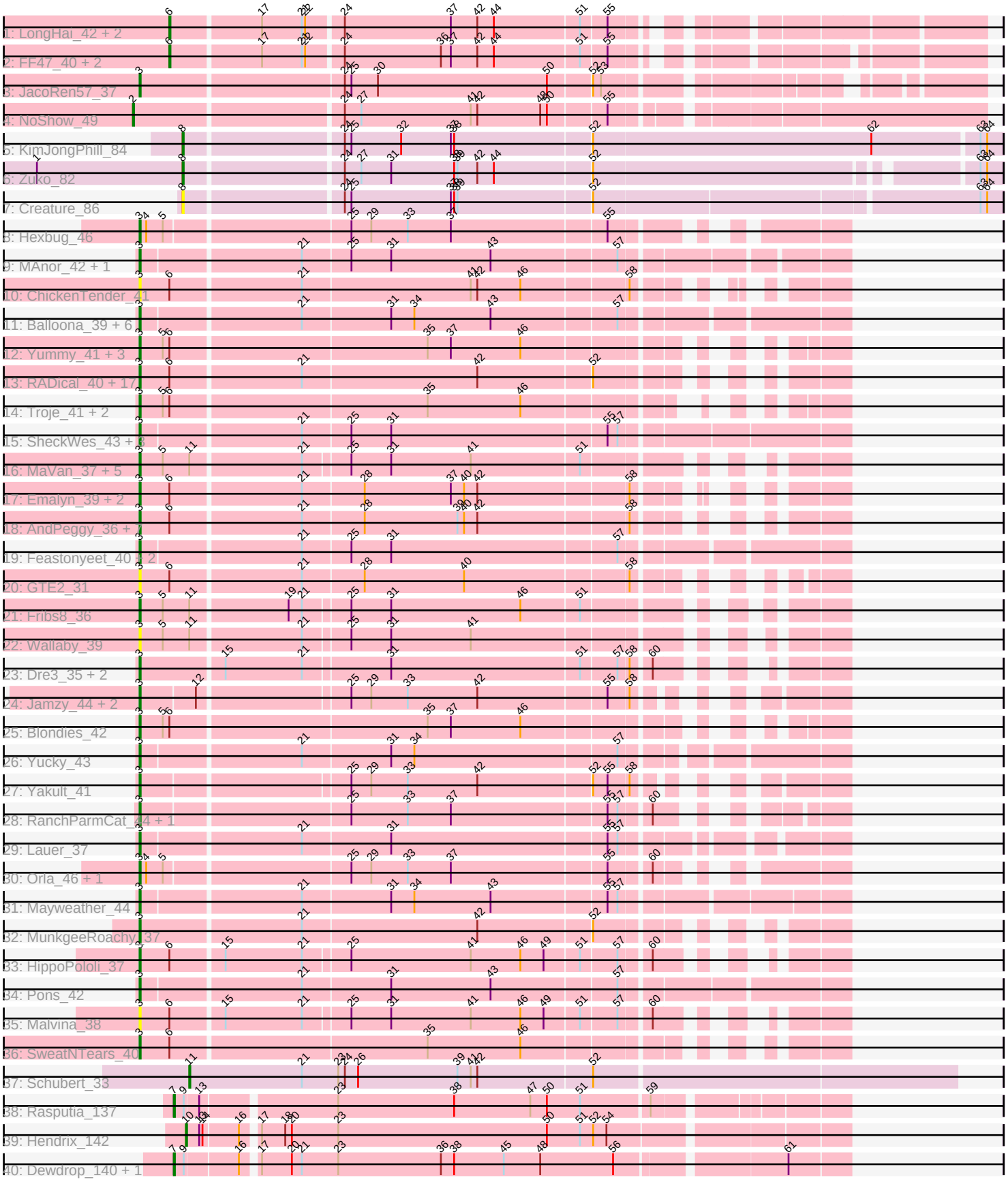
Pham 347460


1: LongHai_42 + 2
2: FF47_40 + 2
3: JacoRen57_37
4: NoShow_49
5: KimJongPhill_84
6: Zuko_82
7: Creature_86
8: Hexbug_46
9: MAnor_42 + 1
10: ChickenTender_41
11: Balloona_39 + 6
12: Yummy_41 + 3
13: RADical_40 + 17
14: Troje_41 + 2
15: SheckWes_43 + 8
16: MaVan_37 + 5
17: Emalyn_39 + 2
18: AndPeggy_36 + 7
19: Feastonyeet_40 + 2
20: GTE2_31
21: Fribs8_36
22: Wallaby_39
23: Dre3_35 + 2
24: Jamzy_44 + 2
25: Blondies_42
26: Yucky_43
27: Yakult_41
28: RanchParmCat_44 + 1
29: Lauer_37
30: Orla_46 + 1
31: Mayweather_44
32: MunkgeeRoachy_37
33: HippoPololi_37
34: Pons_42
35: Malvina_38
36: SweatNTears_40
37: Schubert_33
38: Rasputia_137
39: Hendrix_142
40: Dewdrop_140 + 1

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 347460 Report

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

Pham number 347460 has 99 members, 21 are drafts.

