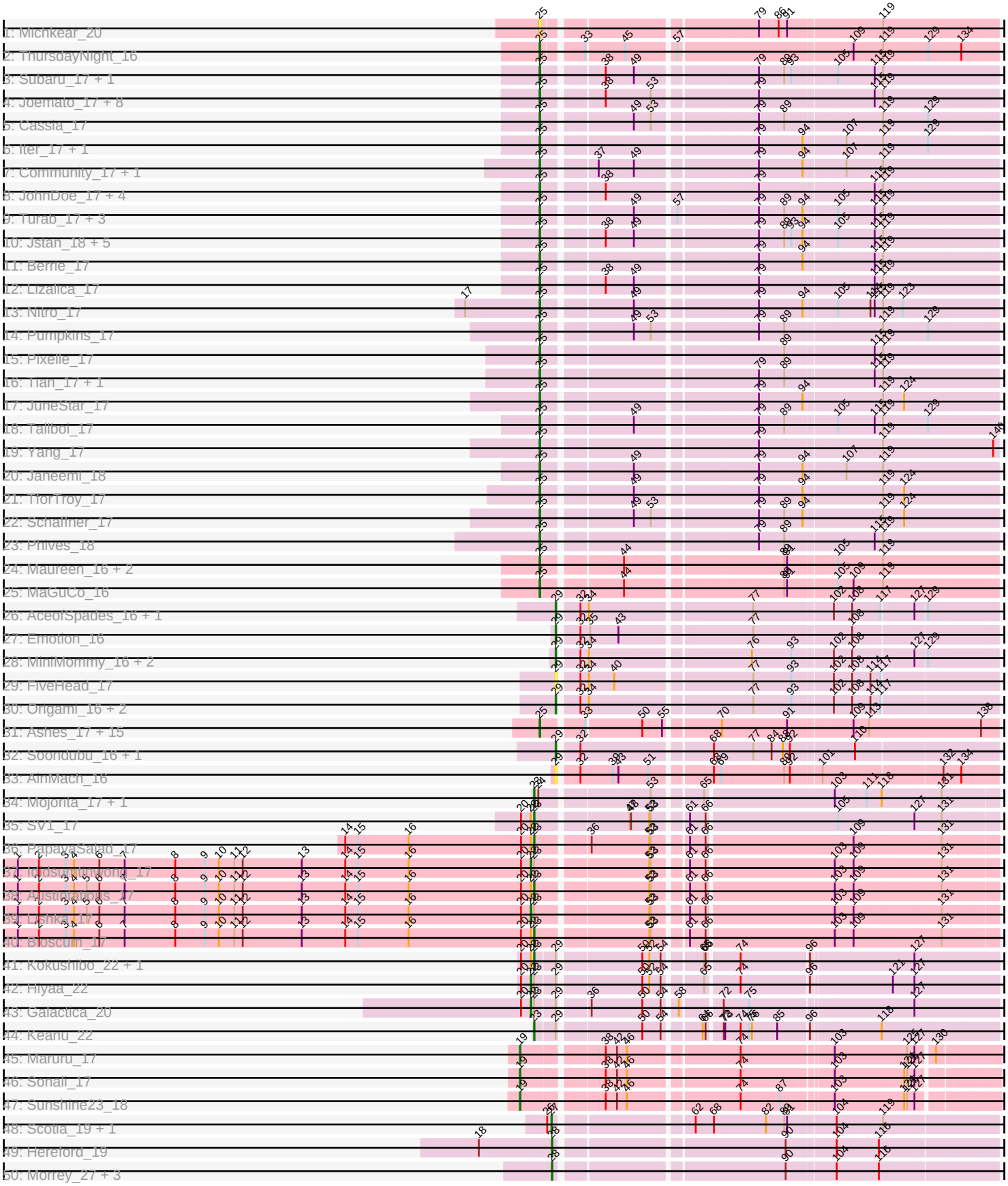
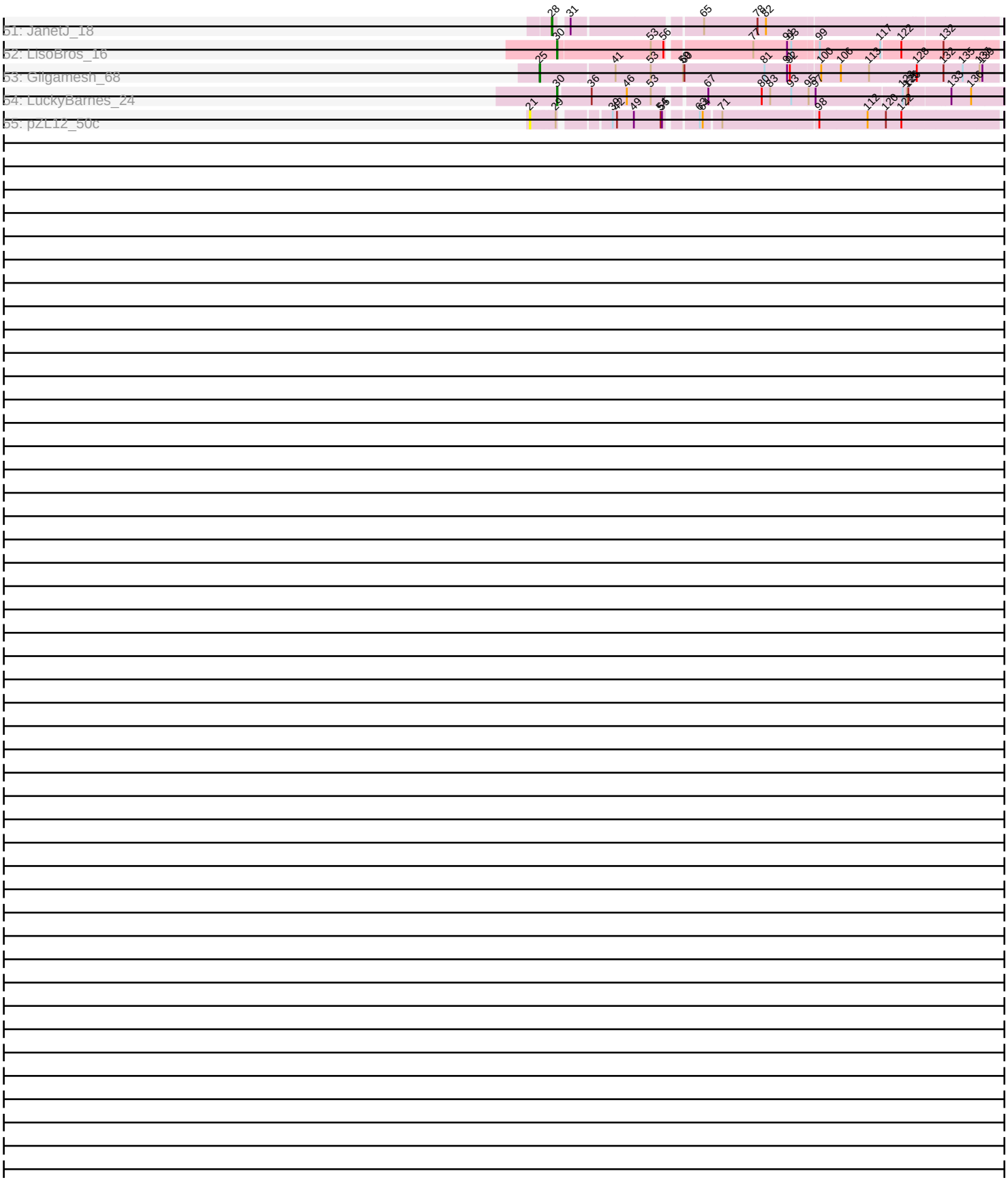
Pham 347434


