```
les4-_mo20w          Fri Jun 01 16:28:50 2018          1

% this is ../../crops/18r/planning/current_pedigrees/primary_dominants/les4-_mo20w
% generated Friday, June 01, 2018 at 21:28:50 UTC (=1527888530.695405) by compute_pedigrees/1.

% Horizontal pedigrees, generations at same indentation.  S: Mo20W; W: W23; M: M14.
% !!! => cross was not by Toni; references to image locations on right.

% Mo20W/Les4-

 06R0003:0000000 x 06R0003:0000000
       06R0003:0000308 x 06R0003:0000303
           06N201:S0004710 x 06N1015:0000502
               07R201:S0000101 x 07R2354:0040306      !!!
               07R201:S0029810 x 07R2354:0040307
               07R201:S0032705 x 07R2354:0040304
                   09R201:S0042901 x 09R1565:0016509
                       10R205:S0001703 x 10R2231:0018402          10R2231:0018402: [10r/gimmel/9.8-[60]]
                           11N205:S0031803 x 11N3251:0010203
                           11N205:S0037802 x 11N3251:0010210
                           11N205:S0037805 x 11N3251:0010201
                       10R205:S0007307 x 10R2231:0018405          10R2231:0018405: [10r/gimmel/9.8-[61]]
                           13R205:S0002202 x 13R4084:0005812        13R4084:0005812: [13r/bet/11.7-[1032],13r/bet/
15.7-[1145],13r/bet/18.7-[1290],13r/bet/21.7-[1408],13r/bet/25.7-[1560]]
                           13R205:S0002204 x 13R4084:0005813        13R4084:0005813: [13r/bet/1.8-[1729],13r/bet/1
1.7-[1030,1031],13r/bet/15.7-[1146],13r/bet/18.7-[1291],13r/bet/21.7-[1409],13r/bet/25.7-[1561]]
                               14R205:S0000215 x 14R4229:0009701      14R4229:0009701: [14r/bet/24.8-[2429]]
                                   17R4441:0006701 x 17R4441:0006706        17R4441:0006706: [17r/gimmel/2.8-[30
5]]
                                   17R4441:0006702 x 17R4441:0006706        17R4441:0006706: [17r/gimmel/2.8-[30
5]]
                                   17R4441:0006703 x 17R4441:0006706        17R4441:0006706: [17r/gimmel/2.8-[30
5]]
                                   17R4441:0006704 x 17R4441:0006704
                                   17R4441:0006709 x 17R4441:0006706        17R4441:0006706: [17r/gimmel/2.8-[30
5]]
                               14R205:S0000217 x 14R4229:0009708        14R4229:0009708: [14r/bet/18.8-[2192]]
                               14R205:S0000218 x 14R4229:0009711        14R4229:0009711: [14r/bet/18.8-[2201]]
                       10R205:S0007308 x 10R2231:0018409        10R2231:0018409: [10r/gimmel/9.8-[62]]
                       10R205:S0007310 x 10R2231:0018411        10R2231:0018411: [10r/gimmel/9.8-[63]]
                       11N205:S0031801 x 11N2231:0010007
                       11N205:S0031904 x 11N2231:0010013
                   09R201:S0043616 x 09R1565:0016508
                   09R201:S0043618 x 09R1565:0016510
                       11N205:S0036604 x 11N3414:0010104
                       11N205:S0037801 x 11N3414:0010112
               07R301:W0032611 x 07R2354:0040304
               07R401:M0032808 x 07R2354:0040304
           06N201:S0005602 x 06N1015:0000501
```

```
            06N201:S0005611 x 06N1015:0000505
            06N201:S0005908 x 06N1015:0000506
                07R201:S0027304 x 07R2351:0040502
                07R201:S0027306 x 07R2351:0040501
                07R301:W0030503 x 07R2351:0040502
                07R301:W0030510 x 07R2351:0040501
                07R401:M0030303 x 07R2351:0040501
                07R401:M0030304 x 07R2351:0040502