Phages represented in each track:
• Track 1 : LongHai_42, Salvus_42, Muddy_41
• Track 2 : FF47_40, Maco6_39, 8UZL_41
• Track 3 : JacoRen57_37
• Track 4 : NoShow_49
• Track 5 : KimJongPhill_84
• Track 6 : Zuko_82
• Track 7 : Creature_86
• Track 8 : Hexbug_46
• Track 9 : MAnor_42, PotPie_41
• Track 10 : ChickenTender_41
• Track 11 : Balloona_39, Tarnish_41, KayGee_42, SummitAcademy_40, Elinal_44, Vine_43, Bavilard_40
• Track 12 : Yummy_41, Buttrmlkdreams_41, MScarn_42, Horseradish_41
• Track 13 : RADical_40, RSchmailzl_39, Axym_38, Burnsey_38, RedBaron_42, Sopespian_38, Typhonomachy_37, Nina_38, Socotra_39, PsychoKiller_38, Agatha_38, Eliott_39, Cozz_37, Quasar_39, GoldHunter_38, Carsonalex_42, Bubble_37, Starburst_40
• Track 14 : Troje_41, SketchMex_39, Biskit_41
• Track 15 : SheckWes_43, McDazzle_42, ElJefes_41, CherryonLim_42
• Track 16 : MaVan_37, Azira_37, Zareef_37, Wolfwood_37, Nibbles_36, Survivors_37
• Track 17 : Emalyn_39, AikoCarson_40, Amok_40
• Track 18 : AndPeggy_36, BillDoor_39, SteamedHams_40, Yarn_36, CaramelLatte_38, CanesSauce_38, ChocoMunchkin_38, Tolls_40
• Track 19 : Feastonyeet_40, BigChungus_40, CocoaPuff_41
• Track 20 : GTE2_31
• Track 21 : Fribs8_36
• Track 22 : Wallaby_39
• Track 23 : Dre3_35, Gibbous_35, Cleo_35
• Track 24 : Jamzy_44, GiKK_44, Button_42
• Track 25 : Blondies_42
• Track 26 : Yucky_43
• Track 27 : Yakult_41
• Track 28 : RanchParmCat_44, Margaret_45
• Track 29 : Lauer_37
• Track 30 : Orla_46, Nodigi_46
• Track 31 : Mayweather_44

• Track 32 : MunkgeeRoachy_37
• Track 33 : HippoPololi_37
• Track 34 : Pons_42
• Track 35 : Malvina_38
• Track 36 : SweatNTears_40
• Track 37 : Schubert_33
• Track 38 : Rasputia_137
• Track 39 : Hendrix_142
• Track 40 : Dewdrop_140, Leaf_140

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

The start number called the most often in the published annotations is 3, it was called in 68 of the 78 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agatha_38, AikoCarson_40, Amok_40, AndPeggy_36, Axym_38, Azira_37, Balloona_39, Bavilard_40, BigChungus_40, BillDoor_39, Biskit_41, Blondies_42, Bubble_37, Burnsey_38, Button_42, Buttrmlkdreams_41, CanesSauce_38, CaramelLatte_38, Carsonalex_42, CherryonLim_42, ChickenTender_41, ChocoMunchkin_38, Cleo_35, CocoaPuff_41, Cozz_37, Dre3_35, ElJefes_41, Elinal_44, Eliott_39, Emalyn_39, Feastonyeet_40, Fribs8_36, GTE2_31, GiKK_44, Gibbous_35, GoldHunter_38, Hexbug_46, HippoPololi_37, Horseradish_41, JacoRen57_37, Jamzy_44, KayGee_42, Lauer_37, MAnor_42, MScarn_42, MaVan_37, Malvina_38, Margaret_45, Mayweather_44, McDazzle_42, MunkgeeRoachy_37, Nibbles_36, Nina_38, Nodigi_46, Orla_46, Pons_42, PotPie_41, PsychoKiller_38, Quasar_39, RADical_40, RSchmailzl_39, RanchParmCat_44, RedBaron_42, SheckWes_43, SketchMex_39, Socotra_39, Sopespian_38, Starburst_40, SteamedHams_40, SummitAcademy_40, Survivors_37, SweatNTears_40, Tarnish_41, Tolls_40, Troje_41, Typhonomachy_37, Vine_43, Wallaby_39, Wolfwood_37, Yakult_41, Yarn_36, Yucky_43, Yummy_41, Zareef_37,

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

Genes that do not have the "Most Annotated" start:
• 8UZL_41, Creature_86, Dewdrop_140, FF47_40, Hendrix_142, KimJongPhill_84, Leaf_140, LongHai_42, Maco6_39, Muddy_41, NoShow_49, Rasputia_137, Salvus_42, Schubert_33, Zuko_82,

Summary by start number:

Start 2:
• Found in 1 of 99 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 78
• Called 100.0% of time when present
• Phage (with cluster) where this start called: NoShow_49 (AB),

