



MM013A

MM013A Correlation Report

General information

- A part of [C181A](#)
- no ALMA participation in this subproject
- Targets: OJ287, 3C345, 1510-089, 1633+38, 0235+164, 3C120
- 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>
- Because this experiment was processed together with ALMA observations, *special processing* was applied to all data in order to correlate mismatching frequency setups of ALMA and other GMVA stations. See details [here](#). This should not have influenced non-ALMA scans.

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.

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>preliminary:</p>	<p>In the plots EVN is "missing" in most baselines. 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>

Station	Code	Fringes	Plots	Comments
			<p>c181a_No0055_3C345_BP_LL.pdf, c181a_No0055_3C345_BP_LR.pdf, c181a_No0055_3C345_BP_RL.pdf, c181a_No0055_3C345_BP_RR.pdf.</p> <p>final:</p> <p>No final fringe plots due to fourfit error</p> <p>Same for all antennas below unless otherwise noted.</p>	
On	X	yes	<p>c181a_FRINGE_RfAnt_On_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0055_3C345_XP_LL.pdf, c181a_No0055_3C345_XP_LR.pdf, c181a_No0055_3C345_XP_RL.pdf, c181a_No0055_3C345_XP_RR.pdf.</p> <p>final:</p> <p>No final fringe plots due to fourfit error</p>	<p>In the plots EVN is "missing" in most baselines. 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>
Ys	Y	yes	<p>c181a_FRINGE_RfAnt_Ys_LLRR_AllSrc.pdf</p> <p>No final fringe plots due to fourfit error</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" in most baselines. 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>

Station	Code	Fringes	Plots	Comments
Mh	Z	yes	<p>c181a_FRINGE_RfAnt_Mh_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0055_3C345_ZP_LL.pdf, c181a_No0055_3C345_ZP_LR.pdf, c181a_No0055_3C345_ZP_RL.pdf, c181a_No0055_3C345_ZP_RR.pdf.</p> <p>final:</p> <p>No final fringe plots due to fourfit error</p>	<p>In the plots EVN is "missing" in most baselines. 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>
Pv	P	yes	<p>c181a_FRINGE_RfAnt_Pv_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0055_3C345_BP_LL.pdf, c181a_No0055_3C345_BP_LR.pdf, c181a_No0055_3C345_BP_RL.pdf, c181a_No0055_3C345_BP_RR.pdf.</p> <p>c181a_No0055_3C345_XP_LL.pdf, c181a_No0055_3C345_XP_LR.pdf, c181a_No0055_3C345_XP_RL.pdf, c181a_No0055_3C345_XP_RR.pdf.</p> <p>c181a_No0055_3C345_ZP_LL.pdf, c181a_No0055_3C345_ZP_LR.pdf, c181a_No0055_3C345_ZP_RL.pdf, c181a_No0055_3C345_ZP_RR.pdf.</p> <p>c181a_No0055_3C345_fP_LL.pdf, c181a_No0055_3C345_fP_RR.pdf, no LR or RL fringe</p> <p>c181a_No0055_3C345_oP_LL.pdf, c181a_No0055_3C345_oP_LR.pdf, no RL fringe, c181a_No0055_3C345_oP_RR.pdf.</p> <p>final:</p> <p>No final fringe plots due to fourfit error</p>	<p>In the plots EVN is "missing" in most baselines. 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>
VLBA: Br	b	yes	<p>c181a_FRINGE_RfAnt_Br_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0120_3C345_bg_LL.pdf, c181a_No0120_3C345_bg_LR.pdf, c181a_No0120_3C345_bg_RL.pdf, c181a_No0120_3C345_bg_RR.pdf</p>	<p>all VLBA stations were starting recording late, software glitch: low data weight, possible other problems</p>

