

C191B/MM014 Correlation Report

General information

- Consists of only one science project: **MM014**
- PI: MacDonald
- Targets: 1510-089, 3C279, 1749+096
- Session info: <http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/>
- Station feedback: http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/sessions/apr19/feedback_apr19.asc
- Text file with detailed antenna statistics, scroll down to get to the cumulative statistics for the whole experiment:
[c191b.antrep](#)

Current Status

correlation finished, data **released** on 19/09/2019.

the **second release** was made on 18/01/2020 to fix the double autocorrelation issue.

Fringes

Fourfit fringe plots with fringes to multiple antennas:

Scan No0004, source 1510-089, fringes to Ef, Pv, On, Ys, Mh: [No0004_all.pdf](#)

Scan No0028, source 1510-089, fringes to Gb, Ef, Pv, On, Ys, Fd, Nl: [No0028_all.pdf](#)

Scan No0051, source 1510-089, fringes to Gb, Br, Fd, Kp, La, Nl, Ov, Pt: [No0051_all.pdf](#)

| Station | Code | Fringes | Plots | Comments |
|---------|------|---------|--|--|
| Ef | B | yes | <p>Fringe overview of all baselines (all of C191B) 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.</p> <p>c191b FRINGE RfAnt Ef LLRR AllSrc.pdf</p> <p>Examples of fourfit fringe plots:</p> <p>No0004_all.pdf, No0028_all.pdf</p> <p>Same for all antennas below unless otherwise noted.</p> | weather mixed, everything from clear sky to light rain |
| On | X | yes | <p>c191b FRINGE RfAnt On LLRR AllSrc.pdf</p> <p>No0004_all.pdf, No0028_all.pdf</p> | |

| Station | Code | Fringes | Plots | Comments |
|-------------|------|---------|--|---|
| Ys | Y | yes | c191b FRINGE RfAnt Ys LLRR AllSrc.pdf No0004_all.pdf , No0028_all.pdf | |
| Mh | Z | yes | c191b FRINGE RfAnt Mh LLRR AllSrc.pdf No0004_all.pdf | |
| Pv | P | yes | c191b FRINGE RfAnt Pv LLRR AllSrc.pdf No0004_all.pdf , No0028_all.pdf | |
| GBT: Gb | G | yes | c191b FRINGE RfAnt Gb LLRR AllSrc.pdf No0028_all.pdf , No0051_all.pdf | broken Cal-Wheel, no Tsys, cloudy and rainy weather |
| VLBA: Br | b | yes | c191b FRINGE RfAnt Br LLRR AllSrc.pdf No0051_all.pdf | |
| VLBA: Fd | f | yes | c191b FRINGE RfAnt Fd LLRR AllSrc.pdf No0028_all.pdf , No0051_all.pdf | |
| VLBA: Kp | k | yes | c191b FRINGE RfAnt Kp LLRR AllSrc.pdf No0051_all.pdf | high winds, several wind stows |
| VLBA: La | l | yes | c191b FRINGE RfAnt La LLRR AllSrc.pdf No0051_all.pdf | slow getting up to proper recording speed |

| Station | Code | Fringes | Plots | Comments |
|-------------|------|---------|--|---|
| VLBA: Mk | m | no | c191b_FRINGE_RfAnt_Mk_LLRR_AllSrc.pdf | 3mm receiver is still cooling and the antenna cannot be tipped. recorded only one scan, no fringes in it. |
| VLBA: Nl | n | yes | c191b_FRINGE_RfAnt_Nl_LLRR_AllSrc.pdf No0028_all.pdf , No0051_all.pdf | |
| VLBA: Ov | o | yes | c191b_FRINGE_RfAnt_Ov_LLRR_AllSrc.pdf No0051_all.pdf | . |
| VLBA: Pt | p | yes | c191b_FRINGE_RfAnt_Pt_LLRR_AllSrc.pdf No0051_all.pdf | Taken out for several scans because of USNO observing. 0600-0700: RDBE-1 timing issues, power cycled unit twice. |