Start 3:
• Found in 84 of 99 (84.8%) of genes in pham

• Manual Annotations of this start: 68 of 78
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Agatha_38 (CT), AikoCarson_40 (CT), Amok_40 (CT), AndPeggy_36 (CT), Axym_38 (CT), Azira_37 (CT), Balloona_39 (CT), Bavilard_40 (CT), BigChungus_40 (CT), BillDoor_39 (CT), Biskit_41 (CT), Blondies_42 (CT), Bubble_37 (CT), Burnsey_38 (CT), Button_42 (CT), Buttrmlkdreams_41 (CT), CanesSauce_38 (CT), CaramelLatte_38 (CT), Carsonalex_42 (CT), CherryonLim_42 (CT), ChickenTender_41 (CT), ChocoMunchkin_38 (CT), Cleo_35 (CT), CocoaPuff_41 (CT), Cozz_37 (CT), Dre3_35 (CT), ElJefes_41 (CT), Elinal_44 (CT), Eliott_39 (CT), Emalyn_39 (CT), Feastonyeet_40 (CT), Fribs8_36 (CT), GTE2_31 (CT), GiKK_44 (CT), Gibbous_35 (CT), GoldHunter_38 (CT), Hexbug_46 (CT), HippoPololi_37 (CT), Horseradish_41 (CT), JacoRen57_37 (AB), Jamzy_44 (CT), KayGee_42 (CT), Lauer_37 (CT), MAnor_42 (CT), MScarn_42 (CT), MaVan_37 (CT), Malvina_38 (CT), Margaret_45 (CT), Mayweather_44 (CT), McDazzle_42 (CT), MunkgeeRoachy_37 (CT), Nibbles_36 (CT), Nina_38 (CT), Nodigi_46 (CT), Orla_46 (CT), Pons_42 (CT), PotPie_41 (CT), PsychoKiller_38 (CT), Quasar_39 (CT), RADical_40 (CT), RSchmailzl_39 (CT), RanchParmCat_44 (CT), RedBaron_42 (CT), SheckWes_43 (CT), SketchMex_39 (CT), Socotra_39 (CT), Sopespian_38 (CT), Starburst_40 (CT), SteamedHams_40 (CT), SummitAcademy_40 (CT), Survivors_37 (CT), SweatNTears_40 (CT), Tarnish_41 (CT), Tolls_40 (CT), Troje_41 (CT), Typhonomachy_37 (CT), Vine_43 (CT), Wallaby_39 (CT), Wolfwood_37 (CT), Yakult_41 (CT), Yarn_36 (CT), Yucky_43 (CT), Yummy_41 (CT), Zareef_37 (CT),

Start 6:
• Found in 48 of 99 (48.5%) of genes in pham
• Manual Annotations of this start: 2 of 78
• Called 12.5% of time when present
• Phage (with cluster) where this start called: 8UZL_41 (AB), FF47_40 (AB), LongHai_42 (AB), Maco6_39 (AB), Muddy_41 (AB), Salvus_42 (AB),

Start 7:
• Found in 3 of 99 (3.0%) of genes in pham
• Manual Annotations of this start: 3 of 78
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Dewdrop_140 (GC), Leaf_140 (GC), Rasputia_137 (GC),

Start 8:
• Found in 3 of 99 (3.0%) of genes in pham
• Manual Annotations of this start: 2 of 78
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Creature_86 (BR), KimJongPhill_84 (BR), Zuko_82 (BR),

Start 10:
• Found in 1 of 99 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 78
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Hendrix_142 (GC),

Start 11:
• Found in 9 of 99 (9.1%) of genes in pham

• Manual Annotations of this start: 1 of 78
• Called 11.1% of time when present
• Phage (with cluster) where this start called: Schubert_33 (EA8),

Summary by clusters:

There are 5 clusters represented in this pham: EA8, AB, GC, BR, CT,

Info for manual annotations of cluster AB:
•Start number 2 was manually annotated 1 time for cluster AB.
•Start number 3 was manually annotated 1 time for cluster AB.
•Start number 6 was manually annotated 2 times for cluster AB.

Info for manual annotations of cluster BR:
•Start number 8 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster CT:
•Start number 3 was manually annotated 67 times for cluster CT.

Info for manual annotations of cluster EA8:
•Start number 11 was manually annotated 1 time for cluster EA8.

Info for manual annotations of cluster GC:
•Start number 7 was manually annotated 3 times for cluster GC.
•Start number 10 was manually annotated 1 time for cluster GC.

Gene Information:

Gene: 8UZL_41 Start: 30093, Stop: 29446, Start Num: 6
Candidate Starts for 8UZL_41:
(Start: 6 @30093 has 2 MA's), (17, 30015), (21, 29979), (22, 29976), (24, 29946), (36, 29859), (37, 29850), (42, 29826), (44, 29811), (51, 29736), (55, 29715),

Gene: Agatha_38 Start: 27790, Stop: 27239, Start Num: 3
Candidate Starts for Agatha_38:
(Start: 3 @27790 has 68 MA's), (Start: 6 @27763 has 2 MA's), (21, 27649), (42, 27493), (52, 27394),

Gene: AikoCarson_40 Start: 28146, Stop: 27598, Start Num: 3
Candidate Starts for AikoCarson_40:
(Start: 3 @28146 has 68 MA's), (Start: 6 @28119 has 2 MA's), (21, 28005), (28, 27951), (37, 27873), (40, 27861), (42, 27849), (58, 27720),

Gene: Amok_40 Start: 28170, Stop: 27622, Start Num: 3
Candidate Starts for Amok_40:
(Start: 3 @28170 has 68 MA's), (Start: 6 @28143 has 2 MA's), (21, 28029), (28, 27975), (37, 27897), (40, 27885), (42, 27873), (58, 27744),

Gene: AndPeggy_36 Start: 27570, Stop: 27022, Start Num: 3
Candidate Starts for AndPeggy_36:
(Start: 3 @27570 has 68 MA's), (Start: 6 @27543 has 2 MA's), (21, 27429), (28, 27375), (39, 27291), (40, 27285), (42, 27273), (58, 27144),

Gene: Axym_38 Start: 27768, Stop: 27217, Start Num: 3
Candidate Starts for Axym_38:
(Start: 3 @27768 has 68 MA's), (Start: 6 @27741 has 2 MA's), (21, 27627), (42, 27471), (52, 27372),

Gene: Azira_37 Start: 27822, Stop: 27271, Start Num: 3
Candidate Starts for Azira_37:
(Start: 3 @27822 has 68 MA's), (5, 27801), (Start: 11 @27777 has 1 MA's), (21, 27681), (25, 27642), (31, 27606), (41, 27534), (51, 27438),

