

Figure 2B Coomassie Pull-down assay

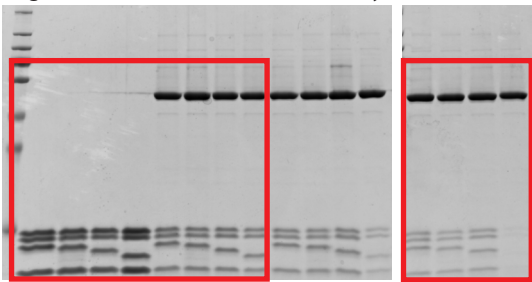
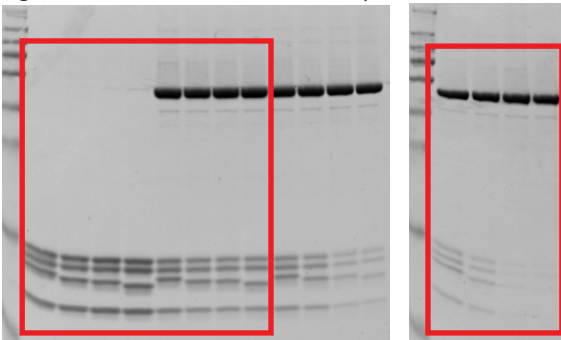
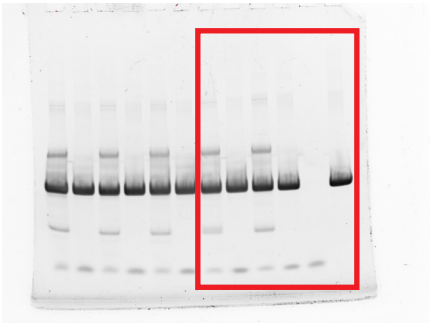


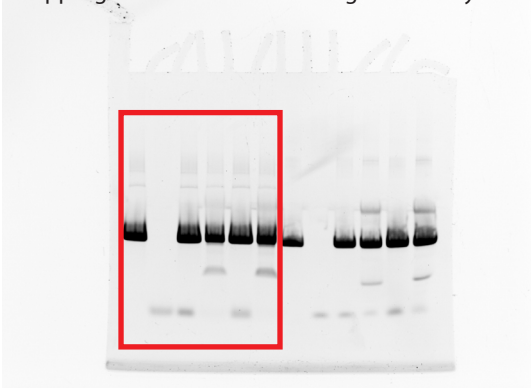
Figure 2C Coomassie Pull-down assay



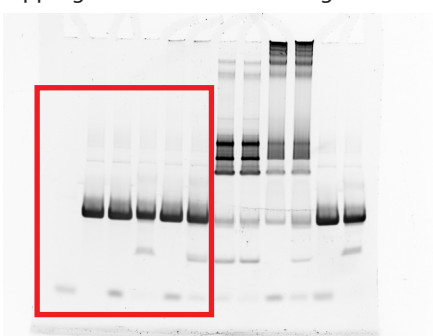
Supp Figure 2A DNA stained integration



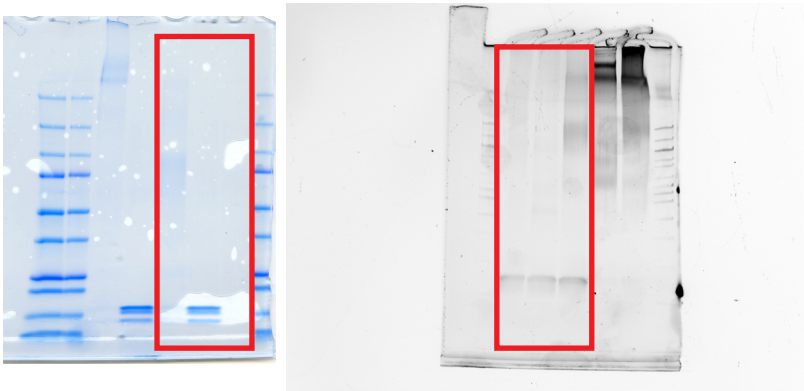
Supp Figure 2B DNA stained integration assay



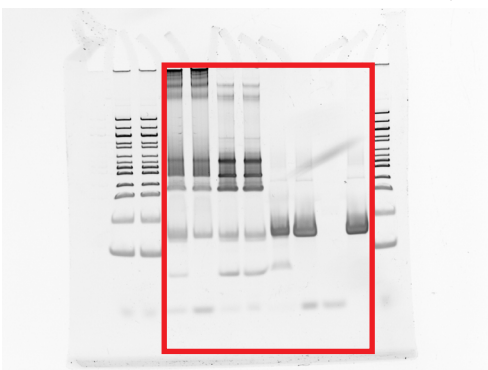
Supp Figure 2c DNA stained integration assay



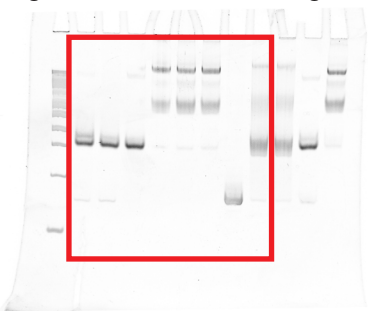
Supp Figure 2D DNA stained and coomassie stained fixation test



Supp Figure 2E DNA stained integration assay



Supp Figure 3A DNA stained native gel



Supp Figure 5A DNA stained native gel



used Superpose in CCP4 - raw data below:

RESIDUE ALIGNMENT

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.------.------.------.
| Query   | Dist.(A) | Target   |
|-----+-----+-----|
| + A:HIS 39 |          | + A:HIS 39 |
| + A:ARG 40 | <***1.63**> | + A:ARG 40 |
| . A:TYR 41 | <***1.47**> | . A:TYR 41 |
| + A:ARG 42 | <***1.37**> | + A:ARG 42 |
| + A:PRO 43 | <***1.04**> | + A:PRO 43 |
| - A:GLY 44 | <***1.30**> | - A:GLY 44 |
| . A:THR 45 | <***0.99**> | H. A:THR 45 |
| H- A:VAL 46 | <***0.77**> | H- A:VAL 46 |
| H- A:ALA 47 | <***0.81**> | H- A:ALA 47 |
| H- A:LEU 48 | <***1.19**> | H- A:LEU 48 |
| H+ A:ARG 49 | <***1.21**> | H+ A:ARG 49 |
| H+ A:GLU 50 | <***1.28**> | H+ A:GLU 50 |
| H- A:ILE 51 | <***1.27**> | H- A:ILE 51 |
| H+ A:ARG 52 | <***1.26**> | H+ A:ARG 52 |
| H+ A:ARG 53 | <***1.24**> | H+ A:ARG 53 |
| H. A:TYR 54 | <***1.24**> | H. A:TYR 54 |
| H+ A:GLN 55 | <***1.26**> | + A:GLN 55 |
| H+ A:LYS 56 | <***1.34**> | + A:LYS 56 |
| . A:SER 57 | <***1.27**> | . A:SER 57 |
| . A:THR 58 | <***1.21**> | . A:THR 58 |
| + A:GLU 59 | <***1.03**> | + A:GLU 59 |
| - A:LEU 60 | <***0.88**> | - A:LEU 60 |
| - A:LEU 61 | <***1.22**> | - A:LEU 61 |
| - A:ILE 62 | <***1.40**> | - A:ILE 62 |
| + A:ARG 63 | <***1.53**> | + A:ARG 63 |
| + A:LYS 64 | <***1.36**> | + A:LYS 64 |
| H- A:LEU 65 | <***1.35**> | H- A:LEU 65 |
| H+ A:PRO 66 | <***1.43**> | H+ A:PRO 66 |
| H- A:PHE 67 | <***1.33**> | H- A:PHE 67 |
| H+ A:GLN 68 | <***1.34**> | H+ A:GLN 68 |
| H+ A:ARG 69 | <***1.41**> | H+ A:ARG 69 |
| H- A:LEU 70 | <***1.42**> | H- A:LEU 70 |
| H- A:VAL 71 | <***1.33**> | H- A:VAL 71 |
| H+ A:ARG 72 | <***1.26**> | H+ A:ARG 72 |
| H+ A:GLU 73 | <***1.48**> | H+ A:GLU 73 |
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| H- A:ILE 74 | < \*\*1.41\*\* > | H- A:ILE 74 |  
| H- A:ALA 75 | < \*\*1.30\*\* > | - A:ALA 75 |  
| H+ A:GLN 76 | < \*\*1.38\*\* > | + A:GLN 76 |  
| H+ A:ASP 77 | < \*\*1.68\*\* > | + A:ASP 77 |  
| H- A:PHE 78 | < \*\*1.57\*\* > | - A:PHE 78 |  
| + A:LYS 79 | < \*\*1.31\*\* > | + A:LYS 79 |  
| . A:THR 80 | < \*\*1.24\*\* > | . A:THR 80 |  
| + A:ASP 81 | < \*\*1.18\*\* > | + A:ASP 81 |  
| - A:LEU 82 | < \*\*1.20\*\* > | - A:LEU 82 |  
| S+ A:ARG 83 | < \*\*1.24\*\* > | S+ A:ARG 83 |  
| S- A:PHE 84 | < \*\*1.28\*\* > | S- A:PHE 84 |  
| + A:GLN 85 | < \*\*1.40\*\* > | + A:GLN 85 |  
| . A:SER 86 | < \*\*1.41\*\* > | H. A:SER 86 |  
| H- A:ALA 87 | < \*\*1.45\*\* > | H- A:ALA 87 |  
| H- A:ALA 88 | < \*\*1.29\*\* > | H- A:ALA 88 |  
| H- A:ILE 89 | < \*\*1.28\*\* > | H- A:ILE 89 |  
| H- A:GLY 90 | < \*\*1.38\*\* > | H- A:GLY 90 |  
| H- A:ALA 91 | < \*\*1.36\*\* > | H- A:ALA 91 |  
| H- A:LEU 92 | < \*\*1.18\*\* > | H- A:LEU 92 |  
| H+ A:GLN 93 | < \*\*1.12\*\* > | H+ A:GLN 93 |  
| H+ A:GLU 94 | < \*\*1.24\*\* > | H+ A:GLU 94 |  
| H- A:ALA 95 | < \*\*1.10\*\* > | H- A:ALA 95 |  
| H. A:SER 96 | < \*\*1.03\*\* > | H. A:SER 96 |  
| H+ A:GLU 97 | < \*\*1.16\*\* > | H+ A:GLU 97 |  
| H- A:ALA 98 | < \*\*1.27\*\* > | H- A:ALA 98 |  
| H. A:TYR 99 | < \*\*1.07\*\* > | H. A:TYR 99 |  
| H- A:LEU 100 | < \*\*1.13\*\* > | H- A:LEU 100 |  
| H- A:VAL 101 | < \*\*1.15\*\* > | H- A:VAL 101 |  
| H- A:GLY 102 | < \*\*1.17\*\* > | H- A:GLY 102 |  
| H- A:LEU 103 | < \*\*0.96\*\* > | H- A:LEU 103 |  
| H- A:PHE 104 | < \*\*1.03\*\* > | H- A:PHE 104 |  
| H+ A:GLU 105 | < \*\*1.11\*\* > | H+ A:GLU 105 |  
| H+ A:ASP 106 | < \*\*0.99\*\* > | H+ A:ASP 106 |  
| H. A:THR 107 | < \*\*0.84\*\* > | H. A:THR 107 |  
| H+ A:ASN 108 | < \*\*0.95\*\* > | H+ A:ASN 108 |  
| H- A:LEU 109 | < \*\*1.02\*\* > | H- A:LEU 109 |  
| H- A:CYS 110 | < \*\*0.92\*\* > | H- A:CYS 110 |  
| H- A:ALA 111 | < \*\*0.61\*\* > | H- A:ALA 111 |  
| H- A:ILE 112 | < \*\*0.79\*\* > | H- A:ILE 112 |  
| + A:HIS 113 | < \*\*0.78\*\* > | H+ A:HIS 113 |  
| - A:ALA 114 | < \*\*0.68\*\* > | - A:ALA 114 |  
| + A:LYS 115 | < \*\*0.78\*\* > | + A:LYS 115 |  
| + A:ARG 116 | < \*\*0.90\*\* > | + A:ARG 116 |  
| - A:VAL 117 | < \*\*1.13\*\* > | - A:VAL 117 |  
| . A:THR 118 | < \*\*1.24\*\* > | S. A:THR 118 |  
| - A:ILE 119 | < \*\*1.15\*\* > | S- A:ILE 119 |

| - A:MET 120 | < \*\*0.96\*\* > | - A:MET 120 |  
| + A:PRO 121 | < \*\*0.65\*\* > | + A:PRO 121 |  
| H+ A:LYS 122 | < \*\*0.56\*\* > | + A:LYS 122 |  
| H+ A:ASP 123 | < \*\*0.78\*\* > | + A:ASP 123 |  
| H- A:ILE 124 | < \*\*0.90\*\* > | H- A:ILE 124 |  
| H+ A:GLN 125 | < \*\*0.79\*\* > | H+ A:GLN 125 |  
| H- A:LEU 126 | < \*\*0.78\*\* > | H- A:LEU 126 |  
| H- A:ALA 127 | < \*\*0.66\*\* > | H- A:ALA 127 |  
| H+ A:ARG 128 | < \*\*0.98\*\* > | H+ A:ARG 128 |  
| H+ A:ARG 129 | < \*\*0.86\*\* > | H+ A:ARG 129 |  
| H- A:ILE 130 | < \*\*0.94\*\* > | H- A:ILE 130 |  
| H+ A:ARG 131 | < \*\*1.22\*\* > | H+ A:ARG 131 |  
| - A:GLY 132 | < \*\*0.99\*\* > | - A:GLY 132 |  
| + A:GLU 133 | < \*\*0.73\*\* > | + A:GLU 133 |  
| + A:ARG 134 | < \*\*0.79\*\* > | + A:ARG 134 |  
| - A:ALA 135 | | - A:ALA 135 |  
| + B:LYS 20 | | + B:LYS 20 |  
| - B:VAL 21 | < \*\*1.70\*\* > | - B:VAL 21 |  
| - B:LEU 22 | < \*\*1.51\*\* > | - B:LEU 22 |  
| + B:ARG 23 | < \*\*1.27\*\* > | + B:ARG 23 |  
| + B:ASP 24 | < \*\*1.44\*\* > | + B:ASP 24 |  
| + B:ASN 25 | < \*\*1.38\*\* > | + B:ASN 25 |  
| - B:ILE 26 | < \*\*1.39\*\* > | - B:ILE 26 |  
| + B:GLN 27 | < \*\*1.28\*\* > | + B:GLN 27 |  
| - B:GLY 28 | < \*\*1.31\*\* > | - B:GLY 28 |  
| - B:ILE 29 | < \*\*1.34\*\* > | - B:ILE 29 |  
| . B:THR 30 | < \*\*1.19\*\* > | . B:THR 30 |  
| H+ B:LYS 31 | < \*\*1.04\*\* > | H+ B:LYS 31 |  
| H+ B:PRO 32 | < \*\*1.29\*\* > | H+ B:PRO 32 |  
| H- B:ALA 33 | < \*\*1.22\*\* > | H- B:ALA 33 |  
| H- B:ILE 34 | < \*\*1.14\*\* > | H- B:ILE 34 |  
| H+ B:ARG 35 | < \*\*1.37\*\* > | H+ B:ARG 35 |  
| H+ B:ARG 36 | < \*\*1.28\*\* > | H+ B:ARG 36 |  
| H- B:LEU 37 | < \*\*1.24\*\* > | H- B:LEU 37 |  
| H- B:ALA 38 | < \*\*1.23\*\* > | H- B:ALA 38 |  
| H+ B:ARG 39 | < \*\*1.40\*\* > | H+ B:ARG 39 |  
| H+ B:ARG 40 | < \*\*1.45\*\* > | + B:ARG 40 |  
| H- B:GLY 41 | < \*\*1.37\*\* > | - B:GLY 41 |  
| - B:GLY 42 | < \*\*1.25\*\* > | - B:GLY 42 |  
| - B:VAL 43 | < \*\*1.15\*\* > | - B:VAL 43 |  
| + B:LYS 44 | < \*\*1.30\*\* > | + B:LYS 44 |  
| + B:ARG 45 | < \*\*1.22\*\* > | S+ B:ARG 45 |  
| - B:ILE 46 | < \*\*1.32\*\* > | S- B:ILE 46 |  
| . B:SER 47 | < \*\*1.25\*\* > | . B:SER 47 |  
| - B:GLY 48 | < \*\*1.25\*\* > | - B:GLY 48 |  
| - B:LEU 49 | < \*\*1.24\*\* > | - B:LEU 49 |

| - B:ILE 50 | <\*\*\*1.23\*\*> | - B:ILE 50 |  
| H. B:TYR 51 | <\*\*\*1.13\*\*> | H. B:TYR 51 |  
| H+ B:GLU 52 | <\*\*\*1.45\*\*> | H+ B:GLU 52 |  
| H+ B:GLU 53 | <\*\*\*1.42\*\*> | H+ B:GLU 53 |  
| H. B:THR 54 | <\*\*\*1.21\*\*> | H. B:THR 54 |  
| H+ B:ARG 55 | <\*\*\*1.09\*\*> | H+ B:ARG 55 |  
| H- B:GLY 56 | <\*\*\*1.13\*\*> | H- B:GLY 56 |  
| H- B:VAL 57 | <\*\*\*1.14\*\*> | H- B:VAL 57 |  
| H- B:LEU 58 | <\*\*\*1.12\*\*> | H- B:LEU 58 |  
| H+ B:LYS 59 | <\*\*\*1.12\*\*> | H+ B:LYS 59 |  
| H- B:VAL 60 | <\*\*\*1.12\*\*> | H- B:VAL 60 |  
| H- B:PHE 61 | <\*\*\*1.09\*\*> | H- B:PHE 61 |  
| H- B:LEU 62 | <\*\*\*1.03\*\*> | H- B:LEU 62 |  
| H+ B:GLU 63 | <\*\*\*0.95\*\*> | H+ B:GLU 63 |  
| H+ B:ASN 64 | <\*\*\*0.92\*\*> | H+ B:ASN 64 |  
| H- B:VAL 65 | <\*\*\*1.02\*\*> | H- B:VAL 65 |  
| H- B:ILE 66 | <\*\*\*0.92\*\*> | H- B:ILE 66 |  
| H+ B:ARG 67 | <\*\*\*1.03\*\*> | H+ B:ARG 67 |  
| H+ B:ASP 68 | <\*\*\*1.04\*\*> | H+ B:ASP 68 |  
| H- B:ALA 69 | <\*\*\*0.95\*\*> | H- B:ALA 69 |  
| H- B:VAL 70 | <\*\*\*1.02\*\*> | H- B:VAL 70 |  
| H. B:THR 71 | <\*\*\*1.03\*\*> | H. B:THR 71 |  
| H. B:TYR 72 | <\*\*\*0.97\*\*> | H. B:TYR 72 |  
| H. B:THR 73 | <\*\*\*1.03\*\*> | H. B:THR 73 |  
| H+ B:GLU 74 | <\*\*\*0.77\*\*> | H+ B:GLU 74 |  
| H+ B:HIS 75 | <\*\*\*0.67\*\*> | H+ B:HIS 75 |  
| - B:ALA 76 | <\*\*\*1.00\*\*> | - B:ALA 76 |  
| + B:LYS 77 | <\*\*\*1.07\*\*> | + B:LYS 77 |  
| + B:ARG 78 | <\*\*\*1.37\*\*> | + B:ARG 78 |  
| + B:LYS 79 | <\*\*\*1.19\*\*> | + B:LYS 79 |  
| S. B:THR 80 | <\*\*\*1.22\*\*> | S. B:THR 80 |  
| S- B:VAL 81 | <\*\*\*1.19\*\*> | S- B:VAL 81 |  
| . B:THR 82 | <\*\*\*1.12\*\*> | . B:THR 82 |  
| - B:ALA 83 | <\*\*\*1.09\*\*> | - B:ALA 83 |  
| H- B:MET 84 | <\*\*\*1.01\*\*> | - B:MET 84 |  
| H+ B:ASP 85 | <\*\*\*0.91\*\*> | H+ B:ASP 85 |  
| H- B:VAL 86 | <\*\*\*1.02\*\*> | H- B:VAL 86 |  
| H- B:VAL 87 | <\*\*\*1.08\*\*> | H- B:VAL 87 |  
| H. B:TYR 88 | <\*\*\*0.85\*\*> | H. B:TYR 88 |  
| H- B:ALA 89 | <\*\*\*0.91\*\*> | H- B:ALA 89 |  
| H- B:LEU 90 | <\*\*\*1.07\*\*> | H- B:LEU 90 |  
| H+ B:LYS 91 | <\*\*\*1.12\*\*> | H+ B:LYS 91 |  
| H+ B:ARG 92 | <\*\*\*1.00\*\*> | H+ B:ARG 92 |  
| H+ B:GLN 93 | <\*\*\*1.26\*\*> | + B:GLN 93 |  
| - B:GLY 94 | <\*\*\*1.20\*\*> | - B:GLY 94 |  
| + B:ARG 95 | <\*\*\*1.12\*\*> | + B:ARG 95 |

|S- B:THR 96 | <0.97> | . B:THR 96 |  
 |S- B:LEU 97 | <0.96> |S- B:LEU 97 |  
 | . B:TYR 98 | <1.14> | . B:TYR 98 |  
 | - B:GLY 99 | <1.13> | - B:GLY 99 |  
 | - B:PHE 100 | <1.04> | - B:PHE 100 |  
 | - B:GLY 101 | <1.32> | - B:GLY 101 |  
 | - B:GLY 102 | <1.31> | - B:GLY 102 |  
 | | + C:LYS 9 |  
 | | - C:ALA 10 |  
 | | + C:ARG 11 |  
 | | - C:ALA 12 |  
 | | + C:LYS 13 |  
 | | - C:ALA 14 |  
 | | + C:LYS 15 |  
 | . C:THR 16 | <1.24> | . C:THR 16 |  
 |H+ C:ARG 17 | <0.92> |H+ C:ARG 17 |  
 |H- C:SER 18 | <1.06> |H- C:SER 18 |  
 |H- C:SER 19 | <1.05> |H- C:SER 19 |  
 |H+ C:ARG 20 | <1.00> |H+ C:ARG 20 |  
 |H- C:ALA 21 | <0.91> |H- C:ALA 21 |  
 | - C:GLY 22 | <1.13> | - C:GLY 22 |  
 | - C:LEU 23 | <1.13> | - C:LEU 23 |  
 | + C:GLN 24 | <0.96> | + C:GLN 24 |  
 | - C:PHE 25 | <1.09> | - C:PHE 25 |  
 | + C:PRO 26 | <1.18> | + C:PRO 26 |  
 |H- C:VAL 27 | <1.04> | - C:VAL 27 |  
 |H- C:GLY 28 | <0.75> |H- C:GLY 28 |  
 |H+ C:ARG 29 | <0.83> |H+ C:ARG 29 |  
 |H- C:VAL 30 | <0.83> |H- C:VAL 30 |  
 |H+ C:HIS 31 | <0.83> |H+ C:HIS 31 |  
 |H+ C:ARG 32 | <1.05> |H+ C:ARG 32 |  
 |H- C:LEU 33 | <1.08> |H- C:LEU 33 |  
 |H- C:LEU 34 | <1.06> |H- C:LEU 34 |  
 |H+ C:ARG 35 | <1.15> |H+ C:ARG 35 |  
 |H+ C:LYS 36 | <0.91> | + C:LYS 36 |  
 | - C:GLY 37 | <0.74> | - C:GLY 37 |  
 | + C:ASN 38 | <0.91> | + C:ASN 38 |  
 | . C:TYR 39 | <0.87> | . C:TYR 39 |  
 | - C:ALA 40 | <0.79> | - C:ALA 40 |  
 | + C:GLU 41 | <1.12> | + C:GLU 41 |  
 | + C:ARG 42 | <1.00> |S+ C:ARG 42 |  
 |S- C:VAL 43 | <0.81> |S- C:VAL 43 |  
 | - C:GLY 44 | <1.01> | - C:GLY 44 |  
 | - C:ALA 45 | <0.64> | - C:ALA 45 |  
 | - C:GLY 46 | <0.83> | - C:GLY 46 |  
 | - C:ALA 47 | <0.78> |H- C:ALA 47 |