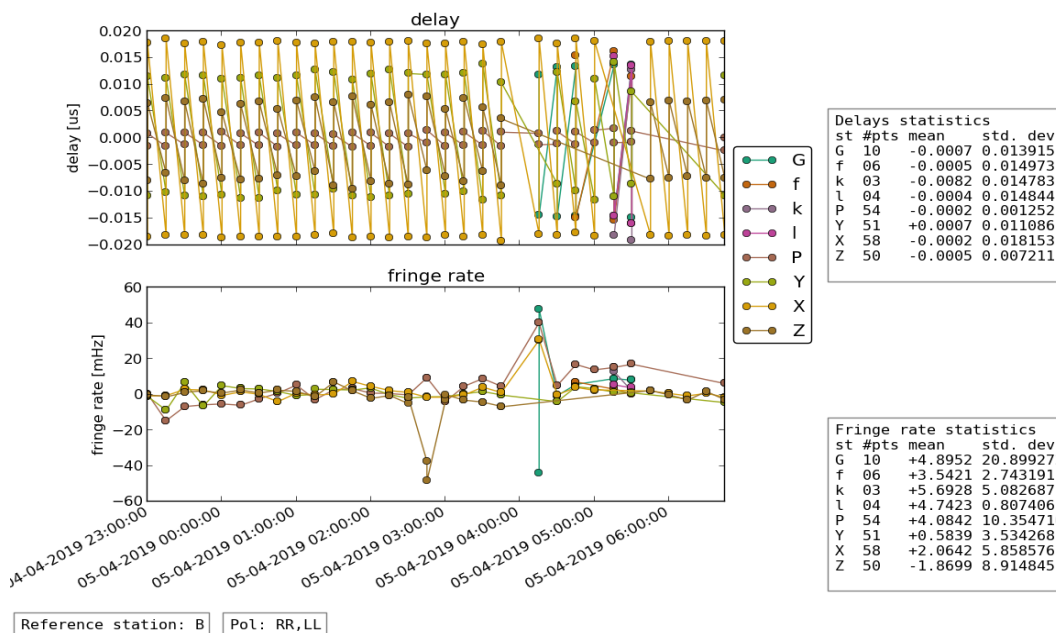
Notes

ALMA was supposed to take part in this experiment, but did not participate because of extremely harsh weather.