1: Michkear_20
2: ThursdayNight_16
3: Subaru_17 + 1
4: Joemato_17 + 8
5: Cassia_17
6: Iter_17 + 1
7: Community_17 + 1
8: JohnDoe_17 + 4
9: Turab_17 + 3
10: Jstan_18 + 5
11: Bernie_17
12: Lizalica_17
13: Nitro_17
14: Pumpkins_17
15: Pixelle_17
16: Tian_17 + 1
17: JuneStar_17
18: Tallbol_17
19: Yang_17
20: Janeemi_18
21: TorTroy_17
22: Schaffner_17
23: Phives_18
24: Maureen_16 + 2
25: MaGuCo_16
26: AceofSpades_16 + 1
27: Emotion_16
28: MiniMommy_16 + 2
29: FiveHead_17
30: Origami_16 + 2
31: Ashes_17 + 15
32: Soondubu_16 + 1
33: AimMach_16
34: Mojorita_17 + 1
35: SV1_17
36: PapayaSalad_17
37: Tousuuhyouroku_17
38: Austinlavious_17
39: Lenka_17
40: Bioscum_17
41: Kokushibo_22 + 1
42: Hiyaa_22
43: Galactica_20
44: Keanu_22
45: Maruru_17
46: Sonali_17
47: Sunshine23_18
48: Scotia_19 + 1
49: Hereford_19
50: Morrey_27 + 3