            06N301:W0004209 x 06N1015:0000502
            06N301:W0004513 x 06N1015:0000505
            06N301:W0004801 x 06N1015:0000511
                09R301:W0034704 x 09R2349:0017211
                09R301:W0035619 x 09R2349:0017203
                09R301:W0039514 x 09R2349:0017211
                09R301:W0041612 x 09R2349:0017201          09R2349:0017201: [09r/bet/2.9-[4]]
                    10R305:W0002405 x 10R2232:0018509          10R2232:0018509: [10r/gimmel/9.8-[67]]
                    10R305:W0003603 x 10R2232:0018504          10R2232:0018504: [10r/gimmel/9.8-[64]]
                        11R305:W0050402 x 11R3252:0017607          11R3252:0017607: [11r/aleph/18.8-[1043]]
                        11R305:W0050403 x 11R3252:0017606          11R3252:0017606: [11r/aleph/18.8-[1041]]
                        11N305:W0038308 x 11N3415:0010308
                        11N305:W0038309 x 11N3415:0010308
                            12R305:W0000210 x 12R3586:0023008          12R3586:0023008: [12r/bet/3.8-[41],12r/be
t/8.8-[156]]
                            12N504:B0040701 x 12N3943:0016410
                            12N504:B0040703 x 12N3943:0016411
                            12N504:B0040705 x 12N3943:0016408
                            13R3943:0006001 x 13R3943:0006010          13R3943:0006010: [13r/bet/1.8-[1715]
,13r/bet/11.7-[1039],13r/bet/15.7-[1152],13r/bet/18.7-[1297],13r/bet/21.7-[1415],13r/bet/25.7-[1567]]
                            13R3943:0006006 x 13R3943:0006010          13R3943:0006010: [13r/bet/1.8-[1715]
,13r/bet/11.7-[1039],13r/bet/15.7-[1152],13r/bet/18.7-[1297],13r/bet/21.7-[1415],13r/bet/25.7-[1567]]
                            13R3943:0006007 x 13R3943:0006010          13R3943:0006010: [13r/bet/1.8-[1715]
,13r/bet/11.7-[1039],13r/bet/15.7-[1152],13r/bet/18.7-[1297],13r/bet/21.7-[1415],13r/bet/25.7-[1567]]
                            13R3943:0006009 x 13R3943:0006010          13R3943:0006010: [13r/bet/1.8-[1715]
,13r/bet/11.7-[1039],13r/bet/15.7-[1152],13r/bet/18.7-[1297],13r/bet/21.7-[1415],13r/bet/25.7-[1567]]
                            13R3943:0006010 x 13R3943:0006010          13R3943:0006010: [13r/bet/1.8-[1715]
,13r/bet/11.7-[1039],13r/bet/15.7-[1152],13r/bet/18.7-[1297],13r/bet/21.7-[1415],13r/bet/25.7-[1567]] 13R3943:0006010: [13
r/bet/1.8-[1715],13r/bet/11.7-[1039],13r/bet/15.7-[1152],13r/bet/18.7-[1297],13r/bet/21.7-[1415],13r/bet/25.7-[1567]]
                            14R3943:0009802 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
                            14R3943:0009804 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
                            14R3943:0009806 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
                            14R3943:0009808 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
                            14R3943:0009814 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
```

```
                              14R3943:0009815 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
                              14R3943:0009816 x 14R3943:0009801          14R3943:0009801: [14r/bet/18.8-[2189
]]
                        12R305:W0000212 x 12R3586:0023002          12R3586:0023002: [12r/bet/3.8-[40],12r/be
t/8.8-[154]]
                        12R3586:0023002 x 12R3586:0023002          12R3586:0023002: [12r/bet/3.8-[40],12r/be
t/8.8-[154]] 12R3586:0023002: [12r/bet/3.8-[40],12r/bet/8.8-[154]]