| H+ C:PRO 48 | <\*\*\*0.74\*\*> | H+ C:PRO 48 |  
| H- C:VAL 49 | <\*\*\*0.86\*\*> | H- C:VAL 49 |  
| H- C:TYR 50 | <\*\*\*0.70\*\*> | H- C:TYR 50 |  
| H- C:LEU 51 | <\*\*\*0.59\*\*> | H- C:LEU 51 |  
| H- C:ALA 52 | <\*\*\*0.66\*\*> | H- C:ALA 52 |  
| H- C:ALA 53 | <\*\*\*0.74\*\*> | H- C:ALA 53 |  
| H- C:VAL 54 | <\*\*\*0.74\*\*> | H- C:VAL 54 |  
| H- C:LEU 55 | <\*\*\*0.79\*\*> | H- C:LEU 55 |  
| H+ C:GLU 56 | <\*\*\*0.79\*\*> | H+ C:GLU 56 |  
| H- C:TYR 57 | <\*\*\*0.73\*\*> | H- C:TYR 57 |  
| H- C:LEU 58 | <\*\*\*0.69\*\*> | H- C:LEU 58 |  
| H- C:THR 59 | <\*\*\*0.76\*\*> | H- C:THR 59 |  
| H- C:ALA 60 | <\*\*\*0.90\*\*> | H- C:ALA 60 |  
| H+ C:GLU 61 | <\*\*\*0.96\*\*> | H+ C:GLU 61 |  
| H- C:ILE 62 | <\*\*\*0.89\*\*> | H- C:ILE 62 |  
| H- C:LEU 63 | <\*\*\*0.82\*\*> | H- C:LEU 63 |  
| H+ C:GLU 64 | <\*\*\*0.74\*\*> | H+ C:GLU 64 |  
| H- C:LEU 65 | <\*\*\*0.72\*\*> | H- C:LEU 65 |  
| H- C:ALA 66 | <\*\*\*0.71\*\*> | H- C:ALA 66 |  
| H- C:GLY 67 | <\*\*\*0.71\*\*> | H- C:GLY 67 |  
| H+ C:ASN 68 | <\*\*\*0.73\*\*> | H+ C:ASN 68 |  
| H- C:ALA 69 | <\*\*\*0.75\*\*> | H- C:ALA 69 |  
| H- C:ALA 70 | <\*\*\*0.69\*\*> | H- C:ALA 70 |  
| H+ C:ARG 71 | <\*\*\*0.61\*\*> | H+ C:ARG 71 |  
| + C:ASP 72 | <\*\*\*0.55\*\*> | H+ C:ASP 72 |  
| + C:ASN 73 | <\*\*\*0.58\*\*> | H+ C:ASN 73 |  
| + C:LYS 74 | <\*\*\*0.97\*\*> | + C:LYS 74 |  
| + C:LYS 75 | <\*\*\*1.13\*\*> | + C:LYS 75 |  
| . C:THR 76 | <\*\*\*0.91\*\*> | . C:THR 76 |  
| S+ C:ARG 77 | <\*\*\*0.96\*\*> | S+ C:ARG 77 |  
| S- C:ILE 78 | <\*\*\*0.93\*\*> | S- C:ILE 78 |  
| - C:ILE 79 | <\*\*\*0.79\*\*> | - C:ILE 79 |  
| + C:PRO 80 | <\*\*\*0.81\*\*> | + C:PRO 80 |  
| H+ C:ARG 81 | <\*\*\*0.88\*\*> | H+ C:ARG 81 |  
| H+ C:HIS 82 | <\*\*\*0.95\*\*> | H+ C:HIS 82 |  
| H- C:LEU 83 | <\*\*\*0.94\*\*> | H- C:LEU 83 |  
| H+ C:GLN 84 | <\*\*\*0.89\*\*> | H+ C:GLN 84 |  
| H- C:LEU 85 | <\*\*\*0.94\*\*> | H- C:LEU 85 |  
| H- C:ALA 86 | <\*\*\*0.80\*\*> | H- C:ALA 86 |  
| H- C:ILE 87 | <\*\*\*0.80\*\*> | - C:ILE 87 |  
| + C:ARG 88 | <\*\*\*1.16\*\*> | + C:ARG 88 |  
| + C:ASN 89 | <\*\*\*0.56\*\*> | + C:ASN 89 |  
| + C:ASP 90 | <\*\*\*0.50\*\*> | + C:ASP 90 |  
| H+ C:GLU 91 | <\*\*\*0.47\*\*> | H+ C:GLU 91 |  
| H+ C:GLU 92 | <\*\*\*0.80\*\*> | H+ C:GLU 92 |  
| H- C:LEU 93 | <\*\*\*0.87\*\*> | H- C:LEU 93 |

| H+ C:ASN 94 | <\*\*\*0.83\*\*> | H+ C:ASN 94 |  
| H+ C:LYS 95 | <\*\*\*0.82\*\*> | H+ C:LYS 95 |  
| H- C:LEU 96 | <\*\*\*0.75\*\*> | H- C:LEU 96 |  
| H- C:LEU 97 | <\*\*\*0.76\*\*> | H- C:LEU 97 |  
| - C:GLY 98 | <\*\*\*1.08\*\*> | - C:GLY 98 |  
| + C:LYS 99 | <\*\*\*1.14\*\*> | + C:LYS 99 |  
| S- C:VAL 100 | <\*\*\*1.08\*\*> | - C:VAL 100 |  
| S. C:THR 101 | <\*\*\*1.05\*\*> | S. C:THR 101 |  
| - C:ILE 102 | <\*\*\*1.15\*\*> | - C:ILE 102 |  
| - C:ALA 103 | <\*\*\*1.18\*\*> | - C:ALA 103 |  
| + C:GLN 104 | <\*\*\*1.05\*\*> | + C:GLN 104 |  
| - C:GLY 105 | <\*\*\*0.87\*\*> | - C:GLY 105 |  
| - C:GLY 106 | <\*\*\*1.05\*\*> | - C:GLY 106 |  
| - C:VAL 107 | <\*\*\*1.00\*\*> | - C:VAL 107 |  
| - C:LEU 108 | <\*\*\*0.69\*\*> | - C:LEU 108 |  
| + C:PRO 109 | <\*\*\*0.65\*\*> | + C:PRO 109 |  
| + C:ASN 110 | <\*\*\*0.37\*\*> | + C:ASN 110 |  
| - C:ILE 111 | <\*\*\*0.76\*\*> | - C:ILE 111 |  
| + C:GLN 112 | <\*\*\*0.90\*\*> | + C:GLN 112 |  
| - C:ALA 113 | <\*\*\*1.15\*\*> | - C:ALA 113 |  
| - C:VAL 114 | <\*\*\*1.00\*\*> | - C:VAL 114 |  
| - C:LEU 115 | <\*\*\*0.52\*\*> | - C:LEU 115 |  
| - C:LEU 116 | <\*\*\*0.65\*\*> | - C:LEU 116 |  
| + C:PRO 117 | <\*\*\*0.95\*\*> | + C:PRO 117 |  
| + C:LYS 118 | <\*\*\*1.21\*\*> | + C:LYS 118 |  
| . D:SER 29 | <\*\*\*1.20\*\*> | . D:SER 29 |  
| + D:ARG 30 | <\*\*\*1.41\*\*> | + D:ARG 30 |  
| + D:LYS 31 | <\*\*\*1.13\*\*> | + D:LYS 31 |  
| + D:GLU 32 | <\*\*\*1.04\*\*> | + D:GLU 32 |  
| . D:SER 33 | <\*\*\*1.09\*\*> | . D:SER 33 |  
| . D:TYR 34 | <\*\*\*1.20\*\*> | . D:TYR 34 |  
| H. D:SER 35 | <\*\*\*1.24\*\*> | . D:SER 35 |  
| H- D:VAL 36 | <\*\*\*1.26\*\*> | - D:VAL 36 |  
| H. D:TYR 37 | <\*\*\*1.21\*\*> | H. D:TYR 37 |  
| H- D:VAL 38 | <\*\*\*0.97\*\*> | H- D:VAL 38 |  
| H. D:TYR 39 | <\*\*\*0.96\*\*> | H. D:TYR 39 |  
| H+ D:LYS 40 | <\*\*\*1.18\*\*> | H+ D:LYS 40 |  
| H- D:VAL 41 | <\*\*\*1.07\*\*> | H- D:VAL 41 |  
| H- D:LEU 42 | <\*\*\*1.12\*\*> | H- D:LEU 42 |  
| H+ D:LYS 43 | <\*\*\*1.11\*\*> | H+ D:LYS 43 |  
| H+ D:GLN 44 | <\*\*\*1.19\*\*> | H+ D:GLN 44 |  
| H- D:VAL 45 | <\*\*\*1.08\*\*> | H- D:VAL 45 |  
| + D:HIS 46 | <\*\*\*1.20\*\*> | + D:HIS 46 |  
| + D:PRO 47 | <\*\*\*1.38\*\*> | + D:PRO 47 |  
| + D:ASP 48 | <\*\*\*1.02\*\*> | + D:ASP 48 |  
| . D:THR 49 | <\*\*\*0.94\*\*> | . D:THR 49 |

|S- D:GLY 50 | <\*\*\*1.15\*\*> |S- D:GLY 50 |  
|S- D:ILE 51 | <\*\*\*1.10\*\*> |S- D:ILE 51 |  
|. D:SER 52 | <\*\*\*1.05\*\*> |. D:SER 52 |  
|H. D:SER 53 | <\*\*\*0.87\*\*> |H. D:SER 53 |  
|H+ D:LYS 54 | <\*\*\*0.96\*\*> |H+ D:LYS 54 |  
|H- D:ALA 55 | <\*\*\*0.97\*\*> |H- D:ALA 55 |  
|H- D:MET 56 | <\*\*\*0.97\*\*> |H- D:MET 56 |  
|H- D:GLY 57 | <\*\*\*1.06\*\*> |H- D:GLY 57 |  
|H- D:ILE 58 | <\*\*\*1.03\*\*> |H- D:ILE 58 |  
|H- D:MET 59 | <\*\*\*0.81\*\*> |H- D:MET 59 |  
|H+ D:ASN 60 | <\*\*\*0.67\*\*> |H+ D:ASN 60 |  
|H. D:SER 61 | <\*\*\*0.76\*\*> |H. D:SER 61 |  
|H- D:PHE 62 | <\*\*\*0.77\*\*> |H- D:PHE 62 |  
|H- D:VAL 63 | <\*\*\*0.85\*\*> |H- D:VAL 63 |  
|H+ D:ASN 64 | <\*\*\*0.55\*\*> |H+ D:ASN 64 |  
|H+ D:ASP 65 | <\*\*\*0.79\*\*> |H+ D:ASP 65 |  
|H- D:ILE 66 | <\*\*\*0.72\*\*> |H- D:ILE 66 |  
|H- D:PHE 67 | <\*\*\*0.77\*\*> |H- D:PHE 67 |  
|H+ D:GLU 68 | <\*\*\*0.99\*\*> |H+ D:GLU 68 |  
|H+ D:ARG 69 | <\*\*\*0.85\*\*> |H+ D:ARG 69 |  
|H- D:ILE 70 | <\*\*\*0.69\*\*> |H- D:ILE 70 |  
|H- D:ALA 71 | <\*\*\*0.75\*\*> |H- D:ALA 71 |  
|H- D:GLY 72 | <\*\*\*0.46\*\*> |H- D:GLY 72 |  
|H+ D:GLU 73 | <\*\*\*0.63\*\*> |H+ D:GLU 73 |  
|H- D:ALA 74 | <\*\*\*0.61\*\*> |H- D:ALA 74 |  
|H. D:SER 75 | <\*\*\*0.59\*\*> |H. D:SER 75 |  
|H+ D:ARG 76 | <\*\*\*0.67\*\*> |H+ D:ARG 76 |  
|H- D:LEU 77 | <\*\*\*0.78\*\*> |H- D:LEU 77 |  
|H- D:ALA 78 | <\*\*\*1.05\*\*> |H- D:ALA 78 |  
|H+ D:HIS 79 | <\*\*\*0.99\*\*> |H+ D:HIS 79 |  
|. D:TYR 80 | <\*\*\*0.64\*\*> |H. D:TYR 80 |  
|+ D:ASN 81 | <\*\*\*0.60\*\*> |H+ D:ASN 81 |  
|+ D:LYS 82 | <\*\*\*0.60\*\*> |+ D:LYS 82 |  
|+ D:ARG 83 | <\*\*\*0.96\*\*> |+ D:ARG 83 |  
|. D:SER 84 | <\*\*\*0.99\*\*> |. D:SER 84 |  
|. D:THR 85 | <\*\*\*0.57\*\*> |S. D:THR 85 |  
|S- D:ILE 86 | <\*\*\*0.69\*\*> |S- D:ILE 86 |  
|. D:THR 87 | <\*\*\*0.80\*\*> |. D:THR 87 |  
|. D:SER 88 | <\*\*\*0.86\*\*> |. D:SER 88 |  
|H+ D:ARG 89 | <\*\*\*0.72\*\*> |+ D:ARG 89 |  
|H+ D:GLU 90 | <\*\*\*0.65\*\*> |H+ D:GLU 90 |  
|H- D:ILE 91 | <\*\*\*0.71\*\*> |H- D:ILE 91 |  
|H+ D:GLN 92 | <\*\*\*0.79\*\*> |H+ D:GLN 92 |  
|H. D:THR 93 | <\*\*\*0.85\*\*> |H. D:THR 93 |  
|H- D:ALA 94 | <\*\*\*0.89\*\*> |H- D:ALA 94 |  
|H- D:VAL 95 | <\*\*\*0.80\*\*> |H- D:VAL 95 |

| H+ D:ARG 96 | <\*\*\*0.89\*\*> | H+ D:ARG 96 |  
 | H- D:LEU 97 | <\*\*\*0.96\*\*> | H- D:LEU 97 |  
 | H- D:LEU 98 | <\*\*\*0.83\*\*> | H- D:LEU 98 |  
 | - D:LEU 99 | <\*\*\*0.54\*\*> | - D:LEU 99 |  
 | + D:PRO 100 | <\*\*\*1.03\*\*> | + D:PRO 100 |  
 | H- D:GLY 101 | <\*\*\*1.26\*\*> | - D:GLY 101 |  
 | H+ D:GLU 102 | <\*\*\*1.13\*\*> | + D:GLU 102 |  
 | H- D:LEU 103 | <\*\*\*0.91\*\*> | H- D:LEU 103 |  
 | H- D:ALA 104 | <\*\*\*0.98\*\*> | H- D:ALA 104 |  
 | H+ D:LYS 105 | <\*\*\*0.91\*\*> | H+ D:LYS 105 |  
 | H+ D:HIS 106 | <\*\*\*0.90\*\*> | H+ D:HIS 106 |  
 | H- D:ALA 107 | <\*\*\*0.92\*\*> | H- D:ALA 107 |  
 | H- D:VAL 108 | <\*\*\*1.02\*\*> | H- D:VAL 108 |  
 | H. D:SER 109 | <\*\*\*0.96\*\*> | H. D:SER 109 |  
 | H+ D:GLU 110 | <\*\*\*1.06\*\*> | H+ D:GLU 110 |  
 | H- D:GLY 111 | <\*\*\*0.82\*\*> | H- D:GLY 111 |  
 | H. D:THR 112 | <\*\*\*0.87\*\*> | H. D:THR 112 |  
 | H+ D:LYS 113 | <\*\*\*0.87\*\*> | H+ D:LYS 113 |  
 | H- D:ALA 114 | <\*\*\*0.88\*\*> | H- D:ALA 114 |  
 | H- D:VAL 115 | <\*\*\*0.87\*\*> | H- D:VAL 115 |  
 | H. D:THR 116 | <\*\*\*0.81\*\*> | H. D:THR 116 |  
 | H+ D:LYS 117 | <\*\*\*0.69\*\*> | H+ D:LYS 117 |  
 | H. D:TYR 118 | <\*\*\*0.85\*\*> | H. D:TYR 118 |  
 | H. D:THR 119 | <\*\*\*0.97\*\*> | H. D:THR 119 |  
 | . D:SER 120 | <\*\*\*0.95\*\*> | . D:SER 120 |  
 | . D:SER 121 | <\*\*\*1.09\*\*> | . D:SER 121 |  
 |           |           | + D:LYS 122 |  
 | + E:HIS 39 | <\*\*\*1.90\*\*> | + E:HIS 39 |  
 | + E:ARG 40 | <\*\*\*1.43\*\*> | + E:ARG 40 |  
 | . E:TYR 41 | <\*\*\*1.18\*\*> | . E:TYR 41 |  
 | + E:ARG 42 | <\*\*\*1.14\*\*> | + E:ARG 42 |  
 | + E:PRO 43 | <\*\*\*1.16\*\*> | + E:PRO 43 |  
 | - E:GLY 44 | <\*\*\*1.01\*\*> | - E:GLY 44 |  
 | H. E:THR 45 | <\*\*\*0.64\*\*> | H. E:THR 45 |  
 | H- E:VAL 46 | <\*\*\*0.98\*\*> | H- E:VAL 46 |  
 | H- E:ALA 47 | <\*\*\*1.00\*\*> | H- E:ALA 47 |  
 | H- E:LEU 48 | <\*\*\*0.97\*\*> | H- E:LEU 48 |  
 | H+ E:ARG 49 | <\*\*\*1.01\*\*> | H+ E:ARG 49 |  
 | H+ E:GLU 50 | <\*\*\*1.20\*\*> | H+ E:GLU 50 |  
 | H- E:ILE 51 | <\*\*\*1.17\*\*> | H- E:ILE 51 |  
 | H+ E:ARG 52 | <\*\*\*1.05\*\*> | H+ E:ARG 52 |  
 | H+ E:ARG 53 | <\*\*\*1.11\*\*> | H+ E:ARG 53 |  
 | H. E:TYR 54 | <\*\*\*1.06\*\*> | H. E:TYR 54 |  
 | H+ E:GLN 55 | <\*\*\*1.05\*\*> | + E:GLN 55 |  
 | H+ E:LYS 56 | <\*\*\*1.20\*\*> | + E:LYS 56 |  
 | . E:SER 57 | <\*\*\*0.97\*\*> | . E:SER 57 |

| . E:THR 58 | <\*\*\*0.88\*\*> | . E:THR 58 |  
 | + E:GLU 59 | <\*\*\*0.84\*\*> | + E:GLU 59 |  
 | - E:LEU 60 | <\*\*\*0.74\*\*> | - E:LEU 60 |  
 | - E:LEU 61 | <\*\*\*1.11\*\*> | - E:LEU 61 |  
 | - E:ILE 62 | <\*\*\*1.18\*\*> | - E:ILE 62 |  
 | + E:ARG 63 | <\*\*\*1.31\*\*> | + E:ARG 63 |  
 | + E:LYS 64 | <\*\*\*1.14\*\*> | + E:LYS 64 |  
 | H- E:LEU 65 | <\*\*\*1.11\*\*> | H- E:LEU 65 |  
 | H+ E:PRO 66 | <\*\*\*1.28\*\*> | H+ E:PRO 66 |  
 | H- E:PHE 67 | <\*\*\*1.11\*\*> | H- E:PHE 67 |  
 | H+ E:GLN 68 | <\*\*\*1.08\*\*> | H+ E:GLN 68 |  
 | H+ E:ARG 69 | <\*\*\*1.24\*\*> | H+ E:ARG 69 |  
 | H- E:LEU 70 | <\*\*\*1.27\*\*> | H- E:LEU 70 |  
 | H- E:VAL 71 | <\*\*\*1.19\*\*> | H- E:VAL 71 |  
 | H+ E:ARG 72 | <\*\*\*1.15\*\*> | H+ E:ARG 72 |  
 | H+ E:GLU 73 | <\*\*\*1.42\*\*> | H+ E:GLU 73 |  
 | H- E:ILE 74 | <\*\*\*1.34\*\*> | H- E:ILE 74 |  
 | H- E:ALA 75 | <\*\*\*1.17\*\*> | - E:ALA 75 |  
 | + E:GLN 76 | <\*\*\*1.21\*\*> | + E:GLN 76 |  
 | + E:ASP 77 | <\*\*\*1.29\*\*> | + E:ASP 77 |  
 | - E:PHE 78 | <\*\*\*1.18\*\*> | - E:PHE 78 |  
 | + E:LYS 79 | <\*\*\*0.96\*\*> | + E:LYS 79 |  
 | . E:THR 80 | <\*\*\*0.99\*\*> | . E:THR 80 |  
 | + E:ASP 81 | <\*\*\*1.11\*\*> | + E:ASP 81 |  
 | - E:LEU 82 | <\*\*\*1.06\*\*> | - E:LEU 82 |  
 | S+ E:ARG 83 | <\*\*\*1.08\*\*> | + E:ARG 83 |  
 | S- E:PHE 84 | <\*\*\*1.12\*\*> | - E:PHE 84 |  
 | + E:GLN 85 | <\*\*\*1.12\*\*> | + E:GLN 85 |  
 | . E:SER 86 | <\*\*\*1.11\*\*> | H. E:SER 86 |  
 | H- E:ALA 87 | <\*\*\*1.09\*\*> | H- E:ALA 87 |  
 | H- E:ALA 88 | <\*\*\*1.00\*\*> | H- E:ALA 88 |  
 | H- E:ILE 89 | <\*\*\*1.01\*\*> | H- E:ILE 89 |  
 | H- E:GLY 90 | <\*\*\*1.03\*\*> | H- E:GLY 90 |  
 | H- E:ALA 91 | <\*\*\*0.95\*\*> | H- E:ALA 91 |  
 | H- E:LEU 92 | <\*\*\*0.99\*\*> | H- E:LEU 92 |  
 | H+ E:GLN 93 | <\*\*\*0.85\*\*> | H+ E:GLN 93 |  
 | H+ E:GLU 94 | <\*\*\*0.86\*\*> | H+ E:GLU 94 |  
 | H- E:ALA 95 | <\*\*\*0.74\*\*> | H- E:ALA 95 |  
 | H. E:SER 96 | <\*\*\*0.89\*\*> | H. E:SER 96 |  
 | H+ E:GLU 97 | <\*\*\*0.91\*\*> | H+ E:GLU 97 |  
 | H- E:ALA 98 | <\*\*\*0.96\*\*> | H- E:ALA 98 |  
 | H. E:TYR 99 | <\*\*\*0.86\*\*> | H. E:TYR 99 |  
 | H- E:LEU 100 | <\*\*\*0.98\*\*> | H- E:LEU 100 |  
 | H- E:VAL 101 | <\*\*\*0.86\*\*> | H- E:VAL 101 |  
 | H- E:GLY 102 | <\*\*\*0.82\*\*> | H- E:GLY 102 |  
 | H- E:LEU 103 | <\*\*\*0.78\*\*> | H- E:LEU 103 |

