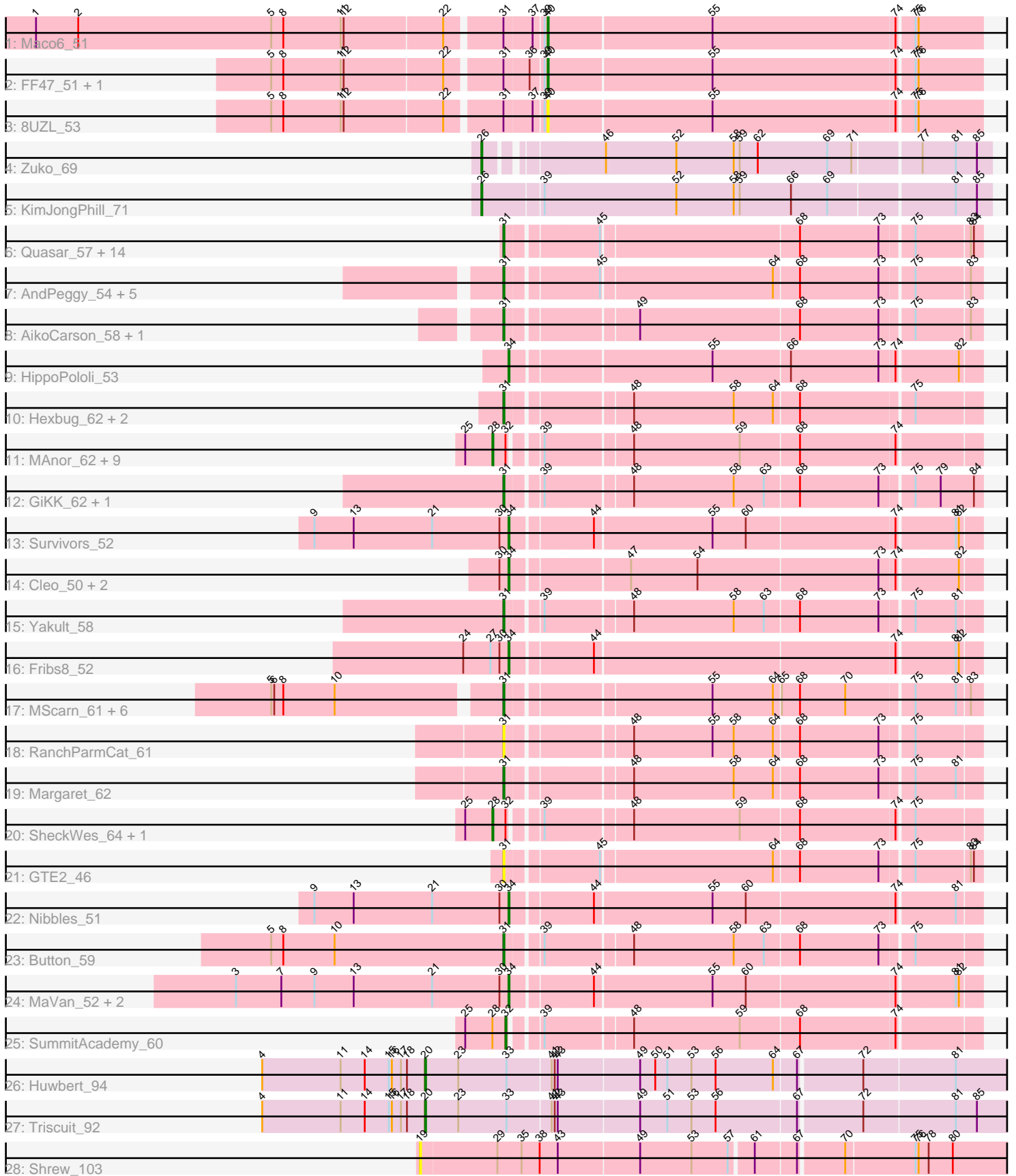


Pham 196500



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 196500 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196500 has 72 members, 13 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, Carsonalex_60, Nina_57, RedBaron_61, Cozz_55, PsychoKiller_56, SweatNTears_59, Axym_56, MunkgeeRoachy_55, Typhonmarchy_57, Sopeopian_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, PotPie_60, BigChungus_60, KayGee_63, Pons_62, Mayweather_64, CherryonLim_61, Vine_63
- Track 12 : GiKK_62, Jamzy_62
- Track 13 : Survivors_52
- Track 14 : Cleo_50, Dre3_53, Gibbous_53
- Track 15 : Yakult_58
- Track 16 : Fribs8_52
- Track 17 : MScarn_61, SketchMex_57, Buttrmlkdreams_59, Biskit_59, Yummy_59, Troje_59, Horseradish_59
- Track 18 : RanchParmCat_61
- Track 19 : Margaret_62
- Track 20 : SheckWes_64, Lauer_55
- Track 21 : GTE2_46
- Track 22 : Nibbles_51
- Track 23 : Button_59
- Track 24 : MaVan_52, Zareef_54, Azira_52
- Track 25 : SummitAcademy_60
- Track 26 : Huwburt_94
- Track 27 : Triscuit_92
- Track 28 : Shrew_103

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

The start number called the most often in the published annotations is 31, it was called in 31 of the 59 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, Carsonalex_60, Cozz_55, Elliott_57, Emalyn_56, GTE2_46, GiKK_62, GoldHunter_58, Hexbug_62, Horseradish_59, Jamzy_62, MScarn_61, Margaret_62, MunkgeeRoachy_55, Nina_57, Nodigi_62, Orla_64, PsychoKiller_56, Quasar_57, RanchParmCat_61, RedBaron_61, SketchMex_57, Sopeopian_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, Maco6_51, Muddy_53,

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, Huwbert_94, KayGee_63, KimJongPhill_71, Lauer_55, MAnor_62, MaVan_52, Mayweather_64, Nibbles_51, Pons_62, PotPie_60, SheckWes_64, Shrew_103, SummitAcademy_60, Survivors_52, Triscuit_92, Vine_63, Zareef_54, Zuko_69,

