MM015_pt2 Correlation Report

General information

- A part of C182C, the first part of this science project is in C182B.
- PI: MARSCHER
- Targets: FERMI sources
- Session info: http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/
- Station feedback: http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/sep18/feedback_sep18.asc
- Text file with detailed antenna statistics: c182c.antrep

Current Status

Correlation finished, data **released** on 14.03.2019.

Fringes

Station	Code	Fringes	Plots	Comments
Ef	B	**yes**	Fringe overview of all baselines (all of C182C) including this antenna in LL (left for each baseline) and RR (right for each baseline). Legend: white - scheduled, but no data, blue - no fringe, dark red/brown/green - fringes of different quality, bright red - false fringe (mostly for baselines to KVN, determined by having exremely large single-band delay, > 0.1us) c182c_SBD_RfAnt_Ef_LLRR_AllSrc.pdf Examples of fourfit fringe plots: c182c_No0007_1633+38_BX_LL.pdf, c182c_No0007_1633+38_BX_LR.pdf, c182c_No0007_1633+38_BX_RL.pdf, c182c_No0007_1633+38_BX_RR.pdf. c182c_No0027_1633+38_BY_RL.pdf, c182c_No0027_1633+38_BY_RR.pdf, no LL or LR fringes. c182c_No0007_1633+38_BZ_LL.pdf, c182c_No0007_1633+38_BZ_RL.pdf, c182c_No0007_1633+38_BZ_RR.pdf, no LR fringe. c182c_No0007_1633+38_BP_LL.pdf, c182c_No0007_1633+38_BP_LR.pdf, c182c_No0007_1633+38_BP_RL.pdf, c182c_No0007_1633+38_BP_RR.pdf. c182c_No0007_1633+38_Bg_LL.pdf, c182c_No0007_1633+38_Bg_LR.pdf, c182c_No0007_1633+38_Bg_RL.pdf, c182c_No0007_1633+38_Bg_RR.pdf. Same for all antennas below unless otherwise noted.	
On	X	**yes**	c182c_SBD_RfAnt_On_LLRR_AllSrc.pdf	

Station	Code	Fringes	Plots	Comments
			c182c_No0007_1633+38_BX_LL.pdf, c182c_No0007_1633+38_BX_LR.pdf, c182c_No0007_1633+38_BX_RL.pdf, c182c_No0007_1633+38_BX_RR.pdf. c182c_No0023_1633+38_tX_LL.pdf, c182c_No0023_1633+38_tX_LR.pdf, c182c_No0023_1633+38_tX_RL.pdf, c182c_No0023_1633=38_tX_RR.pdf. c182c_No0019_1633+38_uX_LL.pdf, c182c_No0019_1633+38_uX_LR.pdf, c182c_No0019_1633+38_uX_RL.pdf, c182c_No0019_1633+38_uX_RR.pdf. c182c_No0023_1633+38_yX_LL.pdf, c182c_No0023_1633+38_yX_LR.pdf, c182c_No0023_1633+38_yX_RL.pdf, c182c_No0023_1633+38_yX_RR.pdf.	
Ys	Y	**yes**	c182c_SBD_RfAnt_Ys_LLRR_AllSrc.pdf c182c_No0027_1633+38_BY_RL.pdf, c182c_No0027_1633+38_BY_RR.pdf, no LL or LR fringes.	An amplifier burned out just before the beginning of the session, fixed during the fringe test, but after that the antenna consistently produces fringes only to RCP, while in its typical configuration in should have LCP only, duplicated to both channels. But in this session it appears to have RCP only.
Mh	Z	**yes**	c182c_SBD_RfAnt_Mh_LLRR_AllSrc.pdf c182c_No0007_1633+38_BZ_LL.pdf, c182c_No0007_1633+38_BZ_RL.pdf, c182c_No0007_1633+38_BZ_RR.pdf, no LR fringe.	
Pv	P	**yes**	c182c_SBD_RfAnt_Pv_LLRR_AllSrc.pdf c182c_No0007_1633+38_BP_LL.pdf, c182c_No0007_1633+38_BP_LR.pdf, c182c_No0007_1633+38_BP_RL.pdf, c182c_No0007_1633+38_BP_RR.pdf. c182c_No0023_1633+38_tP_LL.pdf, c182c_No0023_1633+38_tP_LR.pdf, c182c_No0023_1633+38_tP_RL.pdf, c182c_No0023_1633+38_tP_RR.pdf. c182c_No0019_1633+38_uP_LL.pdf, c182c_No0019_1633+38_uP_LR.pdf, c182c_No0019_1633+38_uP_RL.pdf, c182c_No0019_1633+38_uP_RR.pdf. c182c_No0023_1633+38_yP_LL.pdf, c182c_No0023_1633+38_yP_LR.pdf, c182c_No0023_1633+38_yP_RL.pdf, c182c_No0023_1633+38_yP_RR.pdf.	Had a small clock jump, see the residual plots.
GLT: Gl	g	**yes**	c182c_SBD_RfAnt_Gl_LLRR_AllSrc.pdf c182c_No0007_1633+38_Bg_LL.pdf, c182c_No0007_1633+38_Bg_LR.pdf, c182c_No0007_1633+38_Bg_RL.pdf, c182c_No0007_1633+38_Bg_RR.pdf.	The GLT was observing in an unknown polarization configuration, linear or some elliptic instead of the circular due to a polarizer misalignment. Unless there is a way to recontruct the proper circular polarization, this station must be flagged or used only for the total power measurement.