| H- E:PHE 104 | <\*\*\*0.87\*\*> | H- E:PHE 104 |  
 | H+ E:GLU 105 | <\*\*\*0.84\*\*> | H+ E:GLU 105 |  
 | H+ E:ASP 106 | <\*\*\*0.71\*\*> | H+ E:ASP 106 |  
 | H. E:THR 107 | <\*\*\*0.64\*\*> | H. E:THR 107 |  
 | H+ E:ASN 108 | <\*\*\*0.73\*\*> | H+ E:ASN 108 |  
 | H- E:LEU 109 | <\*\*\*0.74\*\*> | H- E:LEU 109 |  
 | H- E:CYS 110 | <\*\*\*0.82\*\*> | H- E:CYS 110 |  
 | H- E:ALA 111 | <\*\*\*0.68\*\*> | H- E:ALA 111 |  
 | H- E:ILE 112 | <\*\*\*0.66\*\*> | H- E:ILE 112 |  
 | + E:HIS 113 | <\*\*\*0.51\*\*> | H+ E:HIS 113 |  
 | - E:ALA 114 | <\*\*\*0.49\*\*> | - E:ALA 114 |  
 | + E:LYS 115 | <\*\*\*0.79\*\*> | + E:LYS 115 |  
 | + E:ARG 116 | <\*\*\*0.81\*\*> | + E:ARG 116 |  
 | - E:VAL 117 | <\*\*\*0.88\*\*> | - E:VAL 117 |  
 | . E:THR 118 | <\*\*\*0.93\*\*> | . E:THR 118 |  
 | - E:ILE 119 | <\*\*\*0.85\*\*> | - E:ILE 119 |  
 | - E:MET 120 | <\*\*\*0.69\*\*> | - E:MET 120 |  
 | H+ E:PRO 121 | <\*\*\*0.63\*\*> | + E:PRO 121 |  
 | H+ E:LYS 122 | <\*\*\*0.75\*\*> | + E:LYS 122 |  
 | H+ E:ASP 123 | <\*\*\*0.66\*\*> | + E:ASP 123 |  
 | H- E:ILE 124 | <\*\*\*0.79\*\*> | H- E:ILE 124 |  
 | H+ E:GLN 125 | <\*\*\*0.52\*\*> | H+ E:GLN 125 |  
 | H- E:LEU 126 | <\*\*\*0.68\*\*> | H- E:LEU 126 |  
 | H- E:ALA 127 | <\*\*\*0.66\*\*> | H- E:ALA 127 |  
 | H+ E:ARG 128 | <\*\*\*0.87\*\*> | H+ E:ARG 128 |  
 | H+ E:ARG 129 | <\*\*\*0.79\*\*> | H+ E:ARG 129 |  
 | H- E:ILE 130 | <\*\*\*0.72\*\*> | H- E:ILE 130 |  
 | H+ E:ARG 131 | <\*\*\*0.93\*\*> | H+ E:ARG 131 |  
 | - E:GLY 132 | <\*\*\*0.94\*\*> | - E:GLY 132 |  
 | + E:GLU 133 | <\*\*\*0.84\*\*> | + E:GLU 133 |  
 | + E:ARG 134 | <\*\*\*1.05\*\*> | + E:ARG 134 |  
 | - E:ALA 135 | <\*\*\*1.46\*\*> | - E:ALA 135 |  
 |           |           | + F:LYS 20 |  
 |           |           | - F:VAL 21 |  
 |           |           | - F:LEU 22 |  
 |           |           | + F:ARG 23 |  
 |           |           | + F:ASP 24 |  
 | + F:ASN 25 | <\*\*\*1.43\*\*> | + F:ASN 25 |  
 | - F:ILE 26 | <\*\*\*1.40\*\*> | - F:ILE 26 |  
 | + F:GLN 27 | <\*\*\*1.21\*\*> | + F:GLN 27 |  
 | - F:GLY 28 | <\*\*\*1.14\*\*> | - F:GLY 28 |  
 | - F:ILE 29 | <\*\*\*1.06\*\*> | - F:ILE 29 |  
 | . F:THR 30 | <\*\*\*0.95\*\*> | . F:THR 30 |  
 | H+ F:LYS 31 | <\*\*\*0.96\*\*> | H+ F:LYS 31 |  
 | H+ F:PRO 32 | <\*\*\*1.19\*\*> | H+ F:PRO 32 |  
 | H- F:ALA 33 | <\*\*\*1.24\*\*> | H- F:ALA 33 |

| H- F:ILE 34 | <\*\*\*1.05\*\*> | H- F:ILE 34 |  
| H+ F:ARG 35 | <\*\*\*0.92\*\*> | H+ F:ARG 35 |  
| H+ F:ARG 36 | <\*\*\*0.87\*\*> | H+ F:ARG 36 |  
| H- F:LEU 37 | <\*\*\*0.85\*\*> | H- F:LEU 37 |  
| H- F:ALA 38 | <\*\*\*0.79\*\*> | H- F:ALA 38 |  
| H+ F:ARG 39 | <\*\*\*0.89\*\*> | H+ F:ARG 39 |  
| H+ F:ARG 40 | <\*\*\*1.01\*\*> | + F:ARG 40 |  
| H- F:GLY 41 | <\*\*\*0.97\*\*> | - F:GLY 41 |  
| - F:GLY 42 | <\*\*\*0.79\*\*> | - F:GLY 42 |  
| - F:VAL 43 | <\*\*\*0.66\*\*> | - F:VAL 43 |  
| + F:LYS 44 | <\*\*\*0.56\*\*> | + F:LYS 44 |  
| + F:ARG 45 | <\*\*\*0.66\*\*> | + F:ARG 45 |  
| - F:ILE 46 | <\*\*\*0.89\*\*> | - F:ILE 46 |  
| . F:SER 47 | <\*\*\*0.78\*\*> | . F:SER 47 |  
| - F:GLY 48 | <\*\*\*0.67\*\*> | - F:GLY 48 |  
| - F:LEU 49 | <\*\*\*0.93\*\*> | - F:LEU 49 |  
| H- F:ILE 50 | <\*\*\*0.81\*\*> | - F:ILE 50 |  
| H. F:TYR 51 | <\*\*\*0.91\*\*> | H. F:TYR 51 |  
| H+ F:GLU 52 | <\*\*\*1.19\*\*> | H+ F:GLU 52 |  
| H+ F:GLU 53 | <\*\*\*1.19\*\*> | H+ F:GLU 53 |  
| H. F:THR 54 | <\*\*\*1.15\*\*> | H. F:THR 54 |  
| H+ F:ARG 55 | <\*\*\*1.07\*\*> | H+ F:ARG 55 |  
| H- F:GLY 56 | <\*\*\*1.00\*\*> | H- F:GLY 56 |  
| H- F:VAL 57 | <\*\*\*1.02\*\*> | H- F:VAL 57 |  
| H- F:LEU 58 | <\*\*\*0.91\*\*> | H- F:LEU 58 |  
| H+ F:LYS 59 | <\*\*\*1.09\*\*> | H+ F:LYS 59 |  
| H- F:VAL 60 | <\*\*\*1.17\*\*> | H- F:VAL 60 |  
| H- F:PHE 61 | <\*\*\*1.03\*\*> | H- F:PHE 61 |  
| H- F:LEU 62 | <\*\*\*0.98\*\*> | H- F:LEU 62 |  
| H+ F:GLU 63 | <\*\*\*1.03\*\*> | H+ F:GLU 63 |  
| H+ F:ASN 64 | <\*\*\*1.07\*\*> | H+ F:ASN 64 |  
| H- F:VAL 65 | <\*\*\*1.00\*\*> | H- F:VAL 65 |  
| H- F:ILE 66 | <\*\*\*1.03\*\*> | H- F:ILE 66 |  
| H+ F:ARG 67 | <\*\*\*1.21\*\*> | H+ F:ARG 67 |  
| H+ F:ASP 68 | <\*\*\*1.20\*\*> | H+ F:ASP 68 |  
| H- F:ALA 69 | <\*\*\*1.16\*\*> | H- F:ALA 69 |  
| H- F:VAL 70 | <\*\*\*1.19\*\*> | H- F:VAL 70 |  
| H. F:THR 71 | <\*\*\*1.22\*\*> | H. F:THR 71 |  
| H. F:TYR 72 | <\*\*\*1.20\*\*> | H. F:TYR 72 |  
| H. F:THR 73 | <\*\*\*1.21\*\*> | H. F:THR 73 |  
| H+ F:GLU 74 | <\*\*\*1.19\*\*> | H+ F:GLU 74 |  
| H+ F:HIS 75 | <\*\*\*1.15\*\*> | H+ F:HIS 75 |  
| H- F:ALA 76 | <\*\*\*1.27\*\*> | - F:ALA 76 |  
| + F:LYS 77 | <\*\*\*1.17\*\*> | + F:LYS 77 |  
| + F:ARG 78 | <\*\*\*1.45\*\*> | + F:ARG 78 |  
| + F:LYS 79 | <\*\*\*1.23\*\*> | + F:LYS 79 |

|S. F:THR 80 | <\*\*\*1.27\*\*> | . F:THR 80 |  
 |S- F:VAL 81 | <\*\*\*1.32\*\*> | - F:VAL 81 |  
 | . F:THR 82 | <\*\*\*1.17\*\*> | . F:THR 82 |  
 | - F:ALA 83 | <\*\*\*0.98\*\*> | - F:ALA 83 |  
 |H- F:MET 84 | <\*\*\*0.98\*\*> | - F:MET 84 |  
 |H+ F:ASP 85 | <\*\*\*1.05\*\*> |H+ F:ASP 85 |  
 |H- F:VAL 86 | <\*\*\*1.13\*\*> |H- F:VAL 86 |  
 |H- F:VAL 87 | <\*\*\*1.17\*\*> |H- F:VAL 87 |  
 |H. F:TYR 88 | <\*\*\*0.96\*\*> |H. F:TYR 88 |  
 |H- F:ALA 89 | <\*\*\*1.03\*\*> |H- F:ALA 89 |  
 |H- F:LEU 90 | <\*\*\*1.10\*\*> |H- F:LEU 90 |  
 |H+ F:LYS 91 | <\*\*\*1.02\*\*> |H+ F:LYS 91 |  
 |H+ F:ARG 92 | <\*\*\*0.99\*\*> |H+ F:ARG 92 |  
 |H+ F:GLN 93 | <\*\*\*1.27\*\*> | + F:GLN 93 |  
 | - F:GLY 94 | <\*\*\*1.21\*\*> | - F:GLY 94 |  
 | + F:ARG 95 | <\*\*\*1.21\*\*> | + F:ARG 95 |  
 |S. F:THR 96 | <\*\*\*0.94\*\*> | . F:THR 96 |  
 |S- F:LEU 97 | <\*\*\*0.95\*\*> |S- F:LEU 97 |  
 | . F:TYR 98 | <\*\*\*0.98\*\*> | . F:TYR 98 |  
 | - F:GLY 99 | <\*\*\*1.01\*\*> | - F:GLY 99 |  
 | - F:PHE 100 | <\*\*\*0.95\*\*> | - F:PHE 100 |  
 | - G:ALA 14 | | - F:GLY 101 |  
 | | | - F:GLY 102 |  
 | | | + G:LYS 9 |  
 | | | - G:ALA 10 |  
 | | | + G:ARG 11 |  
 | | | - G:ALA 12 |  
 | | | + G:LYS 13 |  
 | | | - G:ALA 14 |  
 | + G:LYS 15 | <\*\*\*0.86\*\*> | + G:LYS 15 |  
 | . G:THR 16 | <\*\*\*0.93\*\*> | . G:THR 16 |  
 |H+ G:ARG 17 | <\*\*\*0.96\*\*> |H+ G:ARG 17 |  
 |H. G:SER 18 | <\*\*\*1.21\*\*> |H. G:SER 18 |  
 |H. G:SER 19 | <\*\*\*1.20\*\*> |H. G:SER 19 |  
 |H+ G:ARG 20 | <\*\*\*1.10\*\*> |H+ G:ARG 20 |  
 |H- G:ALA 21 | <\*\*\*1.03\*\*> |H- G:ALA 21 |  
 | - G:GLY 22 | <\*\*\*1.13\*\*> | - G:GLY 22 |  
 | - G:LEU 23 | <\*\*\*1.12\*\*> | - G:LEU 23 |  
 | + G:GLN 24 | <\*\*\*1.05\*\*> | + G:GLN 24 |  
 | - G:PHE 25 | <\*\*\*1.13\*\*> | - G:PHE 25 |  
 | + G:PRO 26 | <\*\*\*0.99\*\*> | + G:PRO 26 |  
 |H- G:VAL 27 | <\*\*\*0.80\*\*> | - G:VAL 27 |  
 |H- G:GLY 28 | <\*\*\*0.74\*\*> |H- G:GLY 28 |  
 |H+ G:ARG 29 | <\*\*\*0.73\*\*> |H+ G:ARG 29 |  
 |H- G:VAL 30 | <\*\*\*0.67\*\*> |H- G:VAL 30 |  
 |H+ G:HIS 31 | <\*\*\*0.73\*\*> |H+ G:HIS 31 |

|H+ G:ARG 32 | <\*\*\*1.02\*\*> |H+ G:ARG 32 |  
|H- G:LEU 33 | <\*\*\*0.92\*\*> |H- G:LEU 33 |  
|H- G:LEU 34 | <\*\*\*0.85\*\*> |H- G:LEU 34 |  
|H+ G:ARG 35 | <\*\*\*1.08\*\*> |H+ G:ARG 35 |  
|H+ G:LYS 36 | <\*\*\*0.94\*\*> | + G:LYS 36 |  
| - G:GLY 37 | <\*\*\*0.84\*\*> | - G:GLY 37 |  
| + G:ASN 38 | <\*\*\*0.91\*\*> | + G:ASN 38 |  
| . G:TYR 39 | <\*\*\*0.72\*\*> | . G:TYR 39 |  
| - G:ALA 40 | <\*\*\*0.79\*\*> | - G:ALA 40 |  
| + G:GLU 41 | <\*\*\*1.24\*\*> | + G:GLU 41 |  
| + G:ARG 42 | <\*\*\*0.54\*\*> | + G:ARG 42 |  
|S- G:VAL 43 | <\*\*\*0.86\*\*> |S- G:VAL 43 |  
| - G:GLY 44 | <\*\*\*0.99\*\*> | - G:GLY 44 |  
| - G:ALA 45 | <\*\*\*1.24\*\*> | - G:ALA 45 |  
| - G:GLY 46 | <\*\*\*0.89\*\*> | - G:GLY 46 |  
|H- G:ALA 47 | <\*\*\*0.86\*\*> |H- G:ALA 47 |  
|H+ G:PRO 48 | <\*\*\*0.87\*\*> |H+ G:PRO 48 |  
|H- G:VAL 49 | <\*\*\*0.87\*\*> |H- G:VAL 49 |  
|H. G:TYR 50 | <\*\*\*0.82\*\*> |H. G:TYR 50 |  
|H- G:LEU 51 | <\*\*\*0.75\*\*> |H- G:LEU 51 |  
|H- G:ALA 52 | <\*\*\*0.87\*\*> |H- G:ALA 52 |  
|H- G:ALA 53 | <\*\*\*0.92\*\*> |H- G:ALA 53 |  
|H- G:VAL 54 | <\*\*\*0.87\*\*> |H- G:VAL 54 |  
|H- G:LEU 55 | <\*\*\*0.95\*\*> |H- G:LEU 55 |  
|H+ G:GLU 56 | <\*\*\*0.89\*\*> |H+ G:GLU 56 |  
|H. G:TYR 57 | <\*\*\*0.93\*\*> |H. G:TYR 57 |  
|H- G:LEU 58 | <\*\*\*0.91\*\*> |H- G:LEU 58 |  
|H. G:THR 59 | <\*\*\*0.87\*\*> |H. G:THR 59 |  
|H- G:ALA 60 | <\*\*\*1.01\*\*> |H- G:ALA 60 |  
|H+ G:GLU 61 | <\*\*\*1.15\*\*> |H+ G:GLU 61 |  
|H- G:ILE 62 | <\*\*\*1.08\*\*> |H- G:ILE 62 |  
|H- G:LEU 63 | <\*\*\*0.79\*\*> |H- G:LEU 63 |  
|H+ G:GLU 64 | <\*\*\*0.94\*\*> |H+ G:GLU 64 |  
|H- G:LEU 65 | <\*\*\*1.02\*\*> |H- G:LEU 65 |  
|H- G:ALA 66 | <\*\*\*0.77\*\*> |H- G:ALA 66 |  
|H- G:GLY 67 | <\*\*\*0.75\*\*> |H- G:GLY 67 |  
|H+ G:ASN 68 | <\*\*\*0.86\*\*> |H+ G:ASN 68 |  
|H- G:ALA 69 | <\*\*\*0.84\*\*> |H- G:ALA 69 |  
|H- G:ALA 70 | <\*\*\*0.59\*\*> |H- G:ALA 70 |  
|H+ G:ARG 71 | <\*\*\*0.61\*\*> |H+ G:ARG 71 |  
| + G:ASP 72 | <\*\*\*0.46\*\*> |H+ G:ASP 72 |  
| + G:ASN 73 | <\*\*\*0.79\*\*> |H+ G:ASN 73 |  
| + G:LYS 74 | <\*\*\*0.99\*\*> | + G:LYS 74 |  
| + G:LYS 75 | <\*\*\*1.08\*\*> | + G:LYS 75 |  
| . G:THR 76 | <\*\*\*0.93\*\*> | . G:THR 76 |  
|S+ G:ARG 77 | <\*\*\*0.97\*\*> | + G:ARG 77 |

|S- G:ILE 78 | <\*\*\*0.91\*\*> | - G:ILE 78 |  
| - G:ILE 79 | <\*\*\*0.78\*\*> | - G:ILE 79 |  
| + G:PRO 80 | <\*\*\*0.80\*\*> | + G:PRO 80 |  
|H+ G:ARG 81 | <\*\*\*0.81\*\*> |H+ G:ARG 81 |  
|H+ G:HIS 82 | <\*\*\*0.93\*\*> |H+ G:HIS 82 |  
|H- G:LEU 83 | <\*\*\*0.96\*\*> |H- G:LEU 83 |  
|H+ G:GLN 84 | <\*\*\*0.87\*\*> |H+ G:GLN 84 |  
|H- G:LEU 85 | <\*\*\*0.96\*\*> |H- G:LEU 85 |  
|H- G:ALA 86 | <\*\*\*0.96\*\*> |H- G:ALA 86 |  
|H- G:ILE 87 | <\*\*\*0.80\*\*> | - G:ILE 87 |  
|H+ G:ARG 88 | <\*\*\*1.19\*\*> | + G:ARG 88 |  
| + G:ASN 89 | <\*\*\*1.05\*\*> | + G:ASN 89 |  
| + G:ASP 90 | <\*\*\*1.03\*\*> | + G:ASP 90 |  
| + G:GLU 91 | <\*\*\*0.71\*\*> |H+ G:GLU 91 |  
|H+ G:GLU 92 | <\*\*\*0.93\*\*> |H+ G:GLU 92 |  
|H- G:LEU 93 | <\*\*\*0.96\*\*> |H- G:LEU 93 |  
|H+ G:ASN 94 | <\*\*\*0.84\*\*> |H+ G:ASN 94 |  
|H+ G:LYS 95 | <\*\*\*0.82\*\*> |H+ G:LYS 95 |  
|H- G:LEU 96 | <\*\*\*0.89\*\*> |H- G:LEU 96 |  
|H- G:LEU 97 | <\*\*\*0.81\*\*> |H- G:LEU 97 |  
| - G:GLY 98 | <\*\*\*1.08\*\*> | - G:GLY 98 |  
| + G:LYS 99 | <\*\*\*1.13\*\*> | + G:LYS 99 |  
|S- G:VAL 100 | <\*\*\*1.16\*\*> | - G:VAL 100 |  
|S. G:THR 101 | <\*\*\*1.11\*\*> |S. G:THR 101 |  
| - G:ILE 102 | <\*\*\*1.09\*\*> | - G:ILE 102 |  
| - G:ALA 103 | <\*\*\*1.12\*\*> | - G:ALA 103 |  
| + G:GLN 104 | <\*\*\*0.94\*\*> | + G:GLN 104 |  
| - G:GLY 105 | <\*\*\*0.77\*\*> | - G:GLY 105 |  
| - G:GLY 106 | <\*\*\*1.08\*\*> | - G:GLY 106 |  
| - G:VAL 107 | <\*\*\*1.02\*\*> | - G:VAL 107 |  
| - G:LEU 108 | <\*\*\*0.71\*\*> | - G:LEU 108 |  
| + G:PRO 109 | <\*\*\*0.83\*\*> | + G:PRO 109 |  
| + G:ASN 110 | <\*\*\*0.82\*\*> | + G:ASN 110 |  
| - G:ILE 111 | <\*\*\*0.87\*\*> | - G:ILE 111 |  
| + G:GLN 112 | <\*\*\*1.02\*\*> | + G:GLN 112 |  
| - G:ALA 113 | <\*\*\*0.92\*\*> | - G:ALA 113 |  
| - G:VAL 114 | <\*\*\*0.91\*\*> | - G:VAL 114 |  
| - G:LEU 115 | <\*\*\*0.74\*\*> | - G:LEU 115 |  
| - G:LEU 116 | <\*\*\*0.74\*\*> | - G:LEU 116 |  
| + G:PRO 117 | <\*\*\*0.56\*\*> | + G:PRO 117 |  
| + G:LYS 118 | <\*\*\*1.21\*\*> | + G:LYS 118 |  
| . H:SER 29 | <\*\*\*1.27\*\*> | . H:SER 29 |  
| + H:ARG 30 | <\*\*\*1.47\*\*> | + H:ARG 30 |  
| + H:LYS 31 | <\*\*\*1.14\*\*> | + H:LYS 31 |  
| + H:GLU 32 | <\*\*\*1.05\*\*> | + H:GLU 32 |  
| . H:SER 33 | <\*\*\*1.07\*\*> | . H:SER 33 |

| . H:TYR 34 | <\*\*\*1.15\*\*> | . H:TYR 34 |  
| H. H:SER 35 | <\*\*\*1.23\*\*> | . H:SER 35 |  
| H- H:VAL 36 | <\*\*\*1.26\*\*> | - H:VAL 36 |  
| H. H:TYR 37 | <\*\*\*1.19\*\*> | H. H:TYR 37 |  
| H- H:VAL 38 | <\*\*\*0.83\*\*> | H- H:VAL 38 |  
| H. H:TYR 39 | <\*\*\*0.84\*\*> | H. H:TYR 39 |  
| H+ H:LYS 40 | <\*\*\*1.15\*\*> | H+ H:LYS 40 |  
| H- H:VAL 41 | <\*\*\*0.93\*\*> | H- H:VAL 41 |  
| H- H:LEU 42 | <\*\*\*0.98\*\*> | H- H:LEU 42 |  
| H+ H:LYS 43 | <\*\*\*0.99\*\*> | H+ H:LYS 43 |  
| H+ H:GLN 44 | <\*\*\*0.97\*\*> | H+ H:GLN 44 |  
| H- H:VAL 45 | <\*\*\*0.66\*\*> | H- H:VAL 45 |  
| + H:HIS 46 | <\*\*\*0.92\*\*> | + H:HIS 46 |  
| + H:PRO 47 | <\*\*\*1.38\*\*> | + H:PRO 47 |  
| + H:ASP 48 | <\*\*\*1.12\*\*> | + H:ASP 48 |  
| . H:THR 49 | <\*\*\*1.15\*\*> | . H:THR 49 |  
| S- H:GLY 50 | <\*\*\*1.22\*\*> | - H:GLY 50 |  
| S- H:ILE 51 | <\*\*\*0.97\*\*> | - H:ILE 51 |  
| . H:SER 52 | <\*\*\*0.84\*\*> | . H:SER 52 |  
| H. H:SER 53 | <\*\*\*0.68\*\*> | H. H:SER 53 |  
| H+ H:LYS 54 | <\*\*\*0.84\*\*> | H+ H:LYS 54 |  
| H- H:ALA 55 | <\*\*\*0.82\*\*> | H- H:ALA 55 |  
| H- H:MET 56 | <\*\*\*0.76\*\*> | H- H:MET 56 |  
| H- H:GLY 57 | <\*\*\*0.88\*\*> | H- H:GLY 57 |  
| H- H:ILE 58 | <\*\*\*0.80\*\*> | H- H:ILE 58 |  
| H- H:MET 59 | <\*\*\*0.52\*\*> | H- H:MET 59 |  
| H+ H:ASN 60 | <\*\*\*0.56\*\*> | H+ H:ASN 60 |  
| H. H:SER 61 | <\*\*\*0.55\*\*> | H. H:SER 61 |  
| H- H:PHE 62 | <\*\*\*0.51\*\*> | H- H:PHE 62 |  
| H- H:VAL 63 | <\*\*\*0.68\*\*> | H- H:VAL 63 |  
| H+ H:ASN 64 | <\*\*\*0.49\*\*> | H+ H:ASN 64 |  
| H+ H:ASP 65 | <\*\*\*0.66\*\*> | H+ H:ASP 65 |  
| H- H:ILE 66 | <\*\*\*0.73\*\*> | H- H:ILE 66 |  
| H- H:PHE 67 | <\*\*\*0.80\*\*> | H- H:PHE 67 |  
| H+ H:GLU 68 | <\*\*\*0.95\*\*> | H+ H:GLU 68 |  
| H+ H:ARG 69 | <\*\*\*0.88\*\*> | H+ H:ARG 69 |  
| H- H:ILE 70 | <\*\*\*0.76\*\*> | H- H:ILE 70 |  
| H- H:ALA 71 | <\*\*\*0.79\*\*> | H- H:ALA 71 |  
| H- H:GLY 72 | <\*\*\*0.82\*\*> | H- H:GLY 72 |  
| H+ H:GLU 73 | <\*\*\*0.82\*\*> | H+ H:GLU 73 |  
| H- H:ALA 74 | <\*\*\*0.83\*\*> | H- H:ALA 74 |  
| H. H:SER 75 | <\*\*\*0.90\*\*> | H. H:SER 75 |  
| H+ H:ARG 76 | <\*\*\*0.88\*\*> | H+ H:ARG 76 |  
| H- H:LEU 77 | <\*\*\*0.80\*\*> | H- H:LEU 77 |  
| H- H:ALA 78 | <\*\*\*1.12\*\*> | H- H:ALA 78 |  
| H+ H:HIS 79 | <\*\*\*1.16\*\*> | H+ H:HIS 79 |

