

Ligand Field Density Functional Theory for the prediction of future domestic lighting

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Supplementary Information

Numerical data for the energy levels in cm⁻¹ presented in Fig. 4:

(The electron configuration of Pr³⁺ to whom the states belong is given next to the
energy in bracket)

| # | CaF ₂ :Pr ³⁺ | KY ₃ F ₁₀ :Pr ³⁺ | BaY ₂ F ₈ :Pr ³⁺ | LaZrF ₇ :Pr ³⁺ |
|----|------------------------------------|---|---|--------------------------------------|
| 1 | 0 (f2) | 0 (f2) | 0 (f2) | 0 (f2) |
| 2 | 0 (f2) | 0 (f2) | 29 (f2) | 27 (f2) |
| 3 | 0 (f2) | 36 (f2) | 106 (f2) | 30 (f2) |
| 4 | 504 (f2) | 431 (f2) | 188 (f2) | 181 (f2) |
| 5 | 525 (f2) | 557 (f2) | 234 (f2) | 229 (f2) |
| 6 | 525 (f2) | 557 (f2) | 384 (f2) | 389 (f2) |
| 7 | 525 (f2) | 613 (f2) | 496 (f2) | 449 (f2) |
| 8 | 579 (f2) | 818 (f2) | 666 (f2) | 629 (f2) |
| 9 | 579 (f2) | 1152 (f2) | 878 (f2) | 729 (f2) |
| 10 | 2080 (f2) | 2032 (f2) | 1959 (f2) | 1914 (f2) |
| 11 | 2080 (f2) | 2125 (f2) | 1986 (f2) | 1952 (f2) |
| 12 | 2080 (f2) | 2126 (f2) | 1998 (f2) | 1982 (f2) |
| 13 | 2100 (f2) | 2178 (f2) | 2106 (f2) | 2059 (f2) |
| 14 | 2100 (f2) | 2212 (f2) | 2113 (f2) | 2136 (f2) |
| 15 | 2410 (f2) | 2381 (f2) | 2245 (f2) | 2171 (f2) |
| 16 | 2410 (f2) | 2381 (f2) | 2250 (f2) | 2234 (f2) |
| 17 | 2410 (f2) | 2440 (f2) | 2252 (f2) | 2347 (f2) |
| 18 | 2419 (f2) | 2739 (f2) | 2383 (f2) | 2382 (f2) |
| 19 | 2419 (f2) | 2880 (f2) | 2652 (f2) | 2485 (f2) |
| 20 | 2419 (f2) | 2881 (f2) | 2700 (f2) | 2555 (f2) |
| 21 | 3930 (f2) | 3809 (f2) | 3774 (f2) | 3654 (f2) |

| | | | | |
|----|------------|------------|------------|------------|
| 22 | 3932 (f2) | 3809 (f2) | 3788 (f2) | 3801 (f2) |
| 23 | 3932 (f2) | 3849 (f2) | 3816 (f2) | 3827 (f2) |
| 24 | 3932 (f2) | 4206 (f2) | 3964 (f2) | 3947 (f2) |
| 25 | 4044 (f2) | 4224 (f2) | 3969 (f2) | 4089 (f2) |
| 26 | 4044 (f2) | 4286 (f2) | 4092 (f2) | 4119 (f2) |
| 27 | 4044 (f2) | 4367 (f2) | 4125 (f2) | 4137 (f2) |
| 28 | 4415 (f2) | 4368 (f2) | 4225 (f2) | 4164 (f2) |
| 29 | 4415 (f2) | 4539 (f2) | 4330 (f2) | 4267 (f2) |
| 30 | 4506 (f2) | 4636 (f2) | 4435 (f2) | 4403 (f2) |
| 31 | 4506 (f2) | 4637 (f2) | 4565 (f2) | 4477 (f2) |
| 32 | 4506 (f2) | 5169 (f2) | 4732 (f2) | 4591 (f2) |
| 33 | 4638 (f2) | 5182 (f2) | 4750 (f2) | 4630 (f2) |
| 34 | 5638 (f2) | 5644 (f2) | 5564 (f2) | 5456 (f2) |
| 35 | 5638 (f2) | 5816 (f2) | 5576 (f2) | 5499 (f2) |
| 36 | 5638 (f2) | 5821 (f2) | 5688 (f2) | 5551 (f2) |
| 37 | 5735 (f2) | 5822 (f2) | 5741 (f2) | 5598 (f2) |
