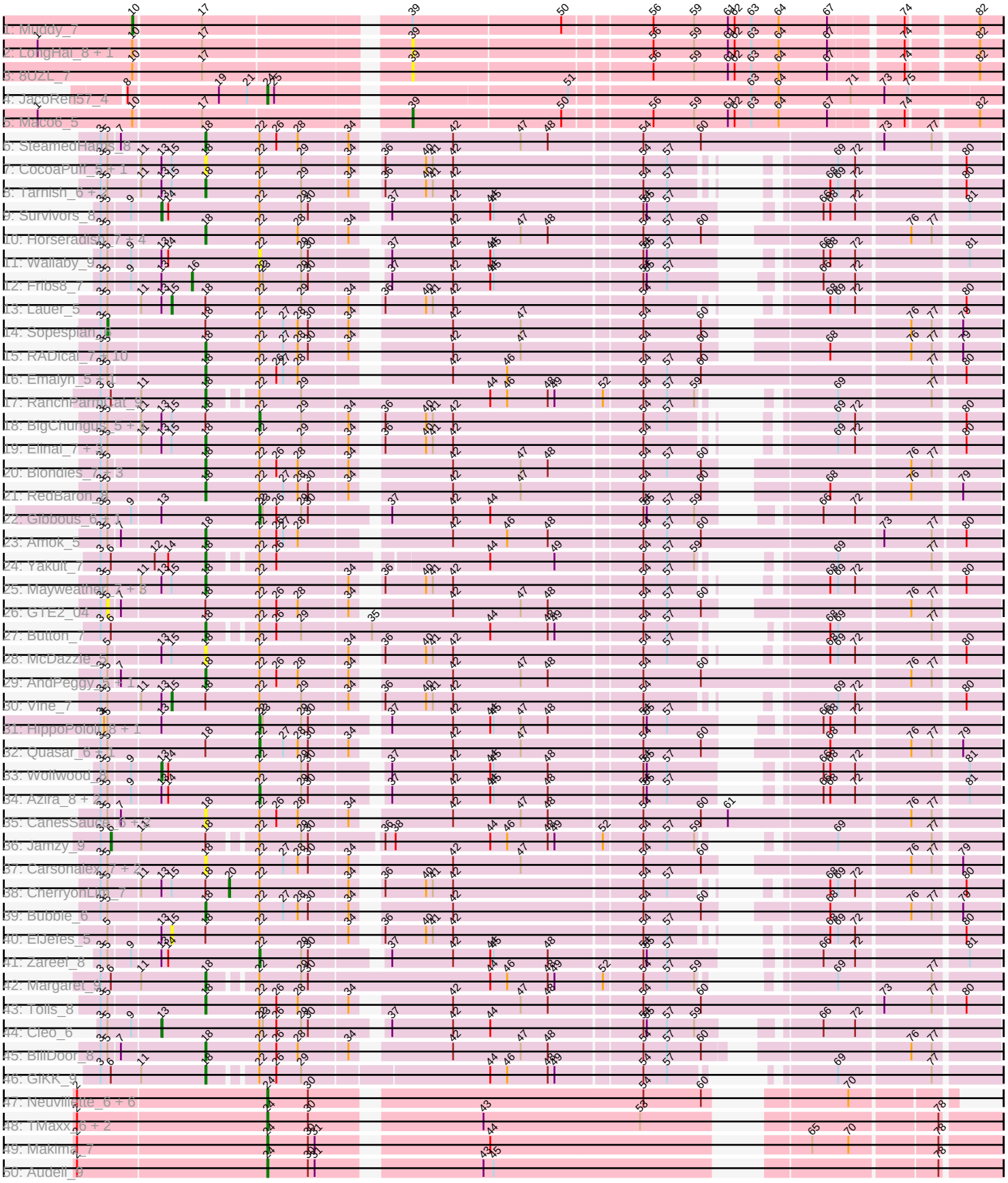
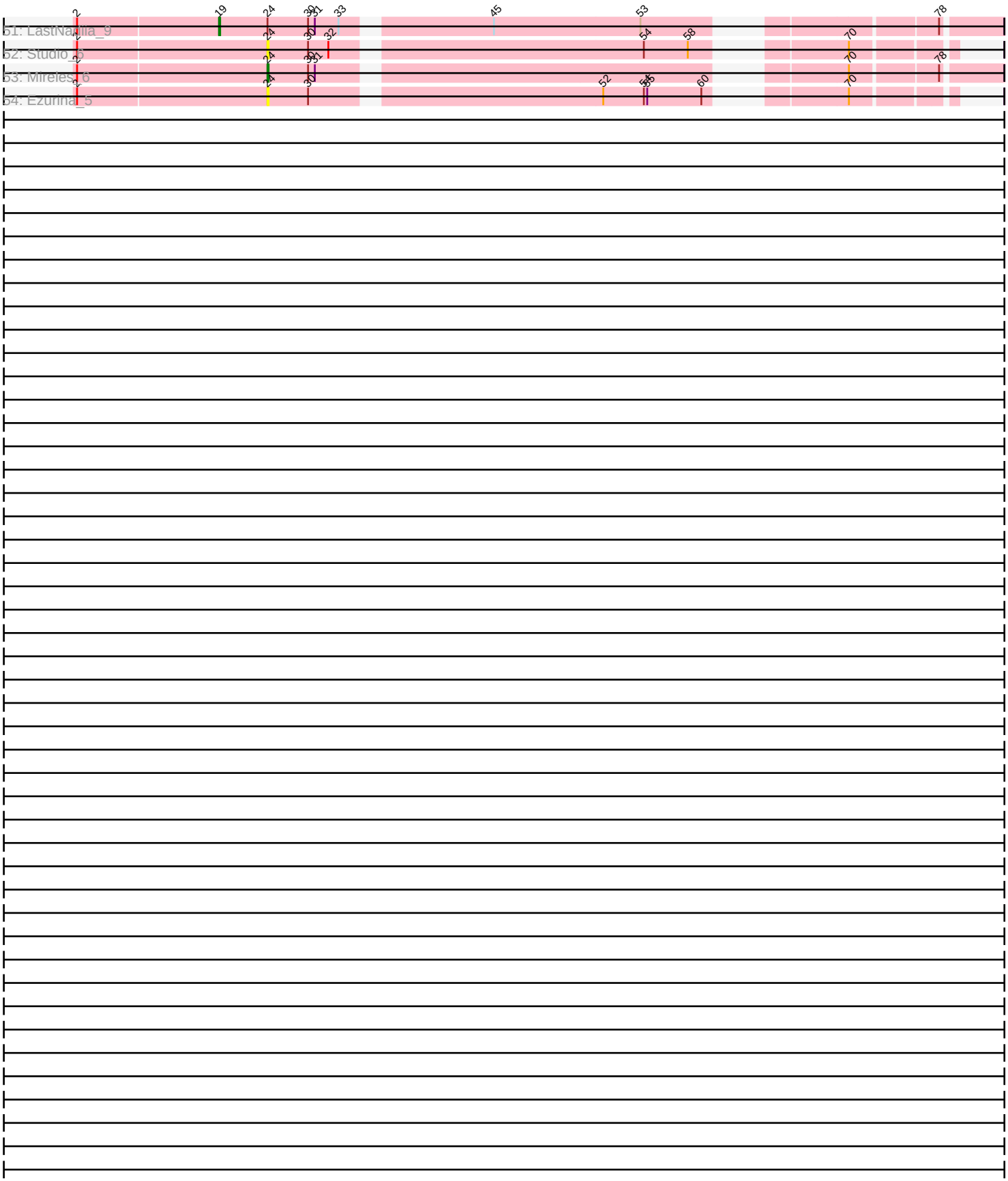
Pham 347451



Pham 347451


2
19
24
30
31
33
45
53
78
51: LastNaruto_9
52: Studio_5
53: Mireles_6
54: Ezurina_5
24
30
32
54
58
70
78
52
55
60

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 347451 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 347451 has 101 members, 24 are drafts.

