

MM013B Correlation Report

General information

- A part of [C181C](#)
- **No ALMA participation** in this part
- Targets: 3C84, 3C111, 3C120, 0836+710, 0954+658, 0716+714, 3C454.3, CTA102
- 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 10/12/2018.

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 C181C) 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 30, 33, 77-78, 80, 82-83, 92 are missing from all diagnostic plots due to a difx2mark4 error. They are present in the final correlation products.</p> <p>c181c FRINGE RfAnt Ef LLRR AllSrc.pdf</p> <p>Examples of fourfit fringe plots: c181c No0032 3C111 Bg RR.pdf, no LL, LR or RL fringe</p> <p>Same for all antennas below unless otherwise noted.</p>	<p>in the plots Ef is "missing" all the baselines except to ALMA, GLT and KVN. 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>
On	X	yes	<p>c181c FRINGE RfAnt On LLRR AllSrc.pdf</p> <p>c181c No0032 3C111 gX LL.pdf, c181c No0032 3C111 gX LR.pdf, no RL fringe, c181c No0032 3C111 gX RR.pdf</p> <p>no LL fringe, c181c No0106 0716+714 tX LR.pdf, c181c No0106 0716+714 tX RL.pdf, c181c No0106 0716+714 tX RR.pdf</p>	<p>in the plots On is "missing" all the baselines except to ALMA, GLT and KVN. This is due to a fourfit error, the</p>

Station	Code	Fringes	Plots	Comments
				<p>baselines are missing only from some of the diagnostic plots, but are present in the final correlation products.</p>
Ys	Y	yes	<p>c181c FRINGE RfAnt Ys LLRR AllSrc.pdf</p> <p>No diagnostic fringe plots for this antenna in this experiment due to a fourfit problem.</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 Ys is "missing" all the baselines except to ALMA, GLT and KVN. 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>c181c FRINGE RfAnt Mh LLRR AllSrc.pdf</p> <p>No diagnostic fringe plots for this antenna in this experiment due to a fourfit problem.</p>	<p>in the plots Mh is "missing" all the baselines except to</p>

Station	Code	Fringes	Plots	Comments
				ALMA, GLT and KVN. 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	yes	<p>c181c FRINGE RfAnt Pv LLRR AllSrc.pdf</p> <p>c181c No0032 3C111 gP LL.pdf, c181c No0032 3C111 gP LR.pdf,</p> <p>c181c No0032 3C111 gP RL.pdf, c181c No0032 3C111 gP RR.pdf</p> <p>c181c No0159 0716+714 tP LL.pdf, c181c No0159 0716+714 tP LR.pdf,</p> <p>c181c No0159 0716+714 tP RL.pdf, c181c No0159 0716+714 tP RR.pdf</p> <p>c181c No0140 0716+714 uP LL.pdf, c181c No0140 0716+714 uP LR.pdf,</p> <p>c181c No0140 0716+714 uP RL.pdf, c181c No0140 0716+714 uP RR.pdf</p> <p>c181c No0140 0716+714 yP LL.pdf, c181c No0140 0716+714 yP LR.pdf,</p> <p>c181c No0140 0716+714 yP RL.pdf, c181c No0140 0716+714 yP RR.pdf</p>	in the plots Pv is "missing" all the baselines except to ALMA, GLT and KVN. 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	<p>c181c FRINGE RfAnt Br LLRR AllSrc.pdf</p> <p>c181c No0187 CTA102 bf LL.pdf, c181c No0187 CTA102 bf LR.pdf,</p> <p>c181c No0187 CTA102 bf RL.pdf, c181c No0187 CTA102 bf RR.pdf</p> <p>c181c No0187 CTA102 bk LL.pdf, c181c No0187 CTA102 bk LR.pdf,</p> <p>c181c No0187 CTA102 bk RL.pdf, c181c No0187 CTA102 bk RR.pdf</p> <p>c181c No0187 CTA102 bl LL.pdf, c181c No0187 CTA102 bl LR.pdf,</p> <p>c181c No0187 CTA102 bl RL.pdf, c181c No0187 CTA102 bl RR.pdf</p> <p>c181c No0187 CTA102 bm LL.pdf, c181c No0187 CTA102 bm RR.pdf,</p> <p>no LR or RL fringe</p> <p>c181c No0187 CTA102 bn LL.pdf, c181c No0187 CTA102 bn RR.pdf,</p> <p>no LR or RL fringe</p>	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.

