C231D 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/may23/feedback_may23.asc
- No fringes to LMT, no data from Hs.
- Kt (no maser) and Br did not observe.

Status

what	date
Preparing for correlation	5 Dec 2023
Ready to start v1 correlation once A, B tracks finish, and copying ofMPI%8027 to /data/c231d/Mk/ has finished	27 Dec 2023
Correlation v1 3mm preparing - todo fix wrong ATCA position, clock adjust	15 Jan 2023
Correlation v1 3mm started with the above fixes	15 Jan 2023
Correlation v1 3mm finished	23 Jan 2023
Waiting for ALMA QA2 calibration tables	...
Sent to PI (ALMA uncorrected)	28 Feb 2024
Polswap running for Aa in v1, no qa2 yet for polconvert	27.Aug.2024

Fringes

Station	Code	Fringes	Plots	Comments
ALMA		yes		
NOEMA		yes		
KVN Ku Ky		yes		
KVN-Mopra		yes		
Mopra-ATCA		yes		ATCA IF1 has a delay offset wrt IF2, and had refpad W104 rather than W110
Mopra-JCMT		yes		
GLT-NOEMA		yes		
EU		yes		
EU-VLBA		yes		

Station	Code	Fringes	Plots	Comments
LMT		no		

Notes

Subband order for ALMA ANTAB

Doing subband 34 of 180 (not plotted)
Doing subband 39 of 180 (not plotted)
Doing subband 40 of 180 (not plotted)
Doing subband 41 of 180 (not plotted)
Doing subband 50 of 180 (not plotted)
Doing subband 51 of 180 (not plotted)
Doing subband 52 of 180 (not plotted)
Doing subband 53 of 180 (fringe plot)
Doing subband 54 of 180 (not plotted)
Doing subband 55 of 180 (not plotted)
Doing subband 56 of 180 (not plotted)
Doing subband 57 of 180 (not plotted)
Doing subband 58 of 180 (not plotted)
Doing subband 59 of 180 (not plotted)
Doing subband 60 of 180 (not plotted)
Doing subband 61 of 180 (fringe plot)
Doing subband 66 of 180 (not plotted)
Doing subband 67 of 180 (not plotted)
Doing subband 68 of 180 (not plotted)
Doing subband 69 of 180 (fringe plot)
Doing subband 70 of 180 (not plotted)
Doing subband 71 of 180 (not plotted)
Doing subband 72 of 180 (not plotted)
Doing subband 73 of 180 (not plotted)
Doing subband 74 of 180 (not plotted)
Doing subband 75 of 180 (not plotted)
Doing subband 76 of 180 (not plotted)

Correspondig DiFX frequency entries (0..N-1):

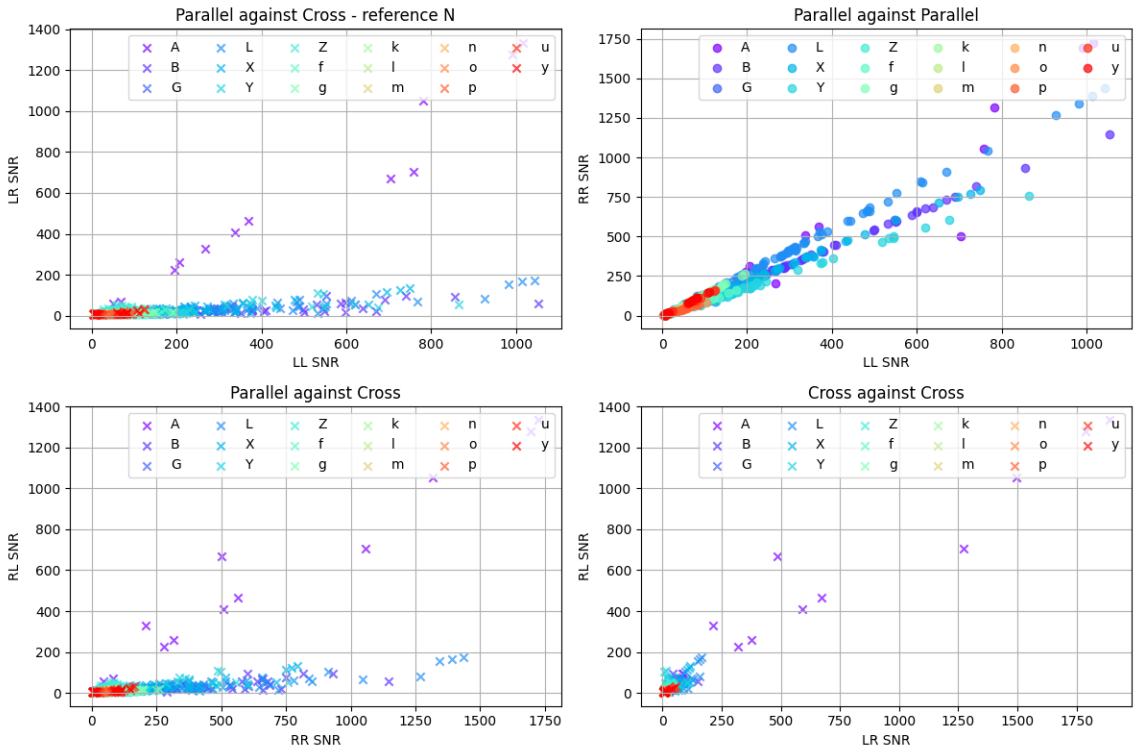
fq 32 : 64.000000 MHz USB [4096-ch/32-avg] @ 86012.000000 MHz
fq 33 : 64.000000 MHz USB [4096-ch/32-avg] @ 86076.000000 MHz
fq 38 : 64.000000 MHz USB [4096-ch/32-avg] @ 86204.000000 MHz
fq 39 : 64.000000 MHz USB [4096-ch/32-avg] @ 86332.000000 MHz
fq 40 : 64.000000 MHz USB [4096-ch/32-avg] @ 86460.000000 MHz
fq 49 : 64.000000 MHz USB [4096-ch/32-avg] @ 86268.000000 MHz
fq 50 : 64.000000 MHz USB [4096-ch/32-avg] @ 86396.000000 MHz
fq 51 : 64.000000 MHz USB [4096-ch/32-avg] @ 86524.000000 MHz
fq 52 : 64.000000 MHz USB [4096-ch/32-avg] @ 86588.000000 MHz
fq 53 : 64.000000 MHz USB [4096-ch/32-avg] @ 86652.000000 MHz
fq 54 : 64.000000 MHz USB [4096-ch/32-avg] @ 86716.000000 MHz