Phages represented in each track:
- Track 1 : Muddy_7
- Track 2 : LongHai_8, Salvus_8
- Track 3 : 8UZL_7
- Track 4 : JacoRen57_4
- Track 5 : Maco6_5
- Track 6 : SteamedHams_8
- Track 7 : CocoaPuff_5, Balloona_5
- Track 8 : Tarnish_6, SummitAcademy_5, PotPie_6
- Track 9 : Survivors_8
- Track 10 : Horseradish_7, SweatNTears_8, Biskit_7, SketchMex_5, Yummy_7
- Track 11 : Wallaby_9
- Track 12 : Fribs8_7
- Track 13 : Lauer_5
- Track 14 : Sopespian_6
- Track 15 : RADical_7, RSchmailzl_7, Cozz_6, MunkgeeRoachy_6, ChickenTender_8, Agatha_6, Socotra_7, GoldHunter_6, Starburst_7, Burnsey_6, Axym_6
- Track 16 : Emalyn_5, AikoCarson_5
- Track 17 : RanchParmCat_9
- Track 18 : BigChungus_5, Feastonyeet_5
- Track 19 : Elinal_7, KayGee_6, Bavilard_6, Yucky_6
- Track 20 : Blondies_7, MScarn_8, Troje_6, Buttrmlkdreams_6
- Track 21 : RedBaron_8
- Track 22 : Gibbous_6, Dre3_6
- Track 23 : Amok_5
- Track 24 : Yakult_7
- Track 25 : Mayweather_7, SheckWes_5, Pons_6, MAnor_6
- Track 26 : GTE2_04
- Track 27 : Button_7
- Track 28 : McDazzle_5
- Track 29 : AndPeggy_5, Yarn_5
- Track 30 : Vine_7
- Track 31 : HippoPololi_8, Malvina_8

• Track 32 : Quasar_6, Typhonomachy_6
• Track 33 : Wolfwood_8
• Track 34 : Azira_8, MaVan_8, Nibbles_8
• Track 35 : CanesSauce_6, CaramelLatte_6, ChocoMunchkin_6
• Track 36 : Jamzy_9
• Track 37 : Carsonalex_7, PsychoKiller_6, Eliott_6
• Track 38 : CherryonLim_7
• Track 39 : Bubble_6
• Track 40 : ElJefes_5
• Track 41 : Zareef_8
• Track 42 : Margaret_9
• Track 43 : Tolls_8
• Track 44 : Cleo_6
• Track 45 : BillDoor_8
• Track 46 : GiKK_9
• Track 47 : Neuvillette_6, Gerri43_6, AnnabelLee_6, ChamoyPickle_6, Roberts_6, CardboardBox_6, ChipsNGuac_6
• Track 48 : TMaxx_6, TripleC_9, Agamotto_8
• Track 49 : Makima_7
• Track 50 : Audell_9
• Track 51 : LastNadiia_9
• Track 52 : Studio_6
• Track 53 : Mireles_6
• Track 54 : Ezurina_5

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

The start number called the most often in the published annotations is 18, it was called in 43 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agatha_6, AikoCarson_5, Amok_5, AndPeggy_5, Axym_6, Balloona_5, Bavilard_6, BillDoor_8, Biskit_7, Blondies_7, Bubble_6, Burnsey_6, Button_7, Buttrmlkdreams_6, CanesSauce_6, CaramelLatte_6, Carsonalex_7, ChickenTender_8, ChocoMunchkin_6, CocoaPuff_5, Cozz_6, Elinal_7, Eliott_6, Emalyn_5, GiKK_9, GoldHunter_6, Horseradish_7, KayGee_6, MAnor_6, MScarn_8, Margaret_9, Mayweather_7, McDazzle_5, MunkgeeRoachy_6, Pons_6, PotPie_6, PsychoKiller_6, RADical_7, RSchmailzl_7, RanchParmCat_9, RedBaron_8, SheckWes_5, SketchMex_5, Socotra_7, Starburst_7, SteamedHams_8, SummitAcademy_5, SweatNTears_8, Tarnish_6, Tolls_8, Troje_6, Yakult_7, Yarn_5, Yucky_6, Yummy_7,

Genes that have the "Most Annotated" start but do not call it:
• BigChungus_5, CherryonLim_7, ElJefes_5, Feastonyeet_5, GTE2_04, Jamzy_9, Lauer_5, Quasar_6, Sopespian_6, Typhonomachy_6, Vine_7,

Genes that do not have the "Most Annotated" start:
• 8UZL_7, Agamotto_8, AnnabelLee_6, Audell_9, Azira_8, CardboardBox_6, ChamoyPickle_6, ChipsNGuac_6, Cleo_6, Dre3_6, Ezurina_5, Fribs8_7, Gerri43_6, Gibbous_6, HippoPololi_8, JacoRen57_4, LastNadiia_9, LongHai_8, MaVan_8, Maco6_5, Makima_7, Malvina_8, Mireles_6, Muddy_7, Neuvillette_6, Nibbles_8,

Roberts_6, Salvus_8, Studio_6, Survivors_8, TMaxx_6, TripleC_9, Wallaby_9, Wolfwood_8, Zareef_8,

Summary by start number:

Start 5:
• Found in 73 of 101 (72.3%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 2.7% of time when present
• Phage (with cluster) where this start called: GTE2_04 (CT), Sopespian_6 (CT),

Start 6:
• Found in 6 of 101 (5.9%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Jamzy_9 (CT),

Start 10:
• Found in 5 of 101 (5.0%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Muddy_7 (AB),

Start 13:
• Found in 33 of 101 (32.7%) of genes in pham
• Manual Annotations of this start: 3 of 77
• Called 9.1% of time when present
• Phage (with cluster) where this start called: Cleo_6 (CT), Survivors_8 (CT), Wolfwood_8 (CT),

Start 15:
• Found in 20 of 101 (19.8%) of genes in pham
• Manual Annotations of this start: 2 of 77
• Called 15.0% of time when present
• Phage (with cluster) where this start called: ElJefes_5 (CT), Lauer_5 (CT), Vine_7 (CT),

Start 16:
• Found in 1 of 101 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Fribs8_7 (CT),

Start 18:
• Found in 66 of 101 (65.3%) of genes in pham
• Manual Annotations of this start: 43 of 77
• Called 83.3% of time when present
• Phage (with cluster) where this start called: Agatha_6 (CT), AikoCarson_5 (CT), Amok_5 (CT), AndPeggy_5 (CT), Axym_6 (CT), Balloona_5 (CT), Bavilard_6 (CT), BillDoor_8 (CT), Biskit_7 (CT), Blondies_7 (CT), Bubble_6 (CT), Burnsey_6 (CT), Button_7 (CT), Buttrmlkdreams_6 (CT), CanesSauce_6 (CT), CaramelLatte_6 (CT), Carsonalex_7 (CT), ChickenTender_8 (CT), ChocoMunchkin_6 (CT), CocoaPuff_5 (CT), Cozz_6 (CT), Elinal_7 (CT), Eliott_6 (CT), Emalyn_5 (CT), GiKK_9 (CT),

