

MB011A Correlation Report

General information

- A part of [C182C](#)
- PI: BACH
- Targets: Cygnus A etc.
- 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	<p>Fringe overview of all baselines (all of C182C) including this antenna in LL (left for each baseline) and RR (right for each baseline).</p> <p>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 extremely large single-band delay, > 0.1us)</p> <p>c182c_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</p> <p>Examples of fourfit fringe plots:</p> <p>c182c_No0107_3C454.3_BX_LL.pdf, c182c_No0107_3C454.3_BX_RR.pdf, no LR or RL fringes.</p> <p>Same for all antennas below unless otherwise noted.</p>	
On	X	yes	<p>c182c_SBD_RfAnt_On_LLRR_AllSrc.pdf</p> <p>c182c_No0107_3C454.3_BX_LL.pdf, c182c_No0107_3C454.3_BX_RR.pdf, no LR or RL fringes.</p> <p>c182c_No0107_3C454.3_XP_LL.pdf, c182c_No0107_3C454.3_XP_LR.pdf, c182c_No0107_3C454.3_XP_RL.pdf, c182c_No0107_3C454.3_XP_RR.pdf.</p>	
Ys	Y	yes	<p>c182c_SBD_RfAnt_Ys_LLRR_AllSrc.pdf</p> <p>c182c_No0107_3C454.3_PY_LL.pdf, c182c_No0107_3C454.3_PY_LR.pdf, c182c_No0107_3C454.3_PY_RL.pdf, c182c_No0107_3C454.3_PY_RR.pdf.</p>	<p>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,</p>

Station	Code	Fringes	Plots	Comments
				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_No0107_3C454.3_ZP_LL.pdf , c182c_No0107_3C454.3_ZP_LR.pdf , c182c_No0107_3C454.3_ZP_RL.pdf , c182c_No0107_3C454.3_ZP_RR.pdf .	
Pv	P	yes	c182c_SBD_RfAnt_Pv_LLRR_AllSrc.pdf c182c_No0107_3C454.3_XP_LL.pdf , c182c_No0107_3C454.3_XP_LR.pdf , c182c_No0107_3C454.3_XP_RL.pdf , c182c_No0107_3C454.3_XP_RR.pdf . c182c_No0107_3C454.3_PY_LL.pdf , c182c_No0107_3C454.3_PY_LR.pdf , c182c_No0107_3C454.3_PY_RL.pdf , c182c_No0107_3C454.3_PY_RR.pdf . c182c_No0107_3C454.3_ZP_LL.pdf , c182c_No0107_3C454.3_ZP_LR.pdf , c182c_No0107_3C454.3_ZP_RL.pdf , c182c_No0107_3C454.3_ZP_RR.pdf . c182c_No0107_3C454.3_gP_LL.pdf , c182c_No0107_3C454.3_gP_LR.pdf , c182c_No0107_3C454.3_gP_RL.pdf , c182c_No0107_3C454.3_gP_RR.pdf . c182c_No0107_3C454.3_bP_LL.pdf , c182c_No0107_3C454.3_bP_RR.pdf , no LR or RL fringes. c182c_No0107_3C454.3_fp_LL.pdf , c182c_No0107_3C454.3_fp_RL.pdf , c182c_No0107_3C454.3_fp_RR.pdf , no LR fringe. c182c_No0107_3C454.3_kP_LL.pdf , c182c_No0107_3C454.3_kP_LR.pdf , c182c_No0107_3C454.3_kP_RL.pdf , c182c_No0107_3C454.3_kP_RR.pdf . c182c_No0107_3C454.3_lP_LL.pdf , c182c_No0107_3C454.3_lP_RR.pdf , no LR or RL fringes. c182c_No0107_3C454.3_nP_LL.pdf , c182c_No0107_3C454.3_nP_RR.pdf , no LR or RL fringes. c182c_No0107_3C454.3_oP_LL.pdf , c182c_No0107_3C454.3_oP_LR.pdf , c182c_No0107_3C454.3_oP_RR.pdf , no RL fringe. c182c_No0058_2013+370_yP_LL.pdf , c182c_No0058_2013+370_yP_LR.pdf , c182c_No0058_2013+370_yP_RL.pdf , c182c_No0058_2013+370_yP_RR.pdf .	Had a small clock jump, see the residual plots.
GLT: Gl	g	yes	c182c_SBD_RfAnt_Gl_LLRR_AllSrc.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

