

# C182A/MB010 Correlation Report

## General information

- Consists of only one science project: **MB010**
- PI: BOCCARDI
- Targets: NGC315 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](http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/sep18/feedback_sep18.asc)
- Text file with detailed antenna statistics: [c182a.antrep](http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/sep18/c182a.antrep)

## Current Status

correlation finished, data **released** on 13/03/2019.

## Fringes

Station	Code	Fringes	Plots	Comments
Ef	B	yes	<p>Fringe overview of all baselines (all of C182A) 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="#">c182a_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</a></p> <p>Examples of fourfit fringe plots:</p> <p><a href="#">c182a_No0063_0234+285_BX_LL.pdf</a>, <a href="#">c182a_No0063_0234+285_BX_LR.pdf</a>,  <a href="#">c182a_No0063_0234+285_BX_RL.pdf</a>, <a href="#">c182a_No0063_0234+285_BX_RR.pdf</a>,  <a href="#">c182a_No0063_0234+285_BY_RL.pdf</a>, <a href="#">c182a_No0063_0234+285_BY_RR.pdf</a>,                      no LL or LR fringes.</p> <p><a href="#">c182a_No0063_0234+285_BZ_LL.pdf</a>, <a href="#">c182a_No0063_0234+285_BZ_RR.pdf</a>,                      no LR or RL fringes.</p> <p><a href="#">c182a_No0063_0234+285_BP_LL.pdf</a>, <a href="#">c182a_No0063_0234+285_BP_LR.pdf</a>,  <a href="#">c182a_No0063_0234+285_BP_RL.pdf</a>, <a href="#">c182a_No0063_0234+285_BP_RR.pdf</a>,  <a href="#">c182a_No0063_0234+285_Bg_LL.pdf</a>, <a href="#">c182a_No0063_0234+285_Bg_LR.pdf</a>,  <a href="#">c182a_No0063_0234+285_Bg_RL.pdf</a>, <a href="#">c182a_No0063_0234+285_Bg_RR.pdf</a>,  <a href="#">c182a_No0063_0234+285_bB_LL.pdf</a>, <a href="#">c182a_No0063_0234+285_bB_RR.pdf</a>,                      no LR or RL fringes.</p> <p><a href="#">c182a_No0063_0234+285_Bf_LL.pdf</a>, <a href="#">c182a_No0063_0234+285_Bf_RR.pdf</a>,                      no LR or RL fringes.</p>	

Station	Code	Fringes	Plots	Comments
			<p><a href="#">c182a No0063 0234+285 Bk LL.pdf</a>, <a href="#">c182a No0063 0234+285 Bk RR.pdf</a>, no LR or RL fringes.</p> <p><a href="#">c182a No0063 0234+285 Bl LL.pdf</a>, <a href="#">c182a No0063 0234+285 Bl LR.pdf</a>, <a href="#">c182a No0063 0234+285 Bl RR.pdf</a>, no RL fringe.</p> <p><a href="#">c182a No0063 0234+285 Bo LL.pdf</a>, <a href="#">c182a No0063 0234+285 Bo RR.pdf</a>, no LR or RL fringes.</p> <p><a href="#">c182a No0020 0234+285 Bt LL.pdf</a>, <a href="#">c182a No0020 0234+285 Bt LR.pdf</a>, <a href="#">c182a No0020 0234+285 Bt RR.pdf</a>, no RL fringe.</p> <p><a href="#">c182a No0020 0234+285 By LL.pdf</a>, <a href="#">c182a No0020 0234+285 By LR.pdf</a>, no RL or RR fringes,</p> <p>Same for all antennas below unless otherwise noted.</p>	
On	X	yes	<p><a href="#">c182a SBD RfAnt_On LLRR AllSrc.pdf</a></p> <p><a href="#">c182a No0063 0234+285 BX LL.pdf</a>, <a href="#">c182a No0063 0234+285 BX LR.pdf</a>, <a href="#">c182a No0063 0234+285 BX RL.pdf</a>, <a href="#">c182a No0063 0234+285 BX RR.pdf</a>.</p>	
Ys	Y	yes	<p><a href="#">c182a SBD RfAnt Ys LLRR AllSrc.pdf</a></p> <p><a href="#">c182a No0063 0234+285 BY RL.pdf</a>, <a href="#">c182a No0063 0234+285 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="#">c182a SBD RfAnt Mh LLRR AllSrc.pdf</a></p> <p><a href="#">c182a No0063 0234+285 BZ LL.pdf</a>, <a href="#">c182a No0063 0234+285 BZ RR.pdf</a>, no LR or RL fringes.</p>	Swapped polarizations, fixed in correlation, data is not affected.
Pv	P	yes	<p><a href="#">c182a SBD RfAnt Pv LLRR AllSrc.pdf</a></p> <p><a href="#">c182a No0063 0234+285 BP LL.pdf</a>, <a href="#">c182a No0063 0234+285 BP LR.pdf</a>, <a href="#">c182a No0063 0234+285 BP RL.pdf</a>, <a href="#">c182a No0063 0234+285 BP RR.pdf</a>.</p> <p><a href="#">c182a No0001 J0102+58 yP LL.pdf</a>, <a href="#">c182a No0001 J0102+58 yP LR.pdf</a>, <a href="#">c182a No0001 J0102+58 yP RL.pdf</a>, <a href="#">c182a No0001 J0102+58 yP RR.pdf</a>.</p>	