| 38 | 5735 (f2) | 6040 (f2) | 5742 (f2) | 5686 (f2) |
| 39 | 6490 (f2) | 6140 (f2) | 6486 (f2) | 6381 (f2) |
| 40 | 6490 (f2) | 6636 (f2) | 6496 (f2) | 6464 (f2) |
| 41 | 6490 (f2) | 6636 (f2) | 6558 (f2) | 6466 (f2) |
| 42 | 6723 (f2) | 6852 (f2) | 6622 (f2) | 6594 (f2) |
| 43 | 6723 (f2) | 6875 (f2) | 6637 (f2) | 6610 (f2) |
| 44 | 6881 (f2) | 6875 (f2) | 6766 (f2) | 6681 (f2) |
| 45 | 6881 (f2) | 6957 (f2) | 6795 (f2) | 6719 (f2) |
| 46 | 6881 (f2) | 7011 (f2) | 6823 (f2) | 6723 (f2) |
| 47 | 6913 (f2) | 7026 (f2) | 6882 (f2) | 6795 (f2) |
| 48 | 6913 (f2) | 7147 (f2) | 6901 (f2) | 6806 (f2) |
| 49 | 6913 (f2) | 7147 (f2) | 6921 (f2) | 6851 (f2) |
| 50 | 7039 (f2) | 7201 (f2) | 7016 (f2) | 6874 (f2) |
| 51 | 7039 (f2) | 7289 (f2) | 7083 (f2) | 6884 (f2) |
| 52 | 7039 (f2) | 7296 (f2) | 7085 (f2) | 6929 (f2) |
| 53 | 7133 (f2) | 7296 (f2) | 7181 (f2) | 6969 (f2) |
| 54 | 7270 (f2) | 7373 (f2) | 7207 (f2) | 7039 (f2) |
| 55 | 9083 (f2) | 8938 (f2) | 9017 (f2) | 8959 (f2) |
| 56 | 9083 (f2) | 9250 (f2) | 9053 (f2) | 8992 (f2) |
| 57 | 9083 (f2) | 9250 (f2) | 9148 (f2) | 9007 (f2) |
| 58 | 9197 (f2) | 9502 (f2) | 9172 (f2) | 9157 (f2) |
| 59 | 9197 (f2) | 9524 (f2) | 9285 (f2) | 9253 (f2) |
| 60 | 9503 (f2) | 9545 (f2) | 9346 (f2) | 9378 (f2) |
| 61 | 9503 (f2) | 9748 (f2) | 9452 (f2) | 9427 (f2) |
| 62 | 9503 (f2) | 9748 (f2) | 9780 (f2) | 9451 (f2) |
| 63 | 10034 (f2) | 9981 (f2) | 9870 (f2) | 9684 (f2) |
| 64 | 17827 (f2) | 17495 (f2) | 17887 (f2) | 17892 (f2) |
| 65 | 17827 (f2) | 18187 (f2) | 18100 (f2) | 18074 (f2) |
| 66 | 18387 (f2) | 18449 (f2) | 18350 (f2) | 18294 (f2) |
| 67 | 18387 (f2) | 18606 (f2) | 18381 (f2) | 18363 (f2) |
| 68 | 18387 (f2) | 18606 (f2) | 18627 (f2) | 18492 (f2) |
| 69 | 21314 (f2) | 21272 (f2) | 21169 (f2) | 21147 (f2) |
| 70 | 21314 (f2) | 21286 (f2) | 21237 (f2) | 21182 (f2) |
| 71 | 21320 (f2) | 21286 (f2) | 21581 (f2) | 21525 (f2) |
| 72 | 21320 (f2) | 21601 (f2) | 21648 (f2) | 21549 (f2) |
| 73 | 21320 (f2) | 21790 (f2) | 21809 (f2) | 21606 (f2) |
| 74 | 21333 (f2) | 22072 (f2) | 21853 (f2) | 21633 (f2) |
| 75 | 22249 (f2) | 22072 (f2) | 21917 (f2) | 21818 (f2) |
| 76 | 22249 (f2) | 22159 (f2) | 21922 (f2) | 21954 (f2) |
| 77 | 22249 (f2) | 22253 (f2) | 22077 (f2) | 22029 (f2) |
| 78 | 22279 (f2) | 22367 (f2) | 22309 (f2) | 22119 (f2) |
| 79 | 22279 (f2) | 22492 (f2) | 22334 (f2) | 22187 (f2) |
| 80 | 22279 (f2) | 22666 (f2) | 22594 (f2) | 22277 (f2) |
| 81 | 22470 (f2) | 22666 (f2) | 22684 (f2) | 22373 (f2) |
| 82 | 22746 (f2) | 22857 (f2) | 22798 (f2) | 22443 (f2) |