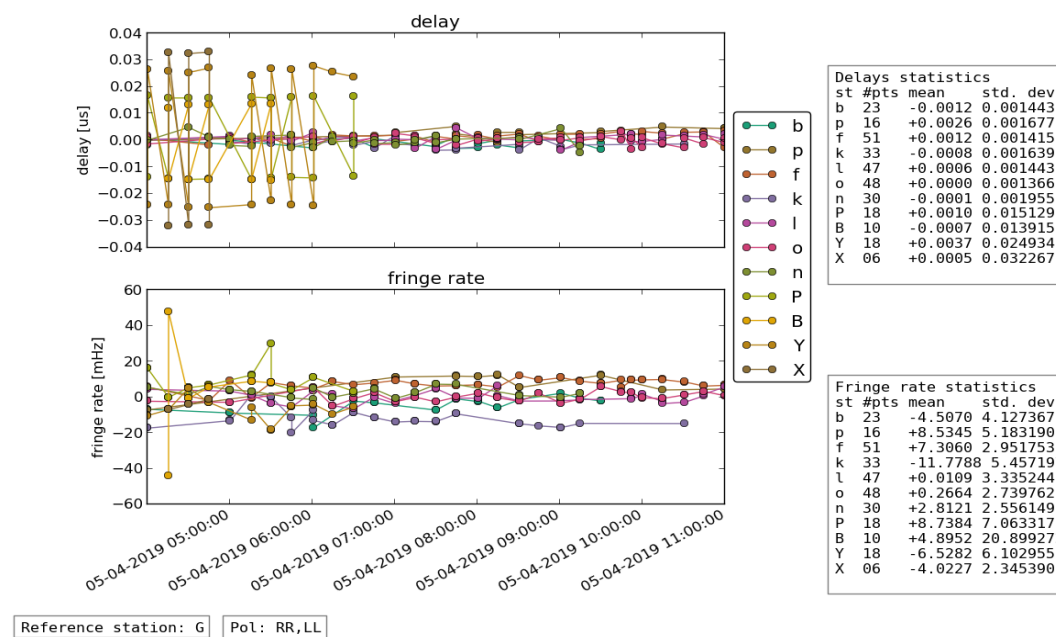
Post-Correlation checks

Residuals

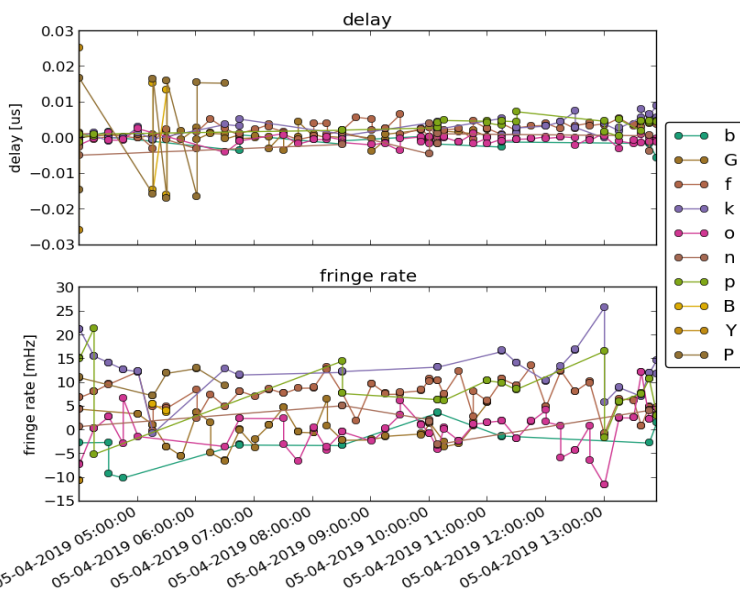
Ef:



GBT:



La:



Delays statistics

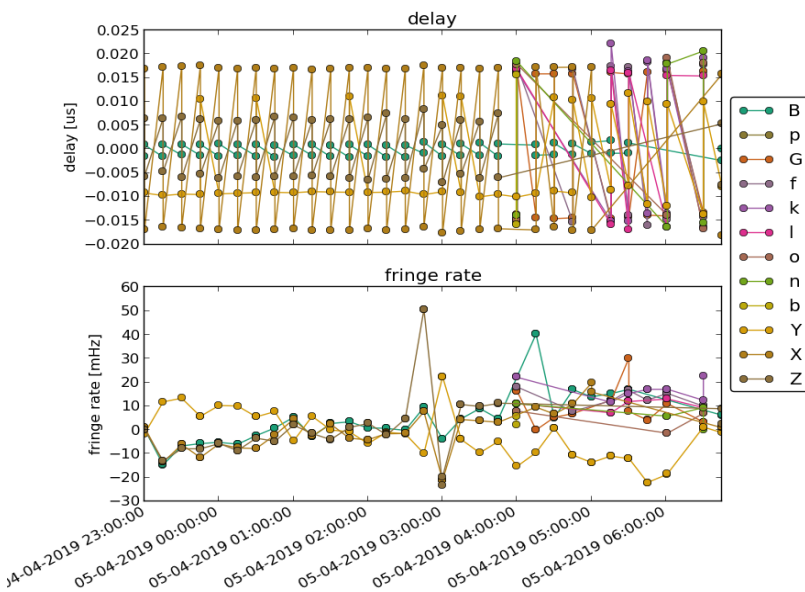
| st | #pts | mean | std. dev |
|----|------|---------|----------|
| b | 14 | -0.0011 | 0.001876 |
| G | 47 | +0.0006 | 0.001443 |
| f | 73 | +0.0024 | 0.001902 |
| k | 37 | +0.0030 | 0.002572 |
| o | 66 | -0.0005 | 0.001130 |
| n | 10 | -0.0012 | 0.002783 |
| p | 25 | +0.0034 | 0.001927 |
| B | 04 | -0.0004 | 0.014844 |
| Y | 02 | -0.0003 | 0.025518 |
| P | 09 | +0.0018 | 0.015924 |