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| . H:TYR 80 | <***1.02**> | H. H:TYR 80 |
| + H:ASN 81 | <***0.95**> | H+ H:ASN 81 |
| + H:LYS 82 | <***0.97**> | + H:LYS 82 |
| + H:ARG 83 | <***1.07**> | + H:ARG 83 |
| . H:SER 84 | <***1.14**> | . H:SER 84 |
| . H:THR 85 | <***0.92**> | . H:THR 85 |
| S- H:ILE 86 | <***0.94**> | S- H:ILE 86 |
| . H:THR 87 | <***0.93**> | . H:THR 87 |
| . H:SER 88 | <***0.93**> | . H:SER 88 |
| H+ H:ARG 89 | <***0.78**> | + H:ARG 89 |
| H+ H:GLU 90 | <***0.66**> | H+ H:GLU 90 |
| H- H:ILE 91 | <***0.79**> | H- H:ILE 91 |
| H+ H:GLN 92 | <***0.89**> | H+ H:GLN 92 |
| H. H:THR 93 | <***0.94**> | H. H:THR 93 |
| H- H:ALA 94 | <***0.94**> | H- H:ALA 94 |
| H- H:VAL 95 | <***0.84**> | H- H:VAL 95 |
| H+ H:ARG 96 | <***0.93**> | H+ H:ARG 96 |
| H- H:LEU 97 | <***1.06**> | H- H:LEU 97 |
| H- H:LEU 98 | <***0.99**> | H- H:LEU 98 |
| - H:LEU 99 | <***0.72**> | - H:LEU 99 |
| + H:PRO 100 | <***0.86**> | + H:PRO 100 |
| H- H:GLY 101 | <***1.26**> | - H:GLY 101 |
| H+ H:GLU 102 | <***1.06**> | + H:GLU 102 |
| H- H:LEU 103 | <***0.71**> | H- H:LEU 103 |
| H- H:ALA 104 | <***0.83**> | H- H:ALA 104 |
| H+ H:LYS 105 | <***0.90**> | H+ H:LYS 105 |
| H+ H:HIS 106 | <***0.83**> | H+ H:HIS 106 |
| H- H:ALA 107 | <***0.97**> | H- H:ALA 107 |
| H- H:VAL 108 | <***1.05**> | H- H:VAL 108 |
| H. H:SER 109 | <***0.94**> | H. H:SER 109 |
| H+ H:GLU 110 | <***1.04**> | H+ H:GLU 110 |
| H- H:GLY 111 | <***0.91**> | H- H:GLY 111 |
| H. H:THR 112 | <***1.00**> | H. H:THR 112 |
| H+ H:LYS 113 | <***0.98**> | H+ H:LYS 113 |
| H- H:ALA 114 | <***1.00**> | H- H:ALA 114 |
| H- H:VAL 115 | <***1.00**> | H- H:VAL 115 |
| H. H:THR 116 | <***0.96**> | H. H:THR 116 |
| H+ H:LYS 117 | <***0.84**> | H+ H:LYS 117 |
| H. H:TYR 118 | <***0.97**> | H. H:TYR 118 |
| H. H:THR 119 | <***1.15**> | H. H:THR 119 |
| . H:SER 120 | <***1.16**> | . H:SER 120 |
| . H:SER 121 | <***1.27**> | . H:SER 121 |
|           |           | + H:LYS 122 |
|-----|-----|-----|

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| NCP + int. traces |           |           |            |            |           |           |            |            |            | NCP + Mg traces |           |            |            |            |            |            |            |            |            | dynamic NCP trace 1 |            |            |            |            |            |            |            |                |      | dynamic NCP trace 2 |  |  |  |  |  |  |  |  |  |
|-------------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|------------|-----------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|---------------------|------------|------------|------------|------------|------------|------------|------------|----------------|------|---------------------|--|--|--|--|--|--|--|--|--|
| NCP + int.        |           |           |            |            |           |           |            |            |            | NCP + Mg        |           |            |            |            |            |            |            |            |            | NCP + int. + Mg     |            |            |            |            |            |            |            |                |      | NCP                 |  |  |  |  |  |  |  |  |  |
| FRET histogram    |           |           |            |            |           |           |            |            |            | FRET histogram  |           |            |            |            |            |            |            |            |            | FRET histogram      |            |            |            |            |            |            |            |                |      | FRET histogram      |  |  |  |  |  |  |  |  |  |
| 0.10003287        | 168.66667 | 326.33333 | 0.92542828 | 0.10003318 | 171.33333 | 4643.6667 | 0.92542828 | 0.10003324 | -85.333333 | 3867.6667       | 1.022561  | 0.10003307 | 610.33333  | 3155.3333  | 0.92038353 | 0.10003303 | 727.66667  | 1641.3333  | 0.69228385 | 0.10003313          | 80.333333  | 2791.3333  | 0.86021957 | 0.10003319 | 109.33333  | 3187.6667  | 0.96688534 | NCP            |      |                     |  |  |  |  |  |  |  |  |  |
| 0.20006575        | 121       | 3375.3333 | 0.96539232 | 0.20006664 | 154       | 3333.3333 | 0.96746311 | 0.20006664 | -156       | 3304.3333       | 1.04995   | 0.20006664 | 851        | 2998.3333  | 0.77892272 | 0.20006665 | 793.33333  | 2550.3333  | 0.76273555 | 0.20006665          | 357.33333  | 2812       | 3787.2584  | 0.20006665 | 357.33333  | 2812       | 3787.2584  | FRET histogram |      |                     |  |  |  |  |  |  |  |  |  |
| 0.30009862        | 239.33333 | 3276.3333 | 0.91192377 | 0.30009954 | 213.33333 | 4259      | 0.91257867 | 0.30009973 | -84.333333 | 3104            | 1.0271722 | 0.30009921 | 859        | 3077.3333  | 0.78177661 | 0.30009908 | 1182       | 2426.6667  | 0.6724552  | 0.30009967          | 318        | 2610       | 3333.3333  | 0.30009967 | 318        | 2610       | 3333.3333  | 0.89429363     | 0.15 |                     |  |  |  |  |  |  |  |  |  |
| 0.40013149        | 417.33333 | 3391.3333 | 0.88042535 | 0.40013291 | 236.33333 | 4554      | 0.95066653 | 0.40013298 | -2.3333333 | 3410            | 1.0008647 | 0.62       | 0.40013228 | 851.66667  | 2734       | 0.76248025 | 0.65       | 0.4001321  | 981.66667  | 2037.6667           | 0.67487304 | 0.40013289 | 140        | 2730       | 3152.9151  | 0.15       | 0.15       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 0.50016437        | 420.66667 | 3222.6667 | 0.88456965 | 0.50016589 | 177.66667 | 4770      | 0.96409802 | 0.50016522 | -45.666667 | 4361            | 1.005824  | 0.65       | 0.50016534 | 139.33333  | 2798.3333  | 0.6763071  | 0.68       | 0.50016513 | 1037.3333  | 2315.6667           | 0.69062531 | 0.50016611 | 185        | 2598.3333  | 0.93532939 | 0.17       | 0.17       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 0.60019734        | 245.33333 | 3260      | 0.93001141 | 0.60019907 | -25.66667 | 4894.3333 | 1.0052718  | 0.64       | 0.6001947  | 22.66667        | 4555      | 0.9950482  | 0.7        | 0.60019841 | 1191.6667  | 2484.6667  | 0.67585457 | 0.68       | 0.60019815 | 790.66667           | 2306.6667  | 0.6747665  | 0.60019934 | 192        | 2852.3333  | 0.936932   | 0.2        |                |      |                     |  |  |  |  |  |  |  |  |  |
| 0.70022011        | 241       | 3052.6667 | 0.93002127 | 0.70022325 | -21       | 4480.6667 | 1.0047089  | 0.65       | 0.70023771 | 66.66667        | 4730.3333 | 0.98612043 | 0.72       | 0.70023148 | 115.6667   | 2425.6667  | 0.67805856 | 0.7        | 0.70023138 | 933.66667           | 249        | 2715.5777  | 0.70023256 | 320        | 66667      | 2733.3333  | 0.89541205 | 0.2            |      |                     |  |  |  |  |  |  |  |  |  |
| 0.80026298        | 288.6667  | 3108.6667 | 0.91592314 | 0.80026562 | 40.66667  | 4891.6667 | 0.9800255  | 0.65       | 0.80026564 | 269.33333       | 3650      | 0.96494984 | 0.75       | 0.80026545 | 499.66667  | 2589.3333  | 0.9834323  | 0.73       | 0.80026544 | 288.6667            | 3108.6667  | 0.91592314 | 0.80026578 | 321        | 66667      | 2998       | 0.89828781 | 0.2            |      |                     |  |  |  |  |  |  |  |  |  |
| 0.90029586        | 577       | 3063.6667 | 0.84151254 | 0.90029861 | 174       | 4780.3333 | 0.96487903 | 0.66       | 0.90029862 | 98.333333       | 3459      | 0.97235757 | 0.8        | 0.90029762 | 453        | 2312.3333  | 0.83618611 | 0.73       | 0.90029733 | 948.33333           | 2258.6667  | 0.70429269 | 0.90029729 | 243.33333  | 2906       | 3277.7497  | 0.2        |                |      |                     |  |  |  |  |  |  |  |  |  |
| 1.0003278         | 467.66667 | 3323.3333 | 0.8763765  | 1.0003324  | 154       | 3333.3333 | 0.9706783  | 0.66       | 1.0003324  | 16              | 3286      | 0.95515445 | 0.8        | 1.0003324  | 433        | 2590       | 0.8567648  | 0.74       | 1.0003303  | 949.66667           | 2336       | 0.7109663  | 1.0003322  | 154        | 2833.3333  | 0.9484321  | 0.2        |                |      |                     |  |  |  |  |  |  |  |  |  |
| 1.1003616         | 463       | 3247.6667 | 0.87522458 | 1.100365   | 43.333333 | 5232      | 0.93178567 | 0.68       | 1.1003657  | -69.66667       | 3551.3333 | 1.0200906  | 0.8        | 1.1003638  | 362        | 2469       | 0.87212999 | 0.75       | 1.1003633  | 722                 | 2504       | 0.77619343 | 1.1003654  | 5          | 2770.3333  | 0.99819841 | 0.2        |                |      |                     |  |  |  |  |  |  |  |  |  |
| 1.2003945         | 408       | 3551      | 0.88964367 | 1.2003981  | 369.33333 | 4876.3333 | 0.92952658 | 0.7        | 1.20039837 | -134            | 4040      | 1.0343062  | 0.85       | 1.2003968  | 364.66667  | 2862       | 0.88698347 | 0.75       | 1.2003963  | 890.33333           | 2521.3333  | 0.73903273 | 1.2003987  | 140        | 33333      | 2770.6667  | 0.95179205 | 0.2            |      |                     |  |  |  |  |  |  |  |  |  |
| 1.3004274         | 380.66667 | 3487      | 0.90157718 | 1.3004313  | 675.66667 | 4209.3333 | 0.86168543 | 0.75       | 1.3004312  | -191.66667      | 4032.3333 | 1.0499045  | 0.85       | 1.3004299  | 327.33333  | 3044.3333  | 0.90291646 | 0.75       | 1.3004293  | 859                 | 2825.3333  | 0.7668505  | 1.3004319  | 195        | 66667      | 2988.6667  | 0.93851477 | 0.2            |      |                     |  |  |  |  |  |  |  |  |  |
| 1.4004602         | 388       | 3848.3333 | 0.90841136 | 1.4004645  | 719.66667 | 4551.6667 | 0.8637454  | 0.72       | 1.4004645  | -156.66667      | 4001.3333 | 1.0407491  | 0.85       | 1.400463   | 327.33333  | 3271.6667  | 0.89561078 | 0.75       | 1.4004624  | 1039.3333           | 3011.6667  | 0.7434783  | 1.4004651  | 211        | 66667      | 2997.3333  | 0.9345791  | 0.22           |      |                     |  |  |  |  |  |  |  |  |  |
| 1.5004931         | 74        | 3546.3333 | 0.9795598  | 1.5004977  | 407.66667 | 4450      | 0.91077078 | 0.72       | 1.5004977  | -69.333333      | 3527      | 1.0200521  | 0.87       | 1.5004946  | 464        | 2966       | 0.88472303 | 0.75       | 1.5004945  | 829                 | 3313.6667  | 0.92769314 | 1.5004983  | 116        | 3141.6667  | 0.96439169 | 0.22       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 1.600526          | 143.33333 | 3455.6667 | 0.95961304 | 1.6005309  | 51.66667  | 5402.3333 | 0.9952838  | 0.75       | 1.6005319  | 85              | 3746.6667 | 0.9718641  | 0.9        | 1.6005291  | 742.6667   | 2613.6667  | 0.7872769  | 0.75       | 1.6005284  | 734                 | 3128.6667  | 0.80979784 | 1.6005316  | 106        | 66667      | 3201       | 0.96775169 | 0.22           |      |                     |  |  |  |  |  |  |  |  |  |
| 1.7005588         | 117       | 3140      | 0.96407737 | 1.700564   | 155.33333 | 4079      | 0.96074615 | 0.75       | 1.7005642  | 295.33333       | 3023.3333 | 0.9299968  | 0.9        | 1.7005622  | 750        | 2068.3333  | 0.78250362 | 0.76       | 1.7005614  | 465.66667           | 3281       | 0.87579805 | 1.7005638  | 2736       | 2736       | 0.89510032 | 0.25       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 1.8005917         | 217.66667 | 3662.3333 | 0.94390034 | 1.8005972  | 116.66667 | 5549.3333 | 0.97940934 | 0.77       | 1.8005984  | 398.33333       | 4122.3333 | 0.91208064 | 0.9        | 1.8005952  | 847.33333  | 3092.6667  | 0.78494078 | 0.76       | 1.8005945  | 402                 | 3801.6667  | 0.9404362  | 1.800598   | 273        | 273        | 0.9051667  | 0.25       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 1.9006246         | 274       | 3998.3333 | 0.93586643 | 1.9006306  | 93        | 5281      | 0.8826945  | 0.78       | 1.9006316  | 139.33333       | 3883.3333 | 0.9240165  | 0.9        | 1.9006283  | 688        | 2872.6667  | 0.86077776 | 0.77       | 1.9006275  | 479.66667           | 3894       | 0.89012848 | 1.9006312  | 284        | 284        | 0.9042928  | 0.25       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.0006575         | 404.33333 | 3780.3333 | 0.90337741 | 2.0006636  | 466.66667 | 5355.6667 | 0.91984886 | 0.78       | 2.0006649  | 20              | 3244.3333 | 0.9387317  | 0.9        | 2.0006614  | 902        | 1912       | 0.67945894 | 0.78       | 2.0006605  | 507.33333           | 3937.6667  | 0.88586427 | 2.0006675  | 231        | 231        | 0.9296415  | 0.25       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.1006903         | 529.66667 | 3533      | 0.94865598 | 2.1006966  | 306.66667 | 4900      | 0.94110115 | 0.8        | 2.1006981  | 92.66667        | 3109.3333 | 0.97105975 | 0.9        | 2.1006944  | 742.33333  | 1775       | 0.70511213 | 0.78       | 2.1006935  | 428.66667           | 3264.3333  | 0.88392454 | 2.1006977  | 299        | 299        | 0.9389424  | 0.25       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.2007232         | 419       | 3145.3333 | 0.88244646 | 2.2007299  | 331       | 4650.3333 | 0.93355193 | 0.8        | 2.2007314  | 63.333333       | 3477.6667 | 0.9811248  | 0.9        | 2.2007275  | 504.66667  | 2088       | 0.7833002  | 0.8        | 2.2007266  | 301.33333           | 3242.3333  | 0.91456657 | 2.2007309  | 145        | 145        | 0.94073077 | 0.25       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.3007561         | 226.66667 | 3641.6667 | 0.94140457 | 2.3007631  | 226       | 3951.3333 | 0.9458895  | 0.8        | 2.3007646  | 118             | 4127      | 0.97220259 | 0.91       | 2.3007606  | 399        | 2878.3333  | 0.78825468 | 0.8        | 2.3007596  | 332                 | 3258       | 0.9072089  | 2.3007641  | -48        | 2713.6667  | 1.0180068  | 0.26       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.400789          | 121       | 3430.3333 | 0.96592829 | 2.4007963  | 566.66667 | 3678.3333 | 0.88659602 | 0.83       | 2.4007979  | 17.66667        | 4415.6667 | 0.99901304 | 0.92       | 2.4007937  | 377.66667  | 2554.6667  | 0.8712069  | 0.8        | 2.4007926  | 458.66667           | 3244       | 0.87612532 | 2.4007973  | 343        | 343        | 0.9651663  | 0.26       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.5008218         | 267       | 3491      | 0.92895157 | 2.5008295  | 252.33333 | 3292.6667 | 0.97079705 | 0.84       | 2.5008329  | -25.333333      | 4208      | 0.97790785 | 0.92       | 2.5008267  | 353.66667  | 2343.6667  | 0.81452734 | 0.8        | 2.5008256  | 518                 | 2855.6667  | 0.88452919 | 2.5008306  | 131        | 131        | 0.9667248  | 0.27       |                |      |                     |  |  |  |  |  |  |  |  |  |
| 2.6008547         | 350.33333 | 3133.6667 | 0.89549498 | 2.6008624  | 269.33333 | 4330.3333 | 0.95002434 | 0.84       | 2.6008658  | 269.33333       | 4330.3333 | 0.95002434 | 0.92       | 2.6008638  | 215.66667  | 2500.3333  | 0.8756887  | 0.84       | 2.6008627  | 265.33333           | 33         |            |            |            |            |            |            |                |      |                     |  |  |  |  |  |  |  |  |  |

