

# C182B/MM015\_pt1 Correlation Report

## General information

- The **first part** of science project **MM015**, the [second part of MM015](#) is in [C182C](#).
- 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](http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/sep18/feedback_sep18.asc)
- Text file with detailed antenna statistics:  
[c182b.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 C182B) 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, &gt; 0.1us)</p> <p><a href="#">c182b_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</a></p> <p>Examples of fourfit fringe plots:</p> <p><a href="#">c182b_No0239_3C454.3_BX_LL.pdf</a>, <a href="#">c182b_No0239_3C454.3_BX_LR.pdf</a>,  <a href="#">c182b_No0239_3C454.3_BX_RL.pdf</a>, <a href="#">c182b_No0239_3C454.3_BX_RR.pdf</a>.</p> <p><a href="#">c182b_No0002_1055+018_BY_RL.pdf</a>,  <a href="#">c182b_No0002_1055+018_BY_RR.pdf</a>,  no LL or LR fringes.</p> <p><a href="#">c182b_No0243_0420-014_BZ_LL.pdf</a>, <a href="#">c182b_No0243_0420-014_BZ_LR.pdf</a>,  <a href="#">c182b_No0243_0420-014_BZ_RL.pdf</a>, <a href="#">c182b_No0243_0420-014_BZ_RR.pdf</a>.</p> <p><a href="#">c182b_No0239_3C454.3_BP_LL.pdf</a>, <a href="#">c182b_No0239_3C454.3_BP_LR.pdf</a>,  <a href="#">c182b_No0239_3C454.3_BP_RL.pdf</a>, <a href="#">c182b_No0239_3C454.3_BP_RR.pdf</a>.</p> <p><a href="#">c182b_No0239_3C454.3_Bg_LL.pdf</a>, <a href="#">c182b_No0239_3C454.3_Bg_LR.pdf</a>,  <a href="#">c182b_No0239_3C454.3_Bg_RL.pdf</a>, <a href="#">c182b_No0239_3C454.3_Bg_RR.pdf</a>.</p> <p><a href="#">c182b_No0239_3C454.3_bB_LL.pdf</a>, <a href="#">c182b_No0239_3C454.3_bB_RR.pdf</a>,  no LR or RL fringes.</p>	

Station	Code	Fringes	Plots	Comments
			<p><a href="#">c182b No0239 3C454.3 Bf LL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bf LR.pdf</a>,  <a href="#">c182b No0239 3C454.3 Bf RL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bf RR.pdf</a>.</p> <p><a href="#">c182b No0239 3C454.3 Bk LL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bk RR.pdf</a>,  no LR or RL fringes.</p> <p><a href="#">c182b No0239 3C454.3 Bl LL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bl RR.pdf</a>,  no LR or RL fringes.</p> <p><a href="#">c182b No0239 3C454.3 Bm LL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bm RR.pdf</a>,  no LR or RL fringes</p> <p><a href="#">c182b No0239 3C454.3 Bn LL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bn RR.pdf</a>,  no LR or RL fringes.</p> <p><a href="#">c182b No0239 3C454.3 Bo LL.pdf</a>, <a href="#">c182b No0239 3C454.3 Bo RR.pdf</a>,  no LR or RL fringes.</p> <p>Same for all antennas below unless otherwise noted.</p>	
On	X	yes	<p><a href="#">c182b SBD RfAnt On LLRR AllSrc.pdf</a></p> <p><a href="#">c182b No0239 3C454.3 BX LL.pdf</a>, <a href="#">c182b No0239 3C454.3 BX LR.pdf</a>,  <a href="#">c182b No0239 3C454.3 BX RL.pdf</a>, <a href="#">c182b No0239 3C454.3 BX RR.pdf</a>.</p>	
Ys	Y	yes	<p><a href="#">c182b SBD RfAnt Ys LLRR AllSrc.pdf</a></p> <p><a href="#">c182b No0002 1055+018 BY RL.pdf</a>,  <a href="#">c182b No0002 1055+018 BY RR.pdf</a>,  no LL or LR fringes.</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, duplicated to both channels. But in this session it appears to have RCP only.
Mh	Z	yes	<p><a href="#">c182b SBD RfAnt Mh LLRR AllSrc.pdf</a></p> <p><a href="#">c182b No0243 0420-014 BZ LL.pdf</a>, <a href="#">c182b No0243 0420-014 BZ LR.pdf</a>,  <a href="#">c182b No0243 0420-014 BZ RL.pdf</a>, <a href="#">c182b No0243 0420-014 BZ RR.pdf</a>.</p> <p><a href="#">c182b No0243 0420-014 ZP LL.pdf</a>, <a href="#">c182b No0243 0420-014 ZP LR.pdf</a>,  <a href="#">c182b No0243 0420-014 ZP RL.pdf</a>, <a href="#">c182b No0243 0420-014 ZP RR.pdf</a>.</p>	
Pv	P	yes	<p><a href="#">c182b SBD RfAnt Pv LLRR AllSrc.pdf</a></p> <p><a href="#">c182b No0239 3C454.3 BP LL.pdf</a>, <a href="#">c182b No0239 3C454.3 BP LR.pdf</a>,  <a href="#">c182b No0239 3C454.3 BP RL.pdf</a>, <a href="#">c182b No0239 3C454.3 BP RR.pdf</a>.</p>	