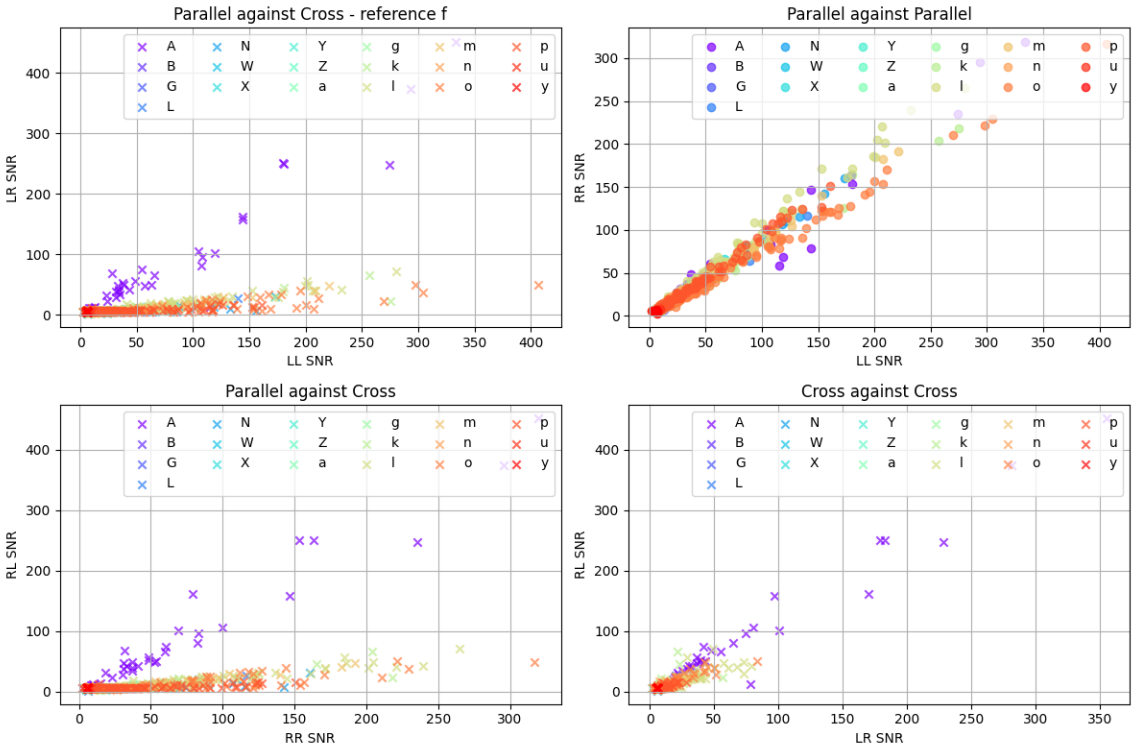
fq 55 : 64.000000 MHz USB [4096-ch/32-avg] @ 86780.000000 MHz
fq 56 : 64.000000 MHz USB [4096-ch/32-avg] @ 86844.000000 MHz
fq 57 : 64.000000 MHz USB [4096-ch/32-avg] @ 86908.000000 MHz
fq 58 : 64.000000 MHz USB [4096-ch/32-avg] @ 86972.000000 MHz
fq 59 : 64.000000 MHz USB [4096-ch/32-avg] @ 87036.000000 MHz
fq 60 : 64.000000 MHz USB [4096-ch/32-avg] @ 87100.000000 MHz
fq 65 : 64.000000 MHz USB [4096-ch/32-avg] @ 85372.000000 MHz
fq 66 : 64.000000 MHz USB [4096-ch/32-avg] @ 85436.000000 MHz
fq 67 : 64.000000 MHz USB [4096-ch/32-avg] @ 85500.000000 MHz
fq 68 : 64.000000 MHz USB [4096-ch/32-avg] @ 85564.000000 MHz
fq 69 : 64.000000 MHz USB [4096-ch/32-avg] @ 85628.000000 MHz
fq 70 : 64.000000 MHz USB [4096-ch/32-avg] @ 85692.000000 MHz
fq 71 : 64.000000 MHz USB [4096-ch/32-avg] @ 85756.000000 MHz
fq 72 : 64.000000 MHz USB [4096-ch/32-avg] @ 85820.000000 MHz
fq 73 : 64.000000 MHz USB [4096-ch/32-avg] @ 85884.000000 MHz
fq 74 : 64.000000 MHz USB [4096-ch/32-avg] @ 85948.000000 MHz
fq 75 : 64.000000 MHz USB [4096-ch/32-avg] @ 86140.000000 MHz