|           |           |           |             |   |           |           |           |            |           |            |           |            |           |           |            |            |           |           |           |            |             |           |             |            |            |            |      |
|-----------|-----------|-----------|-------------|---|-----------|-----------|-----------|------------|-----------|------------|-----------|------------|-----------|-----------|------------|------------|-----------|-----------|-----------|------------|-------------|-----------|-------------|------------|------------|------------|------|
| 10.603485 | 183.66667 | 2274.3333 | 0.9523278   | 1 | 10.603517 | 253       | 5402.3333 | 0.9552648  | 10.603524 | 58         | 4048.3333 | 0.98587548 | 10.603505 | 676.33333 | 2633.3333  | 0.97564911 | 0.98      | 10.603501 | 346.66667 | 2682.3333  | 0.88555079  | 10.603522 | 137.66667   | 2590       | 0.95567243 | 0.4        |      |
| 10.703517 | 183.66667 | 2274.3333 | 0.9523278   |   | 10.70355  | 94        | 4514      | 0.97966009 | 10.703557 | 14         | 4365.3333 | 0.99860317 | 10.703538 | 814       | 251.6667   | 0.77523705 | 0.98      | 10.703534 | 332       | 2894       | 0.89708171  | 10.703555 | -28.66667   | 3076       | 1.0004071  | 0.4        |      |
| 10.80355  | 352.66667 | 2708.3333 | 0.88487711  |   | 10.803583 | 84.66667  | 4403      | 0.9813348  | 10.80359  | -170.33333 | 4554.6667 | 0.1088055  | 10.803571 | 716.33333 | 2503.6667  | 0.77532603 | 0.98      | 10.803567 | 452.66667 | 3057.3333  | 0.87105114  | 10.803588 | 14.66667    | 2989.6667  | 0.92911816 | 0.41       |      |
| 10.903581 | 486.66667 | 3485.3333 | 0.9009295   |   | 10.903616 | 364.33333 | 3815      | 0.91507261 | 10.90362  | -200       | 4865.3333 | 0.94309274 | 10.903607 | 751.33333 | 2460.6667  | 0.77532603 | 0.99      | 10.90361  | 286       | 3401.6667  | 0.88802905  | 10.903627 | 152.66667   | 3155.3333  | 0.92124466 | 0.42       |      |
| 11.003616 | 307.33333 | 2664      | 0.92612630  |   | 11.00365  | 477.66667 | 4563.6667 | 0.912149   | 11.00367  | 50         | 4772.6667 | 0.98843039 | 11.003638 | 659       | 1864.6667  | 0.74411162 | 0.99      | 11.00363  | 429       | 3401.6667  | 0.88802905  | 11.003654 | 386         | 3033.3333  | 0.91383812 | 0.41       |      |
| 11.103649 | 260.33333 | 3631      | 0.91309919  |   | 11.103683 | 452       | 4483      | 0.90800908 | 11.10369  | 65.66667   | 4741.6667 | 0.98460817 | 11.103671 | 698       | 1864.6667  | 0.74411162 | 1         | 11.103666 | 376       | 3171.3333  | 0.90814332  | 11.103688 | 174         | 3171.3333  | 0.94801832 | 0.41       |      |
| 11.203682 | 256       | 3653.6667 | 0.93452127  |   | 11.203716 | 328.6667  | 5631      | 0.9448515  | 11.203723 | 29         | 4035.3333 | 0.99286476 | 11.203704 | 263       | 2465.6667  | 0.90361593 | 1         | 11.203699 | 417.33333 | 3627       | 0.89681035  | 11.203721 | -49.333333  | 2843.3333  | 1.0176569  | 0.42       |      |
| 11.303715 | 343       | 3189.3333 | 0.90287905  |   | 11.303749 | 301       | 5392.3333 | 0.94711315 | 11.303757 | -66.66667  | 4041      | 1.0167743  | 11.303737 | 343       | 2605       | 0.88349993 | 1         | 11.303732 | 347.66667 | 3555.6667  | 0.91030808  | 11.303754 | -247.33333  | 1348.6667  | 1.0852482  | 0.41       |      |
| 11.403748 | 419.66667 | 3657      | 0.90870562  |   | 11.403782 | 250.33333 | 5030      | 0.95259138 | 11.40379  | -137       | 3931.6667 | 1.0361033  | 11.40377  | 409.66667 | 2603.6667  | 0.86404861 | 1         | 11.403765 | 339.66667 | 3283       | 0.9062385   | 11.403787 | -275.66667  | 3255       | 1.0925263  | 0.42       |      |
| 11.50378  | 394.66667 | 3751.3333 | 0.90480785  |   | 11.503816 | 185       | 4058.3333 | 0.9564002  | 11.503823 | -99.333333 | 3595.3333 | 1.0208134  | 11.503803 | 343       | 3319       | 0.90363334 | 1         | 11.503798 | 339.66667 | 3316       | 0.90363334  | 11.503821 | -129.66667  | 3051       | 1.0448681  | 0.42       |      |
| 11.603813 | 380.66667 | 3665.3333 | 0.90591531  |   | 11.603849 | 315.66667 | 3915.3333 | 0.96651033 | 11.603856 | -94.333333 | 3648.6667 | 1.0265044  | 11.603836 | 348.33333 | 2515.3333  | 0.87836108 | 1         | 11.603831 | 483.66667 | 3280       | 0.87149057  | 11.603854 | 163         | 2912       | 0.94699817 | 0.42       |      |
| 11.703846 | 198       | 3258.3333 | 0.94271386  |   | 11.703882 | 4         | 4545      | 0.99912069 | 11.70389  | -48.333333 | 3817      | 1.0102544  | 11.703869 | 303.66667 | 2285.3333  | 0.8827089  | 1         | 11.703864 | 499.33333 | 3196       | 0.86487462  | 11.703887 | 195.66667   | 2564.6667  | 0.92911484 | 0.42       |      |
| 11.803897 | 323.33333 | 3267      | 0.9009295   |   | 11.803925 | 213.33333 | 4729.6667 | 0.90917825 | 11.803931 | 50         | 4162.6667 | 0.90917825 | 11.803916 | 456       | 2594       | 0.87214777 | 0.99      | 11.803912 | 274.66667 | 3545.3333  | 0.86356529  | 11.803928 | 47.333333   | 2802       | 0.96389793 | 0.42       |      |
| 11.903912 | 229.66667 | 3671.6667 | 0.94113124  |   | 11.903948 | 90.66667  | 4438      | 0.97997309 | 11.903956 | 74.33333   | 4229      | 0.93881041 | 11.903939 | 315       | 2041.3333  | 0.86631773 | 1         | 11.90393  | 472.33333 | 2460.6667  | 0.83895807  | 11.903953 | 172.66667   | 2824       | 1.06512545 | 0.42       |      |
| 12.003945 | 203.3333  | 3895.6667 | 0.95039441  |   | 12.003981 | 233.3333  | 3649.6667 | 0.99936108 | 12.003989 | 168.66667  | 4229.6667 | 0.95979861 | 12.003968 | 320.66667 | 2111.3333  | 0.87166166 | 1         | 12.003963 | 506       | 2446       | 0.82590799  | 12.003987 | 159.33333   | 2967       | 0.94003808 | 0.43       |      |
| 12.103978 | 4.66667   | 3236.3333 | 0.95856012  |   | 12.104015 | 145.33333 | 4137.6667 | 0.96060674 | 12.104023 | 142.33333  | 4101      | 0.96572708 | 12.104001 | 2821      | 0.89593479 | 1          | 12.103999 | 428.66667 | 2894      | 0.87089817 | 12.10402    | 304       | 3232.3333   | 0.94103525 | 0.44       |            |      |
| 12.204011 | 67.333333 | 3094.6667 | 0.97870546  |   | 12.204048 | 148       | 4368      | 0.96087047 | 12.204056 | -239       | 4229      | 0.95898977 | 12.204034 | 570       | 2905.3333  | 0.92599438 | 1         | 12.204039 | 257.66667 | 3205.3333  | 0.92599438  | 12.204053 | 431         | 3237.3333  | 0.88250795 | 0.44       |      |
| 12.304043 | 214       | 3196.6667 | 0.931725567 |   | 12.304081 | 501.66667 | 4826      | 0.95083745 | 12.304089 | 22.66667   | 4726.3333 | 0.99527307 | 12.304067 | 589       | 3077.3333  | 0.83934903 | 1         | 12.304062 | 151       | 3564.6667  | 0.95936126  | 12.304086 | 173         | 3152       | 0.94769692 | 0.44       |      |
| 12.404076 | 258.66667 | 3482      | 0.93185256  |   | 12.404112 | 304.33333 | 4517      | 0.93185256 | 12.404122 | 44.66667   | 4580.3333 | 0.99304234 | 12.404101 | 529.33333 | 2456       | 0.8226887  | 1         | 12.404095 | 274       | 3107       | 0.92348506  | 12.40412  | 330.66667   | 2529.3333  | 0.88482328 | 0.45       |      |
| 12.504109 | 305.66667 | 3438      | 0.91891099  |   | 12.504147 | 271       | 4567.6667 | 0.94939284 | 12.504156 | 261.66667  | 4921      | 0.9495119  | 12.504134 | 586       | 2541.3333  | 0.81261993 | 1         | 12.504128 | 521.66667 | 3211       | 0.8602429   | 12.504153 | 280.33333   | 2556.3333  | 0.90117059 | 0.45       |      |
| 12.604142 | 300.33333 | 3101.3333 | 0.90379586  |   | 12.604189 | 128.66667 | 5037      | 0.97357286 | 12.604198 | 128.66667  | 5037      | 0.97357286 | 12.604161 | 505       | 2426.6667  | 0.81252956 | 1         | 12.604161 | 706       | 2786       | 0.7978236   | 12.604188 | 126         | 2858.6667  | 0.8976345  | 0.45       |      |
| 12.704175 | 402.33333 | 3210      | 0.88862231  |   | 12.704212 | 338.6667  | 5501      | 0.93919409 | 12.70422  | 32.7042    | 5314.3333 | 0.93919409 | 12.704194 | 756.6667  | 2564.3333  | 0.81415362 | 1         | 12.704194 | 266.6667  | 2564.3333  | 0.81415362  | 12.704219 | 202.6667    | 3500       | 0.94570459 | 0.45       |      |
| 12.804208 | 455       | 3899.6667 | 0.86436804  |   | 12.804247 | 671.66667 | 5912.6667 | 0.89799018 | 12.804255 | 258.33333  | 4292.3333 | 0.9432136  | 12.804233 | 273.33333 | 2450.6667  | 0.8996537  | 1         | 12.804227 | 624.66667 | 3261.6667  | 0.83302568  | 12.804252 | 364         | 3683.3333  | 0.93311941 | 0.45       |      |
| 12.904241 | 524.33333 | 2715.6667 | 0.83836827  |   | 12.904278 | 715       | 5213      | 0.87875299 | 12.904289 | 88.66667   | 3999.6667 | 0.97595217 | 12.904266 | 190.33333 | 2331       | 0.95451084 | 1         | 12.90426  | 604.33333 | 3278.3333  | 0.84435096  | 12.904286 | 245         | 3575       | 0.93586387 | 0.45       |      |
| 13.004274 | 313.33333 | 2769      | 0.89834541  |   | 13.004313 | 504.66667 | 4996.3333 | 0.90829091 | 13.004322 | -180       | 3658.3333 | 1.0717489  | 13.004299 | 226.66667 | 2000.6667  | 0.89823406 | 1         | 13.004293 | 489       | 3133.3333  | 0.86500414  | 13.004319 | 94.333333   | 3128.3333  | 0.97072818 | 0.45       |      |
| 13.104306 | 51.66667  | 3657      | 0.98100257  |   | 13.104346 | 675       | 3913      | 0.85287913 | 13.104355 | -262       | 3980.6667 | 1.0704554  | 13.104332 | 439       | 2914.6667  | 0.88466208 | 1         | 13.104326 | 289       | 2914.6667  | 0.88466208  | 13.104352 | -0.33333333 | 3086.6667  | 1.000108   | 0.45       |      |
| 13.204339 | 127.66667 | 3171      | 1.0419496   |   | 13.20438  | 545.6667  | 4226.667  | 0.8856604  | 13.204388 | -200.6667  | 3592.6667 | 1.0591588  | 13.204365 | 364       | 2576       | 0.87619048 | 1         | 13.204359 | 393.33333 | 3168.3333  | 0.88956481  | 13.204385 | -58         | 3315.6667  | 1.0178042  | 0.46       |      |
| 13.304372 | 184.66667 | 3112      | 0.94398382  |   | 13.304413 | 390       | 4563.3333 | 0.92126514 | 13.304422 | -238.33333 | 3478      | 0.7356272  | 13.304398 | 572.33333 | 2971       | 0.83847601 | 1         | 13.304392 | 464.33333 | 3324       | 0.874743071 | 13.304419 | 307.33333   | 3467.3333  | 0.91880001 | 0.46       |      |
| 13.404445 | 347.66667 | 3380      | 0.90073433  |   | 13.404486 | 81        | 5649.6667 | 1.0145457  | 13.404495 | -289       | 3403.6667 | 1.0927868  | 13.404431 | 352       | 2910.3333  | 0.89210717 | 1         | 13.404425 | 499       | 3362       | 0.84877556  | 13.404452 | 366.6667    | 3760.6667  | 0.90502166 | 0.47       |      |
| 13.504478 | 341.33333 | 3020.3333 | 0.96222708  |   | 13.504519 | -123.6667 | 5162      | 0.9242462  | 13.504528 | -200.33333 | 3489.6667 | 1.0324464  | 13.504463 | 405       | 3088.3333  | 0.89466769 | 1         | 13.504458 | 606       | 3489.6667  | 0.89466769  | 13.504485 | 477         | 3088.3333  | 0.90804436 | 0.47       |      |
| 13.604471 | 125.6667  | 2918.3333 | 0.9587166   |   | 13.604512 | 102       | 4967.6667 | 1.0209832  | 13.604521 | -43        | 3372.3333 | 1.0129155  | 13.604491 | 193.33333 | 3752.3333  | 0.93346681 | 1         | 13.604489 | 513.66667 | 3366.3333  | 0.86410935  | 13.604518 | 337         | 3327.6667  | 4014       | 0.92340531 | 0.49 |
| 13.704504 | 58.66667  | 3118.6667 | 0.98153588  |   | 13.704545 | 64.333333 | 4713      | 0.98653036 | 13.704555 | 161.33333  | 3740      | 0.95864662 | 13.70453  | 406       | 2459       | 0.85482897 | 1         | 13.704524 | 373.33333 | 3434.3333  | 0.9019522   | 13.704551 | 261.66667   | 4031.3333  | 0.93940608 | 0.49       |      |
| 13.804536 | 71.66667  | 3019      | 0.97816191  |   | 13.804579 | 43        | 4877      | 0.97126016 | 13.804588 | 211.66667  | 3789.3333 | 0.94709656 | 13.804567 | 406       | 2459       | 0.85482897 | 1         | 13.804557 | 288.33333 | 3203       | 0.91784039  | 13.804585 | 284         | 3864.6667  | 0.93154407 | 0.49       |      |
| 13.904569 | 122.66667 | 3452.3333 | 0.96839645  |   | 13.904612 | 153       | 4837      | 0.96938688 | 13.904621 | 43.66667   | 3923.6667 | 0.98899345 | 13.904597 | 588       | 2791.3333  | 0.82600118 | 1         | 13.90459  | 308.66667 | 3628.3333  | 0.92159851  | 13.904618 | 43          | 3297.3333  | 0.98712703 | 0.5        |      |
| 14.004602 | 299       | 3153      | 0.91313855  |   | 14.004645 | 295.33333 | 4933.3333 | 0.93701233 | 14.004654 | 94.333333  | 3686.3333 | 0.97504849 | 14.004632 | 588       | 2791.3333  | 0.79895997 | 1         | 14.004624 | 458       | 3783       | 0.8920066   | 14.004651 | 249         | 2749       | 0.91694465 | 0.5        |      |
| 14.104635 | 129       | 3290.6667 | 0.96227703  |   | 14.104678 | 330.33333 | 4914.6667 | 0.93701938 | 14.104688 | 206.33333  | 3963.6667 | 0.95015958 | 14.104666 | 797       | 2073       | 0.72229965 | 1         | 14.104657 | 341.33333 | 3966       | 0.9207553   | 14.104684 | 86          | 2696.3333  | 0.96909009 | 0.5        |      |
| 14.204668 | 66.33333  | 3264      | 0.90800207  |   | 14.204711 | 140.6667  | 4939.3333 | 0.97330971 | 14.204721 | 10.66667   | 3795.3333 | 0.95021361 | 14.204696 | 784.6666  |            |            |           |           |           |            |             |           |             |            |            |            |      |

|           |            |           |            |           |           |           |            |           |            |           |            |           |           |           |            |           |           |           |            |           |            |           |            |      |
|-----------|------------|-----------|------------|-----------|-----------|-----------|------------|-----------|------------|-----------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------|-----------|------------|-----------|------------|------|
| 21.407035 | 315.66667  | 3058      | 0.90643217 | 21.4071   | 133       | 4771.3333 | 0.97288113 | 21.407114 | -4.333333  | 3468.3333 | 1.001255   | 21.407077 | 660.66667 | 2606.6667 | 0.79779637 | 21.407067 | 469.66667 | 3736.3333 | 0.88834131 | 21.40711  | 265.66667  | 3248.3333 | 0.92496785 | 0.97 |
| 21.407068 | 286.33333  | 351.66667 | 0.92881427 | 21.407133 | 359       | 4756      | 0.92881427 | 21.507148 | 109        | 3778.6667 | 0.97196262 | 21.50711  | 658.66667 | 2517      | 0.79258948 | 21.5071   | 467.66667 | 3522.6667 | 0.8828001  | 21.507143 | 333.3333   | 3838.3333 | 0.99195577 | 0.97 |
| 21.407101 | 374        | 2955.6667 | 0.88767644 | 21.507167 | 278       | 4359.6667 | 0.94050606 | 21.607181 | 17         | 4094.6667 | 0.99586542 | 21.607143 | 614.66667 | 2222      | 0.78333333 | 21.607133 | 500.3333  | 3774.3333 | 0.94585284 | 21.607176 | 359.3333   | 4084.3333 | 0.99138585 | 0.97 |
| 21.701701 | 136        | 3315      | 0.91577687 | 21.701701 | 136       | 3315      | 0.91577687 | 21.701714 | -60.333333 | 4010.3333 | 1.01612698 | 21.701714 | 608.33333 | 2478.6667 | 0.78161434 | 21.701709 | 506.33333 | 3873.3333 | 0.91440074 | 21.701729 | 181.66667  | 3416.6667 | 0.94499919 | 0.97 |
| 21.807766 | -32.66667  | 3210.6667 | 0.91020799 | 21.807723 | 149.3333  | 4605.6667 | 0.90854946 | 21.807729 | -75.66667  | 4033.3333 | 1.019119   | 21.807729 | 529       | 2555.6667 | 0.82850951 | 21.807799 | 507       | 3443.3333 | 0.8716564  | 21.807743 | 433.66667  | 3620.6667 | 0.89303636 | 0.98 |
| 21.907199 | 8          | 1463.6667 | 1.002315   | 21.907266 | 115       | 4334      | 0.97451149 | 21.907281 | -127       | 4030      | 1.025191   | 21.907281 | 490.66667 | 2789.3333 | 0.8504005  | 21.907292 | 490       | 3718      | 0.88355315 | 21.90728  | 180.3333   | 3434.6667 | 0.94809594 | 0.98 |
| 21.027232 | -102.66667 | 3294.6667 | 1.0321637  | 21.027299 | -54.33333 | 4592.6667 | 1.0099992  | 21.027314 | 80.333333  | 3748.3333 | 0.97901793 | 21.027275 | 452.66667 | 2743.3333 | 0.85836462 | 21.027266 | 158.66667 | 3979.6667 | 0.96105298 | 21.027309 | 311.66667  | 3500.6667 | 0.91824779 | 0.98 |
| 21.027265 | 5.666667   | 3208.6667 | 0.99823706 | 21.027332 | -58.33333 | 4522.6667 | 1.0130665  | 21.027347 | 178.33333  | 3993      | 0.95724788 | 21.027308 | 402       | 2780      | 0.87366436 | 21.027299 | 112.66667 | 4201.6667 | 0.9738885  | 21.027342 | 283.66667  | 3207.6667 | 0.91875119 | 0.98 |
| 21.027298 | -64.666667 | 3007.6667 | 1.021973   | 21.027366 | 99.666667 | 4404.6667 | 0.9780486  | 21.027378 | 145        | 4336.6667 | 0.96746591 | 21.027341 | 481.66667 | 2553.6667 | 0.84131342 | 21.027332 | 235       | 3937      | 0.9436721  | 21.027375 | 140.66667  | 3477.3333 | 0.96112032 | 0.98 |
| 21.027331 | 64         | 2933      | 0.97864531 | 21.027399 | 152       | 4257.6667 | 0.96553207 | 21.027414 | -36        | 4374.3333 | 1.0082981  | 21.027374 | 255       | 254.6667  | 0.90078741 | 21.027365 | 310.33333 | 4127.6667 | 0.93007361 | 21.027409 | 109.33333  | 3638      | 0.97120827 | 0.98 |
| 21.027364 | 43         | 3169.6667 | 0.98661548 | 21.027432 | 269.33333 | 4134      | 0.93884242 | 21.027447 | -190.66667 | 3861      | 1.051481   | 21.027407 | 391       | 256.6667  | 0.86780119 | 21.027438 | 322.66667 | 4129.3333 | 0.92752321 | 21.027445 | -33        | 3794.6667 | 1.0087722  | 0.98 |
| 21.027396 | -28.66667  | 3490.6667 | 1.0082804  | 21.027465 | 230.3333  | 4222.3333 | 0.9504589  | 21.027478 | 21.507447  | 3837.3333 | 1.0647588  | 21.507444 | 447       | 4591.3333 | 0.85287987 | 21.027481 | 381.66667 | 4106.3333 | 0.91485841 | 21.027475 | 123        | 3547.3333 | 0.96486086 | 0.98 |
| 21.027401 | 54.66667   | 3044.6667 | 0.98489215 | 21.027488 | 54.66667  | 4084.6667 | 0.98489215 | 21.027513 | -7.333333  | 4234.3333 | 1.00162698 | 21.027513 | 646.33333 | 2408.6667 | 0.78043426 | 21.027508 | 556.33333 | 3873.3333 | 0.91440074 | 21.027508 | 187.33333  | 3103.3333 | 0.94307131 | 0.98 |
| 21.027462 | 142.66667  | 3326.3333 | 0.95087383 | 21.027532 | 99.66667  | 4646.3333 | 0.97899986 | 21.027547 | 180.66667  | 4314.3333 | 0.95980719 | 21.027507 | 767.33333 | 2364.3333 | 0.7564253  | 21.027497 | 667.33333 | 3668.6667 | 0.84069471 | 21.027542 | 170        | 2952.3333 | 0.94553534 | 0.98 |
| 21.027495 | 166.66667  | 3175.6667 | 0.95295003 | 21.027565 | 87        | 5232      | 0.98364534 | 21.027578 | 125        | 3878.6667 | 0.96877862 | 21.027578 | 741.66667 | 2869      | 0.78333333 | 21.027578 | 614.66667 | 3415.3333 | 0.84747725 | 21.027575 | 182        | 3215.6667 | 0.94643383 | 0.99 |
| 21.027528 | 21.666667  | 3550      | 0.93993374 | 21.027598 | 163.66667 | 5119.3333 | 0.96902013 | 21.027613 | 2          | 3647.6667 | 0.999542   | 21.027573 | 651.33333 | 2910.3333 | 0.81712681 | 21.027563 | 604       | 3402.3333 | 0.84923871 | 21.027608 | 172        | 3408      | 0.95195531 | 0.99 |
| 21.02761  | 89         | 3585      | 0.97575752 | 21.027631 | 232.66667 | 5050.6667 | 0.95759215 | 21.027646 | -122.33333 | 4011.3333 | 1.0134562  | 21.027606 | 533.66667 | 2739      | 0.83693217 | 21.027596 | 598.66667 | 3065.6667 | 0.83662331 | 21.027641 | 262        | 3465      | 0.93294088 | 0.99 |
| 21.027594 | 302        | 3491      | 0.92037965 | 21.027664 | 324.33333 | 5087      | 0.94006406 | 21.027678 | 79         | 4052.6667 | 0.98087939 | 21.027639 | 196       | 2271      | 0.92055128 | 21.027629 | 493.66667 | 2947.3333 | 0.85653395 | 21.027674 | 211        | 3225.6667 | 0.93317261 | 1    |
| 21.027627 | 331.66667  | 3357.3333 | 0.91090937 | 21.027697 | 484.33333 | 4952      | 0.91090809 | 21.027713 | 49.333333  | 4029.3333 | 0.98790454 | 21.027672 | 348.66667 | 2146.3333 | 0.86025384 | 21.027662 | 398       | 3099.6667 | 0.86620985 | 21.027708 | -27        | 3321.3333 | 1.00011959 | 1    |
| 21.027659 | 323        | 3748.6667 | 0.92067131 | 21.027711 | 558.66667 | 4456.3333 | 0.88860806 | 21.027726 | 63.333333  | 4059.6667 | 0.99844237 | 21.027705 | 232.66667 | 2315      | 0.9086746  | 21.027705 | 242.33333 | 3382.3333 | 0.92711409 | 21.027741 | 26         | 2980.6667 | 1.00087996 | 1    |
| 21.027692 | 244.33333  | 3589.3333 | 0.93362641 | 21.027747 | 259.66667 | 4468      | 0.94644175 | 21.027759 | -141       | 4133      | 1.0206     | 21.027738 | 509.33333 | 2372.6667 | 0.82327088 | 21.027748 | 488.66667 | 3448.3333 | 0.87578482 | 21.027774 | -86.66667  | 255.6667  | 1.0020396  | 1    |
| 21.507725 | 244.33333  | 3800.3333 | 0.93130535 | 21.507797 | 101.33333 | 4240.667  | 0.95667204 | 21.507813 | -130.33333 | 4002      | 1.033333   | 21.507791 | 348.33333 | 2151      | 0.86025384 | 21.507791 | 3293.3333 | 3393.3333 | 0.80884904 | 21.507807 | -30.66667  | 2719      | 1.014073   | 1    |
| 21.607758 | 223.66667  | 3562      | 0.9406037  | 21.60783  | 59        | 5483.3333 | 1.0108769  | 21.607846 | -72.333333 | 3592      | 1.0205512  | 21.607804 | 390       | 2140.3333 | 0.85024958 | 21.607794 | 412.33333 | 3525      | 0.89572599 | 21.607841 | -55        | 2743.3333 | 1.0204588  | 1    |
| 21.707791 | 120.66667  | 3958      | 0.97041517 | 21.707863 | 382       | 5103.3333 | 0.93035975 | 21.707879 | -70        | 3679      | 1.015936   | 21.707873 | 220.66667 | 2330.3333 | 0.95143797 | 21.707827 | 253       | 3430      | 0.9313106  | 21.707874 | -308       | 3321      | 1.020795   | 1    |
| 21.708724 | 122.66667  | 3525.3333 | 0.96637427 | 21.708786 | 369.66667 | 5117.6667 | 0.93262373 | 21.708792 | -144.33333 | 3554      | 1.0423306  | 21.708787 | 232.33333 | 2311.3333 | 0.91188848 | 21.708796 | 303.33333 | 3401.6667 | 0.91812885 | 21.708797 | -54        | 3312.3333 | 1.0165729  | 1    |
| 21.708757 | 79.333333  | 3782.6667 | 0.94795797 | 21.708793 | 599.33333 | 4238      | 0.87451021 | 21.708795 | -163       | 4101      | 1.041201   | 21.708793 | 300       | 2846      | 0.88771054 | 21.708789 | 514.33333 | 3464.6667 | 0.80773804 | 21.708794 | 165.66667  | 3339.3333 | 0.95273449 | 1    |
| 21.407089 | -41        | 3170.6667 | 1.0131004  | 21.407096 | 286.6667  | 4271.3333 | 0.93710692 | 21.407097 | -89        | 4044.3333 | 1.0225013  | 21.407093 | 592.66667 | 2815.3333 | 0.82600545 | 21.407092 | 352.66667 | 3386      | 0.90567047 | 21.407093 | 149.66667  | 2838.3333 | 0.94930175 | 1    |
| 21.407922 | -7         | 3483      | 1.0027461  | 21.407936 | 379.33333 | 4407      | 0.92074657 | 21.407978 | -122       | 4239.6667 | 1.0296284  | 21.407977 | 781.66667 | 2912.3333 | 0.78840403 | 21.407959 | 318.33333 | 3919.6667 | 0.9248895  | 21.407958 | 353.66667  | 2908.3333 | 0.98799683 | 1    |
| 21.407955 | 41.333333  | 3582.3333 | 0.98893591 | 21.408029 | 153.66667 | 4477.6667 | 0.96862021 | 21.408045 | -15.66667  | 4013.3333 | 1.0370925  | 21.408003 | 872.66667 | 2489.6667 | 0.84405802 | 21.407992 | 168.66667 | 3381      | 0.95840504 | 21.408004 | -221.33333 | 3000.3333 | 1.079645   | 1    |
| 21.407988 | 149.66667  | 3817      | 0.93761535 | 21.408078 | 4628.6667 | 4028.6667 | 0.93761535 | 21.408085 | 125.66667  | 4040.6667 | 0.93761535 | 21.408078 | 778       | 2430.6667 | 0.80828059 | 21.408075 | 478.33333 | 3458.6667 | 0.92087918 | 21.408076 | 146.66667  | 3288.3333 | 0.990878   | 1    |
| 21.408021 | 274        | 3617      | 0.92961736 | 21.408082 | 174       | 4363.6667 | 0.98654864 | 21.408084 | -4757      | 3988.6667 | 0.90803518 | 21.408084 | 579.33333 | 2493.6667 | 0.87108761 | 21.408084 | 305.66667 | 3484.3333 | 0.8733665  | 21.408084 | 103.33333  | 3335      | 1.02091    | 1    |
| 21.508054 | 206.33333  | 3304.6667 | 0.94121232 | 21.508129 | -28.66667 | 4615      | 1.006205   | 21.508145 | 465.66667  | 4492.3333 | 0.95067772 | 21.508102 | 322       | 2289.6667 | 0.87670780 | 21.508091 | 436       | 3551.6667 | 0.90642003 | 21.508104 | 58.33333   | 3687.3333 | 0.97712236 | 1    |
| 21.608087 | 411.66667  | 3444.3333 | 0.89323997 | 21.608162 | 60        | 4630.6667 | 0.98720084 | 21.608178 | 178.66667  | 4745.3333 | 0.96371514 | 21.608124 | 372.66667 | 225.3333  | 0.92144374 | 21.608124 | 396.33333 | 3961.3333 | 0.96642003 | 21.608173 | -135       | 3366.3333 | 1.0417784  | 1    |
| 21.70812  | 139.33333  | 3366.6667 | 0.9602586  | 21.708195 | 270       | 5052      | 0.94026719 | 21.708211 | 1          | 4782      | 0.99979093 | 21.708168 | 209.33333 | 2218      | 0.91375996 | 21.708157 | 116.66667 | 3783.6667 | 0.97080803 | 21.708206 | -195.33333 | 3570.3333 | 1.057805   | 1    |
| 21.808153 | 288.33333  | 3791      | 0.9293183  | 21.808228 | 686.66667 | 4917      | 0.87746119 | 21.808245 | -59.333333 | 4297.3333 | 1.0140003  | 21.808201 | 185.33333 | 2280.3333 | 0.92481349 | 21.80819  | 157.33333 | 3589.3333 | 0.95800712 | 21.808239 | -191.33333 | 3083      | 1.060951   | 1    |
| 21.908185 | 170        | 3785.6667 | 0.95702238 | 21.908261 | 966.66667 | 5321.3333 | 0.89911765 | 21.908278 | -24        | 4018      | 1.006009   | 21.908234 | 169.33333 | 2472.6667 | 0.93509714 | 21.908223 | 250.66667 | 3020.6667 | 0.92337477 | 21.908232 | -12.66667  | 3012.3333 | 1.004227   | 1    |
| 21.008218 | 133.33333  | 3555      | 0.96709668 | 21.008259 | 828.66667 | 4782.3333 | 0.85231391 | 21.008311 | -65.333333 | 4093.6667 | 1.0162185  | 21.008267 | 253.66667 | 2644.3333 | 0.91278334 | 21.008256 | 280.33333 | 3083.3333 | 0.91656841 | 21.008267 | -19.66667  | 2847.6667 | 1.0009543  | 1    |
| 21.108251 | 201        | 3376.3333 | 0.93448129 | 21.108258 | 559.66667 | 4889.3333 | 0.8914909  | 21.108344 | -200       | 3712.6667 | 1.0269     |           |           |           |            |           |           |           |            |           |            |           |            |      |