GoldHunter_6 (CT), Horseradish_7 (CT), KayGee_6 (CT), MAnor_6 (CT), MScarn_8 (CT), Margaret_9 (CT), Mayweather_7 (CT), McDazzle_5 (CT), MunkgeeRoachy_6 (CT), Pons_6 (CT), PotPie_6 (CT), PsychoKiller_6 (CT), RADical_7 (CT), RSchmailzl_7 (CT), RanchParmCat_9 (CT), RedBaron_8 (CT), SheckWes_5 (CT), SketchMex_5 (CT), Socotra_7 (CT), Starburst_7 (CT), SteamedHams_8 (CT), SummitAcademy_5 (CT), SweatNTears_8 (CT), Tarnish_6 (CT), Tolls_8 (CT), Troje_6 (CT), Yakult_7 (CT), Yarn_5 (CT), Yucky_6 (CT), Yummy_7 (CT),

Start 19:
• Found in 2 of 101 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 50.0% of time when present
• Phage (with cluster) where this start called: LastNadiia_9 (FR),

Start 20:
• Found in 1 of 101 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CherryonLim_7 (CT),

Start 22:
• Found in 79 of 101 (78.2%) of genes in pham
• Manual Annotations of this start: 11 of 77
• Called 16.5% of time when present
• Phage (with cluster) where this start called: Azira_8 (CT), BigChungus_5 (CT), Dre3_6 (CT), Feastonyeet_5 (CT), Gibbous_6 (CT), HippoPololi_8 (CT), MaVan_8 (CT), Malvina_8 (CT), Nibbles_8 (CT), Quasar_6 (CT), Typhonomachy_6 (CT), Wallaby_9 (CT), Zareef_8 (CT),

Start 24:
• Found in 17 of 101 (16.8%) of genes in pham
• Manual Annotations of this start: 11 of 77
• Called 94.1% of time when present
• Phage (with cluster) where this start called: Agamotto_8 (FR), AnnabelLee_6 (FR), Audell_9 (FR), CardboardBox_6 (FR), ChamoyPickle_6 (FR), ChipsNGuac_6 (FR), Ezurina_5 (FR), Gerri43_6 (FR), JacoRen57_4 (AB), Makima_7 (FR), Mireles_6 (FR), Neuvillette_6 (FR), Roberts_6 (FR), Studio_6 (FR), TMaxx_6 (FR), TripleC_9 (FR),

Start 39:
• Found in 5 of 101 (5.0%) of genes in pham
• Manual Annotations of this start: 1 of 77
• Called 80.0% of time when present
• Phage (with cluster) where this start called: 8UZL_7 (AB), LongHai_8 (AB), Maco6_5 (AB), Salvus_8 (AB),

Summary by clusters:

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

Info for manual annotations of cluster AB:
•Start number 10 was manually annotated 1 time for cluster AB.
•Start number 24 was manually annotated 1 time for cluster AB.
•Start number 39 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster CT:
•Start number 5 was manually annotated 1 time for cluster CT.
•Start number 6 was manually annotated 1 time for cluster CT.
•Start number 13 was manually annotated 3 times for cluster CT.
•Start number 15 was manually annotated 2 times for cluster CT.
•Start number 16 was manually annotated 1 time for cluster CT.
•Start number 18 was manually annotated 43 times for cluster CT.
•Start number 20 was manually annotated 1 time for cluster CT.
•Start number 22 was manually annotated 11 times for cluster CT.

Info for manual annotations of cluster FR:
•Start number 19 was manually annotated 1 time for cluster FR.
•Start number 24 was manually annotated 10 times for cluster FR.

Gene Information:

Gene: 8UZL_7 Start: 5062, Stop: 5550, Start Num: 39
Candidate Starts for 8UZL_7:
(Start: 10 @4843 has 1 MA's), (17, 4900), (Start: 39 @5062 has 1 MA's), (56, 5263), (59, 5299), (61, 5329), (62, 5335), (63, 5350), (64, 5374), (67, 5416), (74, 5473), (82, 5530),

Gene: Agamotto_8 Start: 7462, Stop: 8025, Start Num: 24
Candidate Starts for Agamotto_8:
(2, 7297), (Start: 24 @7462 has 11 MA's), (30, 7498), (43, 7633), (53, 7771), (78, 7975),

Gene: Agatha_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Agatha_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: AikoCarson_5 Start: 3913, Stop: 4572, Start Num: 18
Candidate Starts for AikoCarson_5:
(3, 3826), (Start: 5 @3832 has 1 MA's), (Start: 18 @3913 has 43 MA's), (Start: 22 @3961 has 11 MA's), (26, 3976), (27, 3982), (28, 3994), (42, 4108), (46, 4156), (54, 4270), (57, 4291), (60, 4321), (77, 4516), (80, 4543),

Gene: Amok_5 Start: 3914, Stop: 4573, Start Num: 18
Candidate Starts for Amok_5:
(3, 3827), (Start: 5 @3833 has 1 MA's), (7, 3842), (Start: 18 @3914 has 43 MA's), (Start: 22 @3962 has 11 MA's), (26, 3977), (27, 3983), (28, 3995), (42, 4109), (46, 4157), (48, 4193), (54, 4271), (57, 4292), (60, 4322), (73, 4475), (77, 4517), (80, 4544),

Gene: AndPeggy_5 Start: 4225, Stop: 4881, Start Num: 18
Candidate Starts for AndPeggy_5:
(3, 4138), (Start: 5 @4144 has 1 MA's), (7, 4153), (Start: 18 @4225 has 43 MA's), (Start: 22 @4273 has 11 MA's), (26, 4288), (28, 4306), (34, 4348), (42, 4420), (47, 4480), (48, 4504), (54, 4582), (60, 4633), (76, 4810), (77, 4828),

Gene: AnnabelLee_6 Start: 4338, Stop: 4859, Start Num: 24

Candidate Starts for AnnabelLee_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: Audell_9 Start: 7732, Stop: 8295, Start Num: 24
Candidate Starts for Audell_9:
(2, 7567), (Start: 24 @7732 has 11 MA's), (30, 7768), (31, 7774), (43, 7903), (45, 7912), (78, 8245),

Gene: Axym_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Axym_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: Azira_8 Start: 5151, Stop: 5714, Start Num: 22
Candidate Starts for Azira_8:
(3, 5016), (Start: 5 @5022 has 1 MA's), (9, 5040), (Start: 13 @5064 has 3 MA's), (14, 5070), (Start: 22 @5151 has 11 MA's), (29, 5187), (30, 5193), (37, 5250), (42, 5304), (44, 5337), (45, 5340), (48, 5388), (54, 5466), (55, 5469), (57, 5487), (66, 5571), (68, 5577), (72, 5598), (81, 5688),

Gene: Balloona_5 Start: 3999, Stop: 4592, Start Num: 18
Candidate Starts for Balloona_5:
(3, 3909), (Start: 5 @3915 has 1 MA's), (11, 3942), (Start: 13 @3960 has 3 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 43 MA's), (Start: 22 @4047 has 11 MA's), (29, 4083), (34, 4122), (36, 4134), (40, 4170), (41, 4176), (42, 4194), (54, 4356), (57, 4377), (69, 4458), (72, 4473), (80, 4560),

Gene: Bavilard_6 Start: 4775, Stop: 5368, Start Num: 18
Candidate Starts for Bavilard_6:
(3, 4685), (Start: 5 @4691 has 1 MA's), (11, 4718), (Start: 13 @4736 has 3 MA's), (Start: 15 @4745 has 2 MA's), (Start: 18 @4775 has 43 MA's), (Start: 22 @4823 has 11 MA's), (29, 4859), (34, 4898), (36, 4910), (40, 4946), (41, 4952), (42, 4970), (54, 5132), (69, 5234), (72, 5249), (80, 5336),