Station	Code	Fringes	Plots	Comments
			c181c No0187 CTA102 bo LL.pdf , no LR fringe, c181c No0187 CTA102 bo RL.pdf , c181c No0187 CTA102 bo RR.pdf c181c No0187 CTA102 bp LL.pdf , c181c No0187 CTA102 bp LR.pdf , c181c No0187 CTA102 bp RL.pdf , c181c No0187 CTA102 bp RR.pdf	
VLBA: Fd	f	yes	c181c FRINGE RfAnt Fd LLRR AllSrc.pdf c181c No0187 CTA102 bf LL.pdf , c181c No0187 CTA102 bf LR.pdf , c181c No0187 CTA102 bf RL.pdf , c181c No0187 CTA102 bf RR.pdf	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.
VLBA: Kp	k	yes	c181c FRINGE RfAnt Kp LLRR AllSrc.pdf c181c No0187 CTA102 bk LL.pdf , c181c No0187 CTA102 bk LR.pdf , c181c No0187 CTA102 bk RL.pdf , c181c No0187 CTA102 bk RR.pdf	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.
VLBA: La	l	yes	c181c FRINGE RfAnt La LLRR AllSrc.pdf c181c No0187 CTA102 bl LL.pdf , c181c No0187 CTA102 bl LR.pdf , c181c No0187 CTA102 bl RL.pdf , c181c No0187 CTA102 bl RR.pdf	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.
VLBA: Mk	m	yes	c181c FRINGE RfAnt Mk LLRR AllSrc.pdf c181c No0187 CTA102 bm LL.pdf , c181c No0187 CTA102 bm RR.pdf , no LR or RL fringe	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.

Station	Code	Fringes	Plots	Comments
VLBA: Nl	n	yes	c181c FRINGE RfAnt Nl LLRR AllSrc.pdf c181c No0187 CTA102 bn LL.pdf , c181c No0187 CTA102 bn RR.pdf , no LR or RL fringe	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.
VLBA: Ov	o	yes	c181c FRINGE RfAnt Ov LLRR AllSrc.pdf c181c No0187 CTA102 bo LL.pdf , no LR fringe, c181c No0187 CTA102 bo RL.pdf , c181c No0187 CTA102 bo RR.pdf	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.
VLBA: Pt	p	yes	c181c FRINGE RfAnt Pt LLRR AllSrc.pdf c181c No0187 CTA102 bp LL.pdf , c181c No0187 CTA102 bp LR.pdf , c181c No0187 CTA102 bp RL.pdf , c181c No0187 CTA102 bp RR.pdf	Baselines to EVN stations are "missing" due to a fourfit error. They are present in the final correlation products.
GBT: Gb	G	n/a	c181c FRINGE RfAnt Gb LLRR AllSrc.pdf -----	Participated in C181C, but not in MM013B
GLT: Gl	g	yes	c181c FRINGE RfAnt Gl LLRR AllSrc.pdf c181c No0032 3C111 Bg RR.pdf , no LL, LR or RL fringe c181c No0032 3C111 gX LL.pdf , c181c No0032 3C111 gX LR.pdf , no RL fringe, c181c No0032 3C111 gX RR.pdf c181c No0032 3C111 gP LL.pdf , c181c No0032 3C111 gP LR.pdf , c181c No0032 3C111 gP RL.pdf , c181c No0032 3C111 gP RR.pdf	Data analysis has shown that GLT recorded in unknown polarization instead of circular (most probably unknown elliptic). At this moment IT

