

MM015_pt2 Correlation Report

General information

- A part of [C182C](#), the first part of this science project is in [C182B](#).
- PI: MARSCHER
- Targets: FERMI sources
- 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
- Text file with detailed antenna statistics:
[c182c.antrep](#)

Current Status

Correlation finished, data **released** on 14.03.2019.

Fringes

| Station | Code | Fringes | Plots | Comments |
|---------|------|---------|---|----------|
| Ef | B | yes | <p>Fringe overview of all baselines (all of C182C) 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, > 0.1us)</p> <p>c182c_SBD_RfAnt_Ef_LLRR_AllSrc.pdf</p> <p>Examples of fourfit fringe plots:</p> <p>c182c_No0007_1633+38_BX_LL.pdf, c182c_No0007_1633+38_BX_LR.pdf, c182c_No0007_1633+38_BX_RL.pdf, c182c_No0007_1633+38_BX_RR.pdf, c182c_No0027_1633+38_BY_RL.pdf, c182c_No0027_1633+38_BY_RR.pdf, no LL or LR fringes.</p> <p>c182c_No0007_1633+38_BZ_LL.pdf, c182c_No0007_1633+38_BZ_RL.pdf, c182c_No0007_1633+38_BZ_RR.pdf, no LR fringe.</p> <p>c182c_No0007_1633+38_BP_LL.pdf, c182c_No0007_1633+38_BP_LR.pdf, c182c_No0007_1633+38_BP_RL.pdf, c182c_No0007_1633+38_BP_RR.pdf.</p> <p>c182c_No0007_1633+38_Bg_LL.pdf, c182c_No0007_1633+38_Bg_LR.pdf, c182c_No0007_1633+38_Bg_RL.pdf, c182c_No0007_1633+38_Bg_RR.pdf.</p> <p>Same for all antennas below unless otherwise noted.</p> | |
| On | X | yes | <p>c182c_SBD_RfAnt_On_LLRR_AllSrc.pdf</p> | |

| Station | Code | Fringes | Plots | Comments |
|------------|------|---------|--|---|
| | | | c182c No0007 1633+38 BX_LL.pdf , c182c No0007 1633+38 BX_LR.pdf , c182c No0007 1633+38 BX_RL.pdf , c182c No0007 1633+38 BX_RR.pdf . c182c No0023 1633+38 tX_LL.pdf , c182c No0023 1633+38 tX_LR.pdf , c182c No0023 1633+38 tX_RL.pdf , c182c No0023 1633+38 tX_RR.pdf . c182c No0019 1633+38 uX_LL.pdf , c182c No0019 1633+38 uX_LR.pdf , c182c No0019 1633+38 uX_RL.pdf , c182c No0019 1633+38 uX_RR.pdf . c182c No0023 1633+38 yX_LL.pdf , c182c No0023 1633+38 yX_LR.pdf , c182c No0023 1633+38 yX_RL.pdf , c182c No0023 1633+38 yX_RR.pdf . | |
| Ys | Y | yes | c182c SBD RfAnt Ys LLRR AllSrc.pdf c182c No0027 1633+38 BY_RL.pdf , c182c No0027 1633+38 BY_RR.pdf , no LL or LR fringes. | 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 | c182c SBD RfAnt Mh LLRR AllSrc.pdf c182c No0007 1633+38 BZ_LL.pdf , c182c No0007 1633+38 BZ_RL.pdf , c182c No0007 1633+38 BZ_RR.pdf , no LR fringe. | |
| Pv | P | yes | c182c SBD RfAnt Pv LLRR AllSrc.pdf c182c No0007 1633+38 BP_LL.pdf , c182c No0007 1633+38 BP_LR.pdf , c182c No0007 1633+38 BP_RL.pdf , c182c No0007 1633+38 BP_RR.pdf . c182c No0023 1633+38 tP_LL.pdf , c182c No0023 1633+38 tP_LR.pdf , c182c No0023 1633+38 tP_RL.pdf , c182c No0023 1633+38 tP_RR.pdf . c182c No0019 1633+38 uP_LL.pdf , c182c No0019 1633+38 uP_LR.pdf , c182c No0019 1633+38 uP_RL.pdf , c182c No0019 1633+38 uP_RR.pdf . c182c No0023 1633+38 yP_LL.pdf , c182c No0023 1633+38 yP_LR.pdf , c182c No0023 1633+38 yP_RL.pdf , c182c No0023 1633+38 yP_RR.pdf . | Had a small clock jump, see the residual plots. |
| GLT: Gl | g | yes | c182c SBD RfAnt Gl LLRR AllSrc.pdf c182c No0007 1633+38 Bg_LL.pdf , c182c No0007 1633+38 Bg_LR.pdf , c182c No0007 1633+38 Bg_RL.pdf , c182c No0007 1633+38 Bg_RR.pdf . | 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. |

