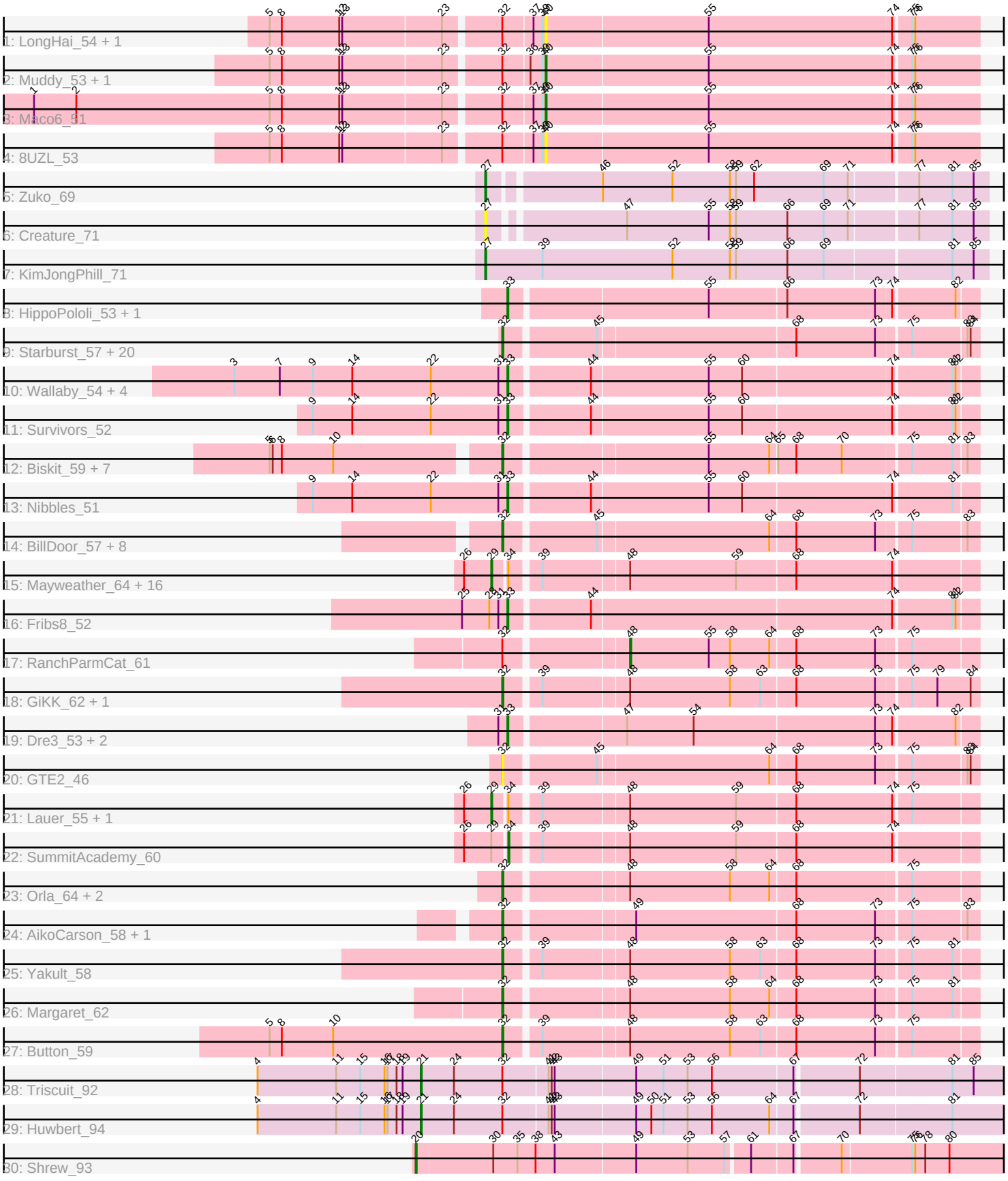
Pham 347473


1: LongHai_54 + 1
2: Muddy_53 + 1
3: Maco6_51
4: 8UZL_53
5: Zuko_69
6: Creature_71
7: KimJongPhill_71
8: HippoPololi_53 + 1
9: Starburst_57 + 20
10: Wallaby_54 + 4
11: Survivors_52
12: Biskit_59 + 7
13: Nibbles_51
14: BillDoor_57 + 8
15: Mayweather_64 + 16
16: Fribs8_52
17: RanchParmCat_61
18: GiKK_62 + 1
19: Dre3_53 + 2
20: GTE2_46
21: Lauer_55 + 1
22: SummitAcademy_60
23: Orla_64 + 2
24: AikoCarson_58 + 1
25: Yakult_58
26: Margaret_62
27: Button_59
28: Triscuit_92
29: Huwbert_94
30: Shrew_93

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 347473 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347473 has 95 members, 21 are drafts.