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|-----|-------|------|-------|------|-------|------|-------|------|
| 83 | 23273 | (f2) | 23252 | (f2) | 23141 | (f2) | 22849 | (f2) |
| 84 | 23273 | (f2) | 23449 | (f2) | 23304 | (f2) | 22915 | (f2) |
| 85 | 23273 | (f2) | 23449 | (f2) | 23328 | (f2) | 23109 | (f2) |
| 86 | 24244 | (f2) | 24246 | (f2) | 24161 | (f2) | 23886 | (f2) |
| 87 | 24244 | (f2) | 24303 | (f2) | 24163 | (f2) | 23941 | (f2) |
| 88 | 24335 | (f2) | 24589 | (f2) | 24415 | (f2) | 24070 | (f2) |
| 89 | 24335 | (f2) | 24593 | (f2) | 24424 | (f2) | 24156 | (f2) |
| 90 | 24335 | (f2) | 24593 | (f2) | 24498 | (f2) | 24203 | (f2) |
| 91 | 47484 | (fd) | 49462 | (f2) | 49586 | (fd) | 49650 | (f2) |
| 92 | 47484 | (fd) | 51560 | (fd) | 49624 | (fd) | 52288 | (fd) |
| 93 | 47484 | (fd) | 51591 | (fd) | 49689 | (f2) | 52298 | (fd) |
| 94 | 48138 | (fd) | 51638 | (fd) | 49771 | (fd) | 52395 | (fd) |
| 95 | 48138 | (fd) | 51638 | (fd) | 49910 | (fd) | 52447 | (fd) |
| 96 | 48361 | (fd) | 51816 | (fd) | 49957 | (fd) | 52484 | (fd) |
| 97 | 48361 | (fd) | 52220 | (fd) | 49981 | (fd) | 52810 | (fd) |
| 98 | 48361 | (fd) | 52220 | (fd) | 50256 | (fd) | 52852 | (fd) |
| 99 | 49059 | (fd) | 52577 | (fd) | 50401 | (fd) | 53078 | (fd) |
| 100 | 49059 | (fd) | 52602 | (fd) | 50626 | (fd) | 53361 | (fd) |
| 101 | 49059 | (fd) | 52780 | (fd) | 51191 | (fd) | 53798 | (fd) |
| 102 | 49169 | (fd) | 53531 | (fd) | 51288 | (fd) | 54053 | (fd) |
| 103 | 49315 | (f2) | 53531 | (fd) | 51468 | (fd) | 54266 | (fd) |
| 104 | 50103 | (fd) | 53815 | (fd) | 51874 | (fd) | 54647 | (fd) |
| 105 | 50103 | (fd) | 53815 | (fd) | 52021 | (fd) | 54698 | (fd) |
| 106 | 50117 | (fd) | 53852 | (fd) | 52073 | (fd) | 54783 | (fd) |
| 107 | 50288 | (fd) | 54192 | (fd) | 52096 | (fd) | 54898 | (fd) |
| 108 | 50288 | (fd) | 54673 | (fd) | 52448 | (fd) | 54937 | (fd) |
| 109 | 50288 | (fd) | 54716 | (fd) | 52596 | (fd) | 55125 | (fd) |
| 110 | 50333 | (fd) | 54743 | (fd) | 52802 | (fd) | 55289 | (fd) |
| 111 | 50333 | (fd) | 54884 | (fd) | 52987 | (fd) | 55629 | (fd) |
| 112 | 50333 | (fd) | 54884 | (fd) | 53051 | (fd) | 55923 | (fd) |
| 113 | 50637 | (fd) | 55359 | (fd) | 53217 | (fd) | 56088 | (fd) |
| 114 | 50990 | (fd) | 55478 | (fd) | 53436 | (fd) | 56314 | (fd) |
| 115 | 50990 | (fd) | 55676 | (fd) | 53555 | (fd) | 56405 | (fd) |
| 116 | 50990 | (fd) | 55676 | (fd) | 53599 | (fd) | 56427 | (fd) |
| 117 | 51164 | (fd) | 56616 | (fd) | 54488 | (fd) | 57158 | (fd) |
| 118 | 51164 | (fd) | 56616 | (fd) | 55787 | (fd) | 59006 | (fd) |