Station	Code	Fringes	Plots	Comments
			<a href="#">c182a No0014 0234+285 tP_LL.pdf</a> , <a href="#">c182a No0014 0234+285 tP_LR.pdf</a> , <a href="#">c182a No0014 0234+285 tP_RL.pdf</a> , <a href="#">c182a No0014 0234+285 tP_RR.pdf</a> .	
GLT: Gl	g	yes	<a href="#">c182a SBD RfAnt Gl LLRR AllSrc.pdf</a> <a href="#">c182a No0063 0234+285 Bg_LL.pdf</a> , <a href="#">c182a No0063 0234+285 Bg_LR.pdf</a> , <a href="#">c182a No0063 0234+285 Bg_RL.pdf</a> , <a href="#">c182a No0063 0234+285 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="#">c182a SBD RfAnt Br LLRR AllSrc.pdf</a> <a href="#">c182a No0063 0234+285 bB_LL.pdf</a> , <a href="#">c182a No0063 0234+285 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="#">c182a SBD RfAnt Fd LLRR AllSrc.pdf</a> <a href="#">c182a No0063 0234+285 Bf_LL.pdf</a> , <a href="#">c182a No0063 0234+285 Bf_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="#">c182a SBD RfAnt Kp LLRR AllSrc.pdf</a> <a href="#">c182a No0063 0234+285 Bk_LL.pdf</a> , <a href="#">c182a No0063 0234+285 Bk_RR.pdf</a> , no LR or RL fringes. <a href="#">c182a No0118 3C84 km_LL.pdf</a> , <a href="#">c182a No0118 3C84 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%.
VLBA: La	l	yes	<a href="#">c182a SBD RfAnt La LLRR AllSrc.pdf</a> <a href="#">c182a No0063 0234+285 Bl_LL.pdf</a> , <a href="#">c182a No0063 0234+285 Bl_LR.pdf</a> , <a href="#">c182a No0063 0234+285 Bl_RR.pdf</a> , no RL fringe.	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="#">c182a SBD RfAnt Mk LLRR AllSrc.pdf</a> <a href="#">c182a No0118 3C84 km_LL.pdf</a> , <a href="#">c182a No0118 3C84 km_RR.pdf</a> , no LR or RL fringes. <a href="#">c182a No0118 3C84 mo_LL.pdf</a> , <a href="#">c182a No0118 3C84 mo_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%.  Very few fringes
VLBA: Nl	n	no	<a href="#">c182a SBD RfAnt Nl LLRR AllSrc.pdf</a>	All the data for this part of the session is missing, probably recorded on a different Mk5 module and lost in transit. All attempts