Summary by start number:

Start 19:

- Found in 1 of 72 (1.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shrew_103 (singleton),

Start 20:

- Found in 2 of 72 (2.8%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Huwbert_94 (GG), Triscuit_92 (GG),

Start 26:

- Found in 2 of 72 (2.8%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill_71 (BR), Zuko_69 (BR),

Start 28:

- Found in 13 of 72 (18.1%) of genes in pham
- Manual Annotations of this start: 12 of 59
- 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_63 (CT), Lauer_55 (CT), MAnor_62 (CT), Mayweather_64 (CT), Pons_62 (CT), PotPie_60 (CT), SheckWes_64 (CT), Vine_63 (CT),

Start 31:

- Found in 44 of 72 (61.1%) of genes in pham
- Manual Annotations of this start: 31 of 59
- Called 90.9% 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), Carsonalex_60 (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_55 (CT), Nina_57 (CT), Nodigi_62 (CT), Orla_64 (CT), PsychoKiller_56 (CT), Quasar_57 (CT), RanchParmCat_61 (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 32:

- Found in 13 of 72 (18.1%) of genes in pham
- Manual Annotations of this start: 1 of 59
- Called 7.7% of time when present
- Phage (with cluster) where this start called: SummitAcademy_60 (CT),

Start 34:

- Found in 10 of 72 (13.9%) of genes in pham
- Manual Annotations of this start: 9 of 59
- Called 100.0% 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_52 (CT), Nibbles_51 (CT), Survivors_52 (CT), Zareef_54 (CT),

Start 40:

- Found in 4 of 72 (5.6%) of genes in pham
- Manual Annotations of this start: 2 of 59
- 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 5 clusters represented in this pham: GG, singleton, AB, BR, CT,

Info for manual annotations of cluster AB:

- Start number 40 was manually annotated 2 times for cluster AB.