                        12N3944:0016703 x 12N3944:0016704          12N3944:0016703: [12n/bet/13.1-[813]
]     12N3944:0016704: [12n/bet/13.1-[814]]
                        12R3586:0023008 x 12R3586:0023008          12R3586:0023008: [12r/bet/3.8-[41],12r/be
t/8.8-[156]] 12R3586:0023008: [12r/bet/3.8-[41],12r/bet/8.8-[156]]
                        12N3945:0016803 x 12N3945:0016809          12N3945:0016803: [12n/bet/13.1-[820]
]     12N3945:0016809: [12n/bet/13.1-[822]]
                     11N305:W0038310 x 11N3415:0010308
          06N401:M0005507 x 06N1015:0000502
          06N401:M0006104 x 06N1015:0000511
             09R401:M0042411 x 09R2350:0017312          09R2350:0017312: [09r/aleph/18.8-[245,247,252]]
             09R401:M0042703 x 09R2350:0017315          09R2350:0017315: [09r/aleph/21.8-[4]]
             09R401:M0042709 x 09R2350:0017314          09R2350:0017314: [09r/aleph/21.8-[2]]
               10R405:M0005009 x 10R2233:0018603          10R2233:0018603: [10r/gimmel/9.8-[68]]
               10R405:M0005010 x 10R2233:0018604          10R2233:0018604: [10r/gimmel/9.8-[69]]
              11R405:M0050304 x 11R3253:0017702          11R3253:0017702: [11r/aleph/18.8-[1040]]
                 11N405:M0037307 x 11N3416:0010410
                  12R405:M0000310 x 12R3587:0023110          12R3587:0023110: [12r/bet/3.1-[44],12r/be
t/8.8-[161]]
                        12N3946:0017004 x 12N3946:0017105
                        12N3946:0017006 x 12N3946:0017103          12N3946:0017103: [12n/bet/13.1-[829]
]
                        12N3946:0017102 x 12N3946:0017105
                        12N3946:0017105 x 12N3946:0017109          12N3946:0017109: [12n/bet/13.1-[832]
]
                        12N3946:0017106 x 12N3946:0017107          12N3946:0017107: [12n/bet/13.1-[831]
]
                     13R4196:0013018 x 13R4115:0012910          13R4196:0013018: [13r/bet/6.8-[
1830]]     13R4115:0012910: [13r/bet/17.7-[1234],13r/bet/21.7-[1438],13r/bet/25.7-[1589],13r/bet/6.8-[1846]]
                        12N3946:0017112 x 12N3946:0017113          12N3946:0017113: [12n/bet/13.1-[834]
]
                        12N504:B0039905 x 12N3946:0017107          12N3946:0017107: [12n/bet/13.1-[831]
]
                        12N504:B0039911 x 12N3946:0017110          12N3946:0017110: [12n/bet/13.1-[833]
]
                        17R3946:0006905 x 17R3946:0006904          17R3946:0006904: [17r/gimmel/2.8-[31
5]]
                        17R3946:0006906 x 17R3946:0006904          17R3946:0006904: [17r/gimmel/2.8-[31
5]]
                        17R3946:0006908 x 17R3946:0006904          17R3946:0006904: [17r/gimmel/2.8-[31
```

[handwritten annotations in red: "16", "small 0m7 eors,", "infertile" with arrow pointing to line 12R405:M0000310]

```
5]]
                                        12R405:M0001202 x 12R3587:0023104          12R3587:0023104: [12r/bet/3.8-[42],12r/be
t/8.8-[159]]
                                        12R405:M0011408 x 12R3587:0023107          12R3587:0023107: [12r/bet/3.8-[43]]
                                        12R503:B0012702 x 12R3587:0023110          12R3587:0023110: [12r/bet/3.1-[44],12r/be
t/8.8-[161]]
                            11N405:M0037308 x 11N3416:0010410
                    10R405:M0005012 x 10R2233:0018608          10R2233:0018608: [10r/gimmel/9.8-[70,71]]
            07R201:S0034005 x 07R1015:0098406
            07R201:S0034007 x 07R1015:0098406
            07R301:W0085005 x 07R1015:0098410      !!!