Phages represented in each track:
• Track 1 : LongHai_54, Salvus_54
• Track 2 : Muddy_53, FF47_51
• Track 3 : Maco6_51
• Track 4 : 8UZL_53
• Track 5 : Zuko_69
• Track 6 : Creature_71
• Track 7 : KimJongPhill_71
• Track 8 : HippoPololi_53, Malvina_54
• Track 9 : Starburst_57, RSchmailzl_58, RedBaron_63, MunkgeeRoachy_55, RADical_58, Typhonomachy_56, Sopespian_55, GoldHunter_57, Socotra_58, Cozz_55, Axym_56, Burnsey_57, Quasar_57, Agatha_57, Carsonalex_60, Eliott_57, Bubble_55, Nina_57, PsychoKiller_56, SweatNTears_59, ChickenTender_59
• Track 10 : Wallaby_54, MaVan_52, Azira_52, Wolfwood_52, Zareef_52
• Track 11 : Survivors_52
• Track 12 : Biskit_59, Troje_59, SketchMex_57, Horseradish_59, MScarn_61, Blondies_60, Buttrmlkdreams_59, Yummy_59
• Track 13 : Nibbles_51
• Track 14 : BillDoor_57, Yarn_54, CanesSauce_56, CaramelLatte_56, Emalyn_56, AndPeggy_54, SteamedHams_58, ChocoMunchkin_56, Tolls_58
• Track 15 : Mayweather_64, ElJefes_62, PotPie_60, BigChungus_60, Bavilard_59, Elinal_65, Feastonyeet_60, KayGee_63, Yucky_63, Pons_62, CherryonLim_61, MAnor_62, Tarnish_60, CocoaPuff_60, Vine_63, McDazzle_62, Balloona_59
• Track 16 : Fribs8_52
• Track 17 : RanchParmCat_61
• Track 18 : GiKK_62, Jamzy_62
• Track 19 : Dre3_53, Gibbous_53, Cleo_50
• Track 20 : GTE2_46
• Track 21 : Lauer_55, SheckWes_64
• Track 22 : SummitAcademy_60
• Track 23 : Orla_64, Hexbug_62, Nodigi_62
• Track 24 : AikoCarson_58, Amok_58
• Track 25 : Yakult_58
• Track 26 : Margaret_62
• Track 27 : Button_59
• Track 28 : Triscuit_92
• Track 29 : Huwbert_94
• Track 30 : Shrew_93

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

The start number called the most often in the published annotations is 32, it was called in 39 of the 74 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_60, Bubble_55, Burnsey_57, Button_59, Buttrmlkdreams_59, CanesSauce_56, CaramelLatte_56, Carsonalex_60, ChickenTender_59, ChocoMunchkin_56, Cozz_55, Eliott_57, Emalyn_56, GTE2_46, GiKK_62, GoldHunter_57, Hexbug_62, Horseradish_59, Jamzy_62, MScarn_61, Margaret_62, MunkgeeRoachy_55, Nina_57, Nodigi_62, Orla_64, PsychoKiller_56, Quasar_57, RADical_58, RSchmailzl_58, RedBaron_63, SketchMex_57, Socotra_58, Sopespian_55, Starburst_57, SteamedHams_58, SweatNTears_59, Tolls_58, Troje_59, Typhonomachy_56, Yakult_58, Yarn_54, Yummy_59,

Genes that have the "Most Annotated" start but do not call it:
• 8UZL_53, FF47_51, Huwbert_94, LongHai_54, Maco6_51, Muddy_53, RanchParmCat_61, Salvus_54, Triscuit_92,

Genes that do not have the "Most Annotated" start:
• Azira_52, Balloona_59, Bavilard_59, BigChungus_60, CherryonLim_61, Cleo_50, CocoaPuff_60, Creature_71, Dre3_53, ElJefes_62, Elinal_65, Feastonyeet_60, Fribs8_52, Gibbous_53, HippoPololi_53, KayGee_63, KimJongPhill_71, Lauer_55, MAnor_62, MaVan_52, Malvina_54, Mayweather_64, McDazzle_62, Nibbles_51, Pons_62, PotPie_60, SheckWes_64, Shrew_93, SummitAcademy_60, Survivors_52, Tarnish_60, Vine_63, Wallaby_54, Wolfwood_52, Yucky_63, Zareef_52, Zuko_69,

Summary by start number:

Start 20:
• Found in 1 of 95 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shrew_93 (singleton),

Start 21:
• Found in 2 of 95 (2.1%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Huwbert_94 (GG), Triscuit_92 (GG),

Start 27:
• Found in 3 of 95 (3.2%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Creature_71 (BR), KimJongPhill_71 (BR), Zuko_69 (BR),

Start 29:
• Found in 20 of 95 (21.1%) of genes in pham
• Manual Annotations of this start: 15 of 74
• Called 95.0% of time when present
• Phage (with cluster) where this start called: Balloona_59 (CT), Bavilard_59 (CT), BigChungus_60 (CT), CherryonLim_61 (CT), CocoaPuff_60 (CT), ElJefes_62 (CT), Elinal_65 (CT), Feastonyeet_60 (CT), KayGee_63 (CT), Lauer_55 (CT), MAnor_62 (CT), Mayweather_64 (CT), McDazzle_62 (CT), Pons_62 (CT), PotPie_60 (CT), SheckWes_64 (CT), Tarnish_60 (CT), Vine_63 (CT), Yucky_63 (CT),