Gene: BigChungus_5 Start: 4072, Stop: 4617, Start Num: 22
Candidate Starts for BigChungus_5:
(3, 3934), (Start: 5 @3940 has 1 MA's), (11, 3967), (Start: 13 @3985 has 3 MA's), (Start: 15 @3994 has 2 MA's), (Start: 18 @4024 has 43 MA's), (Start: 22 @4072 has 11 MA's), (29, 4108), (34, 4147), (36, 4159), (40, 4195), (41, 4201), (42, 4219), (54, 4381), (57, 4402), (69, 4483), (72, 4498), (80, 4585),

Gene: BillDoor_8 Start: 4220, Stop: 4846, Start Num: 18
Candidate Starts for BillDoor_8:
(3, 4133), (Start: 5 @4139 has 1 MA's), (7, 4148), (Start: 18 @4220 has 43 MA's), (Start: 22 @4268 has 11 MA's), (26, 4283), (28, 4301), (34, 4343), (42, 4415), (47, 4475), (48, 4499), (54, 4577), (57, 4598), (60, 4628), (76, 4775), (77, 4793),

Gene: Biskit_7 Start: 4215, Stop: 4838, Start Num: 18
Candidate Starts for Biskit_7:
(3, 4128), (Start: 5 @4134 has 1 MA's), (Start: 18 @4215 has 43 MA's), (Start: 22 @4263 has 11 MA's), (28, 4296), (34, 4338), (42, 4410), (47, 4470), (48, 4494), (54, 4572), (57, 4593), (60, 4623), (76, 4767), (77, 4785),

Gene: Blondies_7 Start: 4216, Stop: 4839, Start Num: 18
Candidate Starts for Blondies_7:
(3, 4129), (Start: 5 @4135 has 1 MA's), (Start: 18 @4216 has 43 MA's), (Start: 22 @4264 has 11 MA's), (26, 4279), (28, 4297), (34, 4339), (42, 4411), (47, 4471), (48, 4495), (54, 4573), (57, 4594), (60,

4624), (76, 4768), (77, 4786),

Gene: Bubble_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Bubble_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: Burnsey_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Burnsey_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: Button_7 Start: 4307, Stop: 4906, Start Num: 18
Candidate Starts for Button_7:
(3, 4214), (Start: 6 @4223 has 1 MA's), (Start: 18 @4307 has 43 MA's), (Start: 22 @4343 has 11 MA's), (26, 4358), (29, 4379), (35, 4439), (44, 4544), (48, 4595), (49, 4601), (54, 4673), (57, 4694), (68, 4766), (69, 4772), (77, 4850),

Gene: Buttrmlkdreams_6 Start: 4216, Stop: 4839, Start Num: 18
Candidate Starts for Buttrmlkdreams_6:
(3, 4129), (Start: 5 @4135 has 1 MA's), (Start: 18 @4216 has 43 MA's), (Start: 22 @4264 has 11 MA's), (26, 4279), (28, 4297), (34, 4339), (42, 4411), (47, 4471), (48, 4495), (54, 4573), (57, 4594), (60, 4624), (76, 4768), (77, 4786),

Gene: CanesSauce_6 Start: 4225, Stop: 4881, Start Num: 18
Candidate Starts for CanesSauce_6:
(3, 4138), (Start: 5 @4144 has 1 MA's), (7, 4153), (Start: 18 @4225 has 43 MA's), (Start: 22 @4273 has 11 MA's), (26, 4288), (28, 4306), (34, 4348), (42, 4420), (47, 4480), (48, 4504), (54, 4582), (60, 4633), (61, 4657), (76, 4810), (77, 4828),

Gene: CaramelLatte_6 Start: 4225, Stop: 4881, Start Num: 18
Candidate Starts for CaramelLatte_6:
(3, 4138), (Start: 5 @4144 has 1 MA's), (7, 4153), (Start: 18 @4225 has 43 MA's), (Start: 22 @4273 has 11 MA's), (26, 4288), (28, 4306), (34, 4348), (42, 4420), (47, 4480), (48, 4504), (54, 4582), (60, 4633), (61, 4657), (76, 4810), (77, 4828),

Gene: CardboardBox_6 Start: 4338, Stop: 4859, Start Num: 24
Candidate Starts for CardboardBox_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: Carsonalex_7 Start: 4278, Stop: 4901, Start Num: 18
Candidate Starts for Carsonalex_7:
(3, 4188), (Start: 5 @4194 has 1 MA's), (Start: 18 @4278 has 43 MA's), (Start: 22 @4326 has 11 MA's), (27, 4347), (28, 4359), (30, 4368), (34, 4401), (42, 4473), (47, 4533), (54, 4635), (60, 4686), (76, 4830), (77, 4848), (79, 4869),

Gene: ChamoyPickle_6 Start: 4338, Stop: 4859, Start Num: 24
Candidate Starts for ChamoyPickle_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: CherryonLim_7 Start: 4771, Stop: 5343, Start Num: 20

Candidate Starts for CherryonLim_7:
(3, 4660), (Start: 5 @4666 has 1 MA's), (11, 4693), (Start: 13 @4711 has 3 MA's), (Start: 15 @4720 has 2 MA's), (Start: 18 @4750 has 43 MA's), (Start: 20 @4771 has 1 MA's), (Start: 22 @4798 has 11 MA's), (34, 4873), (36, 4885), (40, 4921), (41, 4927), (42, 4945), (54, 5107), (57, 5128), (68, 5203), (69, 5209), (72, 5224), (80, 5311),

Gene: ChickenTender_8 Start: 4269, Stop: 4892, Start Num: 18
Candidate Starts for ChickenTender_8:
(3, 4179), (Start: 5 @4185 has 1 MA's), (Start: 18 @4269 has 43 MA's), (Start: 22 @4317 has 11 MA's), (27, 4338), (28, 4350), (30, 4359), (34, 4392), (42, 4464), (47, 4524), (54, 4626), (60, 4677), (68, 4755), (76, 4821), (77, 4839), (79, 4860),

Gene: ChipsNGuac_6 Start: 4338, Stop: 4859, Start Num: 24
Candidate Starts for ChipsNGuac_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: ChocoMunchkin_6 Start: 4225, Stop: 4881, Start Num: 18
Candidate Starts for ChocoMunchkin_6:
(3, 4138), (Start: 5 @4144 has 1 MA's), (7, 4153), (Start: 18 @4225 has 43 MA's), (Start: 22 @4273 has 11 MA's), (26, 4288), (28, 4306), (34, 4348), (42, 4420), (47, 4480), (48, 4504), (54, 4582), (60, 4633), (61, 4657), (76, 4810), (77, 4828),

Gene: Cleo_6 Start: 4357, Stop: 5013, Start Num: 13
Candidate Starts for Cleo_6:
(3, 4306), (Start: 5 @4312 has 1 MA's), (9, 4333), (Start: 13 @4357 has 3 MA's), (Start: 22 @4444 has 11 MA's), (23, 4447), (26, 4459), (29, 4480), (30, 4486), (37, 4543), (42, 4597), (44, 4630), (54, 4759), (55, 4762), (57, 4780), (59, 4804), (66, 4870), (72, 4897),

Gene: CocoaPuff_5 Start: 3999, Stop: 4592, Start Num: 18
Candidate Starts for CocoaPuff_5:
(3, 3909), (Start: 5 @3915 has 1 MA's), (11, 3942), (Start: 13 @3960 has 3 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 43 MA's), (Start: 22 @4047 has 11 MA's), (29, 4083), (34, 4122), (36, 4134), (40, 4170), (41, 4176), (42, 4194), (54, 4356), (57, 4377), (69, 4458), (72, 4473), (80, 4560),