Station	Code	Fringes	Plots	Comments
				SHOULD NOT BE USED FOR ANY POLARIMETRY and in general dealt with very carefully.
KVN: Kt	t	yes	c181c FRINGE RfAnt Kt LLRR AllSrc.pdf no LL fringe, c181c No0106 0716+714 tX LR.pdf , c181c No0106 0716+714 tX RL.pdf , c181c No0106 0716+714 tX RR.pdf c181c No0159 0716+714 tP LL.pdf , c181c No0159 0716+714 tP LR.pdf , c181c No0159 0716+714 tP RL.pdf , c181c No0159 0716+714 tP RR.pdf c181c No0140 0716+714 tu LR.pdf , c181c No0140 0716+714 tu LR.pdf , c181c No0140 0716+714 tu RL.pdf , c181c No0140 0716+714 tu RR.pdf c181c No0140 0716+714 ty LL.pdf , c181c No0140 0716+714 ty LR.pdf , c181c No0140 0716+714 ty RL.pdf , c181c No0140 0716+714 ty RR.pdf	
KVN: Ku	u	yes	c181c FRINGE RfAnt Ku LLRR AllSrc.pdf c181c No0140 0716+714 tu LR.pdf , c181c No0140 0716+714 tu LR.pdf , c181c No0140 0716+714 tu RL.pdf , c181c No0140 0716+714 tu RR.pdf c181c No0140 0716+714 uP LL.pdf , c181c No0140 0716+714 uP LR.pdf , c181c No0140 0716+714 uP RL.pdf , c181c No0140 0716+714 uP RR.pdf c181c No0140 0716+714 uy LL.pdf , c181c No0140 0716+714 uy LR.pdf , c181c No0140 0716+714 uy RL.pdf , c181c No0140 0716+714 uy RR.pdf	
KVN: Ky	y	yes	c181c FRINGE RfAnt Ky LLRR AllSrc.pdf c181c No0140 0716+714 yP LL.pdf , c181c No0140 0716+714 yP LR.pdf , c181c No0140 0716+714 yP RL.pdf , c181c No0140 0716+714 yP RR.pdf c181c No0140 0716+714 ty LL.pdf , c181c No0140 0716+714 ty LR.pdf , c181c No0140 0716+714 ty RL.pdf , c181c No0140 0716+714 ty RR.pdf c181c No0140 0716+714 uy LL.pdf , c181c No0140 0716+714 uy LR.pdf , c181c No0140 0716+714 uy RL.pdf , c181c No0140 0716+714 uy RR.pdf	

Notes

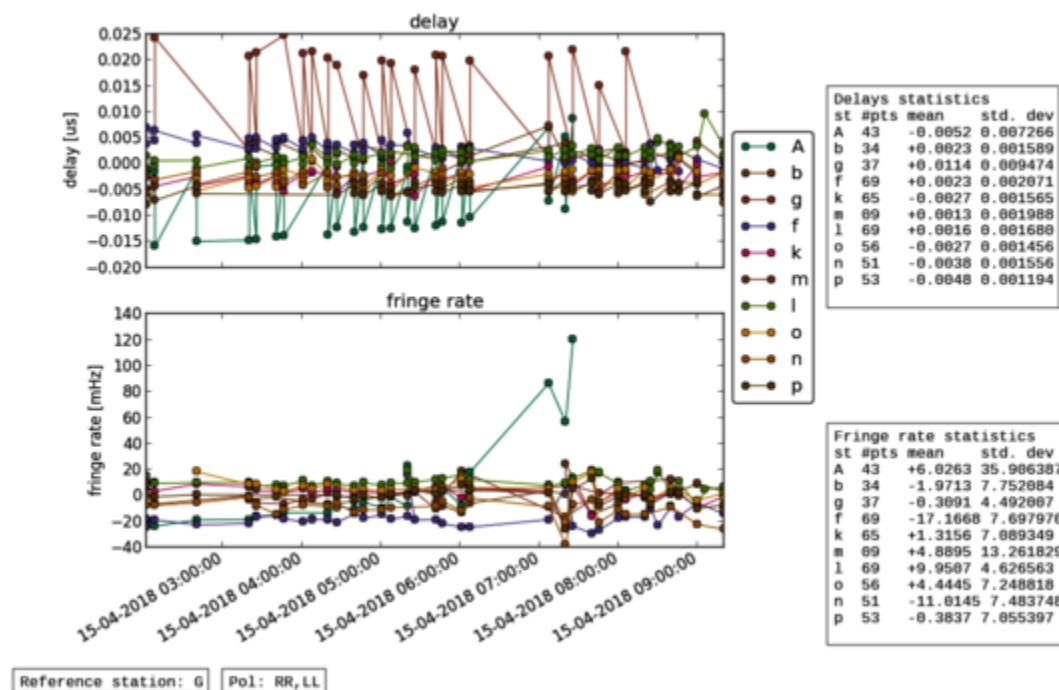
There were problems with some diagnostic plots of this experiment due to yet poorly understood errors of fourfit and other HOPS components. But this does not change the quality of the final correlation products. *(These issues were fixed in the second data release of 31/01/2019)*