Station	Code	Fringes	Plots	Comments
			<p>final:</p> <p>c181a_No0008_OJ287_bp_LL.pdf, c181a_No0008_OJ287_bp_RR.pdf, no LR or RL fringe</p> <p>c181a_No0065_1633+38_bf_LL.pdf, c181a_No0065_1633+38_bf_RR.pdf, no LR or RL fringe</p> <p>c181a_No0065_1633+38_bk_LL.pdf, c181a_No0065_1633+38_bk_LR.pdf, no RL fringe, c181a_No0065_1633+38_bk_RR.pdf</p> <p>c181a_No0065_1633+38_bl_LL.pdf, c181a_No0065_1633+38_bl_LR.pdf, no RL fringe, c181a_No0065_1633+38_bl_RR.pdf</p> <p>c181a_No0065_1633+38_bn_LL.pdf, c181a_No0065_1633+38_bn_RR.pdf, no LR or RL fringes</p> <p>c181a_No0065_1633+38_bo_LL.pdf, c181a_No0065_1633+38_bo_RR.pdf, no LR or RL fringes</p> <p>c181a_No0065_1633+38_bp_LL.pdf, c181a_No0065_1633+38_bp_LR.pdf, no RL fringe, c181a_No0065_1633+38_bp_RR.pdf</p>	
VLBA: Fd	f	yes	<p>c181a_FRINGE_RfAnt_Fd_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0055_3C345_fp_LL.pdf, c181a_No0055_3C345_fp_RR.pdf, no LR or RL fringe</p> <p>final:</p> <p>c181a_No0008_OJ287_fp_LL.pdf, c181a_No0008_OJ287_fp_LR.pdf, c181a_No0008_OJ287_fp_RL.pdf, c181a_No0008_OJ287_fp_RR.pdf</p> <p>c181a_No0010_OJ287_fp_LL.pdf, c181a_No0010_OJ287_fp_LR.pdf, c181a_No0010_OJ287_fp_RL.pdf, c181a_No0010_OJ287_fp_RR.pdf</p> <p>c181a_No0065_1633+38_bf_LL.pdf, c181a_No0065_1633+38_bf_RR.pdf, no LR or RL fringe</p>	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems

Station	Code	Fringes	Plots	Comments
VLBA: Kp	k	yes	c181a_FRINGE_RfAnt_Kp_LLRR_AllSrc.pdf c181a_No0065_1633+38_bk_LL.pdf , c181a_No0065_1633+38_bk_LR.pdf , no RL fringe, c181a_No0065_1633+38_bk_RR.pdf c181a_No0114_3C345_gk_LL.pdf , c181a_No0114_3C345_gk_LR.pdf , c181a_No0114_3C345_gk_RL.pdf , c181a_No0114_3C345_gk_RR.pdf	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: La	l	yes	c181a_FRINGE_RfAnt_La_LLRR_AllSrc.pdf c181a_No0065_1633+38_bl_LL.pdf , c181a_No0065_1633+38_bl_LR.pdf , no RL fringe, c181a_No0065_1633+38_bl_RR.pdf c181a_No0114_3C345_gl_LL.pdf , c181a_No0114_3C345_gl_LR.pdf , c181a_No0114_3C345_gl_RL.pdf , c181a_No0114_3C345_gl_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_No0008_OJ287_mp_LL.pdf , no LR, RL or RR fringe c181a_No0089_1633+38_mo_LL.pdf , c181a_No0089_1633+38_mo_RR.pdf , no LR or RL fringes c181a_No0089_1633+38_mp_LL.pdf , c181a_No0089_1633+38_mp_RR.pdf , no LR or RL fringes	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: NI	n	yes	c181a_FRINGE_RfAnt_NI_LLRR_AllSrc.pdf c181a_No0008_OJ287_np_LL.pdf , c181a_No0008_OJ287_np_RR.pdf , no LR or RL fringes c181a_No0010_OJ287_np_LL.pdf , c181a_No0010_OJ287_np_RR.pdf , no LR or RL fringes c181a_No0065_1633+38_bn_LL.pdf , c181a_No0065_1633+38_bn_RR.pdf , no LR or RL fringes	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems

Station	Code	Fringes	Plots	Comments
VLBA: Ov	o	yes	<p>c181a_FRINGE_RfAnt_Ov_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0055_3C345_oP_LL.pdf, c181a_No0055_3C345_oP_LR.pdf, no RL fringe, c181a_No0055_3C345_oP_RR.pdf.</p> <p>final:</p> <p>c181a_No0008_OJ287_op_LL.pdf, c181a_No0008_OJ287_op_LR.pdf, c181a_No0008_OJ287_op_RL.pdf, c181a_No0008_OJ287_op_RR.pdf</p> <p>c181a_No0010_OJ287_op_LL.pdf, c181a_No0010_OJ287_op_RR.pdf, no LR or RL fringes</p> <p>c181a_No0065_1633+38_bo_LL.pdf, c181a_No0065_1633+38_bo_RR.pdf, no LR or RL fringes</p> <p>c181a_No0089_1633+38_mo_LL.pdf, c181a_No0089_1633+38_mo_RR.pdf, no LR or RL fringes</p> <p>c181a_No0114_3C345_go_LL.pdf, c181a_No0114_3C345_go_LR.pdf, c181a_No0114_3C345_go_RL.pdf, c181a_No0114_3C345_go_RR.pdf</p>	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems
VLBA: Pt	p	yes	<p>c181a_FRINGE_RfAnt_Pt_LLRR_AllSrc.pdf</p> <p>preliminary:</p> <p>c181a_No0120_3C345_gp_LL.pdf, c181a_No0120_3C345_gp_LR.pdf, c181a_No0120_3C345_gp_RL.pdf, c181a_No0120_3C345_gp_RR.pdf</p> <p>final:</p> <p>c181a_No0008_OJ287_bp_LL.pdf, c181a_No0008_OJ287_bp_RR.pdf, no LR or RL fringe</p> <p>c181a_No0008_OJ287_fp_LL.pdf, c181a_No0008_OJ287_fp_LR.pdf, c181a_No0008_OJ287_fp_RL.pdf, c181a_No0008_OJ287_fp_RR.pdf</p> <p>c181a_No0010_OJ287_fp_LL.pdf, c181a_No0010_OJ287_fp_LR.pdf, c181a_No0010_OJ287_fp_RL.pdf, c181a_No0010_OJ287_fp_RR.pdf</p>	all VLBA stations were starting recording late, software glitch: low data weight, possible other problems

Station	Code	Fringes	Plots	Comments
			<p>c181a_No0008_OJ287_mp_LL.pdf, no LR, RL or RR fringe</p> <p>c181a_No0008_OJ287_Gp_LL.pdf, c181a_No0008_OJ287_Gp_LR.pdf, c181a_No0008_OJ287_Gp_RL.pdf, c181a_No0008_OJ287_Gp_RR.pdf</p> <p>c181a_No0010_OJ287_Gp_LL.pdf, c181a_No0010_OJ287_Gp_LR.pdf, no RL fringe, c181a_No0010_OJ287_Gp_RR.pdf</p> <p>c181a_No0008_OJ287_np_LL.pdf, c181a_No0008_OJ287_np_RR.pdf, no LR or RL fringes</p> <p>c181a_No0008_OJ287_op_LL.pdf, c181a_No0008_OJ287_op_LR.pdf, c181a_No0008_OJ287_op_RL.pdf, c181a_No0008_OJ287_op_RR.pdf</p> <p>c181a_No0010_OJ287_np_LL.pdf, c181a_No0010_OJ287_np_RR.pdf, no LR or RL fringes</p> <p>c181a_No0010_OJ287_op_LL.pdf, c181a_No0010_OJ287_op_RR.pdf, no LR or RL fringes</p> <p>c181a_No0065_1633+38_bp_LL.pdf, c181a_No0065_1633+38_bp_LR.pdf, no RL fringe, c181a_No0065_1633+38_bp_RR.pdf</p> <p>c181a_No0089_1633+38_mp_LL.pdf, c181a_No0089_1633+38_mp_RR.pdf, no LR or RL fringes</p> <p>c181a_No0114_3C345_gp_LL.pdf, c181a_No0114_3C345_gp_LR.pdf, c181a_No0114_3C345_gp_RL.pdf, c181a_No0114_3C345_gp_RR.pdf</p>	
GBT: Gb	G	yes	<p>c181a_FRINGE_RfAnt_Gb_LLRR_AllSrc.pdf</p> <p>c181a_No0008_OJ287_Gp_LL.pdf, c181a_No0008_OJ287_Gp_LR.pdf, c181a_No0008_OJ287_Gp_RL.pdf, c181a_No0008_OJ287_Gp_RR.pdf</p> <p>c181a_No0010_OJ287_Gp_LL.pdf, c181a_No0010_OJ287_Gp_LR.pdf, no RL fringe, c181a_No0010_OJ287_Gp_RR.pdf</p>	only present for scans 3, 5, 8, and 10
GLT: Gl	g	yes	<p>c181a_FRINGE_RfAnt_Gl_LLRR_AllSrc.pdf</p> <p>preliminary:</p>	Data analysis has shown that GLT recorded in unknown polarization instead