Post-Correlation checks

Polarization

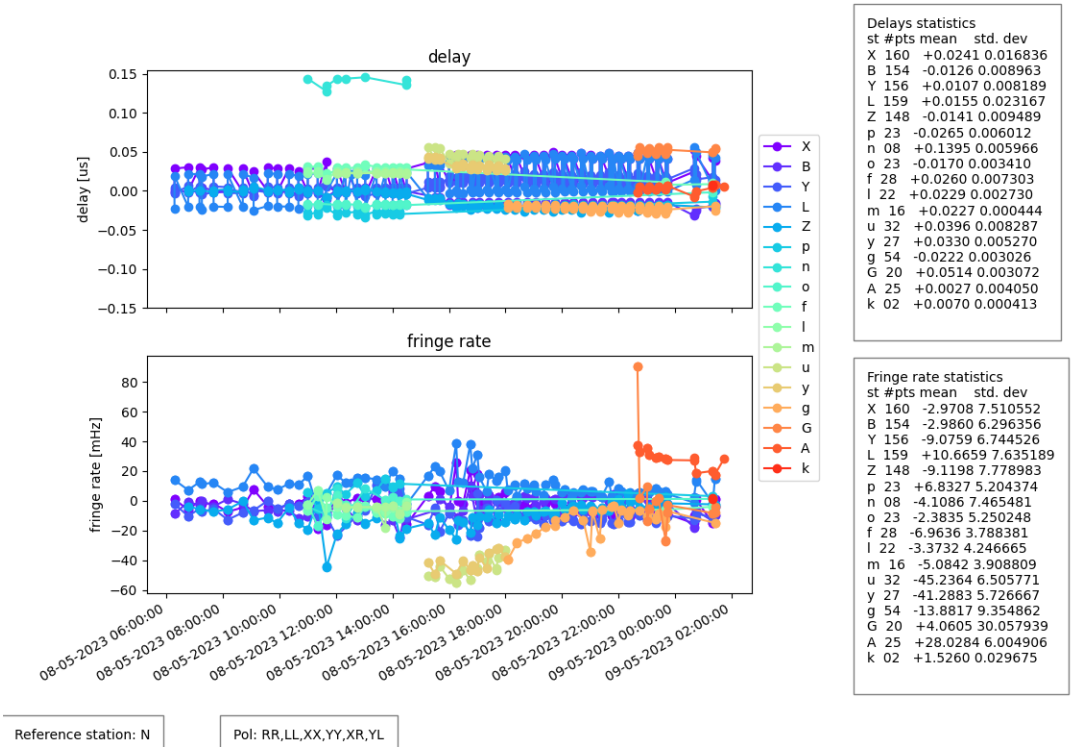
Note, ALMA (A) not polconverted yet.





Residuals

Residual delay for VLBA_NL a bit high at 0.10 to 0.15 usec.