Gene: Balloona_39 Start: 28980, Stop: 28381, Start Num: 3
Candidate Starts for Balloona_39:
(Start: 3 @28980 has 68 MA's), (21, 28842), (31, 28764), (34, 28743), (43, 28674), (57, 28566),

Gene: Bavilard_40 Start: 29201, Stop: 28599, Start Num: 3
Candidate Starts for Bavilard_40:
(Start: 3 @29201 has 68 MA's), (21, 29063), (31, 28985), (34, 28964), (43, 28895), (57, 28787),

Gene: BigChungus_40 Start: 29381, Stop: 28782, Start Num: 3
Candidate Starts for BigChungus_40:
(Start: 3 @29381 has 68 MA's), (21, 29243), (25, 29201), (31, 29165), (57, 28967),

Gene: BillDoor_39 Start: 27241, Stop: 26699, Start Num: 3
Candidate Starts for BillDoor_39:
(Start: 3 @27241 has 68 MA's), (Start: 6 @27214 has 2 MA's), (21, 27100), (28, 27046), (39, 26962), (40, 26956), (42, 26944), (58, 26815),

Gene: Biskit_41 Start: 27935, Stop: 27390, Start Num: 3
Candidate Starts for Biskit_41:
(Start: 3 @27935 has 68 MA's), (5, 27914), (Start: 6 @27908 has 2 MA's), (35, 27683), (46, 27599),

Gene: Blondies_42 Start: 28251, Stop: 27706, Start Num: 3
Candidate Starts for Blondies_42:
(Start: 3 @28251 has 68 MA's), (5, 28230), (Start: 6 @28224 has 2 MA's), (35, 27999), (37, 27978), (46, 27915),

Gene: Bubble_37 Start: 27377, Stop: 26826, Start Num: 3
Candidate Starts for Bubble_37:
(Start: 3 @27377 has 68 MA's), (Start: 6 @27350 has 2 MA's), (21, 27236), (42, 27080), (52, 26981),

Gene: Burnsey_38 Start: 27781, Stop: 27230, Start Num: 3
Candidate Starts for Burnsey_38:
(Start: 3 @27781 has 68 MA's), (Start: 6 @27754 has 2 MA's), (21, 27640), (42, 27484), (52, 27385),

Gene: Button_42 Start: 28421, Stop: 27879, Start Num: 3
Candidate Starts for Button_42:
(Start: 3 @28421 has 68 MA's), (12, 28373), (25, 28244), (29, 28226), (33, 28193), (42, 28130), (55, 28019), (58, 28001),

Gene: Buttrmlkdreams_41 Start: 28267, Stop: 27722, Start Num: 3
Candidate Starts for Buttrmlkdreams_41:
(Start: 3 @28267 has 68 MA's), (5, 28246), (Start: 6 @28240 has 2 MA's), (35, 28015), (37, 27994), (46, 27931),

Gene: CanesSauce_38 Start: 27743, Stop: 27195, Start Num: 3
Candidate Starts for CanesSauce_38:
(Start: 3 @27743 has 68 MA's), (Start: 6 @27716 has 2 MA's), (21, 27602), (28, 27548), (39, 27464), (40, 27458), (42, 27446), (58, 27317),

Gene: CaramelLatte_38 Start: 27743, Stop: 27195, Start Num: 3
Candidate Starts for CaramelLatte_38:
(Start: 3 @27743 has 68 MA's), (Start: 6 @27716 has 2 MA's), (21, 27602), (28, 27548), (39, 27464), (40, 27458), (42, 27446), (58, 27317),

Gene: Carsonalex_42 Start: 27818, Stop: 27267, Start Num: 3
Candidate Starts for Carsonalex_42:
(Start: 3 @27818 has 68 MA's), (Start: 6 @27791 has 2 MA's), (21, 27677), (42, 27521), (52, 27422),

Gene: CherryonLim_42 Start: 30519, Stop: 29932, Start Num: 3
Candidate Starts for CherryonLim_42:
(Start: 3 @30519 has 68 MA's), (21, 30381), (25, 30339), (31, 30303), (55, 30114), (57, 30105),

Gene: ChickenTender_41 Start: 27551, Stop: 27003, Start Num: 3
Candidate Starts for ChickenTender_41:
(Start: 3 @27551 has 68 MA's), (Start: 6 @27524 has 2 MA's), (21, 27410), (41, 27260), (42, 27254), (46, 27215), (58, 27125),

Gene: ChocoMunchkin_38 Start: 27743, Stop: 27195, Start Num: 3
Candidate Starts for ChocoMunchkin_38:
(Start: 3 @27743 has 68 MA's), (Start: 6 @27716 has 2 MA's), (21, 27602), (28, 27548), (39, 27464), (40, 27458), (42, 27446), (58, 27317),

Gene: Cleo_35 Start: 27367, Stop: 26819, Start Num: 3
Candidate Starts for Cleo_35:
(Start: 3 @27367 has 68 MA's), (15, 27295), (21, 27226), (31, 27151), (51, 26983), (57, 26953), (58, 26944), (60, 26929),

Gene: CocoaPuff_41 Start: 29386, Stop: 28796, Start Num: 3
Candidate Starts for CocoaPuff_41:
(Start: 3 @29386 has 68 MA's), (21, 29248), (25, 29206), (31, 29170), (57, 28972),

Gene: Cozz_37 Start: 27378, Stop: 26827, Start Num: 3
Candidate Starts for Cozz_37:
(Start: 3 @27378 has 68 MA's), (Start: 6 @27351 has 2 MA's), (21, 27237), (42, 27081), (52, 26982),