Station	Code	Fringes	Plots	Comments
			<a href="#">c182b No0243 0420-014 ZP LL.pdf</a> , <a href="#">c182b No0243 0420-014 ZP LR.pdf</a> , <a href="#">c182b No0243 0420-014 ZP RL.pdf</a> , <a href="#">c182b No0243 0420-014 ZP RR.pdf</a> .  <a href="#">c182b No0205 0716+714 yP LL.pdf</a> , <a href="#">c182b No0205 0716+714 yP LR.pdf</a> , <a href="#">c182b No0205 0716+714 yP RL.pdf</a> , <a href="#">c182b No0205 0716+714 yP RR.pdf</a> .	
GLT: Gl	g	yes	<a href="#">c182b SBD RfAnt Gl LLRR AllSrc.pdf</a>  <a href="#">c182b No0239 3C454.3 Bg LL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bg LR.pdf</a> , <a href="#">c182b No0239 3C454.3 Bg RL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bg RR.pdf</a> .	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 reconstruct the proper circular polarization, this station must be flagged or used only for the total power measurement.
VLBA: Br	b	yes	<a href="#">c182b SBD RfAnt Br LLRR AllSrc.pdf</a>  <a href="#">c182b No0239 3C454.3 bB LL.pdf</a> , <a href="#">c182b No0239 3C454.3 bB RR.pdf</a> , 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	<a href="#">c182b SBD RfAnt Fd LLRR AllSrc.pdf</a>  <a href="#">c182b No0239 3C454.3 Bf LL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bf LR.pdf</a> , <a href="#">c182b No0239 3C454.3 Bf RL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bf RR.pdf</a> .	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.
VLBA: Kp	k	yes	<a href="#">c182b SBD RfAnt Kp LLRR AllSrc.pdf</a>  <a href="#">c182b No0239 3C454.3 Bk LL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bk RR.pdf</a> , 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: La	l	yes	<a href="#">c182b SBD RfAnt La LLRR AllSrc.pdf</a>  <a href="#">c182b No0239 3C454.3 Bl LL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bl RR.pdf</a> , 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	<a href="#">c182b SBD RfAnt Mk LLRR AllSrc.pdf</a>  <a href="#">c182b No0239 3C454.3 Bm LL.pdf</a> , <a href="#">c182b No0239 3C454.3 Bm RR.pdf</a> , 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	<a href="#">c182b SBD RfAnt Nl LLRR AllSrc.pdf</a>	All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%.