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51: JanetJ_18
52: LisoBros_16
53: Gilgamesh_68
54: LuckyBarnes_24
55: pZL12_50c

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 347434 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 347434 has 108 members, 15 are drafts.

Phages represented in each track:
• Track 1 : Michkear_20
• Track 2 : ThursdayNight_16
• Track 3 : Subaru_17, Elezi_17
• Track 4 : Joemato_17, AGrandiflora_17, Lego_17, YesChef_17, Kaylissa_17, Simpson_19, Flutur_17, Cyan_17, Powerpuff_17
• Track 5 : Cassia_17
• Track 6 : Iter_17, Ascela_17
• Track 7 : Community_17, Tuck_18
• Track 8 : JohnDoe_17, Warda_17, Tutumahutu_17, Tbone_17, Mudpuppy_17
• Track 9 : Turab_17, Adumb2043_17, Amploria_17, AEgle_17
• Track 10 : Jstan_18, Eraser_17, London_17, Niobe_17, Skelbel_18, Asa16_17
• Track 11 : Berrie_17
• Track 12 : Lizalica_17
• Track 13 : Nitro_17
• Track 14 : Pumpkins_17
• Track 15 : Pixelle_17
• Track 16 : Tian_17, Amyev_17
• Track 17 : JuneStar_17
• Track 18 : Tallboi_17
• Track 19 : Yang_17
• Track 20 : Janeemi_18
• Track 21 : TforTroy_17
• Track 22 : Schaffner_17
• Track 23 : Phives_18
• Track 24 : Maureen_16, IUFootball_16, Liebe_16
• Track 25 : MaGuCo_16
• Track 26 : AceofSpades_16, VroomVroom_16
• Track 27 : Emotion_16
• Track 28 : MiniMommy_16, JasmineDragon_16, ShakeItOph_16
• Track 29 : FiveHead_17
• Track 30 : Origami_16, JohnThicc_16, LadyAstra_16
• Track 31 : Ashes_17, RockScotty_17, Mysterium_17, SpecialK_17, Beaupre_17, Stuu_17, Cappuccino_17, Donkey_17, Halsey_17, Sabourin_17, Gumpizza_17,

Giorgio_17, Moss_17, Gambol_17, Sooty_17, Kalimba_17
• Track 32 : Soondubu_16, Exile_16
• Track 33 : AinMach_16
• Track 34 : Mojorita_17, Picard_17
• Track 35 : SV1_17
• Track 36 : PapayaSalad_17
• Track 37 : Ididsumtinwong_17
• Track 38 : Austintatious_17
• Track 39 : Lishka_17
• Track 40 : Bioscum_17
• Track 41 : Kokushibo_22, Spocter_22
• Track 42 : Hiyaa_22
• Track 43 : Galactica_20
• Track 44 : Keanu_22
• Track 45 : Maruru_17
• Track 46 : Sonali_17
• Track 47 : Sunshine23_18
• Track 48 : Scotia_19, NoSwimming_19
• Track 49 : Hereford_19
• Track 50 : Morrey_27, PrairieDogTown_18, Aoka_18, EvenBluerMoon_18
• Track 51 : JanetJ_18
• Track 52 : LisoBros_16
• Track 53 : Gilgamesh_68
• Track 54 : LuckyBarnes_24
• Track 55 : pZL12_50c