Station	Code	Fringes	Plots	Comments
VLBA: Br	b	yes	c182c_SBD_RfAnt_Br_LLRR_AllSrc.pdf c182c_No0008_3C120_bk_LL.pdf, c182c_No0008_3C120_bk_LR.pdf, c182c_No0008_3C120_bk_RL.pdf, c182c_No0008_3C120_bk_RR.pdf.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: Fd	f	yes	c182c_SBD_RfAnt_Fd_LLRR_AllSrc.pdf c182c_No0010_0420-014_fk_LL.pdf, c182c_No0010_0420-014_fk_RR.pdf, no LR or RL fringes. c182c_No0010_0420-014_fm_LL.pdf, c182c_No0010_0420-014_fm_RR.pdf, no LR or RL fringes.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: Kp	k	yes	c182c_SBD_RfAnt_Kp_LLRR_AllSrc.pdf c182c_No0008_3C120_bk_LL.pdf, c182c_No0008_3C120_bk_LR.pdf, c182c_No0008_3C120_bk_RL.pdf, c182c_No0008_3C120_bk_RR.pdf. c182c_No0010_0420-014_fk_LL.pdf, c182c_No0010_0420-014_fk_RR.pdf, no LR or RL fringes. c182c_No0008_3C120_kl_LL.pdf, c182c_No0008_3C120_kl_RR.pdf, no LR or RL fringes. c182c_No0010_0420-014_km_LL.pdf, c182c_No0010_0420-014_km_RR.pdf, no LR or RL fringes. c182c_No0010_0420-014_kn_LL.pdf, c182c_No0010_0420-014_kn_RR.pdf, no LR or RL fringes. c182c_No0008_3C120_ko_LL.pdf, c182c_No0008_3C120_ko_RL.pdf, c182c_No0008_3C120_ko_RR.pdf, no LR fringe.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: La	l	yes	c182c_SBD_RfAnt_La_LLRR_AllSrc.pdf c182c_No0008_3C120_kl_LL.pdf, c182c_No0008_3C120_kl_RR.pdf, no LR or RL fringes.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: Mk	m	yes	c182c_SBD_RfAnt_Mk_LLRR_AllSrc.pdf c182c_No0010_0420-014_km_LL.pdf, c182c_No0010_0420-014_km_RR.pdf, no LR or RL fringes.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.