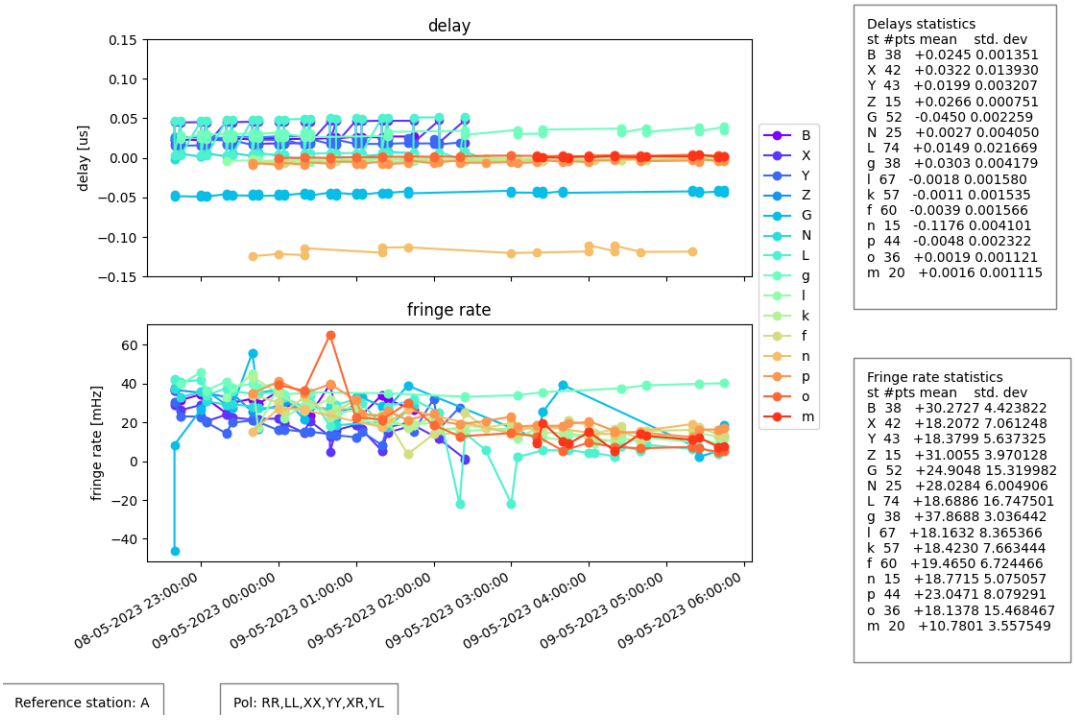


Delays statistics

st	#pts	mean	std. dev
X	160	+0.0241	0.016836
B	154	-0.0126	0.008963
Y	156	+0.0107	0.008189
L	159	+0.0155	0.023167
Z	148	-0.0141	0.009489
p	23	-0.0265	0.006012
n	08	+0.1395	0.005966
o	23	-0.0170	0.003410
f	28	+0.0260	0.007303
l	22	+0.0229	0.002730
m	16	+0.0227	0.000444
u	32	+0.0396	0.008287
y	27	+0.0330	0.005270
g	54	-0.0222	0.003026
G	20	+0.0514	0.003072
A	25	+0.0027	0.004050
k	02	+0.0070	0.000413

Fringe rate statistics

st	#pts	mean	std. dev
X	160	-2.9708	7.510552
B	154	-2.9860	6.296356
Y	156	-9.0759	6.744526
L	159	+10.6659	7.635189
Z	148	-9.1198	7.778983
p	23	+6.8327	5.204374
n	08	-4.1086	7.465481
o	23	-2.3835	5.250248
f	28	-6.9636	3.788381
l	22	-3.3732	4.246665
m	16	-5.0842	3.908809
u	32	-45.2364	6.505771
y	27	-41.2883	5.726667
g	54	-13.8817	9.354862
G	20	+4.0605	30.057939
A	25	+28.0284	6.004906
k	02	+1.5260	0.029675



Delays statistics

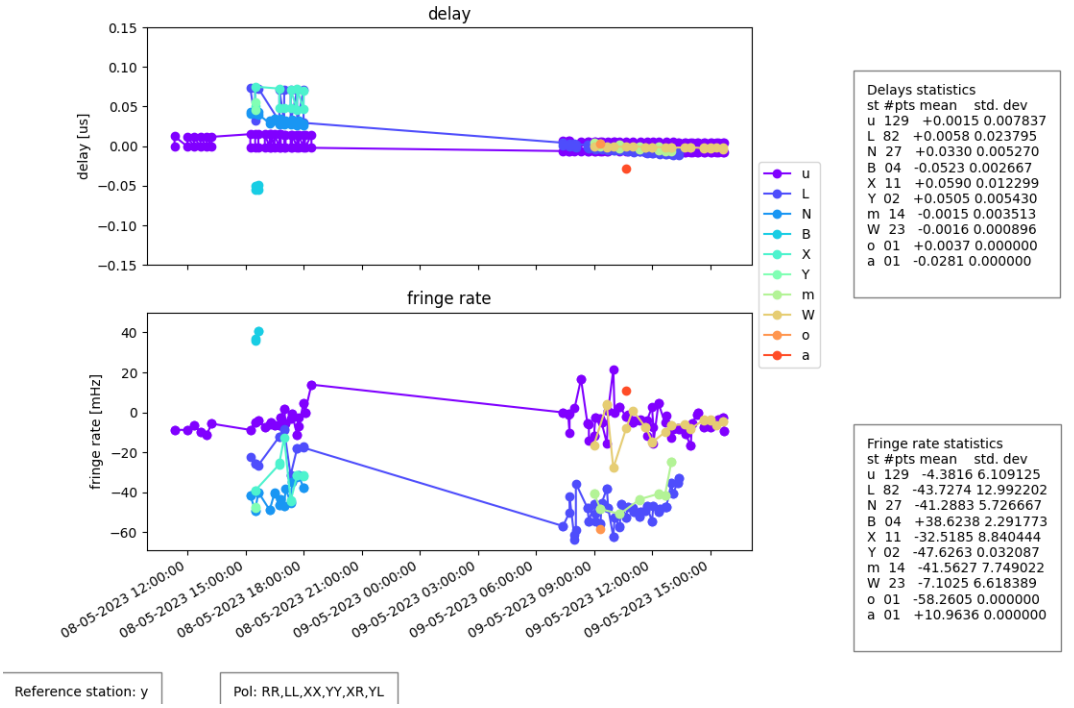
st	#pts	mean	std. dev
B	38	+0.0245	0.001351
X	42	+0.0322	0.013930
Y	43	+0.0199	0.003207
Z	15	+0.0266	0.000751
G	52	-0.0450	0.002259
N	25	+0.0027	0.004050
L	74	+0.0149	0.021669
g	38	+0.0303	0.004179
l	67	-0.0018	0.001580
k	57	-0.0011	0.001535
f	60	-0.0039	0.001566
n	15	-0.1176	0.004101
p	44	-0.0048	0.002322
o	36	+0.0019	0.001121
m	20	+0.0016	0.001115

Fringe rate statistics

st	#pts	mean	std. dev
B	38	+30.2727	4.423822
X	42	+18.2072	7.061248
Y	43	+18.3799	5.637325
Z	15	+31.0055	3.970128
G	52	+24.9048	15.319982
N	25	+28.0284	6.004906
L	74	+18.6886	16.747501
g	38	+37.8688	3.036442
l	67	+18.1632	8.365366
k	57	+18.4230	7.663444
f	60	+19.4650	6.724466
n	15	+18.7715	5.075057
p	44	+23.0471	8.079291
o	36	+18.1378	15.468467
m	20	+10.7801	3.557549