| Station | Code | Fringes | Plots | Comments |
|-------------|------|---------|--|---|
| VLBA: Br | b | yes | c182c_SBD_RfAnt_Br_LLRR_AllSrc.pdf c182c_No0008_3C120_bk_LL.pdf , c182c_No0008_3C120_bk_LR.pdf , c182c_No0008_3C120_bk_RL.pdf , c182c_No0008_3C120_bk_RR.pdf . | All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%. |
| VLBA: Fd | f | yes | c182c_SBD_RfAnt_Fd_LLRR_AllSrc.pdf c182c_No0010_0420-014_fk_LL.pdf , c182c_No0010_0420-014_fk_RR.pdf , no LR or RL fringes. c182c_No0010_0420-014_fm_LL.pdf , c182c_No0010_0420-014_fm_RR.pdf , 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 | c182c_SBD_RfAnt_Kp_LLRR_AllSrc.pdf c182c_No0008_3C120_bk_LL.pdf , c182c_No0008_3C120_bk_LR.pdf , c182c_No0008_3C120_bk_RL.pdf , c182c_No0008_3C120_bk_RR.pdf . c182c_No0010_0420-014_fk_LL.pdf , c182c_No0010_0420-014_fk_RR.pdf , no LR or RL fringes. c182c_No0008_3C120_kl_LL.pdf , c182c_No0008_3C120_kl_RR.pdf , no LR or RL fringes. c182c_No0010_0420-014_km_LL.pdf , c182c_No0010_0420-014_km_RR.pdf , no LR or RL fringes. c182c_No0010_0420-014_kn_LL.pdf , c182c_No0010_0420-014_kn_RR.pdf , no LR or RL fringes. c182c_No0008_3C120_ko_LL.pdf , c182c_No0008_3C120_ko_RL.pdf , c182c_No0008_3C120_ko_RR.pdf , no LR fringe. | All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%. |
| VLBA: La | l | yes | c182c_SBD_RfAnt_La_LLRR_AllSrc.pdf c182c_No0008_3C120_kl_LL.pdf , c182c_No0008_3C120_kl_RR.pdf , 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: Mk | m | yes | c182c_SBD_RfAnt_Mk_LLRR_AllSrc.pdf c182c_No0010_0420-014_km_LL.pdf , c182c_No0010_0420-014_km_RR.pdf , no LR or RL fringes. | All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%. |

| Station | Code | Fringes | Plots | Comments |
|-------------|------|---------|--|---|
| | | | c182c No0010 0420-014_fm_LL.pdf , c182c No0010 0420-014_fm_RR.pdf , no LR or RL fringes. | |
| VLBA: Nl | n | yes | c182c SBD RfAnt Nl LLRR AllSrc.pdf c182c No0010 0420-014_kn_LL.pdf , c182c No0010 0420-014_kn_RR.pdf , 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: Ov | o | yes | c182c SBD RfAnt Ov LLRR AllSrc.pdf c182c No0008 3C120_ko_LL.pdf , c182c No0008 3C120_ko_RL.pdf , c182c No0008 3C120_ko_RR.pdf , no LR fringe. | All VLBA antennas suffer from the same problem, diminishing the effective observing time in many scans by 30-50%. |
| VLBA: Pt | p | no | c182c SBD RfAnt Pt LLRR AllSrc.pdf ----- | 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. |
| KVN: Kt | t | yes | c182c SBD RfAnt Kt LLRR AllSrc.pdf c182c No0023 1633+38_tP_LL.pdf , c182c No0023 1633+38_tP_LR.pdf , c182c No0023 1633+38_tP_RL.pdf , c182c No0023 1633+38_tP_RR.pdf . c182c No0023 1633+38_tX_LL.pdf , c182c No0023 1633+38_tX_LR.pdf , c182c No0023 1633+38_tX_RL.pdf , c182c No0023 1633+38_tX_RR.pdf . c182c No0019 1633+38_tu_LL.pdf , c182c No0019 1633+38_tu_LR.pdf , c182c No0019 1633+38_tu_RL.pdf , c182c No0019 1633+38_tu_RR.pdf . c182c No0023 1633+38_ty_LL.pdf , c182c No0023 1633+38_ty_LR.pdf , c182c No0023 1633+38_ty_RL.pdf , c182c No0023 1633+38_ty_RR.pdf . | |
| KVN: Ku | u | yes | c182c SBD RfAnt Ku LLRR AllSrc.pdf c182c No0019 1633+38_uP_LL.pdf , c182c No0019 1633+38_uP_LR.pdf , c182c No0019 1633+38_uP_RL.pdf , c182c No0019 1633+38_uP_RR.pdf . c182c No0019 1633+38_uX_LL.pdf , c182c No0019 1633+38_uX_LR.pdf , c182c No0019 1633+38_uX_RL.pdf , c182c No0019 1633+38_uX_RR.pdf . c182c No0019 1633+38_tu_LL.pdf , c182c No0019 1633+38_tu_LR.pdf , c182c No0019 1633+38_tu_RL.pdf , c182c No0019 1633+38_tu_RR.pdf . c182c No0019 1633+38_uy_LL.pdf , c182c No0019 1633+38_uy_LR.pdf , c182c No0019 1633+38_uy_RL.pdf , c182c No0019 1633+38_uy_RR.pdf . | |

