

## C221E Correlation Report

### General information

- Session info: <http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/>
- Station feedback: [https://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/apr22/feedback\\_apr22.asc](https://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/apr22/feedback_apr22.asc)
- ALMA and LMT did not observe
- Scan No0074 has GLT-Mopra on M87, common bandwidth 2048 MHz, was correlated separately. There are Mopra-KVN fringes in the scan, but no GLT-Mopra fringe.
- ATCA has large clock offset of 0.09 usec between its same-polarization IFs

### Status

what	date
Correlation of 3mm preparing	14 Dec 2022
Correlation of 3mm started	11 Jan 2023
Correlation of 3mm finished; accidentally though still had all scans cropped to 60 sec	13 Jan 2023
Correlation of 3mm ver2 finished	03 Feb 2023
Polarization rotation of Mopra in 3mm ver2 finished	06 Feb 2023
Partial recorelation (v3) of 3mm of scans with GLT (they had a YIG tuning error)	22 May 2023
Released v3 to PIs	30 May 2023

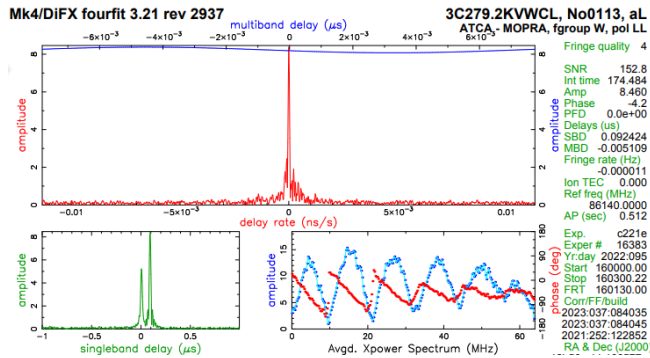
### Fringes

Station	Code	Fringes	Plots	Comments
VLBA 3mm		yes		
GLT		yes		Fringes only in C221A but later none, reason unknown Tuning error at GLT and 63 MHz off (found 03/2023)
ATCA, ATCA-Mopra		yes	No0113 At-Mp	
Mopra, Mopra-KVN		yes	No0093 Mp-Kt	
GBT, GBT-EU		yes	No0021 Fd-Gb, No0044 Gb-Nn	
KVN		yes		
EU		yes		

Station	Code	Fringes	Plots	Comments
KVN-VLBA		yes	No0085 Ky-Mk	
EU-VLBA		yes	No0033 Nn-Pt	

**Notes**

- Pv lost most scans to wx, good scans are No0030 095-0240 till No0039 095-0345 inclusive
- GLT observing logs on EHT 2022 wiki note high wind speeds 6-13 m/s throughout C221E, light snow from 06:06 UT, heavy snowfall from 08:04 UT
- ATCA has around 0.09 usec [offset between IFs](#), PI should fringe-fit accordingly

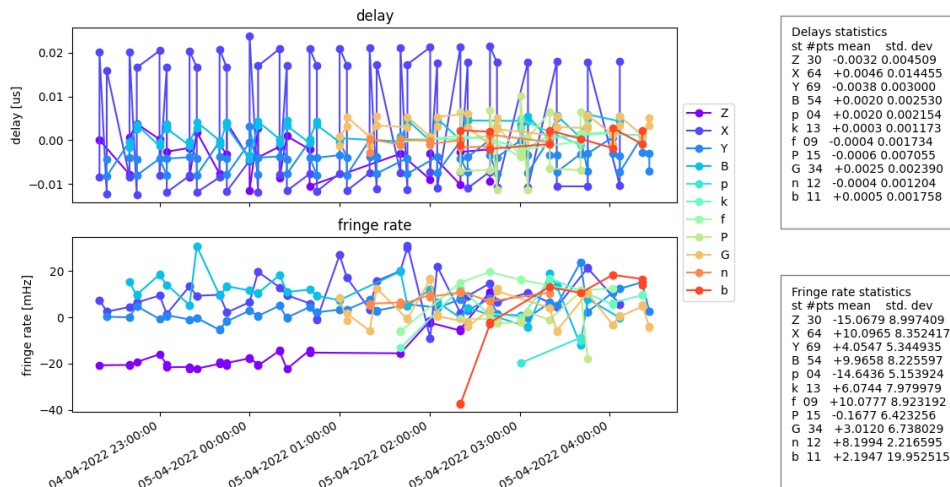


- No GLT fringes in this track in releases v1, v2
- Tuning error at GLT found 03/2023, they were unknowingly 63 MHz off after C221A, fixed in release v3
- Recorrelation of GLT--Mopra in scan No0074 on M87 with full 2048 MHz bandwidth on that baseline: no GLT fringes in v3 either, just Mopra-KVN fringes i.e. Mopra was fine.