| 119 | 51164 | (fd) | 58369 | (fd) | 57760 | (fd) | 59690 | (fd) |
| 120 | 51321 | (fd) | 58493 | (fd) | 58866 | (fd) | 61092 | (fd) |
| 121 | 51321 | (fd) | 58522 | (fd) | 59048 | (fd) | 61268 | (fd) |
| 122 | 51688 | (fd) | 58522 | (fd) | 59058 | (fd) | 61302 | (fd) |
| 123 | 51689 | (fd) | 58554 | (fd) | 59194 | (fd) | 61390 | (fd) |
| 124 | 51689 | (fd) | 58785 | (fd) | 59297 | (fd) | 61514 | (fd) |
| 125 | 52239 | (fd) | 59010 | (fd) | 59455 | (fd) | 61665 | (fd) |
| 126 | 52831 | (fd) | 59059 | (fd) | 59812 | (fd) | 61981 | (fd) |
| 127 | 52831 | (fd) | 59276 | (fd) | 59823 | (fd) | 62317 | (fd) |
| 128 | 52831 | (fd) | 59276 | (fd) | 60054 | (fd) | 62520 | (fd) |
| 129 | 53079 | (fd) | 59921 | (fd) | 60161 | (fd) | 62673 | (fd) |
| 130 | 53079 | (fd) | 60259 | (fd) | 60558 | (fd) | 62863 | (fd) |
| 131 | 53256 | (fd) | 60260 | (fd) | 60894 | (fd) | 63111 | (fd) |
| 132 | 53256 | (fd) | 60672 | (fd) | 61213 | (fd) | 63125 | (fd) |
| 133 | 53256 | (fd) | 60672 | (fd) | 61215 | (fd) | 63205 | (fd) |
| 134 | 53327 | (fd) | 60685 | (fd) | 61623 | (fd) | 63383 | (fd) |
| 135 | 53327 | (fd) | 61047 | (fd) | 61731 | (fd) | 63565 | (fd) |
| 136 | 53699 | (fd) | 61186 | (fd) | 61808 | (fd) | 63633 | (fd) |
| 137 | 53699 | (fd) | 61186 | (fd) | 61976 | (fd) | 63825 | (fd) |
| 138 | 53699 | (fd) | 61327 | (fd) | 62190 | (fd) | 63903 | (fd) |
| 139 | 54174 | (fd) | 61614 | (fd) | 62254 | (fd) | 64126 | (fd) |
| 140 | 54174 | (fd) | 61738 | (fd) | 62296 | (fd) | 64173 | (fd) |
| 141 | 54174 | (fd) | 61853 | (fd) | 62373 | (fd) | 64291 | (fd) |
| 142 | 55113 | (fd) | 61857 | (fd) | 62512 | (fd) | 64341 | (fd) |
| 143 | 55113 | (fd) | 61857 | (fd) | 62730 | (fd) | 64478 | (fd) |

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|-----|-------|------|-------|------|-------|------|-------|------|
| 144 | 55113 | (fd) | 61887 | (fd) | 62837 | (fd) | 64513 | (fd) |
| 145 | 59271 | (fd) | 62194 | (fd) | 62848 | (fd) | 64660 | (fd) |
| 146 | 59271 | (fd) | 62257 | (fd) | 64320 | (fd) | 64751 | (fd) |
| 147 | 59271 | (fd) | 62257 | (fd) | 64366 | (fd) | 64844 | (fd) |
| 148 | 69464 | (fd) | 62443 | (fd) | 64464 | (fd) | 64985 | (fd) |
| 149 | 70830 | (fd) | 62460 | (fd) | 64642 | (fd) | 65071 | (fd) |
| 150 | 70830 | (fd) | 62530 | (fd) | 64806 | (fd) | 65121 | (fd) |
| 151 | 70830 | (fd) | 63001 | (fd) | 65049 | (fd) | 65208 | (fd) |
| 152 | 70980 | (fd) | 63001 | (fd) | 65411 | (fd) | 65389 | (fd) |
| 153 | 70980 | (fd) | 63317 | (fd) | 65481 | (fd) | 65420 | (fd) |
| 154 | 71445 | (fd) | 63860 | (fd) | 65505 | (fd) | 65692 | (fd) |