Gene: Creature_86 Start: 62091, Stop: 62798, Start Num: 8
Candidate Starts for Creature_86:
(Start: 8 @62091 has 2 MA's), (24, 62226), (25, 62232), (37, 62322), (38, 62325), (39, 62328), (52, 62445), (63, 62778), (64, 62784),

Gene: Dewdrop_140 Start: 84117, Stop: 84695, Start Num: 7
Candidate Starts for Dewdrop_140:
(Start: 7 @84117 has 3 MA's), (9, 84126), (16, 84171), (17, 84183), (20, 84210), (21, 84219), (23, 84252), (36, 84345), (38, 84357), (45, 84402), (48, 84435), (56, 84501), (61, 84642),

Gene: Dre3_35 Start: 27110, Stop: 26562, Start Num: 3

Candidate Starts for Dre3_35:
(Start: 3 @27110 has 68 MA's), (15, 27038), (21, 26969), (31, 26894), (51, 26726), (57, 26696), (58, 26687), (60, 26672),

Gene: ElJefes_41 Start: 29726, Stop: 29121, Start Num: 3
Candidate Starts for ElJefes_41:
(Start: 3 @29726 has 68 MA's), (21, 29588), (25, 29546), (31, 29510), (55, 29321), (57, 29312),

Gene: Elinal_44 Start: 29769, Stop: 29167, Start Num: 3
Candidate Starts for Elinal_44:
(Start: 3 @29769 has 68 MA's), (21, 29631), (31, 29553), (34, 29532), (43, 29463), (57, 29355),

Gene: Eliott_39 Start: 27789, Stop: 27238, Start Num: 3
Candidate Starts for Eliott_39:
(Start: 3 @27789 has 68 MA's), (Start: 6 @27762 has 2 MA's), (21, 27648), (42, 27492), (52, 27393),

Gene: Emalyn_39 Start: 27338, Stop: 26793, Start Num: 3
Candidate Starts for Emalyn_39:
(Start: 3 @27338 has 68 MA's), (Start: 6 @27311 has 2 MA's), (21, 27197), (28, 27143), (37, 27065), (40, 27053), (42, 27041), (58, 26912),

Gene: FF47_40 Start: 30004, Stop: 29357, Start Num: 6
Candidate Starts for FF47_40:
(Start: 6 @30004 has 2 MA's), (17, 29926), (21, 29890), (22, 29887), (24, 29857), (36, 29770), (37, 29761), (42, 29737), (44, 29722), (51, 29647), (55, 29626),

Gene: Feastonyeet_40 Start: 29381, Stop: 28782, Start Num: 3
Candidate Starts for Feastonyeet_40:
(Start: 3 @29381 has 68 MA's), (21, 29243), (25, 29201), (31, 29165), (57, 28967),

Gene: Fribs8_36 Start: 27549, Stop: 26995, Start Num: 3
Candidate Starts for Fribs8_36:
(Start: 3 @27549 has 68 MA's), (5, 27528), (Start: 11 @27504 has 1 MA's), (19, 27420), (21, 27408), (25, 27369), (31, 27333), (46, 27216), (51, 27165),

Gene: GTE2_31 Start: 27554, Stop: 27012, Start Num: 3
Candidate Starts for GTE2_31:
(Start: 3 @27554 has 68 MA's), (Start: 6 @27527 has 2 MA's), (21, 27413), (28, 27359), (40, 27269), (58, 27128),

Gene: GiKK_44 Start: 28751, Stop: 28209, Start Num: 3
Candidate Starts for GiKK_44:
(Start: 3 @28751 has 68 MA's), (12, 28703), (25, 28574), (29, 28556), (33, 28523), (42, 28460), (55, 28349), (58, 28331),

Gene: Gibbous_35 Start: 27110, Stop: 26562, Start Num: 3
Candidate Starts for Gibbous_35:
(Start: 3 @27110 has 68 MA's), (15, 27038), (21, 26969), (31, 26894), (51, 26726), (57, 26696), (58, 26687), (60, 26672),

Gene: GoldHunter_38 Start: 27790, Stop: 27239, Start Num: 3
Candidate Starts for GoldHunter_38:
(Start: 3 @27790 has 68 MA's), (Start: 6 @27763 has 2 MA's), (21, 27649), (42, 27493), (52, 27394),

Gene: Hendrix_142 Start: 88084, Stop: 88653, Start Num: 10
Candidate Starts for Hendrix_142:
(Start: 10 @88084 has 1 MA's), (13, 88096), (14, 88099), (16, 88129), (17, 88141), (18, 88162), (20, 88168), (23, 88210), (50, 88399), (51, 88429), (52, 88441), (54, 88453),

Gene: Hexbug_46 Start: 30533, Stop: 29970, Start Num: 3
Candidate Starts for Hexbug_46:
(Start: 3 @30533 has 68 MA's), (4, 30527), (5, 30512), (25, 30353), (29, 30335), (33, 30302), (37, 30263), (55, 30128),

Gene: HippoPololi_37 Start: 27564, Stop: 27016, Start Num: 3
Candidate Starts for HippoPololi_37:
(Start: 3 @27564 has 68 MA's), (Start: 6 @27537 has 2 MA's), (15, 27492), (21, 27423), (25, 27384), (41, 27276), (46, 27231), (49, 27210), (51, 27180), (57, 27150), (60, 27126),