Gene: Cozz_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Cozz_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: Dre3_6 Start: 4388, Stop: 4960, Start Num: 22
Candidate Starts for Dre3_6:
(3, 4250), (Start: 5 @4256 has 1 MA's), (9, 4277), (Start: 13 @4301 has 3 MA's), (Start: 22 @4388 has 11 MA's), (23, 4391), (26, 4403), (29, 4424), (30, 4430), (37, 4490), (42, 4544), (44, 4577), (54, 4706), (55, 4709), (57, 4727), (59, 4751), (66, 4817), (72, 4844),

Gene: ElJefes_5 Start: 4440, Stop: 5063, Start Num: 15
Candidate Starts for ElJefes_5:
(Start: 5 @4389 has 1 MA's), (Start: 13 @4431 has 3 MA's), (Start: 15 @4440 has 2 MA's), (Start: 18 @4470 has 43 MA's), (Start: 22 @4518 has 11 MA's), (34, 4593), (36, 4605), (40, 4641), (41, 4647), (42, 4665), (54, 4827), (57, 4848), (68, 4923), (69, 4929), (72, 4944), (80, 5031),

Gene: Elinal_7 Start: 4002, Stop: 4595, Start Num: 18

Candidate Starts for Elinal_7:
(3, 3912), (Start: 5 @3918 has 1 MA's), (11, 3945), (Start: 13 @3963 has 3 MA's), (Start: 15 @3972 has 2 MA's), (Start: 18 @4002 has 43 MA's), (Start: 22 @4050 has 11 MA's), (29, 4086), (34, 4125), (36, 4137), (40, 4173), (41, 4179), (42, 4197), (54, 4359), (69, 4461), (72, 4476), (80, 4563),

Gene: Eliott_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Eliott_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (76, 4773), (77, 4791), (79, 4812),

Gene: Emalyn_5 Start: 3913, Stop: 4572, Start Num: 18
Candidate Starts for Emalyn_5:
(3, 3826), (Start: 5 @3832 has 1 MA's), (Start: 18 @3913 has 43 MA's), (Start: 22 @3961 has 11 MA's), (26, 3976), (27, 3982), (28, 3994), (42, 4108), (46, 4156), (54, 4270), (57, 4291), (60, 4321), (77, 4516), (80, 4543),

Gene: Ezurina_5 Start: 3952, Stop: 4473, Start Num: 24
Candidate Starts for Ezurina_5:
(2, 3787), (Start: 24 @3952 has 11 MA's), (30, 3988), (52, 4228), (54, 4264), (55, 4267), (60, 4315), (70, 4393),

Gene: Feastonyeet_5 Start: 4072, Stop: 4617, Start Num: 22
Candidate Starts for Feastonyeet_5:
(3, 3934), (Start: 5 @3940 has 1 MA's), (11, 3967), (Start: 13 @3985 has 3 MA's), (Start: 15 @3994 has 2 MA's), (Start: 18 @4024 has 43 MA's), (Start: 22 @4072 has 11 MA's), (29, 4108), (34, 4147), (36, 4159), (40, 4195), (41, 4201), (42, 4219), (54, 4381), (57, 4402), (69, 4483), (72, 4498), (80, 4585),

Gene: Fribs8_7 Start: 4879, Stop: 5508, Start Num: 16
Candidate Starts for Fribs8_7:
(3, 4804), (Start: 5 @4810 has 1 MA's), (9, 4828), (Start: 13 @4852 has 3 MA's), (Start: 16 @4879 has 1 MA's), (Start: 22 @4939 has 11 MA's), (23, 4942), (29, 4975), (30, 4981), (37, 5038), (42, 5092), (44, 5125), (45, 5128), (54, 5254), (55, 5257), (57, 5275), (66, 5365), (72, 5392),

Gene: GTE2_04 Start: 3827, Stop: 4531, Start Num: 5
Candidate Starts for GTE2_04:
(3, 3821), (Start: 5 @3827 has 1 MA's), (7, 3836), (Start: 18 @3908 has 43 MA's), (Start: 22 @3956 has 11 MA's), (26, 3971), (28, 3989), (34, 4031), (42, 4103), (47, 4163), (48, 4187), (54, 4265), (57, 4286), (60, 4316), (76, 4460), (77, 4478),

Gene: Gerri43_6 Start: 4338, Stop: 4859, Start Num: 24
Candidate Starts for Gerri43_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: GiKK_9 Start: 4616, Stop: 5209, Start Num: 18
Candidate Starts for GiKK_9:
(3, 4523), (Start: 6 @4532 has 1 MA's), (11, 4559), (Start: 18 @4616 has 43 MA's), (Start: 22 @4652 has 11 MA's), (26, 4667), (29, 4688), (44, 4847), (46, 4862), (48, 4898), (49, 4904), (54, 4976), (57, 4997), (69, 5075), (77, 5153),

Gene: Gibbous_6 Start: 4388, Stop: 4960, Start Num: 22
Candidate Starts for Gibbous_6:

(3, 4250), (Start: 5 @4256 has 1 MA's), (9, 4277), (Start: 13 @4301 has 3 MA's), (Start: 22 @4388 has 11 MA's), (23, 4391), (26, 4403), (29, 4424), (30, 4430), (37, 4490), (42, 4544), (44, 4577), (54, 4706), (55, 4709), (57, 4727), (59, 4751), (66, 4817), (72, 4844),

Gene: GoldHunter_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for GoldHunter_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: HippoPololi_8 Start: 5028, Stop: 5600, Start Num: 22
Candidate Starts for HippoPololi_8:
(3, 4890), (4, 4893), (Start: 5 @4896 has 1 MA's), (Start: 13 @4941 has 3 MA's), (Start: 22 @5028 has 11 MA's), (23, 5031), (29, 5064), (30, 5070), (37, 5130), (42, 5184), (44, 5217), (45, 5220), (47, 5244), (48, 5268), (54, 5346), (55, 5349), (57, 5367), (66, 5457), (68, 5463), (72, 5484),

Gene: Horseradish_7 Start: 4122, Stop: 4745, Start Num: 18
Candidate Starts for Horseradish_7:
(3, 4035), (Start: 5 @4041 has 1 MA's), (Start: 18 @4122 has 43 MA's), (Start: 22 @4170 has 11 MA's), (28, 4203), (34, 4245), (42, 4317), (47, 4377), (48, 4401), (54, 4479), (57, 4500), (60, 4530), (76, 4674), (77, 4692),

Gene: JacoRen57_4 Start: 3951, Stop: 4562, Start Num: 24
Candidate Starts for JacoRen57_4:
(8, 3834), (Start: 19 @3909 has 1 MA's), (21, 3933), (Start: 24 @3951 has 11 MA's), (25, 3957), (51, 4191), (63, 4344), (64, 4368), (71, 4431), (73, 4461), (75, 4482),

Gene: Jamzy_9 Start: 4537, Stop: 5217, Start Num: 6
Candidate Starts for Jamzy_9:
(3, 4528), (Start: 6 @4537 has 1 MA's), (11, 4564), (Start: 18 @4621 has 43 MA's), (Start: 22 @4657 has 11 MA's), (29, 4693), (30, 4699), (36, 4759), (38, 4768), (44, 4852), (46, 4867), (48, 4903), (49, 4909), (52, 4948), (54, 4981), (57, 5002), (59, 5026), (69, 5083), (77, 5161),

Gene: KayGee_6 Start: 4002, Stop: 4595, Start Num: 18
Candidate Starts for KayGee_6:
(3, 3912), (Start: 5 @3918 has 1 MA's), (11, 3945), (Start: 13 @3963 has 3 MA's), (Start: 15 @3972 has 2 MA's), (Start: 18 @4002 has 43 MA's), (Start: 22 @4050 has 11 MA's), (29, 4086), (34, 4125), (36, 4137), (40, 4173), (41, 4179), (42, 4197), (54, 4359), (69, 4461), (72, 4476), (80, 4563),