| 155 | 71445 | (fd) | 63861 | (fd) | 65736 | (fd) | 65811 | (fd) |
| 156 | 71445 | (fd) | 63869 | (fd) | 65816 | (fd) | 66019 | (fd) |
| 157 | 71586 | (fd) | 63894 | (fd) | 66051 | (fd) | 66057 | (fd) |
| 158 | 71586 | (fd) | 64119 | (fd) | 66261 | (fd) | 66345 | (fd) |
| 159 | 71600 | (fd) | 64334 | (fd) | 66394 | (fd) | 66420 | (fd) |
| 160 | 71630 | (fd) | 64334 | (fd) | 66503 | (fd) | 66491 | (fd) |
| 161 | 71630 | (fd) | 64474 | (fd) | 66539 | (fd) | 66580 | (fd) |
| 162 | 71630 | (fd) | 64552 | (fd) | 66673 | (fd) | 66683 | (fd) |
| 163 | 72055 | (fd) | 65008 | (fd) | 66723 | (fd) | 66814 | (fd) |
| 164 | 72055 | (fd) | 65009 | (fd) | 67057 | (fd) | 66867 | (fd) |
| 165 | 72055 | (fd) | 65316 | (fd) | 67063 | (fd) | 66924 | (fd) |
| 166 | 72278 | (fd) | 65317 | (fd) | 67336 | (fd) | 67058 | (fd) |
| 167 | 72278 | (fd) | 65533 | (fd) | 67378 | (fd) | 67117 | (fd) |
| 168 | 72278 | (fd) | 65560 | (fd) | 67426 | (fd) | 67260 | (fd) |
| 169 | 73115 | (fd) | 65564 | (fd) | 67797 | (fd) | 67325 | (fd) |
| 170 | 73115 | (fd) | 65596 | (fd) | 67888 | (fd) | 67364 | (fd) |
| 171 | 73115 | (fd) | 67830 | (fd) | 68195 | (fd) | 67535 | (fd) |
| 172 | 73173 | (fd) | 67831 | (fd) | 68217 | (fd) | 67683 | (fd) |
| 173 | 73173 | (fd) | 68412 | (fd) | 68245 | (fd) | 67741 | (fd) |
| 174 | 73457 | (fd) | 69692 | (fd) | 68316 | (fd) | 67873 | (fd) |
| 175 | 73517 | (fd) | 69693 | (fd) | 68534 | (fd) | 67942 | (fd) |
| 176 | 73517 | (fd) | 70931 | (fd) | 68656 | (fd) | 68089 | (fd) |
| 177 | 73517 | (fd) | 71344 | (fd) | 68842 | (fd) | 68263 | (fd) |
| 178 | 73657 | (fd) | 71355 | (fd) | 68955 | (fd) | 68429 | (fd) |
| 179 | 73657 | (fd) | 71355 | (fd) | 68964 | (fd) | 68636 | (fd) |
| 180 | 73657 | (fd) | 71829 | (fd) | 69215 | (fd) | 68772 | (fd) |
| 181 | 74249 | (fd) | 72091 | (fd) | 69588 | (fd) | 68843 | (fd) |
| 182 | 74249 | (fd) | 72092 | (fd) | 69719 | (fd) | 69017 | (fd) |
| 183 | 74249 | (fd) | 72442 | (fd) | 69840 | (fd) | 69182 | (fd) |
| 184 | 74343 | (fd) | 72664 | (fd) | 69912 | (fd) | 69266 | (fd) |
| 185 | 74343 | (fd) | 72850 | (fd) | 70187 | (fd) | 69402 | (fd) |
| 186 | 74343 | (fd) | 72850 | (fd) | 70522 | (fd) | 69444 | (fd) |
| 187 | 74422 | (fd) | 72922 | (fd) | 70629 | (fd) | 69608 | (fd) |
| 188 | 74422 | (fd) | 73144 | (fd) | 70665 | (fd) | 69718 | (fd) |
| 189 | 74463 | (fd) | 73144 | (fd) | 70761 | (fd) | 69977 | (fd) |
| 190 | 74463 | (fd) | 73507 | (fd) | 70815 | (fd) | 70087 | (fd) |
| 191 | 74463 | (fd) | 73668 | (fd) | 70906 | (fd) | 70141 | (fd) |
| 192 | 74845 | (fd) | 73687 | (fd) | 71042 | (fd) | 70318 | (fd) |