Gene: Horseradish_41 Start: 27795, Stop: 27250, Start Num: 3
Candidate Starts for Horseradish_41:
(Start: 3 @27795 has 68 MA's), (5, 27774), (Start: 6 @27768 has 2 MA's), (35, 27543), (37, 27522), (46, 27459),

Gene: JacoRen57_37 Start: 30872, Stop: 30189, Start Num: 3
Candidate Starts for JacoRen57_37:
(Start: 3 @30872 has 68 MA's), (24, 30695), (25, 30689), (30, 30665), (50, 30512), (52, 30476), (53, 30470),

Gene: Jamzy_44 Start: 28734, Stop: 28192, Start Num: 3
Candidate Starts for Jamzy_44:
(Start: 3 @28734 has 68 MA's), (12, 28686), (25, 28557), (29, 28539), (33, 28506), (42, 28443), (55, 28332), (58, 28314),

Gene: KayGee_42 Start: 29769, Stop: 29167, Start Num: 3
Candidate Starts for KayGee_42:
(Start: 3 @29769 has 68 MA's), (21, 29631), (31, 29553), (34, 29532), (43, 29463), (57, 29355),

Gene: KimJongPhill_84 Start: 62747, Stop: 63463, Start Num: 8
Candidate Starts for KimJongPhill_84:
(Start: 8 @62747 has 2 MA's), (24, 62882), (25, 62888), (32, 62933), (37, 62978), (38, 62981), (52, 63101), (62, 63350), (63, 63443), (64, 63449),

Gene: Lauer_37 Start: 30578, Stop: 29997, Start Num: 3
Candidate Starts for Lauer_37:
(Start: 3 @30578 has 68 MA's), (21, 30440), (31, 30362), (55, 30173), (57, 30164),

Gene: Leaf_140 Start: 84048, Stop: 84626, Start Num: 7
Candidate Starts for Leaf_140:
(Start: 7 @84048 has 3 MA's), (9, 84057), (16, 84102), (17, 84114), (20, 84141), (21, 84150), (23, 84183), (36, 84276), (38, 84288), (45, 84333), (48, 84366), (56, 84432), (61, 84573),

Gene: LongHai_42 Start: 30402, Stop: 29746, Start Num: 6
Candidate Starts for LongHai_42:
(Start: 6 @30402 has 2 MA's), (17, 30324), (21, 30288), (22, 30285), (24, 30255), (37, 30159), (42, 30135), (44, 30120), (51, 30045), (55, 30024),

Gene: MAnor_42 Start: 30111, Stop: 29515, Start Num: 3
Candidate Starts for MAnor_42:
(Start: 3 @30111 has 68 MA's), (21, 29973), (25, 29931), (31, 29895), (43, 29805), (57, 29697),

Gene: MScarn_42 Start: 27935, Stop: 27390, Start Num: 3
Candidate Starts for MScarn_42:
(Start: 3 @27935 has 68 MA's), (5, 27914), (Start: 6 @27908 has 2 MA's), (35, 27683), (37, 27662), (46, 27599),

Gene: MaVan_37 Start: 27851, Stop: 27303, Start Num: 3
Candidate Starts for MaVan_37:
(Start: 3 @27851 has 68 MA's), (5, 27830), (Start: 11 @27806 has 1 MA's), (21, 27710), (25, 27671), (31, 27635), (41, 27563), (51, 27467),

Gene: Maco6_39 Start: 29344, Stop: 28697, Start Num: 6
Candidate Starts for Maco6_39:
(Start: 6 @29344 has 2 MA's), (17, 29266), (21, 29230), (22, 29227), (24, 29197), (36, 29110), (37, 29101), (42, 29077), (44, 29062), (51, 28987), (55, 28966),

Gene: Malvina_38 Start: 27562, Stop: 27014, Start Num: 3
Candidate Starts for Malvina_38:
(Start: 3 @27562 has 68 MA's), (Start: 6 @27535 has 2 MA's), (15, 27490), (21, 27421), (25, 27382), (31, 27346), (41, 27274), (46, 27229), (49, 27208), (51, 27178), (57, 27148), (60, 27124),

Gene: Margaret_45 Start: 29479, Stop: 28916, Start Num: 3
Candidate Starts for Margaret_45:
(Start: 3 @29479 has 68 MA's), (25, 29299), (33, 29248), (37, 29209), (55, 29074), (57, 29065), (60, 29041),

Gene: Mayweather_44 Start: 30390, Stop: 29791, Start Num: 3
Candidate Starts for Mayweather_44:
(Start: 3 @30390 has 68 MA's), (21, 30252), (31, 30174), (34, 30153), (43, 30084), (55, 29985), (57, 29976),

Gene: McDazzle_42 Start: 29720, Stop: 29115, Start Num: 3
Candidate Starts for McDazzle_42:
(Start: 3 @29720 has 68 MA's), (21, 29582), (25, 29540), (31, 29504), (55, 29315), (57, 29306),

Gene: Muddy_41 Start: 30576, Stop: 29920, Start Num: 6
Candidate Starts for Muddy_41:
(Start: 6 @30576 has 2 MA's), (17, 30498), (21, 30462), (22, 30459), (24, 30429), (37, 30333), (42, 30309), (44, 30294), (51, 30219), (55, 30198),

Gene: MunkgeeRoachy_37 Start: 27252, Stop: 26701, Start Num: 3
Candidate Starts for MunkgeeRoachy_37:
(Start: 3 @27252 has 68 MA's), (21, 27111), (42, 26955), (52, 26856),