      06R200:S00I6614 x 06R0003:0000304
            07R301:W0025104 x 07R1011:0042006
            07R301:W0025409 x 07R1011:0042006
            07R401:M0028002 x 07R1011:0042006
      06R300:W00I1707 x 06R0003:0000304
            07R301:W0085006 x 07R1555:0098507      !!!
      06R300:W00I2006 x 06R0003:0000302
            09R201:S0035501 x 09R1278:0016404
            09R201:S0035502 x 09R1278:0016409
                    10R205:S0001702 x 10R3000:0018907          10R3000:0018907: [10r/gimmel/9.8-[82]]
                    10R205:S0001704 x 10R3000:0018902          10R3000:0018902: [10r/gimmel/9.8-[81]]
                    11N205:S0036709 x 11N3303:0009701
                    11N205:S0037807 x 11N3303:0009705
                    11N205:S0039001 x 11N3303:0009708
                    12R205:S0003403 x 12R3582:0022607          12R3582:0022607: [12r/aleph/8.8-[1949]]
                    12R205:S0003408 x 12R3582:0022607          12R3582:0022607: [12r/aleph/8.8-[1949]]
                    12R205:S0010918 x 12R3582:0022610          12R3582:0022610: [12r/aleph/8.8-[1951]]
                    12R205:S0010919 x 12R3582:0022608          12R3582:0022608: [12r/aleph/8.8-[1957]]
                    12N205:S0035502 x 12N3939:0015202          12N3939:0015202: [12n/bet/13.1-[790]]
                    12N205:S0035506 x 12N3939:0015204          12N3939:0015204: [12n/bet/13.1-[791]]
                    13R205:S0002205 x 13R4082:0005502          13R4082:0005502: [13r/bet/1.8-[1713],13r/
bet/11.7-[975,976,977],13r/bet/15.7-[1118],13r/bet/18.7-[1263],13r/bet/21.7-[1381],13r/bet/25.7-[1532]]
                                        14R4227:0009205 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]

                                        14R4227:0009207 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]

                                        14R4227:0009208 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]

                                        14R4227:0009209 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]

                                        14R4227:0009210 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]

                                        14R4227:0009213 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]

                                        14R4227:0009214 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]
```

(handwritten annotation) K0302

(handwritten annotation) A ?

(handwritten annotation) J6

```
                                    14R4227:0009216 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]
                                    14R505:B0002013 x 14R4227:0009211          14R4227:0009211: [14r/bet/18.8-[2193
,2200]]
                                    16R505:B0002405 x 16R4227:0006601          16R4227:0006601: [16r/gimmel/26.7-[1
22]]
                                    16R505:B0002408 x 16R4227:0006601          16R4227:0006601: [16r/gimmel/26.7-[1
22]]
                                    17R4227:0006301 x 17R4227:0006317          17R4227:0006317: [17r/gimmel/2.8-[30
9]]
                                    17R4227:0006303 x 17R4227:0006310          17R4227:0006310: [17r/gimmel/2.8-[31
2]]
                                    17R4227:0006304 x 17R4227:0006317          17R4227:0006317: [17r/gimmel/2.8-[30
9]]
                                    17R4227:0006305 x 17R4227:0006317          17R4227:0006317: [17r/gimmel/2.8-[30
