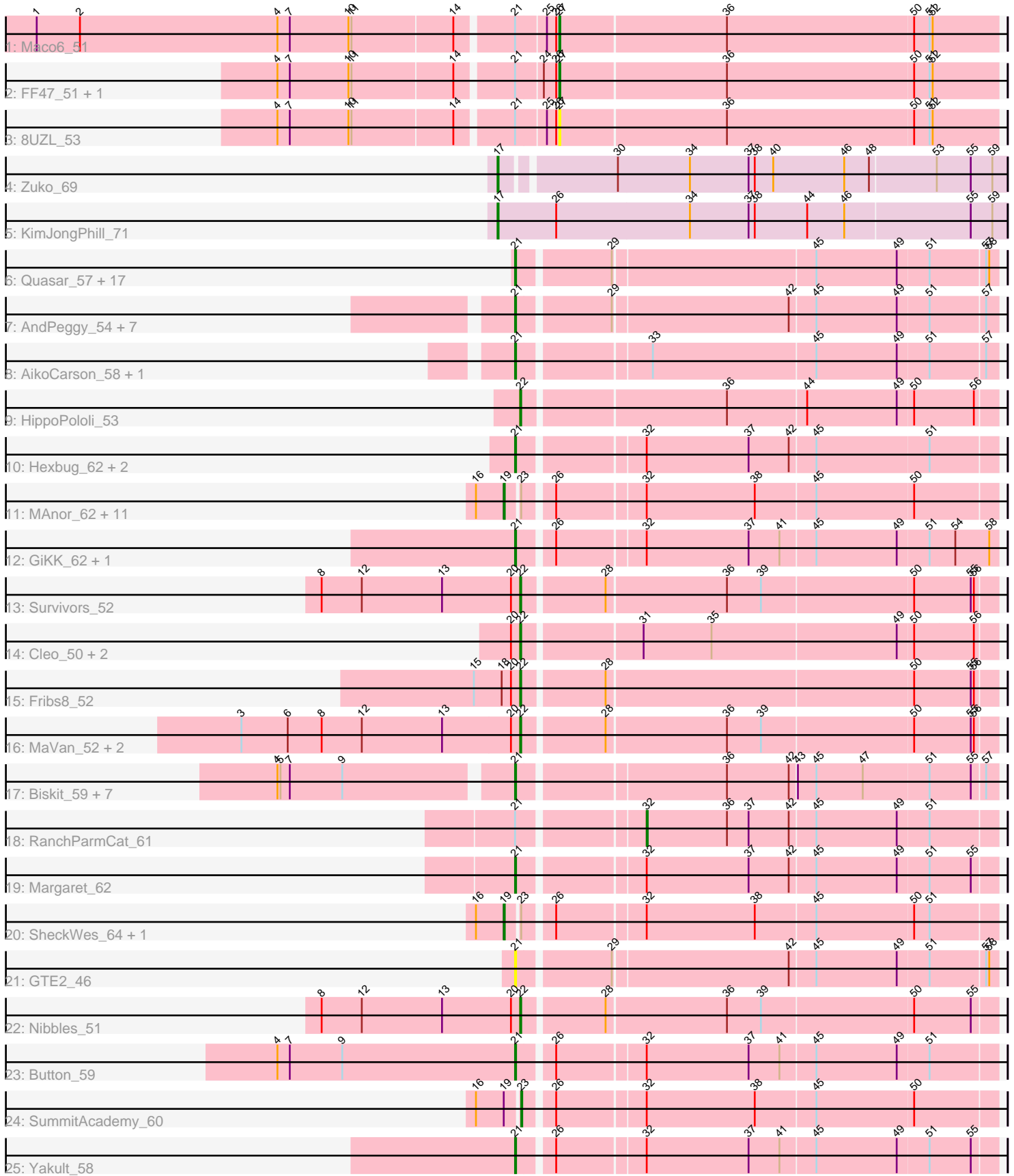


Pham 221376



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 221376 Report

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

Pham number 221376 has 77 members, 19 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, Starburst_57, Agatha_57, Socotra_58, Burnsey_57, Carsonalex_60, Nina_57, Cozz_55, PsychoKiller_56, SweatNTears_59, Axym_56, MunkgeeRoachy_55, Typhonmarchy_57, Sopespian_54, ChickenTender_59, RedBaron_61, GoldHunter_58, Elliott_57
- Track 7 : AndPeggy_54, BillDoor_57, Yarn_54, CanesSauce_56, SteamedHams_58, Emalyn_56, ChocoMunchkin_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, Bavidard_59, Feastonyeet_60, Elinal_65, PotPie_60, KayGee_63, Yucky_64, Pons_62, Mayweather_64, CherryonLim_61, BigChungus_60, Vine_63
- Track 12 : GiKK_62, Jamzy_62
- Track 13 : Survivors_52
- Track 14 : Cleo_50, Gibbous_53, Dre3_53
- Track 15 : Fribs8_52
- Track 16 : MaVan_52, Zareef_54, Azira_52
- Track 17 : Biskit_59, MScarn_61, SketchMex_57, Blondies_59, Buttrmlkdreams_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 : SummitAcademy_60
- Track 25 : Yakult_58

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

The start number called the most often in the published annotations is 21, it was called in 31 of the 58 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, Blondies_59, Burnsey_57, Button_59, Buttrmlkdreams_59, CanesSauce_56, Carsonalex_60, ChickenTender_59, ChocoMunchkin_56, 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, RedBaron_61, SketchMex_57, Socotra_58, Sopespian_54, Starburst_57, SteamedHams_58, SweatNTears_59, Tolls_58, Troje_59, Typhonomachy_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, RanchParmCat_61,

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

- Azira_52, Bavailard_59, BigChungus_60, CherryonLim_61, Cleo_50, Dre3_53, Elinal_65, Feastonyeet_60, Fribs8_52, Gibbous_53, HippoPololi_53, KayGee_63, KimJongPhill_71, Lauer_55, MAnor_62, MaVan_52, Mayweather_64, Nibbles_51, Pons_62, PotPie_60, SheckWes_64, SummitAcademy_60, Survivors_52, Vine_63, Yucky_64, Zareef_54, Zuko_69,

Summary by start number:

Start 17:

