

# 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](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, &gt; 0.1us)</p> <p><a href="#">c182c_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</a></p> <p>Examples of fourfit fringe plots:</p> <p><a href="#">c182c_No0007_1633+38_BX_LL.pdf</a>, <a href="#">c182c_No0007_1633+38_BX_LR.pdf</a>,  <a href="#">c182c_No0007_1633+38_BX_RL.pdf</a>, <a href="#">c182c_No0007_1633+38_BX_RR.pdf</a>,  <a href="#">c182c_No0027_1633+38_BY_RL.pdf</a>, <a href="#">c182c_No0027_1633+38_BY_RR.pdf</a>,            no LL or LR fringes.</p> <p><a href="#">c182c_No0007_1633+38_BZ_LL.pdf</a>, <a href="#">c182c_No0007_1633+38_BZ_RL.pdf</a>,  <a href="#">c182c_No0007_1633+38_BZ_RR.pdf</a>, no LR fringe.</p> <p><a href="#">c182c_No0007_1633+38_BP_LL.pdf</a>, <a href="#">c182c_No0007_1633+38_BP_LR.pdf</a>,  <a href="#">c182c_No0007_1633+38_BP_RL.pdf</a>, <a href="#">c182c_No0007_1633+38_BP_RR.pdf</a>.</p> <p><a href="#">c182c_No0007_1633+38_Bg_LL.pdf</a>, <a href="#">c182c_No0007_1633+38_Bg_LR.pdf</a>,  <a href="#">c182c_No0007_1633+38_Bg_RL.pdf</a>, <a href="#">c182c_No0007_1633+38_Bg_RR.pdf</a>.</p> <p>Same for all antennas below unless otherwise noted.</p>	
On	X	yes	<p><a href="#">c182c_SBD_RfAnt_On_LLRR_AllSrc.pdf</a></p>	

Station	Code	Fringes	Plots	Comments
			<a href="#">c182c No0007 1633+38 BX_LL.pdf</a> , <a href="#">c182c No0007 1633+38 BX_LR.pdf</a> , <a href="#">c182c No0007 1633+38 BX_RL.pdf</a> , <a href="#">c182c No0007 1633+38 BX_RR.pdf</a> .  <a href="#">c182c No0023 1633+38 tX_LL.pdf</a> , <a href="#">c182c No0023 1633+38 tX_LR.pdf</a> , <a href="#">c182c No0023 1633+38 tX_RL.pdf</a> , <a href="#">c182c No0023 1633+38 tX_RR.pdf</a> .  <a href="#">c182c No0019 1633+38 uX_LL.pdf</a> , <a href="#">c182c No0019 1633+38 uX_LR.pdf</a> , <a href="#">c182c No0019 1633+38 uX_RL.pdf</a> , <a href="#">c182c No0019 1633+38 uX_RR.pdf</a> .  <a href="#">c182c No0023 1633+38 yX_LL.pdf</a> , <a href="#">c182c No0023 1633+38 yX_LR.pdf</a> , <a href="#">c182c No0023 1633+38 yX_RL.pdf</a> , <a href="#">c182c No0023 1633+38 yX_RR.pdf</a> .	
Ys	Y	yes	<a href="#">c182c SBD RfAnt Ys LLRR AllSrc.pdf</a> <a href="#">c182c No0027 1633+38 BY_RL.pdf</a> , <a href="#">c182c No0027 1633+38 BY_RR.pdf</a> , 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	<a href="#">c182c SBD RfAnt Mh LLRR AllSrc.pdf</a> <a href="#">c182c No0007 1633+38 BZ_LL.pdf</a> , <a href="#">c182c No0007 1633+38 BZ_RL.pdf</a> , <a href="#">c182c No0007 1633+38 BZ_RR.pdf</a> , no LR fringe.	
Pv	P	yes	<a href="#">c182c SBD RfAnt Pv LLRR AllSrc.pdf</a>  <a href="#">c182c No0007 1633+38 BP_LL.pdf</a> , <a href="#">c182c No0007 1633+38 BP_LR.pdf</a> , <a href="#">c182c No0007 1633+38 BP_RL.pdf</a> , <a href="#">c182c No0007 1633+38 BP_RR.pdf</a> .  <a href="#">c182c No0023 1633+38 tP_LL.pdf</a> , <a href="#">c182c No0023 1633+38 tP_LR.pdf</a> , <a href="#">c182c No0023 1633+38 tP_RL.pdf</a> , <a href="#">c182c No0023 1633+38 tP_RR.pdf</a> .  <a href="#">c182c No0019 1633+38 uP_LL.pdf</a> , <a href="#">c182c No0019 1633+38 uP_LR.pdf</a> , <a href="#">c182c No0019 1633+38 uP_RL.pdf</a> , <a href="#">c182c No0019 1633+38 uP_RR.pdf</a> .  <a href="#">c182c No0023 1633+38 yP_LL.pdf</a> , <a href="#">c182c No0023 1633+38 yP_LR.pdf</a> , <a href="#">c182c No0023 1633+38 yP_RL.pdf</a> , <a href="#">c182c No0023 1633+38 yP_RR.pdf</a> .	Had a small clock jump, see the residual plots.
GLT: Gl	g	yes	<a href="#">c182c SBD RfAnt Gl LLRR AllSrc.pdf</a> <a href="#">c182c No0007 1633+38 Bg_LL.pdf</a> , <a href="#">c182c No0007 1633+38 Bg_LR.pdf</a> , <a href="#">c182c No0007 1633+38 Bg_RL.pdf</a> , <a href="#">c182c No0007 1633+38 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.