Reference station: A

Pol: RR,LL,XX,YY,XR,YL



Delays statistics

st	#pts	mean	std. dev
u	129	+0.0015	0.007837
L	82	+0.0058	0.023795
N	27	+0.0330	0.005270
B	04	-0.0523	0.002667
X	11	+0.0590	0.012299
Y	02	+0.0505	0.005430
m	14	-0.0015	0.003513
W	23	-0.0016	0.000896
o	01	+0.0037	0.000000
a	01	-0.0281	0.000000

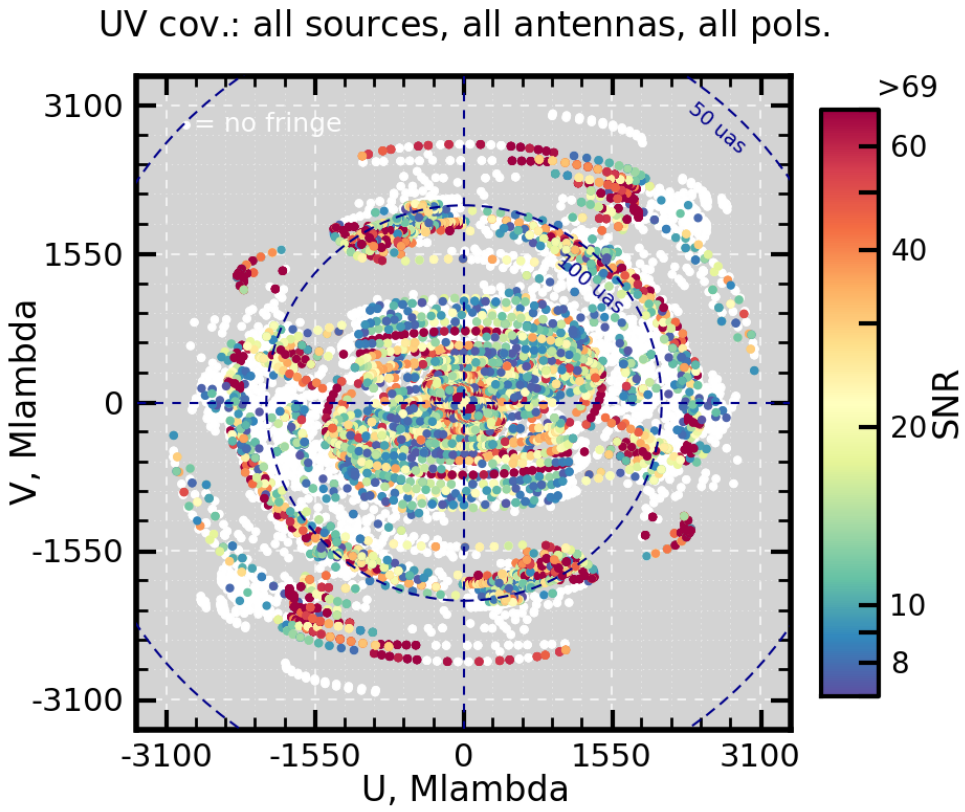
Fringe rate statistics

st	#pts	mean	std. dev
u	129	-4.3816	6.109125
L	82	-43.7274	12.992202
N	27	-41.2883	5.726667
B	04	+38.6238	2.291773
X	11	-32.5185	8.840444
Y	02	-47.6263	0.032087
m	14	-41.5627	7.749022
W	23	-7.1025	6.618389
o	01	-58.2605	0.000000
a	01	+10.9636	0.000000

Reference station: y

Pol: RR,LL,XX,YY,XR,YL

Detections 3mm



FITS completeness (pclist)

												EF	LM	ON	OD	YS	NN	MH	FD	NL	OV	PT	BR	KP
LA	KY	KU	KT	MK	HS	GL	GB	AA	MM	AT	MP													
c231d_1000	No0001						3C345	86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1001	No0002					UGC06728		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1002	No0003					NGC6232		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1003	No0004					2013+370		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1004	No0005					2018+407		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1005	No0006					2117+516		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1006	No0007					2013+370		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1007	No0008					4C50.55		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1008	No0009					2117+516		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1009	No0010					2013+370		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			
c231d_1010	No0011					NGC6232		86ghz	o	x	o	o	o	o	o	.	.	.	.	.	.			