| Station | Code | Fringes | Plots | Comments |
|------------|------|---------|--|----------|
| KVN: Ky | y | yes | c182c SBD RfAnt Ky LLRR AllSrc.pdf c182c No0023 1633+38 yP LL.pdf , c182c No0023 1633+38 yP LR.pdf , c182c No0023 1633+38 yP RL.pdf , c182c No0023 1633+38 yP RR.pdf . c182c No0023 1633+38 yX LL.pdf , c182c No0023 1633+38 yX LR.pdf , c182c No0023 1633+38 yX RL.pdf , c182c No0023 1633+38 yX RR.pdf . c182c No0023 1633+38 ty LL.pdf , c182c No0023 1633+38 ty LR.pdf , c182c No0023 1633+38 ty RL.pdf , c182c No0023 1633+38 ty RR.pdf . c182c No0019 1633+38 uy LL.pdf , c182c No0019 1633+38 uy LR.pdf , c182c No0019 1633+38 uy RL.pdf , c182c No0019 1633+38 uy RR.pdf . | |

Notes

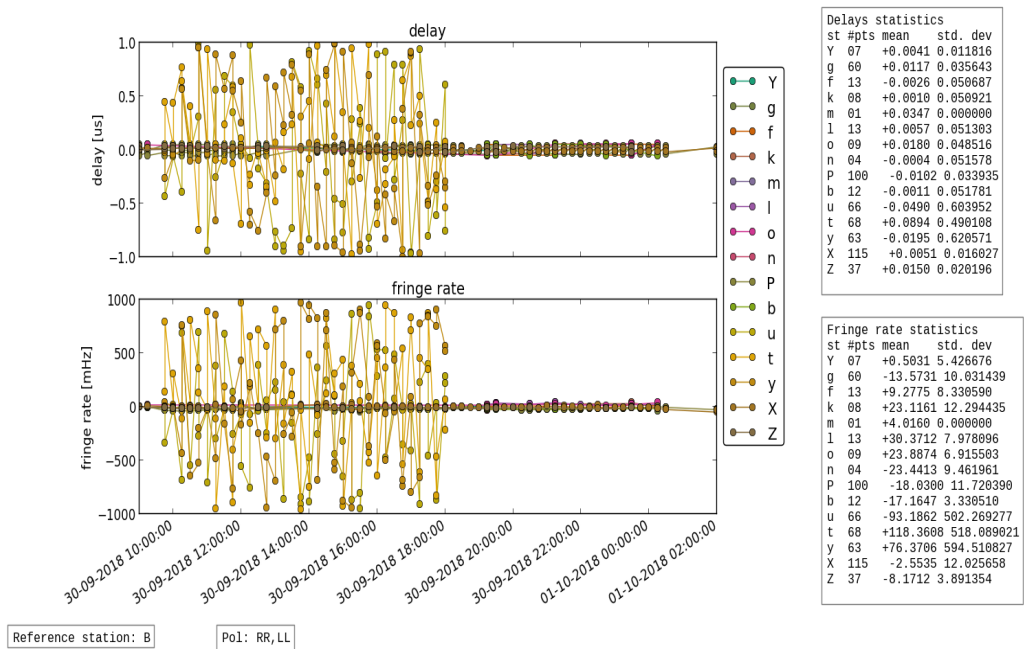
All VLBA antennas are affected by the same problem (probably originating in the control software) during the whole session: for a significant portion of scans the recording starts several seconds or even few minutes late compared with the schedule. This results in effective reduction of observing time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