- Found in 2 of 77 (2.6%) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill_71 (BR), Zuko_69 (BR),

Start 19:

- Found in 15 of 77 (19.5%) of genes in pham
- Manual Annotations of this start: 12 of 58
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Bavailard_59 (CT), 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), Yucky_64 (CT),

Start 21:

- Found in 50 of 77 (64.9%) of genes in pham
- Manual Annotations of this start: 31 of 58
- Called 90.0% 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), Blondies_59 (CT), Burnsey_57 (CT), Button_59 (CT), Buttrmlkdreams_59 (CT), CanesSauce_56 (CT), Carsonalex_60 (CT), ChickenTender_59 (CT), ChocoMunchkin_56 (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), RedBaron_61 (CT), SketchMex_57 (CT), Socotra_58 (CT), Sopespian_54 (CT), Starburst_57 (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 22:

- Found in 10 of 77 (13.0%) of genes in pham
- Manual Annotations of this start: 9 of 58
- 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 23:

- Found in 15 of 77 (19.5%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 6.7% of time when present
- Phage (with cluster) where this start called: SummitAcademy_60 (CT),

Start 27:

- Found in 4 of 77 (5.2%) of genes in pham
- Manual Annotations of this start: 2 of 58
- 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),

Start 32:

- Found in 24 of 77 (31.2%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 4.2% of time when present
- Phage (with cluster) where this start called: RanchParmCat_61 (CT),

Summary by clusters:

There are 3 clusters represented in this pham: AB, BR, CT,

Info for manual annotations of cluster AB:

- Start number 27 was manually annotated 2 times for cluster AB.

Info for manual annotations of cluster BR:

- Start number 17 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:

- Start number 19 was manually annotated 12 times for cluster CT.
- Start number 21 was manually annotated 31 times for cluster CT.
- Start number 22 was manually annotated 9 times for cluster CT.
- Start number 23 was manually annotated 1 time for cluster CT.
- Start number 32 was manually annotated 1 time for cluster CT.