Station	Code	Fringes	Plots	Comments
			c181a_No0120_3C345_bg_LL.pdf , c181a_No0120_3C345_bg_LR.pdf , c181a_No0120_3C345_bg_RL.pdf , c181a_No0120_3C345_bg_RR.pdf c181a_No0120_3C345_gp_LL.pdf , c181a_No0120_3C345_gp_LR.pdf , c181a_No0120_3C345_gp_RL.pdf , c181a_No0120_3C345_gp_RR.pdf final: c181a_No0114_3C345_gk_LL.pdf , c181a_No0114_3C345_gk_LR.pdf , c181a_No0114_3C345_gk_RL.pdf , c181a_No0114_3C345_gk_RR.pdf c181a_No0114_3C345_gl_LL.pdf , c181a_No0114_3C345_gl_LR.pdf , c181a_No0114_3C345_gl_RL.pdf , c181a_No0114_3C345_gl_RR.pdf c181a_No0114_3C345_go_LL.pdf , c181a_No0114_3C345_go_LR.pdf , c181a_No0114_3C345_go_RL.pdf , c181a_No0114_3C345_go_RR.pdf c181a_No0114_3C345_gp_LL.pdf , c181a_No0114_3C345_gp_LR.pdf , c181a_No0114_3C345_gp_RL.pdf , c181a_No0114_3C345_gp_RR.pdf	circular (most probably unknown elliptic). At this moment IT SHOULD NOT BE USED FOR ANY POLARIMETRY in general dealt with very carefully.
KVN: Kt	t	no	c181a_FRINGE_RfAnt_Kt_LLRR_AllSrc.pdf	no fringes detected
KVN: Ku	u	yes	c181a_FRINGE_RfAnt_Ku_LLRR_AllSrc.pdf c181a_No0134_1633+38_uy_LL.pdf , c181a_No0134_1633+38_uy_LR.pdf , c181a_No0134_1633+38_uy_RL.pdf , c181a_No0134_1633+38_uy_RR.pdf	only weak KuKy fringes in scans 134 and 136
KVN: Ky	y	yes	c181a_FRINGE_RfAnt_Ky_LLRR_AllSrc.pdf c181a_No0134_1633+38_uy_LL.pdf , c181a_No0134_1633+38_uy_LR.pdf , c181a_No0134_1633+38_uy_RL.pdf , c181a_No0134_1633+38_uy_RR.pdf	only weak KuKy fringes in scans 134 and 136

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 careful when using them.

For technical reasons the correlation output is saved as 7 different fits files, see their content below in the pclist section.

Post-Correlation checks

Residuals

[plotRes_b.png](#)

[plotRes_n.png](#)

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

mm013a_setup1.fits:

			GB	EF	ON	YS	PV	MH	GL	NL	FD	PT	LA	OV	KP	BR	MK	KY	KU	KT	
c181a_002D2D	No0003	OJ287	3mm_RDBE	o	.	.	.	.	.	x	76	76	76	76	76	76	.	.	.	.
c181a_004D2D	No0005	OJ287	3mm_RDBE	o	.	.	.	.	.	x	76	76	76	76	76	76	.	.	.	.
c181a_006D2D	No0008	OJ287	3mm_RDBE	o	.	.	.	.	.	x	76	76	76	76	85	76	85	85	.	.	.
c181a_008D2D	No0010	OJ287	3mm_RDBE	o	.	.	.	.	.	x	66	66	66	66	66	66	66	66	.	.	.
c181a_010D2D	No0013	OJ287	3mm_RDBE	.	.	.	.	.	.	x	66	66	66	66	66	66	66	66	.	.	.
c181a_012D2D	No0016	OJ287	3mm_RDBE	.	.	.	.	.	.	x	76	76	76	76	76	76	76	76	.	.	.
c181a_014D2D	No0018	OJ287	3mm_RDBE	.	.	.	.	.	.	x	76	76	76	76	76	76	76	76	.	.	.
c181a_016D2D	No0020	OJ287	3mm_RDBE	.	.	.	.	.	.	x	.	76	76	76	76	76	76	76	.	.	.
c181a_018D2D	No0023	OJ287	3mm_RDBE	.	.	.	.	.	.	x	.	76	76	76	76	76	76	76	.	.	.
c181a_020D2D	No0025	OJ287	3mm_RDBE	.	.	.	.	.	.	x	.	.	76	76	76	76	76	76	.	.	.
c181a_022D2D	No0028	OJ287	3mm_RDBE	.	.	.	.	.	.	x	.	.	76	76	76	76	76	76	.	.	.