Station	Code	Fringes	Plots	Comments
			c182c_No0010_0420-014_fm_LL.pdf, c182c_No0010_0420-014_fm_RR.pdf, no LR or RL fringes.	
VLBA: Nl	n	yes	c182c_SBD_RfAnt_Nl_LLRR_AllSrc.pdf c182c_No0010_0420-014_kn_LL.pdf, c182c_No0010_0420-014_kn_RR.pdf, no LR or RL fringes.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: Ov	o	yes	c182c_SBD_RfAnt_Ov_LLRR_AllSrc.pdf c182c_No0008_3C120_ko_LL.pdf, c182c_No0008_3C120_ko_RL.pdf, c182c_No0008_3C120_ko_RR.pdf, no LR fringe.	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: Pt	p	no	c182c_SBD_RfAnt_Pt_LLRR_AllSrc.pdf _____	All Pt data for this whole session lost due to a malfunctioning Mk5 module. We attempted to save it, but the data has proven to be unrecoverable.
KVN: Kt	t	yes	c182c_SBD_RfAnt_Kt_LLRR_AllSrc.pdf c182c_No0023_1633+38_tP_LL.pdf, c182c_No0023_1633+38_tP_LR.pdf, c182c_No0023_1633+38_tP_RL.pdf, c182c_No0023_1633+38_tP_RR.pdf. c182c_No0023_1633+38_tX_LL.pdf, c182c_No0023_1633+38_tX_LR.pdf, c182c_No0023_1633+38_tX_RL.pdf, c182c_No0023_1633=38_tX_RR.pdf. c182c_No0019_1633+38_tu_LL.pdf, c182c_No0019_1633+38_tu_LR.pdf, c182c_No0019_1633+38_tu_RL.pdf, c182c_No0019_1633+38_tu_RR.pdf. c182c_No0023_1633+38_ty_LL.pdf, c182c_No0023_1633+38_ty_LR.pdf, c182c_No0023_1633+38_ty_RL.pdf, c182c_No0023_1633+38_ty_RR.pdf.	
KVN: Ku	u	yes	c182c_SBD_RfAnt_Ku_LLRR_AllSrc.pdf c182c_No0019_1633+38_uP_LL.pdf, c182c_No0019_1633+38_uP_LR.pdf, c182c_No0019_1633+38_uP_RL.pdf, c182c_No0019_1633+38_uP_RR.pdf. c182c_No0019_1633+38_uX_LL.pdf, c182c_No0019_1633+38_uX_LR.pdf, c182c_No0019_1633+38_uX_RL.pdf, c182c_No0019_1633+38_uX_RR.pdf. c182c_No0019_1633+38_tu_LL.pdf, c182c_No0019_1633+38_tu_LR.pdf, c182c_No0019_1633+38_tu_RL.pdf, c182c_No0019_1633+38_tu_RR.pdf. c182c_No0019_1633+38_uy_LL.pdf, c182c_No0019_1633+38_uy_LR.pdf, c182c_No0019_1633+38_uy_RL.pdf, c182c_No0019_1633+38_uy_RR.pdf.	

Station	Code	Fringes	Plots	Comments
KVN: Ky	y	yes	c182c_SBD_RfAnt_Ky_LLRR_AllSrc.pdf c182c_No0023_1633+38_yP_LL.pdf, c182c_No0023_1633+38_yP_LR.pdf, c182c_No0023_1633+38_yP_RL.pdf, c182c_No0023_1633+38_yP_RR.pdf. c182c_No0023_1633+38_yX_LL.pdf, c182c_No0023_1633+38_yX_LR.pdf, c182c_No0023_1633+38_yX_RL.pdf, c182c_No0023_1633+38_yX_RR.pdf. c182c_No0023_1633+38_ty_LL.pdf, c182c_No0023_1633+38_ty_LR.pdf, c182c_No0023_1633+38_ty_RL.pdf, c182c_No0023_1633+38_ty_RR.pdf. c182c_No0019_1633+38_uy_LL.pdf, c182c_No0019_1633+38_uy_LR.pdf, c182c_No0019_1633+38_uy_RL.pdf, c182c_No0019_1633+38_uy_RR.pdf.	