Gene Information:

Gene: 8UZL_53 Start: 39944, Stop: 39525, Start Num: 27

Candidate Starts for 8UZL_53:

(4, 40202), (7, 40190), (10, 40133), (11, 40130), (14, 40034), (Start: 21 @39983 has 31 MA's), (25, 39956), (26, 39947), (Start: 27 @39944 has 2 MA's), (36, 39785), (50, 39605), (51, 39590), (52, 39587),

Gene: Agatha_57 Start: 39947, Stop: 39504, Start Num: 21

Candidate Starts for Agatha_57:

(Start: 21 @39947 has 31 MA's), (29, 39863), (45, 39674), (49, 39596), (51, 39566), (57, 39515), (58, 39512),

Gene: AikoCarson_58 Start: 40131, Stop: 39688, Start Num: 21

Candidate Starts for AikoCarson_58:

(Start: 21 @40131 has 31 MA's), (33, 40014), (45, 39858), (49, 39780), (51, 39750), (57, 39699),

Gene: Amok_58 Start: 40059, Stop: 39616, Start Num: 21

Candidate Starts for Amok_58:

(Start: 21 @40059 has 31 MA's), (33, 39942), (45, 39786), (49, 39708), (51, 39678), (57, 39627),

Gene: AndPeggy_54 Start: 39363, Stop: 38920, Start Num: 21

Candidate Starts for AndPeggy_54:

(Start: 21 @39363 has 31 MA's), (29, 39279), (42, 39114), (45, 39090), (49, 39012), (51, 38982), (57, 38931),

Gene: Axym_56 Start: 39844, Stop: 39401, Start Num: 21

Candidate Starts for Axym_56:

(Start: 21 @39844 has 31 MA's), (29, 39760), (45, 39571), (49, 39493), (51, 39463), (57, 39412), (58, 39409),

Gene: Azira_52 Start: 38928, Stop: 38485, Start Num: 22

Candidate Starts for Azira_52:

(3, 39198), (6, 39153), (8, 39120), (12, 39081), (13, 39003), (20, 38937), (Start: 22 @38928 has 9 MA's), (28, 38853), (36, 38739), (39, 38706), (50, 38562), (55, 38508), (56, 38505),

Gene: Bavilard_59 Start: 40990, Stop: 40541, Start Num: 19

Candidate Starts for Bavilard_59:

(16, 41017), (Start: 19 @40990 has 12 MA's), (Start: 23 @40978 has 1 MA's), (26, 40954), (Start: 32 @40873 has 1 MA's), (38, 40768), (45, 40711), (50, 40618),

Gene: BigChungus_60 Start: 41521, Stop: 41072, Start Num: 19

Candidate Starts for BigChungus_60:

(16, 41548), (Start: 19 @41521 has 12 MA's), (Start: 23 @41509 has 1 MA's), (26, 41485), (Start: 32 @41404 has 1 MA's), (38, 41299), (45, 41242), (50, 41149),

Gene: BillDoor_57 Start: 39039, Stop: 38596, Start Num: 21

Candidate Starts for BillDoor_57:

(Start: 21 @39039 has 31 MA's), (29, 38955), (42, 38790), (45, 38766), (49, 38688), (51, 38658), (57, 38607),

Gene: Biskit_59 Start: 39729, Stop: 39286, Start Num: 21

Candidate Starts for Biskit_59:

(4, 39945), (5, 39942), (7, 39933), (9, 39882), (Start: 21 @39729 has 31 MA's), (36, 39540), (42, 39480), (43, 39474), (45, 39456), (47, 39411), (51, 39348), (55, 39309), (57, 39297),

Gene: Blondies_59 Start: 40046, Stop: 39603, Start Num: 21

Candidate Starts for Blondies_59:

(4, 40262), (5, 40259), (7, 40250), (9, 40199), (Start: 21 @40046 has 31 MA's), (36, 39857), (42, 39797), (43, 39791), (45, 39773), (47, 39728), (51, 39665), (55, 39626), (57, 39614),

Gene: Burnsey_57 Start: 39938, Stop: 39495, Start Num: 21

Candidate Starts for Burnsey_57:

(Start: 21 @39938 has 31 MA's), (29, 39854), (45, 39665), (49, 39587), (51, 39557), (57, 39506), (58, 39503),

Gene: Button_59 Start: 39824, Stop: 39381, Start Num: 21

Candidate Starts for Button_59:

(4, 40055), (7, 40043), (9, 39992), (Start: 21 @39824 has 31 MA's), (26, 39794), (Start: 32 @39713 has 1 MA's), (37, 39614), (41, 39584), (45, 39551), (49, 39473), (51, 39443),

Gene: Buttrmlkdreams_59 Start: 40176, Stop: 39733, Start Num: 21

Candidate Starts for Buttrmlkdreams_59:

(4, 40392), (5, 40389), (7, 40380), (9, 40329), (Start: 21 @40176 has 31 MA's), (36, 39987), (42, 39927), (43, 39921), (45, 39903), (47, 39858), (51, 39795), (55, 39756), (57, 39744),

Gene: CanesSauce_56 Start: 39524, Stop: 39081, Start Num: 21

Candidate Starts for CanesSauce_56:

(Start: 21 @39524 has 31 MA's), (29, 39440), (42, 39275), (45, 39251), (49, 39173), (51, 39143), (57, 39092),

Gene: Carsonalex_60 Start: 40326, Stop: 39883, Start Num: 21

Candidate Starts for Carsonalex_60:

(Start: 21 @40326 has 31 MA's), (29, 40242), (45, 40053), (49, 39975), (51, 39945), (57, 39894), (58, 39891),

Gene: CherryonLim_61 Start: 43000, Stop: 42551, Start Num: 19

Candidate Starts for CherryonLim_61:

(16, 43027), (Start: 19 @43000 has 12 MA's), (Start: 23 @42988 has 1 MA's), (26, 42964), (Start: 32 @42883 has 1 MA's), (38, 42778), (45, 42721), (50, 42628),

Gene: ChickenTender_59 Start: 39509, Stop: 39066, Start Num: 21

Candidate Starts for ChickenTender_59:

(Start: 21 @39509 has 31 MA's), (29, 39425), (45, 39236), (49, 39158), (51, 39128), (57, 39077), (58, 39074),

Gene: ChocoMunchkin_56 Start: 39524, Stop: 39081, Start Num: 21

Candidate Starts for ChocoMunchkin_56:

(Start: 21 @39524 has 31 MA's), (29, 39440), (42, 39275), (45, 39251), (49, 39173), (51, 39143), (57, 39092),

Gene: Cleo_50 Start: 38689, Stop: 38246, Start Num: 22

Candidate Starts for Cleo_50:

(20, 38698), (Start: 22 @38689 has 9 MA's), (31, 38581), (35, 38515), (49, 38338), (50, 38323), (56, 38266),

Gene: Cozz_55 Start: 39535, Stop: 39092, Start Num: 21

Candidate Starts for Cozz_55:

(Start: 21 @39535 has 31 MA's), (29, 39451), (45, 39262), (49, 39184), (51, 39154), (57, 39103), (58, 39100),

Gene: Dre3_53 Start: 39533, Stop: 39090, Start Num: 22

Candidate Starts for Dre3_53:

(20, 39542), (Start: 22 @39533 has 9 MA's), (31, 39425), (35, 39359), (49, 39182), (50, 39167), (56, 39110),

Gene: Elinal_65 Start: 42329, Stop: 41880, Start Num: 19

Candidate Starts for Elinal_65:

(16, 42356), (Start: 19 @42329 has 12 MA's), (Start: 23 @42317 has 1 MA's), (26, 42293), (Start: 32 @42212 has 1 MA's), (38, 42107), (45, 42050), (50, 41957),

Gene: Elliott_57 Start: 39831, Stop: 39388, Start Num: 21

Candidate Starts for Elliott_57:

(Start: 21 @39831 has 31 MA's), (29, 39747), (45, 39558), (49, 39480), (51, 39450), (57, 39399), (58, 39396),

Gene: Emalyn_56 Start: 38851, Stop: 38408, Start Num: 21

Candidate Starts for Emalyn_56:

(Start: 21 @38851 has 31 MA's), (29, 38767), (42, 38602), (45, 38578), (49, 38500), (51, 38470), (57, 38419),

Gene: FF47_51 Start: 39855, Stop: 39436, Start Num: 27

Candidate Starts for FF47_51:

(4, 40113), (7, 40101), (10, 40044), (11, 40041), (14, 39945), (Start: 21 @39894 has 31 MA's), (24, 39870), (26, 39858), (Start: 27 @39855 has 2 MA's), (36, 39696), (50, 39516), (51, 39501), (52, 39498),

