

Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

Pham 217947 Report

This analysis was run 03/28/25 on database version 593.

Pham number 217947 has 62 members, 8 are drafts.

Phages represented in each track:

- Track 1 : HedwigODU_81, Adephagia_80, Joy99_82, Asayake_81, Tachez_81, BaghaKamala_80, Twitch_81, Atiba_82, Padfoot_81, Blizzard_81
- Track 2 : Rosmarinus_81, Topper_81, Dalmuri_81, Capricorn_81, ActinUp_82, BEEST_81, CaseJules_83, Jarvi_81, Zabiza_77, Boiiii_81, CREW_80, Jeckyll_81, Piatt_80, CallaLilly_82, Hyperbowlee_80, Inky_81, Llorens_81, Durfee_81, TruffulaTree_83, Peel_81, Spock_81, Lunahalos_81, ShiaSurprise_82, Belladonna_81, Homura_80
- Track 3 : Ramen_82
- Track 4 : TaiwanKao_82
- Track 5 : Curiosium_87
- Track 6 : McMater_83, Dartin_83, Peanam_84, Richo_83
- Track 7 : JAWS_80, Slimphazie_83, Veliki_82
- Track 8 : Guanica15_87
- Track 9 : Clipper_87
- Track 10 : Yunkel11_87, Efra2_88
- Track 11 : Bella96_83
- Track 12 : Sulley_78, Deby_81, Angelica_79
- Track 13 : LastHope_88
- Track 14 : TingHuaYa_86
- Track 15 : Anaya_85
- Track 16 : Shaobing_83
- Track 17 : Validus_87
- Track 18 : Niklas_84
- Track 19 : MacKat_78
- Track 20 : TiniBug_82
- Track 21 : Omnicron_78

Summary of Final Annotations (See graph section above for start numbers):

The start number called the most often in the published annotations is 12, it was called in 32 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp_82, Anaya_85, BEEST_81, Belladonna_81, Boiiii_81, CREW_80, CallaLilly_82, Capricorn_81, CaseJules_83, Curiosium_87, Dalmuri_81, Durfee_81, Homura_80, Hyperbowlee_80, Inky_81, JAWS_80, Jarvi_81, Jeckyll_81, LastHope_88, Llorens_81, Lunahalos_81, MacKat_78, Omnicron_78, Peel_81, Piatt_80, Ramen_82, Rosmarinus_81, ShiaSurprise_82, Slimphazie_83, Spock_81, TingHuaYa_86, Topper_81, TruffulaTree_83, Veliki_82, Zabiza_77,

Genes that have the "Most Annotated" start but do not call it:

- Adephagia_80, Asayake_81, Atiba_82, BaghaKamala_80, Bella96_83, Blizzard_81, Clipper_87, Efra2_88, Guanica15_87, HedwigODU_81, Joy99_82, Padfoot_81, Tachez_81, TaiwanKao_82, Twitch_81, Yunkel11_87,

Genes that do not have the "Most Annotated" start:

- Angelica_79, Dartin_83, Deby_81, McMater_83, Niklas_84, Peanam_84, Richo_83, Shaobing_83, Sulley_78, TiniBug_82, Validus_87,

Summary by start number:

Start 8:

- Found in 4 of 62 (6.5%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 25.0% of time when present
- Phage (with cluster) where this start called: TiniBug_82 (K1),

Start 9:

- Found in 3 of 62 (4.8%) of genes in pham
- Manual Annotations of this start: 3 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angelica_79 (K1), Deby_81 (K1), Sulley_78 (K1),

Start 11:

- Found in 51 of 62 (82.3%) of genes in pham
- Manual Annotations of this start: 17 of 54
- Called 41.2% of time when present
- Phage (with cluster) where this start called: Adephagia_80 (K1), Asayake_81 (K1), Atiba_82 (K1), BaghaKamala_80 (K1), Bella96_83 (K1), Blizzard_81 (K1), Clipper_87 (K1), Dartin_83 (K1), Efra2_88 (K1), HedwigODU_81 (K1), Joy99_82 (K1), McMater_83 (K1), Niklas_84 (K1), Padfoot_81 (K1), Peanam_84 (K1), Richo_83 (K1), Shaobing_83 (K1), Tachez_81 (K1), Twitch_81 (K1), Validus_87 (K1), Yunkel11_87 (K1),

Start 12:

- Found in 51 of 62 (82.3%) of genes in pham
- Manual Annotations of this start: 32 of 54
- Called 68.6% of time when present
- Phage (with cluster) where this start called: ActinUp_82 (K1), Anaya_85 (K1), BEEST_81 (K1), Belladonna_81 (K1), Boiiii_81 (K1), CREW_80 (K1), CallaLilly_82 (K1), Capricorn_81 (K1), CaseJules_83 (K1), Curiosium_87 (K1), Dalmuri_81 (K1), Durfee_81 (K1), Homura_80 (K1), Hyperbowlee_80 (K1), Inky_81 (K1), JAWS_80 (K1), Jarvi_81 (K1), Jeckyll_81 (K1), LastHope_88 (K1), Llorens_81 (K1), Lunahalos_81 (K1), MacKat_78 (K1), Omnicron_78 (K5), Peel_81 (K1), Piatt_80 (K1), Ramen_82 (K1), Rosmarinus_81 (K1), ShiaSurprise_82 (K1), Slimphazie_83 (K1),

Spock_81 (K1), TingHuaYa_86 (K1), Topper_81 (K1), TruffulaTree_83 (K1), Veliki_82 (K1), Zabiza_77 (K1),

Start 13:

- Found in 7 of 62 (11.3%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Guanica15_87 (K1), TaiwanKao_82 (K1),

Summary by clusters:

There are 2 clusters represented in this pham: K1, K5,

Info for manual annotations of cluster K1:

- Start number 8 was manually annotated 1 time for cluster K1.
- Start number 9 was manually annotated 3 times for cluster K1.
- Start number 11 was manually annotated 17 times for cluster K1.
- Start number 12 was manually annotated 31 times for cluster K1.
- Start number 13 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K5:

- Start number 12 was manually annotated 1 time for cluster K5.

Gene Information:

Gene: ActinUp_82 Start: 52951, Stop: 53229, Start Num: 12

Candidate Starts for ActinUp_82:

(Start: 11 @52948 has 17 MA's), (Start: 12 @52951 has 32 MA's), (14, 52963), (18, 53014), (21, 53047), (23, 53074), (24, 53080), (25, 53104),

Gene: Adephagia_80 Start: 52785, Stop: 53066, Start Num: 11

Candidate Starts for Adephagia_80:

(Start: 11 @52785 has 17 MA's), (Start: 12 @52788 has 32 MA's), (14, 52800), (18, 52851), (21, 52884), (23, 52911), (24, 52917), (25, 52941),

Gene: Anaya_85 Start: 53830, Stop: 54108, Start Num: 12

Candidate Starts for Anaya_85:

(Start: 12 @53830 has 32 MA's), (Start: 13 @53833 has 1 MA's), (17, 53854), (18, 53893), (21, 53926), (24, 53959), (25, 53983),

Gene: Angelica_79 Start: 52375, Stop: 52740, Start Num: 9

Candidate Starts for Angelica_79:

(7, 52369), (Start: 8 @52372 has 1 MA's), (Start: 9 @52375 has 3 MA's), (14, 52468), (15, 52471), (18, 52519), (21, 52552), (23, 52579), (24, 52585), (25, 52609),

Gene: Asayake_81 Start: 53100, Stop: 53381, Start Num: 11

Candidate Starts for Asayake_81:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Atiba_82 Start: 52748, Stop: 53029, Start Num: 11

Candidate Starts for Atiba_82:

(Start: 11 @52748 has 17 MA's), (Start: 12 @52751 has 32 MA's), (14, 52763), (18, 52814), (21, 52847), (23, 52874), (24, 52880), (25, 52904),

Gene: BEEST_81 Start: 53103, Stop: 53381, Start Num: 12

Candidate Starts for BEEST_81:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: BaghaKamala_80 Start: 52334, Stop: 52615, Start Num: 11

Candidate Starts for BaghaKamala_80:

(Start: 11 @52334 has 17 MA's), (Start: 12 @52337 has 32 MA's), (14, 52349), (18, 52400), (21, 52433), (23, 52460), (24, 52466), (25, 52490),

Gene: Bella96_83 Start: 53274, Stop: 53555, Start Num: 11

Candidate Starts for Bella96_83:

(Start: 11 @53274 has 17 MA's), (Start: 12 @53277 has 32 MA's), (14, 53289), (16, 53298), (18, 53340), (21, 53373), (23, 53400), (24, 53406), (25, 53430), (28, 53484),

Gene: Belladonna_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Belladonna_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: Blizzard_81 Start: 53100, Stop: 53381, Start Num: 11

Candidate Starts for Blizzard_81:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Boiiii_81 Start: 53105, Stop: 53383, Start Num: 12

Candidate Starts for Boiiii_81:

(Start: 11 @53102 has 17 MA's), (Start: 12 @53105 has 32 MA's), (14, 53117), (18, 53168), (21, 53201), (23, 53228), (24, 53234), (25, 53258),

Gene: CREW_80 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for CREW_80:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: CallaLilly_82 Start: 52829, Stop: 53107, Start Num: 12

Candidate Starts for CallaLilly_82:

(Start: 11 @52826 has 17 MA's), (Start: 12 @52829 has 32 MA's), (14, 52841), (18, 52892), (21, 52925), (23, 52952), (24, 52958), (25, 52982),

Gene: Capricorn_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Capricorn_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: CaseJules_83 Start: 53103, Stop: 53381, Start Num: 12

Candidate Starts for CaseJules_83:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Clipper_87 Start: 53466, Stop: 53747, Start Num: 11

Candidate Starts for Clipper_87:

(Start: 11 @53466 has 17 MA's), (Start: 12 @53469 has 32 MA's), (14, 53481), (15, 53484), (18, 53532), (21, 53565), (23, 53592), (24, 53598), (25, 53622),

Gene: Curiosium_87 Start: 52762, Stop: 53040, Start Num: 12

Candidate Starts for Curiosium_87:

(10, 52717), (Start: 11 @52759 has 17 MA's), (Start: 12 @52762 has 32 MA's), (14, 52774), (15, 52777), (18, 52825), (21, 52858), (23, 52885), (24, 52891), (25, 52915), (27, 52933),

Gene: Dalmuri_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Dalmuri_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: Dartin_83 Start: 54044, Stop: 54325, Start Num: 11

Candidate Starts for Dartin_83:

(1, 53687), (2, 53786), (3, 53828), (4, 53834), (6, 53942), (Start: 11 @54044 has 17 MA's), (14, 54059), (18, 54110), (19, 54119), (20, 54125), (21, 54143), (22, 54161), (23, 54170), (24, 54176), (25, 54200),

Gene: Deby_81 Start: 53273, Stop: 53638, Start Num: 9

Candidate Starts for Deby_81:

(7, 53267), (Start: 8 @53270 has 1 MA's), (Start: 9 @53273 has 3 MA's), (14, 53366), (15, 53369), (18, 53417), (21, 53450), (23, 53477), (24, 53483), (25, 53507),

Gene: Durfee_81 Start: 53103, Stop: 53381, Start Num: 12

Candidate Starts for Durfee_81:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Efra2_88 Start: 53692, Stop: 53973, Start Num: 11

Candidate Starts for Efra2_88:

(Start: 11 @53692 has 17 MA's), (Start: 12 @53695 has 32 MA's), (14, 53707), (15, 53710), (18, 53758), (21, 53791), (23, 53818), (24, 53824), (25, 53848), (26, 53857), (27, 53866),

Gene: Guanica15_87 Start: 53392, Stop: 53667, Start Num: 13

Candidate Starts for Guanica15_87:

(Start: 12 @53389 has 32 MA's), (Start: 13 @53392 has 1 MA's), (14, 53401), (17, 53413), (18, 53452), (21, 53485), (24, 53518), (25, 53542),

Gene: HedwigODU_81 Start: 52948, Stop: 53229, Start Num: 11

Candidate Starts for HedwigODU_81:

(Start: 11 @52948 has 17 MA's), (Start: 12 @52951 has 32 MA's), (14, 52963), (18, 53014), (21, 53047), (23, 53074), (24, 53080), (25, 53104),

Gene: Homura_80 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Homura_80:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: Hyperbowlee_80 Start: 53103, Stop: 53381, Start Num: 12

Candidate Starts for Hyperbowlee_80:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Inky_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Inky_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: JAWS_80 Start: 52865, Stop: 53149, Start Num: 12

Candidate Starts for JAWS_80:

(5, 52730), (10, 52823), (Start: 12 @52865 has 32 MA's), (Start: 13 @52868 has 1 MA's), (17, 52889), (18, 52928), (21, 52961), (24, 52994), (25, 53018),

Gene: Jarvi_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Jarvi_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: Jeckyll_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Jeckyll_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: Joy99_82 Start: 53032, Stop: 53313, Start Num: 11

Candidate Starts for Joy99_82:

(Start: 11 @53032 has 17 MA's), (Start: 12 @53035 has 32 MA's), (14, 53047), (18, 53098), (21, 53131), (23, 53158), (24, 53164), (25, 53188),

Gene: LastHope_88 Start: 53488, Stop: 53766, Start Num: 12

Candidate Starts for LastHope_88:

(Start: 11 @53485 has 17 MA's), (Start: 12 @53488 has 32 MA's), (14, 53500), (15, 53503), (21, 53584), (23, 53611), (24, 53617), (25, 53641),