Station	Code	Fringes	Plots	Comments
			c182c_No0107_3C454.3_gP_LL.pdf , c182c_No0107_3C454.3_gP_LR.pdf , c182c_No0107_3C454.3_gP_RL.pdf , c182c_No0107_3C454.3_gP_RR.pdf .	reconstruct the proper circular polarization, this station must be flagged or used only for the total power measurement.
VLBA: Br	b	yes	c182c_SBD_RfAnt_Br_LLRR_AllSrc.pdf c182c_No0107_3C454.3_bP_LL.pdf , c182c_No0107_3C454.3_bP_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: Fd	f	yes	c182c_SBD_RfAnt_Fd_LLRR_AllSrc.pdf c182c_No0107_3C454.3_fP_LL.pdf , c182c_No0107_3C454.3_fP_RL.pdf , c182c_No0107_3C454.3_fP_RR.pdf , no LR fringe. c182c_No0128_3C454.3_fm_LL.pdf , c182c_No0128_3C454.3_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_No0107_3C454.3_kP_LL.pdf , c182c_No0107_3C454.3_kP_LR.pdf , c182c_No0107_3C454.3_kP_RL.pdf , c182c_No0107_3C454.3_kP_RR.pdf .	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_No0107_3C454.3_lP_LL.pdf , c182c_No0107_3C454.3_lP_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_No0128_3C454.3_fm_LL.pdf , c182c_No0128_3C454.3_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: Nl	n	yes	c182c_SBD_RfAnt_Nl_LLRR_AllSrc.pdf c182c_No0107_3C454.3_nP_LL.pdf , c182c_No0107_3C454.3_nP_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_No0107_3C454.3_oP_LL.pdf , c182c_No0107_3C454.3_oP_LR.pdf , c182c_No0107_3C454.3_oP_RR.pdf , no RL 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

Station	Code	Fringes	Plots	Comments
			-----	save it, but the data has proven to be unrecoverable.
KVN: Kt	t	no	c182c_SBD_RfAnt_Kt_LLRR_AllSrc.pdf -----	All fringes seem to be false ones, even those that have low SBD and appear green in the fringe overview table (there are true fringes in C182C, but not in MB011A)
KVN: Ku	u	no	c182c_SBD_RfAnt_Ku_LLRR_AllSrc.pdf -----	All fringes seem to be false ones, even those that have low SBD and appear green in the fringe overview table (there are true fringes in C182C, but not in MB011A)
KVN: Ky	y	yes	c182c_SBD_RfAnt_Ky_LLRR_AllSrc.pdf c182c_No0058_2013+370_yP_LL.pdf , c182c_No0058_2013+370_yP_LR.pdf , c182c_No0058_2013+370_yP_RL.pdf , c182c_No0058_2013+370_yP_RR.pdf .	The baseline and scan shown in the plots seem to be the only true fringes in MB011A

Notes

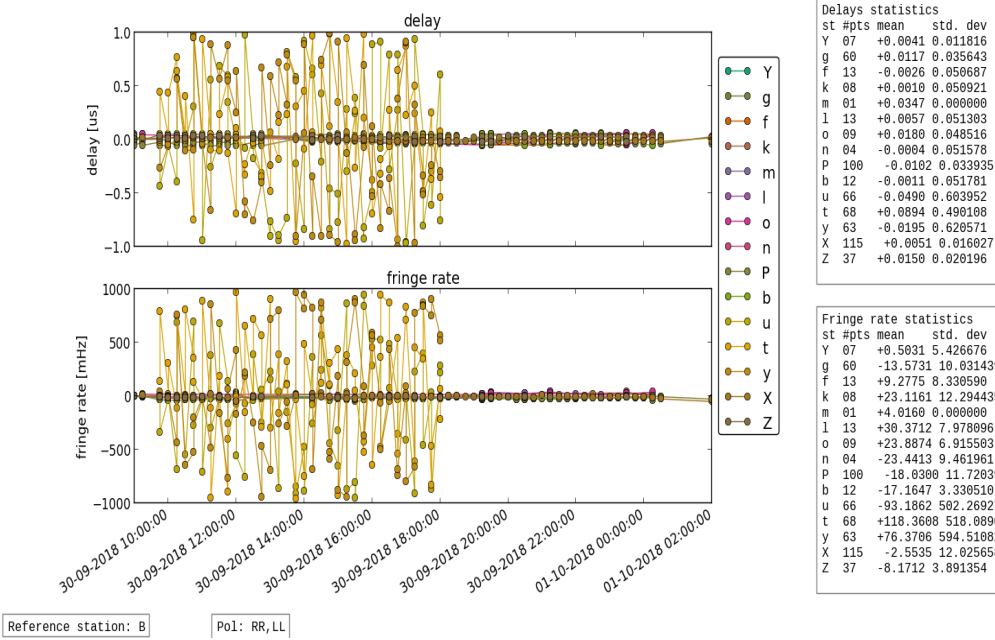
All VLBA antennas are affected by the same problem (probably originating in the control software) during the whole session: for a significant portion of scans the recording starts several seconds or even few minutes late compared with the schedule. This results in effective reduction of observing time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