Gene: Feastonyeet_60 Start: 41521, Stop: 41072, Start Num: 19

Candidate Starts for Feastonyeet_60:

(16, 41548), (Start: 19 @41521 has 12 MA's), (Start: 23 @41509 has 1 MA's), (26, 41485), (Start: 32 @41404 has 1 MA's), (38, 41299), (45, 41242), (50, 41149),

Gene: Fribs8_52 Start: 39605, Stop: 39162, Start Num: 22

Candidate Starts for Fribs8_52:

(15, 39650), (18, 39623), (20, 39614), (Start: 22 @39605 has 9 MA's), (28, 39530), (50, 39239), (55, 39185), (56, 39182),

Gene: GTE2_46 Start: 39481, Stop: 39038, Start Num: 21

Candidate Starts for GTE2_46:

(Start: 21 @39481 has 31 MA's), (29, 39397), (42, 39232), (45, 39208), (49, 39130), (51, 39100), (57, 39049), (58, 39046),

Gene: GiKK_62 Start: 40991, Stop: 40545, Start Num: 21

Candidate Starts for GiKK_62:

(Start: 21 @40991 has 31 MA's), (26, 40961), (Start: 32 @40880 has 1 MA's), (37, 40781), (41, 40751), (45, 40718), (49, 40640), (51, 40610), (54, 40586), (58, 40553),

Gene: Gibbous_53 Start: 39533, Stop: 39090, Start Num: 22

Candidate Starts for Gibbous_53:

(20, 39542), (Start: 22 @39533 has 9 MA's), (31, 39425), (35, 39359), (49, 39182), (50, 39167), (56, 39110),

Gene: GoldHunter_58 Start: 39948, Stop: 39505, Start Num: 21

Candidate Starts for GoldHunter_58:

(Start: 21 @39948 has 31 MA's), (29, 39864), (45, 39675), (49, 39597), (51, 39567), (57, 39516), (58, 39513),

Gene: Hexbug_62 Start: 41858, Stop: 41415, Start Num: 21

Candidate Starts for Hexbug_62:

(Start: 21 @41858 has 31 MA's), (Start: 32 @41747 has 1 MA's), (37, 41648), (42, 41609), (45, 41585), (51, 41477),

Gene: HippoPololi_53 Start: 38842, Stop: 38399, Start Num: 22

Candidate Starts for HippoPololi_53:

(Start: 22 @38842 has 9 MA's), (36, 38653), (44, 38578), (49, 38491), (50, 38476), (56, 38419),

Gene: Horseradish_59 Start: 39662, Stop: 39219, Start Num: 21

Candidate Starts for Horseradish_59:

(4, 39878), (5, 39875), (7, 39866), (9, 39815), (Start: 21 @39662 has 31 MA's), (36, 39473), (42, 39413), (43, 39407), (45, 39389), (47, 39344), (51, 39281), (55, 39242), (57, 39230),

Gene: Jamzy_62 Start: 40727, Stop: 40281, Start Num: 21

Candidate Starts for Jamzy_62:

(Start: 21 @40727 has 31 MA's), (26, 40697), (Start: 32 @40616 has 1 MA's), (37, 40517), (41, 40487), (45, 40454), (49, 40376), (51, 40346), (54, 40322), (58, 40289),

Gene: KayGee_63 Start: 42329, Stop: 41880, Start Num: 19

Candidate Starts for KayGee_63:

(16, 42356), (Start: 19 @42329 has 12 MA's), (Start: 23 @42317 has 1 MA's), (26, 42293), (Start: 32 @42212 has 1 MA's), (38, 42107), (45, 42050), (50, 41957),

Gene: KimJongPhill_71 Start: 50463, Stop: 50954, Start Num: 17

Candidate Starts for KimJongPhill_71:

(Start: 17 @50463 has 2 MA's), (26, 50520), (34, 50649), (37, 50706), (38, 50712), (44, 50763), (46, 50799), (55, 50919), (59, 50940),

Gene: Lauer_55 Start: 42506, Stop: 42057, Start Num: 19

Candidate Starts for Lauer_55:

(16, 42533), (Start: 19 @42506 has 12 MA's), (Start: 23 @42494 has 1 MA's), (26, 42470), (Start: 32 @42389 has 1 MA's), (38, 42284), (45, 42227), (50, 42134), (51, 42119),

Gene: MAnor_62 Start: 42460, Stop: 42011, Start Num: 19

Candidate Starts for MAnor_62:

(16, 42487), (Start: 19 @42460 has 12 MA's), (Start: 23 @42448 has 1 MA's), (26, 42424), (Start: 32 @42343 has 1 MA's), (38, 42238), (45, 42181), (50, 42088),

Gene: MScarn_61 Start: 39844, Stop: 39401, Start Num: 21

Candidate Starts for MScarn_61:

(4, 40060), (5, 40057), (7, 40048), (9, 39997), (Start: 21 @39844 has 31 MA's), (36, 39655), (42, 39595), (43, 39589), (45, 39571), (47, 39526), (51, 39463), (55, 39424), (57, 39412),

Gene: MaVan_52 Start: 38957, Stop: 38514, Start Num: 22

Candidate Starts for MaVan_52:

(3, 39227), (6, 39182), (8, 39149), (12, 39110), (13, 39032), (20, 38966), (Start: 22 @38957 has 9 MA's), (28, 38882), (36, 38768), (39, 38735), (50, 38591), (55, 38537), (56, 38534),

Gene: Maco6_51 Start: 39195, Stop: 38776, Start Num: 27

Candidate Starts for Maco6_51:

(1, 39687), (2, 39645), (4, 39453), (7, 39441), (10, 39384), (11, 39381), (14, 39285), (Start: 21 @39234 has 31 MA's), (25, 39207), (26, 39198), (Start: 27 @39195 has 2 MA's), (36, 39036), (50, 38856), (51, 38841), (52, 38838),

Gene: Margaret_62 Start: 40886, Stop: 40443, Start Num: 21

Candidate Starts for Margaret_62:

(Start: 21 @40886 has 31 MA's), (Start: 32 @40775 has 1 MA's), (37, 40676), (42, 40637), (45, 40613), (49, 40535), (51, 40505), (55, 40466),

Gene: Mayweather_64 Start: 42723, Stop: 42274, Start Num: 19

Candidate Starts for Mayweather_64:

(16, 42750), (Start: 19 @42723 has 12 MA's), (Start: 23 @42711 has 1 MA's), (26, 42687), (Start: 32 @42606 has 1 MA's), (38, 42501), (45, 42444), (50, 42351),

Gene: Muddy_53 Start: 40427, Stop: 40008, Start Num: 27

Candidate Starts for Muddy_53:

(4, 40685), (7, 40673), (10, 40616), (11, 40613), (14, 40517), (Start: 21 @40466 has 31 MA's), (24, 40442), (26, 40430), (Start: 27 @40427 has 2 MA's), (36, 40268), (50, 40088), (51, 40073), (52, 40070),

Gene: MunkgeeRoachy_55 Start: 39294, Stop: 38851, Start Num: 21

Candidate Starts for MunkgeeRoachy_55:

(Start: 21 @39294 has 31 MA's), (29, 39210), (45, 39021), (49, 38943), (51, 38913), (57, 38862), (58, 38859),

Gene: Nibbles_51 Start: 38650, Stop: 38207, Start Num: 22

Candidate Starts for Nibbles_51:

(8, 38842), (12, 38803), (13, 38725), (20, 38659), (Start: 22 @38650 has 9 MA's), (28, 38575), (36, 38461), (39, 38428), (50, 38284), (55, 38230),

Gene: Nina_57 Start: 40434, Stop: 39991, Start Num: 21

Candidate Starts for Nina_57:

(Start: 21 @40434 has 31 MA's), (29, 40350), (45, 40161), (49, 40083), (51, 40053), (57, 40002), (58, 39999),

Gene: Nodigi_62 Start: 41877, Stop: 41434, Start Num: 21

Candidate Starts for Nodigi_62:

(Start: 21 @41877 has 31 MA's), (Start: 32 @41766 has 1 MA's), (37, 41667), (42, 41628), (45, 41604), (51, 41496),

Gene: Orla_64 Start: 42200, Stop: 41757, Start Num: 21

Candidate Starts for Orla_64:

(Start: 21 @42200 has 31 MA's), (Start: 32 @42089 has 1 MA's), (37, 41990), (42, 41951), (45, 41927), (51, 41819),

Gene: Pons_62 Start: 42065, Stop: 41616, Start Num: 19

Candidate Starts for Pons_62:

(16, 42092), (Start: 19 @42065 has 12 MA's), (Start: 23 @42053 has 1 MA's), (26, 42029), (Start: 32 @41948 has 1 MA's), (38, 41843), (45, 41786), (50, 41693),

Gene: PotPie_60 Start: 42556, Stop: 42107, Start Num: 19

Candidate Starts for PotPie_60:

(16, 42583), (Start: 19 @42556 has 12 MA's), (Start: 23 @42544 has 1 MA's), (26, 42520), (Start: 32 @42439 has 1 MA's), (38, 42334), (45, 42277), (50, 42184),

Gene: PsychoKiller_56 Start: 39832, Stop: 39389, Start Num: 21

Candidate Starts for PsychoKiller_56:

(Start: 21 @39832 has 31 MA's), (29, 39748), (45, 39559), (49, 39481), (51, 39451), (57, 39400), (58, 39397),

Gene: Quasar_57 Start: 40536, Stop: 40093, Start Num: 21

Candidate Starts for Quasar_57:

(Start: 21 @40536 has 31 MA's), (29, 40452), (45, 40263), (49, 40185), (51, 40155), (57, 40104), (58, 40101),

Gene: RanchParmCat_61 Start: 41057, Stop: 40725, Start Num: 32

Candidate Starts for RanchParmCat_61:

(Start: 21 @41168 has 31 MA's), (Start: 32 @41057 has 1 MA's), (36, 40979), (37, 40958), (42, 40919), (45, 40895), (49, 40817), (51, 40787),

Gene: RedBaron_61 Start: 40909, Stop: 40466, Start Num: 21

Candidate Starts for RedBaron_61:

(Start: 21 @40909 has 31 MA's), (29, 40825), (45, 40636), (49, 40558), (51, 40528), (57, 40477), (58, 40474),

Gene: SheckWes_64 Start: 41596, Stop: 41147, Start Num: 19

Candidate Starts for SheckWes_64:

(16, 41623), (Start: 19 @41596 has 12 MA's), (Start: 23 @41584 has 1 MA's), (26, 41560), (Start: 32 @41479 has 1 MA's), (38, 41374), (45, 41317), (50, 41224), (51, 41209),

Gene: SketchMex_57 Start: 39729, Stop: 39286, Start Num: 21

Candidate Starts for SketchMex_57:

(4, 39945), (5, 39942), (7, 39933), (9, 39882), (Start: 21 @39729 has 31 MA's), (36, 39540), (42, 39480), (43, 39474), (45, 39456), (47, 39411), (51, 39348), (55, 39309), (57, 39297),

Gene: Socotra_58 Start: 39944, Stop: 39501, Start Num: 21

Candidate Starts for Socotra_58:

(Start: 21 @39944 has 31 MA's), (29, 39860), (45, 39671), (49, 39593), (51, 39563), (57, 39512), (58, 39509),

Gene: Sopespian_54 Start: 39833, Stop: 39390, Start Num: 21

Candidate Starts for Sopespian_54:

(Start: 21 @39833 has 31 MA's), (29, 39749), (45, 39560), (49, 39482), (51, 39452), (57, 39401), (58, 39398),

Gene: Starburst_57 Start: 39828, Stop: 39385, Start Num: 21

Candidate Starts for Starburst_57:

(Start: 21 @39828 has 31 MA's), (29, 39744), (45, 39555), (49, 39477), (51, 39447), (57, 39396), (58, 39393),

Gene: SteamedHams_58 Start: 39340, Stop: 38897, Start Num: 21
Candidate Starts for SteamedHams_58:
(Start: 21 @39340 has 31 MA's), (29, 39256), (42, 39091), (45, 39067), (49, 38989), (51, 38959), (57, 38908),

Gene: SummitAcademy_60 Start: 41687, Stop: 41250, Start Num: 23
Candidate Starts for SummitAcademy_60:
(16, 41726), (Start: 19 @41699 has 12 MA's), (Start: 23 @41687 has 1 MA's), (26, 41663), (Start: 32 @41582 has 1 MA's), (38, 41477), (45, 41420), (50, 41327),

