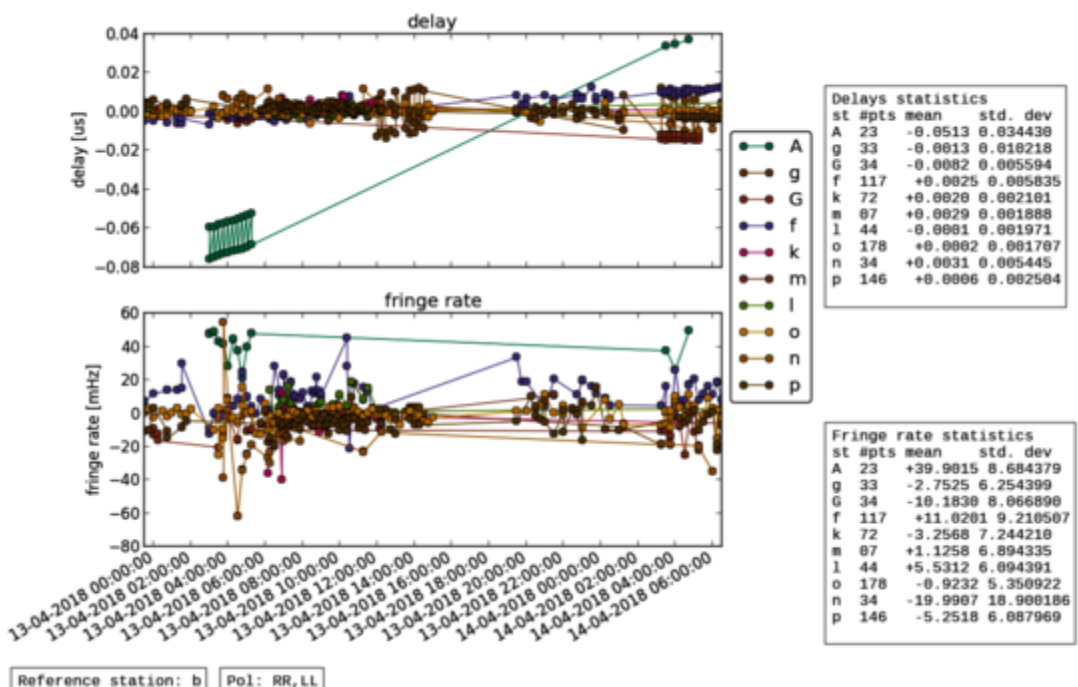
Notes

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)*

Post-Correlation checks

Residuals





FITS completeness (pclist)

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

ml006a.fits:

				GB	EF	ON	YS	PV	MH	AA	AA	NL	FD	PT	LA	OV	KP	BR	MK
c181a_001D2D	No0002	3C279	3mm_RDBE	.	o	o	x	x	o	x	x	.	.	.	.	.	.	.	.
c181a_003D2D	No0004	3C279	3mm_RDBE	.	o	o	x	x	o	x	x	.	.	.	.	.	.	.	.
c181a_005D2D	No0007	3C279	3mm_RDBE	.	o	o	x	x	o	42	42	.	.	.	.	.	.	.	.
c181a_007D2D	No0009	3C279	3mm_RDBE	.	o	o	x	x	o	x	x	.	.	.	.	.	.	.	.
c181a_009D2D	No0012	3C279	3mm_RDBE	o	o	o	x	x	o	o	o	.	.	.	.	.	.	.	.
c181a_011D2D	No0015	3C279	3mm_RDBE	o	o	o	x	x	o	o	o	.	.	.	.	.	.	.	.
c181a_013D2D	No0017	3C279	3mm_RDBE	o	o	o	x	x	o	o	o	.	.	.	.	.	.	.	.
c181a_015D2D	No0019	3C279	3mm_RDBE	o	o	o	x	x	o	o	o	80	.	.	.	.	.	.	.
c181a_017D2D	No0022	3C279	3mm_RDBE	o	o	o	x	x	o	o	o	66	.	.	.	.	.	.	.
c181a_019D2D	No0024	3C279	3mm_RDBE	o	o	o	x	x	o	o	o	80	80	.	.	.	.	.	.
c181a_021D2D	No0027	3C279	3mm_RDBE	o	o	o	x	x	.	o	o	66	66	.	.	.	.	.	.
c181a_023D2D	No0029	3C279	3mm_RDBE	o	o	o	x	x	.	o	o	80	80	80	80	.	80	.	.
c181a_024D2D	No0031	3C279	3mm_RDBE	o	o	o	x	x	.	o	o	66	66	x	66	80	66	.	.
c181a_025D2D	No0032	3C279	3mm_RDBE	o	o	o	x	x	.	o	o	66	66	x	66	80	66	.	.
c181a_026D2D	No0034	3C279	3mm_RDBE	o	o	.	x	x	.	o	o	66	66	x	66	85	66	85	.
c181a_027D2D	No0035	3C279	3mm_RDBE	o	o	.	x	x	.	o	o	66	66	x	66	85	66	85	.
c181a_028D2D	No0037	3C279	3mm_RDBE	o	.	.	x	x	.	95	95	66	66	x	66	85	66	85	.
c181a_029D2D	No0038	3C279	3mm_RDBE	o	.	.	x	x	.	o	o	66	66	x	66	66	66	66	.
c181a_030D2D	No0039	3C279	3mm_RDBE	o	.	.	x	x	.	o	o	66	66	x	66	66	66	66	.
c181a_032D2D	No0042	3C279	3mm_RDBE	o	.	.	.	.	.	o	o	66	66	x	66	66	66	66	.
c181a_034D2D	No0045	3C279	3mm_RDBE	o	.	.	.	.	.	o	o	66	66	x	66	90	66	90	x
c181a_036D2D	No0047	3C279	3mm_RDBE	o	.	.	.	.	.	o	o	66	66	x	66	90	66	90	90
c181a_038D2D	No0050	3C279	3mm_RDBE	o	.	.	.	.	.	o	o	66	66	x	66	90	66	90	90
c181a_040D2D	No0052	3C279	3mm_RDBE	o	.	.	.	.	.	o	o	76	76	x	76	76	76	76	76