Start 32:
• Found in 58 of 95 (61.1%) of genes in pham
• Manual Annotations of this start: 39 of 74
• Called 84.5% 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_60 (CT), Bubble_55 (CT), Burnsey_57 (CT), Button_59 (CT), Buttrmlkdreams_59 (CT), CanesSauce_56 (CT), CaramelLatte_56 (CT), Carsonalex_60 (CT), ChickenTender_59 (CT), ChocoMunchkin_56 (CT), Cozz_55 (CT), Eliott_57 (CT), Emalyn_56 (CT), GTE2_46 (CT), GiKK_62 (CT), GoldHunter_57 (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), RADical_58 (CT), RSchmailzl_58 (CT), RedBaron_63 (CT), SketchMex_57 (CT), Socotra_58 (CT), Sopespian_55 (CT), Starburst_57 (CT), SteamedHams_58 (CT), SweatNTears_59 (CT), Tolls_58 (CT), Troje_59 (CT), Typhonomachy_56 (CT), Yakult_58 (CT), Yarn_54 (CT), Yummy_59 (CT),

Start 33:
• Found in 13 of 95 (13.7%) of genes in pham
• Manual Annotations of this start: 11 of 74
• 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), Malvina_54 (CT), Nibbles_51 (CT), Survivors_52 (CT), Wallaby_54 (CT), Wolfwood_52 (CT), Zareef_52 (CT),

Start 34:
• Found in 20 of 95 (21.1%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 5.0% of time when present
• Phage (with cluster) where this start called: SummitAcademy_60 (CT),

Start 40:
• Found in 6 of 95 (6.3%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: 8UZL_53 (AB), FF47_51 (AB), LongHai_54 (AB), Maco6_51 (AB), Muddy_53 (AB), Salvus_54 (AB),

Start 48:
• Found in 29 of 95 (30.5%) of genes in pham
• Manual Annotations of this start: 1 of 74

• Called 3.4% of time when present
• Phage (with cluster) where this start called: RanchParmCat_61 (CT),

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 27 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:
•Start number 29 was manually annotated 15 times for cluster CT.
•Start number 32 was manually annotated 39 times for cluster CT.
•Start number 33 was manually annotated 11 times for cluster CT.
•Start number 34 was manually annotated 1 time for cluster CT.
•Start number 48 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster GG:
•Start number 21 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), (12, 40133), (13, 40130), (23, 40034), (Start: 32 @39983 has 39 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: 32
Candidate Starts for Agatha_57:
(Start: 32 @39947 has 39 MA's), (45, 39863), (68, 39674), (73, 39596), (75, 39566), (83, 39515), (84, 39512),

Gene: AikoCarson_58 Start: 40131, Stop: 39688, Start Num: 32
Candidate Starts for AikoCarson_58:
(Start: 32 @40131 has 39 MA's), (49, 40014), (68, 39858), (73, 39780), (75, 39750), (83, 39699),

Gene: Amok_58 Start: 40059, Stop: 39616, Start Num: 32
Candidate Starts for Amok_58:
(Start: 32 @40059 has 39 MA's), (49, 39942), (68, 39786), (73, 39708), (75, 39678), (83, 39627),

Gene: AndPeggy_54 Start: 39363, Stop: 38920, Start Num: 32
Candidate Starts for AndPeggy_54:
(Start: 32 @39363 has 39 MA's), (45, 39279), (64, 39114), (68, 39090), (73, 39012), (75, 38982), (83, 38931),

Gene: Axym_56 Start: 39844, Stop: 39401, Start Num: 32
Candidate Starts for Axym_56:

(Start: 32 @39844 has 39 MA's), (45, 39760), (68, 39571), (73, 39493), (75, 39463), (83, 39412), (84, 39409),

Gene: Azira_52 Start: 38928, Stop: 38485, Start Num: 33
Candidate Starts for Azira_52:
(3, 39198), (7, 39153), (9, 39120), (14, 39081), (22, 39003), (31, 38937), (Start: 33 @38928 has 11 MA's), (44, 38853), (55, 38739), (60, 38706), (74, 38562), (81, 38508), (82, 38505),

Gene: Balloona_59 Start: 41980, Stop: 41531, Start Num: 29
Candidate Starts for Balloona_59:
(26, 42007), (Start: 29 @41980 has 15 MA's), (Start: 34 @41968 has 1 MA's), (39, 41944), (Start: 48 @41863 has 1 MA's), (59, 41758), (68, 41701), (74, 41608),

Gene: Bavilard_59 Start: 40990, Stop: 40541, Start Num: 29
Candidate Starts for Bavilard_59:
(26, 41017), (Start: 29 @40990 has 15 MA's), (Start: 34 @40978 has 1 MA's), (39, 40954), (Start: 48 @40873 has 1 MA's), (59, 40768), (68, 40711), (74, 40618),

Gene: BigChungus_60 Start: 41521, Stop: 41072, Start Num: 29
Candidate Starts for BigChungus_60:
(26, 41548), (Start: 29 @41521 has 15 MA's), (Start: 34 @41509 has 1 MA's), (39, 41485), (Start: 48 @41404 has 1 MA's), (59, 41299), (68, 41242), (74, 41149),