Station	Code	Fringes	Plots	Comments
			-----	to track down the fate of this portion of the data failed.
VLBA: Ov	o	yes	<a href="#">c182a_SBD_RfAnt_Ov_LLRR_AllSrc.pdf</a> <a href="#">c182a_No0063_0234+285_Bo_LL.pdf</a> , <a href="#">c182a_No0063_0234+285_Bo_RR.pdf</a> , no LR or RL fringes. <a href="#">c182a_No0118_3C84_mo_LL.pdf</a> , <a href="#">c182a_No0118_3C84_mo_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="#">c182a_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. The antenna was included into the production correlation of the first part of this experiment, but this should be ignored and <b>all the baselines for this antenna must be flagged..</b>
KVN: Kt	t	yes	<a href="#">c182a_SBD_RfAnt_Kt_LLRR_AllSrc.pdf</a> <a href="#">c182a_No0020_0234+285_Bt_LL.pdf</a> , <a href="#">c182a_No0020_0234+285_Bt_LR.pdf</a> , <a href="#">c182a_No0020_0234+285_Bt_RR.pdf</a> , no RL fringe. <a href="#">c182a_No0014_0234+285_tP_LL.pdf</a> , <a href="#">c182a_No0014_0234+285_tP_LR.pdf</a> , <a href="#">c182a_No0014_0234+285_tP_RL.pdf</a> , <a href="#">c182a_No0014_0234+285_tP_RR.pdf</a> . <a href="#">c182a_No0118_3C84_tu_LL.pdf</a> , <a href="#">c182a_No0118_3C84_tu_LR.pdf</a> , <a href="#">c182a_No0118_3C84_tu_RL.pdf</a> , <a href="#">c182a_No0118_3C84_tu_RR.pdf</a> .	very few real fringes (although fourfit finds a false fringe for many baselines)
KVN: Ku	u	yes	<a href="#">c182a_SBD_RfAnt_Ku_LLRR_AllSrc.pdf</a> <a href="#">c182a_No0118_3C84_tu_LL.pdf</a> , <a href="#">c182a_No0118_3C84_tu_LR.pdf</a> , <a href="#">c182a_No0118_3C84_tu_RL.pdf</a> , <a href="#">c182a_No0118_3C84_tu_RR.pdf</a> . <a href="#">c182a_No0118_3C84_uy_LL.pdf</a> , <a href="#">c182a_No0118_3C84_uy_LR.pdf</a> , <a href="#">c182a_No0118_3C84_uy_RL.pdf</a> , <a href="#">c182a_No0118_3C84_uy_RR.pdf</a> .	very few real fringes (although fourfit finds a false fringe for many baselines)
KVN: Ky	y	yes	<a href="#">c182a_SBD_RfAnt_Ky_LLRR_AllSrc.pdf</a> <a href="#">182a_No0020_0234+285_By_LL.pdf</a> , <a href="#">c182a_No0020_0234+285_By_LR.pdf</a> , no RL or RR fringes,	very few real fringes (although fourfit finds a false fringe for many baselines)

Station	Code	Fringes	Plots	Comments
			<a href="#">c182a No0001 J0102+58 yP_LL.pdf</a> , <a href="#">c182a No0001 J0102+58 yP_LR.pdf</a> , <a href="#">c182a No0001 J0102+58 yP_RL.pdf</a> , <a href="#">c182a No0001 J0102+58 yP_RR.pdf</a> .  <a href="#">c182a No0118 3C84 uy_LL.pdf</a> , <a href="#">c182a No0118 3C84 uy_LR.pdf</a> , <a href="#">c182a No0118 3C84 uy_RL.pdf</a> , <a href="#">c182a No0118 3C84 uy_RR.pdf</a> .	

## Notes

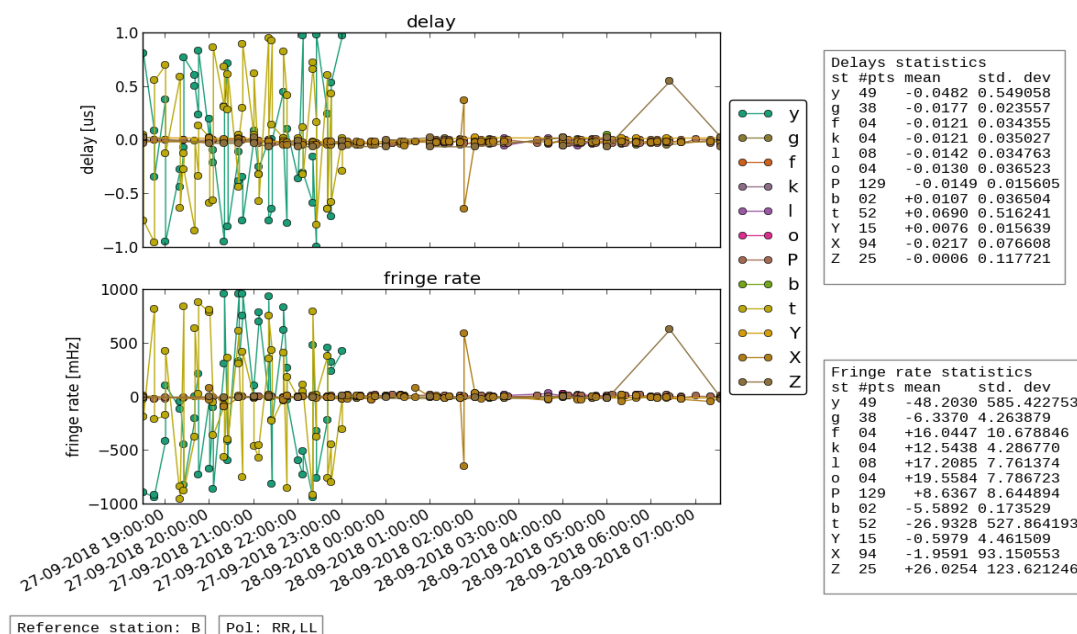
All VLBA antennas are affected by the same problem (probably originating in the control software) during the whole session: for a significant portion of scans the recording starts several seconds or even few minutes late compared with the schedule. This results in effective reduction of observing time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