9]]
                                    17R4227:0006315 x 17R4227:0006317          17R4227:0006317: [17r/gimmel/2.8-[30
9]]
                                    17R4227:0006316 x 17R4227:0006317          17R4227:0006317: [17r/gimmel/2.8-[30
9]]
                            13R205:S0002206 x 13R4082:0005510        13R4082:0005510: [13r/bet/11.7-[980,981],
13r/bet/15.7-[1121],13r/bet/18.7-[1266],13r/bet/21.7-[1384],13r/bet/25.7-[1535]]
                            13R205:S0002207 x 13R4082:0005502        13R4082:0005502: [13r/bet/1.8-[1713],13r/
bet/11.7-[975,976,977],13r/bet/15.7-[1118],13r/bet/18.7-[1263],13r/bet/21.7-[1381],13r/bet/25.7-[1532]]
                    12N205:S0037002 x 12N3939:0015211        12N3939:0015211: [12n/bet/13.1-[792]]
            10R205:S0002002 x 10R3000:0018911        10R3000:0018911: [10r/gimmel/9.8-[83]]
        09R201:S0036103 x 09R1278:0016410
        09R301:W0034702 x 09R1278:0016410
        09R301:W0035615 x 09R1278:0016404
        09R401:M0034607 x 09R1278:0016404
            10R305:W0002410 x 10R3001:0019009        10R3001:0019009: [10r/gimmel/9.8-[85,87]]
            10R305:W0006207 x 10R3001:0019012        10R3001:0019012: [10r/gimmel/9.8-[89]]
            11R305:W0043508 x 11R3304:0017301        11R3304:0017301: [11r/aleph/18.8-[1046]]
            11R305:W0043510 x 11R3304:0017303        11R3304:0017303: [11r/aleph/18.8-[1048]]
            11N305:W0038601 x 11N3412:0009809
                12R305:W0000506 x 12R3583:0022707        12R3583:0022707: [12r/bet/3.8-[36],12r/bet/8.8
-[146]]
                12R305:W0000512 x 12R3583:0022709        12R3583:0022709: [12r/bet/3.8-[37],12r/bet/8.8
-[148]]
                    12N305:W0038309 x 12N3940:0015409          12N3940:0015409: [12n/bet/13.1-[794]]
                    13R305:W0000702 x 13R4083:0005603          13R4083:0005603: [13r/bet/11.7-[994,
995],13r/bet/15.7-[1127],13r/bet/18.7-[1272],13r/bet/21.7-[1390],13r/bet/25.7-[1541]]
                            14R4228:0009419 x 14R4228:0009404          14R4228:0009404: [14r/bet/18.8-
[2196]]
                            14R505:B0002108 x 14R4228:0009404          14R4228:0009404: [14r/bet/18.8-
[2196]]
                            16R4228:0006808 x 16R4228:0006811          16R4228:0006811: [16r/gimmel/30
```

```
.7-[287]]
                                        17R4228:0006401 x 17R4228:0006404            17R4228:0006404: [17r/gimmel/2.
8-[331]]
                                        17R4228:0006404 x 17R4228:0006404            17R4228:0006404: [17r/gimmel/2.
8-[331]]     17R4228:0006404: [17r/gimmel/2.8-[331]]
                                        17R4228:0006408 x 17R4228:0006404            17R4228:0006404: [17r/gimmel/2.
8-[331]]
                                        17R4228:0006409 x 17R4228:0006415            17R4228:0006415: [17r/gimmel/2.
8-[330]]
                                        17R4228:0006410 x 17R4228:0006415            17R4228:0006415: [17r/gimmel/2.
8-[330]]
                                        17R4228:0006411 x 17R4228:0006415            17R4228:0006415: [17r/gimmel/2.
8-[330]]
                                        17R4228:0006415 x 17R4228:0006415            17R4228:0006415: [17r/gimmel/2.
8-[330]]     17R4228:0006415: [17r/gimmel/2.8-[330]]
                                        17R4228:0006416 x 17R4228:0006415            17R4228:0006415: [17r/gimmel/2.