Station	Code	Fringes	Plots	Comments
			<a href="#">c182b_No0239_3C454.3_Bn_LL.pdf</a> , <a href="#">c182b_No0239_3C454.3_Bn_RR.pdf</a> , no LR or RL fringes.	Data for the first several scans missing, probably due to a lost Mk5 module.
VLBA: Ov	o	yes	<a href="#">c182b_SBD_RfAnt_Ov_LLRR_AllSrc.pdf</a> <a href="#">c182b_No0239_3C454.3_Bo_LL.pdf</a> , <a href="#">c182b_No0239_3C454.3_Bo_RR.pdf</a> , 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: Pt	p	no	<a href="#">c182b_SBD_RfAnt_Pt_LLRR_AllSrc.pdf</a> -----	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	no	<a href="#">c182b_SBD_RfAnt_Kt_LLRR_AllSrc.pdf</a> <a href="#">c182b_No0205_0716+714_ty_LL.pdf</a> , <a href="#">c182b_No0205_0716+714_ty_LR.pdf</a> , <a href="#">c182b_No0205_0716+714_ty_RL.pdf</a> , <a href="#">c182b_No0205_0716+714_ty_RR.pdf</a> .	All fringes seem to be false ones, even those that have low SBD and appear green in the fringe overview table  See the plots for one possible, but very strange fringe to Ky.
KVN: Ku	u	no	<a href="#">c182b_SBD_RfAnt_Ku_LLRR_AllSrc.pdf</a> -----	All fringes seem to be false ones, even those that have low SBD and appear green in the fringe overview table
KVN: Ky	y	yes	<a href="#">c182b_SBD_RfAnt_Ky_LLRR_AllSrc.pdf</a> <a href="#">c182b_No0205_0716+714_yP_LL.pdf</a> , <a href="#">c182b_No0205_0716+714_yP_LR.pdf</a> , <a href="#">c182b_No0205_0716+714_yP_RL.pdf</a> , <a href="#">c182b_No0205_0716+714_yP_RR.pdf</a> . <a href="#">c182b_No0205_0716+714_ty_LL.pdf</a> , <a href="#">c182b_No0205_0716+714_ty_LR.pdf</a> , <a href="#">c182b_No0205_0716+714_ty_RL.pdf</a> , <a href="#">c182b_No0205_0716+714_ty_RR.pdf</a> .	Real fringes only to Pv (with exception of one possible but very strange fringe to Kt, see the plots)

## Notes

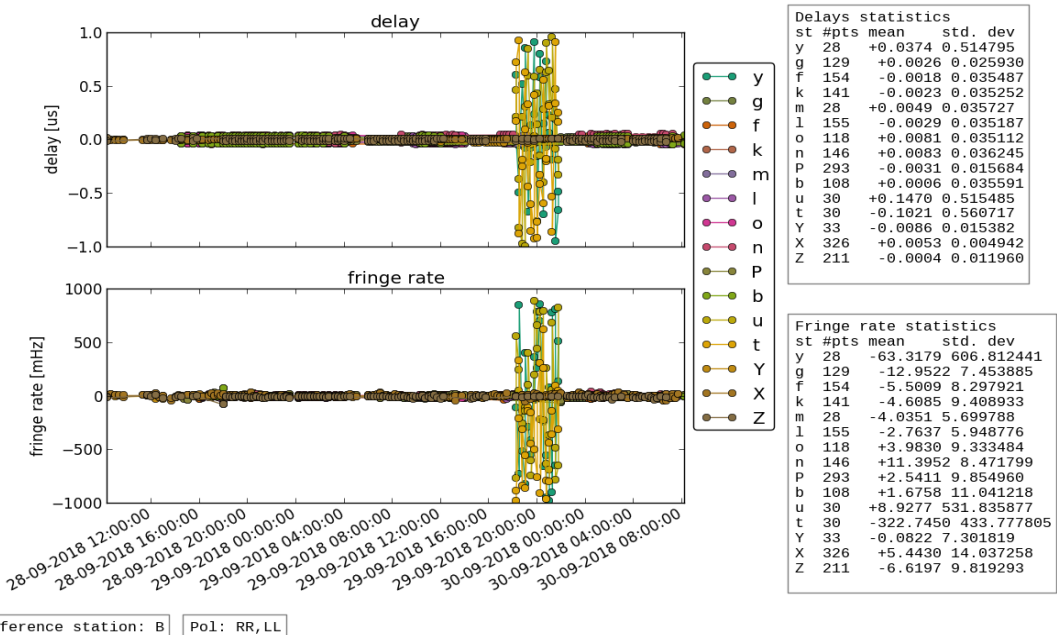
All VLBA antennas are affected by the same problem (probably originating in the control software) during the whole session: for a significant portion of scans the recording starts several seconds or even few minutes late compared with the schedule. This results in effective reduction of observing time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