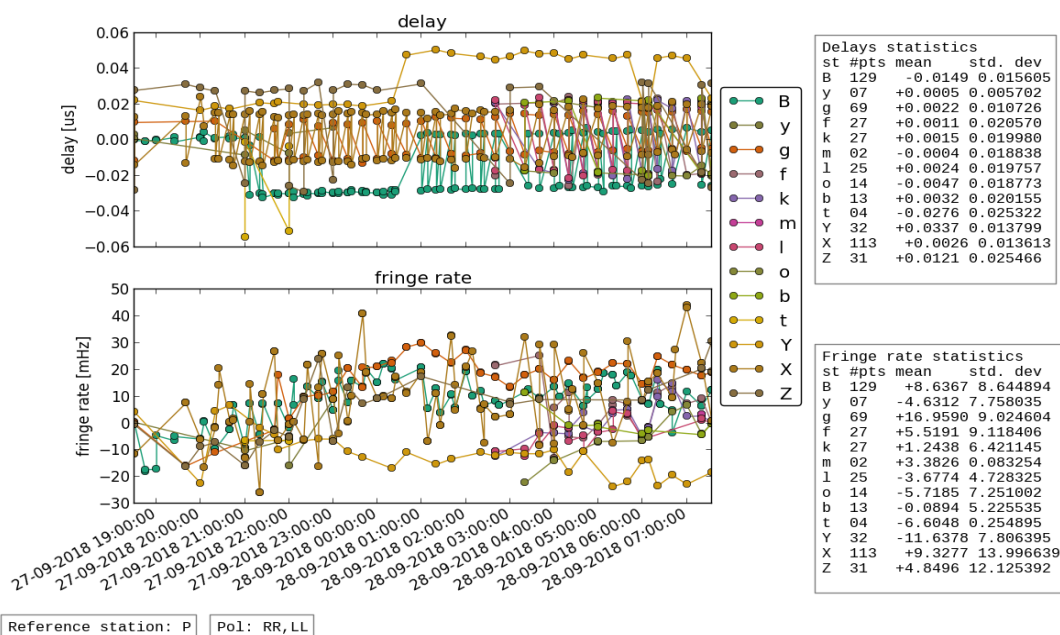
## Post-Correlation checks

### Residuals

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



PV:



### 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

### mb010.fits:

					EF	GL	ON	YS	PV	MH	KY	KU	KT	FD	NL	OV	PT	BR	KP	LA	MK	
c182a_001	No0001	J0102+58	3mm_RDBE	o	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.
c182a_002	No0002	NGC0315	3mm_RDBE	o	o	o	o	80	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_003	No0003	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_004	No0004	J0152+22	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_005	No0005	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_006	No0006	J0152+22	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_007	No0007	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_008	No0008	J0152+22	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_009	No0009	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_010	No0010	J0152+22	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_011	No0011	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_012	No0012	J0152+22	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_013	No0013	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_014	No0014	0234+285	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_015	No0015	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_016	No0016	J0152+22	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.
c182a_017	No0017	NGC0315	3mm_RDBE	o	o	o	o	o	o	o	x	o	.	.	.	.	.	.	.	.	.	.