Notes

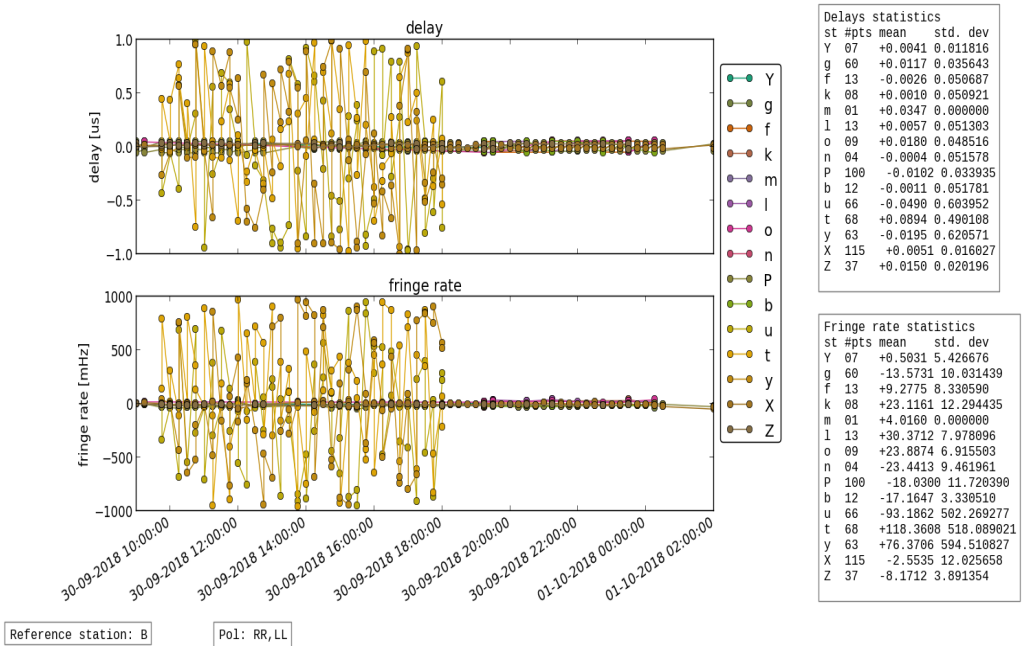
All VLBA antennas are affected by the same problem (probably originating in the control software) during the whole session: for a significant portion of scans the recording starts several seconds or even few minutes late compared with the schedule. This results in effective reduction of observing time by a factor of 30-50%.

For some reason fourfit finds a fringe for every baseline including a KVN antenna. We are stiil looking how to avoid this problem. Meanwhile in the overview tables above the value of single-band delay is used to tell the difference between the considerably fewer real fringes and false positives.

Post-Correlation checks

Residuals

EF (the outliers are due to multiple false fringes in KVN antennas detected by fourfit):



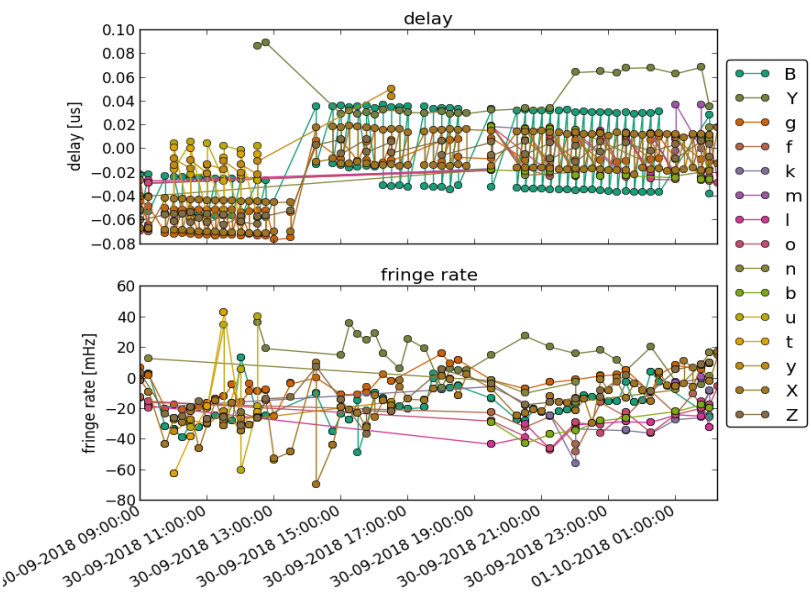
Delays statistics

st	#pts	mean	std. dev
Y	07	+0.0041	0.011816
g	60	+0.0117	0.035643
f	13	-0.0026	0.050687
k	08	+0.0010	0.050921
m	01	+0.0347	0.000000
l	13	+0.0057	0.051303
o	09	+0.0180	0.048516
n	04	-0.0004	0.051578
P	100	-0.0102	0.033935
b	12	-0.0011	0.051781
u	66	-0.0490	0.603952
t	68	+0.0894	0.490108
y	63	-0.0195	0.620571
X	115	+0.0051	0.016027
Z	37	+0.0150	0.020196