Station	Code	Fringes	Plots	Comments
VLBA: Br	b	yes	<a href="#">c182c_SBD_RfAnt_Br_LLRR_AllSrc.pdf</a> <a href="#">c182c_No0008_3C120_bk_LL.pdf</a> , <a href="#">c182c_No0008_3C120_bk_LR.pdf</a> , <a href="#">c182c_No0008_3C120_bk_RL.pdf</a> , <a href="#">c182c_No0008_3C120_bk_RR.pdf</a> .	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="#">c182c_SBD_RfAnt_Fd_LLRR_AllSrc.pdf</a> <a href="#">c182c_No0010_0420-014_fk_LL.pdf</a> , <a href="#">c182c_No0010_0420-014_fk_RR.pdf</a> , no LR or RL fringes. <a href="#">c182c_No0010_0420-014_fm_LL.pdf</a> , <a href="#">c182c_No0010_0420-014_fm_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: Kp	k	yes	<a href="#">c182c_SBD_RfAnt_Kp_LLRR_AllSrc.pdf</a> <a href="#">c182c_No0008_3C120_bk_LL.pdf</a> , <a href="#">c182c_No0008_3C120_bk_LR.pdf</a> , <a href="#">c182c_No0008_3C120_bk_RL.pdf</a> , <a href="#">c182c_No0008_3C120_bk_RR.pdf</a> . <a href="#">c182c_No0010_0420-014_fk_LL.pdf</a> , <a href="#">c182c_No0010_0420-014_fk_RR.pdf</a> , no LR or RL fringes. <a href="#">c182c_No0008_3C120_kl_LL.pdf</a> , <a href="#">c182c_No0008_3C120_kl_RR.pdf</a> , no LR or RL fringes. <a href="#">c182c_No0010_0420-014_km_LL.pdf</a> , <a href="#">c182c_No0010_0420-014_km_RR.pdf</a> , no LR or RL fringes. <a href="#">c182c_No0010_0420-014_kn_LL.pdf</a> , <a href="#">c182c_No0010_0420-014_kn_RR.pdf</a> , no LR or RL fringes. <a href="#">c182c_No0008_3C120_ko_LL.pdf</a> , <a href="#">c182c_No0008_3C120_ko_RL.pdf</a> , <a href="#">c182c_No0008_3C120_ko_RR.pdf</a> , 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	<a href="#">c182c_SBD_RfAnt_La_LLRR_AllSrc.pdf</a> <a href="#">c182c_No0008_3C120_kl_LL.pdf</a> , <a href="#">c182c_No0008_3C120_kl_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="#">c182c_SBD_RfAnt_Mk_LLRR_AllSrc.pdf</a> <a href="#">c182c_No0010_0420-014_km_LL.pdf</a> , <a href="#">c182c_No0010_0420-014_km_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%.