Gene: Llorens_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Llorens_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: Lunahalos_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Lunahalos_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: MacKat_78 Start: 48353, Stop: 48631, Start Num: 12

Candidate Starts for MacKat_78:

(Start: 11 @48350 has 17 MA's), (Start: 12 @48353 has 32 MA's), (14, 48365), (15, 48368), (18, 48416), (21, 48449), (23, 48476), (24, 48482), (25, 48506),

Gene: McMater_83 Start: 54044, Stop: 54325, Start Num: 11

Candidate Starts for McMater_83:

(1, 53687), (2, 53786), (3, 53828), (4, 53834), (6, 53942), (Start: 11 @54044 has 17 MA's), (14, 54059), (18, 54110), (19, 54119), (20, 54125), (21, 54143), (22, 54161), (23, 54170), (24, 54176), (25, 54200),

Gene: Niklas_84 Start: 54084, Stop: 54365, Start Num: 11

Candidate Starts for Niklas_84:

(1, 53763), (2, 53862), (3, 53904), (4, 53910), (Start: 11 @54084 has 17 MA's), (14, 54099), (18, 54150), (19, 54159), (20, 54165), (21, 54183), (22, 54201), (23, 54210), (24, 54216), (25, 54240),

Gene: Omnicron_78 Start: 52916, Stop: 53194, Start Num: 12

Candidate Starts for Omnicron_78:

(Start: 12 @52916 has 32 MA's), (Start: 13 @52919 has 1 MA's), (17, 52940), (18, 52979), (19, 52988), (21, 53012), (24, 53045), (25, 53069),

Gene: Padfoot_81 Start: 53100, Stop: 53381, Start Num: 11

Candidate Starts for Padfoot_81:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Peanam_84 Start: 54063, Stop: 54344, Start Num: 11

Candidate Starts for Peanam_84:

(1, 53706), (2, 53805), (3, 53847), (4, 53853), (6, 53961), (Start: 11 @54063 has 17 MA's), (14, 54078), (18, 54129), (19, 54138), (20, 54144), (21, 54162), (22, 54180), (23, 54189), (24, 54195), (25, 54219),

Gene: Peel_81 Start: 52908, Stop: 53186, Start Num: 12

Candidate Starts for Peel_81:

(Start: 11 @52905 has 17 MA's), (Start: 12 @52908 has 32 MA's), (14, 52920), (18, 52971), (21, 53004), (23, 53031), (24, 53037), (25, 53061),

Gene: Piatt_80 Start: 53103, Stop: 53381, Start Num: 12

Candidate Starts for Piatt_80:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Ramen_82 Start: 52676, Stop: 52954, Start Num: 12

Candidate Starts for Ramen_82:

(Start: 11 @52673 has 17 MA's), (Start: 12 @52676 has 32 MA's), (14, 52688), (16, 52697), (18, 52739), (21, 52772), (24, 52805), (25, 52829),

Gene: Richo_83 Start: 54044, Stop: 54325, Start Num: 11

Candidate Starts for Richo_83:

(1, 53687), (2, 53786), (3, 53828), (4, 53834), (6, 53942), (Start: 11 @54044 has 17 MA's), (14, 54059), (18, 54110), (19, 54119), (20, 54125), (21, 54143), (22, 54161), (23, 54170), (24, 54176), (25, 54200),

Gene: Rosmarinus_81 Start: 52894, Stop: 53172, Start Num: 12

Candidate Starts for Rosmarinus_81:

(Start: 11 @52891 has 17 MA's), (Start: 12 @52894 has 32 MA's), (14, 52906), (18, 52957), (21, 52990), (23, 53017), (24, 53023), (25, 53047),

Gene: Shaobing_83 Start: 54131, Stop: 54412, Start Num: 11

Candidate Starts for Shaobing_83:

(Start: 11 @54131 has 17 MA's), (14, 54146), (18, 54197), (19, 54206), (20, 54212), (21, 54230), (22, 54248), (23, 54257), (24, 54263), (25, 54287),

Gene: ShiaSurprise_82 Start: 53103, Stop: 53381, Start Num: 12

Candidate Starts for ShiaSurprise_82:

(Start: 11 @53100 has 17 MA's), (Start: 12 @53103 has 32 MA's), (14, 53115), (18, 53166), (21, 53199), (23, 53226), (24, 53232), (25, 53256),

Gene: Slimphazie_83 Start: 53315, Stop: 53599, Start Num: 12

Candidate Starts for Slimphazie_83:

(5, 53180), (10, 53273), (Start: 12 @53315 has 32 MA's), (Start: 13 @53318 has 1 MA's), (17, 53339), (18, 53378), (21, 53411), (24, 53444), (25, 53468),

Gene: Spock_81 Start: 52907, Stop: 53185, Start Num: 12

Candidate Starts for Spock_81:

(Start: 11 @52904 has 17 MA's), (Start: 12 @52907 has 32 MA's), (14, 52919), (18, 52970), (21, 53003), (23, 53030), (24, 53036), (25, 53060),

Gene: Sulley_78 Start: 52370, Stop: 52735, Start Num: 9

Candidate Starts for Sulley_78:

(7, 52364), (Start: 8 @52367 has 1 MA's), (Start: 9 @52370 has 3 MA's), (14, 52463), (15, 52466), (18, 52514), (21, 52547), (23, 52574), (24, 52580), (25, 52604),

Gene: Tachez_81 Start: 52748, Stop: 53029, Start Num: 11

Candidate Starts for Tachez_81:

(Start: 11 @52748 has 17 MA's), (Start: 12 @52751 has 32 MA's), (14, 52763), (18, 52814), (21, 52847), (23, 52874), (24, 52880), (25, 52904),

Gene: TaiwanKao_82 Start: 52883, Stop: 53164, Start Num: 13

Candidate Starts for TaiwanKao_82:

(Start: 12 @52880 has 32 MA's), (Start: 13 @52883 has 1 MA's), (17, 52904), (18, 52943), (19, 52952), (21, 52976), (24, 53009), (25, 53033),

Gene: TingHuaYa_86 Start: 53796, Stop: 54074, Start Num: 12

Candidate Starts for TingHuaYa_86:

(Start: 11 @53793 has 17 MA's), (Start: 12 @53796 has 32 MA's), (14, 53808), (15, 53811), (21, 53892), (23, 53919), (24, 53925),

Gene: TiniBug_82 Start: 53409, Stop: 53771, Start Num: 8

Candidate Starts for TiniBug_82:

(7, 53406), (Start: 8 @53409 has 1 MA's), (14, 53505), (18, 53556), (21, 53589), (23, 53616), (24, 53622), (25, 53646), (28, 53700),

Gene: Topper_81 Start: 52906, Stop: 53184, Start Num: 12

Candidate Starts for Topper_81:

(Start: 11 @52903 has 17 MA's), (Start: 12 @52906 has 32 MA's), (14, 52918), (18, 52969), (21, 53002), (23, 53029), (24, 53035), (25, 53059),

Gene: TruffulaTree_83 Start: 53314, Stop: 53592, Start Num: 12

Candidate Starts for TruffulaTree_83:

(Start: 11 @53311 has 17 MA's), (Start: 12 @53314 has 32 MA's), (14, 53326), (18, 53377), (21, 53410), (23, 53437), (24, 53443), (25, 53467),

Gene: Twitch_81 Start: 52905, Stop: 53186, Start Num: 11

Candidate Starts for Twitch_81:

(Start: 11 @52905 has 17 MA's), (Start: 12 @52908 has 32 MA's), (14, 52920), (18, 52971), (21, 53004), (23, 53031), (24, 53037), (25, 53061),

Gene: Validus_87 Start: 54683, Stop: 54964, Start Num: 11

Candidate Starts for Validus_87:

(Start: 11 @54683 has 17 MA's), (14, 54698), (18, 54749), (19, 54758), (20, 54764), (21, 54782), (22, 54800), (24, 54815), (25, 54839),

Gene: Veliki_82 Start: 52850, Stop: 53134, Start Num: 12

Candidate Starts for Veliki_82:

(5, 52715), (10, 52808), (Start: 12 @52850 has 32 MA's), (Start: 13 @52853 has 1 MA's), (17, 52874), (18, 52913), (21, 52946), (24, 52979), (25, 53003),

Gene: Yunkel11_87 Start: 53374, Stop: 53655, Start Num: 11

Candidate Starts for Yunkel11_87:

(Start: 11 @53374 has 17 MA's), (Start: 12 @53377 has 32 MA's), (14, 53389), (15, 53392), (18, 53440), (21, 53473), (23, 53500), (24, 53506), (25, 53530), (26, 53539), (27, 53548),

Gene: Zabiza_77 Start: 49256, Stop: 49534, Start Num: 12

Candidate Starts for Zabiza_77:

(Start: 11 @49253 has 17 MA's), (Start: 12 @49256 has 32 MA's), (14, 49268), (18, 49319), (21, 49352), (23, 49379), (24, 49385), (25, 49409),