8-[330]]
                                13R305:W0000707 x 13R4083:0005603            13R4083:0005603: [13r/bet/11.7-[994,
995],13r/bet/15.7-[1127],13r/bet/18.7-[1272],13r/bet/21.7-[1390],13r/bet/25.7-[1541]]
                                    12N305:W0038601 x 12N3940:0015407          12N3940:0015407: [12n/bet/13.1-[793]]
                                    12N305:W0038603 x 12N3940:0015407          12N3940:0015407: [12n/bet/13.1-[793]]
                              12R3583:0022707 x 12R3583:0022707          12R3583:0022707: [12r/bet/3.8-[36],12r/bet/8.8
-[146]] 12R3583:0022707: [12r/bet/3.8-[36],12r/bet/8.8-[146]]
                                12R3583:0022709 x 12R3583:0022709          12R3583:0022709: [12r/bet/3.8-[37],12r/bet/8.8
-[148]] 12R3583:0022709: [12r/bet/3.8-[37],12r/bet/8.8-[148]]
                              11N305:W0039202 x 11N3412:0009802
                        11R305:W0043513 x 11R3304:0017311          11R3304:0017311: [11r/aleph/18.8-[1045]]
                  10R305:W0006211 x 10R3001:0019002          10R3001:0019002: [10r/gimmel/9.8-[86]]
            09R401:M0034610 x 09R1278:0016409
            09R401:M0034902 x 09R1278:0016410
                  10R405:M0005011 x 10R3002:0019112          10R3002:0019112: [10r/gimmel/9.8-[95]]
                  10R405:M0005306 x 10R3002:0019107          10R3002:0019107: [10r/gimmel/9.8-[93]]
                  10R405:M0005311 x 10R3002:0019103          10R3002:0019103: [10r/gimmel/9.8-[90]]
        06R400:M00I2104 x 06R0003:0000302
            06N201:S0004106 x 06N1603:0020008
                  10R205:S0000803 x 10R3003:0019211          10R3003:0019211: [10r/gimmel/9.8-[99]]
                  10R205:S0002005 x 10R3003:0019208          10R3003:0019208: [10r/gimmel/9.8-[98]]
                  10R205:S0002010 x 10R3003:0019203          10R3003:0019203: [10r/gimmel/9.8-[97]]
            06N301:W0034504 x 06N1603:0020008
                  10R305:W0002411 x 10R2327:0019302          10R2327:0019302: [10r/gimmel/9.8-[100]]
                  10R305:W0006203 x 10R2327:0019304          10R2327:0019304: [10r/gimmel/9.8-[101]]
                  10R305:W0006214 x 10R2327:0019311          10R2327:0019311: [10r/gimmel/9.8-[102]]
            06N401:M0004302 x 06N1603:0020008
                  07R201:S0030716 x 07R2328:0040111
                  07R201:S0031001 x 07R2328:0040106
                  07R201:S0032713 x 07R2328:0040101
                  07R301:W0030514 x 07R2328:0040111
```

```
                 10R305:W0001807 x 10R1802:0019605           10R1802:0019605: [10r/gimmel/9.8-[106]]
                 10R305:W0001808 x 10R1802:0019607           10R1802:0019607: [10r/gimmel/9.8-[107]]
                 10R305:W0006217 x 10R1802:0019610           10R1802:0019610: [10r/gimmel/9.8-[108]]
          07R301:W0032609 x 07R2328:0040101
          07R401:M0030610 x 07R2328:0040111
          07R401:M0032802 x 07R2328:0040106
          07R401:M0033910 x 07R2328:0040101
             10R405:M0001316 x 10R2135:0019711             10R2135:0019711: [10r/gimmel/9.8-[110]]
             10R405:M0006909 x 10R2135:0019707             10R2135:0019707: [10r/gimmel/9.8-[109]]
               11R405:M0051304 x 11R3241:0017406           11R3241:0017406: [11r/aleph/18.8-[1070]]
                 11N405:M0034004 x 11N3413:0009901