Station	Code	Fringes	Plots	Comments
			<a href="#">c182c No0010 0420-014_fm_LL.pdf</a> , <a href="#">c182c No0010 0420-014_fm_RR.pdf</a> , no LR or RL fringes.	
VLBA: Nl	n	yes	<a href="#">c182c SBD RfAnt Nl LLRR AllSrc.pdf</a> <a href="#">c182c No0010 0420-014_kn_LL.pdf</a> , <a href="#">c182c No0010 0420-014_kn_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: Ov	o	yes	<a href="#">c182c SBD RfAnt Ov LLRR AllSrc.pdf</a> <a href="#">c182c No0008 3C120_ko_LL.pdf</a> , <a href="#">c182c No0008 3C120_ko_RL.pdf</a> , <a href="#">c182c No0008 3C120_ko_RR.pdf</a> , 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	<a href="#">c182c 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	yes	<a href="#">c182c SBD RfAnt Kt LLRR AllSrc.pdf</a>  <a href="#">c182c No0023 1633+38_tP_LL.pdf</a> , <a href="#">c182c No0023 1633+38_tP_LR.pdf</a> , <a href="#">c182c No0023 1633+38_tP_RL.pdf</a> , <a href="#">c182c No0023 1633+38_tP_RR.pdf</a> .  <a href="#">c182c No0023 1633+38_tX_LL.pdf</a> , <a href="#">c182c No0023 1633+38_tX_LR.pdf</a> , <a href="#">c182c No0023 1633+38_tX_RL.pdf</a> , <a href="#">c182c No0023 1633+38_tX_RR.pdf</a> .  <a href="#">c182c No0019 1633+38_tu_LL.pdf</a> , <a href="#">c182c No0019 1633+38_tu_LR.pdf</a> , <a href="#">c182c No0019 1633+38_tu_RL.pdf</a> , <a href="#">c182c No0019 1633+38_tu_RR.pdf</a> .  <a href="#">c182c No0023 1633+38_ty_LL.pdf</a> , <a href="#">c182c No0023 1633+38_ty_LR.pdf</a> , <a href="#">c182c No0023 1633+38_ty_RL.pdf</a> , <a href="#">c182c No0023 1633+38_ty_RR.pdf</a> .	
KVN: Ku	u	yes	<a href="#">c182c SBD RfAnt Ku LLRR AllSrc.pdf</a>  <a href="#">c182c No0019 1633+38_uP_LL.pdf</a> , <a href="#">c182c No0019 1633+38_uP_LR.pdf</a> , <a href="#">c182c No0019 1633+38_uP_RL.pdf</a> , <a href="#">c182c No0019 1633+38_uP_RR.pdf</a> .  <a href="#">c182c No0019 1633+38_uX_LL.pdf</a> , <a href="#">c182c No0019 1633+38_uX_LR.pdf</a> , <a href="#">c182c No0019 1633+38_uX_RL.pdf</a> , <a href="#">c182c No0019 1633+38_uX_RR.pdf</a> .  <a href="#">c182c No0019 1633+38_tu_LL.pdf</a> , <a href="#">c182c No0019 1633+38_tu_LR.pdf</a> , <a href="#">c182c No0019 1633+38_tu_RL.pdf</a> , <a href="#">c182c No0019 1633+38_tu_RR.pdf</a> .  <a href="#">c182c No0019 1633+38_uy_LL.pdf</a> , <a href="#">c182c No0019 1633+38_uy_LR.pdf</a> , <a href="#">c182c No0019 1633+38_uy_RL.pdf</a> , <a href="#">c182c No0019 1633+38_uy_RR.pdf</a> .	