Gene: BillDoor_57 Start: 39039, Stop: 38596, Start Num: 32
Candidate Starts for BillDoor_57:
(Start: 32 @39039 has 39 MA's), (45, 38955), (64, 38790), (68, 38766), (73, 38688), (75, 38658), (83, 38607),

Gene: Biskit_59 Start: 39729, Stop: 39286, Start Num: 32
Candidate Starts for Biskit_59:
(5, 39945), (6, 39942), (8, 39933), (10, 39882), (Start: 32 @39729 has 39 MA's), (55, 39540), (64, 39480), (65, 39474), (68, 39456), (70, 39411), (75, 39348), (81, 39309), (83, 39297),

Gene: Blondies_60 Start: 40046, Stop: 39603, Start Num: 32
Candidate Starts for Blondies_60:
(5, 40262), (6, 40259), (8, 40250), (10, 40199), (Start: 32 @40046 has 39 MA's), (55, 39857), (64, 39797), (65, 39791), (68, 39773), (70, 39728), (75, 39665), (81, 39626), (83, 39614),

Gene: Bubble_55 Start: 39532, Stop: 39089, Start Num: 32
Candidate Starts for Bubble_55:
(Start: 32 @39532 has 39 MA's), (45, 39448), (68, 39259), (73, 39181), (75, 39151), (83, 39100), (84, 39097),

Gene: Burnsey_57 Start: 39938, Stop: 39495, Start Num: 32
Candidate Starts for Burnsey_57:
(Start: 32 @39938 has 39 MA's), (45, 39854), (68, 39665), (73, 39587), (75, 39557), (83, 39506), (84, 39503),

Gene: Button_59 Start: 39824, Stop: 39381, Start Num: 32
Candidate Starts for Button_59:
(5, 40055), (8, 40043), (10, 39992), (Start: 32 @39824 has 39 MA's), (39, 39794), (Start: 48 @39713 has 1 MA's), (58, 39614), (63, 39584), (68, 39551), (73, 39473), (75, 39443),

Gene: Buttrmlkdreams_59 Start: 40176, Stop: 39733, Start Num: 32
Candidate Starts for Buttrmlkdreams_59:
(5, 40392), (6, 40389), (8, 40380), (10, 40329), (Start: 32 @40176 has 39 MA's), (55, 39987), (64, 39927), (65, 39921), (68, 39903), (70, 39858), (75, 39795), (81, 39756), (83, 39744),

Gene: CanesSauce_56 Start: 39524, Stop: 39081, Start Num: 32
Candidate Starts for CanesSauce_56:
(Start: 32 @39524 has 39 MA's), (45, 39440), (64, 39275), (68, 39251), (73, 39173), (75, 39143), (83, 39092),

Gene: CaramelLatte_56 Start: 39524, Stop: 39081, Start Num: 32
Candidate Starts for CaramelLatte_56:
(Start: 32 @39524 has 39 MA's), (45, 39440), (64, 39275), (68, 39251), (73, 39173), (75, 39143), (83, 39092),

Gene: Carsonalex_60 Start: 40326, Stop: 39883, Start Num: 32
Candidate Starts for Carsonalex_60:
(Start: 32 @40326 has 39 MA's), (45, 40242), (68, 40053), (73, 39975), (75, 39945), (83, 39894), (84, 39891),

Gene: CherryonLim_61 Start: 43000, Stop: 42551, Start Num: 29
Candidate Starts for CherryonLim_61:
(26, 43027), (Start: 29 @43000 has 15 MA's), (Start: 34 @42988 has 1 MA's), (39, 42964), (Start: 48 @42883 has 1 MA's), (59, 42778), (68, 42721), (74, 42628),

Gene: ChickenTender_59 Start: 39509, Stop: 39066, Start Num: 32
Candidate Starts for ChickenTender_59:
(Start: 32 @39509 has 39 MA's), (45, 39425), (68, 39236), (73, 39158), (75, 39128), (83, 39077), (84, 39074),

Gene: ChocoMunchkin_56 Start: 39524, Stop: 39081, Start Num: 32
Candidate Starts for ChocoMunchkin_56:
(Start: 32 @39524 has 39 MA's), (45, 39440), (64, 39275), (68, 39251), (73, 39173), (75, 39143), (83, 39092),

Gene: Cleo_50 Start: 38689, Stop: 38246, Start Num: 33
Candidate Starts for Cleo_50:
(31, 38698), (Start: 33 @38689 has 11 MA's), (47, 38581), (54, 38515), (73, 38338), (74, 38323), (82, 38266),

Gene: CocoaPuff_60 Start: 41526, Stop: 41077, Start Num: 29
Candidate Starts for CocoaPuff_60:
(26, 41553), (Start: 29 @41526 has 15 MA's), (Start: 34 @41514 has 1 MA's), (39, 41490), (Start: 48 @41409 has 1 MA's), (59, 41304), (68, 41247), (74, 41154),

Gene: Cozz_55 Start: 39535, Stop: 39092, Start Num: 32
Candidate Starts for Cozz_55:
(Start: 32 @39535 has 39 MA's), (45, 39451), (68, 39262), (73, 39184), (75, 39154), (83, 39103), (84, 39100),

Gene: Creature_71 Start: 49949, Stop: 50422, Start Num: 27
Candidate Starts for Creature_71:

(Start: 27 @49949 has 2 MA's), (47, 50072), (55, 50153), (58, 50174), (59, 50180), (66, 50231), (69, 50267), (71, 50291), (77, 50354), (81, 50387), (85, 50408),

Gene: Dre3_53 Start: 39533, Stop: 39090, Start Num: 33
Candidate Starts for Dre3_53:
(31, 39542), (Start: 33 @39533 has 11 MA's), (47, 39425), (54, 39359), (73, 39182), (74, 39167), (82, 39110),

Gene: ElJefes_62 Start: 42056, Stop: 41607, Start Num: 29
Candidate Starts for ElJefes_62:
(26, 42083), (Start: 29 @42056 has 15 MA's), (Start: 34 @42044 has 1 MA's), (39, 42020), (Start: 48 @41939 has 1 MA's), (59, 41834), (68, 41777), (74, 41684),

Gene: Elinal_65 Start: 42329, Stop: 41880, Start Num: 29
Candidate Starts for Elinal_65:
(26, 42356), (Start: 29 @42329 has 15 MA's), (Start: 34 @42317 has 1 MA's), (39, 42293), (Start: 48 @42212 has 1 MA's), (59, 42107), (68, 42050), (74, 41957),

Gene: Eliott_57 Start: 39831, Stop: 39388, Start Num: 32
Candidate Starts for Eliott_57:
(Start: 32 @39831 has 39 MA's), (45, 39747), (68, 39558), (73, 39480), (75, 39450), (83, 39399), (84, 39396),

Gene: Emalyn_56 Start: 38851, Stop: 38408, Start Num: 32
Candidate Starts for Emalyn_56:
(Start: 32 @38851 has 39 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), (12, 40044), (13, 40041), (23, 39945), (Start: 32 @39894 has 39 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: 29
Candidate Starts for Feastonyeet_60:
(26, 41548), (Start: 29 @41521 has 15 MA's), (Start: 34 @41509 has 1 MA's), (39, 41485), (Start: 48 @41404 has 1 MA's), (59, 41299), (68, 41242), (74, 41149),

Gene: Fribs8_52 Start: 39605, Stop: 39162, Start Num: 33
Candidate Starts for Fribs8_52:
(25, 39650), (28, 39623), (31, 39614), (Start: 33 @39605 has 11 MA's), (44, 39530), (74, 39239), (81, 39185), (82, 39182),

Gene: GTE2_46 Start: 39481, Stop: 39038, Start Num: 32
Candidate Starts for GTE2_46:
(Start: 32 @39481 has 39 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: 32
Candidate Starts for GiKK_62:
(Start: 32 @40991 has 39 MA's), (39, 40961), (Start: 48 @40880 has 1 MA's), (58, 40781), (63, 40751), (68, 40718), (73, 40640), (75, 40610), (79, 40586), (84, 40553),

Gene: Gibbous_53 Start: 39533, Stop: 39090, Start Num: 33
Candidate Starts for Gibbous_53:
(31, 39542), (Start: 33 @39533 has 11 MA's), (47, 39425), (54, 39359), (73, 39182), (74, 39167), (82, 39110),

Gene: GoldHunter_57 Start: 39948, Stop: 39505, Start Num: 32
Candidate Starts for GoldHunter_57:
(Start: 32 @39948 has 39 MA's), (45, 39864), (68, 39675), (73, 39597), (75, 39567), (83, 39516), (84, 39513),

Gene: Hexbug_62 Start: 41858, Stop: 41415, Start Num: 32
Candidate Starts for Hexbug_62:
(Start: 32 @41858 has 39 MA's), (Start: 48 @41747 has 1 MA's), (58, 41648), (64, 41609), (68, 41585), (75, 41477),

Gene: HippoPololi_53 Start: 38842, Stop: 38399, Start Num: 33
Candidate Starts for HippoPololi_53:
(Start: 33 @38842 has 11 MA's), (55, 38653), (66, 38578), (73, 38491), (74, 38476), (82, 38419),

Gene: Horseradish_59 Start: 39662, Stop: 39219, Start Num: 32
Candidate Starts for Horseradish_59:
(5, 39878), (6, 39875), (8, 39866), (10, 39815), (Start: 32 @39662 has 39 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: 21
Candidate Starts for Huwbert_94:
(4, 56001), (11, 55923), (15, 55899), (16, 55875), (17, 55872), (18, 55863), (19, 55857), (Start: 21 @55839 has 2 MA's), (24, 55806), (Start: 32 @55758 has 39 MA's), (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: 32
Candidate Starts for Jamzy_62:
(Start: 32 @40727 has 39 MA's), (39, 40697), (Start: 48 @40616 has 1 MA's), (58, 40517), (63, 40487), (68, 40454), (73, 40376), (75, 40346), (79, 40322), (84, 40289),

Gene: KayGee_63 Start: 42329, Stop: 41880, Start Num: 29
Candidate Starts for KayGee_63:
(26, 42356), (Start: 29 @42329 has 15 MA's), (Start: 34 @42317 has 1 MA's), (39, 42293), (Start: 48 @42212 has 1 MA's), (59, 42107), (68, 42050), (74, 41957),