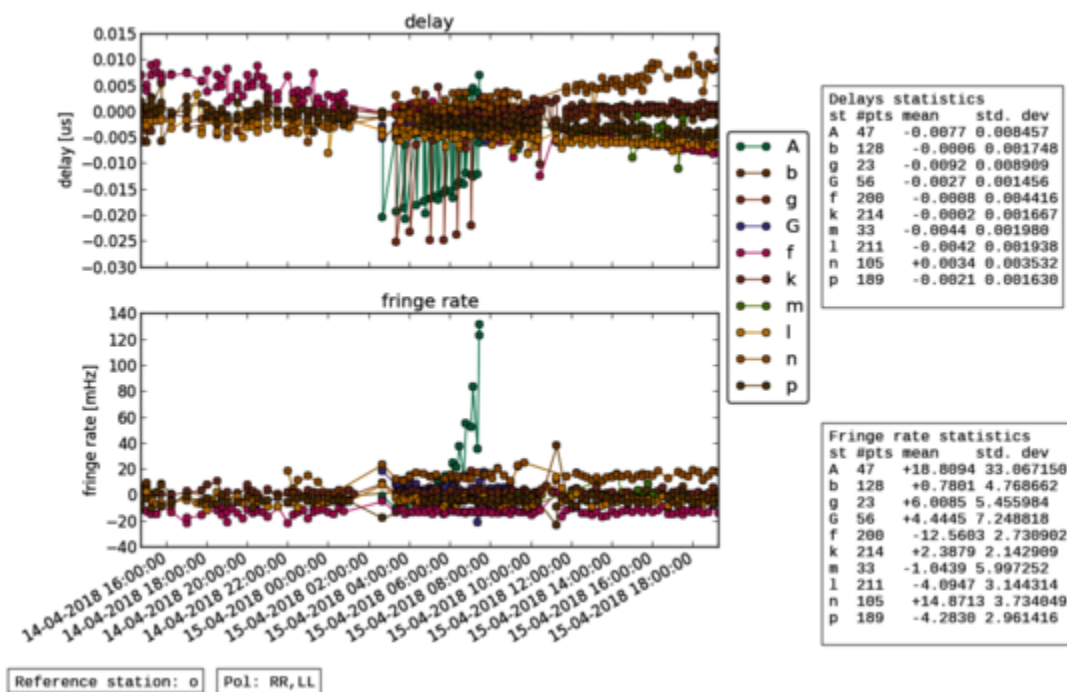
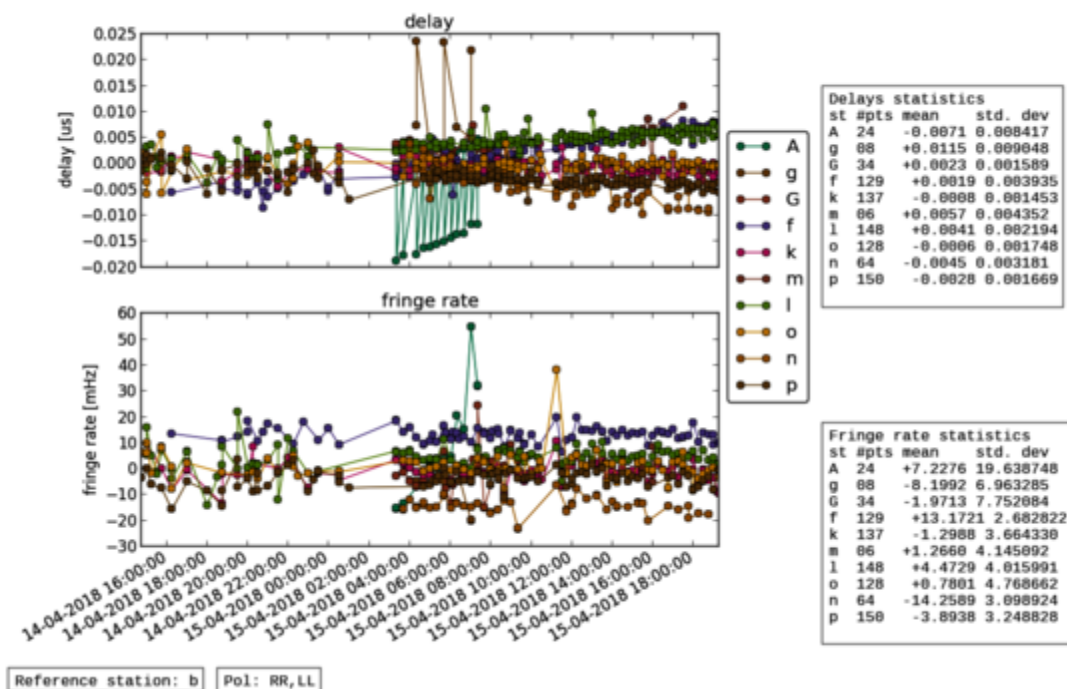
GLT participated in this session for the first time as a test, and serious problems were detected when analysing its data. Be very careful when using them.