Gene: Nibbles_36 Start: 27538, Stop: 26987, Start Num: 3
Candidate Starts for Nibbles_36:
(Start: 3 @27538 has 68 MA's), (5, 27517), (Start: 11 @27493 has 1 MA's), (21, 27397), (25, 27358), (31, 27322), (41, 27250), (51, 27154),

Gene: Nina_38 Start: 27914, Stop: 27363, Start Num: 3
Candidate Starts for Nina_38:
(Start: 3 @27914 has 68 MA's), (Start: 6 @27887 has 2 MA's), (21, 27773), (42, 27617), (52, 27518),

Gene: NoShow_49 Start: 33469, Stop: 32750, Start Num: 2
Candidate Starts for NoShow_49:
(Start: 2 @33469 has 1 MA's), (24, 33289), (27, 33274), (41, 33175), (42, 33169), (48, 33112), (50, 33106), (55, 33058),

Gene: Nodigi_46 Start: 30519, Stop: 29959, Start Num: 3
Candidate Starts for Nodigi_46:
(Start: 3 @30519 has 68 MA's), (4, 30513), (5, 30498), (25, 30339), (29, 30321), (33, 30288), (37, 30249), (55, 30114), (60, 30081),

Gene: Orla_46 Start: 30492, Stop: 29932, Start Num: 3
Candidate Starts for Orla_46:
(Start: 3 @30492 has 68 MA's), (4, 30486), (5, 30471), (25, 30312), (29, 30294), (33, 30261), (37, 30222), (55, 30087), (60, 30054),

Gene: Pons_42 Start: 29741, Stop: 29139, Start Num: 3
Candidate Starts for Pons_42:
(Start: 3 @29741 has 68 MA's), (21, 29603), (31, 29525), (43, 29435), (57, 29327),

Gene: PotPie_41 Start: 30672, Stop: 30073, Start Num: 3
Candidate Starts for PotPie_41:
(Start: 3 @30672 has 68 MA's), (21, 30534), (25, 30492), (31, 30456), (43, 30366), (57, 30258),

Gene: PsychoKiller_38 Start: 27790, Stop: 27239, Start Num: 3
Candidate Starts for PsychoKiller_38:
(Start: 3 @27790 has 68 MA's), (Start: 6 @27763 has 2 MA's), (21, 27649), (42, 27493), (52, 27394),

Gene: Quasar_39 Start: 28338, Stop: 27787, Start Num: 3
Candidate Starts for Quasar_39:
(Start: 3 @28338 has 68 MA's), (Start: 6 @28311 has 2 MA's), (21, 28197), (42, 28041), (52, 27942),

Gene: RADical_40 Start: 27784, Stop: 27233, Start Num: 3
Candidate Starts for RADical_40:
(Start: 3 @27784 has 68 MA's), (Start: 6 @27757 has 2 MA's), (21, 27643), (42, 27487), (52, 27388),

Gene: RSchmailzl_39 Start: 27827, Stop: 27276, Start Num: 3
Candidate Starts for RSchmailzl_39:
(Start: 3 @27827 has 68 MA's), (Start: 6 @27800 has 2 MA's), (21, 27686), (42, 27530), (52, 27431),

Gene: RanchParmCat_44 Start: 29617, Stop: 29066, Start Num: 3
Candidate Starts for RanchParmCat_44:
(Start: 3 @29617 has 68 MA's), (25, 29437), (33, 29386), (37, 29347), (55, 29212), (57, 29203), (60, 29179),

Gene: Rasputia_137 Start: 85507, Stop: 86073, Start Num: 7
Candidate Starts for Rasputia_137:
(Start: 7 @85507 has 3 MA's), (9, 85516), (13, 85528), (23, 85642), (38, 85747), (47, 85816), (50, 85831), (51, 85861), (59, 85918),

Gene: RedBaron_42 Start: 28027, Stop: 27476, Start Num: 3
Candidate Starts for RedBaron_42:
(Start: 3 @28027 has 68 MA's), (Start: 6 @28000 has 2 MA's), (21, 27886), (42, 27730), (52, 27631),

Gene: Salvus_42 Start: 30402, Stop: 29746, Start Num: 6
Candidate Starts for Salvus_42:
(Start: 6 @30402 has 2 MA's), (17, 30324), (21, 30288), (22, 30285), (24, 30255), (37, 30159), (42, 30135), (44, 30120), (51, 30045), (55, 30024),

Gene: Schubert_33 Start: 24621, Stop: 23938, Start Num: 11
Candidate Starts for Schubert_33:
(Start: 11 @24621 has 1 MA's), (21, 24519), (23, 24486), (24, 24480), (26, 24468), (39, 24378), (41, 24366), (42, 24360), (52, 24258),

Gene: SheckWes_43 Start: 29265, Stop: 28660, Start Num: 3
Candidate Starts for SheckWes_43:
(Start: 3 @29265 has 68 MA's), (21, 29127), (25, 29085), (31, 29049), (55, 28860), (57, 28851),

Gene: SketchMex_39 Start: 27935, Stop: 27390, Start Num: 3
Candidate Starts for SketchMex_39:
(Start: 3 @27935 has 68 MA's), (5, 27914), (Start: 6 @27908 has 2 MA's), (35, 27683), (46, 27599),

Gene: Socotra_39 Start: 27789, Stop: 27238, Start Num: 3
Candidate Starts for Socotra_39:
(Start: 3 @27789 has 68 MA's), (Start: 6 @27762 has 2 MA's), (21, 27648), (42, 27492), (52, 27393),