Gene: KimJongPhill_71 Start: 50463, Stop: 50954, Start Num: 27
Candidate Starts for KimJongPhill_71:
(Start: 27 @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: 29
Candidate Starts for Lauer_55:
(26, 42533), (Start: 29 @42506 has 15 MA's), (Start: 34 @42494 has 1 MA's), (39, 42470), (Start: 48 @42389 has 1 MA's), (59, 42284), (68, 42227), (74, 42134), (75, 42119),

Gene: LongHai_54 Start: 40256, Stop: 39837, Start Num: 40

Candidate Starts for LongHai_54:
(5, 40514), (8, 40502), (12, 40445), (13, 40442), (23, 40346), (Start: 32 @40295 has 39 MA's), (37, 40268), (39, 40259), (Start: 40 @40256 has 2 MA's), (55, 40097), (74, 39917), (75, 39902), (76, 39899),

Gene: MAnor_62 Start: 42460, Stop: 42011, Start Num: 29
Candidate Starts for MAnor_62:
(26, 42487), (Start: 29 @42460 has 15 MA's), (Start: 34 @42448 has 1 MA's), (39, 42424), (Start: 48 @42343 has 1 MA's), (59, 42238), (68, 42181), (74, 42088),

Gene: MScarn_61 Start: 39844, Stop: 39401, Start Num: 32
Candidate Starts for MScarn_61:
(5, 40060), (6, 40057), (8, 40048), (10, 39997), (Start: 32 @39844 has 39 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: 33
Candidate Starts for MaVan_52:
(3, 39227), (7, 39182), (9, 39149), (14, 39110), (22, 39032), (31, 38966), (Start: 33 @38957 has 11 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), (12, 39384), (13, 39381), (23, 39285), (Start: 32 @39234 has 39 MA's), (37, 39207), (39, 39198), (Start: 40 @39195 has 2 MA's), (55, 39036), (74, 38856), (75, 38841), (76, 38838),

Gene: Malvina_54 Start: 38840, Stop: 38397, Start Num: 33
Candidate Starts for Malvina_54:
(Start: 33 @38840 has 11 MA's), (55, 38651), (66, 38576), (73, 38489), (74, 38474), (82, 38417),

Gene: Margaret_62 Start: 40886, Stop: 40443, Start Num: 32
Candidate Starts for Margaret_62:
(Start: 32 @40886 has 39 MA's), (Start: 48 @40775 has 1 MA's), (58, 40676), (64, 40637), (68, 40613), (73, 40535), (75, 40505), (81, 40466),

Gene: Mayweather_64 Start: 42723, Stop: 42274, Start Num: 29
Candidate Starts for Mayweather_64:
(26, 42750), (Start: 29 @42723 has 15 MA's), (Start: 34 @42711 has 1 MA's), (39, 42687), (Start: 48 @42606 has 1 MA's), (59, 42501), (68, 42444), (74, 42351),

Gene: McDazzle_62 Start: 42050, Stop: 41601, Start Num: 29
Candidate Starts for McDazzle_62:
(26, 42077), (Start: 29 @42050 has 15 MA's), (Start: 34 @42038 has 1 MA's), (39, 42014), (Start: 48 @41933 has 1 MA's), (59, 41828), (68, 41771), (74, 41678),

Gene: Muddy_53 Start: 40427, Stop: 40008, Start Num: 40
Candidate Starts for Muddy_53:
(5, 40685), (8, 40673), (12, 40616), (13, 40613), (23, 40517), (Start: 32 @40466 has 39 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: 32
Candidate Starts for MunkgeeRoachy_55:

(Start: 32 @39294 has 39 MA's), (45, 39210), (68, 39021), (73, 38943), (75, 38913), (83, 38862), (84, 38859),

Gene: Nibbles_51 Start: 38650, Stop: 38207, Start Num: 33
Candidate Starts for Nibbles_51:
(9, 38842), (14, 38803), (22, 38725), (31, 38659), (Start: 33 @38650 has 11 MA's), (44, 38575), (55, 38461), (60, 38428), (74, 38284), (81, 38230),

Gene: Nina_57 Start: 40434, Stop: 39991, Start Num: 32
Candidate Starts for Nina_57:
(Start: 32 @40434 has 39 MA's), (45, 40350), (68, 40161), (73, 40083), (75, 40053), (83, 40002), (84, 39999),

Gene: Nodigi_62 Start: 41877, Stop: 41434, Start Num: 32
Candidate Starts for Nodigi_62:
(Start: 32 @41877 has 39 MA's), (Start: 48 @41766 has 1 MA's), (58, 41667), (64, 41628), (68, 41604), (75, 41496),

Gene: Orla_64 Start: 42200, Stop: 41757, Start Num: 32
Candidate Starts for Orla_64:
(Start: 32 @42200 has 39 MA's), (Start: 48 @42089 has 1 MA's), (58, 41990), (64, 41951), (68, 41927), (75, 41819),

Gene: Pons_62 Start: 42065, Stop: 41616, Start Num: 29
Candidate Starts for Pons_62:
(26, 42092), (Start: 29 @42065 has 15 MA's), (Start: 34 @42053 has 1 MA's), (39, 42029), (Start: 48 @41948 has 1 MA's), (59, 41843), (68, 41786), (74, 41693),