Fringe rate statistics

st	#pts	mean	std. dev
Y	07	+0.5031	5.426676
g	60	-13.5731	10.031439
f	13	+9.2775	8.330590
k	08	+23.1161	12.294435
m	01	+4.0160	0.000000
l	13	+30.3712	7.978096
o	09	+23.8874	6.915503
n	04	-23.4413	9.461961
P	100	-18.0300	11.720390
b	12	-17.1647	3.330510
u	66	-93.1862	502.269277
t	68	+118.3608	518.089021
y	63	+76.3706	594.510827
X	115	-2.5535	12.025658
Z	37	-8.1712	3.891354

PV (had a small clock jump):

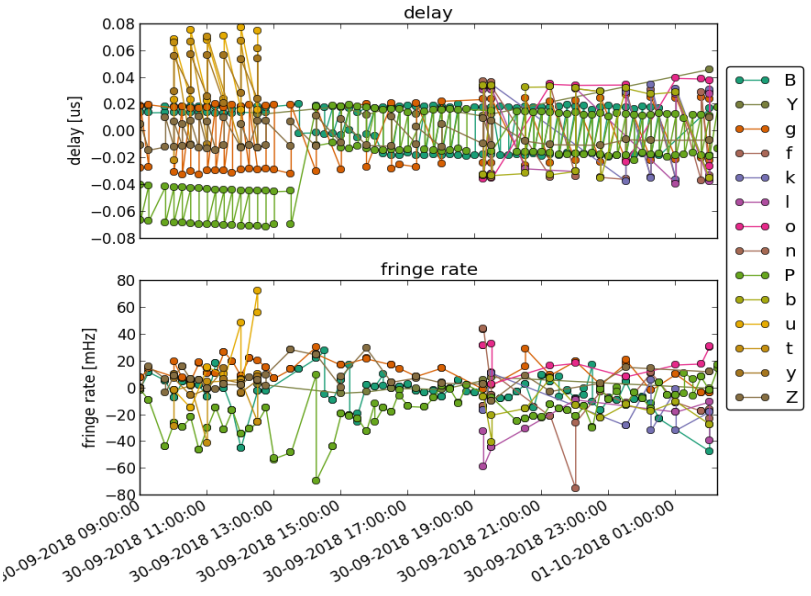



```
Delays statistics
st #pts mean    std. dev
B  100   -0.0102 0.033935
Y  26   +0.0450 0.019698
g  70   -0.0299 0.031804
f  24   -0.0119 0.024702
k  17   -0.0089 0.022984
m  04   +0.0181 0.018873
l  20   -0.0083 0.021727
o  20   -0.0113 0.022394
n  10   -0.0105 0.019404
b  18   -0.0042 0.018201
u  12   -0.0097 0.013186
t  12   -0.0314 0.026828
y  14   -0.0057 0.022177
X  120   -0.0163 0.029149
Z  45   -0.0240 0.029141
```

```
Fringe rate statistics
st #pts mean    std. dev
B  100   -18.0300 11.720390
Y  26   +15.3428 11.666447
g  70   -4.8572 10.244793
f  24   -20.1422 10.028965
k  17   -26.1041 12.363942
m  04   -1.3818 1.707933
l  20   -30.5671 8.970561
o  20   -25.6094 9.732581
n  10   +1.7536 10.856511
b  18   -28.2381 7.825514
u  12   -14.4118 27.269213
t  12   -21.2622 32.186669
y  14   -26.4557 6.017417
X  120   -16.1888 15.426980
Z  45   -12.9495 12.646808
```

Reference station: P | Pol: RR,LL

ON:




```
Delays statistics
st #pts mean    std. dev
B  115   +0.0051 0.016027
Y  09   +0.0179 0.010327
g  66   -0.0036 0.024079
f  20   -0.0018 0.032860
k  12   -0.0012 0.033724
l  11   -0.0045 0.031671
o  12   +0.0139 0.031389
n  04   +0.0015 0.035465
P  120   -0.0163 0.029149
b  16   +0.0034 0.032053
u  12   +0.0468 0.026215
t  10   +0.0267 0.040004
y  12   +0.0412 0.014782
Z  49   -0.0030 0.009326
```

```
Fringe rate statistics
st #pts mean    std. dev
B  115   -2.5535 12.025658
Y  09   +1.0256 3.749695
g  66   +12.5040 8.554566
f  20   -12.2159 18.529008
k  12   -13.2998 15.501574
l  11   -28.3422 16.231389
o  12   +20.8217 10.251062
n  04   +19.6113 24.657054
P  120   -16.1888 15.426980
b  16   -13.9353 11.484153
u  12   +15.8012 27.265955
t  10   -6.4287 17.155945
y  12   +3.6171 6.319910
Z  49   +7.5410 8.809312
```