|           |            |           |            |           |           |           |             |           |            |           |            |           |           |                 |              |           |           |           |              |           |            |            |            |
|-----------|------------|-----------|------------|-----------|-----------|-----------|-------------|-----------|------------|-----------|------------|-----------|-----------|-----------------|--------------|-----------|-----------|-----------|--------------|-----------|------------|------------|------------|
| 32.210585 | -156.33333 | 3261.6667 | 1.0503435  | 32.210683 | 128.33333 | 4217.6667 | 0.97047093  | 32.210705 | 63.66667   | 5304.3333 | 0.98813959 | 32.210648 | 1925.3333 | 121.33333       | 0.05928388   | 32.210634 | 427       | 3345.6667 | 0.88681746   | 32.210698 | 74.33333   | 3760.3333  | 0.98061544 |
| 32.210618 | 70.66667   | 3352.6667 | 0.97935735 | 32.210717 | 216.6667  | 4163.6667 | 0.95053469  | 32.210738 | 65.66667   | 456.6667  | 0.9638288  | 32.210681 | 1800.6667 | -25.66667       | -0.014460094 | 32.210667 | 307       | 3514      | 0.91965454   | 32.210731 | 207        | 3738       | 0.94752852 |
| 32.410651 | 185.33333  | 3657.3333 | 0.9517906  | 32.410771 | 282       | 5090.3333 | 0.94750884  | 32.410771 | 79         | 4932      | 0.98423468 | 32.410714 | 2106.6667 | -72             | -0.03702434  | 32.4107   | 381.3333  | 31112     | 0.98083969   | 32.410788 | 361.33333  | 3688.6667  | 0.91078189 |
| 32.510684 | 212.33333  | 3671.3333 | 0.94531928 | 32.410781 | 145       | 5600.3333 | 0.94531928  | 32.510685 | 62.66667   | 5079.3333 | 0.9064661  | 32.510685 | 422.6667  | 3297.3333       | 0.88677991   | 32.510719 | 422.6667  | 3297.3333 | 0.88677991   | 32.510797 | 155        | 8851       | 0.87077007 |
| 32.610717 | 793.6667   | 3539      | 0.92337798 | 32.610846 | 161.6667  | 5551.6667 | 0.937170362 | 32.610848 | -67.66667  | 5244.6667 | 0.9130706  | 32.610846 | 196.6667  | -3.333333       | 0.001724138  | 32.610766 | 402.6667  | 3313      | 0.89163003   | 32.610831 | 342.3333   | 3250.6667  | 0.90472734 |
| 32.71075  | 206        | 3358      | 0.94219798 | 32.710849 | 82        | 5407      | 0.98532003  | 32.710871 | 62.33333   | 4494      | 0.98680467 | 32.710813 | 1656.3333 | 24.33333        | 0.014478382  | 32.710799 | 189       | 3642      | 0.95065652   | 32.710864 | 182.6667   | 3478.3333  | 0.95010471 |
| 32.810782 | 489        | 3359.6667 | 0.87294301 | 32.810883 | -49       | 4976.6667 | 1.0009439   | 32.810904 | -61.66667  | 5089      | 1.0122663  | 32.810847 | 1787.3333 | 157.6667        | 0.881062554  | 32.810872 | 184.6667  | 3633      | 0.95182389   | 32.810897 | 255        | 3535.3333  | 0.92334212 |
| 32.910815 | 302        | 2982.3333 | 0.90804831 | 32.910916 | 56.66667  | 4968.3333 | 0.98872035  | 32.910938 | 31.333333  | 5097      | 0.99389015 | 32.910885 | 160.6667  | 3728            | 0.95868335   | 32.91093  | 192.6667  | 3728      | 0.95868335   | 32.910967 | 3398.6667  | 0.97376989 |            |
| 33.010848 | 283.33333  | 2373.6667 | 0.98336344 | 33.010949 | 52        | 4288.3333 | 0.98801935  | 33.010971 | -37.333333 | 5236      | 1.0077813  | 33.010913 | 1711      | -29             | -0.017431379 | 33.010898 | 150.3333  | 3430.6667 | 0.95801918   | 33.010963 | 176.33333  | 3312       | 0.94945055 |
| 33.110881 | 193.6667   | 2417      | 0.95281716 | 33.110982 | 274       | 3978.6667 | 0.93556984  | 33.110914 | 175        | 4569.3333 | 0.96311389 | 33.110946 | 1616      | -175.6667       | -0.12196251  | 33.110931 | 189       | 3542.6667 | 0.94935239   | 33.110997 | 379.33333  | 3843.3333  | 0.91016735 |
| 33.210914 | 33.33333   | 2611.6667 | 0.88416747 | 33.211005 | 288.33333 | 5202.3333 | 0.9398135   | 33.211037 | 209.33333  | 461.6667  | 0.9566481  | 33.210979 | 1519      | -121            | -0.086552217 | 33.210964 | 189       | 3155      | 0.94062436   | 33.21103  | 459.6667   | 3813.6667  | 0.89258451 |
| 33.310947 | 465.6667   | 3125      | 0.87031192 | 33.311048 | 288.33333 | 5205.3333 | 0.94751214  | 33.311071 | 311        | 4684      | 0.9727935  | 33.311012 | 1650      | -67.333333      | -0.05444229  | 33.310997 | 187       | 3093      | 0.9429878    | 33.311063 | 412.33333  | 3579       | 0.8969283  |
| 33.410989 | 499.6667   | 3716      | 0.94531928 | 33.411082 | 205.6667  | 5782      | 0.94531928  | 33.411104 | -13.66667  | 5365.3333 | 0.9064661  | 33.411045 | 1618.3333 | -109.6667       | -0.072691118 | 33.411108 | 148       | 3078      | 0.87712106   | 33.411096 | 249        | 3201.3333  | 0.92783306 |
| 35.11012  | 418.6667   | 3138.3333 | 0.88229782 | 35.11115  | 346.33333 | 5459.6667 | 0.94040096  | 35.11117  | -55.66667  | 5205.3333 | 1.0108098  | 35.111078 | 1933.3333 | -131.33333      | -0.072881983 | 35.11063  | 106.3333  | 3107.3333 | 0.96691215   | 35.11113  | 120        | 3019       | 0.96177126 |
| 35.611045 | 259.33333  | 3456.6667 | 0.9392171  | 35.611148 | 357.33333 | 5173      | 0.93338666  | 35.61117  | 100        | 5108.6667 | 0.98080123 | 35.611096 | 1854.6667 | -75.333333      | -0.037237954 | 35.611096 | 229.6667  | 3432.3333 | 0.93723882   | 35.611163 | 47         | 3319.6667  | 0.98603936 |
| 37.110778 | 172.33333  | 3550.3333 | 0.93537072 | 37.111181 | 407.33333 | 4977.3333 | 0.9243531   | 37.112103 | 87         | 4389      | 0.980563   | 37.111144 | 210.6667  | -72.66667       | -0.034795    | 37.111129 | 367.6667  | 3231.6667 | 0.89785145   | 37.111196 | -60.333333 | 2982.6667  | 1.0206456  |
| 38.11111  | 121.6667   | 3656      | 0.96779317 | 38.112124 | 292.33333 | 5101.6667 | 0.94580198  | 38.112137 | 31         | 4114.6667 | 0.99522137 | 38.111177 | 1836.6667 | -77.333333      | -0.01587902  | 38.111162 | 784       | 3471.6667 | 0.81577505   | 38.112129 | -65.333333 | 121.4348   |            |
| 39.111444 | 222.6667   | 2803      | 0.92545602 | 39.112148 | 219.33333 | 6107      | 0.9653301   | 39.112137 | -119.6667  | 3996.6667 | 1.0098058  | 39.112121 | 1849      | -218.33333      | -0.13389207  | 39.111196 | 741.33333 | 3462.6667 | 0.82366001   | 39.112126 | -64.333333 | 1718.6667  | 1.0200572  |
| 40.011177 | 129.6667   | 2635.6667 | 0.953076   | 40.012181 | 4.66667   | 5893      | 0.99920873  | 40.011243 | -152.6667  | 4316.6667 | 1.066365   | 40.011229 | 692       | 3828            | 0.84860265   | 40.011229 | 692       | 3828      | 0.84860265   | 40.011266 | 50.66667   | 3282.6667  | 0.9848     |
| 41.11121  | 33         | 2791.6667 | 0.98831721 | 41.111314 | -160      | 5983.6667 | 1.0274741   | 41.111316 | -54.66667  | 4418.3333 | 1.0125277  | 41.111276 | 2016      | -28             | -0.014084507 | 41.111262 | 367.6667  | 3469.3333 | 0.90417881   | 41.111329 | -57.66667  | 3520.3333  | 1.0166538  |
| 41.211243 | -111       | 3760.3333 | 1.02010105 | 41.211347 | 127.6667  | 5553.6667 | 0.97070883  | 41.21137  | -93        | 4536.3333 | 1.0209202  | 41.21131  | 2083.6667 | -54.66667       | -0.027710884 | 41.211295 | 270.6667  | 3498      | 0.93217973   | 41.211328 | 139        | 3215       | 0.95859585 |
| 43.111275 | -102.6667  | 3716      | 1.0204133  | 43.111348 | 495       | 5305.3333 | 0.91466508  | 43.111343 | 57.66667   | 4599.6667 | 0.9878952  | 43.111343 | 1768.3333 | -99             | -0.058672461 | 43.111328 | 487.6667  | 3488      | 0.87712106   | 43.111328 | 155.6667   | 3543.3333  | 0.95650794 |
| 44.111308 | 52         | 3449      | 0.9851471  | 44.111413 | 388       | 5138.3333 | 0.9297707   | 44.111436 | -148.33333 | 4809      | 1.0181266  | 44.111376 | 1693      | -167            | -0.1094364   | 44.111361 | 421.33333 | 3677      | 0.89719398   | 44.111429 | 128.6667   | 3373.3333  | 0.96325909 |
| 45.111341 | 224.6667   | 2957.3333 | 0.93293451 | 45.111449 | 154.33333 | 4959.6667 | 0.95082191  | 45.111469 | 53.33333   | 5363.3333 | 0.99015385 | 45.111409 | 1859.6667 | -44             | -0.02433523  | 45.111394 | 537.3333  | 3453.3333 | 0.86535459   | 45.111462 | 21.66667   | 3698.3333  | 0.99417563 |
| 46.111374 | 43.333333  | 3222      | 0.98672928 | 46.111448 | -3        | 5528      | 1.000543    | 46.111536 | 73.66667   | 5158.667  | 0.98592088 | 46.111447 | 2089.3333 | -52             | -0.05225252  | 46.11427  | 579       | 3521      | 0.85878049   | 46.11465  | -169.33333 | 3525       | 1.0504619  |
| 47.111407 | -29.333333 | 3456.6667 | 1.0085586  | 47.111513 | 215.33333 | 5988.3333 | 0.96328935  | 47.111535 | 57         | 4871.6667 | 0.98843501 | 47.111445 | 2134.3333 | -23.33333       | -0.01153336  | 47.111446 | 702.6667  | 3427.3333 | 0.92986279   | 47.111528 | -129       | 3513       | 1.0246587  |
| 48.11144  | 2          | 3464.6667 | 0.99942308 | 48.111546 | 510       | 6233.3333 | 0.92436975  | 48.111568 | -96.333333 | 4431      | 1.0022239  | 48.111548 | 2037      | 71              | 0.033681214  | 48.111493 | 718.33333 | 3335.3333 | 0.82279418   | 48.111561 | -241       | 2824.6667  | 1.0932783  |
| 49.111473 | 216.6667   | 3616.3333 | 0.94347335 | 49.111579 | 608.33333 | 5817      | 0.90532268  | 49.116102 | -77.333333 | 4330.6667 | 1.0181818  | 49.11501  | 1989      | 123             | 0.058238636  | 49.111526 | 422       | 2689.6667 | 0.86438186   | 49.115595 | -54.66667  | 2814       | 1.0119815  |
| 50.011506 | 251        | 3600      | 0.93482212 | 50.011612 | 575.33333 | 5525.667  | 0.90569852  | 50.011636 | -4.66667   | 4748      | 1.0035409  | 50.011574 | 1967.3333 | 135.33333       | 0.064362714  | 50.011559 | 805       | 2054.6667 | 0.71849866   | 50.011628 | 82.66667   | 3246.6667  | 0.9751702  |
| 51.011528 | 42.66667   | 3775      | 0.9272166  | 51.011649 | 555       | 5493.3333 | 0.92080283  | 51.011669 | -5.116667  | 4908      | 0.9809797  | 51.011592 | 2226      | 1034            | 0.91262696   | 51.011592 | 814       | 3121.2696 | 0.912696     | 51.011661 | 708        | 3265.6667  | 0.94603839 |
| 51.211571 | 116.6667   | 3978.3333 | 0.97149005 | 51.211679 | 984.3333  | 5208.6667 | 0.97857817  | 51.211702 | -320.6667  | 5022.6667 | 1.00618179 | 51.211625 | 3031.333  | 289.6667        | 0.087170218  | 51.211625 | 3031.333  | 289.6667  | 0.087170218  | 51.211625 | 3209.6667  | 0.92391096 |            |
| 51.311604 | 37         | 3772      | 0.99028616 | 51.311712 | 337.33333 | 5083.6667 | 0.91777286  | 51.311735 | -199.33333 | 5180.6667 | 1.0400161  | 51.311735 | 1580.6667 | -135.0415177171 |              | 51.311658 | 3664.6667 | -145.6667 | -0.041394316 | 51.311728 | 169.6667   | 2806.3333  | 0.9435733  |
| 51.411637 | 307.33333  | 3448.3333 | 0.91818681 | 51.411745 | 361       | 4537.6667 | 0.92630068  | 51.411769 | -251       | 5579.6667 | 1.0471037  | 51.411691 | 1315      | 0.0415177171    |              | 51.411891 | 116.6667  | 135       | 0.0415177171 | 51.411761 | 2902.6667  | 0.9657314  |            |
| 51.51167  | 334.33333  | 2765.3333 | 0.89213894 | 51.511782 | 287.33333 | 4879.3333 | 0.93448371  | 51.511802 | -24.66667  | 6201      | 1.0039937  | 51.511774 | 2016      | -28             | -0.014084507 | 51.511724 | 3284      | 195.33333 | 0.056141023  | 51.511794 | -22        | 3370       | 1.0065711  |
| 51.611703 | 396.33333  | 3061.3333 | 0.88537549 | 51.611835 | 624       | 5616      | 0.9         | 51.611835 | -238       | 5796      | 1.0428212  | 51.611757 | 2997      | 252             | 0.077562327  | 51.611827 | 204.6667  | 3488      | 0.93217973   | 51.611827 | 204.6667   | 3614.6667  | 0.94641299 |
| 51.711736 | 154        | 2937      | 0.95017794 | 51.711845 | 490.33333 | 5533.3333 | 0.91859886  | 51.711868 | -94.333333 | 5594.3333 | 1.0175155  | 51.711719 | 2833.6667 | 88.66667        | 0.030341052  | 51.71186  | 205.33333 | 3426      | 0.94345511   | 51.71186  | 205.33333  | 3426       | 0.94345511 |
| 51.811769 | 13.66667   | 3020.3333 | 0.9594955  | 51.811878 | 573.33333 | 5342.3333 | 0.93038221  | 51.811902 | -49        | 5404.6667 | 1.0091492  | 51.811823 | 2397.3333 | 31              | 0.01765957   | 51.811894 | 168.6667  | 3219.3333 | 0.95016445   | 51.811894 | 168.6667   | 3219.3333  | 0.95016445 |
| 51.911801 | 24.66667   | 2891      | 0.91565359 | 51.911911 | 443.33333 | 4781.6667 | 0.93151542  | 51.911935 | 99.66667   | 5174.3333 | 0.98110226 | 51.911856 | 2581.3333 | 31              | 0.0212244898 | 51.911927 | 18        | 2887.3333 | 0.9398045    | 51.911927 | 18         | 2887.3333  | 0.9398045  |
| 52.011841 | 113.6667   | 3253.3333 | 0.97149005 | 52.011948 | 437.6667  | 5213.6667 | 0.92052555  | 52.011968 | 36.011968  | 5204.6667 | 0.98498612 | 52.011889 | 2866      | -67.66667       | -0.02418356  | 52.011889 | 2866      | -67.66667 | -0.02418356  | 52.011889 | 2866       |            |            |