For technical reasons the correlation output is saved as 8 different fits files, see their content below in the pclist section.

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

mm013b_setup1.fits:

				EF	ON	PV	YS	MH	NL	FD	PT	LA	OV	KP	BR	GL	MK	GB	KY	KU	KT
c181c_001D2D	No0001	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_002D2D	No0002	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_023D2D	No0023	3C111	3mm_RDBE	o	o	.	.	o	.	.	.	.	.	.	.	x	o	.	.	.	.
c181c_025D2D	No0025	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_028D2D	No0028	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_031D2D	No0031	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_034D2D	No0034	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_037D2D	No0037	3C84	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_040D2D	No0040	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_043D2D	No0043	3C111	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_046D2D	No0046	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_047D2D	No0047	3C111	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_050D2D	No0050	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_053D2D	No0053	3C111	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_056D2D	No0056	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_057D2D	No0057	3C111	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_060D2D	No0060	3C120	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_063D2D	No0063	3C111	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_066D2D	No0066	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	o	o	o	.	o	.	.	.	.
c181c_067D2D	No0067	3C120	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	o	o	.	o	.	.	.	.
c181c_155D2D	No0166	0716+714	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	o	o	x	o	.	o	o	o
c181c_157D2D	No0168	0716+714	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	o	o	x	o	.	o	o	o
c181c_173D2D	No0184	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_174D2D	No0185	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_176D2D	No0187	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_178D2D	No0189	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_180D2D	No0191	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_182D2D	No0193	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_184D2D	No0195	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_186D2D	No0197	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_188D2D	No0199	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_190D2D	No0201	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_192D2D	No0203	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_194D2D	No0205	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_196D2D	No0207	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_198D2D	No0209	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_200D2D	No0211	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_202D2D	No0213	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_204D2D	No0215	CTA102	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.
c181c_206D2D	No0217	3C454.3	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	o	o	.	o	.	.	.	.

mm013b_setup2.fits:

				EF	ON	PV	YS	MH	NL	FD	PT	LA	OV	KP	BR	GL	MK	GB	KY	KU	KT
c181c_003D2D	No0003	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.

c181c_004D2D	No0004	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_005D2D	No0005	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_006D2D	No0006	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.

mm013b_setup3.fits:

				EF	ON	PV	YS	MH	NL	FD	PT	LA	OV	KP	BR	GL	MK	GB	KY	KU	KT	
c181c_007D2D	No0007	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_008D2D	No0008	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_009D2D	No0009	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_010D2D	No0010	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_011D2D	No0011	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_012D2D	No0012	3C120	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	.	x	.	.	.	.	.
c181c_013D2D	No0013	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_014D2D	No0014	3C120	3mm_RDBE	o	o	o	33	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_015D2D	No0015	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_016D2D	No0016	3C120	3mm_RDBE	o	o	o	o	.	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_017D2D	No0017	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_018D2D	No0018	3C120	3mm_RDBE	o	o	o	o	.	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_019D2D	No0019	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_020D2D	No0020	3C120	3mm_RDBE	o	o	o	o	.	o	o	o	o	o	o	o	o	x	.	.	.	.	.
c181c_021D2D	No0021	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_022D2D	No0022	3C120	3mm_RDBE	.	.	o	o	.	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c181c_024D2D	No0024	3C84	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_026D2D	No0026	3C111	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	x	.	.	.	.	.
c181c_027D2D	No0027	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	x	o	.	.	.	.
c181c_029D2D	No0029	3C111	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	x	.	.	.	.	.
c181c_030D2D	No0030	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	o	.	.	.	.	.
c181c_032D2D	No0032	3C111	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	o	.	.	.	.	.
c181c_033D2D	No0033	3C111	3mm_RDBE	o	o	o	o	o	o	o	o	o	o	o	o	o	o	.	.	.	.	.