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. . . . . .
c231d_1011 No0012 UGC06728 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1012 No0013    BLLAC 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1013 No0014 2018+407 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1014 No0015 2117+516 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1015 No0016 2127+566 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1016 No0017    BLLAC 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1017 No0018 UGC12282 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1018 No0019 0954+658 86ghz o . o o o o o . . . . . .
. . . . . .
c231d_1019 No0020  NGC3516 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1020 No0021  NGC6232 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1021 No0022 2013+370 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1022 No0023 2018+407 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1023 No0024    BLLAC 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1024 No0025 UGC12282 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1025 No0026 2127+566 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1026 No0027    BLLAC 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1027 No0028 2117+516 86ghz o x o o o o o . . . . . .
. . . . . .
c231d_1028 No0029 0059+581 86ghz o x o o o o o x x x x x x
x x x x . . . . . .
c231d_1029 No0030 0025+684 86ghz o x o o o o o o o o o x x
o 85 76 x . . . . . .
c231d_1030 No0031    BLLAC 86ghz o x o o o o o o o o o x x
o . . . . . .
c231d_1031 No0032 UGC06728 86ghz o x o o o o o o o o o x x
o o o x . . . . . .
c231d_1032 No0033    BLLAC 86ghz o x o o o o o o o o o x x
o . . . . . .
c231d_1033 No0034 UGC12282 86ghz o x o o o o o o o o o x x
o . . . . . .
c231d_1034 No0035 0954+658 86ghz . . . . . .
. o o x . . . . . .
c231d_1035 No0036  NGC3079 86ghz . . . . . .
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. o o x . . . . . . . .
c231d_1036 No0037  3C454.3 86ghz o x o x o o o o o o o x x
o . . . . . . . . . . .
c231d_1037 No0038  NGC6232 86ghz o x o o o o o o o o o x x
o o o x x . . . . . . .
c231d_1038 No0039    BLLAC 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1039 No0040 2018+407 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1040 No0041 0954+658 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1041 No0042  NGC3516 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1042 No0043    BLLAC 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1043 No0044 2117+516 86ghz 22 x 22 22 22 22 22 22 22 22 22 x x
22 . . . 22 . . . . . .
c231d_1044 No0045  4C50.55 86ghz 38 x 38 38 38 38 38 38 38 38 38 x x
38 . . . 38 . . . . . .
c231d_1045 No0046 0954+658 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1046 No0047 UGC06728 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1047 No0048 1156+295 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1048 No0049  NGC4051 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1049 No0050    BLLAC 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1050 No0051 2127+566 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1051 No0052 0059+581 86ghz o x o o o o o o o o o x x
o . . . . . . . . . . .
c231d_1052 No0053 0025+684 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1053 No0054 0250+547 86ghz o x o o o o o o o o o x x
o . . . . . . . . . . .
c231d_1054 No0055 1156+295 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1055 No0056  NGC4102 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1056 No0057 1156+295 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1057 No0058  NGC4138 86ghz . . . . . . . . . . . .
. o o x . . . . . . . .
c231d_1058 No0059    BLLAC 86ghz o x o o o o o o o o o x x
o . . . o . . . . . . .
c231d_1059 No0060 UGC12282 86ghz o x o o o o o o 88 o o x x
o . . . o . . . . . . .
c231d_1060 No0061    BLLAC 86ghz o . o o o o o o o o o x x
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o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1061 No0062    BLLAC 86ghz o  .  o  o  o  o  o  o  o  o  o  o  x  x
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1062 No0063    BLLAC 86ghz o  .  o  o  o  o  o  o  o  o  o  o  x  x
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1063 No0064    BLLAC 86ghz o  .  o  o  o  o  o  o  o  o  o  o  x  x
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1064 No0065    BLLAC 86ghz o  .  o  o  o  .  o  o  o  o  o  o  x  x
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1065 No0066    BLLAC 86ghz o  .  o  o  o  .  o  o  o  o  o  o  x  x
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1066 No0067 1156+295 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1067 No0068  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  x
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1068 No0069 1156+295 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1069 No0070    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1070 No0071 1156+295 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1071 No0072  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1072 No0073      M87 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1073 No0074    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1074 No0075    3C273 86ghz .  .  o  o  .  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1075 No0076      M87 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1076 No0077  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1077 No0078      M87 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1078 No0079    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1079 No0080    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1080 No0081      M87 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1081 No0082  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1082 No0083    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1083 No0084      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1084 No0085    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1085 No0086  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
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o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1086 No0087    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1087 No0088      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1088 No0089    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1089 No0090    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1090 No0091      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1091 No0092  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1092 No0093    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  .  .  .
c231d_1093 No0094      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .
.  o  o  x  .  .  o  .  .  .  .  .  .
c231d_1094 No0095    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1095 No0096  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1096 No0097    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
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c231d_1097 No0098      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .
.  o  o  x  .  .  o  .  .  .  .  .  .
c231d_1098 No0099    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1099 No0100    3C279 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  .  .  .  .  .  .  .  .  .  .  .  .
