

# C211A Correlation Report

## General Information

- Includes 3 science projects: [MB016A](#), [MB018A](#), and [MS004](#).
- Includes 3mm and 7mm parts
- Session info: <http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/>
- Station feedback: [http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/apr21/feedback\\_apr21.asc](http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/apr21/feedback_apr21.asc)
- Text files with detailed antenna statistics, scroll down to get to the cumulative statistics for the whole experiment:  
[c211a\\_3mm\\_ALL.antrep](#)  
[c211a\\_7mm\\_ALL.antrep](#)

## Current Status

Correlation finished, data **released to PI** on 25.11.2021.

The second release was prepared in February 2022, v3, fixing NOEMA site position in the 3mm part. The 7mm is unaffected and those FITS files should be taken from the first release, v1.

Found July 2023: output of the 7mm correlation contains all autocorrelation records twice. This leads to artificially low weights in AIPS task ACCOR or equivalent, and/or to lower than expected flux densities.

Suggested fix (communicated to PIs): Antenna based scaling by a factor of  $2^{0.5}$  or baseline based scaling by a factor of 2.

## Fringes

Station	Code	Fringes	Plots	Comments
Ef	B	yes	<p>Fringe overview of all baselines including this antenna in LL(left for each baseline) and RR (right for each baseline).</p> <p>Legend: white box - scheduled, but no data (or sometimes fourfit had trouble with the particular baseline/pol, so no data in alist), blue - no fringe, shades of green and brown -- fringes of varying quality, with bright green designating the best and brownish-red the worst.</p> <p><a href="#">c211a_3mm_FRINGE_RfAnt_Ef_LLRR_AllSrc.pdf</a></p> <p>Examples of fourfit fringe plots can be found in (all fringe plots with baselines including the given antenna):</p> <p><a href="#">No0029_B.pdf</a>, <a href="#">No0245_B.pdf</a></p> <p>Antenna statistics:</p> <p><a href="#">c211a_3mm_Ef.antrep</a></p> <p>Same for all antennas below unless otherwise noted.</p>	<p>Mostly clear sky</p> <p>Participated in 99% scans (3mm only), fringes in 53% baselines*  pols, mean SNR 333.</p>

Station	Code	Fringes	Plots	Comments
On	X	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_On_LLRR_AllSrc.pdf</a> <a href="#">No0029_X.pdf</a> , <a href="#">No0231_X.pdf</a> <a href="#">c211a_3mm_On.antrep</a>	<p>Mostly clear sky. The 4mm receiver was used.</p> <p>Participated in 100% scans (3mm only), fringes in 51% baselines*  pols, mean SNR 211.</p>
Ys	Y	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Ys_LLRR_AllSrc.pdf</a> <a href="#">No0007_Y.pdf</a> <a href="#">c211a_3mm_Ys.antrep</a>	<p><b>Took part only in a few scans due to the blind repairs, and fringes found only for one scan.</b></p> <p>Participated in 8% scans (3mm only), fringes in 10% baselines*  pols, mean SNR 88.</p>
Mh	Z	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Mh_LLRR_AllSrc.pdf</a> <a href="#">No0103_Z.pdf</a> <a href="#">c211a_3mm_Mh.antrep</a>	<p><b>Bad weather</b> for most of the observations (rain or wet snow, heavy clouds).</p> <p>Participated in 96% scans (3mm only), fringes in 33% baselines*  pols, mean SNR 44.</p>
Pv	P	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Pv_LLRR_AllSrc.pdf</a> <a href="#">No0143_P.pdf</a> <a href="#">c211a_3mm_Pv.antrep</a>	<p><b>Bad weather.</b></p> <p>"Participated" in 100% scans (3mm only),</p> <p><b>This represents the number of recorded scans, but for more than a half of those the antenna was stowed due to the weather. See the fringe overview for the good and bad scans.</b></p> <p>fringes in 23% baselines*  pols, mean SNR 317.</p>
NOEMA: Nn	N	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Nn_LLRR_AllSrc.pdf</a> <a href="#">No0156_N.pdf</a> , <a href="#">No0160_N.pdf</a> , <a href="#">No0245_N.pdf</a> <a href="#">c211a_3mm_Nn.antrep</a>	<p>Participated in 100% scans (3mm only), fringes in 56% baselines*  pols, mean SNR 526.</p> <p>(there was a large clock drift in the first production correlation, but it was fixed in the second release by using a better phase center)</p>
GLT: Gl	g	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Gl_LLRR_AllSrc.pdf</a>	<p>Storm and high wind for part of the observations.</p>

