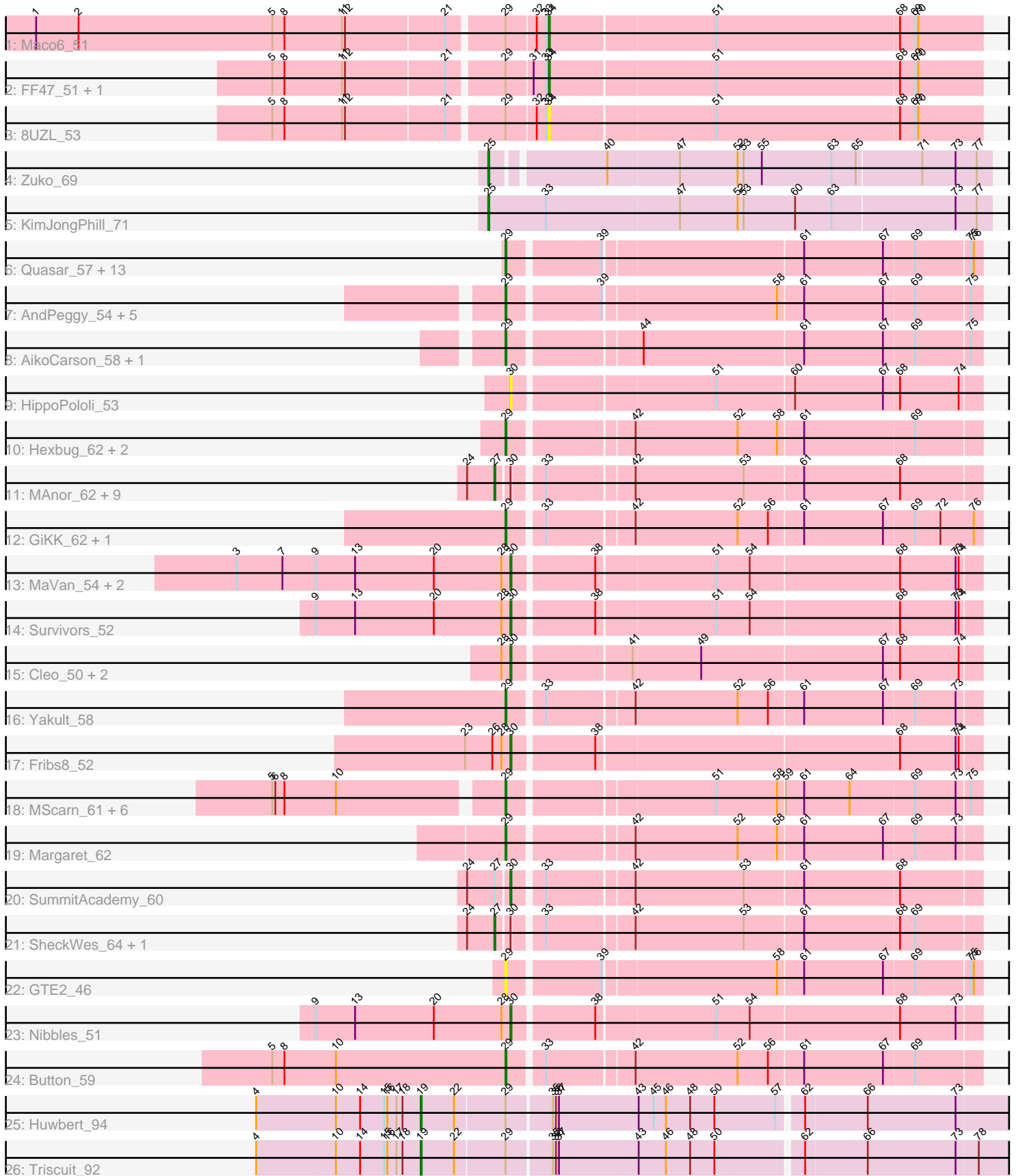


Pham 157840



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 157840 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157840 has 69 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Maco6_51
- Track 2 : FF47_51, Muddy_53
- Track 3 : 8UZL_53
- Track 4 : Zuko_69
- Track 5 : KimJongPhill_71
- Track 6 : Quasar_57, Agatha_57, Burnsey_57, Nina_57, RedBaron_61, Cozz_55, PsychoKiller_56, MunkgeeRoachy_58, Axym_56, SweatNTears_59, Typhonomachy_57, Sopespian_54, GoldHunter_58, Elliott_57
- Track 7 : AndPeggy_54, BillDoor_57, Yarn_54, SteamedHams_58, Emalyn_56, Tolls_58
- Track 8 : AikoCarson_58, Amok_58
- Track 9 : HippoPololi_53
- Track 10 : Hexbug_62, Nodigi_62, Orla_64
- Track 11 : MAnor_62, Elinal_65, Feastonyeet_60, KayGee_62, Pons_62, PotPie_59, Mayweather_64, CherryonLim_61, BigChungus_60, Vine_63
- Track 12 : GiKK_62, Jamzy_62
- Track 13 : MaVan_54, Zareef_54, Azira_52
- Track 14 : Survivors_52
- Track 15 : Cleo_50, Dre3_53, Gibbous_53
- Track 16 : Yakult_58
- Track 17 : Fribs8_52
- Track 18 : MScarn_61, SketchMex_57, Buttrmlkdreams_59, Biskit_59, Yummy_59, Troje_59, Horseradish_59
- Track 19 : Margaret_62
- Track 20 : SummitAcademy_60
- Track 21 : SheckWes_64, Lauer_55
- Track 22 : GTE2_46
- Track 23 : Nibbles_51
- Track 24 : Button_59
- Track 25 : Huwbert_94
- Track 26 : Triscuit_92

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