**Post-Correlation checks**

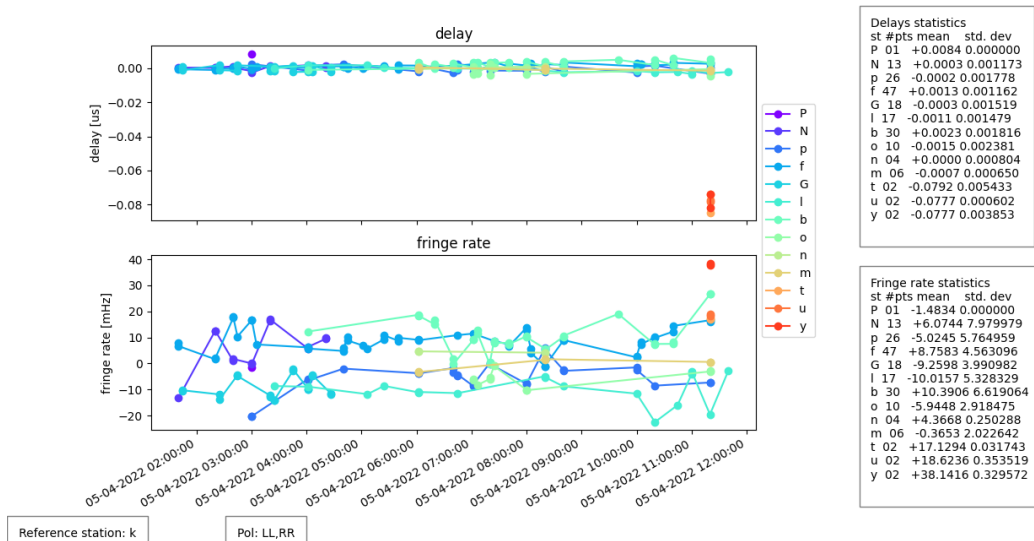
Residuals 3mm in v1/v2

Residuals to NOEMA

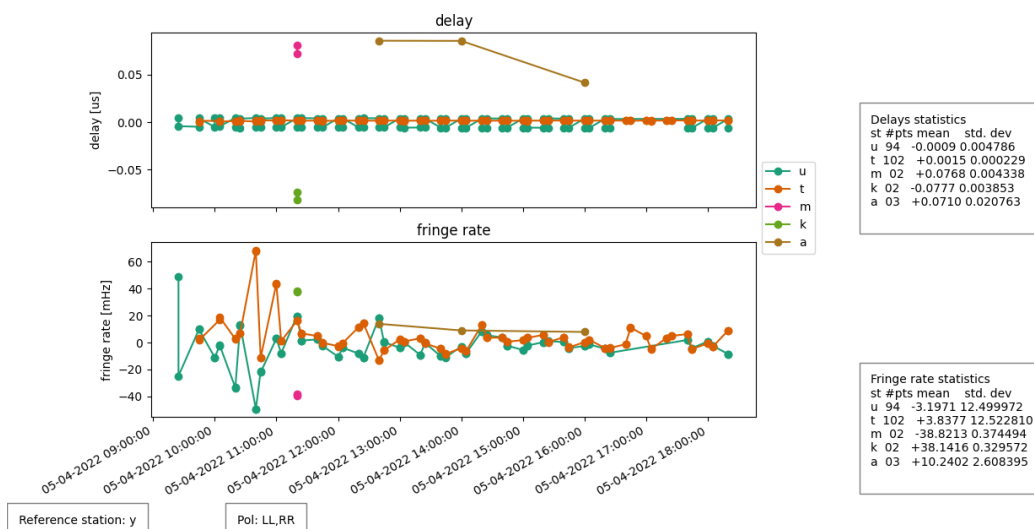


Reference station: N Pol: LL,RR

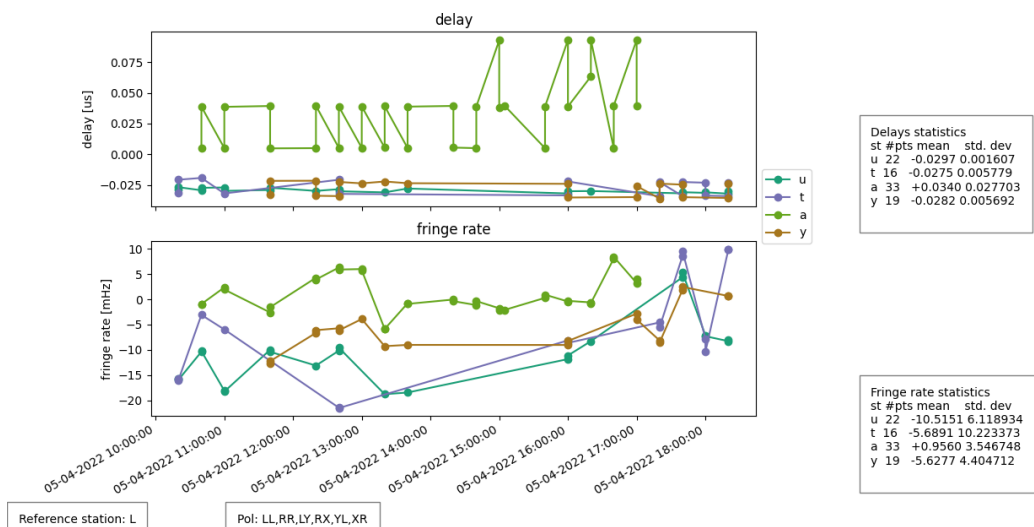
Residuals to Kitt Peak



Residuals to Yonsei

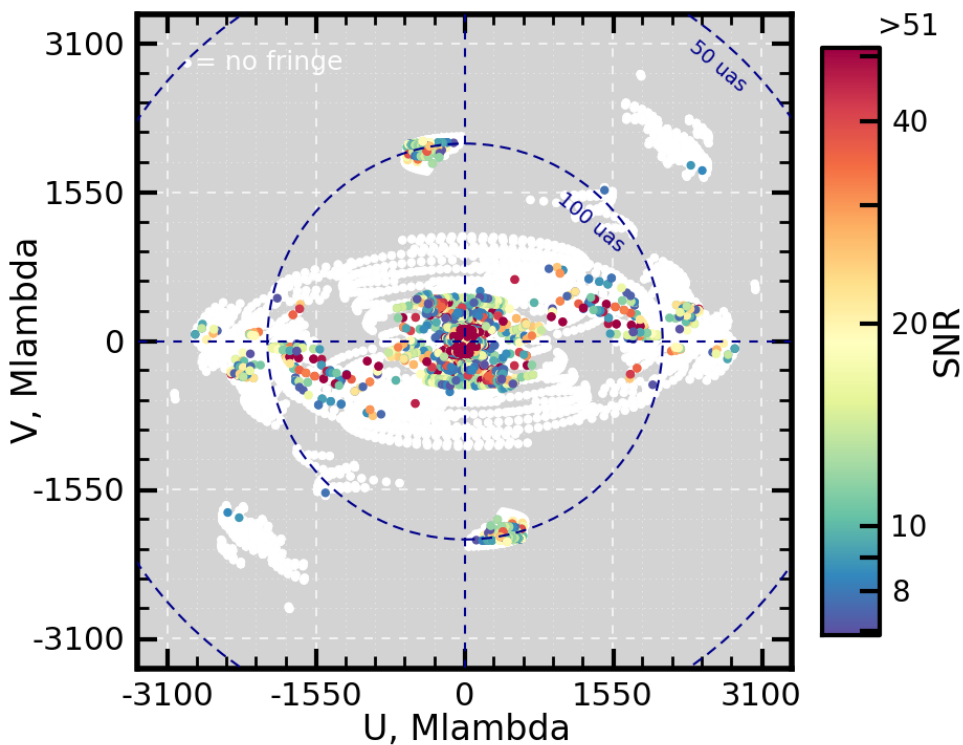


Residuals to Mopra



**Detections 3mm**

UV cov.: all sources, all antennas, all pols.



**FITS completeness (pclist)**

				EF	ON	YS	PV	NN	MH	GL	GB	NL	FD	PT	LA	KP	OV
BR	MK	AT	MP	KY	KU	KT											
c221e_1000	No0001	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
c221e_1001	No0002	M87	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
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c221e_1002	No0003	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
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c221e_1003	No0004	M87	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1004	No0005	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1005	No0006	M87	86ghz	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c221e_1006	No0007	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1007	No0008	M87	86ghz	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c221e_1008	No0009	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1009	No0010	M87	86ghz	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c221e_1010	No0011	3C279	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1011	No0012	M87	86ghz	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c221e_1012	No0013	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1013	No0014	M87	86ghz	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c221e_1014	No0015	3C273	86ghz	o	o	o	o	o	o	.	.	.	.	.	.	.	.
c221e_1015	No0016	M87	86ghz	o	o	o	o	o	o	o	.	.	.	.	.	.	.
c221e_1016	No0018	3C273	86ghz	o	o	o	o	o	o	o	o	.	.	.	.	.	.
c221e_1017	No0019	M87	86ghz	o	o	o	o	o	o	o	o	o	x	x	x	.	.
c221e_1018	No0020	3C273	86ghz	o	o	o	o	o	o	o	o	o	o	.	.	.	.
c221e_1019	No0021	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	x	.
c221e_1020	No0023	3C273	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	.
c221e_1021	No0024	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	.
c221e_1022	No0025	3C273	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	.
c221e_1023	No0026	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1024	No0028	3C273	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1025	No0029	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1026	No0030	3C273	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1027	No0031	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o