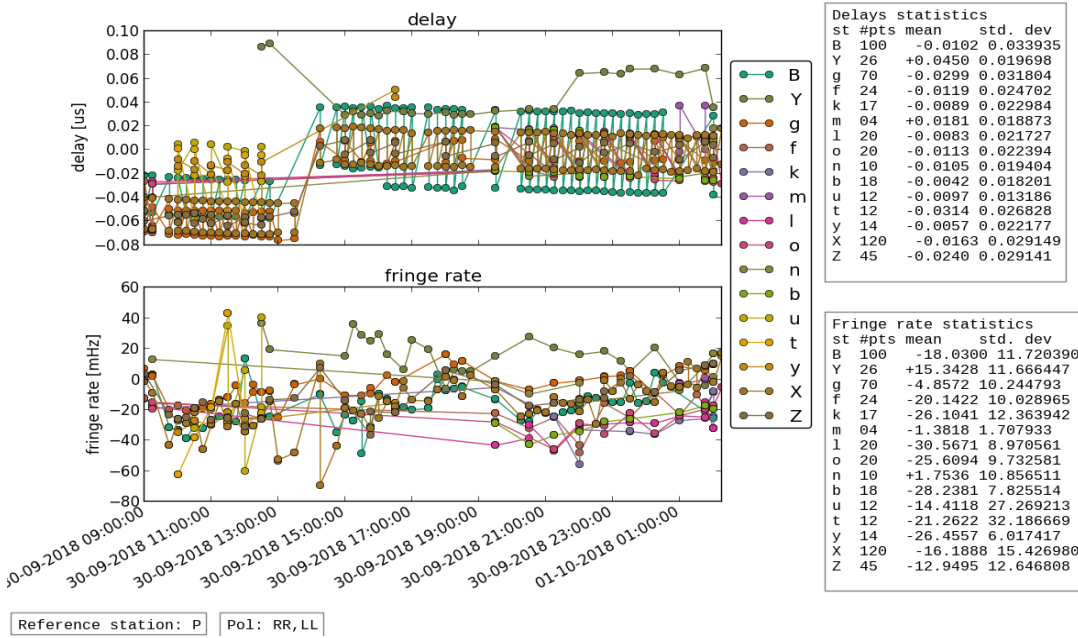
Post-Correlation checks

Residuals

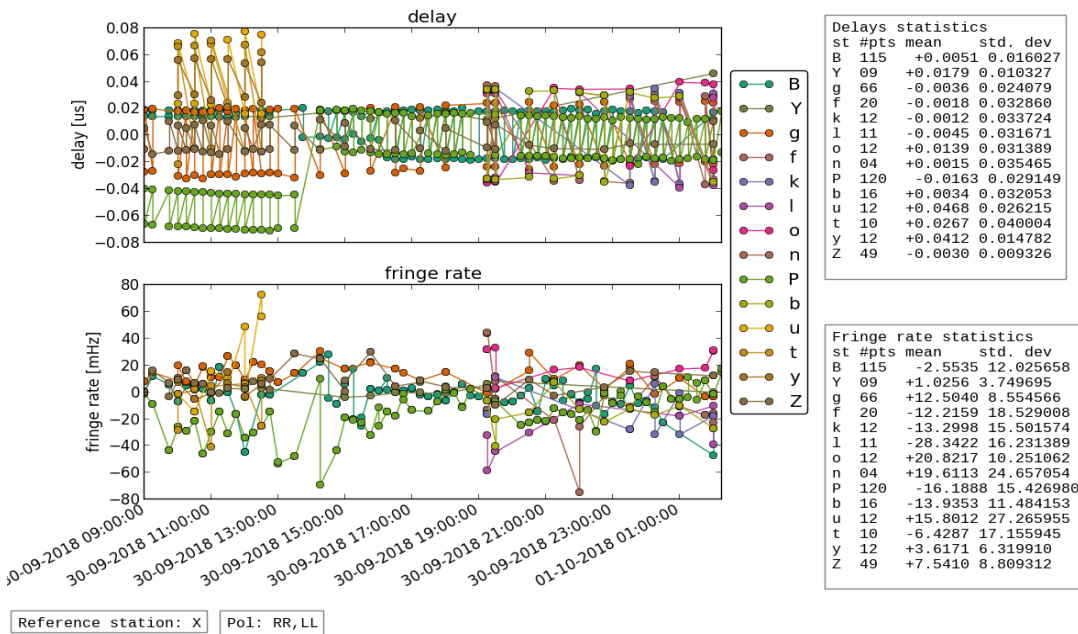
EF (the outliers are due to multiple false fringes in KVN antennas detected by fourfit):