Fringe rate statistics

| st | #pts | mean | std. dev |
|----|------|----------|----------|
| b | 14 | -2.3551 | 3.777053 |
| G | 47 | +0.0109 | 3.335244 |
| f | 73 | +7.5626 | 3.285492 |
| k | 37 | +13.0667 | 4.480440 |
| o | 66 | +0.0367 | 4.257829 |
| n | 10 | +2.1728 | 2.966879 |
| p | 25 | +8.6580 | 5.483122 |
| B | 04 | +4.7423 | 0.807406 |
| Y | 02 | -10.5005 | 0.002154 |
| P | 09 | +10.6958 | 2.108969 |

Reference station: l Pol: RR,LL

PV:



Delays statistics

| st | #pts | mean | std. dev |
|----|------|---------|----------|
| B | 54 | -0.0002 | 0.001252 |
| p | 01 | +0.0162 | 0.000000 |
| G | 18 | +0.0010 | 0.015129 |
| f | 14 | +0.0013 | 0.016270 |
| k | 12 | +0.0017 | 0.016644 |
| l | 09 | +0.0018 | 0.015924 |
| o | 06 | +0.0016 | 0.016783 |
| n | 06 | +0.0019 | 0.017138 |
| b | 02 | -0.0001 | 0.015793 |
| Y | 44 | -0.0036 | 0.009176 |
| X | 50 | +0.0000 | 0.016971 |
| Z | 42 | +0.0003 | 0.006171 |

Fringe rate statistics

| st | #pts | mean | std. dev |
|----|------|----------|-----------|
| B | 54 | +4.0842 | 10.354710 |
| p | 01 | +7.1365 | 0.000000 |
| G | 18 | +8.7384 | 7.063317 |
| f | 14 | +13.2787 | 3.351173 |
| k | 12 | +16.8471 | 3.747059 |
| l | 09 | +10.6958 | 2.108969 |
| o | 06 | +4.5321 | 4.175860 |
| n | 06 | +7.1950 | 3.840073 |
| b | 02 | +4.0071 | 1.811266 |
| Y | 44 | -2.7003 | 10.498108 |
| X | 50 | -0.6042 | 8.226789 |
| Z | 42 | +0.8830 | 13.627000 |

Reference station: P Pol: RR,LL

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

mm014.fits:

| | | | | EF | ON | YS | PV | MH | GB | FD | NL | OV | PT | BR | KP | LA | MK |
|----------|--------|----------|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| c191b_01 | No0001 | 3C279 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_02 | No0002 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_03 | No0003 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_04 | No0004 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_05 | No0005 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_06 | No0006 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_07 | No0007 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_08 | No0008 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_09 | No0009 | 3C279 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_10 | No0010 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_11 | No0011 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_12 | No0012 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_13 | No0013 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_14 | No0014 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_15 | No0015 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_16 | No0016 | 3C279 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_17 | No0017 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_18 | No0018 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_19 | No0019 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_20 | No0020 | 1510-089 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_21 | No0022 | 3C279 | 3mm_RDBE | . | . | o | o | . | o | o | o | o | o | o | o | o | . |
| c191b_22 | No0024 | 1510-089 | 3mm_RDBE | o | o | o | o | . | o | . | o | . | . | . | . | . | . |
| c191b_23 | No0025 | 3C279 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | o | o | o | o | . |
| c191b_24 | No0026 | 1510-089 | 3mm_RDBE | o | o | o | o | . | o | . | o | . | . | . | . | . | . |
| c191b_25 | No0027 | 3C279 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | . |
| c191b_26 | No0028 | 1510-089 | 3mm_RDBE | o | o | o | o | . | o | o | o | . | . | . | . | . | . |
| c191b_27 | No0029 | 3C279 | 3mm_RDBE | . | . | . | . | . | . | . | . | o | x | o | o | o | . |
| c191b_28 | No0031 | 3C279 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | x | o | o | o | . |
| c191b_29 | No0032 | 1510-089 | 3mm_RDBE | o | o | o | o | . | . | . | . | . | . | . | . | . | . |
| c191b_30 | No0034 | 1510-089 | 3mm_RDBE | o | . | o | o | . | o | o | o | . | x | . | o | o | . |
| c191b_31 | No0035 | 1510-089 | 3mm_RDBE | o | . | o | o | . | o | o | o | . | x | . | o | o | . |
| c191b_32 | No0036 | 1510-089 | 3mm_RDBE | . | . | o | o | . | o | o | o | . | x | . | o | o | . |
| c191b_33 | No0037 | 1749+096 | 3mm_RDBE | o | o | . | . | o | . | . | . | . | . | . | . | . | . |
| c191b_34 | No0039 | 1510-089 | 3mm_RDBE | . | . | o | o | . | o | o | o | o | x | o | o | o | . |
| c191b_35 | No0040 | 1749+096 | 3mm_RDBE | o | o | . | . | o | . | . | . | . | . | . | . | . | . |
| c191b_36 | No0041 | 1510-089 | 3mm_RDBE | . | . | o | o | . | o | o | o | o | x | o | o | o | . |
| c191b_37 | No0042 | 1749+096 | 3mm_RDBE | o | o | . | . | o | . | . | . | . | . | . | . | . | . |
| c191b_38 | No0043 | 1510-089 | 3mm_RDBE | . | . | o | o | . | o | o | o | o | x | o | o | o | . |
| c191b_39 | No0044 | 1749+096 | 3mm_RDBE | o | o | . | . | o | . | . | . | . | . | . | . | . | . |
| c191b_40 | No0045 | 1749+096 | 3mm_RDBE | o | o | o | o | o | . | . | . | . | . | . | . | . | . |
| c191b_41 | No0046 | 3C279 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | 41 | o | o | o | o |
| c191b_42 | No0048 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | . |
| c191b_43 | No0049 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | . |
| c191b_44 | No0050 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | . |
| c191b_45 | No0051 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_46 | No0052 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |

| | | | | | | | | | | | | | | | | | |
|----------|--------|----------|----------|---|---|---|---|---|---|---|---|----|---|---|---|---|---|
| c191b_47 | No0053 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_48 | No0055 | 3C279 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_49 | No0056 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_50 | No0057 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_51 | No0058 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_52 | No0060 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_53 | No0061 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_54 | No0062 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_55 | No0063 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_56 | No0064 | 3C279 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_57 | No0065 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | 46 | o | o | o | o | x |
| c191b_58 | No0067 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_59 | No0068 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_60 | No0069 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_61 | No0070 | 1749+096 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_62 | No0071 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_63 | No0072 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_64 | No0073 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_65 | No0074 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_66 | No0075 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_67 | No0076 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_68 | No0077 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | . | o | o | o | o | o | o | x |
| c191b_69 | No0078 | 1510-089 | 3mm_RDBE | . | . | . | . | . | o | . | o | o | o | o | o | o | x |
| c191b_70 | No0079 | 1749+096 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_71 | No0080 | 1749+096 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_72 | No0081 | 1749+096 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |
| c191b_73 | No0082 | 1749+096 | 3mm_RDBE | . | . | . | . | . | o | o | o | o | o | o | o | o | x |