|           |            |           |            |           |            |           |            |           |            |           |            |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 43.014267 | 122        | 4862.3333 | 0.97552331 | 43.014295 | -43.333333 | 4474      | 1.0097803  | 43.014286 | 147.66667  | 1951      | 0.92963787 |
| 43.1143   | 208.33333  | 5154.3333 | 0.96115117 | 43.114328 | 54.666667  | 4114      | 0.98688629 | 43.114319 | 459.66667  | 2411      | 0.83987459 |
| 43.214333 | 263.33333  | 4847.6667 | 0.94847714 | 43.214362 | 38         | 3932.6667 | 0.99042982 | 43.214352 | 601        | 2766.6667 | 0.82133816 |
| 43.314366 | 372.66667  | 5491.3333 | 0.93844809 | 43.314395 | 6          | 3916.6667 | 0.9015143  | 43.314388 | 2673.3333  | 546       | 0.81114188 |
| 43.414399 | 510.66667  | 5250.6667 | 0.91136311 | 43.414428 | -42.333333 | 4261.6667 | 0.100333   | 43.414419 | 471.33333  | 2371      | 0.83417138 |
| 43.514433 | 651.66667  | 5059.6667 | 0.88589938 | 43.514461 | 23.333333  | 4555.3333 | 0.9949039  | 43.514452 | 512.66667  | 2120      | 0.80526716 |
| 43.614466 | 715.33333  | 4046      | 0.84976197 | 43.614495 | 81.333333  | 4636.6667 | 0.98276106 | 43.614485 | 528.33333  | 1839      | 0.77682343 |
| 43.714499 | 544.66667  | 4309.6667 | 0.88779784 | 43.714528 | 31.666667  | 4370      | 0.99280576 | 43.714518 | 558.66667  | 1919      | 0.77451904 |
| 43.814532 | 280.66667  | 4865.6667 | 0.94546279 | 43.814561 | -70.333333 | 4136.3333 | 0.1127979  | 43.814551 | 545.66667  | 1733      | 0.76053248 |
| 43.914565 | 196        | 5273.3333 | 0.96416382 | 43.914594 | -139.66667 | 4080.3333 | 1.0354424  | 43.914585 | 530.66667  | 1976      | 0.78829787 |
| 44.014598 | 356        | 5294.6667 | 0.93698858 | 44.014628 | -244.66667 | 3974.3333 | 1.0656001  | 44.014618 | 481.33333  | 1953.6667 | 0.8024894  |
| 44.114632 | 299.66667  | 4917.3333 | 0.94259598 | 44.114661 | -115.66667 | 3908.3333 | 1.0304975  | 44.114651 | 276.33333  | 2236.6667 | 0.89039847 |
| 44.214665 | 145        | 4811.3333 | 0.97070445 | 44.214694 | -179.66667 | 4131.3333 | 1.045466   | 44.214684 | 185.33333  | 2363      | 0.92722273 |
| 44.314698 | 128.33333  | 4436.3333 | 0.9718855  | 44.314727 | -56.333333 | 3967.3333 | 0.1044638  | 44.314718 | 70         | 2319      | 0.97069904 |
| 44.414731 | 283        | 3648      | 0.92800814 | 44.414761 | -73        | 4579      | 0.10162006 | 44.414751 | -74.333333 | 2274.3333 | 1.0337879  |
| 44.514764 | 362        | 3599.3333 | 0.90861663 | 44.514794 | 61         | 4502.3333 | 0.98663258 | 44.514784 | 200.33333  | 1949.6667 | 0.90682171 |
| 44.614798 | 494        | 3691      | 0.88195938 | 44.614827 | 121        | 4701      | 0.97490668 | 44.614817 | 144.66667  | 2205.3333 | 0.93843972 |
| 44.714831 | 797.33333  | 4291      | 0.84330167 | 44.71486  | 134        | 4204      | 0.96911019 | 44.71485  | 308.33333  | 2141      | 0.87411551 |
| 44.814864 | 1094.6667  | 4020.3333 | 0.78598892 | 44.814894 | 127        | 3740.3333 | 0.96716083 | 44.814884 | 65.333333  | 2500.3333 | 0.97435343 |
| 44.914897 | 873.33333  | 4540      | 0.83866995 | 44.914927 | 377        | 3837      | 0.91053631 | 44.914917 | 24.666667  | 2284.3333 | 0.98931716 |
| 45.01493  | 552.66667  | 4113.3333 | 0.92441777 | 45.01496  | 381        | 4054      | 0.91402945 | 45.01495  | 43.333333  | 1936.6667 | 0.99776747 |
| 45.114964 | 110        | 4126.6667 | 0.97303037 | 45.114993 | 155.66667  | 4697.3333 | 0.96792362 | 45.114983 | 224.66667  | 2048.3333 | 0.90155853 |
| 45.214997 | 50.666667  | 4102      | 0.987799   | 45.215027 | -149.33333 | 4679.6667 | 0.132963   | 45.215017 | 364        | 2100      | 0.85227273 |
| 45.31503  | 274.33333  | 4082.6667 | 0.93703619 | 45.31506  | -234.66667 | 4871      | 1.0506147  | 45.31505  | 536.33333  | 2402.3333 | 0.81749093 |
| 45.415063 | 116        | 4473.3333 | 0.974724   | 45.415093 | -135.66667 | 4219.3333 | 0.1322218  | 45.415083 | 423.33333  | 2119.3333 | 0.83350813 |
| 45.515096 | 162.66667  | 4476.6667 | 0.96493749 | 45.515126 | -73        | 4168.6667 | 0.1078237  | 45.515116 | 480.33333  | 2219      | 0.82205483 |
| 45.615129 | 411.33333  | 4953      | 0.92332307 | 45.61516  | 17.666667  | 3715.6667 | 0.99526786 | 45.61515  | 304        | 2289      | 0.88276128 |
| 45.715163 | 554.33333  | 5485      | 0.90821283 | 45.715193 | 102.33333  | 4068.3333 | 0.97546355 | 45.715183 | 142.33333  | 2300      | 0.9417224  |
| 45.815196 | 597.66667  | 5495.3333 | 0.90190929 | 45.815226 | -91.333333 | 3664.6667 | 0.10255997 | 45.815216 | 5          | 1900.6667 | 0.99737625 |
| 45.915229 | 305.66667  | 6143.3333 | 0.95260247 | 45.915259 | -778       | 3798.6667 | 0.10789523 | 45.915249 | 313.33333  | 1875.6667 | 0.84604042 |
| 46.015262 | 268.66667  | 5699      | 0.95497961 | 46.015292 | -405       | 3666.3333 | 1.1241823  | 46.015282 | 359.33333  | 1672.3333 | 0.82313373 |
| 46.115295 | 157        | 5677.6667 | 0.97257482 | 46.115326 | -256       | 4223.6667 | 0.10645215 | 46.115316 | 639        | 1964.3333 | 0.75454545 |
| 46.215328 | -69.333333 | 5151.6667 | 1.013642   | 46.215359 | 31.666667  | 4279      | 0.99265388 | 46.215349 | 506.66667  | 2021.6667 | 0.79960448 |
| 46.315362 | -24        | 5368.6667 | 1.0044905  | 46.315392 | 43.333333  | 4199      | 0.9897855  | 46.315382 | 517        | 2140      | 0.80541965 |
| 46.415395 | -22.666667 | 4916      | 1.0046322  | 46.415426 | -69.666667 | 3863      | 1.0183656  | 46.415415 | 188.66667  | 2423      | 0.92776005 |
| 46.515428 | 112.33333  | 4563.3333 | 0.97597491 | 46.515459 | -214.33333 | 3370.6667 | 1.06790508 | 46.515449 | 374.33333  | 2370.6667 | 0.86363084 |
| 46.615461 | 223.33333  | 4541.3333 | 0.95312719 | 46.615492 | -247.66667 | 3589      | 1.0741221  | 46.615482 | 663        | 2443.6667 | 0.78658798 |
| 46.715494 | 166        | 5991.6667 | 0.97013135 | 46.715525 | -208.66667 | 3511.3333 | 1.0631813  | 46.715515 | 874.66667  | 1866.6667 | 0.68093385 |
| 46.815528 | 121.66667  | 5052.3333 | 0.97948499 | 46.815559 | -146.66667 | 4327      | 0.8350549  | 46.815548 | 290        | 1931.6667 | 0.83316181 |
| 46.915561 | -169.66667 | 5378.3333 | 1.0325759  | 46.915592 | 52         | 4356.6667 | 0.98820505 | 46.915581 | -59.333333 | 1825.6667 | 1.03359312 |
| 47.015594 | 12.666667  | 4969.6667 | 0.99745768 | 47.015625 | 80         | 4246.6667 | 0.98151002 | 47.015615 | 59         | 2405      | 0.97605519 |
| 47.115627 | -40.333333 | 5707      | 1.0071176  | 47.115658 | 54.666667  | 3891      | 0.98614514 | 47.115648 | 285.33333  | 2428.6667 | 0.89486613 |
| 47.21566  | 311.33333  | 5448.3333 | 0.94594595 | 47.215691 | 52.666667  | 3774.3333 | 0.98623813 | 47.215681 | 680        | 2285      | 0.77065767 |
| 47.315693 | 241.66667  | 5369      | 0.95692728 | 47.315725 | 123.33333  | 3822.6667 | 0.96847472 | 47.315714 | 338.66667  | 2017.3333 | 0.85625354 |
| 47.415727 | 519.33333  | 5421      | 0.91257505 | 47.415758 | 78.666667  | 3725.3333 | 0.97932001 | 47.415748 | 503.66667  | 1769.6667 | 0.77844575 |
| 47.51576  | 728.66667  | 5424.3333 | 0.88157538 | 47.515791 | 84         | 4149.3333 | 0.98015748 | 47.515781 | 452        | 2017.3333 | 0.81695464 |
| 47.615793 | 622.33333  | 5336.6667 | 0.8956413  | 47.615824 | 43.666667  | 4147.3333 | 0.98959805 | 47.615814 | 751        | 1850.3333 | 0.7113019  |
| 47.715826 | 476.33333  | 4873.3333 | 0.91030618 | 47.715858 | 159        | 4127.3333 | 0.95290536 | 47.715847 | 448.33333  | 1948      | 0.81290861 |
| 47.815859 | 203        | 4761      | 0.95910556 | 47.815891 | 182.66667  | 3964.3333 | 0.95295209 | 47.81588  | 448.66667  | 1652      | 0.78641701 |
| 47.915893 | 394.33333  | 4845.3333 | 0.92474076 | 47.915924 | -13        | 4269      | 1.0030545  | 47.915914 | 391        | 1733.6667 | 0.81597113 |
| 48.015926 | 438.66667  | 4938.6667 | 0.91842301 | 48.015957 | -92.666667 | 4091.3333 | 1.0231744  | 48.015947 | 463.66667  | 1800.6667 | 0.79523038 |
| 48.115959 | 345.66667  | 4959.3333 | 0.93484134 | 48.115991 | -267       | 3730      | 0.10771008 | 48.11598  | 340.66667  | 2048      | 0.85738208 |
| 48.215992 | 244        | 5310.3333 | 0.95607034 | 48.216024 | -136.33333 | 3487      | 1.0406884  | 48.216013 | 244.33333  | 2223      | 0.90097271 |
| 48.316025 | 388.66667  | 5221.3333 | 0.93071895 | 48.316057 | -113.33333 | 3441      | 1.0340579  | 48.316047 | 375        | 2274.6667 | 0.85847276 |
| 48.416058 | 331.66667  | 4891.3333 | 0.93694882 | 48.41609  | -30        | 3500.3333 | 1.0086447  | 48.41608  | 542        | 2198      | 0.80218978 |
| 48.516092 | 389        | 4335.3333 | 0.91760634 | 48.516124 | 186.66667  | 3215      | 0.94499205 | 48.516113 | 620.33333  | 1975      | 0.76096125 |
| 48.616125 | 161.66667  | 4586.6667 | 0.94952397 | 48.616157 | 348        | 3589.3333 | 0.91161531 | 48.616146 | 412.33333  | 1984      | 0.82034834 |
| 48.716158 | 168.66667  | 4312.3333 | 0.96259599 | 48.71619  | 315.66667  | 3799      | 0.92328257 | 48.716179 | 338.33333  | 1881.6667 | 0.84759796 |
| 48.816191 | 143        | 4795.3333 | 0.97104286 | 48.816223 | 64         | 3943.6667 | 0.98403061 | 48.816213 | 536.66667  | 1898.6667 | 0.77963318 |
| 48.916224 | 338.66667  | 4792.6667 | 0.93400026 | 48.916257 | -181.33333 | 3899.6667 | 1.0487674  | 48.916246 | 838        | 2112      | 0.7159322  |
| 49.016257 | 349.33333  | 5091.6667 | 0.93579612 | 49.01629  | -295.66667 | 3796.3333 | 1.0844601  | 49.016279 | 774        | 2197.6667 | 0.73954041 |
| 49.116291 | 196.33333  | 5223.3333 | 0.96377391 | 49.116323 | -182.33333 | 4147.6667 | 1.0459818  | 49.116312 | 410.66667  | 2849.3333 | 0.87402603 |
| 49.216324 | -140.33333 | 4824.3333 | 1.0299601  | 49.216356 | -188       | 4738      | 1.0448687  | 49.216346 | 386.33333  | 2848      | 0.8055241  |
| 49.316357 | -92        | 5125.3333 | 1.0182781  | 49.31639  | -193.33333 | 4241      | 0.9777541  | 49.316379 | 449        | 2820      | 0.86264913 |
| 49.41639  | 15         | 4901      | 0.99846874 | 49.416423 | -118.66667 | 4215.6667 | 1.0871723  | 49.416412 | 799.33333  | 2211.6667 | 0.73673107 |
| 49.516423 | 417        | 5125      | 0.92475541 | 49.516454 | -124.66667 | 3980      | 1.08882    | 49.516445 | 776.33333  | 1825.6667 | 0.70163976 |
| 49.616457 | 235        | 4898.3333 | 0.95422078 | 49.616489 | 102.66667  | 4126      | 0.97575127 | 49.616478 | 734.66667  | 1495      | 0.67053081 |
| 49.71649  | 283.33333  | 4705.6667 | 0.94320839 | 49.716523 | 300.66667  | 3849      | 0.92754438 | 49.716512 | 418        | 1362      | 0.76516854 |
| 49.816523 | -48.666667 | 5491.3333 | 1.0089417  | 49.816556 | 355.33333  | 4001.3333 | 0.91843917 | 49.816545 | 259        | 1502.3333 | 0.85295231 |
| 49.916556 | 114.33333  | 5458.6667 | 0.97948442 | 49.916589 | -7.666667  | 4182.3333 | 1.0018365  | 49.916578 | 207        | 1820      | 0.89787864 |
| 50.016589 | -140.66667 | 6177.6667 | 1.0233008  | 50.016622 | -40.666667 | 4376.3333 | 1.0093796  | 50.016611 | 215        | 1991.3333 | 0.90255326 |
| 50.116622 | 133.33333  | 5613      | 0.9767968  | 50.116656 | -41.666667 | 4050.3333 | 1.0103941  | 50.116645 | 172        | 2466.6667 | 0.93481562 |
| 50.216656 | -81.333333 | 6034      | 1.0136663  | 50.216689 | -58        | 3839.6667 | 1.0153372  | 50.216678 | 181.33333  | 2648.6667 | 0.93592462 |
| 50.316689 | 408.66667  | 5309.3333 | 0.92854668 | 50.316722 | 96         | 3609      | 0.97408907 | 50.316711 | 172.33333  | 2587.6667 | 0.93756089 |
| 50.41672  | 164.66667  | 5218.6667 | 0.96841176 | 50.416755 | 123        | 3921.3333 | 0.96958708 | 50.416744 | 223.66667  | 2008      | 0.89977595 |
| 50.516755 | 375        | 5415      | 0.93523316 | 50.516789 | 218.66667  | 3745.     |            |           |            |           |            |

|           |            |            |            |           |             |           |            |           |            |           |            |
|-----------|------------|------------|------------|-----------|-------------|-----------|------------|-----------|------------|-----------|------------|
| 53.81785  | 199        | 4839.6667  | 0.96050542 | 53.817886 | -23         | 3650.3333 | 1.0063407  | 53.817874 | -32.666667 | 3797.3333 | 1.0086772  |
| 53.917883 | -124       | 5170.6667  | 1.0245707  | 53.917919 | -113.333333 | 3489.6667 | 1.033567   | 53.917907 | -28.333333 | 3154      | 1.0006467  |
| 54.017916 | 223.33333  | 4739       | 0.95499429 | 54.017952 | -148        | 3603      | 1.0428365  | 54.01794  | 177        | 3210      | 0.9474136  |
| 54.11795  | 183.33333  | 4625       | 0.96187175 | 54.117985 | -130.33333  | 3734.3333 | 1.0361635  | 54.117973 | 107.33333  | 3031.6667 | 0.9854269  |
| 54.217983 | 113.66667  | 4776.6667  | 0.97675887 | 54.218019 | -200.33333  | 4186.6667 | 1.052035   | 54.218007 | 31         | 3291.3333 | 0.99066921 |
| 54.318016 | -111.33333 | 5235       | 1.0217292  | 54.318052 | -208.33333  | 4102.6667 | 1.0534965  | 54.31804  | 154.66667  | 2985      | 0.95073787 |
| 54.418049 | -42.333333 | 5108.3333  | 1.0083564  | 54.418085 | -90         | 3823      | 1.0241093  | 54.418073 | 262.66667  | 3235.6667 | 0.92491663 |
| 54.518082 | 100.66667  | 5410.6667  | 0.98173461 | 54.518118 | -39         | 3515      | 1.0112198  | 54.518106 | 346.66667  | 3530      | 0.9105761  |
| 54.618115 | 346.66667  | 5089       | 0.93622371 | 54.618152 | -90         | 3742.3333 | 1.0246418  | 54.61814  | 183.66667  | 3911      | 0.9551449  |
| 54.718149 | 340.33333  | 5334       | 0.94002232 | 54.718185 | -126        | 3680.6667 | 1.0354464  | 54.718173 | 21         | 3914.3333 | 0.99466373 |
| 54.818218 | 122.66667  | 4961.3333  | 0.97587202 | 54.818218 | -154        | 3892.3333 | 1.0411948  | 54.818206 | 13.666667  | 3740      | 0.96395312 |
| 54.918215 | 11         | 4937.6667  | 0.99777718 | 54.918251 | -191.66667  | 3299.3333 | 1.0616754  | 54.918239 | -28        | 4082.3333 | 1.0009602  |
| 55.018248 | 59         | 5225.6667  | 0.98803563 | 55.018285 | -186.66667  | 3080.3333 | 1.0642865  | 55.018272 | 40.666667  | 3726.3333 | 0.98902645 |
| 55.118281 | 21         | 5081.6667  | 0.99588405 | 55.118318 | -118.33333  | 2731      | 1.0686891  | 55.118306 | 156.66667  | 3392.6667 | 0.95586026 |
| 55.218315 | -152.66667 | 4849       | 1.0325076  | 55.218351 | -97.333333  | 3006.3333 | 1.0334594  | 55.218339 | 44         | 2924      | 0.9851752  |
| 55.318348 | -133.33333 | 5044       | 1.0271518  | 55.318384 | -166        | 2935.6667 | 1.059935   | 55.318372 | 3          | 2914.6667 | 0.99897178 |
| 55.418381 | 49         | 5295.6667  | 0.99083198 | 55.418418 | -44.333333  | 3000.3333 | 1.0149977  | 55.418405 | -128.33333 | 3267      | 1.0408879  |
| 55.518414 | 251.33333  | 5033.3333  | 0.95244102 | 55.518451 | -110.66667  | 3148.3333 | 1.0364315  | 55.518439 | -94.666667 | 3270.6667 | 1.0298069  |
| 55.618447 | 280.66667  | 5028.3333  | 0.9471138  | 55.618484 | 15.333333   | 3588.6667 | 0.99574547 | 55.618472 | -21.666667 | 2995.3333 | 1.0072862  |
| 55.71848  | 218.33333  | 4893       | 0.95728447 | 55.718517 | -110        | 3773      | 1.03003    | 55.718505 | -75.666667 | 3110.6667 | 1.0249314  |
| 55.818514 | 137.66667  | 5460.3333  | 0.97540788 | 55.818551 | -119.66667  | 3654      | 1.0338847  | 55.818538 | -46.333333 | 2842.6667 | 1.0165693  |
| 55.918547 | 89.333333  | 5075.6667  | 0.98270941 | 55.918584 | -284        | 3173.6667 | 1.0082812  | 55.918571 | -107.33333 | 3076.3333 | 1.0361513  |
| 56.01858  | 127        | 5065       | 0.97553029 | 56.018617 | -289.33333  | 2888.6667 | 1.1113106  | 56.018605 | -61.666667 | 3054.3333 | 1.026059   |
| 56.118615 | 55.333333  | 4788       | 0.98857536 | 56.11865  | -371.66667  | 2852      | 1.1498455  | 56.118638 | -48.666667 | 3217.6667 | 1.0153571  |
| 56.218646 | 39.666667  | 4569.6667  | 0.99119427 | 56.218684 | -214.66667  | 3626.6667 | 1.0629152  | 56.218671 | -107.66667 | 3332      | 1.0333919  |
| 56.318679 | 57         | 4501.6667  | 0.98749634 | 56.318717 | -177.33333  | 3673.6667 | 1.0507198  | 56.318704 | -135.33333 | 2979.3333 | 1.0475856  |
| 56.418713 | 466        | 4605.6667  | 0.90811699 | 56.41875  | -16.333333  | 3593      | 1.0045666  | 56.418738 | -224.33333 | 3319.6667 | 1.0724747  |
| 56.518746 | 599.66667  | 5243       | 0.89736422 | 56.518783 | 4           | 3316.6667 | 0.99879542 | 56.518771 | -163.33333 | 3422.3333 | 1.0501126  |
| 56.618779 | 749.33333  | 5325       | 0.87636941 | 56.618816 | 60.666667   | 3537.6667 | 0.98314034 | 56.618804 | -51.666667 | 3738.6667 | 1.0140132  |
| 56.718812 | 548        | 6259.64284 | 0.941413   | 56.71885  | 208.33333   | 3503.6667 | 0.94387572 | 56.718837 | 54.333333  | 3435.6667 | 0.98571298 |
| 56.818845 | 419.33333  | 4703.6667  | 0.91814692 | 56.818883 | 212.33333   | 3154.6667 | 0.93893694 | 56.81887  | 293.33333  | 3473      | 0.9322117  |
| 56.918879 | 469.33333  | 4400.6667  | 0.90362765 | 56.918916 | 395         | 3328.3333 | 0.89391226 | 56.918904 | 288.33333  | 3216.3333 | 0.91772874 |
| 57.018912 | 493        | 4208       | 0.8951287  | 57.018949 | 359         | 3429      | 0.90522703 | 57.018937 | 356        | 3189      | 0.89957687 |
| 57.118945 | 371.33333  | 4571.6667  | 0.92487693 | 57.118983 | 337.66667   | 3345      | 0.91303228 | 57.11897  | 172.33333  | 3167      | 0.94839289 |
| 57.218978 | 479        | 5012.3333  | 0.91277164 | 57.219016 | 183         | 3283      | 0.94720138 | 57.219003 | 10         | 3547.6667 | 0.99718917 |
| 57.319011 | 729        | 4981.6667  | 0.87234415 | 57.319049 | -37.333333  | 3308.3333 | 1.0114134  | 57.319037 | -127.33333 | 3120.3333 | 1.0425437  |
| 57.419044 | 849.66667  | 5703.3333  | 0.87033928 | 57.419082 | -100        | 3349.3333 | 1.0307755  | 57.41907  | -208.33333 | 2831.3333 | 1.0794256  |
| 57.519078 | 533.66667  | 5448       | 0.91078295 | 57.519116 | -159.33333  | 3475.3333 | 1.0480499  | 57.519103 | 60         | 2685      | 0.97814208 |
| 57.619111 | 389        | 5835       | 0.93848407 | 57.619149 | -109.66667  | 3533.3333 | 1.0730319  | 57.619136 | 16.333333  | 3483.3333 | 0.99533389 |
| 57.719144 | 215.66667  | 4976       | 0.95849057 | 57.719182 | -118.33333  | 3203.3333 | 1.0714235  | 57.719169 | 206        | 2873.6667 | 0.94950568 |
| 57.819177 | 152.33333  | 5055.3333  | 0.97074826 | 57.819215 | -222.33333  | 2960      | 1.0812127  | 57.819203 | -19.333333 | 3968.6667 | 1.0048953  |
| 57.91921  | -122.33333 | 4485       | 1.028041   | 57.919249 | -36.333333  | 2902      | 1.0126788  | 57.919236 | 109.66667  | 3410.3333 | 0.9688447  |
| 58.019244 | 95.666667  | 4461       | 0.97900512 | 58.019282 | 2.6666667   | 3654.6667 | 0.99927087 | 58.019269 | 8.6666667  | 3248.6667 | 0.99733934 |
| 58.119277 | 235.33333  | 4979.6667  | 0.95487376 | 58.119315 | 39.333333   | 3853      | 0.98898466 | 58.119302 | 98.333333  | 3114.6667 | 0.96939157 |
| 58.21931  | 243.66667  | 5147       | 0.95479842 | 58.219348 | -118.66667  | 3525.3333 | 1.0348337  | 58.219336 | 229        | 3336.6667 | 0.95377639 |
| 58.319343 | 441.33333  | 4963       | 0.91833714 | 58.319382 | -106.33333  | 2772.6667 | 1.039988   | 58.319369 | 271.66667  | 3424.6667 | 0.92650374 |
| 58.419376 | 643.33333  | 4324.6667  | 0.87504566 | 58.419415 | -109        | 2648.6667 | 1.042919   | 58.419402 | 89.666667  | 3497.3333 | 0.97500232 |
| 58.519449 | 772.66667  | 4990       | 0.86591256 | 58.519488 | -133.33333  | 2671      | 1.031541   | 58.519475 | -91        | 3345      | 1.0436616  |
| 58.619483 | 449.33333  | 5502.3333  | 0.92450294 | 58.619521 | -4          | 2940.3333 | 1.0013622  | 58.619508 | -327       | 3648.3333 | 1.0984544  |
| 58.719476 | 445        | 6199.6667  | 0.931029   | 58.719515 | -27.666667  | 3180      | 1.0087766  | 58.719502 | -111.66667 | 3724.6667 | 1.0309069  |
| 58.819509 | 385        | 5541.6667  | 0.93503937 | 58.819548 | 24.666667   | 3772.6667 | 0.99350421 | 58.819535 | -158.33333 | 3623.3333 | 1.045695   |
| 58.919542 | 544        | 4920.3333  | 0.9004531  | 58.919581 | -38         | 3847.3333 | 1.0099755  | 58.919568 | -101.66667 | 3350      | 1.0312981  |
| 59.019575 | 492.66667  | 4507       | 0.9014601  | 59.019614 | -51         | 3447.6667 | 1.0150147  | 59.019601 | -246       | 2994.6667 | 1.0884979  |
| 59.119608 | 592        | 5229.3333  | 0.89830508 | 59.119646 | -83.666667  | 3236      | 1.0265412  | 59.119635 | -174.33333 | 3361.6667 | 1.0546957  |
| 59.219642 | 481        | 5544.6667  | 0.90217481 | 59.219681 | -139        | 3434      | 1.0421851  | 59.219668 | 105.66667  | 3596.3333 | 1.0302712  |
| 59.319675 | 259.66667  | 4901.3333  | 0.94608675 | 59.319714 | -75.333333  | 3626.3333 | 1.0221247  | 59.319701 | 52         | 3854.3333 | 1.0119701  |
| 59.419708 | 62.666667  | 4255.3333  | 0.98080436 | 59.419747 | -15.666667  | 3511.3333 | 1.0044817  | 59.419734 | 52         | 3464      | 0.98512047 |
| 59.519741 | 5.6666667  | 4598.6667  | 0.99876028 | 59.519781 | 23.333333   | 3242.6667 | 0.99285568 | 59.519767 | 162.66667  | 2969.6667 | 0.94808583 |
| 59.619774 | 78         | 5176       | 0.98515417 | 59.619814 | -4.6666667  | 2720      | 1.0017186  | 59.619801 | 291.66667  | 2994.6667 | 0.91124861 |
| 59.719808 | 38         | 5058       | 0.99254317 | 59.719847 | -5          | 2497.3333 | 1.0020062  | 59.719834 | 480        | 3261.3333 | 0.87170349 |
| 59.819841 | 107.66667  | 4962.3333  | 0.97873937 | 59.81988  | 47.666667   | 2255.3333 | 0.97930236 | 59.819867 | 345.33333  | 3333.6667 | 0.90613391 |
| 59.919874 | -87        | 4646.3333  | 1.0190817  | 59.919914 | -27.666667  | 2587.6667 | 1.0108073  | 59.9199   | 73.333333  | 3403      | 0.97800498 |
| 60.019947 | 315.66667  | 5202       | 0.94278983 | 60.019987 | -70.333333  | 3106.6667 | 1.0231639  | 60.019974 | -246.33333 | 3288.3333 | 1.0809774  |
| 60.11994  | 225.33333  | 5433       | 0.96017673 | 60.11998  | -105.33333  | 3573.6667 | 1.03037    | 60.119967 | -259       | 3617.3333 | 1.0772126  |
| 60.219973 | 596.66667  | 6173.6667  | 0.91187942 | 60.220013 | -55.666667  | 4162.6667 | 1.031541   | 60.220001 | -86        | 3608      | 1.08069127 |
| 60.320007 | 359.66667  | 6025.6667  | 0.934673   | 60.320047 | 94.333333   | 3951.3333 | 0.97668287 | 60.320033 | 33.666667  | 3678.6667 | 0.99093113 |
| 60.42004  | 313.33333  | 6013.6667  | 0.95047679 | 60.42008  | 11          | 3559.3333 | 0.99691906 | 60.420066 | -50.666667 | 3818      | 1.0134489  |
| 60.520073 | 204        | 6043.6667  | 0.96734781 | 60.520113 | 179.33333   | 3206.3333 | 0.9470316  | 60.5201   | 102.33333  | 3863      | 0.97419301 |
| 60.620106 | 258.66667  | 5882.6667  | 0.95788102 | 60.620146 | 67.333333   | 3220.3333 | 0.97951942 | 60.620133 | -9         | 3971.3333 | 1.0022714  |
| 60.720139 | 748        | 5328.6667  | 0.8769062  | 60.72018  | 189.33333   | 3465      | 0.94818936 | 60.720166 | 153.33333  | 3707.3333 | 0.9602832  |
| 60.820173 | 632        | 4810.3333  | 0.88387334 | 60.820213 | 93.666667   | 3187.3333 | 0.97145179 | 60.820199 | -31.333333 | 3446.3333 | 1.0001752  |
| 60.920206 | 539.66667  | 4989.6667  | 0.90239932 | 60.920246 | 56.666667   | 2872.6667 | 0.98065544 | 60.920233 | -208.66667 | 3060.6667 | 1.073165   |
| 61.020239 | 77.666667  | 5383       | 0.98877707 | 61.020279 | -77.333333  | 2654      | 1.0003129  | 61.020266 | -287.33333 | 3211.3333 | 1.0982672  |
| 61.120272 | -114.33333 | 5880       | 1.0197991  | 61.120313 | -230.66667  | 3166      | 1.0785828  | 61.120299 | -241       | 3296.3333 | 1.0708785  |
| 61.220305 | 245.66667  | 5611       | 0.9580535  | 61.220346 | -254        | 3254.6667 | 1.0846479  | 61.220332 | -174.66667 | 3098.3333 | 1.0597423  |
| 61.320338 | 573        | 5166       | 0.90015682 | 61.320379 | -200.66667  | 3490.3333 | 1.0609991  | 61.320365 |            |           |            |