c182a_068	No0068	NGC0315	3mm_RDBE	o	o	o	o	o	o	.	.	.	o	x	o	o	o	o	o	o
c182a_069	No0069	3C84	3mm_RDBE	o	o	o	o	o	o	.	.	.	46	x	46	46	46	46	46	.
c182a_070	No0070	3C84	3mm_RDBE	o	o	o	o	o	o	.	.	.	66	x	66	66	66	66	66	.
c182a_071	No0071	J0152+22	3mm_RDBE	o	o	o	o	o	o	.	.	.	22	x	22	22	22	22	22	22
c182a_072	No0072	NGC0315	3mm_RDBE	o	o	o	o	o	o	.	.	.	o	x	o	o	o	o	o	o
c182a_073	No0073	J0152+22	3mm_RDBE	o	o	o	o	o	o	.	.	.	22	x	22	22	22	22	22	22
c182a_074	No0074	NGC0315	3mm_RDBE	o	o	o	o	o	o	.	.	.	o	x	o	o	o	o	o	o
c182a_075	No0075	J0152+22	3mm_RDBE	o	o	o	o	o	o	.	.	.	22	x	22	22	22	22	22	22
c182a_076	No0076	NGC0315	3mm_RDBE	o	o	o	o	o	o	.	.	.	o	x	o	o	o	o	o	o
c182a_077	No0077	0234+285	3mm_RDBE	o	o	o	o	o	o	.	.	.	53	x	53	53	53	53	53	53
c182a_078	No0078	3C84	3mm_RDBE	o	o	o	o	o	o	.	.	.	53	x	53	53	53	53	53	53
c182a_079	No0079	J0152+22	3mm_RDBE	.	.	.	.	.	.	.	.	.	22	x	22	22	22	22	22	22
c182a_080	No0080	NGC0315	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	o	o	o	o	o
c182a_081	No0081	J0152+22	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	o	o	o	o	o
c182a_082	No0082	NGC0315	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	o	o	o	o	o
c182a_083	No0083	J0152+22	3mm_RDBE	.	.	.	.	.	.	.	.	.	88	x	o	88	o	88	88	o
c182a_084	No0084	NGC0315	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	x	o	o	o	o
c182a_085	No0085	J0152+22	3mm_RDBE	.	.	.	.	.	.	.	.	.	88	x	o	x	o	88	88	o
c182a_086	No0086	NGC0315	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	x	o	o	o	o
c182a_087	No0087	0234+285	3mm_RDBE	.	.	.	.	.	.	.	.	.	93	x	93	x	93	93	93	93
c182a_088	No0088	NGC0315	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	x	o	o	o	o
c182a_089	No0089	J0152+22	3mm_RDBE	.	.	.	.	.	.	.	.	.	66	x	o	x	o	66	66	o
c182a_090	No0090	NGC0315	3mm_RDBE	.	.	.	.	.	.	.	.	.	o	x	o	x	o	o	o	o
c182a_091	No0091	J0152+22	3mm_RDBE	.	.	.	.	.	.	.	.	.	88	x	88	x	88	88	88	88
c182a_092	No0092	NGC0315	3mm_RDBE	.	.	.	.	.	o	81	o	o	o	x	o	x	o	o	o	o
c182a_093	No0093	0234+285	3mm_RDBE	.	.	.	.	.	.	.	.	.	93	x	93	x	93	93	93	93
c182a_094	No0094	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_095	No0095	J0152+22	3mm_RDBE	.	.	.	.	.	44	55	.	.	66	x	66	x	66	66	66	66
c182a_096	No0096	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_097	No0097	J0152+22	3mm_RDBE	.	.	.	.	.	66	77	77	88	x	88	x	88	88	88	88	88
c182a_098	No0098	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_099	No0099	0234+285	3mm_RDBE	.	.	.	.	.	o	o	o	93	x	93	x	93	93	93	93	93
c182a_100	No0100	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_101	No0101	J0152+22	3mm_RDBE	.	.	.	.	.	44	55	55	66	x	66	x	66	66	66	66	66
c182a_102	No0102	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_103	No0103	J0152+22	3mm_RDBE	.	.	.	.	.	55	66	x	88	x	88	x	88	88	88	88	88
c182a_104	No0104	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_105	No0105	0234+285	3mm_RDBE	.	.	.	.	.	o	o	o	93	x	93	x	93	93	93	93	93
c182a_106	No0106	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_107	No0107	J0152+22	3mm_RDBE	.	.	.	.	.	44	44	55	66	x	66	x	66	66	66	66	66
c182a_108	No0108	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_109	No0109	J0152+22	3mm_RDBE	.	.	.	.	.	66	66	66	88	x	88	x	88	88	88	88	88
c182a_110	No0110	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_111	No0111	0234+285	3mm_RDBE	.	.	.	.	.	o	o	o	93	x	93	x	93	93	93	93	93
c182a_112	No0112	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_113	No0113	J0152+22	3mm_RDBE	.	.	.	.	.	x	x	55	66	x	66	x	66	66	66	66	66
c182a_114	No0114	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o
c182a_115	No0115	J0152+22	3mm_RDBE	.	.	.	.	.	66	66	11	88	x	88	x	88	88	88	88	88
c182a_116	No0116	NGC0315	3mm_RDBE	.	.	.	.	.	o	o	o	o	o	x	o	x	o	o	o	o



```
c182a_117 No0117 0234+285 3mm_RDBE . . . . . o o o 93 x 93 x 93 93 93 93
c182a_118 No0118      3C84 3mm_RDBE . . . . . 93 o o o x o x o o o o
```