The start number called the most often in the published annotations is 29, it was called in 30 of the 53 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha_57, AikoCarson_58, Amok_58, AndPeggy_54, Axym_56, BillDoor_57, Biskit_59, Burnsey_57, Button_59, Buttrmlkdreams_59, Cozz_55, Elliott_57, Emalyn_56, GTE2_46, GiKK_62, GoldHunter_58, Hexbug_62, Horseradish_59, Jamzy_62, MScarn_61, Margaret_62, MunkgeeRoachy_58, Nina_57, Nodigi_62, Orla_64, PsychoKiller_56, Quasar_57, RedBaron_61, SketchMex_57, Sopespian_54, SteamedHams_58, SweatNTears_59, Tolls_58, Troje_59, Typhonmarchy_57, Yakult_58, Yarn_54, Yummy_59,

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

- 8UZL_53, FF47_51, Huwburt_94, Maco6_51, Muddy_53, Triscuit_92,

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

- Azira_52, BigChungus_60, CherryonLim_61, Cleo_50, Dre3_53, Elinal_65, Feastonyeet_60, Fribs8_52, Gibbous_53, HippoPololi_53, KayGee_62, KimJongPhill_71, Lauer_55, MAnor_62, MaVan_54, Mayweather_64, Nibbles_51, Pons_62, PotPie_59, SheckWes_64, SummitAcademy_60, Survivors_52, Vine_63, Zareef_54, Zuko_69,

Summary by start number:

Start 19:

- Found in 2 of 69 (2.9%) of genes in pham
- Manual Annotations of this start: 2 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Huwburt_94 (GG), Triscuit_92 (GG),

Start 25:

- Found in 2 of 69 (2.9%) of genes in pham
- Manual Annotations of this start: 2 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill_71 (BR), Zuko_69 (BR),

Start 27:

- Found in 13 of 69 (18.8%) of genes in pham
- Manual Annotations of this start: 9 of 53
- Called 92.3% of time when present
- Phage (with cluster) where this start called: BigChungus_60 (CT), CherryonLim_61 (CT), Elinal_65 (CT), Feastonyeet_60 (CT), KayGee_62 (CT), Lauer_55 (CT), MAnor_62 (CT), Mayweather_64 (CT), Pons_62 (CT), PotPie_59 (CT), SheckWes_64 (CT), Vine_63 (CT),

Start 29:

- Found in 44 of 69 (63.8%) of genes in pham
- Manual Annotations of this start: 30 of 53
- Called 86.4% of time when present
- Phage (with cluster) where this start called: Agatha_57 (CT), AikoCarson_58 (CT), Amok_58 (CT), AndPeggy_54 (CT), Axym_56 (CT), BillDoor_57 (CT), Biskit_59 (CT), Burnsey_57 (CT), Button_59 (CT), Buttrmlkdreams_59 (CT), Cozz_55 (CT), Elliott_57 (CT), Emalyn_56 (CT), GTE2_46 (CT), GiKK_62 (CT), GoldHunter_58 (CT),

Hexbug_62 (CT), Horseradish_59 (CT), Jamzy_62 (CT), MScarn_61 (CT), Margaret_62 (CT), MunkgeeRoachy_58 (CT), Nina_57 (CT), Nodigi_62 (CT), Orla_64 (CT), PsychoKiller_56 (CT), Quasar_57 (CT), RedBaron_61 (CT), SketchMex_57 (CT), Sopespian_54 (CT), SteamedHams_58 (CT), SweatNTears_59 (CT), Tolls_58 (CT), Troje_59 (CT), Typhonomachy_57 (CT), Yakult_58 (CT), Yarn_54 (CT), Yummy_59 (CT),

Start 30:

- Found in 23 of 69 (33.3%) of genes in pham
- Manual Annotations of this start: 8 of 53
- Called 47.8% of time when present
- Phage (with cluster) where this start called: Azira_52 (CT), Cleo_50 (CT), Dre3_53 (CT), Fribs8_52 (CT), Gibbous_53 (CT), HippoPololi_53 (CT), MaVan_54 (CT), Nibbles_51 (CT), SummitAcademy_60 (CT), Survivors_52 (CT), Zareef_54 (CT),

Start 34:

- Found in 4 of 69 (5.8%) of genes in pham
- Manual Annotations of this start: 2 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 8UZL_53 (AB), FF47_51 (AB), Maco6_51 (AB), Muddy_53 (AB),

Summary by clusters:

There are 4 clusters represented in this pham: GG, AB, BR, CT,

Info for manual annotations of cluster AB:

- Start number 34 was manually annotated 2 times for cluster AB.

Info for manual annotations of cluster BR:

- Start number 25 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:

- Start number 27 was manually annotated 9 times for cluster CT.
- Start number 29 was manually annotated 30 times for cluster CT.
- Start number 30 was manually annotated 8 times for cluster CT.

Info for manual annotations of cluster GG:

- Start number 19 was manually annotated 2 times for cluster GG.

Gene Information:

Gene: 8UZL_53 Start: 39944, Stop: 39525, Start Num: 34

Candidate Starts for 8UZL_53:

(5, 40202), (8, 40190), (11, 40133), (12, 40130), (21, 40034), (Start: 29 @39983 has 30 MA's), (32, 39956), (33, 39947), (Start: 34 @39944 has 2 MA's), (51, 39785), (68, 39605), (69, 39590), (70, 39587),

Gene: Agatha_57 Start: 39947, Stop: 39504, Start Num: 29

Candidate Starts for Agatha_57:

(Start: 29 @39947 has 30 MA's), (39, 39863), (61, 39674), (67, 39596), (69, 39566), (75, 39515), (76, 39512),

Gene: AikoCarson_58 Start: 40131, Stop: 39688, Start Num: 29

Candidate Starts for AikoCarson_58:

(Start: 29 @40131 has 30 MA's), (44, 40014), (61, 39858), (67, 39780), (69, 39750), (75, 39699),

Gene: Amok_58 Start: 40059, Stop: 39616, Start Num: 29

Candidate Starts for Amok_58:

(Start: 29 @40059 has 30 MA's), (44, 39942), (61, 39786), (67, 39708), (69, 39678), (75, 39627),

Gene: AndPeggy_54 Start: 39363, Stop: 38920, Start Num: 29

Candidate Starts for AndPeggy_54:

(Start: 29 @39363 has 30 MA's), (39, 39279), (58, 39114), (61, 39090), (67, 39012), (69, 38982), (75, 38931),

Gene: Axym_56 Start: 39844, Stop: 39401, Start Num: 29

Candidate Starts for Axym_56:

(Start: 29 @39844 has 30 MA's), (39, 39760), (61, 39571), (67, 39493), (69, 39463), (75, 39412), (76, 39409),

Gene: Azira_52 Start: 38928, Stop: 38485, Start Num: 30

Candidate Starts for Azira_52:

(3, 39198), (7, 39153), (9, 39120), (13, 39081), (20, 39003), (28, 38937), (Start: 30 @38928 has 8 MA's), (38, 38853), (51, 38739), (54, 38706), (68, 38562), (73, 38508), (74, 38505),

Gene: BigChungus_60 Start: 41521, Stop: 41072, Start Num: 27

Candidate Starts for BigChungus_60:

(24, 41548), (Start: 27 @41521 has 9 MA's), (Start: 30 @41509 has 8 MA's), (33, 41485), (42, 41404), (53, 41299), (61, 41242), (68, 41149),

Gene: BillDoor_57 Start: 39039, Stop: 38596, Start Num: 29

Candidate Starts for BillDoor_57:

(Start: 29 @39039 has 30 MA's), (39, 38955), (58, 38790), (61, 38766), (67, 38688), (69, 38658), (75, 38607),

Gene: Biskit_59 Start: 39729, Stop: 39286, Start Num: 29

Candidate Starts for Biskit_59:

(5, 39945), (6, 39942), (8, 39933), (10, 39882), (Start: 29 @39729 has 30 MA's), (51, 39540), (58, 39480), (59, 39474), (61, 39456), (64, 39411), (69, 39348), (73, 39309), (75, 39297),

Gene: Burnsey_57 Start: 39938, Stop: 39495, Start Num: 29

Candidate Starts for Burnsey_57:

(Start: 29 @39938 has 30 MA's), (39, 39854), (61, 39665), (67, 39587), (69, 39557), (75, 39506), (76, 39503),

Gene: Button_59 Start: 39824, Stop: 39381, Start Num: 29

Candidate Starts for Button_59:

(5, 40055), (8, 40043), (10, 39992), (Start: 29 @39824 has 30 MA's), (33, 39794), (42, 39713), (52, 39614), (56, 39584), (61, 39551), (67, 39473), (69, 39443),

Gene: Buttrmlkdreams_59 Start: 40176, Stop: 39733, Start Num: 29

Candidate Starts for Buttrmlkdreams_59:

(5, 40392), (6, 40389), (8, 40380), (10, 40329), (Start: 29 @40176 has 30 MA's), (51, 39987), (58, 39927), (59, 39921), (61, 39903), (64, 39858), (69, 39795), (73, 39756), (75, 39744),

Gene: CherryonLim_61 Start: 43000, Stop: 42551, Start Num: 27

Candidate Starts for CherryonLim_61:

(24, 43027), (Start: 27 @43000 has 9 MA's), (Start: 30 @42988 has 8 MA's), (33, 42964), (42, 42883), (53, 42778), (61, 42721), (68, 42628),

Gene: Cleo_50 Start: 38689, Stop: 38246, Start Num: 30

Candidate Starts for Cleo_50:

(28, 38698), (Start: 30 @38689 has 8 MA's), (41, 38581), (49, 38515), (67, 38338), (68, 38323), (74, 38266),

Gene: Cozz_55 Start: 39535, Stop: 39092, Start Num: 29

Candidate Starts for Cozz_55:

(Start: 29 @39535 has 30 MA's), (39, 39451), (61, 39262), (67, 39184), (69, 39154), (75, 39103), (76, 39100),

Gene: Dre3_53 Start: 39533, Stop: 39090, Start Num: 30

Candidate Starts for Dre3_53:

(28, 39542), (Start: 30 @39533 has 8 MA's), (41, 39425), (49, 39359), (67, 39182), (68, 39167), (74, 39110),

Gene: Elinal_65 Start: 42329, Stop: 41880, Start Num: 27

Candidate Starts for Elinal_65:

(24, 42356), (Start: 27 @42329 has 9 MA's), (Start: 30 @42317 has 8 MA's), (33, 42293), (42, 42212), (53, 42107), (61, 42050), (68, 41957),

Gene: Elliott_57 Start: 39831, Stop: 39388, Start Num: 29

Candidate Starts for Elliott_57:

(Start: 29 @39831 has 30 MA's), (39, 39747), (61, 39558), (67, 39480), (69, 39450), (75, 39399), (76, 39396),