c221e_1028	No0033	3C279	86ghz	o	.	o	o	o	.	.	o	o	o	o	o	o	.
c221e_1029	No0034	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1030	No0035	3C273	86ghz	o	.	o	o	o	.	o	o	o	o	o	o	o	o
c221e_1031	No0036	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1032	No0038	3C273	86ghz	o	.	o	o	o	.	o	o	o	o	o	o	o	o
c221e_1033	No0039	M87	86ghz	o	o	o	o	o	o	o	o	o	o	o	o	o	o
c221e_1034	No0040	3C273	86ghz	.	.	o	o	o	.	o	o	o	o	o	o	o	o
c221e_1035	No0041	M87	86ghz	o	o	o	o	o	.	o	o	o	o	o	o	o	o
c221e_1036	No0043	3C273	86ghz	.	.	o	o	o	.	o	o	o	o	o	o	o	o
c221e_1037	No0044	M87	86ghz	o	.	o	o	o	.	o	o	o	o	o	o	o	o
c221e_1038	No0045	3C273	86ghz	.	.	o	.	.	.	o	.	o	o	o	o	o	o
c221e_1039	No0046	M87	86ghz	.	.	o	.	.	.	o	.	o	o	o	o	o	o
c221e_1040	No0047	3C273	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1041	No0048	M87	86ghz	.	.	o	.	.	.	o	.	o	o	o	o	o	o
c221e_1042	No0049	3C273	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1043	No0050	M87	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1044	No0051	3C273	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1045	No0052	M87	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1046	No0053	3C279	86ghz	.	.	.	.	.	.	.	.	o	o	o	o	o	o
c221e_1047	No0054	M87	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1048	No0055	3C273	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1049	No0056	M87	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1050	No0057	3C273	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1051	No0058	M87	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o
c221e_1052	No0059	3C273	86ghz	.	.	.	.	.	.	o	.	o	o	o	o	o	o

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c221e_1053 No0060 M87 86ghz . . . . . o . o o o o o o
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c221e_1054 No0061 3C273 86ghz . . . . . o . o o o o o o
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c221e_1055 No0062 M87 86ghz . . . . . o . o o o o o o
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c221e_1056 No0063 3C273 86ghz . . . . . . . o o o o o o
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c221e_1057 No0064 M87 86ghz . . . . . o . o o o o o o
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c221e_1058 No0065 3C273 86ghz . . . . . . . o o o o o o
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c221e_1059 No0066 M87 86ghz . . . . . o . o o o o o o
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c221e_1060 No0067 3C279 86ghz . . . . . . . o o o o o o
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c221e_1061 No0068 M87 86ghz . . . . . o . o o o o o o
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c221e_1062 No0069 3C273 86ghz . . . . . . . o o o o o o
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c221e_1063 No0070 M87 86ghz . . . . . o . o o o o o o
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c221e_1064 No0071 3C273 86ghz . . . . . . . o o o o o o
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c221e_1065 No0072 M87 86ghz . . . . . o . o o o o o o
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c221e_1066 No0073 3C273 86ghz . . . . . . . o o o o o o
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c221e_1067 No0074 M87 86ghz . . . . . o . o o o o o o
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c221e_1068 No0075 3C273 86ghz . . . . . . . o o o o o o
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c221e_1069 No0076 M87 86ghz . . . . . . . o o o o o o
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c221e_1070 No0077 3C273 86ghz . . . . . . . o o o o o o
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c221e_1071 No0078 M87 86ghz . . . . . . . o o o o o o
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c221e_1072 No0079 3C273 86ghz . . . . . . . o o o o o o
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c221e_1073 No0080 M87 86ghz . . . . . . . o o o o o o
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c221e_1074 No0081 3C273 86ghz . . . . . . . o o o o o o
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c221e_1075 No0082 M87 86ghz . . . . . . . o o o o o o
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c221e_1076 No0083 3C273 86ghz . . . . . . . o o o o o o
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c221e_1077 No0084 M87 86ghz . . . . . . . o o o o o o
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c221e_1103 No0110   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1104 No0111 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1105 No0112   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1106 No0113 3C279 86ghz . . . . . . . . . . . . . . . . .
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c221e_1107 No0114   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1108 No0115 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1109 No0116   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1110 No0117 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1111 No0118   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1112 No0119 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1113 No0120   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1114 No0121 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1115 No0122   M87 86ghz . . . . . . . . . . . . . . . . .
. . o o o 53 o
c221e_1116 No0123 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1117 No0124   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1118 No0125 3C273 86ghz . . . . . . . . . . . . . . . . .
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c221e_1119 No0126   M87 86ghz . . . . . . . . . . . . . . . . .
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c221e_1120 No0127 3C279 86ghz . . . . . . . . . . . . . . . . .
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Note: ALMA, LMT did not observe