Info for manual annotations of cluster BR:

- Start number 26 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:

- Start number 28 was manually annotated 12 times for cluster CT.
- Start number 31 was manually annotated 31 times for cluster CT.
- Start number 32 was manually annotated 1 time for cluster CT.
- Start number 34 was manually annotated 9 times for cluster CT.

Info for manual annotations of cluster GG:

- Start number 20 was manually annotated 2 times for cluster GG.

Gene Information:

Gene: 8UZL_53 Start: 39944, Stop: 39525, Start Num: 40

Candidate Starts for 8UZL_53:

(5, 40202), (8, 40190), (11, 40133), (12, 40130), (22, 40034), (Start: 31 @39983 has 31 MA's), (37, 39956), (39, 39947), (Start: 40 @39944 has 2 MA's), (55, 39785), (74, 39605), (75, 39590), (76, 39587),

Gene: Agatha_57 Start: 39947, Stop: 39504, Start Num: 31

Candidate Starts for Agatha_57:

(Start: 31 @39947 has 31 MA's), (45, 39863), (68, 39674), (73, 39596), (75, 39566), (83, 39515), (84, 39512),

Gene: AikoCarson_58 Start: 40131, Stop: 39688, Start Num: 31

Candidate Starts for AikoCarson_58:

(Start: 31 @40131 has 31 MA's), (49, 40014), (68, 39858), (73, 39780), (75, 39750), (83, 39699),

Gene: Amok_58 Start: 40059, Stop: 39616, Start Num: 31

Candidate Starts for Amok_58:

(Start: 31 @40059 has 31 MA's), (49, 39942), (68, 39786), (73, 39708), (75, 39678), (83, 39627),

Gene: AndPeggy_54 Start: 39363, Stop: 38920, Start Num: 31

Candidate Starts for AndPeggy_54:

(Start: 31 @39363 has 31 MA's), (45, 39279), (64, 39114), (68, 39090), (73, 39012), (75, 38982), (83, 38931),

Gene: Axym_56 Start: 39844, Stop: 39401, Start Num: 31

Candidate Starts for Axym_56:

(Start: 31 @39844 has 31 MA's), (45, 39760), (68, 39571), (73, 39493), (75, 39463), (83, 39412), (84, 39409),

Gene: Azira_52 Start: 38928, Stop: 38485, Start Num: 34

Candidate Starts for Azira_52:

(3, 39198), (7, 39153), (9, 39120), (13, 39081), (21, 39003), (30, 38937), (Start: 34 @38928 has 9 MA's), (44, 38853), (55, 38739), (60, 38706), (74, 38562), (81, 38508), (82, 38505),

Gene: BigChungus_60 Start: 41521, Stop: 41072, Start Num: 28

Candidate Starts for BigChungus_60:

(25, 41548), (Start: 28 @41521 has 12 MA's), (Start: 32 @41509 has 1 MA's), (39, 41485), (48, 41404), (59, 41299), (68, 41242), (74, 41149),

Gene: BillDoor_57 Start: 39039, Stop: 38596, Start Num: 31

Candidate Starts for BillDoor_57:

(Start: 31 @39039 has 31 MA's), (45, 38955), (64, 38790), (68, 38766), (73, 38688), (75, 38658), (83, 38607),

Gene: Biskit_59 Start: 39729, Stop: 39286, Start Num: 31

Candidate Starts for Biskit_59:

(5, 39945), (6, 39942), (8, 39933), (10, 39882), (Start: 31 @39729 has 31 MA's), (55, 39540), (64, 39480), (65, 39474), (68, 39456), (70, 39411), (75, 39348), (81, 39309), (83, 39297),

Gene: Burnsey_57 Start: 39938, Stop: 39495, Start Num: 31

Candidate Starts for Burnsey_57:

(Start: 31 @39938 has 31 MA's), (45, 39854), (68, 39665), (73, 39587), (75, 39557), (83, 39506), (84, 39503),

Gene: Button_59 Start: 39824, Stop: 39381, Start Num: 31

Candidate Starts for Button_59:

(5, 40055), (8, 40043), (10, 39992), (Start: 31 @39824 has 31 MA's), (39, 39794), (48, 39713), (58, 39614), (63, 39584), (68, 39551), (73, 39473), (75, 39443),