                   12N3584:0015602 x 12N3584:0015604          12N3584:0015604: [12n/bet/13.1-[796]]
                       13R4196:0013005 x 13R4114:0012804          13R4114:0012804: [13r/bet/17.7-[1227
],13r/bet/21.7-[1431],13r/bet/25.7-[1583]]
                       13R4196:0013007 x 13R4114:0012804          13R4114:0012804: [13r/bet/17.7-[1227
],13r/bet/21.7-[1431],13r/bet/25.7-[1583]]
                       13R4196:0013016 x 13R4114:0012808          13R4114:0012808: [13r/bet/17.7-[1230
],13r/bet/21.7-[1434],13r/bet/25.7-[1586]]
                       13R4196:0013017 x 13R4114:0012805          13R4114:0012805: [13r/bet/17.7-[1228
],13r/bet/21.7-[1432],13r/bet/25.7-[1584],13r/bet/6.8-[1844,1845]]
                   12N3584:0015603 x 12N3584:0015604          12N3584:0015604: [12n/bet/13.1-[796]]
                   12N3584:0015607 x 12N3584:0015604          12N3584:0015604: [12n/bet/13.1-[796]]
                   12N3584:0015701 x 12N3584:0015706          12N3584:0015706: [12n/bet/13.1-[803]]
                   12N3584:0015710 x 12N3584:0015710          12N3584:0015710: [12n/bet/13.1-[806]]
      12N3584:0015710: [12n/bet/13.1-[806]]
                   12N3584:0015804 x 12N3584:0015804
                   12N3584:0015806 x 12N3584:0015803          12N3584:0015803: [12n/bet/13.1-[808]]
                   12N3584:0015809 x 12N3584:0015809
                   12N3584:0015810 x 12N3584:0015810
                   12N3584:0015812 x 12N3584:0015811          12N3584:0015811: [12n/bet/13.1-[810]]
                   12R503:B0012603 x 12R3584:0022802
                   12R503:B0012605 x 12R3584:0022806
                   12R503:B0012607 x 12R3584:0022809          12R3584:0022809: [12r/bet/3.8-[39],12r/be
t/8.8-[152]]
                   12R503:B0012709 x 12R3584:0022804          12R3584:0022804: [12r/bet/3.8-[38],12r/be
t/8.8-[150]]
                   13R3584:0005701 x 13R3584:0005717          13R3584:0005717: [13r/bet/11.7-[1023,1024
],13r/bet/15.7-[1142],13r/bet/18.7-[1287],13r/bet/21.7-[1405],13r/bet/25.7-[1557]]
                   13R3584:0005703 x 13R3584:0005713          13R3584:0005713: [13r/bet/1.8-[1730],13r/
bet/11.7-[1021,1022],13r/bet/15.7-[1141],13r/bet/18.7-[1286],13r/bet/21.7-[1404],13r/bet/25.7-[1556]]
                   13R3584:0005714 x 13R3584:0005713          13R3584:0005713: [13r/bet/1.8-[1730],13r/
bet/11.7-[1021,1022],13r/bet/15.7-[1141],13r/bet/18.7-[1286],13r/bet/21.7-[1404],13r/bet/25.7-[1556]]
                   13R3584:0005715 x 13R3584:0005713          13R3584:0005713: [13r/bet/1.8-[1730],13r/
bet/11.7-[1021,1022],13r/bet/15.7-[1141],13r/bet/18.7-[1286],13r/bet/21.7-[1404],13r/bet/25.7-[1556]]
                   13R3584:0005716 x 13R3584:0005717          13R3584:0005717: [13r/bet/11.7-[1023,1024
],13r/bet/15.7-[1142],13r/bet/18.7-[1287],13r/bet/21.7-[1405],13r/bet/25.7-[1557]]
                   13R3584:0005718 x 13R3584:0005717          13R3584:0005717: [13r/bet/11.7-[1023,1024
```

```
],13r/bet/15.7-[1142],13r/bet/18.7-[1287],13r/bet/21.7-[1405],13r/bet/25.7-[1557]]
                        13R3584:0005719 x 13R3584:0005713          13R3584:0005713: [13r/bet/1.8-[1730],13r/
bet/11.7-[1021,1022],13r/bet/15.7-[1141],13r/bet/18.7-[1286],13r/bet/21.7-[1404],13r/bet/25.7-[1556]]
                        14R3584:0009502 x 14R3584:0009514          14R3584:0009514: [14r/bet/24.8-[2431]]