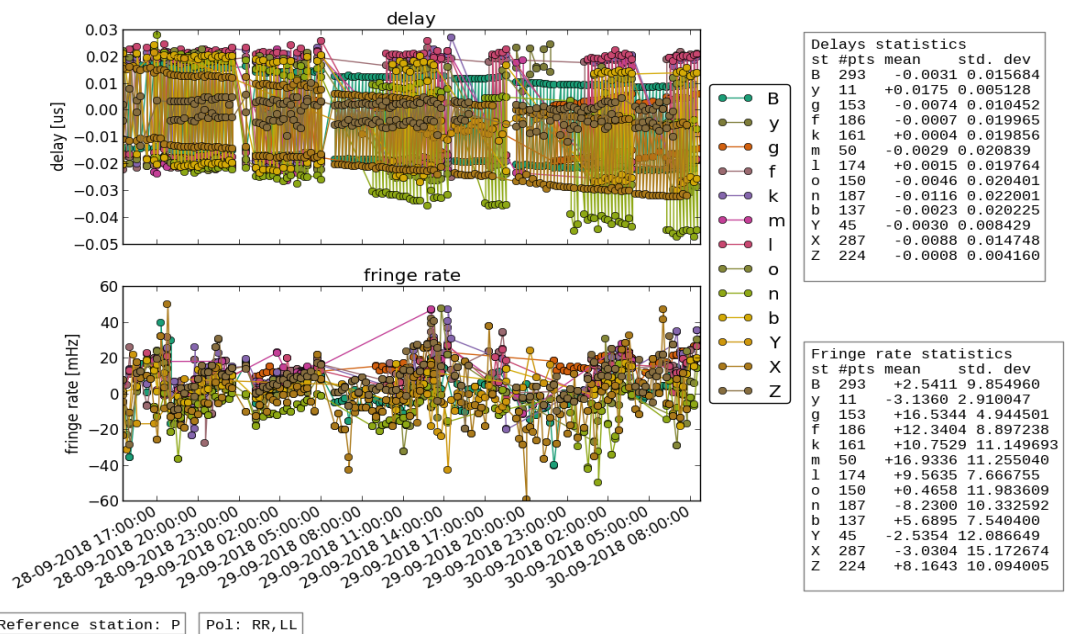
## Post-Correlation checks

### Residuals

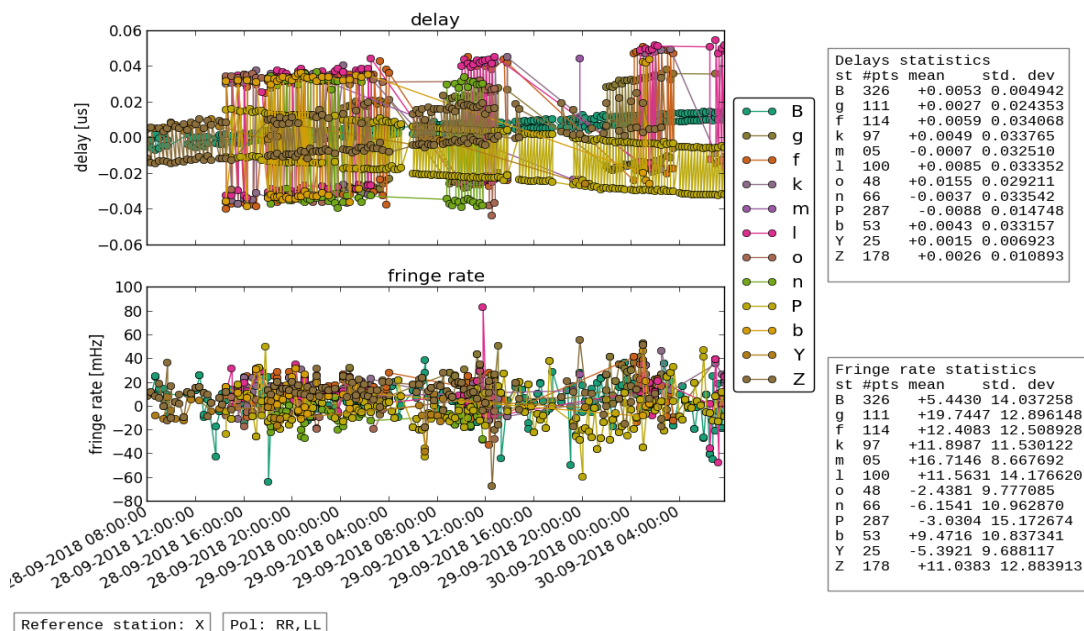
EF (the outliers are due to multiple false fringes in KVN antennas detected by fourfit):



PV:



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

**mm015\_pt1.fits:**

			EF	GL	ON	YS	PV	MH	FD	NL	OV	PT	BR	KP	LA	MK	KY	KU	KT
c182b_001	No0001	1156+295 3mm_RDBE	o	x	o	x	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_002	No0002	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_003	No0003	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_004	No0004	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_005	No0005	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_006	No0006	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_007	No0007	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_008	No0008	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_009	No0009	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_010	No0010	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_011	No0011	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_012	No0012	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_013	No0013	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_014	No0014	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_015	No0015	1156+295 3mm_RDBE	o	x	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.
c182b_016	No0016	1055+018 3mm_RDBE	o	.	o	o	x	o	.	.	.	.	.	.	.	.	.	.	.