Gene: Buttrmlkdreams_59 Start: 40176, Stop: 39733, Start Num: 31

Candidate Starts for Buttrmlkdreams_59:

(5, 40392), (6, 40389), (8, 40380), (10, 40329), (Start: 31 @40176 has 31 MA's), (55, 39987), (64, 39927), (65, 39921), (68, 39903), (70, 39858), (75, 39795), (81, 39756), (83, 39744),

Gene: Carsonalex_60 Start: 40326, Stop: 39883, Start Num: 31

Candidate Starts for Carsonalex_60:

(Start: 31 @40326 has 31 MA's), (45, 40242), (68, 40053), (73, 39975), (75, 39945), (83, 39894), (84, 39891),

Gene: CherryonLim_61 Start: 43000, Stop: 42551, Start Num: 28

Candidate Starts for CherryonLim_61:

(25, 43027), (Start: 28 @43000 has 12 MA's), (Start: 32 @42988 has 1 MA's), (39, 42964), (48, 42883), (59, 42778), (68, 42721), (74, 42628),

Gene: Cleo_50 Start: 38689, Stop: 38246, Start Num: 34

Candidate Starts for Cleo_50:

(30, 38698), (Start: 34 @38689 has 9 MA's), (47, 38581), (54, 38515), (73, 38338), (74, 38323), (82, 38266),

Gene: Cozz_55 Start: 39535, Stop: 39092, Start Num: 31

Candidate Starts for Cozz_55:

(Start: 31 @39535 has 31 MA's), (45, 39451), (68, 39262), (73, 39184), (75, 39154), (83, 39103), (84, 39100),

Gene: Dre3_53 Start: 39533, Stop: 39090, Start Num: 34

Candidate Starts for Dre3_53:

(30, 39542), (Start: 34 @39533 has 9 MA's), (47, 39425), (54, 39359), (73, 39182), (74, 39167), (82, 39110),

Gene: Elinal_65 Start: 42329, Stop: 41880, Start Num: 28

Candidate Starts for Elinal_65:

(25, 42356), (Start: 28 @42329 has 12 MA's), (Start: 32 @42317 has 1 MA's), (39, 42293), (48, 42212), (59, 42107), (68, 42050), (74, 41957),

Gene: Elliott_57 Start: 39831, Stop: 39388, Start Num: 31

Candidate Starts for Elliott_57:

(Start: 31 @39831 has 31 MA's), (45, 39747), (68, 39558), (73, 39480), (75, 39450), (83, 39399), (84, 39396),

Gene: Emalyn_56 Start: 38851, Stop: 38408, Start Num: 31

Candidate Starts for Emalyn_56:

(Start: 31 @38851 has 31 MA's), (45, 38767), (64, 38602), (68, 38578), (73, 38500), (75, 38470), (83, 38419),

Gene: FF47_51 Start: 39855, Stop: 39436, Start Num: 40

Candidate Starts for FF47_51:

(5, 40113), (8, 40101), (11, 40044), (12, 40041), (22, 39945), (Start: 31 @39894 has 31 MA's), (36, 39870), (39, 39858), (Start: 40 @39855 has 2 MA's), (55, 39696), (74, 39516), (75, 39501), (76, 39498),

Gene: Feastonyeet_60 Start: 41521, Stop: 41072, Start Num: 28

Candidate Starts for Feastonyeet_60:

(25, 41548), (Start: 28 @41521 has 12 MA's), (Start: 32 @41509 has 1 MA's), (39, 41485), (48, 41404), (59, 41299), (68, 41242), (74, 41149),

Gene: Fribs8_52 Start: 39605, Stop: 39162, Start Num: 34

Candidate Starts for Fribs8_52:

(24, 39650), (27, 39623), (30, 39614), (Start: 34 @39605 has 9 MA's), (44, 39530), (74, 39239), (81, 39185), (82, 39182),

Gene: GTE2_46 Start: 39481, Stop: 39038, Start Num: 31

Candidate Starts for GTE2_46:

(Start: 31 @39481 has 31 MA's), (45, 39397), (64, 39232), (68, 39208), (73, 39130), (75, 39100), (83, 39049), (84, 39046),

Gene: GiKK_62 Start: 40991, Stop: 40545, Start Num: 31

Candidate Starts for GiKK_62:

(Start: 31 @40991 has 31 MA's), (39, 40961), (48, 40880), (58, 40781), (63, 40751), (68, 40718), (73, 40640), (75, 40610), (79, 40586), (84, 40553),

Gene: Gibbous_53 Start: 39533, Stop: 39090, Start Num: 34

Candidate Starts for Gibbous_53:

(30, 39542), (Start: 34 @39533 has 9 MA's), (47, 39425), (54, 39359), (73, 39182), (74, 39167), (82, 39110),

Gene: GoldHunter_58 Start: 39948, Stop: 39505, Start Num: 31

Candidate Starts for GoldHunter_58:

(Start: 31 @39948 has 31 MA's), (45, 39864), (68, 39675), (73, 39597), (75, 39567), (83, 39516), (84, 39513),

Gene: Hexbug_62 Start: 41858, Stop: 41415, Start Num: 31

Candidate Starts for Hexbug_62:

(Start: 31 @41858 has 31 MA's), (48, 41747), (58, 41648), (64, 41609), (68, 41585), (75, 41477),

Gene: HippoPololi_53 Start: 38842, Stop: 38399, Start Num: 34

Candidate Starts for HippoPololi_53:

(Start: 34 @38842 has 9 MA's), (55, 38653), (66, 38578), (73, 38491), (74, 38476), (82, 38419),

Gene: Horseradish_59 Start: 39662, Stop: 39219, Start Num: 31

Candidate Starts for Horseradish_59:

(5, 39878), (6, 39875), (8, 39866), (10, 39815), (Start: 31 @39662 has 31 MA's), (55, 39473), (64, 39413), (65, 39407), (68, 39389), (70, 39344), (75, 39281), (81, 39242), (83, 39230),

Gene: Huwbert_94 Start: 55839, Stop: 55264, Start Num: 20

Candidate Starts for Huwbert_94:

(4, 56001), (11, 55923), (14, 55899), (15, 55875), (16, 55872), (17, 55863), (18, 55857), (Start: 20 @55839 has 2 MA's), (23, 55806), (33, 55758), (41, 55716), (42, 55713), (43, 55710), (49, 55632), (50, 55617), (51, 55605), (53, 55581), (56, 55557), (64, 55500), (67, 55479), (72, 55419), (81, 55332),

Gene: Jamzy_62 Start: 40727, Stop: 40281, Start Num: 31

Candidate Starts for Jamzy_62:

(Start: 31 @40727 has 31 MA's), (39, 40697), (48, 40616), (58, 40517), (63, 40487), (68, 40454), (73, 40376), (75, 40346), (79, 40322), (84, 40289),

Gene: KayGee_63 Start: 42329, Stop: 41880, Start Num: 28

Candidate Starts for KayGee_63:

(25, 42356), (Start: 28 @42329 has 12 MA's), (Start: 32 @42317 has 1 MA's), (39, 42293), (48, 42212), (59, 42107), (68, 42050), (74, 41957),

Gene: KimJongPhill_71 Start: 50463, Stop: 50954, Start Num: 26

Candidate Starts for KimJongPhill_71:

(Start: 26 @50463 has 2 MA's), (39, 50520), (52, 50649), (58, 50706), (59, 50712), (66, 50763), (69, 50799), (81, 50919), (85, 50940),

Gene: Lauer_55 Start: 42506, Stop: 42057, Start Num: 28

Candidate Starts for Lauer_55:

(25, 42533), (Start: 28 @42506 has 12 MA's), (Start: 32 @42494 has 1 MA's), (39, 42470), (48, 42389), (59, 42284), (68, 42227), (74, 42134), (75, 42119),