Gene: PotPie_60 Start: 42556, Stop: 42107, Start Num: 29
Candidate Starts for PotPie_60:
(26, 42583), (Start: 29 @42556 has 15 MA's), (Start: 34 @42544 has 1 MA's), (39, 42520), (Start: 48 @42439 has 1 MA's), (59, 42334), (68, 42277), (74, 42184),

Gene: PsychoKiller_56 Start: 39832, Stop: 39389, Start Num: 32
Candidate Starts for PsychoKiller_56:
(Start: 32 @39832 has 39 MA's), (45, 39748), (68, 39559), (73, 39481), (75, 39451), (83, 39400), (84, 39397),

Gene: Quasar_57 Start: 40536, Stop: 40093, Start Num: 32
Candidate Starts for Quasar_57:
(Start: 32 @40536 has 39 MA's), (45, 40452), (68, 40263), (73, 40185), (75, 40155), (83, 40104), (84, 40101),

Gene: RADical_58 Start: 39826, Stop: 39383, Start Num: 32
Candidate Starts for RADical_58:
(Start: 32 @39826 has 39 MA's), (45, 39742), (68, 39553), (73, 39475), (75, 39445), (83, 39394), (84, 39391),

Gene: RSchmailzl_58 Start: 39991, Stop: 39548, Start Num: 32
Candidate Starts for RSchmailzl_58:
(Start: 32 @39991 has 39 MA's), (45, 39907), (68, 39718), (73, 39640), (75, 39610), (83, 39559), (84, 39556),

Gene: RanchParmCat_61 Start: 41057, Stop: 40725, Start Num: 48
Candidate Starts for RanchParmCat_61:
(Start: 32 @41168 has 39 MA's), (Start: 48 @41057 has 1 MA's), (55, 40979), (58, 40958), (64, 40919), (68, 40895), (73, 40817), (75, 40787),

Gene: RedBaron_63 Start: 40909, Stop: 40466, Start Num: 32
Candidate Starts for RedBaron_63:
(Start: 32 @40909 has 39 MA's), (45, 40825), (68, 40636), (73, 40558), (75, 40528), (83, 40477), (84, 40474),

Gene: Salvus_54 Start: 40256, Stop: 39837, Start Num: 40
Candidate Starts for Salvus_54:
(5, 40514), (8, 40502), (12, 40445), (13, 40442), (23, 40346), (Start: 32 @40295 has 39 MA's), (37, 40268), (39, 40259), (Start: 40 @40256 has 2 MA's), (55, 40097), (74, 39917), (75, 39902), (76, 39899),

Gene: SheckWes_64 Start: 41596, Stop: 41147, Start Num: 29
Candidate Starts for SheckWes_64:
(26, 41623), (Start: 29 @41596 has 15 MA's), (Start: 34 @41584 has 1 MA's), (39, 41560), (Start: 48 @41479 has 1 MA's), (59, 41374), (68, 41317), (74, 41224), (75, 41209),

Gene: Shrew_93 Start: 56025, Stop: 55444, Start Num: 20
Candidate Starts for Shrew_93:
(Start: 20 @56025 has 1 MA's), (30, 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: 32
Candidate Starts for SketchMex_57:
(5, 39945), (6, 39942), (8, 39933), (10, 39882), (Start: 32 @39729 has 39 MA's), (55, 39540), (64, 39480), (65, 39474), (68, 39456), (70, 39411), (75, 39348), (81, 39309), (83, 39297),

Gene: Socotra_58 Start: 39944, Stop: 39501, Start Num: 32
Candidate Starts for Socotra_58:
(Start: 32 @39944 has 39 MA's), (45, 39860), (68, 39671), (73, 39593), (75, 39563), (83, 39512), (84, 39509),

Gene: Sopespian_55 Start: 39833, Stop: 39390, Start Num: 32
Candidate Starts for Sopespian_55:
(Start: 32 @39833 has 39 MA's), (45, 39749), (68, 39560), (73, 39482), (75, 39452), (83, 39401), (84, 39398),

Gene: Starburst_57 Start: 39828, Stop: 39385, Start Num: 32
Candidate Starts for Starburst_57:
(Start: 32 @39828 has 39 MA's), (45, 39744), (68, 39555), (73, 39477), (75, 39447), (83, 39396), (84, 39393),

Gene: SteamedHams_58 Start: 39340, Stop: 38897, Start Num: 32
Candidate Starts for SteamedHams_58:
(Start: 32 @39340 has 39 MA's), (45, 39256), (64, 39091), (68, 39067), (73, 38989), (75, 38959), (83, 38908),

Gene: SummitAcademy_60 Start: 41687, Stop: 41250, Start Num: 34

Candidate Starts for SummitAcademy_60:
(26, 41726), (Start: 29 @41699 has 15 MA's), (Start: 34 @41687 has 1 MA's), (39, 41663), (Start: 48 @41582 has 1 MA's), (59, 41477), (68, 41420), (74, 41327),