For some reason fourfit finds a fringe for every baseline including a KVN antenna. We are still 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

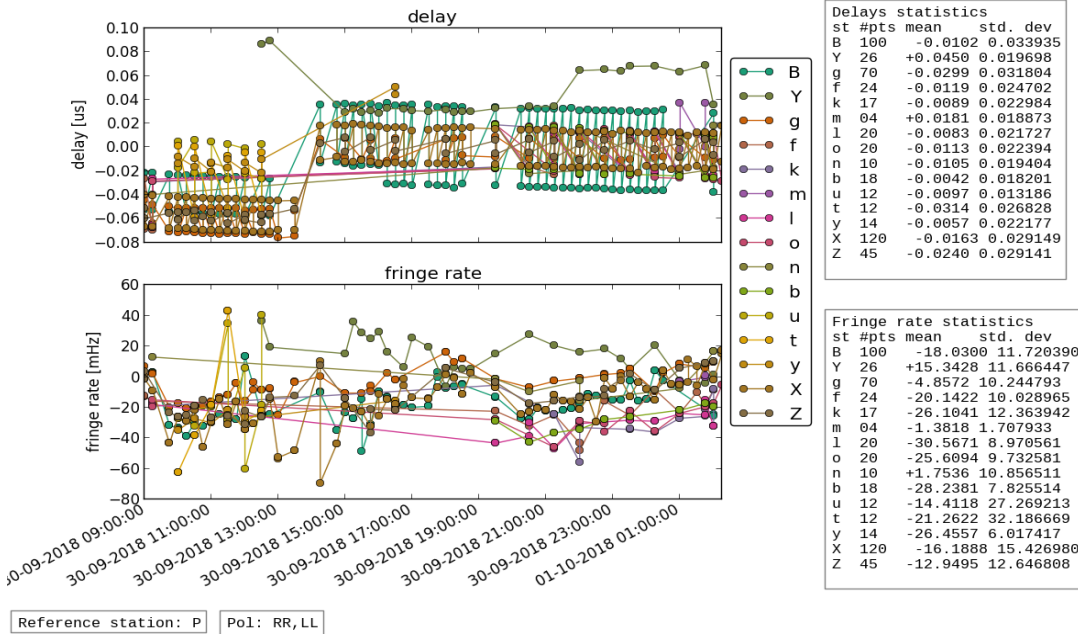
EF (the outliers are due to multiple false fringes in KVN antennas detected by fourfit):



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	0.063952
t	68	+0.0094	0.490100
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	518.009021
y	63	+76.3706	594.510827
X	115	-2.5535	12.025658
Z	37	-8.1712	3.891354