Gene: Survivors_52 Start: 38850, Stop: 38407, Start Num: 22
Candidate Starts for Survivors_52:
(8, 39042), (12, 39003), (13, 38925), (20, 38859), (Start: 22 @38850 has 9 MA's), (28, 38775), (36, 38661), (39, 38628), (50, 38484), (55, 38430), (56, 38427),

Gene: SweatNTears_59 Start: 40075, Stop: 39632, Start Num: 21
Candidate Starts for SweatNTears_59:
(Start: 21 @40075 has 31 MA's), (29, 39991), (45, 39802), (49, 39724), (51, 39694), (57, 39643), (58, 39640),

Gene: Tolls_58 Start: 39611, Stop: 39168, Start Num: 21
Candidate Starts for Tolls_58:
(Start: 21 @39611 has 31 MA's), (29, 39527), (42, 39362), (45, 39338), (49, 39260), (51, 39230), (57, 39179),

Gene: Troje_59 Start: 40067, Stop: 39624, Start Num: 21
Candidate Starts for Troje_59:
(4, 40283), (5, 40280), (7, 40271), (9, 40220), (Start: 21 @40067 has 31 MA's), (36, 39878), (42, 39818), (43, 39812), (45, 39794), (47, 39749), (51, 39686), (55, 39647), (57, 39635),

Gene: Typhonomachy_57 Start: 39657, Stop: 39214, Start Num: 21
Candidate Starts for Typhonomachy_57:
(Start: 21 @39657 has 31 MA's), (29, 39573), (45, 39384), (49, 39306), (51, 39276), (57, 39225), (58, 39222),

Gene: Vine_63 Start: 42322, Stop: 41873, Start Num: 19
Candidate Starts for Vine_63:
(16, 42349), (Start: 19 @42322 has 12 MA's), (Start: 23 @42310 has 1 MA's), (26, 42286), (Start: 32 @42205 has 1 MA's), (38, 42100), (45, 42043), (50, 41950),

Gene: Yakult_58 Start: 40649, Stop: 40206, Start Num: 21
Candidate Starts for Yakult_58:
(Start: 21 @40649 has 31 MA's), (26, 40619), (Start: 32 @40538 has 1 MA's), (37, 40439), (41, 40409), (45, 40376), (49, 40298), (51, 40268), (55, 40229),

Gene: Yarn_54 Start: 39368, Stop: 38925, Start Num: 21
Candidate Starts for Yarn_54:
(Start: 21 @39368 has 31 MA's), (29, 39284), (42, 39119), (45, 39095), (49, 39017), (51, 38987), (57, 38936),

Gene: Yucky_64 Start: 42114, Stop: 41665, Start Num: 19
Candidate Starts for Yucky_64:

(16, 42141), (Start: 19 @42114 has 12 MA's), (Start: 23 @42102 has 1 MA's), (26, 42078), (Start: 32 @41997 has 1 MA's), (38, 41892), (45, 41835), (50, 41742),

Gene: Yummy_59 Start: 39776, Stop: 39333, Start Num: 21

Candidate Starts for Yummy_59:

(4, 39992), (5, 39989), (7, 39980), (9, 39929), (Start: 21 @39776 has 31 MA's), (36, 39587), (42, 39527), (43, 39521), (45, 39503), (47, 39458), (51, 39395), (55, 39356), (57, 39344),

Gene: Zareef_54 Start: 38947, Stop: 38504, Start Num: 22

Candidate Starts for Zareef_54:

(3, 39217), (6, 39172), (8, 39139), (12, 39100), (13, 39022), (20, 38956), (Start: 22 @38947 has 9 MA's), (28, 38872), (36, 38758), (39, 38725), (50, 38581), (55, 38527), (56, 38524),

Gene: Zuko_69 Start: 50446, Stop: 50922, Start Num: 17

Candidate Starts for Zuko_69:

(Start: 17 @50446 has 2 MA's), (30, 50548), (34, 50617), (37, 50674), (38, 50680), (40, 50698), (46, 50767), (48, 50791), (53, 50854), (55, 50887), (59, 50908),