Gene: Survivors_52 Start: 38850, Stop: 38407, Start Num: 33
Candidate Starts for Survivors_52:
(9, 39042), (14, 39003), (22, 38925), (31, 38859), (Start: 33 @38850 has 11 MA's), (44, 38775), (55, 38661), (60, 38628), (74, 38484), (81, 38430), (82, 38427),

Gene: SweatNTears_59 Start: 40075, Stop: 39632, Start Num: 32
Candidate Starts for SweatNTears_59:
(Start: 32 @40075 has 39 MA's), (45, 39991), (68, 39802), (73, 39724), (75, 39694), (83, 39643), (84, 39640),

Gene: Tarnish_60 Start: 41880, Stop: 41431, Start Num: 29
Candidate Starts for Tarnish_60:
(26, 41907), (Start: 29 @41880 has 15 MA's), (Start: 34 @41868 has 1 MA's), (39, 41844), (Start: 48 @41763 has 1 MA's), (59, 41658), (68, 41601), (74, 41508),

Gene: Tolls_58 Start: 39611, Stop: 39168, Start Num: 32
Candidate Starts for Tolls_58:
(Start: 32 @39611 has 39 MA's), (45, 39527), (64, 39362), (68, 39338), (73, 39260), (75, 39230), (83, 39179),

Gene: Triscuit_92 Start: 55578, Stop: 55003, Start Num: 21
Candidate Starts for Triscuit_92:
(4, 55740), (11, 55662), (15, 55638), (16, 55614), (17, 55611), (18, 55602), (19, 55596), (Start: 21 @55578 has 2 MA's), (24, 55545), (Start: 32 @55497 has 39 MA's), (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: 32
Candidate Starts for Troje_59:
(5, 40283), (6, 40280), (8, 40271), (10, 40220), (Start: 32 @40067 has 39 MA's), (55, 39878), (64, 39818), (65, 39812), (68, 39794), (70, 39749), (75, 39686), (81, 39647), (83, 39635),

Gene: Typhonomachy_56 Start: 39657, Stop: 39214, Start Num: 32
Candidate Starts for Typhonomachy_56:
(Start: 32 @39657 has 39 MA's), (45, 39573), (68, 39384), (73, 39306), (75, 39276), (83, 39225), (84, 39222),

Gene: Vine_63 Start: 42322, Stop: 41873, Start Num: 29
Candidate Starts for Vine_63:
(26, 42349), (Start: 29 @42322 has 15 MA's), (Start: 34 @42310 has 1 MA's), (39, 42286), (Start: 48 @42205 has 1 MA's), (59, 42100), (68, 42043), (74, 41950),

Gene: Wallaby_54 Start: 38951, Stop: 38508, Start Num: 33
Candidate Starts for Wallaby_54:
(3, 39221), (7, 39176), (9, 39143), (14, 39104), (22, 39026), (31, 38960), (Start: 33 @38951 has 11 MA's), (44, 38876), (55, 38762), (60, 38729), (74, 38585), (81, 38531), (82, 38528),

Gene: Wolfwood_52 Start: 38925, Stop: 38482, Start Num: 33
Candidate Starts for Wolfwood_52:

(3, 39195), (7, 39150), (9, 39117), (14, 39078), (22, 39000), (31, 38934), (Start: 33 @38925 has 11 MA's), (44, 38850), (55, 38736), (60, 38703), (74, 38559), (81, 38505), (82, 38502),

Gene: Yakult_58 Start: 40649, Stop: 40206, Start Num: 32
Candidate Starts for Yakult_58:
(Start: 32 @40649 has 39 MA's), (39, 40619), (Start: 48 @40538 has 1 MA's), (58, 40439), (63, 40409), (68, 40376), (73, 40298), (75, 40268), (81, 40229),

Gene: Yarn_54 Start: 39368, Stop: 38925, Start Num: 32
Candidate Starts for Yarn_54:
(Start: 32 @39368 has 39 MA's), (45, 39284), (64, 39119), (68, 39095), (73, 39017), (75, 38987), (83, 38936),

Gene: Yucky_63 Start: 42114, Stop: 41665, Start Num: 29
Candidate Starts for Yucky_63:
(26, 42141), (Start: 29 @42114 has 15 MA's), (Start: 34 @42102 has 1 MA's), (39, 42078), (Start: 48 @41997 has 1 MA's), (59, 41892), (68, 41835), (74, 41742),

Gene: Yummy_59 Start: 39776, Stop: 39333, Start Num: 32
Candidate Starts for Yummy_59:
(5, 39992), (6, 39989), (8, 39980), (10, 39929), (Start: 32 @39776 has 39 MA's), (55, 39587), (64, 39527), (65, 39521), (68, 39503), (70, 39458), (75, 39395), (81, 39356), (83, 39344),

Gene: Zareef_52 Start: 38947, Stop: 38504, Start Num: 33
Candidate Starts for Zareef_52:
(3, 39217), (7, 39172), (9, 39139), (14, 39100), (22, 39022), (31, 38956), (Start: 33 @38947 has 11 MA's), (44, 38872), (55, 38758), (60, 38725), (74, 38581), (81, 38527), (82, 38524),

Gene: Zuko_69 Start: 50446, Stop: 50922, Start Num: 27
Candidate Starts for Zuko_69:
(Start: 27 @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),