Gene: MAnor_62 Start: 42460, Stop: 42011, Start Num: 28

Candidate Starts for MAnor_62:

(25, 42487), (Start: 28 @42460 has 12 MA's), (Start: 32 @42448 has 1 MA's), (39, 42424), (48, 42343), (59, 42238), (68, 42181), (74, 42088),

Gene: MScarn_61 Start: 39844, Stop: 39401, Start Num: 31

Candidate Starts for MScarn_61:

(5, 40060), (6, 40057), (8, 40048), (10, 39997), (Start: 31 @39844 has 31 MA's), (55, 39655), (64, 39595), (65, 39589), (68, 39571), (70, 39526), (75, 39463), (81, 39424), (83, 39412),

Gene: MaVan_52 Start: 38957, Stop: 38514, Start Num: 34

Candidate Starts for MaVan_52:

(3, 39227), (7, 39182), (9, 39149), (13, 39110), (21, 39032), (30, 38966), (Start: 34 @38957 has 9 MA's), (44, 38882), (55, 38768), (60, 38735), (74, 38591), (81, 38537), (82, 38534),

Gene: Maco6_51 Start: 39195, Stop: 38776, Start Num: 40

Candidate Starts for Maco6_51:

(1, 39687), (2, 39645), (5, 39453), (8, 39441), (11, 39384), (12, 39381), (22, 39285), (Start: 31 @39234 has 31 MA's), (37, 39207), (39, 39198), (Start: 40 @39195 has 2 MA's), (55, 39036), (74, 38856), (75, 38841), (76, 38838),

Gene: Margaret_62 Start: 40886, Stop: 40443, Start Num: 31

Candidate Starts for Margaret_62:

(Start: 31 @40886 has 31 MA's), (48, 40775), (58, 40676), (64, 40637), (68, 40613), (73, 40535), (75, 40505), (81, 40466),

Gene: Mayweather_64 Start: 42723, Stop: 42274, Start Num: 28

Candidate Starts for Mayweather_64:

(25, 42750), (Start: 28 @42723 has 12 MA's), (Start: 32 @42711 has 1 MA's), (39, 42687), (48, 42606), (59, 42501), (68, 42444), (74, 42351),

Gene: Muddy_53 Start: 40427, Stop: 40008, Start Num: 40

Candidate Starts for Muddy_53:

(5, 40685), (8, 40673), (11, 40616), (12, 40613), (22, 40517), (Start: 31 @40466 has 31 MA's), (36, 40442), (39, 40430), (Start: 40 @40427 has 2 MA's), (55, 40268), (74, 40088), (75, 40073), (76, 40070),

Gene: MunkgeeRoachy_55 Start: 39294, Stop: 38851, Start Num: 31

Candidate Starts for MunkgeeRoachy_55:

(Start: 31 @39294 has 31 MA's), (45, 39210), (68, 39021), (73, 38943), (75, 38913), (83, 38862), (84, 38859),

Gene: Nibbles_51 Start: 38650, Stop: 38207, Start Num: 34

Candidate Starts for Nibbles_51:

(9, 38842), (13, 38803), (21, 38725), (30, 38659), (Start: 34 @38650 has 9 MA's), (44, 38575), (55, 38461), (60, 38428), (74, 38284), (81, 38230),

Gene: Nina_57 Start: 40434, Stop: 39991, Start Num: 31

Candidate Starts for Nina_57:

(Start: 31 @40434 has 31 MA's), (45, 40350), (68, 40161), (73, 40083), (75, 40053), (83, 40002), (84, 39999),

Gene: Nodigi_62 Start: 41877, Stop: 41434, Start Num: 31

Candidate Starts for Nodigi_62:

(Start: 31 @41877 has 31 MA's), (48, 41766), (58, 41667), (64, 41628), (68, 41604), (75, 41496),

Gene: Orla_64 Start: 42200, Stop: 41757, Start Num: 31

Candidate Starts for Orla_64:

(Start: 31 @42200 has 31 MA's), (48, 42089), (58, 41990), (64, 41951), (68, 41927), (75, 41819),