Station	Code	Fringes	Plots	Comments
			<a href="#">No0182_g.pdf</a> , <a href="#">No0245_g.pdf</a> <a href="#">c211a_3mm_Gl.antrep</a>	Participated in 100% scans (3mm only), fringes in 36% baselines*  pols, mean SNR 45.
GBT: Gb	G	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Gb_LLRR_AllSrc.pdf</a> <a href="#">No0029_G.pdf</a> , <a href="#">No0108_G.pdf</a> <a href="#">c211a_3mm_Gb.antrep</a>	<b>Pointing problems</b> , for some scans was not on source. Participated in 100% scans (3mm only), fringes in 14% baselines*  pols, mean SNR 61.
VLBA: Br	b	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Br_LLRR_AllSrc.pdf</a> <a href="#">No0213_b.pdf</a> <a href="#">c211a_3mm_Br.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Br_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf</a> , <a href="#">No0121_all.pdf</a> <a href="#">c211a_7mm_Br.antrep</a>	3mm: Participated in 99% scans, fringes in 44% baselines*  pols, mean SNR 48. 7mm: Participated in 99% scans, fringes in 84% baselines*  pols, mean SNR 179.
VLBA: Fd	f	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Fd_LLRR_AllSrc.pdf</a> <a href="#">No0245_f.pdf</a> <a href="#">c211a_3mm_Fd.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Fd_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf</a> , <a href="#">No0121_all.pdf</a> <a href="#">c211a_7mm_Fd.antrep</a>	<b>Constant LCP problems.</b> 3mm: Participated in 98% scans, fringes in 41% baselines*  pols, mean SNR 50. 7mm: Participated in 98% scans, fringes in 91% baselines*  pols, mean SNR 173.
VLBA: Kp	k	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Kp_LLRR_AllSrc.pdf</a> <a href="#">No0155_k.pdf</a> <a href="#">c211a_3mm_Kp.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Kp_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf</a> , <a href="#">No0121_all.pdf</a> <a href="#">c211a_7mm_Kp.antrep</a>	3mm: Participated in 100% scans, fringes in 46% baselines*  pols, mean SNR 53. 7mm: Participated in 100% scans, fringes in 94% baselines*  pols, mean SNR 221.

Station	Code	Fringes	Plots	Comments
VLBA: La	l	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_La_LLRR_AllSrc.pdf</a> <a href="#">No0237_l.pdf</a> <a href="#">c211a_3mm_La.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_La_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_La.antrep</a>	<p>3mm: Participated in 100% scans, fringes in 45% baselines*  pols, mean SNR 58.</p> <p>7mm: Participated in 100% scans, fringes in 90% baselines*  pols, mean SNR 174.</p>
VLBA: Mk	m	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Mk_LLRR_AllSrc.pdf</a> <a href="#">No0237_m.pdf</a> <a href="#">c211a_3mm_Mk.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Mk_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_Mk.antrep</a>	<p>3mm: Participated in 87% scans, fringes in 37% baselines*  pols, mean SNR 28.</p> <p>7mm: Participated in 90% scans, fringes in 85% baselines*  pols, mean SNR 199.</p> <p><b>dropped out for a few scans due to USNO observations</b></p>
VLBA: Nl	n	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Nl_LLRR_AllSrc.pdf</a> <a href="#">No0155_n.pdf</a> <a href="#">c211a_3mm_Nl.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Nl_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_Nl.antrep</a>	<p>3mm: Participated in 100% scans, fringes in 26% baselines*  pols, mean SNR 22.</p> <p>7mm: Participated in 98% scans, fringes in 89% baselines*  pols, mean SNR 138.</p>
VLBA: Ov	o	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Ov_LLRR_AllSrc.pdf</a> <a href="#">No0152_o.pdf</a> <a href="#">c211a_3mm_Ov.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Ov_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_Ov.antrep</a>	<p>.</p> <p>3mm: Participated in 100% scans, fringes in 43% baselines*  pols, mean SNR 44.</p> <p>7mm: Participated in 100% scans, fringes in 80% baselines*  pols, mean SNR 149.</p>