                        14R3584:0009505 x 14R3584:0009514          14R3584:0009514: [14r/bet/24.8-[2431]]
                        14R3584:0009507 x 14R3584:0009514          14R3584:0009514: [14r/bet/24.8-[2431]]
                        14R3584:0009511 x 14R3584:0009514          14R3584:0009514: [14r/bet/24.8-[2431]]
                        14R3584:0009513 x 14R3584:0009514          14R3584:0009514: [14r/bet/24.8-[2431]]
                    11N405:M0034005 x 11N3413:0009901
                  11R405:M0051311 x 11R3241:0017404          11R3241:0017404: [11r/aleph/18.8-[1042]]
            10R405:M0005310 x 10R2328:0019402          10R2328:0019402: [10r/gimmel/9.8-[104]]
            10R405:M0006908 x 10R2328:0019413          10R2328:0019413: [10r/gimmel/9.8-[105]]
      06R400:M00I6106 x 06R0003:0000303
        06N201:S0008301 x 06N1602:0019901
            07R201:S0027610 x 07R2346:0040606
            07R301:W0032608 x 07R2346:0040606
            07R401:M0025511 x 07R2346:0040606
            07R401:M0030305 x 07R2346:0040604
        06N201:S0008305 x 06N1602:0019907
            07R201:S0025009 x 07R2340:0041013
            07R301:W0023308 x 07R2340:0041013
            07R301:W0027507 x 07R2340:0041011
            07R301:W0029309 x 07R2340:0041011
            07R301:W0030210 x 07R2340:0041013
            07R401:M0024906 x 07R2340:0041013
            07R401:M0028003 x 07R2340:0041011
        06N201:S0008309 x 06N1602:0019911
        06N201:S0008906 x 06N1602:0019912
        06N201:S0009804 x 06N1602:0019913
            07R201:S0030704 x 07R2329:0041801      !!!
            07R301:W0030511 x 07R2329:0041801
            07R401:M0030601 x 07R2329:0041801      !!!
        06N201:S0031904 x 06N1602:0019905
            07R201:S0025017 x 07R2343:0040803
            07R201:S0029805 x 07R2343:0040803
            07R301:W0029311 x 07R2343:0040808
            07R401:M0028004 x 07R2343:0040803
            07R401:M0028005 x 07R2343:0040808
        06N301:W0006307 x 06N1602:0019901
        06N301:W0006605 x 06N1602:0019911
        06N301:W0011408 x 06N1602:0019912
        06N301:W0025101 x 06N1602:0019905
        06N301:W0025108 x 06N1602:0019909
        06N301:W0025401 x 06N1602:0019910
        06N301:W0025402 x 06N1602:0019913
        06N301:W0029904 x 06N1602:0019907
        06N401:M0004304 x 06N1602:0019913
```

```
06N401:M0004902 x 06N1602:0019901
      07R201:S0025615 x 07R2348:0040704
      07R201:S0029201 x 07R2348:0040709
      07R301:W0023908 x 07R2348:0040709
      07R301:W0032001 x 07R2348:0040704
      07R301:W0032002 x 07R2348:0040709
      07R401:M0024308 x 07R2348:0040709
      07R401:M0030306 x 07R2348:0040704
      07R401:M0030310 x 07R2348:0040709
06N401:M0004909 x 06N1602:0019905
      07R301:W0023906 x 07R2345:0040908
      07R401:M0024305 x 07R2345:0040908
06N401:M0005201 x 06N1602:0019911
      07R201:S0029808 x 07R2336:0041505
      07R301:W0029608 x 07R2336:0041505
      07R301:W0033204 x 07R2336:0041502
      07R401:M0026101 x 07R2336:0041502
      07R401:M0030005 x 07R2336:0041505
06N401:M0005202 x 06N1602:0019909
06N401:M0005509 x 06N1602:0019907
      07R201:S0030403 x 07R2342:0041105
      07R301:W0020601 x 07R2342:0041105
      07R401:M0021008 x 07R2342:0041105
06N401:M0006101 x 06N1602:0019912
06N401:M0007001 x 06N1602:0019910
```