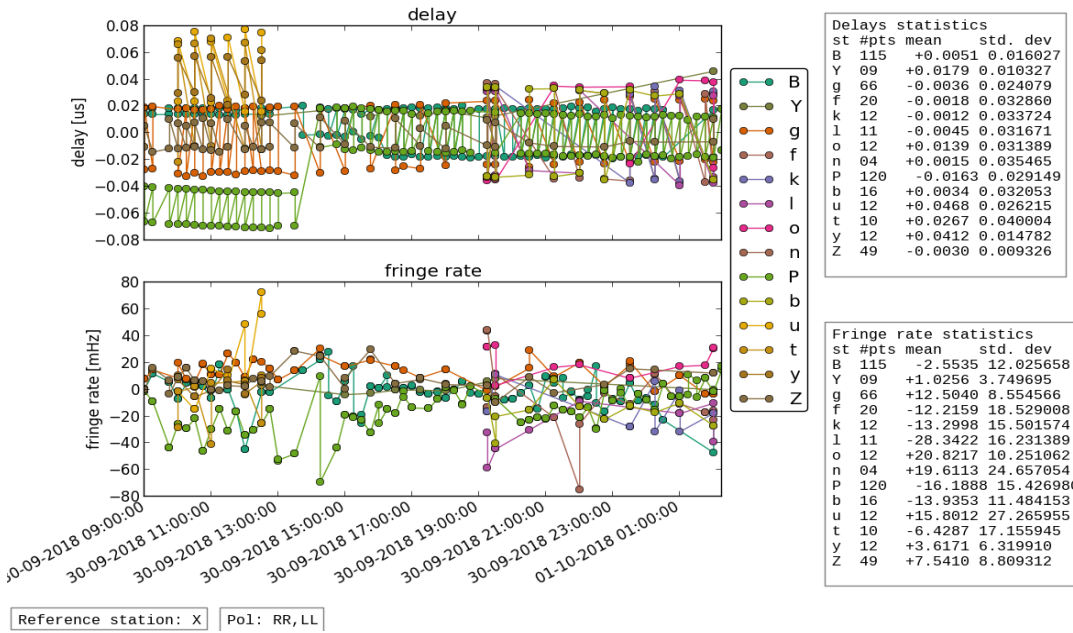
PV (had a small clock jump):



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

ON:



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

mb011a.fits:

				EF	GL	ON	YS	PV	MH	FD	NL	OV	PT	BR	KP	LA	MK	KY	KU	KT
c182c_031	No0031	2013+370	3mm_RDBE	o	o	o	o	48	o	.	.	.	.	.	.	.	.	o	62	71
c182c_033	No0033	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	75	75
c182c_035	No0035	2013+370	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	76	76
c182c_037	No0037	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	87	87
c182c_039	No0039	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	26	26
c182c_041	No0041	2013+370	3mm_RDBE	o	o	o	o	38	o	.	.	.	.	.	.	.	.	o	76	76
c182c_043	No0043	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	87	87
c182c_045	No0045	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	31	26
c182c_046	No0046	2013+370	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_048	No0048	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_050	No0050	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_052	No0052	2013+370	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_054	No0054	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_056	No0056	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_058	No0058	2013+370	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_060	No0060	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o
c182c_062	No0062	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	o	o	o