Gene: Emalyn_56 Start: 38851, Stop: 38408, Start Num: 29

Candidate Starts for Emalyn_56:

(Start: 29 @38851 has 30 MA's), (39, 38767), (58, 38602), (61, 38578), (67, 38500), (69, 38470), (75, 38419),

Gene: FF47_51 Start: 39855, Stop: 39436, Start Num: 34

Candidate Starts for FF47_51:

(5, 40113), (8, 40101), (11, 40044), (12, 40041), (21, 39945), (Start: 29 @39894 has 30 MA's), (31, 39870), (33, 39858), (Start: 34 @39855 has 2 MA's), (51, 39696), (68, 39516), (69, 39501), (70, 39498),

Gene: Feastonyeet_60 Start: 41521, Stop: 41072, Start Num: 27

Candidate Starts for Feastonyeet_60:

(24, 41548), (Start: 27 @41521 has 9 MA's), (Start: 30 @41509 has 8 MA's), (33, 41485), (42, 41404), (53, 41299), (61, 41242), (68, 41149),

Gene: Fribs8_52 Start: 39605, Stop: 39162, Start Num: 30

Candidate Starts for Fribs8_52:

(23, 39650), (26, 39623), (28, 39614), (Start: 30 @39605 has 8 MA's), (38, 39530), (68, 39239), (73, 39185), (74, 39182),

Gene: GTE2_46 Start: 39481, Stop: 39038, Start Num: 29

Candidate Starts for GTE2_46:

(Start: 29 @39481 has 30 MA's), (39, 39397), (58, 39232), (61, 39208), (67, 39130), (69, 39100), (75, 39049), (76, 39046),

Gene: GiKK_62 Start: 40991, Stop: 40545, Start Num: 29

Candidate Starts for GiKK_62:

(Start: 29 @40991 has 30 MA's), (33, 40961), (42, 40880), (52, 40781), (56, 40751), (61, 40718), (67, 40640), (69, 40610), (72, 40586), (76, 40553),

Gene: Gibbous_53 Start: 39533, Stop: 39090, Start Num: 30

Candidate Starts for Gibbous_53:

(28, 39542), (Start: 30 @39533 has 8 MA's), (41, 39425), (49, 39359), (67, 39182), (68, 39167), (74, 39110),

Gene: GoldHunter_58 Start: 39948, Stop: 39505, Start Num: 29

Candidate Starts for GoldHunter_58:

(Start: 29 @39948 has 30 MA's), (39, 39864), (61, 39675), (67, 39597), (69, 39567), (75, 39516), (76, 39513),

Gene: Hexbug_62 Start: 41858, Stop: 41415, Start Num: 29

Candidate Starts for Hexbug_62:

(Start: 29 @41858 has 30 MA's), (42, 41747), (52, 41648), (58, 41609), (61, 41585), (69, 41477),

Gene: HippoPololi_53 Start: 38842, Stop: 38399, Start Num: 30

Candidate Starts for HippoPololi_53:

(Start: 30 @38842 has 8 MA's), (51, 38653), (60, 38578), (67, 38491), (68, 38476), (74, 38419),

Gene: Horseradish_59 Start: 39662, Stop: 39219, Start Num: 29

Candidate Starts for Horseradish_59:

(5, 39878), (6, 39875), (8, 39866), (10, 39815), (Start: 29 @39662 has 30 MA's), (51, 39473), (58, 39413), (59, 39407), (61, 39389), (64, 39344), (69, 39281), (73, 39242), (75, 39230),

Gene: Huwbert_94 Start: 55839, Stop: 55264, Start Num: 19

Candidate Starts for Huwbert_94:

(4, 56001), (10, 55923), (14, 55899), (15, 55875), (16, 55872), (17, 55863), (18, 55857), (Start: 19 @55839 has 2 MA's), (22, 55806), (Start: 29 @55758 has 30 MA's), (35, 55716), (36, 55713), (37, 55710), (43, 55632), (45, 55617), (46, 55605), (48, 55581), (50, 55557), (57, 55500), (62, 55479), (66, 55419), (73, 55332),

Gene: Jamzy_62 Start: 40727, Stop: 40281, Start Num: 29

Candidate Starts for Jamzy_62:

(Start: 29 @40727 has 30 MA's), (33, 40697), (42, 40616), (52, 40517), (56, 40487), (61, 40454), (67, 40376), (69, 40346), (72, 40322), (76, 40289),

Gene: KayGee_62 Start: 42329, Stop: 41880, Start Num: 27

Candidate Starts for KayGee_62:

(24, 42356), (Start: 27 @42329 has 9 MA's), (Start: 30 @42317 has 8 MA's), (33, 42293), (42, 42212), (53, 42107), (61, 42050), (68, 41957),

Gene: KimJongPhill_71 Start: 50463, Stop: 50954, Start Num: 25

Candidate Starts for KimJongPhill_71:

(Start: 25 @50463 has 2 MA's), (33, 50520), (47, 50649), (52, 50706), (53, 50712), (60, 50763), (63, 50799), (73, 50919), (77, 50940),

Gene: Lauer_55 Start: 42506, Stop: 42057, Start Num: 27

Candidate Starts for Lauer_55:

(24, 42533), (Start: 27 @42506 has 9 MA's), (Start: 30 @42494 has 8 MA's), (33, 42470), (42, 42389), (53, 42284), (61, 42227), (68, 42134), (69, 42119),

Gene: MAnor_62 Start: 42460, Stop: 42011, Start Num: 27

Candidate Starts for MAnor_62:

(24, 42487), (Start: 27 @42460 has 9 MA's), (Start: 30 @42448 has 8 MA's), (33, 42424), (42, 42343), (53, 42238), (61, 42181), (68, 42088),

Gene: MScarn_61 Start: 39844, Stop: 39401, Start Num: 29

Candidate Starts for MScarn_61:

(5, 40060), (6, 40057), (8, 40048), (10, 39997), (Start: 29 @39844 has 30 MA's), (51, 39655), (58, 39595), (59, 39589), (61, 39571), (64, 39526), (69, 39463), (73, 39424), (75, 39412),

Gene: MaVan_54 Start: 38957, Stop: 38514, Start Num: 30

Candidate Starts for MaVan_54:

(3, 39227), (7, 39182), (9, 39149), (13, 39110), (20, 39032), (28, 38966), (Start: 30 @38957 has 8 MA's), (38, 38882), (51, 38768), (54, 38735), (68, 38591), (73, 38537), (74, 38534),

Gene: Maco6_51 Start: 39195, Stop: 38776, Start Num: 34

Candidate Starts for Maco6_51:

(1, 39687), (2, 39645), (5, 39453), (8, 39441), (11, 39384), (12, 39381), (21, 39285), (Start: 29 @39234 has 30 MA's), (32, 39207), (33, 39198), (Start: 34 @39195 has 2 MA's), (51, 39036), (68, 38856), (69, 38841), (70, 38838),

Gene: Margaret_62 Start: 40886, Stop: 40443, Start Num: 29

Candidate Starts for Margaret_62:

(Start: 29 @40886 has 30 MA's), (42, 40775), (52, 40676), (58, 40637), (61, 40613), (67, 40535), (69, 40505), (73, 40466),

Gene: Mayweather_64 Start: 42723, Stop: 42274, Start Num: 27

Candidate Starts for Mayweather_64:

(24, 42750), (Start: 27 @42723 has 9 MA's), (Start: 30 @42711 has 8 MA's), (33, 42687), (42, 42606), (53, 42501), (61, 42444), (68, 42351),

Gene: Muddy_53 Start: 40427, Stop: 40008, Start Num: 34

Candidate Starts for Muddy_53:

(5, 40685), (8, 40673), (11, 40616), (12, 40613), (21, 40517), (Start: 29 @40466 has 30 MA's), (31, 40442), (33, 40430), (Start: 34 @40427 has 2 MA's), (51, 40268), (68, 40088), (69, 40073), (70, 40070),

Gene: MunkgeeRoachy_58 Start: 39294, Stop: 38851, Start Num: 29

Candidate Starts for MunkgeeRoachy_58:

(Start: 29 @39294 has 30 MA's), (39, 39210), (61, 39021), (67, 38943), (69, 38913), (75, 38862), (76, 38859),

Gene: Nibbles_51 Start: 38650, Stop: 38207, Start Num: 30

Candidate Starts for Nibbles_51:

(9, 38842), (13, 38803), (20, 38725), (28, 38659), (Start: 30 @38650 has 8 MA's), (38, 38575), (51, 38461), (54, 38428), (68, 38284), (73, 38230),

Gene: Nina_57 Start: 40434, Stop: 39991, Start Num: 29

Candidate Starts for Nina_57:

(Start: 29 @40434 has 30 MA's), (39, 40350), (61, 40161), (67, 40083), (69, 40053), (75, 40002), (76, 39999),

Gene: Nodigi_62 Start: 41877, Stop: 41434, Start Num: 29

Candidate Starts for Nodigi_62:

(Start: 29 @41877 has 30 MA's), (42, 41766), (52, 41667), (58, 41628), (61, 41604), (69, 41496),

Gene: Orla_64 Start: 42200, Stop: 41757, Start Num: 29

Candidate Starts for Orla_64:

(Start: 29 @42200 has 30 MA's), (42, 42089), (52, 41990), (58, 41951), (61, 41927), (69, 41819),

Gene: Pons_62 Start: 42065, Stop: 41616, Start Num: 27

Candidate Starts for Pons_62:

(24, 42092), (Start: 27 @42065 has 9 MA's), (Start: 30 @42053 has 8 MA's), (33, 42029), (42, 41948), (53, 41843), (61, 41786), (68, 41693),

Gene: PotPie_59 Start: 42556, Stop: 42107, Start Num: 27

Candidate Starts for PotPie_59:

(24, 42583), (Start: 27 @42556 has 9 MA's), (Start: 30 @42544 has 8 MA's), (33, 42520), (42, 42439), (53, 42334), (61, 42277), (68, 42184),

Gene: PsychoKiller_56 Start: 39832, Stop: 39389, Start Num: 29

Candidate Starts for PsychoKiller_56:

(Start: 29 @39832 has 30 MA's), (39, 39748), (61, 39559), (67, 39481), (69, 39451), (75, 39400), (76, 39397),

Gene: Quasar_57 Start: 40536, Stop: 40093, Start Num: 29

Candidate Starts for Quasar_57:

(Start: 29 @40536 has 30 MA's), (39, 40452), (61, 40263), (67, 40185), (69, 40155), (75, 40104), (76, 40101),

Gene: RedBaron_61 Start: 40909, Stop: 40466, Start Num: 29

Candidate Starts for RedBaron_61:

(Start: 29 @40909 has 30 MA's), (39, 40825), (61, 40636), (67, 40558), (69, 40528), (75, 40477), (76, 40474),

Gene: SheckWes_64 Start: 41596, Stop: 41147, Start Num: 27

Candidate Starts for SheckWes_64:

(24, 41623), (Start: 27 @41596 has 9 MA's), (Start: 30 @41584 has 8 MA's), (33, 41560), (42, 41479), (53, 41374), (61, 41317), (68, 41224), (69, 41209),

Gene: SketchMex_57 Start: 39729, Stop: 39286, Start Num: 29

Candidate Starts for SketchMex_57:

(5, 39945), (6, 39942), (8, 39933), (10, 39882), (Start: 29 @39729 has 30 MA's), (51, 39540), (58, 39480), (59, 39474), (61, 39456), (64, 39411), (69, 39348), (73, 39309), (75, 39297),

Gene: Sopespian_54 Start: 39833, Stop: 39390, Start Num: 29

Candidate Starts for Sopespian_54:

(Start: 29 @39833 has 30 MA's), (39, 39749), (61, 39560), (67, 39482), (69, 39452), (75, 39401), (76, 39398),

Gene: SteamedHams_58 Start: 39340, Stop: 38897, Start Num: 29

Candidate Starts for SteamedHams_58:

(Start: 29 @39340 has 30 MA's), (39, 39256), (58, 39091), (61, 39067), (67, 38989), (69, 38959), (75, 38908),

Gene: SummitAcademy_60 Start: 41687, Stop: 41250, Start Num: 30

Candidate Starts for SummitAcademy_60:

(24, 41726), (Start: 27 @41699 has 9 MA's), (Start: 30 @41687 has 8 MA's), (33, 41663), (42, 41582), (53, 41477), (61, 41420), (68, 41327),