c231d_1100 No0101      M87 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  .  .  .  .  .  o  .  .  .  .  .  .
c231d_1101 No0102  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  x  .  .  .  .  .  .  .
c231d_1102 No0103    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  .  .  .  .  .  .  .  .  .  .  .  .
c231d_1103 No0104      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .
.  .  .  .  .  .  o  .  .  .  .  .  .
c231d_1104 No0105    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .  .
c231d_1105 No0106  3C454.3 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .  .
c231d_1106 No0107    3C273 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  .  .  .  .  .  .  .  .  .  .  .  .
c231d_1107 No0108      M87 86ghz o  .  o  o  98 o  o  .  .  .  .  .  .
.  .  .  .  .  .  o  .  .  .  .  .  .
c231d_1108 No0109    BLLAC 86ghz .  .  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .  .
c231d_1109 No0110    3C279 86ghz x  .  o  o  o  o  o  .  .  .  .  .  .
.  .  .  .  .  .  .  .  .  .  .  .  .
c231d_1110 No0111      M87 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
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c231d_1111 No0112  3C454.3 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1112 No0113    3C273 86ghz o . o o o o o . . . . . .
. . . . . . . . . . . . . .
c231d_1113 No0114      M87 86ghz o . o o 98 o o . . . . . .
. . . . . . . o . . . . . .
c231d_1114 No0115    BLLAC 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1115 No0116  3C454.3 86ghz . . . . . . . o . o o x o
o . . . . o . . . . . . . .
c231d_1116 No0117    3C273 86ghz o . o o o o o . . . . . .
. . . . . . . . . . . . . .
c231d_1117 No0118      M87 86ghz 10 .  10 10 07 10 10 . . . . . .
. . . . . . . 10 . . . . . .
c231d_1118 No0119    BLLAC 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1119 No0120    3C279 86ghz o . o o o o o . . . . . .
. . . . . . . . . . . . . .
c231d_1120 No0121      M87 86ghz 25 .  25 25 22 25 25 . . . . . .
. . . . . . . 25 . . . . . .
c231d_1121 No0122     3C84 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1122 No0123    3C273 86ghz o . o o o o o . . . . . .
. . . . . . . o . . . . . .
c231d_1123 No0124      M87 86ghz o . o o 98 o o . . . . . .
. . . . . . . o . . . . . .
c231d_1124 No0125     3C84 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1125 No0126     3C84 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1126 No0127    3C273 86ghz o . o o o o o . . . . . .
. . . . . . . o . . . . . .
c231d_1127 No0128      M87 86ghz o . o o 98 o o . . . . . .
. . . . . . . o . . . . . .
c231d_1128 No0129     3C84 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
c231d_1129 No0130    3C279 86ghz o . o o o o o . . . . . .
. . . . . . . . . . . . . .
c231d_1130 No0131      M87 86ghz o . o o o o o . . . . . .
. . . . . . . o . . . . . .
c231d_1132 No0132     3C84 86ghz . . . . . . . o o o o x o
o . . . . o . . . . . . . .
           No0133 1156+295 86ghz . . . . . . . . . . . . .
. . . . . . . . x . . . . .
c231d_1134 No0134    3C273 86ghz o . o o o o o . . . . . .
. . . . . x o o x . . . . .
c231d_1135 No0135      M87 86ghz o . o o o o o . o . . . . .
. . . . . x o o x . . . . .
c231d_1136 No0136     3C84 86ghz . . . . . . . o . o o x o
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o  .  .  .  o  .  .  .  .  .  .  .
c231d_1137 No0137    3C84 86ghz .  .  .  .  .  .  .  o  .  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .
c231d_1138 No0138    3C273 86ghz o  .  o  o  o  o  o  .  o  .  .  .  .
.  .  .  .  .  .  x  o  o  x  .  .  .
c231d_1139 No0139     M87 86ghz o  .  o  o  o  o  o  .  o  .  .  .  .
.  .  .  .  .  .  x  o  o  x  .  .  .
c231d_1140 No0140    3C84 86ghz .  .  .  .  .  .  .  o  .  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .
c231d_1141 No0141    3C279 86ghz o  .  o  o  o  o  o  .  .  .  .  .  .
.  .  .  .  .  .  x  .  o  o  .  .  .
c231d_1142 No0142     M87 86ghz o  .  o  o  o  o  o  .  o  .  .  .  .
.  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1143 No0143    3C84 86ghz .  .  .  .  .  .  .  o  .  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .
           No0144    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  .  .  .  .  .  .  .  x  .  .  .  .
c231d_1144 No0145    3C273 86ghz o  .  o  o  o  o  o  o  o  .  .  .  .
.  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1145 No0146     M87 86ghz o  .  o  o  o  o  o  o  o  .  .  .  .
.  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1146 No0147    3C84 86ghz .  .  .  .  .  .  .  .  o  o  x  o
o  .  .  .  o  .  .  .  .  .  .  .
c231d_1147 No0148    3C273 86ghz o  .  o  o  o  o  o  o  o  .  o  .  .
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1148 No0149     M87 86ghz o  .  o  o  98 o  o  o  o  .  o  .  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1149 No0150    3C273 86ghz o  .  o  o  o  o  o  o  o  .  o  .  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1150 No0151     M87 86ghz o  .  o  o  o  o  o  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
           No0152    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  .  .  .  .  .  .  .  x  .  .  .  .
c231d_1151 No0153    3C273 86ghz o  .  o  o  o  x  o  o  o  o  o  .  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1152 No0154     M87 86ghz o  .  o  o  98 x  o  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1153 No0155    3C273 86ghz o  .  o  o  o  x  o  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1154 No0156     M87 86ghz o  .  o  o  98 24 o  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1155 No0157    3C279 86ghz o  .  o  o  o  66 .  o  o  o  o  .  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1156 No0158     M87 86ghz o  .  o  o  o  o  o  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
           No0159    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  .  .  .  .  .  .  .  x  .  .  .  .
c231d_1157 No0160    3C273 86ghz o  .  o  o  o  11 .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1158 No0161     M87 86ghz o  .  o  o  98 73 o  o  o  o  o  x  o
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o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1159 No0162    3C273 86ghz o  .  o  o  o  o  .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1160 No0163      M87 86ghz o  .  o  o  98 o  o  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1161 No0164    3C279 86ghz .  .  .  .  o  11 .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1162 No0165      M87 86ghz o  .  o  o  o  66 .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
           No0166    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  .  .  .  .  .  .  .  x  .  .  .  .
c231d_1163 No0167    3C273 86ghz .  x  .  .  o  x  .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1164 No0168      M87 86ghz o  x  o  o  98 x  .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  .  .  .
c231d_1165 No0169    3C273 86ghz .  x  .  .  o  .  .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  o  .  .
c231d_1166 No0170      M87 86ghz o  x  o  o  98 x  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1167 No0171      M87 86ghz .  x  .  .  o  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