Station	Code	Fringes	Plots	Comments
KVN: Ky	y	yes	<a href="#">c182c SBD RfAnt Ky LLRR AllSrc.pdf</a>  <a href="#">c182c No0023 1633+38 yP LL.pdf</a> , <a href="#">c182c No0023 1633+38 yP LR.pdf</a> , <a href="#">c182c No0023 1633+38 yP RL.pdf</a> , <a href="#">c182c No0023 1633+38 yP RR.pdf</a> .  <a href="#">c182c No0023 1633+38 yX LL.pdf</a> , <a href="#">c182c No0023 1633+38 yX LR.pdf</a> , <a href="#">c182c No0023 1633+38 yX RL.pdf</a> , <a href="#">c182c No0023 1633+38 yX RR.pdf</a> .  <a href="#">c182c No0023 1633+38 ty LL.pdf</a> , <a href="#">c182c No0023 1633+38 ty LR.pdf</a> , <a href="#">c182c No0023 1633+38 ty RL.pdf</a> , <a href="#">c182c No0023 1633+38 ty RR.pdf</a> .  <a href="#">c182c No0019 1633+38 uy LL.pdf</a> , <a href="#">c182c No0019 1633+38 uy LR.pdf</a> , <a href="#">c182c No0019 1633+38 uy RL.pdf</a> , <a href="#">c182c No0019 1633+38 uy RR.pdf</a> .	

**Notes**

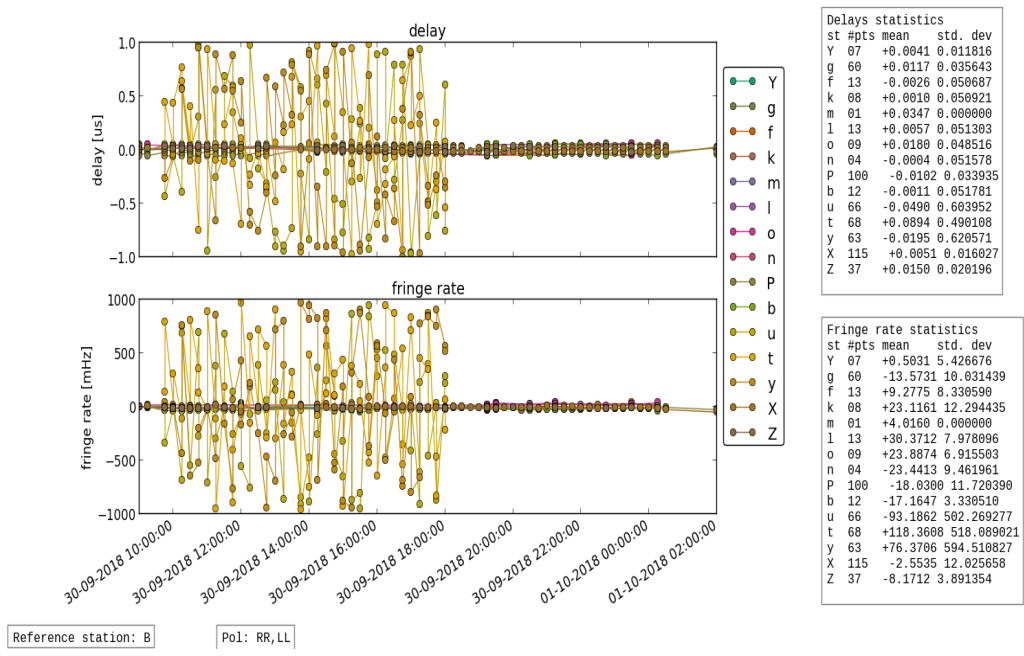
All VLBA antennas are affected by the same problem (probably originating in the control software) during the whole session: for a significant portion of scans the recording starts several seconds or even few minutes late compared with the schedule. This results in effective reduction of observing time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