|           |            |           |             |           |            |            |              |           |           |            |              |
|-----------|------------|-----------|-------------|-----------|------------|------------|--------------|-----------|-----------|------------|--------------|
| 64.621433 | 82.333333  | 4585.3333 | 0.98236092  | 64.621476 | 34.333333  | 2543       | 0.98667874   | 64.621462 | 2843.6667 | -35.666667 | -0.012701804 |
| 64.721466 | 267.33333  | 4742.6667 | 0.94664005  | 64.721509 | 86.333333  | 2605.6667  | 0.96792967   | 64.721495 | 2682.6667 | -55.666667 | -0.021190204 |
| 64.8215   | 538.33333  | 4679.3333 | 0.89862489  | 64.821543 | 32         | 2775       | 0.94885993   | 64.821528 | 2704.6667 | -79        | -0.029415415 |
| 64.921533 | 884.33333  | 4125      | 0.823278849 | 64.921576 | -49.666667 | 3348       | 0.91163021   | 64.921561 | 3113.3333 | 14         | 0.004460885  |
| 65.021566 | 705        | 4254      | 0.85783824  | 65.021609 | -44.333333 | 3335       | 1.0134724    | 65.021595 | 3195.6667 | -68.666667 | -0.021952259 |
| 65.121599 | 581.33333  | 4380.3333 | 0.88283507  | 65.121642 | 114.66667  | 3195.6667  | 0.96536099   | 65.121628 | 3205.3333 | -0.6666667 | -0.00202003  |
| 65.221632 | 340.66667  | 4490.6667 | 0.92948806  | 65.221676 | 59.666667  | 2975       | 0.98033831   | 65.221661 | 3316      | -100.66667 | -0.031308314 |
| 65.321666 | 235.66667  | 4155.6667 | 0.94633369  | 65.321709 | 90         | 3344       | 0.9737915    | 65.321694 | 3004.6667 | 10.333333  | 0.003427308  |
| 65.421699 | 587        | 4588.3333 | 0.88657735  | 65.421742 | -141.33333 | 3420       | 1.043107     | 65.421728 | 2762.3333 | -59.666667 | -0.022076961 |
| 65.521732 | 535.66667  | 4580.3333 | 0.8952958   | 65.521775 | -104       | 3638       | 1.0294284    | 65.521761 | 2327.6667 | -103       | -0.046239071 |
| 65.621765 | 645.33333  | 5123      | 0.88812482  | 65.621809 | -59        | 3115.3333  | 1.0193042    | 65.621794 | 2053.3333 | -103.33333 | -0.052991453 |
| 65.721798 | 85         | 5109      | 0.93836496  | 65.721842 | 20.666667  | 3198.6667  | 0.99358045   | 65.721827 | 2056      | 92         | -0.046843177 |
| 65.821831 | 56         | 5511      | 0.98994072  | 65.821875 | 197.66667  | 3145.6667  | 0.94807737   | 65.82186  | 2223      | -54.666667 | -0.025213376 |
| 65.921865 | -1.666667  | 5729.6667 | 1.000291    | 65.921908 | -34        | 3409.6667  | 1.0100721    | 65.921894 | 2572.3333 | -97.333333 | -0.039326599 |
| 66.021898 | 239.33333  | 6157.3333 | 0.96258468  | 66.021941 | 1.6666667  | 3642.3333  | 0.99954263   | 66.021927 | 2833.3333 | -102       | -0.037344398 |
| 66.121931 | 534.33333  | 6016      | 0.91842854  | 66.121975 | -111.66667 | 3523.3333  | 1.0327308    | 66.12196  | 2758.3333 | -66        | -0.024514052 |
| 66.221964 | 847.66667  | 5361      | 0.86347042  | 66.222008 | 1.3333333  | 3273.3333  | 0.99959283   | 66.221993 | 2785      | -79        | -0.021943483 |
| 66.321997 | 671        | 5520.3333 | 0.89162227  | 66.322041 | 291.66667  | 2961.6667  | 0.91034836   | 66.322027 | 2569.3333 | 1          | 0.000389055  |
| 66.422031 | 365        | 5098.3333 | 0.93319097  | 66.422074 | 223        | 2971.3333  | 0.93018888   | 66.42206  | 2709      | 11         | 0.004044118  |
| 66.522064 | 72         | 5265.6667 | 0.98651096  | 66.522108 | 132.66667  | 3573.6667  | 0.96420541   | 66.522093 | 2988      | 46         | 0.015161503  |
| 66.622097 | 441.33333  | 4989.6667 | 0.93787811  | 66.622141 | -40.666667 | 3548.3333  | 1.0131997    | 66.622126 | 2882.6667 | 125        | 0.041560467  |
| 66.72213  | 353        | 4863.3333 | 0.93232794  | 66.722174 | 111        | 3721       | 0.9710334    | 66.722159 | 2838.3333 | 52         | 0.017981004  |
| 66.822163 | 538.66667  | 5099.6667 | 0.9046349   | 66.822207 | 217.33333  | 3191.3333  | 0.93624095   | 66.822193 | 2635.6667 | 57.666667  | 0.021410891  |
| 66.922196 | 400.66667  | 5524.6667 | 0.93238074  | 66.922241 | 113.33333  | 3074       | 0.96444259   | 66.922226 | 3050.3333 | -18.333333 | -0.006046614 |
| 67.02223  | 384        | 5843      | 0.93833307  | 67.022274 | -17        | 2730.6667  | 1.0062646    | 67.022259 | 2808.3333 | 14         | 0.004960435  |
| 67.122263 | 104.33333  | 5653.6667 | 0.98188028  | 67.122307 | -193       | 3005       | 1.0686344    | 67.122292 | 3222      | -77        | -0.024483307 |
| 67.222296 | 232        | 4703      | 0.95298886  | 67.22234  | -264.33333 | 3309.6667  | 1.0867995    | 67.222326 | 2604      | -158.66667 | -0.06485496  |
| 67.322329 | 415.66667  | 4657.3333 | 0.91806295  | 67.322374 | -283.33333 | 3410       | 1.0906183    | 67.322359 | 2635      | -99.333333 | -0.039174445 |
| 67.422362 | 559        | 4711.3333 | 0.89393446  | 67.422407 | -21        | 3516.3333  | 1.000608     | 67.422392 | 2167.6667 | -127.66667 | -0.062581899 |
| 67.522395 | 102.33333  | 5087.3333 | 0.98082813  | 67.52244  | -46.666667 | 3371       | 1.0148179    | 67.522425 | 2377      | -100       | -0.043917485 |
| 67.622429 | -79.666667 | 4697      | 0.91725338  | 67.622473 | 129.66667  | 3244       | 0.96156506   | 67.622458 | 2356.6667 | -212       | -0.09848486  |
| 67.722462 | -54        | 4840      | 1.0112829   | 67.722507 | 28         | 2456.3333  | 0.98872937   | 67.722492 | 2520.3333 | -175.33333 | -0.074769012 |
| 67.822495 | 232.66667  | 4606.6667 | 0.95192175  | 67.82254  | 135        | 2066.6667  | 0.93868282   | 67.822525 | 2896.6667 | -30.333333 | -0.010582626 |
| 67.922528 | 331        | 5023.3333 | 0.93818091  | 67.922573 | -26        | 2309.6667  | 1.0113852    | 67.922558 | 3004.6667 | 15.666667  | 0.005187065  |
| 68.022561 | 483.33333  | 4517      | 0.90333978  | 68.022606 | -97        | 3159.6667  | 1.0316717    | 68.022591 | 3137.3333 | 25         | 0.007905555  |
| 68.122595 | 592        | 4385      | 0.88105284  | 68.12264  | -97.333333 | 3331.3333  | 1.0300969    | 68.122625 | 2987.6667 | -57        | -0.0194495   |
| 68.222628 | 457.33333  | 4188      | 0.90154994  | 68.222673 | 9.3333333  | 3505.3333  | 0.99734446   | 68.222658 | 3228.3333 | 52         | 0.015852048  |
| 68.322661 | 475.33333  | 4309.3333 | 0.90065487  | 68.322706 | 113.33333  | 3406.3333  | 0.96779998   | 68.322691 | 2850.6667 | 122        | 0.041040592  |
| 68.422694 | 374.33333  | 4417      | 0.91873823  | 68.422738 | 138        | 3690.6667  | 0.96395612   | 68.422724 | 2676.6667 | -17        | -0.060313778 |
| 68.522737 | 413        | 4732      | 0.91872789  | 68.522779 | 21         | 3541.6667  | 0.99410554   | 68.522757 | 2477      | 14         | -0.005684125 |
| 68.62276  | 316.33333  | 5180      | 0.94244648  | 68.622806 | 15.666667  | 3981.6667  | 0.99608072   | 68.622791 | 2981      | -50.666667 | -0.017290411 |
| 68.722794 | 93.666667  | 5557.6667 | 0.98342574  | 68.722839 | 114.66667  | 3912       | 0.97152318   | 68.722824 | 3335.6667 | 107.66667  | 0.031268151  |
| 68.822827 | 397        | 5519.6667 | 0.93290141  | 68.822872 | 265.33333  | 4129       | 0.93961921   | 68.822857 | 3325.6667 | -46        | -0.014025816 |
| 68.92286  | 610        | 5774.3333 | 0.90445361  | 68.922906 | 138.33333  | 3353       | 0.96037808   | 68.92289  | 3087.6667 | -15        | -0.004881753 |
| 69.022893 | 703        | 5944.6667 | 0.89424861  | 69.022939 | -72.333333 | 3254.3333  | 1.022732     | 69.022924 | 2944      | -111.66667 | -0.03942568  |
| 69.122926 | 330        | 5659.3333 | 0.94480205  | 69.122972 | -216.66667 | 3022.6667  | 1.0772155    | 69.122957 | 2703      | 15.666667  | 0.005762629  |
| 69.22296  | -95        | 5383      | 1.0179652   | 69.223005 | -65.666667 | 3198       | 1.0209641    | 69.22299  | 2526.3333 | 74.333333  | 0.028582415  |
| 69.322993 | 11.666667  | 5123.3333 | 0.99772801  | 69.323039 | 472.66667  | 2851.6667  | 0.8578161    | 69.323023 | 2390.3333 | 181.66667  | 0.070634852  |
| 69.423026 | 212.33333  | 5183.3333 | 0.96064743  | 69.423072 | 1611.6667  | 1937.6667  | 0.54592412   | 69.423056 | 3031.6667 | 59.666667  | 0.019301272  |
| 69.523059 | 353.66667  | 4900      | 0.93268194  | 69.523105 | 2646.6667  | 1051       | 0.2842333    | 69.52309  | 3467.3333 | 70.333333  | 0.019881278  |
| 69.623092 | 124        | 5311.6667 | 0.97640642  | 69.623138 | 3407       | 328.33333  | 0.08789934   | 69.623123 | 3379.6667 | 47         | 0.013715953  |
| 69.723125 | 62         | 5443.3333 | 0.98867649  | 69.723172 | 3203       | 147        | 0.043880597  | 69.723156 | 3379.3333 | -25.333333 | -0.00755317  |
| 69.823159 | -22.333333 | 5270.3333 | 1.0042556   | 69.823205 | 3426.3333  | 97.333333  | 0.02762741   | 69.823189 | 3088      | -30.333333 | -0.009920419 |
| 69.923192 | 130        | 4627.6667 | 0.97676568  | 69.923238 | 3309.6667  | 137.66667  | 0.039934249  | 69.923223 | 3857.6667 | -65.333333 | -0.01722774  |
| 70.023225 | 78.666667  | 5013.3333 | 0.98455093  | 70.023271 | 3590.6667  | 19.666667  | 0.005447327  | 70.023256 | 3901.6667 | 151        | 0.037259418  |
| 70.123258 | 105        | 5156.3333 | 0.98040408  | 70.123305 | 3764.6667  | 189        | -0.023857276 |           |           |            |              |
| 70.223291 | 0.6666667  | 5868.3333 | 1.0001136   | 70.223338 | 3836.3333  | -216.33333 | -0.059760589 |           |           |            |              |
| 70.323324 | 293.33333  | 6154.6667 | 0.95450786  | 70.323371 | 3559.3333  | -139.33333 | -0.040740741 |           |           |            |              |
| 70.423358 | 457        | 6257.6667 | 0.93194003  | 70.423404 | 3528       | 130        | 0.035538546  |           |           |            |              |
| 70.523391 | 479        | 6445.6667 | 0.930827    | 70.523438 | 3233       | 112.33333  | 0.033579115  |           |           |            |              |
| 70.623424 | 258.33333  | 5148.3333 | 0.95221948  | 70.623471 | 3676.6667  | 222.66667  | 0.057103778  |           |           |            |              |
| 70.723457 | 222.66667  | 5508.3333 | 0.96114698  | 70.723504 | 3226       | 40         | 0.012247397  |           |           |            |              |
| 70.82349  | 263        | 4737      | 0.9474      | 70.823537 | 3473.3333  | 297.66667  | 0.078935738  |           |           |            |              |
| 70.923524 | 228.33333  | 5460.3333 | 0.95986171  | 70.92357  | 3127       | 376.33333  | 0.1074215    |           |           |            |              |
| 71.023557 | 47         | 5164      | 0.99989862  | 71.023604 | 3651.3333  | 418.66667  | 0.01876665   |           |           |            |              |
| 71.12359  | 128        | 5428.3333 | 0.9706623   | 71.123637 | 3716.3333  | 161.66667  | 0.04168815   |           |           |            |              |
| 71.223623 | 22         | 4884.3333 | 0.995516    | 71.22367  | 3766.6667  | 53         | 0.013875556  |           |           |            |              |
| 71.323656 | 128        | 5041      | 0.97523899  | 71.323703 | 3185       | 69.333333  | 0.021304927  |           |           |            |              |
| 71.423689 | 323.33333  | 4869.6667 | 0.9377367   | 71.423737 | 3227.6667  | 102.33333  | 0.030730731  |           |           |            |              |
| 71.523723 | 465.33333  | 4756.6667 | 0.91088983  | 71.52377  | 3010.6667  | 4          | 0.001326847  |           |           |            |              |
| 71.623756 | 592.33333  | 4002      | 0.87107306  | 71.623803 | 3196.6667  | -38.333333 | -0.012137203 |           |           |            |              |
| 71.723789 | 301.66667  | 3913.3333 | 0.92843021  | 71.723836 | 2911.3333  | -87.333333 | -0.039295401 |           |           |            |              |
| 71.823822 | 484        | 4575.3333 | 0.90433522  | 71.82387  | 3050.3333  | -50.333333 | -0.016777778 |           |           |            |              |
| 71.923855 | 548.66667  | 5103.6667 | 0.90293894  | 71.923903 | 3070.3333  | 40         | -0.019931348 |           |           |            |              |
| 72.023889 | 458        | 4847.3333 | 0.91367178  | 72.023936 | 3296.6667  | 101.66667  | 0.029916626  |           |           |            |              |
| 72.123922 | 156        | 4165.3333 | 0.96390003  | 72.123969 | 3490       | 269.33333  | 0.071643908  |           |           |            |              |
| 72.223955 | 128        | 4061.3333 | 0.96944621  | 72.224003 | 3831       | 207.66667  | 0.05141961   |           |           |            |              |
| 72.323988 | 170.33333  | 4965.3333 | 0.96683326  | 72.324036 | 3456.6667  | 64.333333  | 0.018271324  |           |           |            |              |
| 72.424021 | 491.33333  | 5645.6667 | 0.91993917  | 72.424069 | 3279       | -46        | -0.014228271 |           |           |            |              |
| 72.524054 | 2371.3333  | 3919.3333 | 0.62303942  | 72.524102 | 2843.6667  | 62         | 0.021337616  |           |           |            |              |
| 72.624088 | 3763.6667  | 1974.3333 | 0.34480804  | 72.624136 | 3323.6667  | 119        | 0.034566228  |           |           |            |              |
| 72.724121 | 5006       | 157.33333 | 0.027299017 | 72.724    |            |            |              |           |           |            |              |

|           |           |            |              |
|-----------|-----------|------------|--------------|
| 75.425017 | 5265.3333 | 73.666667  | 0.01379784   |
| 75.52505  | 5459.3333 | 63.333333  | 0.01146789   |
| 75.625083 | 5420.3333 | 257.33333  | 0.045321783  |
| 75.725116 | 4099      | 660.66667  | 0.11671243   |
| 75.825149 | 5220.3333 | 583.66667  | 0.10056283   |
| 75.925182 | 5140      | 64.666667  | 0.012424747  |
| 76.025216 | 5507.3333 | -88.333333 | -0.03630067  |
| 76.125249 | 5210      | 8          | 0.001533155  |
| 76.225282 | 4827.6667 | 80.666667  | 0.016434635  |
| 76.325315 | 4823      | -106       | -0.02247191  |
| 76.425348 | 5040.3333 | 41         | 0.008068748  |
| 76.525382 | 5155.6667 | 82.666667  | 0.015781101  |
| 76.625415 | 4836.3333 | 69.333333  | 0.014133315  |
| 76.725448 | 4472.3333 | -155.33333 | -0.035981777 |
| 76.825481 | 4169      | -123       | -0.030400395 |
| 76.925514 | 3774.6667 | -12.666667 | -0.003367003 |
| 77.025547 | 3792      | 0          | 0            |
| 77.125581 | 3716      | 202.66667  | 0.051718272  |
| 77.225614 | 4661      | 210        | 0.043112297  |
| 77.325647 | 5314.3333 | 393.66667  | 0.068967531  |
| 77.42568  | 6254      | 75         | 0.011850213  |
| 77.525713 | 5721.6667 | -38        | -0.006685825 |
| 77.625747 | 5225.6667 | -113.66667 | -0.022235263 |
| 77.72578  | 4282.6667 | 28.666667  | 0.00649142   |
| 77.825813 | 4678.6667 | 16         | 0.003408123  |
| 77.925846 | 4549.3333 | -52        | -0.011562407 |
| 78.025879 | 5063.3333 | 142        | 0.027279713  |
| 78.125912 | 5318.6667 | 59         | 0.010971301  |
| 78.225946 | 5617.3333 | -45        | -0.008075612 |
| 78.325979 | 4881      | -325       | -0.071334504 |
| 78.426012 | 4233.3333 | -305       | -0.077915464 |
| 78.526045 | 3928      | -134.33333 | -0.035420894 |
| 78.626078 | 4894.6667 | 360.66667  | 0.068628695  |
| 78.726111 | 4960.6667 | 473.66667  | 0.087161872  |
| 78.826145 | 5057      | 409        | 0.074826198  |
| 78.926178 | 4574.3333 | -36.666667 | -0.008080511 |
| 79.026211 | 4877      | -16        | -0.003291504 |
| 79.126244 | 4797.6667 | -42        | -0.008831569 |
| 79.226277 | 4583.3333 | -75        | -0.016635986 |
| 79.326311 | 4421.3333 | -179.33333 | -0.042275656 |
| 79.426344 | 4840.3333 | -274.66667 | -0.060159159 |
| 79.526377 | 5669.3333 | -64.333333 | -0.011477847 |
| 79.62641  | 5382      | -100.66667 | -0.019060843 |
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| 79.92651  | 4696      | -3         | -0.00063925  |
| 80.026543 | 5416      | -134       | -0.025369178 |

|           |           |            |              |
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| 75.425066 | 3127.6667 | -168.33333 | -0.056882181 |
| 75.5251   | 2917      | -51.333333 | -0.017913226 |
| 75.625133 | 3297.6667 | 44         | 0.01167082   |
| 75.725166 | 3315.6667 | 106.33333  | 0.031079446  |
| 75.825199 | 3111.3333 | 74.666667  | 0.023435865  |
| 75.925233 | 3004.6667 | -82        | -0.028056569 |
| 76.025266 | 3333      | -63.333333 | -0.019369966 |
| 76.125299 | 3691      | -156.66667 | -0.044327077 |
| 76.225332 | 3921.6667 | 71         | 0.017782601  |
| 76.325366 | 3805.6667 | 74         | 0.019073804  |
| 76.425399 | 3642      | 128.66667  | 0.034123055  |
| 76.525432 | 3333      | -35.333333 | -0.010714647 |
| 76.625465 | 3192.3333 | -50.666667 | -0.016127321 |
| 76.725499 | 3135      | -188       | -0.063793688 |
| 76.825532 | 3013.6667 | -157.33333 | -0.055082273 |
| 76.925565 | 2682.3333 | -97.333333 | -0.037653127 |
| 77.025598 | 2688      | -56.666667 | -0.021535343 |
| 77.125632 | 2666      | -11        | -0.004143126 |
| 77.225665 | 3306.6667 | -124.66667 | -0.039178714 |
| 77.325698 | 3249.3333 | 62.666667  | 0.018921095  |
| 77.425731 | 2990.6667 | -63.666667 | -0.021751509 |
| 77.525765 | 2839.3333 | -91.666667 | -0.03336164  |
| 77.625798 | 2724.3333 | -74.333333 | -0.028050314 |
| 77.725831 | 3039      | 12         | 0.003933137  |
| 77.825864 | 2954      | 216        | 0.068138801  |
| 77.925898 | 3400.3333 | 90.666667  | 0.025971546  |
| 78.025931 | 3795.6667 | 67         | 0.01734553   |
| 78.125964 | 3988.6667 | -13        | -0.003269892 |
| 78.225997 | 4032      | 40         | 0.009823183  |
| 78.326031 | 3904.3333 | 40         | 0.010141131  |
| 78.426064 | 3839      | 117.66667  | 0.020738837  |
| 78.526097 | 3568.3333 | 330.66667  | 0.08480807   |
| 78.62613  | 3333.3333 | 348.66667  | 0.094694912  |
| 78.726164 | 3122.6667 | 398.33333  | 0.11313074   |
| 78.826197 | 3421.6667 | 205.66667  | 0.056699136  |
| 78.92623  | 3534.6667 | 116        | 0.031775018  |
| 79.026263 | 3218.3333 | -98.333333 | -0.031517094 |
| 79.126297 | 2655      | -192.33333 | -0.078099621 |
| 79.22633  | 2352      | -165       | -0.075445816 |
| 79.326363 | 3039      | -182       | -0.063703185 |
| 79.426396 | 3288.6667 | -241       | -0.079076889 |
| 79.52643  | 3273.6667 | -186.66667 | -0.060468632 |
| 79.626463 | 2946.3333 | -171.33333 | -0.061741742 |
| 79.726496 | 3117      | -173.66667 | -0.059003398 |
| 79.826529 | 3041.6667 | -281.33333 | -0.10192006  |
| 79.926563 | 3326.3333 | -51        | -0.015570934 |
| 80.026596 | 3031      | -49        | -0.016431925 |
| 80.126629 | 3116.3333 | -57        | -0.01863151  |
| 80.226662 | 3100.3333 | -275.33333 | -0.097463127 |
| 80.326695 | 3305.3333 | 44.666667  | 0.013333333  |
| 80.426729 | 3639.3333 | 249        | 0.06403772   |
| 80.526762 | 3578      | 358.66667  | 0.091109229  |
| 80.626795 | 3422      | 28         | 0.008115942  |
| 80.726828 | 3441      | -194.33333 | -0.059856263 |
| 80.826862 | 3375      | -341       | -0.11239288  |
| 80.926895 | 3419      | -293.33333 | -0.093846646 |