Reference station: X | Pol: RR,LL

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
```

mm015_pt2.fits:

				EF	GL	ON	YS	PV	MH	FD	NL	OV	PT	BR	KP	LA	MK	KY	KU	KT
c182c_001	No0001	3C84	3mm_RDBE	o	o	o	x	o	o	40	40	40	x	40	40	40	40	.	.	.
c182c_002	No0002	3C84	3mm_RDBE	o	o	o	x	o	o	75	75	71	x	71	75	75	71	.	.	.
c182c_003	No0003	0420-014	3mm_RDBE	.	.	.	.	.	.	73	73	73	x	73	73	73	73	.	.	.
c182c_004	No0004	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_005	No0005	3C345	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_006	No0006	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_007	No0007	1633+38	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_008	No0008	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_009	No0009	3C345	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_010	No0010	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_011	No0011	1633+38	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_012	No0012	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_013	No0013	3C345	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_014	No0014	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_015	No0015	1633+38	3mm_RDBE	o	o	o	x	40	o	.	.	.	.	.	.	.	.	o	75	75
c182c_016	No0016	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_017	No0017	3C345	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_018	No0018	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_019	No0019	1633+38	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_020	No0020	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_021	No0021	3C345	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_022	No0022	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_023	No0023	1633+38	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_024	No0024	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_025	No0025	3C345	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_026	No0026	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_027	No0027	1633+38	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_028	No0028	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_029	No0029	3C345	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_030	No0030	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_032	No0032	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_034	No0034	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_036	No0036	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_038	No0038	0420-014	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_040	No0040	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_042	No0042	0420-014	3mm_RDBE	.	.	.	.	.	.	70	70	73	x	73	70	70	73	.	.	.
c182c_044	No0044	3C120	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_047	No0047	0420-014	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	.	.	.
c182c_049	No0049	3C120	3mm_RDBE	.	.	.	.	.	.	o	83	o	x	o	o	o	o	.	.	.
c182c_051	No0051	0420-014	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	.	.	.
c182c_053	No0053	3C120	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	.	.	.
c182c_055	No0055	OJ287	3mm_RDBE	.	.	.	.	.	.	o	76	o	x	o	o	o	o	.	.	.
c182c_057	No0057	OJ287	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_059	No0059	OJ287	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_061	No0061	OJ287	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182c_063	No0063	OJ287	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	.	.	.

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c182c_065 No0065    OJ287 3mm_RDBE .  .  .  .  .  .  o  o  o  x  o  o  o  o  .  .  .
c182c_067 No0067    OJ287 3mm_RDBE .  .  .  .  .  .  o  o  o  x  o  o  o  o  .  .  .
c182c_069 No0069    OJ287 3mm_RDBE .  .  .  .  .  .  o  o  o  x  o  o  o  o  .  .  .
c182c_071 No0071    OJ287 3mm_RDBE .  .  .  .  .  .  o  o  o  x  o  o  o  o  .  .  .
c182c_073 No0073    OJ287 3mm_RDBE .  .  .  .  .  .  o  .  o  x  o  o  o  o  o  30 o
c182c_075 No0075    OJ287 3mm_RDBE .  .  .  .  .  .  o  .  o  x  o  o  o  o  o  26 o
c182c_077 No0077    OJ287 3mm_RDBE .  .  .  .  .  .  o  .  o  x  o  o  o  o  o  x  o
c182c_079 No0079    OJ287 3mm_RDBE .  .  .  .  .  .  o  .  o  x  o  o  o  o  o  80 o
c182c_080 No0080  1633+38 3mm_RDBE o  o  o  o  o  o  o  57 o  x  o  o  o  .  .  .  .
c182c_081 No0081  1633+38 3mm_RDBE o  o  o  o  o  o  57 57 57 x  57 57 57 .  .  .  .
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