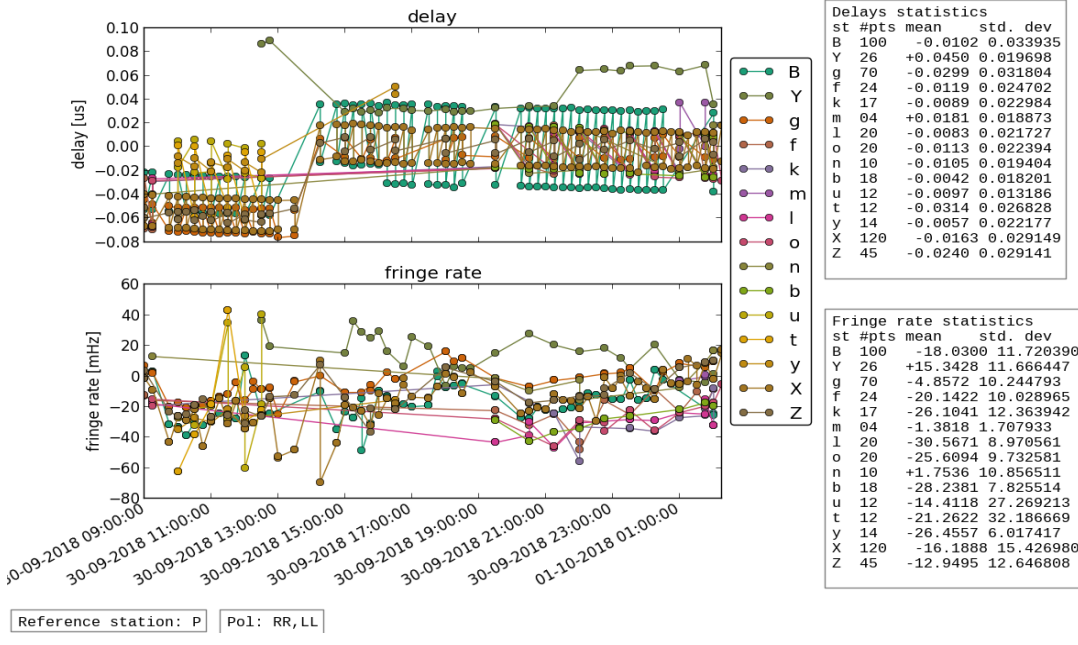
**Post-Correlation checks**

**Residuals**

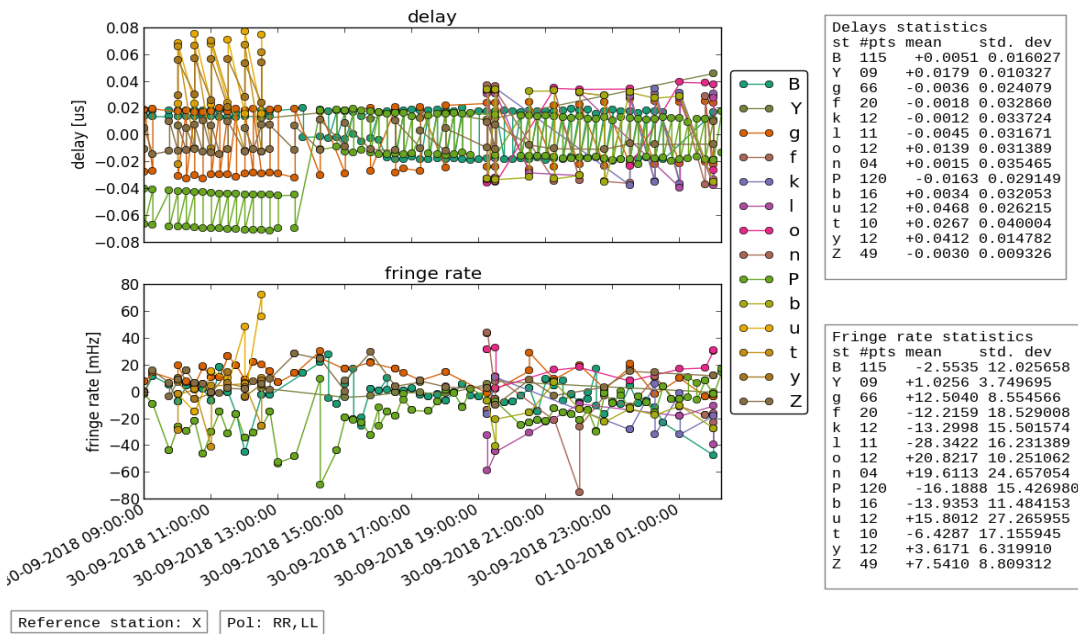
EF (the outliers are due to multiple false fringes in KVN antennas detected by fourfit):



PV (had a small clock jump):



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\_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	.	.	.

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	o	57	o	x	o	o	o	.	.	.
c182c_081	No0081	1633+38	3mm_RDBE	o	o	o	o	o	o	o	57	57	57	x	57	57	57	.	.	.