           No0172    3C279 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  .  .  .  .  .  .  .  x  .  .  .  .
c231d_1168 No0173    3C279 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  .  x  o  o  o  o  .  .
c231d_1169 No0174      M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1170 No0175    3C273 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1171 No0176      M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1172 No0177    3C273 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1173 No0178      M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
           No0179    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  .  .  .  .  .  .  .  x  .  .  .  .
c231d_1174 No0180    3C273 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1175 No0181      M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1176 No0182    3C279 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1177 No0183      M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1178 No0184    3C273 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
c231d_1179 No0185      M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  .  .  .  .  o  x  o  o  o  o  .  .
           No0186    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
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. . . . . . . . x . . . .
c231d_1180 No0187    3C273 86ghz . x . . . . . . o o o o x o
o . . . . o x o o 88 o . .
c231d_1181 No0188      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o x o . .
c231d_1182 No0189    3C279 86ghz . x . . . . . . o o o o x o
o . . . . o x . o o o . .
c231d_1183 No0190      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o o o . .
c231d_1184 No0191    3C273 86ghz . x . . . . . . o o o o x o
o . . . . o x o o o o . .
c231d_1185 No0192      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o o o . .
           No0193    3C273 86ghz . . . . . . . . . . . . . .
. . . . . . . . x . . . .
c231d_1186 No0194    3C273 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o . .
c231d_1187 No0195      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o . .
c231d_1188 No0196    3C279 86ghz . x . . . . . . o o o o x o
o . . . . o x . o . o . .
c231d_1189 No0197      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o . .
           No0198    3C273 86ghz . . . . . . . . . . . . . .
. . . . . . . . x . . . .
c231d_1190 No0199    3C273 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o . .
c231d_1191 No0200      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o . .
c231d_1192 No0201    3C273 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o o o
c231d_1193 No0202      M87 86ghz . x . . . . . . o o o o x o
o . . . . o x o o . o o o
c231d_1194 No0203    3C279 86ghz . x . . . . . . o o o o x o
o . . . . o . . o . o o o
c231d_1195 No0204      M87 86ghz . x . . . . . . o o o o x o
o o o x o . o o . o o o o
c231d_1196 No0205    3C273 86ghz . x . . . . . . o o o o x o
o o o x o . . o . o o o o
c231d_1197 No0206      M87 86ghz . x . . . . . . o o o o x o
o o o x o . o o . o o o o
c231d_1198 No0207    3C273 86ghz . x . . . . . . o o o o x o
o o o x o . . . . o o o o
c231d_1199 No0208      M87 86ghz . x . . . . . . o o o o x o
o o x x o . o . . o o o o
c231d_1200 No0209    3C279 86ghz . x . . . . . . o o o o x o
o o o x o . . . . o o o o
c231d_1201 No0210      M87 86ghz . x . . . . . . o o o o x o
o o x x o . o . . o o o o
c231d_1202 No0211    3C273 86ghz . x . . . . . . o o o o x o
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o  o  o  x  o  .  .  .  .  o  o  o
c231d_1203 No0212     M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  o  o  x  o  .  o  .  .  o  o  o
c231d_1204 No0213    3C273 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  o  o  x  o  .  .  .  .  o  o  o
c231d_1205 No0214     M87 86ghz .  x  .  .  .  .  .  o  o  o  o  x  o
o  o  o  x  o  .  o  .  .  o  o  o
c231d_1206 No0215    3C279 86ghz .  x  .  .  .  .  .  o  .  o  o  x  o
o  o  o  x  o  .  .  .  .  o  o  o
c231d_1207 No0216     M87 86ghz .  x  .  .  .  .  .  o  .  o  o  x  o
o  o  o  x  o  .  o  .  .  o  o  o
c231d_1208 No0217    3C273 86ghz .  .  .  .  .  .  .  .  .  o  o  x  o
o  o  o  x  o  .  .  .  .  o  o  o
c231d_1209 No0218     M87 86ghz .  .  .  .  .  .  .  o  .  o  o  x  o
o  o  o  x  o  .  o  .  .  o  o  o
c231d_1210 No0219    3C273 86ghz .  .  .  .  .  .  .  .  .  o  .  x  o
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1211 No0220     M87 86ghz .  .  .  .  .  .  .  .  .  o  o  x  o
o  o  o  x  o  .  o  .  .  o  o  o
c231d_1212 No0221    3C279 86ghz .  .  .  .  .  .  .  .  .  o  .  x  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1213 No0222     M87 86ghz .  .  .  .  .  .  .  .  .  o  .  x  .
.  o  x  x  o  .  .  .  .  o  o  o
c231d_1214 No0223    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1215 No0224     M87 86ghz .  .  .  .  .  .  .  .  .  o  .  x  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1216 No0225    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1217 No0226     M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1218 No0227    3C279 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1219 No0228     M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1220 No0229    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1221 No0230     M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1222 No0231    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1223 No0232     M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1224 No0233    3C279 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1225 No0234     M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  x  x  o  .  .  .  .  o  o  o
c231d_1226 No0235    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1227 No0236     M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .  .
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.  o  o  x  o  .  .  .  .  o  o  o
c231d_1228 No0237    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1229 No0238      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1230 No0239    3C279 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1231 No0240      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  o  .  .  .  .  o  o  o
c231d_1232 No0241    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1233 No0242      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1234 No0243    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1235 No0244      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1236 No0245    3C279 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1237 No0246      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1238 No0247    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1239 No0248      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1240 No0249    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1241 No0250      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1242 No0251    3C279 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1243 No0252      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1244 No0253    3C273 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
c231d_1245 No0254      M87 86ghz .  .  .  .  .  .  .  .  .  .  .  .
.  o  o  x  .  .  .  .  .  .  o  o
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