c182b_067	No0067	1749+096	3mm_RDBE	.	.	.	.	.	.	73	73	70	x	73	73	73	73	.	.	.
c182b_068	No0068		BLLAC	3mm_RDBE	o	o	o	x	o	o	o	o	x	o	o	o	.	.	.	.
c182b_069	No0069		BLLAC	3mm_RDBE	o	o	o	x	o	o	63	63	63	x	63	63	63	.	.	.
c182b_070	No0070		BLLAC	3mm_RDBE	o	o	o	x	o	o	63	63	72	x	72	63	63	72	.	.
c182b_071	No0071		BLLAC	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	.	.
c182b_072	No0072	1749+096	3mm_RDBE	.	.	.	.	.	.	73	73	70	x	73	73	73	73	.	.	.
c182b_073	No0073		BLLAC	3mm_RDBE	o	o	o	x	o	o	o	o	o	x	o	o	o	o	.	.
c182b_074	No0074		BLLAC	3mm_RDBE	o	o	o	x	o	o	63	63	77	x	77	63	63	77	.	.
c182b_075	No0075		BLLAC	3mm_RDBE	o	o	o	x	o	o	63	63	63	x	63	63	63	63	.	.
c182b_076	No0076		BLLAC	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	.	.
c182b_077	No0077	1749+096	3mm_RDBE	.	.	.	.	.	.	73	73	70	x	73	73	73	73	.	.	.
c182b_078	No0078		BLLAC	3mm_RDBE	o	o	o	x	o	o	o	o	o	x	o	o	o	o	.	.
c182b_079	No0079		BLLAC	3mm_RDBE	o	o	o	x	o	o	63	63	68	x	68	63	63	68	.	.
c182b_080	No0080		BLLAC	3mm_RDBE	o	o	o	x	o	o	72	72	68	x	68	72	72	68	.	.
c182b_081	No0081		BLLAC	3mm_RDBE	o	o	o	x	o	o	77	77	68	x	68	77	77	68	.	.
c182b_082	No0082		BLLAC	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	.	.
c182b_083	No0083	1749+096	3mm_RDBE	.	.	.	.	.	.	73	73	73	x	76	73	73	76	o	o	o
c182b_084	No0084		BLLAC	3mm_RDBE	o	o	o	x	o	o	.	.	.	.	.	.	.	.	.	.
c182b_085	No0085	1749+096	3mm_RDBE	.	.	.	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_086	No0086		BLLAC	3mm_RDBE	o	o	o	x	o	o	o	o	o	x	o	o	o	o	.	.
c182b_087	No0087	1749+096	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	o	o	o
c182b_088	No0088		BLLAC	3mm_RDBE	o	o	o	x	o	o	o	o	o	x	o	o	o	o	.	.
c182b_089	No0089	1749+096	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	o	o	o
c182b_090	No0090		BLLAC	3mm_RDBE	o	o	o	x	.	o	o	o	o	x	o	o	o	o	.	.
c182b_091	No0091	1749+096	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	o	o	o
c182b_092	No0092		BLLAC	3mm_RDBE	.	o	o	.	.	o	o	o	o	x	o	o	o	o	.	.
c182b_093	No0093	1749+096	3mm_RDBE	.	.	.	.	.	.	o	.	o	x	o	o	o	o	o	o	o
c182b_094	No0094		BLLAC	3mm_RDBE	.	o	o	.	.	o	o	o	o	x	o	o	o	o	.	.
c182b_095	No0095	1749+096	3mm_RDBE	.	.	.	.	.	.	.	.	o	.	o	o	.	o	o	o	o
c182b_096	No0096		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	.	.	.
c182b_097	No0097	OJ287	3mm_RDBE	o	.	o	x	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_098	No0098		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_099	No0099	OJ287	3mm_RDBE	o	.	o	x	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_100	No0100		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_101	No0101	OJ287	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_102	No0102		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_103	No0103	OJ287	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_104	No0104		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_105	No0105	1055+018	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_106	No0106		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_107	No0107	OJ287	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_108	No0108		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_109	No0109	OJ287	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_110	No0110		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_111	No0111	1055+018	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_112	No0112		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_113	No0113	OJ287	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_114	No0114		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o
c182b_115	No0115	OJ287	3mm_RDBE	o	.	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.
c182b_116	No0116		BLLAC	3mm_RDBE	.	o	.	.	.	o	o	o	x	o	o	o	o	o	o	o









c182b_267	No0267	0420-014	3mm_RDBE	o	o	o	x	o	.	66	66	66	x	66	66	66	.	.	.	.
c182b_268	No0268	3C120	3mm_RDBE	o	o	o	x	o	.	62	62	62	x	62	62	62	.	.	.	.
c182b_269	No0269	0420-014	3mm_RDBE	.	.	.	x	o	.	66	66	66	x	66	66	66	.	.	.	.
c182b_270	No0270	3C120	3mm_RDBE	o	o	.	x	o	.	62	62	62	x	62	62	62	.	.	.	.
c182b_271	No0271	0420-014	3mm_RDBE	.	.	.	x	o	.	66	66	66	x	66	66	66	.	.	.	.
c182b_272	No0272	3C120	3mm_RDBE	.	o	.	x	o	.	x	x	x	x	x	x	x	.	.	.	.