Gene: Survivors_52 Start: 38850, Stop: 38407, Start Num: 30

Candidate Starts for Survivors_52:

(9, 39042), (13, 39003), (20, 38925), (28, 38859), (Start: 30 @38850 has 8 MA's), (38, 38775), (51, 38661), (54, 38628), (68, 38484), (73, 38430), (74, 38427),

Gene: SweatNTears_59 Start: 40075, Stop: 39632, Start Num: 29

Candidate Starts for SweatNTears_59:

(Start: 29 @40075 has 30 MA's), (39, 39991), (61, 39802), (67, 39724), (69, 39694), (75, 39643), (76, 39640),

Gene: Tolls_58 Start: 39611, Stop: 39168, Start Num: 29

Candidate Starts for Tolls_58:

(Start: 29 @39611 has 30 MA's), (39, 39527), (58, 39362), (61, 39338), (67, 39260), (69, 39230), (75, 39179),

Gene: Triscuit_92 Start: 55578, Stop: 55003, Start Num: 19

Candidate Starts for Triscuit_92:

(4, 55740), (10, 55662), (14, 55638), (15, 55614), (16, 55611), (17, 55602), (18, 55596), (Start: 19 @55578 has 2 MA's), (22, 55545), (Start: 29 @55497 has 30 MA's), (35, 55455), (36, 55452), (37, 55449), (43, 55371), (46, 55344), (48, 55320), (50, 55296), (62, 55218), (66, 55158), (73, 55071), (78, 55050),

Gene: Troje_59 Start: 40067, Stop: 39624, Start Num: 29

Candidate Starts for Troje_59:

(5, 40283), (6, 40280), (8, 40271), (10, 40220), (Start: 29 @40067 has 30 MA's), (51, 39878), (58, 39818), (59, 39812), (61, 39794), (64, 39749), (69, 39686), (73, 39647), (75, 39635),

Gene: Typhonomachy_57 Start: 39657, Stop: 39214, Start Num: 29

Candidate Starts for Typhonomachy_57:

(Start: 29 @39657 has 30 MA's), (39, 39573), (61, 39384), (67, 39306), (69, 39276), (75, 39225), (76, 39222),

Gene: Vine_63 Start: 42322, Stop: 41873, Start Num: 27

Candidate Starts for Vine_63:

(24, 42349), (Start: 27 @42322 has 9 MA's), (Start: 30 @42310 has 8 MA's), (33, 42286), (42, 42205), (53, 42100), (61, 42043), (68, 41950),

Gene: Yakult_58 Start: 40649, Stop: 40206, Start Num: 29

Candidate Starts for Yakult_58:

(Start: 29 @40649 has 30 MA's), (33, 40619), (42, 40538), (52, 40439), (56, 40409), (61, 40376), (67, 40298), (69, 40268), (73, 40229),

Gene: Yarn_54 Start: 39368, Stop: 38925, Start Num: 29

Candidate Starts for Yarn_54:

(Start: 29 @39368 has 30 MA's), (39, 39284), (58, 39119), (61, 39095), (67, 39017), (69, 38987), (75, 38936),

Gene: Yummy_59 Start: 39776, Stop: 39333, Start Num: 29

Candidate Starts for Yummy_59:

(5, 39992), (6, 39989), (8, 39980), (10, 39929), (Start: 29 @39776 has 30 MA's), (51, 39587), (58, 39527), (59, 39521), (61, 39503), (64, 39458), (69, 39395), (73, 39356), (75, 39344),

Gene: Zareef_54 Start: 38947, Stop: 38504, Start Num: 30

Candidate Starts for Zareef_54:

(3, 39217), (7, 39172), (9, 39139), (13, 39100), (20, 39022), (28, 38956), (Start: 30 @38947 has 8 MA's), (38, 38872), (51, 38758), (54, 38725), (68, 38581), (73, 38527), (74, 38524),

Gene: Zuko_69 Start: 50446, Stop: 50922, Start Num: 25

Candidate Starts for Zuko_69:

(Start: 25 @50446 has 2 MA's), (40, 50548), (47, 50617), (52, 50674), (53, 50680), (55, 50698), (63, 50767), (65, 50791), (71, 50854), (73, 50887), (77, 50908),