c182c_064	No0064	2013+370	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	.	o	o	o
c182c_066	No0066	CYG_A	3mm_RDBE	39	o	o	o	o	o	.	.	.	.	.	.	.	.	.	o	o	o
c182c_068	No0068	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	.	o	35	o
c182c_070	No0070	2013+370	3mm_RDBE	o	o	o	o	o	o	.	.	.	.	.	.	.	.	.	o	04	o
c182c_072	No0072	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	o	.	.	.	.	.	.	.	.	.	.
c182c_074	No0074	CYG_A	3mm_RDBE	o	o	o	o	o	o	.	93	.	.	.	.	.	.	.	.	.	.
c182c_076	No0076	CYG_A	3mm_RDBE	o	x	o	o	o	o	.	93	.	.	.	.	.	.	.	.	.	.
c182c_078	No0078	CYG_A	3mm_RDBE	o	o	o	o	44	o	.	71	.	.	.	.	.	.	.	.	.	.
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	.	.	.	.
c182c_082	No0082	CYG_A	3mm_RDBE	o	o	o	o	.	o	66	66	.	x	61	.	66	.	.	.	.
c182c_083	No0083	CYG_A	3mm_RDBE	o	o	o	o	o	o	81	81	o	x	75	81	81	.	.	.	.
c182c_084	No0084	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	.	.	.	.
c182c_085	No0085	2013+370	3mm_RDBE	o	o	o	o	o	o	71	71	95	x	66	71	71	.	.	.	.
c182c_086	No0086	CYG_A	3mm_RDBE	o	o	o	o	o	o	75	75	78	x	78	75	75	.	.	.	.
c182c_087	No0087	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	.	.	.	.
c182c_088	No0088	2013+370	3mm_RDBE	o	o	o	o	o	o	61	61	61	x	61	61	61	.	.	.	.
c182c_089	No0089	CYG_A	3mm_RDBE	o	o	o	o	o	o	75	75	75	x	75	75	75	.	.	.	.
c182c_090	No0090	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	.	.	.	.
c182c_091	No0091	2013+370	3mm_RDBE	o	o	o	o	o	o	61	61	61	x	61	61	61	.	.	.	.
c182c_092	No0092	CYG_A	3mm_RDBE	o	o	o	o	o	o	75	75	75	x	75	75	75	.	.	.	.
c182c_093	No0093	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	.	.	.	.
c182c_094	No0094	2013+370	3mm_RDBE	o	o	o	o	o	o	61	61	61	x	61	61	61	.	.	.	.
c182c_095	No0095	CYG_A	3mm_RDBE	o	o	o	o	o	o	78	78	75	x	75	78	78	.	.	.	.
c182c_096	No0096	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	.	.	.	.
c182c_097	No0097	2013+370	3mm_RDBE	o	o	o	o	o	o	66	66	61	x	61	66	66	.	.	.	.
c182c_098	No0098	CYG_A	3mm_RDBE	o	o	o	o	o	o	78	78	75	x	75	78	78	75	.	.	.	.
c182c_099	No0099	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	93	.	.	.	.
c182c_100	No0100	2013+370	3mm_RDBE	o	o	o	o	o	o	66	66	61	x	61	66	66	61	.	.	.	.
c182c_101	No0101	CYG_A	3mm_RDBE	o	o	o	o	o	o	81	81	78	x	78	81	81	78	.	.	.	.
c182c_102	No0102	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	93	.	.	.	.
c182c_103	No0103	2013+370	3mm_RDBE	o	o	o	o	o	o	66	66	66	x	66	66	66	66	.	.	.	.
c182c_104	No0104	CYG_A	3mm_RDBE	o	o	o	o	o	o	81	81	78	x	78	81	81	78	.	.	.	.
c182c_105	No0105	CYG_A	3mm_RDBE	o	o	o	o	o	o	93	93	93	x	93	93	93	93	.	.	.	.
c182c_106	No0106	2013+370	3mm_RDBE	o	o	o	o	o	o	66	66	66	x	66	66	66	66	.	.	.	.
c182c_107	No0107	3C454.3	3mm_RDBE	o	o	o	o	o	o	61	61	61	x	61	61	61	.	.	.	.	.
c182c_108	No0108	CYG_A	3mm_RDBE	o	o	o	o	o	o	84	84	84	x	84	84	84	84	.	.	.	.
c182c_109	No0109	CYG_A	3mm_RDBE	o	o	o	o	.	o	o	o	93	x	93	o	o	93	.	.	.	.
c182c_110	No0110	2013+370	3mm_RDBE	o	o	.	.	.	.	o	o	66	x	66	o	o	66	.	.	.	.
c182c_111	No0111	CYG_A	3mm_RDBE	.	o	.	.	.	.	81	81	81	x	81	81	81	81	.	.	.	.
c182c_112	No0112	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	.	.	.	.
c182c_113	No0113	2013+370	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	.	.	.	.
c182c_114	No0114	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	.	.	.	.
c182c_115	No0115	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	x	o	.
c182c_116	No0116	2013+370	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	x	o	.
c182c_117	No0117	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	87	o	.
c182c_118	No0118	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o	.
c182c_119	No0119	2013+370	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o	.
c182c_120	No0120	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o	.
c182c_121	No0121	CYG_A	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o	.

c182c_122	No0122	2013+370	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o
c182c_123	No0123		CYG_A 3mm_RDBE	.	o	.	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182c_124	No0124		CYG_A 3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o
c182c_125	No0125	2013+370	3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o
c182c_126	No0126		CYG_A 3mm_RDBE	.	o	.	.	.	.	93	93	o	x	o	93	93	o	o	o	o
c182c_127	No0127		CYG_A 3mm_RDBE	.	o	.	.	.	.	92	92	o	x	o	92	92	o	o	o	o
c182c_128	No0128	3C454.3	3mm_RDBE	.	o	.	.	.	.	66	66	o	x	o	66	66	o	.	.	.
c182c_129	No0129		CYG_A 3mm_RDBE	.	o	.	.	.	.	75	75	81	x	81	75	75	81	o	o	o
c182c_130	No0130		CYG_A 3mm_RDBE	.	o	.	.	.	.	93	93	93	x	93	93	93	93	o	o	o
c182c_131	No0131	2013+370	3mm_RDBE	.	o	.	.	.	.	93	93	93	x	93	93	93	93	o	o	o
c182c_132	No0132		CYG_A 3mm_RDBE	.	o	.	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182c_133	No0133		CYG_A 3mm_RDBE	.	o	.	.	.	.	o	o	66	x	66	o	o	66	93	o	93