mm013b_setup4.fits:

				EF	ON	PV	YS	MH	NL	FD	PT	LA	OV	KP	BR	GL	MK	GB	KY	KU	KT	
c181c_092D2D	No0097	0716+714	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_095D2D	No0101	0836+710	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_096D2D	No0102	0954+658	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_099D2D	No0106	0716+714	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_102D2D	No0109	0836+710	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_105D2D	No0113	0954+658	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_106D2D	No0114	0716+714	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_109D2D	No0117	0836+710	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_112D2D	No0120	0954+658	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_115D2D	No0124	0716+714	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_116D2D	No0125	0836+710	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_119D2D	No0128	0954+658	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o
c181c_122D2D	No0132	0716+714	3mm_RDBE	o	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	o	o	o

```

c181c_125D2D No0136 0836+710 3mm_RDBE o o o o o . . . . . o o o
c181c_126D2D No0137 0954+658 3mm_RDBE o o o o o . . . . . o o o

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mm013b_setup5.fits:

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                EF ON PV YS MH NL FD PT LA OV KP BR GL MK GB KY KU KT
c181c_130D2D No0140 0716+714 3mm_RDBE o o o o 14 . . . . . o o o
c181c_133D2D No0144 0836+710 3mm_RDBE o o o o o . . . . . o o o
c181c_136D2D No0147 0954+658 3mm_RDBE o o o o o . . . . . o o o
c181c_137D2D No0148 0716+714 3mm_RDBE o o o o o . . . . . o o o
c181c_140D2D No0151 0836+710 3mm_RDBE o o o o o . . . . . x . o o o
c181c_144D2D No0155 0954+658 3mm_RDBE o o o o o . . . . . x . o o o
c181c_148D2D No0159 0716+714 3mm_RDBE o o o o o . . . . . x . o o o
c181c_149D2D No0160 0836+710 3mm_RDBE o o o o o . . . . . x . o o o
c181c_153D2D No0164 0954+658 3mm_RDBE o o o o o . . . . . x . o o o

```

mm013b_setup6.fits:

```

                EF ON PV YS MH NL FD PT LA OV KP BR GL MK GB KY KU KT
c181c_154D2D No0165 3C454.3 3mm_RDBE o o o o o o o o o . . . . .
c181c_156D2D No0167 3C454.3 3mm_RDBE o o o o o o o o o . . . . .

```

mm013b_setup7.fits:

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                EF ON PV YS MH NL FD PT LA OV KP BR GL MK GB KY KU KT
c181c_158D2D No0169 3C454.3 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_159D2D No0170 CTA102 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_160D2D No0171 3C454.3 3mm_RDBE o o o o o o o o o o o x . . . .

```

mm013b_setup8.fits:

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                EF ON PV YS MH NL FD PT LA OV KP BR GL MK GB KY KU KT
c181c_161D2D No0172 CTA102 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_162D2D No0173 3C454.3 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_163D2D No0174 CTA102 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_164D2D No0175 3C454.3 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_165D2D No0176 CTA102 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_166D2D No0177 3C454.3 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_167D2D No0178 CTA102 3mm_RDBE o o o o . o o o o o o o x . . . .
c181c_168D2D No0179 3C454.3 3mm_RDBE o o o o o o o o o o o x . . . .
c181c_169D2D No0180 CTA102 3mm_RDBE o o o o . o o o o o o o x o . . .
c181c_170D2D No0181 3C454.3 3mm_RDBE o o o o . o o o o o o o x o . . .
c181c_171D2D No0182 CTA102 3mm_RDBE . . o o . o o o o o o o x o . . .
c181c_172D2D No0183 3C454.3 3mm_RDBE o o o o . o o o o o o o x o . . .
c181c_175D2D No0186 0716+714 3mm_RDBE o o o o o . . . . . o o o
c181c_177D2D No0188 0836+710 3mm_RDBE o o o o o . . . . . o o o
c181c_179D2D No0190 0954+658 3mm_RDBE o o o o o . . . . . o o o

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