Gene: LastNadiia_9 Start: 6642, Stop: 7247, Start Num: 19
Candidate Starts for LastNadiia_9:
(2, 6519), (Start: 19 @6642 has 1 MA's), (Start: 24 @6684 has 11 MA's), (30, 6720), (31, 6726), (33, 6747), (45, 6864), (53, 6993), (78, 7197),

Gene: Lauer_5 Start: 4024, Stop: 4647, Start Num: 15
Candidate Starts for Lauer_5:
(3, 3964), (Start: 5 @3970 has 1 MA's), (11, 3997), (Start: 13 @4015 has 3 MA's), (Start: 15 @4024 has 2 MA's), (Start: 18 @4054 has 43 MA's), (Start: 22 @4102 has 11 MA's), (29, 4138), (34, 4177), (36, 4189), (40, 4225), (41, 4231), (42, 4249), (54, 4411), (68, 4507), (69, 4513), (72, 4528), (80, 4615),

Gene: LongHai_8 Start: 5367, Stop: 5855, Start Num: 39
Candidate Starts for LongHai_8:

(1, 5064), (Start: 10 @5148 has 1 MA's), (17, 5205), (Start: 39 @5367 has 1 MA's), (56, 5568), (59, 5604), (61, 5634), (62, 5640), (63, 5655), (64, 5679), (67, 5721), (74, 5778), (82, 5835),

Gene: MAnor_6 Start: 3999, Stop: 4592, Start Num: 18
Candidate Starts for MAnor_6:
(3, 3909), (Start: 5 @3915 has 1 MA's), (11, 3942), (Start: 13 @3960 has 3 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 43 MA's), (Start: 22 @4047 has 11 MA's), (34, 4122), (36, 4134), (40, 4170), (41, 4176), (42, 4194), (54, 4356), (57, 4377), (68, 4452), (69, 4458), (72, 4473), (80, 4560),

Gene: MScarn_8 Start: 4216, Stop: 4839, Start Num: 18
Candidate Starts for MScarn_8:
(3, 4129), (Start: 5 @4135 has 1 MA's), (Start: 18 @4216 has 43 MA's), (Start: 22 @4264 has 11 MA's), (26, 4279), (28, 4297), (34, 4339), (42, 4411), (47, 4471), (48, 4495), (54, 4573), (57, 4594), (60, 4624), (76, 4768), (77, 4786),

Gene: MaVan_8 Start: 5151, Stop: 5714, Start Num: 22
Candidate Starts for MaVan_8:
(3, 5016), (Start: 5 @5022 has 1 MA's), (9, 5040), (Start: 13 @5064 has 3 MA's), (14, 5070), (Start: 22 @5151 has 11 MA's), (29, 5187), (30, 5193), (37, 5250), (42, 5304), (44, 5337), (45, 5340), (48, 5388), (54, 5466), (55, 5469), (57, 5487), (66, 5571), (68, 5577), (72, 5598), (81, 5688),

Gene: Maco6_5 Start: 4321, Stop: 4809, Start Num: 39
Candidate Starts for Maco6_5:
(1, 4018), (Start: 10 @4102 has 1 MA's), (17, 4159), (Start: 39 @4321 has 1 MA's), (50, 4450), (56, 4522), (59, 4558), (61, 4588), (62, 4594), (63, 4609), (64, 4633), (67, 4675), (74, 4732), (82, 4789),

Gene: Makima_7 Start: 5797, Stop: 6360, Start Num: 24
Candidate Starts for Makima_7:
(2, 5632), (Start: 24 @5797 has 11 MA's), (30, 5833), (31, 5839), (44, 5974), (65, 6208), (70, 6238), (78, 6310),

Gene: Malvina_8 Start: 5031, Stop: 5603, Start Num: 22
Candidate Starts for Malvina_8:
(3, 4893), (4, 4896), (Start: 5 @4899 has 1 MA's), (Start: 13 @4944 has 3 MA's), (Start: 22 @5031 has 11 MA's), (23, 5034), (29, 5067), (30, 5073), (37, 5133), (42, 5187), (44, 5220), (45, 5223), (47, 5247), (48, 5271), (54, 5349), (55, 5352), (57, 5370), (66, 5460), (68, 5466), (72, 5487),

Gene: Margaret_9 Start: 4991, Stop: 5593, Start Num: 18
Candidate Starts for Margaret_9:
(3, 4898), (Start: 6 @4907 has 1 MA's), (11, 4934), (Start: 18 @4991 has 43 MA's), (Start: 22 @5027 has 11 MA's), (29, 5063), (30, 5069), (44, 5228), (46, 5243), (48, 5279), (49, 5285), (52, 5324), (54, 5357), (57, 5378), (59, 5402), (69, 5459), (77, 5537),

Gene: Mayweather_7 Start: 4620, Stop: 5213, Start Num: 18
Candidate Starts for Mayweather_7:
(3, 4530), (Start: 5 @4536 has 1 MA's), (11, 4563), (Start: 13 @4581 has 3 MA's), (Start: 15 @4590 has 2 MA's), (Start: 18 @4620 has 43 MA's), (Start: 22 @4668 has 11 MA's), (34, 4743), (36, 4755), (40, 4791), (41, 4797), (42, 4815), (54, 4977), (57, 4998), (68, 5073), (69, 5079), (72, 5094), (80, 5181),

Gene: McDazzle_5 Start: 4464, Stop: 5057, Start Num: 18
Candidate Starts for McDazzle_5:
(Start: 5 @4383 has 1 MA's), (Start: 13 @4425 has 3 MA's), (Start: 15 @4434 has 2 MA's), (Start: 18 @4464 has 43 MA's), (Start: 22 @4512 has 11 MA's), (34, 4587), (36, 4599), (40, 4635), (41, 4641),

(42, 4659), (54, 4821), (57, 4842), (68, 4917), (69, 4923), (72, 4938), (80, 5025),

Gene: Mireles_6 Start: 4203, Stop: 4766, Start Num: 24
Candidate Starts for Mireles_6:
(2, 4038), (Start: 24 @4203 has 11 MA's), (30, 4239), (31, 4245), (70, 4644), (78, 4716),

Gene: Muddy_7 Start: 5056, Stop: 5763, Start Num: 10
Candidate Starts for Muddy_7:
(Start: 10 @5056 has 1 MA's), (17, 5113), (Start: 39 @5275 has 1 MA's), (50, 5404), (56, 5476), (59, 5512), (61, 5542), (62, 5548), (63, 5563), (64, 5587), (67, 5629), (74, 5686), (82, 5743),

Gene: MunkgeeRoachy_6 Start: 4269, Stop: 4892, Start Num: 18
Candidate Starts for MunkgeeRoachy_6:
(3, 4179), (Start: 5 @4185 has 1 MA's), (Start: 18 @4269 has 43 MA's), (Start: 22 @4317 has 11 MA's), (27, 4338), (28, 4350), (30, 4359), (34, 4392), (42, 4464), (47, 4524), (54, 4626), (60, 4677), (68, 4755), (76, 4821), (77, 4839), (79, 4860),