Gene: Sopespian_38 Start: 27791, Stop: 27240, Start Num: 3
Candidate Starts for Sopespian_38:
(Start: 3 @27791 has 68 MA's), (Start: 6 @27764 has 2 MA's), (21, 27650), (42, 27494), (52, 27395),

Gene: Starburst_40 Start: 27784, Stop: 27233, Start Num: 3
Candidate Starts for Starburst_40:
(Start: 3 @27784 has 68 MA's), (Start: 6 @27757 has 2 MA's), (21, 27643), (42, 27487), (52, 27388),

Gene: SteamedHams_40 Start: 27710, Stop: 27168, Start Num: 3
Candidate Starts for SteamedHams_40:
(Start: 3 @27710 has 68 MA's), (Start: 6 @27683 has 2 MA's), (21, 27569), (28, 27515), (39, 27431), (40, 27425), (42, 27413), (58, 27284),

Gene: SummitAcademy_40 Start: 29301, Stop: 28702, Start Num: 3
Candidate Starts for SummitAcademy_40:
(Start: 3 @29301 has 68 MA's), (21, 29163), (31, 29085), (34, 29064), (43, 28995), (57, 28887),

Gene: Survivors_37 Start: 27747, Stop: 27196, Start Num: 3
Candidate Starts for Survivors_37:
(Start: 3 @27747 has 68 MA's), (5, 27726), (Start: 11 @27702 has 1 MA's), (21, 27606), (25, 27567), (31, 27531), (41, 27459), (51, 27363),

Gene: SweatNTears_40 Start: 27687, Stop: 27136, Start Num: 3
Candidate Starts for SweatNTears_40:
(Start: 3 @27687 has 68 MA's), (Start: 6 @27660 has 2 MA's), (35, 27435), (46, 27351),

Gene: Tarnish_41 Start: 29811, Stop: 29209, Start Num: 3

Candidate Starts for Tarnish_41:
(Start: 3 @29811 has 68 MA's), (21, 29673), (31, 29595), (34, 29574), (43, 29505), (57, 29397),

Gene: Tolls_40 Start: 27815, Stop: 27267, Start Num: 3
Candidate Starts for Tolls_40:
(Start: 3 @27815 has 68 MA's), (Start: 6 @27788 has 2 MA's), (21, 27674), (28, 27620), (39, 27536), (40, 27530), (42, 27518), (58, 27389),

Gene: Troje_41 Start: 28273, Stop: 27737, Start Num: 3
Candidate Starts for Troje_41:
(Start: 3 @28273 has 68 MA's), (5, 28252), (Start: 6 @28246 has 2 MA's), (35, 28021), (46, 27937),

Gene: Typhonomachy_37 Start: 27409, Stop: 26858, Start Num: 3
Candidate Starts for Typhonomachy_37:
(Start: 3 @27409 has 68 MA's), (Start: 6 @27382 has 2 MA's), (21, 27268), (42, 27112), (52, 27013),

Gene: Vine_43 Start: 30028, Stop: 29438, Start Num: 3
Candidate Starts for Vine_43:
(Start: 3 @30028 has 68 MA's), (21, 29890), (31, 29812), (34, 29791), (43, 29722), (57, 29614),

Gene: Wallaby_39 Start: 27848, Stop: 27297, Start Num: 3
Candidate Starts for Wallaby_39:
(Start: 3 @27848 has 68 MA's), (5, 27827), (Start: 11 @27803 has 1 MA's), (21, 27707), (25, 27668), (31, 27632), (41, 27560),

Gene: Wolfwood_37 Start: 27819, Stop: 27268, Start Num: 3
Candidate Starts for Wolfwood_37:
(Start: 3 @27819 has 68 MA's), (5, 27798), (Start: 11 @27774 has 1 MA's), (21, 27678), (25, 27639), (31, 27603), (41, 27531), (51, 27435),

Gene: Yakult_41 Start: 28566, Stop: 28024, Start Num: 3
Candidate Starts for Yakult_41:
(Start: 3 @28566 has 68 MA's), (25, 28389), (29, 28371), (33, 28338), (42, 28275), (52, 28176), (55, 28164), (58, 28146),

Gene: Yarn_36 Start: 27575, Stop: 27027, Start Num: 3
Candidate Starts for Yarn_36:
(Start: 3 @27575 has 68 MA's), (Start: 6 @27548 has 2 MA's), (21, 27434), (28, 27380), (39, 27296), (40, 27290), (42, 27278), (58, 27149),

Gene: Yucky_43 Start: 29968, Stop: 29378, Start Num: 3
Candidate Starts for Yucky_43:
(Start: 3 @29968 has 68 MA's), (21, 29830), (31, 29752), (34, 29731), (57, 29554),

Gene: Yummy_41 Start: 27909, Stop: 27364, Start Num: 3
Candidate Starts for Yummy_41:
(Start: 3 @27909 has 68 MA's), (5, 27888), (Start: 6 @27882 has 2 MA's), (35, 27657), (37, 27636), (46, 27573),

Gene: Zareef_37 Start: 27841, Stop: 27290, Start Num: 3
Candidate Starts for Zareef_37:
(Start: 3 @27841 has 68 MA's), (5, 27820), (Start: 11 @27796 has 1 MA's), (21, 27700), (25, 27661), (31, 27625), (41, 27553), (51, 27457),

Gene: Zuko_82 Start: 62610, Stop: 63302, Start Num: 8
Candidate Starts for Zuko_82:
(1, 62478), (Start: 8 @62610 has 2 MA's), (24, 62745), (27, 62760), (31, 62787), (38, 62844), (39, 62847), (42, 62865), (44, 62880), (52, 62964), (63, 63282), (64, 63288),