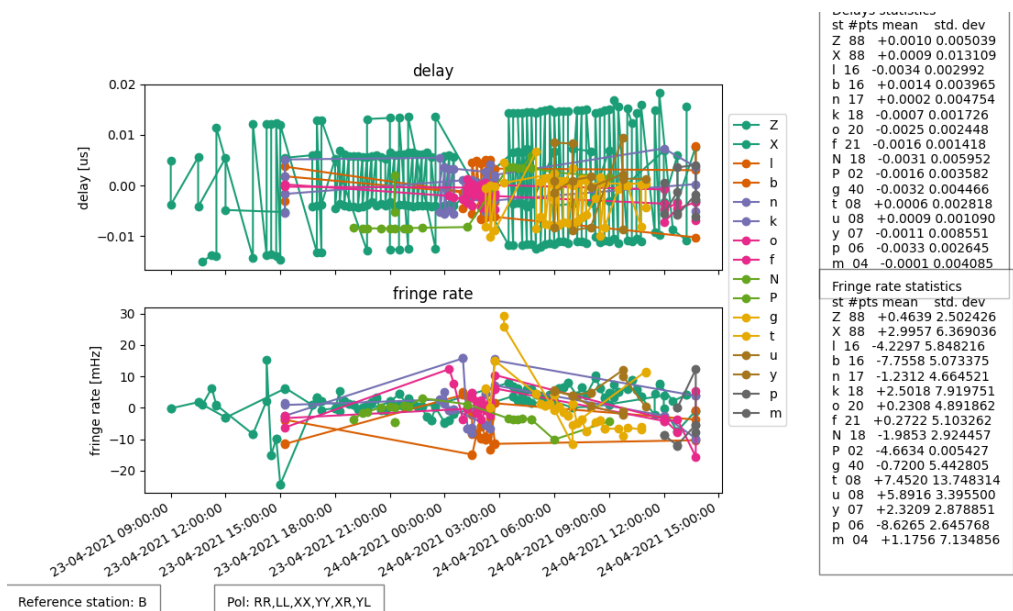
Station	Code	Fringes	Plots	Comments
VLBA: Pt	p	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Pt_LLRR_AllSrc.pdf</a> <a href="#">No0173_p.pdf</a> <a href="#">c211a_3mm_Pt.antrep</a> <a href="#">c211a_7mm_FRINGE_RfAnt_Pt_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_Pt.antrep</a>	3mm: Participated in 95% scans, fringes in 34% baselines*  pols, mean SNR 30.  7mm: Participated in 92% scans, fringes in 84% baselines*  pols, mean SNR 160.  <b>dropped out for a few scans due to USNO observations</b>
VLBA: Hn	h	yes	<a href="#">c211a_7mm_FRINGE_RfAnt_Hn_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_Hn.antrep</a>	Participated in 100% scans (7mm only), fringes in 75% baselines*  pols, mean SNR 89.
VLBA: Sc	c	yes	<a href="#">c211a_7mm_FRINGE_RfAnt_Sc_LLRR_AllSrc.pdf</a> <a href="#">No0082_all.pdf, No0121_all.pdf</a> <a href="#">c211a_7mm_Sc.antrep</a>	Participated in 90% scans (7mm only), fringes in 72% baselines*  pols, mean SNR 85.
KVN: Kt	t	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Kt_LLRR_AllSrc.pdf</a> <a href="#">No0170_t.pdf, No0213_t.pdf</a> <a href="#">c211a_3mm_Kt.antrep</a>	Some bad weather.  Participated in 100% scans (3mm only), fringes in 49% baselines*  pols, mean SNR 125.
KVN: Ku	u	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Ku_LLRR_AllSrc.pdf</a> <a href="#">No0164_u.pdf, No0212_u.pdf</a> <a href="#">c211a_3mm_Ku.antrep</a>	Some bad weather.  Participated in 100% scans (3mm only), fringes in 51% baselines*  pols, mean SNR 156.
KVN: Ky	y	yes	<a href="#">c211a_3mm_FRINGE_RfAnt_Ky_LLRR_AllSrc.pdf</a> <a href="#">No0166_y.pdf, No0212_y.pdf</a> <a href="#">c211a_3mm_Ky.antrep</a> -----	Some bad weather.  Participated in 100% scans (3mm only), fringes in 51% baselines*  pols, mean SNR 154.