Gene: Neuvillette_6 Start: 4338, Stop: 4859, Start Num: 24
Candidate Starts for Neuvillette_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: Nibbles_8 Start: 5151, Stop: 5714, Start Num: 22
Candidate Starts for Nibbles_8:
(3, 5016), (Start: 5 @5022 has 1 MA's), (9, 5040), (Start: 13 @5064 has 3 MA's), (14, 5070), (Start: 22 @5151 has 11 MA's), (29, 5187), (30, 5193), (37, 5250), (42, 5304), (44, 5337), (45, 5340), (48, 5388), (54, 5466), (55, 5469), (57, 5487), (66, 5571), (68, 5577), (72, 5598), (81, 5688),

Gene: Pons_6 Start: 3999, Stop: 4592, Start Num: 18
Candidate Starts for Pons_6:
(3, 3909), (Start: 5 @3915 has 1 MA's), (11, 3942), (Start: 13 @3960 has 3 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 43 MA's), (Start: 22 @4047 has 11 MA's), (34, 4122), (36, 4134), (40, 4170), (41, 4176), (42, 4194), (54, 4356), (57, 4377), (68, 4452), (69, 4458), (72, 4473), (80, 4560),

Gene: PotPie_6 Start: 4858, Stop: 5451, Start Num: 18
Candidate Starts for PotPie_6:
(3, 4768), (Start: 5 @4774 has 1 MA's), (11, 4801), (Start: 13 @4819 has 3 MA's), (Start: 15 @4828 has 2 MA's), (Start: 18 @4858 has 43 MA's), (Start: 22 @4906 has 11 MA's), (29, 4942), (34, 4981), (36, 4993), (40, 5029), (41, 5035), (42, 5053), (54, 5215), (57, 5236), (68, 5311), (69, 5317), (72, 5332), (80, 5419),

Gene: PsychoKiller_6 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for PsychoKiller_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (76, 4773), (77, 4791), (79, 4812),

Gene: Quasar_6 Start: 4890, Stop: 5465, Start Num: 22
Candidate Starts for Quasar_6:
(3, 4752), (Start: 5 @4758 has 1 MA's), (Start: 18 @4842 has 43 MA's), (Start: 22 @4890 has 11 MA's), (27, 4911), (28, 4923), (30, 4932), (34, 4965), (42, 5037), (47, 5097), (54, 5199), (60, 5250), (68, 5328), (76, 5394), (77, 5412), (79, 5433),

Gene: RADical_7 Start: 4222, Stop: 4845, Start Num: 18

Candidate Starts for RADical_7:
(3, 4132), (Start: 5 @4138 has 1 MA's), (Start: 18 @4222 has 43 MA's), (Start: 22 @4270 has 11 MA's), (27, 4291), (28, 4303), (30, 4312), (34, 4345), (42, 4417), (47, 4477), (54, 4579), (60, 4630), (68, 4708), (76, 4774), (77, 4792), (79, 4813),

Gene: RSchmailzl_7 Start: 4362, Stop: 4985, Start Num: 18
Candidate Starts for RSchmailzl_7:
(3, 4272), (Start: 5 @4278 has 1 MA's), (Start: 18 @4362 has 43 MA's), (Start: 22 @4410 has 11 MA's), (27, 4431), (28, 4443), (30, 4452), (34, 4485), (42, 4557), (47, 4617), (54, 4719), (60, 4770), (68, 4848), (76, 4914), (77, 4932), (79, 4953),

Gene: RanchParmCat_9 Start: 4991, Stop: 5593, Start Num: 18
Candidate Starts for RanchParmCat_9:
(3, 4898), (Start: 6 @4907 has 1 MA's), (11, 4934), (Start: 18 @4991 has 43 MA's), (Start: 22 @5027 has 11 MA's), (29, 5063), (44, 5228), (46, 5243), (48, 5279), (49, 5285), (52, 5324), (54, 5357), (57, 5378), (59, 5402), (69, 5459), (77, 5537),

Gene: RedBaron_8 Start: 4266, Stop: 4889, Start Num: 18
Candidate Starts for RedBaron_8:
(3, 4176), (Start: 5 @4182 has 1 MA's), (Start: 18 @4266 has 43 MA's), (Start: 22 @4314 has 11 MA's), (27, 4335), (28, 4347), (30, 4356), (34, 4389), (42, 4461), (47, 4521), (54, 4623), (60, 4674), (68, 4752), (76, 4818), (79, 4857),

Gene: Roberts_6 Start: 4338, Stop: 4859, Start Num: 24
Candidate Starts for Roberts_6:
(2, 4173), (Start: 24 @4338 has 11 MA's), (30, 4374), (54, 4650), (60, 4701), (70, 4779),

Gene: Salvus_8 Start: 5367, Stop: 5855, Start Num: 39
Candidate Starts for Salvus_8:
(1, 5064), (Start: 10 @5148 has 1 MA's), (17, 5205), (Start: 39 @5367 has 1 MA's), (56, 5568), (59, 5604), (61, 5634), (62, 5640), (63, 5655), (64, 5679), (67, 5721), (74, 5778), (82, 5835),

Gene: SheckWes_5 Start: 3999, Stop: 4592, Start Num: 18
Candidate Starts for SheckWes_5:
(3, 3909), (Start: 5 @3915 has 1 MA's), (11, 3942), (Start: 13 @3960 has 3 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 43 MA's), (Start: 22 @4047 has 11 MA's), (34, 4122), (36, 4134), (40, 4170), (41, 4176), (42, 4194), (54, 4356), (57, 4377), (68, 4452), (69, 4458), (72, 4473), (80, 4560),

Gene: SketchMex_5 Start: 4215, Stop: 4838, Start Num: 18
Candidate Starts for SketchMex_5:
(3, 4128), (Start: 5 @4134 has 1 MA's), (Start: 18 @4215 has 43 MA's), (Start: 22 @4263 has 11 MA's), (28, 4296), (34, 4338), (42, 4410), (47, 4470), (48, 4494), (54, 4572), (57, 4593), (60, 4623), (76, 4767), (77, 4785),

Gene: Socotra_7 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Socotra_7:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: Sopespian_6 Start: 4137, Stop: 4844, Start Num: 5
Candidate Starts for Sopespian_6:

(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (76, 4773), (77, 4791), (79, 4812),

Gene: Starburst_7 Start: 4221, Stop: 4844, Start Num: 18
Candidate Starts for Starburst_7:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: SteamedHams_8 Start: 4225, Stop: 4881, Start Num: 18
Candidate Starts for SteamedHams_8:
(3, 4138), (Start: 5 @4144 has 1 MA's), (7, 4153), (Start: 18 @4225 has 43 MA's), (Start: 22 @4273 has 11 MA's), (26, 4288), (28, 4306), (34, 4348), (42, 4420), (47, 4480), (48, 4504), (54, 4582), (60, 4633), (73, 4786), (77, 4828),

Gene: Studio_6 Start: 4142, Stop: 4663, Start Num: 24
Candidate Starts for Studio_6:
(2, 3977), (Start: 24 @4142 has 11 MA's), (30, 4178), (32, 4196), (54, 4454), (58, 4493), (70, 4583),

Gene: SummitAcademy_5 Start: 4073, Stop: 4666, Start Num: 18
Candidate Starts for SummitAcademy_5:
(3, 3983), (Start: 5 @3989 has 1 MA's), (11, 4016), (Start: 13 @4034 has 3 MA's), (Start: 15 @4043 has 2 MA's), (Start: 18 @4073 has 43 MA's), (Start: 22 @4121 has 11 MA's), (29, 4157), (34, 4196), (36, 4208), (40, 4244), (41, 4250), (42, 4268), (54, 4430), (57, 4451), (68, 4526), (69, 4532), (72, 4547), (80, 4634),