| 193 | 74870 | (fd) | 74001 | (fd) | 71326 | (fd) | 70413 | (fd) |
| 194 | 74870 | (fd) | 74002 | (fd) | 71432 | (fd) | 70699 | (fd) |
| 195 | 74870 | (fd) | 74279 | (fd) | 71656 | (fd) | 71087 | (fd) |
| 196 | 75030 | (fd) | 74279 | (fd) | 71735 | (fd) | 71188 | (fd) |
| 197 | 75030 | (fd) | 74299 | (fd) | 71989 | (fd) | 71446 | (fd) |
| 198 | 75174 | (fd) | 74385 | (fd) | 72344 | (fd) | 71732 | (fd) |
| 199 | 75174 | (fd) | 74527 | (fd) | 72636 | (fd) | 73582 | (fd) |
| 200 | 75174 | (fd) | 74527 | (fd) | 72966 | (fd) | 73623 | (fd) |
| 201 | 75315 | (fd) | 74817 | (fd) | 73454 | (fd) | 73741 | (fd) |
| 202 | 75406 | (fd) | 74860 | (fd) | 73632 | (fd) | 74067 | (fd) |
| 203 | 75406 | (fd) | 74898 | (fd) | 74063 | (fd) | 74211 | (fd) |
| 204 | 75406 | (fd) | 74955 | (fd) | 74141 | (fd) | 74341 | (fd) |

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|-----|------------|------------|------------|------------|
| 205 | 76154 (fd) | 75029 (fd) | 74659 (fd) | 74565 (fd) |
| 206 | 76154 (fd) | 75030 (fd) | 75193 (fd) | 74985 (fd) |
| 207 | 76154 (fd) | 75291 (fd) | 75239 (fd) | 74999 (fd) |
| 208 | 76779 (fd) | 75423 (fd) | 75483 (fd) | 75205 (fd) |
| 209 | 76779 (fd) | 75457 (fd) | 75581 (fd) | 75359 (fd) |
| 210 | 76779 (fd) | 75457 (fd) | 75642 (fd) | 75538 (fd) |
| 211 | 77217 (fd) | 75845 (fd) | 75895 (fd) | 75575 (fd) |
| 212 | 77404 (fd) | 75878 (fd) | 75949 (fd) | 75869 (fd) |
| 213 | 77404 (fd) | 75879 (fd) | 75957 (fd) | 75909 (fd) |
| 214 | 77404 (fd) | 75894 (fd) | 76154 (fd) | 76017 (fd) |
| 215 | 77961 (fd) | 75895 (fd) | 76173 (fd) | 76286 (fd) |
| 216 | 78196 (fd) | 76189 (fd) | 76448 (fd) | 76367 (fd) |
| 217 | 78196 (fd) | 76599 (fd) | 76944 (fd) | 76502 (fd) |
| 218 | 78245 (fd) | 76682 (fd) | 77106 (fd) | 77019 (fd) |
| 219 | 78245 (fd) | 76773 (fd) | 77109 (fd) | 77149 (fd) |
| 220 | 78245 (fd) | 76774 (fd) | 77154 (fd) | 77304 (fd) |
| 221 | 79988 (fd) | 76933 (fd) | 77215 (fd) | 77340 (fd) |
| 222 | 79988 (fd) | 76933 (fd) | 77521 (fd) | 77537 (fd) |
| 223 | 79988 (fd) | 77298 (fd) | 77648 (fd) | 77611 (fd) |
| 224 | 80728 (fd) | 77389 (fd) | 77808 (fd) | 77680 (fd) |
| 225 | 80728 (fd) | 78374 (fd) | 77924 (fd) | 78165 (fd) |
| 226 | 82273 (fd) | 78746 (fd) | 78073 (fd) | 78258 (fd) |
| 227 | 82273 (fd) | 79902 (fd) | 78944 (fd) | 78972 (fd) |
| 228 | 82273 (fd) | 79902 (fd) | 79283 (fd) | 79293 (fd) |
| 229 | 84485 (fd) | 81279 (fd) | 81527 (fd) | 81701 (fd) |
| 230 | 84485 (fd) | 81280 (fd) | 81794 (fd) | 82491 (fd) |
| 231 | 84485 (fd) | 81323 (fd) | 83020 (fd) | 83182 (fd) |