				GB	EF	ON	YS	PV	MH	GL	NL	FD	PT	LA	OV	KP	BR	MK	KY	KU	KT
c181a_080D2D	No0093	1633+38	3mm_RDBE	.	o	o	o	o	o	x	66	66	66	66	66	66	66	66	.	.	.
c181a_082D2D	No0095	3C345	3mm_RDBE	.	o	o	o	o	o	x	o	o	o	o	60	o	60	60	.	.	.
c181a_084D2D	No0097	1633+38	3mm_RDBE	.	.	o	o	.	o	x	o	o	o	o	60	o	60	60	.	.	.
c181a_086D2D	No0099	3C345	3mm_RDBE	.	.	o	.	.	o	x	o	o	o	o	60	o	60	60	.	.	.
c181a_094D2D	No0107	0235+164	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_097D2D	No0110	3C120	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_100D2D	No0113	0235+164	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_103D2D	No0116	3C120	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_106D2D	No0119	0235+164	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.

mm013a_setup7.fits:

				GB	EF	ON	YS	PV	MH	GL	NL	FD	PT	LA	OV	KP	BR	MK	KY	KU	KT
c181a_108D2D	No0121	3C120	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_110D2D	No0123	0235+164	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_112D2D	No0125	3C120	3mm_RDBE	.	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c181a_114D2D	No0127	0235+164	3mm_RDBE	.	o	o	o	o	o	.	76	.	.	.	.	.	.	.	.	.	.
c181a_116D2D	No0129	0235+164	3mm_RDBE	.	o	o	o	o	o	.	76	.	.	.	.	.	.	.	.	.	.
c181a_118D2D	No0131	0235+164	3mm_RDBE	.	o	o	o	o	o	.	76	.	.	.	.	.	.	.	.	.	.
c181a_120D2D	No0133	0235+164	3mm_RDBE	.	o	o	o	o	o	.	76	.	.	.	.	.	.	.	.	.	.
c181a_122D2D	No0135	0235+164	3mm_RDBE	.	o	o	o	o	o	.	95	95	.	95	.	.	.	.	.	.	.
c181a_125D2D	No0138	0235+164	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	71	71	71	.	.	.	.
c181a_126D2D	No0139	0235+164	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	71	71	71	.	.	.	.
c181a_127D2D	No0140	0235+164	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	71	71	71	.	.	.	.
c181a_128D2D	No0141	0235+164	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	71	71	71	.	.	.	.
c181a_133D2D	No0146	3C120	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	.	.	.	.	.	.	.
c181a_134D2D	No0147	0235+164	3mm_RDBE	.	o	90	o	o	o	x	76	76	76	76	71	76	71	.	.	.	.
c181a_135D2D	No0148	3C120	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	71	71	.	.	.	.	.
c181a_136D2D	No0149	0235+164	3mm_RDBE	.	o	o	o	o	o	x	76	76	76	76	71	76	71	.	.	.	.
c181a_137D2D	No0150	3C120	3mm_RDBE	.	o	o	o	o	o	x	71	71	71	71	71	71	71	.	.	.	.
c181a_138D2D	No0151	0235+164	3mm_RDBE	.	o	o	o	o	.	x	76	76	76	76	90	76	90	90	.	.	.
c181a_139D2D	No0152	3C120	3mm_RDBE	.	o	o	o	o	.	x	71	71	71	71	71	71	71	.	.	.	.
c181a_141D2D	No0154	3C120	3mm_RDBE	.	o	o	o	o	.	x	71	71	71	71	71	71	71	.	.	.	.
c181a_143D2D	No0156	3C120	3mm_RDBE	.	o	o	o	o	.	x	71	71	71	71	71	71	71	.	.	.	.