Gene: Pons_62 Start: 42065, Stop: 41616, Start Num: 28

Candidate Starts for Pons_62:

(25, 42092), (Start: 28 @42065 has 12 MA's), (Start: 32 @42053 has 1 MA's), (39, 42029), (48, 41948), (59, 41843), (68, 41786), (74, 41693),

Gene: PotPie_60 Start: 42556, Stop: 42107, Start Num: 28

Candidate Starts for PotPie_60:

(25, 42583), (Start: 28 @42556 has 12 MA's), (Start: 32 @42544 has 1 MA's), (39, 42520), (48, 42439), (59, 42334), (68, 42277), (74, 42184),

Gene: PsychoKiller_56 Start: 39832, Stop: 39389, Start Num: 31

Candidate Starts for PsychoKiller_56:

(Start: 31 @39832 has 31 MA's), (45, 39748), (68, 39559), (73, 39481), (75, 39451), (83, 39400), (84, 39397),

Gene: Quasar_57 Start: 40536, Stop: 40093, Start Num: 31

Candidate Starts for Quasar_57:

(Start: 31 @40536 has 31 MA's), (45, 40452), (68, 40263), (73, 40185), (75, 40155), (83, 40104), (84, 40101),

Gene: RanchParmCat_61 Start: 41168, Stop: 40725, Start Num: 31

Candidate Starts for RanchParmCat_61:

(Start: 31 @41168 has 31 MA's), (48, 41057), (55, 40979), (58, 40958), (64, 40919), (68, 40895), (73, 40817), (75, 40787),

Gene: RedBaron_61 Start: 40909, Stop: 40466, Start Num: 31

Candidate Starts for RedBaron_61:

(Start: 31 @40909 has 31 MA's), (45, 40825), (68, 40636), (73, 40558), (75, 40528), (83, 40477), (84, 40474),

Gene: SheckWes_64 Start: 41596, Stop: 41147, Start Num: 28

Candidate Starts for SheckWes_64:

(25, 41623), (Start: 28 @41596 has 12 MA's), (Start: 32 @41584 has 1 MA's), (39, 41560), (48, 41479), (59, 41374), (68, 41317), (74, 41224), (75, 41209),

Gene: Shrew_103 Start: 56025, Stop: 55444, Start Num: 19

Candidate Starts for Shrew_103:

(19, 56025), (29, 55950), (35, 55926), (38, 55908), (43, 55890), (49, 55812), (53, 55761), (57, 55725), (61, 55704), (67, 55665), (70, 55623), (75, 55557), (76, 55554), (78, 55545), (80, 55521),

Gene: SketchMex_57 Start: 39729, Stop: 39286, Start Num: 31

Candidate Starts for SketchMex_57:

(5, 39945), (6, 39942), (8, 39933), (10, 39882), (Start: 31 @39729 has 31 MA's), (55, 39540), (64, 39480), (65, 39474), (68, 39456), (70, 39411), (75, 39348), (81, 39309), (83, 39297),

Gene: Sopespian_54 Start: 39833, Stop: 39390, Start Num: 31

Candidate Starts for Sopespian_54:

(Start: 31 @39833 has 31 MA's), (45, 39749), (68, 39560), (73, 39482), (75, 39452), (83, 39401), (84, 39398),

Gene: SteamedHams_58 Start: 39340, Stop: 38897, Start Num: 31

Candidate Starts for SteamedHams_58:

(Start: 31 @39340 has 31 MA's), (45, 39256), (64, 39091), (68, 39067), (73, 38989), (75, 38959), (83, 38908),

Gene: SummitAcademy_60 Start: 41687, Stop: 41250, Start Num: 32

Candidate Starts for SummitAcademy_60:

(25, 41726), (Start: 28 @41699 has 12 MA's), (Start: 32 @41687 has 1 MA's), (39, 41663), (48, 41582), (59, 41477), (68, 41420), (74, 41327),

Gene: Survivors_52 Start: 38850, Stop: 38407, Start Num: 34

Candidate Starts for Survivors_52:

(9, 39042), (13, 39003), (21, 38925), (30, 38859), (Start: 34 @38850 has 9 MA's), (44, 38775), (55, 38661), (60, 38628), (74, 38484), (81, 38430), (82, 38427),

Gene: SweatNTears_59 Start: 40075, Stop: 39632, Start Num: 31

Candidate Starts for SweatNTears_59:

(Start: 31 @40075 has 31 MA's), (45, 39991), (68, 39802), (73, 39724), (75, 39694), (83, 39643), (84, 39640),

Gene: Tolls_58 Start: 39611, Stop: 39168, Start Num: 31

Candidate Starts for Tolls_58:

(Start: 31 @39611 has 31 MA's), (45, 39527), (64, 39362), (68, 39338), (73, 39260), (75, 39230), (83, 39179),

Gene: Triscuit_92 Start: 55578, Stop: 55003, Start Num: 20

Candidate Starts for Triscuit_92:

(4, 55740), (11, 55662), (14, 55638), (15, 55614), (16, 55611), (17, 55602), (18, 55596), (Start: 20 @55578 has 2 MA's), (23, 55545), (33, 55497), (41, 55455), (42, 55452), (43, 55449), (49, 55371), (51, 55344), (53, 55320), (56, 55296), (67, 55218), (72, 55158), (81, 55071), (85, 55050),

Gene: Troje_59 Start: 40067, Stop: 39624, Start Num: 31

Candidate Starts for Troje_59:

(5, 40283), (6, 40280), (8, 40271), (10, 40220), (Start: 31 @40067 has 31 MA's), (55, 39878), (64, 39818), (65, 39812), (68, 39794), (70, 39749), (75, 39686), (81, 39647), (83, 39635),

Gene: Typhonomachy_57 Start: 39657, Stop: 39214, Start Num: 31

Candidate Starts for Typhonomachy_57:

(Start: 31 @39657 has 31 MA's), (45, 39573), (68, 39384), (73, 39306), (75, 39276), (83, 39225), (84, 39222),

Gene: Vine_63 Start: 42322, Stop: 41873, Start Num: 28

Candidate Starts for Vine_63:

(25, 42349), (Start: 28 @42322 has 12 MA's), (Start: 32 @42310 has 1 MA's), (39, 42286), (48, 42205), (59, 42100), (68, 42043), (74, 41950),

Gene: Yakult_58 Start: 40649, Stop: 40206, Start Num: 31

Candidate Starts for Yakult_58:

(Start: 31 @40649 has 31 MA's), (39, 40619), (48, 40538), (58, 40439), (63, 40409), (68, 40376), (73, 40298), (75, 40268), (81, 40229),

Gene: Yarn_54 Start: 39368, Stop: 38925, Start Num: 31

Candidate Starts for Yarn_54:

(Start: 31 @39368 has 31 MA's), (45, 39284), (64, 39119), (68, 39095), (73, 39017), (75, 38987), (83, 38936),

Gene: Yummy_59 Start: 39776, Stop: 39333, Start Num: 31

Candidate Starts for Yummy_59:

(5, 39992), (6, 39989), (8, 39980), (10, 39929), (Start: 31 @39776 has 31 MA's), (55, 39587), (64, 39527), (65, 39521), (68, 39503), (70, 39458), (75, 39395), (81, 39356), (83, 39344),

Gene: Zareef_54 Start: 38947, Stop: 38504, Start Num: 34

Candidate Starts for Zareef_54:

(3, 39217), (7, 39172), (9, 39139), (13, 39100), (21, 39022), (30, 38956), (Start: 34 @38947 has 9 MA's), (44, 38872), (55, 38758), (60, 38725), (74, 38581), (81, 38527), (82, 38524),

Gene: Zuko_69 Start: 50446, Stop: 50922, Start Num: 26

Candidate Starts for Zuko_69:

(Start: 26 @50446 has 2 MA's), (46, 50548), (52, 50617), (58, 50674), (59, 50680), (62, 50698), (69, 50767), (71, 50791), (77, 50854), (81, 50887), (85, 50908),