Gene: Survivors_8 Start: 4918, Stop: 5568, Start Num: 13
Candidate Starts for Survivors_8:
(3, 4870), (Start: 5 @4876 has 1 MA's), (9, 4894), (Start: 13 @4918 has 3 MA's), (14, 4924), (Start: 22 @5005 has 11 MA's), (29, 5041), (30, 5047), (37, 5104), (42, 5158), (44, 5191), (45, 5194), (54, 5320), (55, 5323), (57, 5341), (66, 5425), (68, 5431), (72, 5452), (81, 5542),

Gene: SweatNTears_8 Start: 4742, Stop: 5365, Start Num: 18
Candidate Starts for SweatNTears_8:
(3, 4655), (Start: 5 @4661 has 1 MA's), (Start: 18 @4742 has 43 MA's), (Start: 22 @4790 has 11 MA's), (28, 4823), (34, 4865), (42, 4937), (47, 4997), (48, 5021), (54, 5099), (57, 5120), (60, 5150), (76, 5294), (77, 5312),

Gene: TMaxx_6 Start: 4276, Stop: 4839, Start Num: 24
Candidate Starts for TMaxx_6:
(2, 4111), (Start: 24 @4276 has 11 MA's), (30, 4312), (43, 4447), (53, 4585), (78, 4789),

Gene: Tarnish_6 Start: 4372, Stop: 4965, Start Num: 18
Candidate Starts for Tarnish_6:
(3, 4282), (Start: 5 @4288 has 1 MA's), (11, 4315), (Start: 13 @4333 has 3 MA's), (Start: 15 @4342 has 2 MA's), (Start: 18 @4372 has 43 MA's), (Start: 22 @4420 has 11 MA's), (29, 4456), (34, 4495), (36, 4507), (40, 4543), (41, 4549), (42, 4567), (54, 4729), (57, 4750), (68, 4825), (69, 4831), (72, 4846), (80, 4933),

Gene: Tolls_8 Start: 4226, Stop: 4885, Start Num: 18
Candidate Starts for Tolls_8:

(3, 4139), (Start: 5 @4145 has 1 MA's), (Start: 18 @4226 has 43 MA's), (Start: 22 @4274 has 11 MA's), (26, 4289), (28, 4307), (34, 4349), (42, 4421), (47, 4481), (48, 4505), (54, 4583), (60, 4634), (73, 4787), (77, 4829), (80, 4856),

Gene: TripleC_9 Start: 7743, Stop: 8306, Start Num: 24
Candidate Starts for TripleC_9:
(2, 7578), (Start: 24 @7743 has 11 MA's), (30, 7779), (43, 7914), (53, 8052), (78, 8256),

Gene: Troje_6 Start: 4216, Stop: 4839, Start Num: 18
Candidate Starts for Troje_6:
(3, 4129), (Start: 5 @4135 has 1 MA's), (Start: 18 @4216 has 43 MA's), (Start: 22 @4264 has 11 MA's), (26, 4279), (28, 4297), (34, 4339), (42, 4411), (47, 4471), (48, 4495), (54, 4573), (57, 4594), (60, 4624), (76, 4768), (77, 4786),

Gene: Typhonomachy_6 Start: 4269, Stop: 4844, Start Num: 22
Candidate Starts for Typhonomachy_6:
(3, 4131), (Start: 5 @4137 has 1 MA's), (Start: 18 @4221 has 43 MA's), (Start: 22 @4269 has 11 MA's), (27, 4290), (28, 4302), (30, 4311), (34, 4344), (42, 4416), (47, 4476), (54, 4578), (60, 4629), (68, 4707), (76, 4773), (77, 4791), (79, 4812),

Gene: Vine_7 Start: 4967, Stop: 5590, Start Num: 15
Candidate Starts for Vine_7:
(3, 4907), (Start: 5 @4913 has 1 MA's), (11, 4940), (Start: 13 @4958 has 3 MA's), (Start: 15 @4967 has 2 MA's), (Start: 18 @4997 has 43 MA's), (Start: 22 @5045 has 11 MA's), (29, 5081), (34, 5120), (36, 5132), (40, 5168), (41, 5174), (42, 5192), (54, 5354), (69, 5456), (72, 5471), (80, 5558),

Gene: Wallaby_9 Start: 5150, Stop: 5713, Start Num: 22
Candidate Starts for Wallaby_9:
(3, 5015), (Start: 5 @5021 has 1 MA's), (9, 5039), (Start: 13 @5063 has 3 MA's), (14, 5069), (Start: 22 @5150 has 11 MA's), (29, 5186), (30, 5192), (37, 5249), (42, 5303), (44, 5336), (45, 5339), (54, 5465), (55, 5468), (57, 5486), (66, 5570), (68, 5576), (72, 5597), (81, 5687),

Gene: Wolfwood_8 Start: 5063, Stop: 5713, Start Num: 13
Candidate Starts for Wolfwood_8:
(3, 5015), (Start: 5 @5021 has 1 MA's), (9, 5039), (Start: 13 @5063 has 3 MA's), (14, 5069), (Start: 22 @5150 has 11 MA's), (29, 5186), (30, 5192), (37, 5249), (42, 5303), (44, 5336), (45, 5339), (48, 5387), (54, 5465), (55, 5468), (57, 5486), (66, 5570), (68, 5576), (72, 5597), (81, 5687),

Gene: Yakult_7 Start: 4190, Stop: 4777, Start Num: 18
Candidate Starts for Yakult_7:
(3, 4097), (Start: 6 @4106 has 1 MA's), (12, 4145), (14, 4157), (Start: 18 @4190 has 43 MA's), (Start: 22 @4226 has 11 MA's), (26, 4241), (44, 4412), (49, 4469), (54, 4541), (57, 4562), (59, 4586), (69, 4643), (77, 4721),

Gene: Yarn_5 Start: 4219, Stop: 4875, Start Num: 18
Candidate Starts for Yarn_5:
(3, 4132), (Start: 5 @4138 has 1 MA's), (7, 4147), (Start: 18 @4219 has 43 MA's), (Start: 22 @4267 has 11 MA's), (26, 4282), (28, 4300), (34, 4342), (42, 4414), (47, 4474), (48, 4498), (54, 4576), (60, 4627), (76, 4804), (77, 4822),

Gene: Yucky_6 Start: 4858, Stop: 5451, Start Num: 18
Candidate Starts for Yucky_6:

(3, 4768), (Start: 5 @4774 has 1 MA's), (11, 4801), (Start: 13 @4819 has 3 MA's), (Start: 15 @4828 has 2 MA's), (Start: 18 @4858 has 43 MA's), (Start: 22 @4906 has 11 MA's), (29, 4942), (34, 4981), (36, 4993), (40, 5029), (41, 5035), (42, 5053), (54, 5215), (69, 5317), (72, 5332), (80, 5419),

Gene: Yummy_7 Start: 4122, Stop: 4745, Start Num: 18
Candidate Starts for Yummy_7:
(3, 4035), (Start: 5 @4041 has 1 MA's), (Start: 18 @4122 has 43 MA's), (Start: 22 @4170 has 11 MA's), (28, 4203), (34, 4245), (42, 4317), (47, 4377), (48, 4401), (54, 4479), (57, 4500), (60, 4530), (76, 4674), (77, 4692),

Gene: Zareef_8 Start: 5152, Stop: 5715, Start Num: 22
Candidate Starts for Zareef_8:
(3, 5017), (Start: 5 @5023 has 1 MA's), (9, 5041), (Start: 13 @5065 has 3 MA's), (14, 5071), (Start: 22 @5152 has 11 MA's), (29, 5188), (30, 5194), (37, 5251), (42, 5305), (44, 5338), (45, 5341), (48, 5389), (54, 5467), (55, 5470), (57, 5488), (66, 5572), (72, 5599), (81, 5689),