## Notes

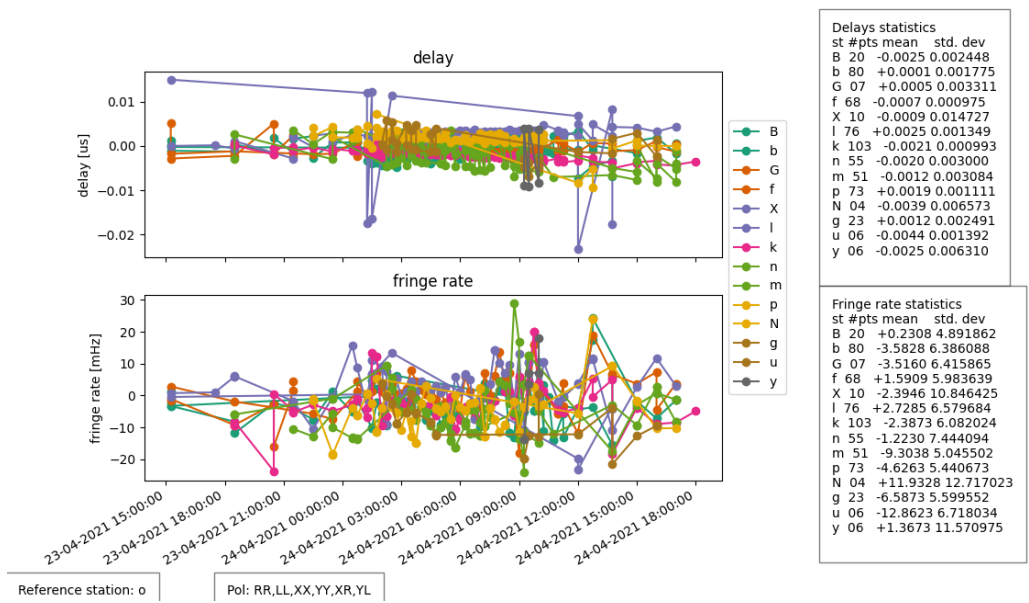
## Post-Correlation checks

### Residuals

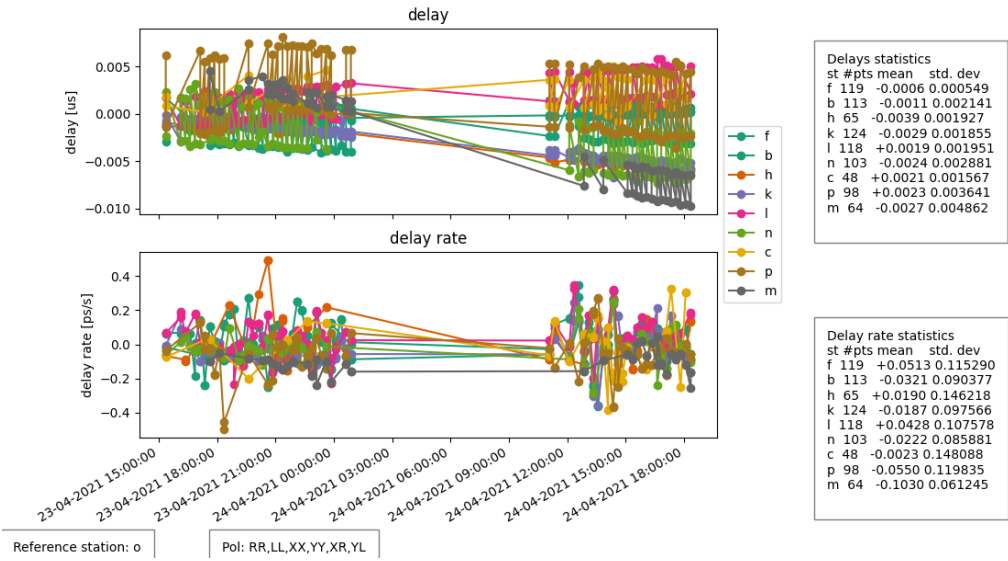
c211a 3mm, Ef as reference:



c211a 3mm, Ov as reference:



c211a 7mm, Ov as reference:



### 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

**c211a.3mm.fits:**

	EF	ON	MH	YS	GB	NL	FD	PT	LA	OV	BR	KP	PV	NN	MK	GL	KY	KU	KT
c211a_001	No0001	0106+013	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_002	No0002	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_003	No0003	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_004	No0004	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_005	No0005	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_006	No0006	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_007	No0007	0106+013	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_008	No0008	NGC1052	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_009	No0009	NGC1052	86ghz	o	o	o	57	.	.	.	.	.	.	.	.	.	.	.	.
c211a_010	No0010	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_011	No0011	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_012	No0012	NGC1052	86ghz	o	o	o	o	.	.	.	.	.	.	.	.	.	.	.	.
c211a_013	No0013	0106+013	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_014	No0014	NGC1052	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_015	No0015	NGC1052	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_016	No0016	NGC1052	86ghz	o	o	90	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_017	No0017	NGC1052	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_018	No0018	NGC1052	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.
c211a_019	No0019	NGC1052	86ghz	o	o	o	x	.	.	.	.	.	.	.	.	.	.	.	.











c211a_14	No0065	NGC1052	43ghz	o	o	25	o	o	25	o	o	o	41
c211a_15	No0069	0420-014	43ghz	o	o	x	o	o	x	o	o	o	.
c211a_16	No0072	NGC1052	43ghz	o	o	x	o	o	x	o	o	o	x
c211a_17	No0075	NGC1052	43ghz	o	o	x	o	o	x	o	o	o	x
c211a_18	No0078	NGC1052	43ghz	o	o	x	o	o	x	o	o	o	x
c211a_19	No0082	0106+013	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_20	No0085	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_21	No0089	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_22	No0092	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_23	No0096	0106+013	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_24	No0099	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_25	No0102	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_26	No0105	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_27	No0109	0420-014	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_28	No0112	NGC1052	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_29	No0115	NGC1052	43ghz	o	o	o	o	.	.	o	o	o	o
c211a_30	No0118	NGC1052	43ghz	o	o	o	o	.	.	o	o	o	o
c211a_31	No0121	0420-014	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_32	No0124	NGC1052	43ghz	o	o	o	o	.	.	o	o	o	o
c211a_33	No0127	NGC1052	43ghz	o	o	o	o	.	.	o	o	o	o
c211a_34	No0130	NGC1052	43ghz	o	o	o	o	.	.	o	o	o	o
c211a_35	No0133	0420-014	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_36	No0136	NGC1052	43ghz	.	o	o	o	.	.	o	o	o	o
c211a_37	No0139	NGC1052	43ghz	.	o	o	o	.	.	o	o	o	o
c211a_38	No0142	NGC1052	43ghz	.	.	o	o	.	.	o	o	o	o
c211a_39	No0145	0420-014	43ghz	.	.	o	o	.	.	o	o	o	o
c211a_40	No0148	0420-014	43ghz	.	o	o	o	.	.	o	o	o	o
c211a_41	No0223	BLLAC	43ghz	.	o	o	o	o	o	o	o	o	.
c211a_42	No0226	BLLAC	43ghz	.	o	o	o	o	o	o	o	o	.
c211a_43	No0228	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_44	No0230	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_45	No0232	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_46	No0234	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_47	No0236	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_48	No0238	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_49	No0240	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_50	No0242	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_51	No0244	NGC0315	43ghz	08	o	o	o	o	o	o	o	o	.
c211a_52	No0246	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_53	No0248	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_54	No0250	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_55	No0252	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_56	No0254	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	.
c211a_57	No0256	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_58	No0258	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_59	No0260	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_60	No0262	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_61	No0264	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_62	No0266	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_63	No0268	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o

c211a_64	No0270	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_65	No0272	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_66	No0274	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_67	No0276	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_68	No0278	NGC0315	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_69	No0280	BLLAC	43ghz	o	o	o	o	o	o	o	o	o	o
c211a_70	No0282	NGC0315	43ghz	o	o	25	o	o	25	o	o	o	41