PV (had a small clock jump):



ON:



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

mm015_pt2.fits:

| | | | | EF | GL | ON | YS | PV | MH | FD | NL | OV | PT | BR | KP | LA | MK | KY | KU | KT |
|-----------|--------|----------|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| c182c_001 | No0001 | 3C84 | 3mm_RDBE | o | o | o | x | o | o | 40 | 40 | 40 | x | 40 | 40 | 40 | 40 | . | . | . |
| c182c_002 | No0002 | 3C84 | 3mm_RDBE | o | o | o | x | o | o | 75 | 75 | 71 | x | 71 | 75 | 75 | 71 | . | . | . |
| c182c_003 | No0003 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | 73 | 73 | 73 | x | 73 | 73 | 73 | 73 | . | . | . |
| c182c_004 | No0004 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_005 | No0005 | 3C345 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | o | o |
| c182c_006 | No0006 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_007 | No0007 | 1633+38 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_008 | No0008 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_009 | No0009 | 3C345 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_010 | No0010 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_011 | No0011 | 1633+38 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_012 | No0012 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_013 | No0013 | 3C345 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_014 | No0014 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_015 | No0015 | 1633+38 | 3mm_RDBE | o | o | o | x | 40 | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_016 | No0016 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_017 | No0017 | 3C345 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_018 | No0018 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_019 | No0019 | 1633+38 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_020 | No0020 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_021 | No0021 | 3C345 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_022 | No0022 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_023 | No0023 | 1633+38 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_024 | No0024 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_025 | No0025 | 3C345 | 3mm_RDBE | o | o | o | x | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_026 | No0026 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_027 | No0027 | 1633+38 | 3mm_RDBE | o | o | o | o | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_028 | No0028 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_029 | No0029 | 3C345 | 3mm_RDBE | o | o | o | o | o | o | . | . | . | . | . | . | . | . | o | 75 | 75 |
| c182c_030 | No0030 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_032 | No0032 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_034 | No0034 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_036 | No0036 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_038 | No0038 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_040 | No0040 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_042 | No0042 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | 70 | 70 | 73 | x | 73 | 70 | 70 | 73 | . | . | . |
| c182c_044 | No0044 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_047 | No0047 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | . | . | . |
| c182c_049 | No0049 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | 83 | o | x | o | o | o | o | . | . | . |
| c182c_051 | No0051 | 0420-014 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | . | . | . |
| c182c_053 | No0053 | 3C120 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | . | . | . |
| c182c_055 | No0055 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | 76 | o | x | o | o | o | o | . | . | . |
| c182c_057 | No0057 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_059 | No0059 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_061 | No0061 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_063 | No0063 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |

| | | | | | | | | | | | | | | | | | | | | |
|-----------|--------|---------|----------|---|---|---|---|---|---|---|----|----|----|---|----|----|----|---|----|---|
| c182c_065 | No0065 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_067 | No0067 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_069 | No0069 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_071 | No0071 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | o | o | x | o | o | o | o | . | . | . |
| c182c_073 | No0073 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | o | 30 | o |
| c182c_075 | No0075 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | o | 26 | o |
| c182c_077 | No0077 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | o | x | o |
| c182c_079 | No0079 | OJ287 | 3mm_RDBE | . | . | . | . | . | . | o | . | o | x | o | o | o | o | o | 80 | o |
| c182c_080 | No0080 | 1633+38 | 3mm_RDBE | o | o | o | o | o | o | o | o | 57 | o | x | o | o | o | . | . | . |
| c182c_081 | No0081 | 1633+38 | 3mm_RDBE | o | o | o | o | o | o | o | 57 | 57 | 57 | x | 57 | 57 | 57 | . | . | . |