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

The start number called the most often in the published annotations is 25, it was called in 59 of the 93 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AEgle_17, AGrandiflora_17, Adumb2043_17, Amploria_17, Amyev_17, Asa16_17, Ascela_17, Ashes_17, Beaupre_17, Berrie_17, Cappuccino_17, Cassia_17, Community_17, Cyan_17, Donkey_17, Elezi_17, Eraser_17, Flutur_17, Gambol_17, Gilgamesh_68, Giorgio_17, Gumpizza_17, Halsey_17, IUFootball_16, Iter_17, Janeemi_18, Joemato_17, JohnDoe_17, Jstan_18, JuneStar_17, Kalimba_17, Kaylissa_17, Lego_17, Liebe_16, Lizalica_17, London_17, MaGuCo_16, Maureen_16, Michkear_20, Moss_17, Mudpuppy_17, Mysterium_17, Niobe_17, Nitro_17, Phives_18, Pixelle_17, Powerpuff_17, Pumpkins_17, RockScotty_17, Sabourin_17, Schaffner_17, Simpson_19, Skelbel_18, Sooty_17, SpecialK_17, Stuu_17, Subaru_17, Tallboi_17, Tbone_17, TforTroy_17, ThursdayNight_16, Tian_17, Tuck_18, Turab_17, Tutumahutu_17, Warda_17, Yang_17, YesChef_17,

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

Genes that do not have the "Most Annotated" start:
• AceofSpades_16, AinMach_16, Aoka_18, Austintatious_17, Bioscum_17, Emotion_16, EvenBluerMoon_18, Exile_16, FiveHead_17, Galactica_20,

Hereford_19, Hiyaa_22, Ididsumtinwong_17, JanetJ_18, JasmineDragon_16, JohnThicc_16, Keanu_22, Kokushibo_22, LadyAstra_16, Lishka_17, LisoBros_16, LuckyBarnes_24, Maruru_17, MiniMommy_16, Mojorita_17, Morrey_27, NoSwimming_19, Origami_16, PapayaSalad_17, Picard_17, PrairieDogTown_18, SV1_17, Scotia_19, ShakeItOph_16, Sonali_17, Soondubu_16, Spocter_22, Sunshine23_18, VroomVroom_16, pZL12_50c,

Summary by start number:

Start 19:
• Found in 3 of 108 (2.8%) of genes in pham
• Manual Annotations of this start: 3 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Maruru_17 (FG), Sonali_17 (FG), Sunshine23_18 (FG),

Start 21:
• Found in 1 of 108 (0.9%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: pZL12_50c (singleton),

Start 22:
• Found in 10 of 108 (9.3%) of genes in pham
• Manual Annotations of this start: 4 of 93
• Called 40.0% of time when present
• Phage (with cluster) where this start called: Galactica_20 (BQ), Hiyaa_22 (BQ), Ididsumtinwong_17 (BC3), Lishka_17 (BC3),

Start 23:
• Found in 13 of 108 (12.0%) of genes in pham
• Manual Annotations of this start: 9 of 93
• Called 69.2% of time when present
• Phage (with cluster) where this start called: Austintatious_17 (BC3), Bioscum_17 (BC3), Keanu_22 (BQ), Kokushibo_22 (BQ), Mojorita_17 (BC1), PapayaSalad_17 (BC3), Picard_17 (BC1), SV1_17 (BC1), Spocter_22 (BQ),

Start 25:
• Found in 68 of 108 (63.0%) of genes in pham
• Manual Annotations of this start: 59 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AEgle_17 (AZ1), AGrandiflora_17 (AZ1), Adumb2043_17 (AZ1), Amploria_17 (AZ1), Amyev_17 (AZ1), Asa16_17 (AZ1), Ascela_17 (AZ1), Ashes_17 (AZ5), Beaupre_17 (AZ5), Berrie_17 (AZ1), Cappuccino_17 (AZ5), Cassia_17 (AZ1), Community_17 (AZ1), Cyan_17 (AZ1), Donkey_17 (AZ5), Elezi_17 (AZ1), Eraser_17 (AZ1), Flutur_17 (AZ), Gambol_17 (AZ5), Gilgamesh_68 (singleton), Giorgio_17 (AZ5), Gumpizza_17 (AZ5), Halsey_17 (AZ5), IUFootball_16 (AZ2), Iter_17 (AZ1), Janeemi_18 (AZ1), Joemato_17 (AZ1), JohnDoe_17 (AZ1), Jstan_18 (AZ1), JuneStar_17 (AZ1), Kalimba_17 (AZ5), Kaylissa_17 (AZ1), Lego_17 (AZ1), Liebe_16 (AZ2), Lizalica_17 (AZ1), London_17 (AZ1), MaGuCo_16 (AZ2), Maureen_16 (AZ2), Michkear_20 (AZ), Moss_17 (AZ5), Mudpuppy_17 (AZ1), Mysterium_17 (AZ5), Niobe_17 (AZ1), Nitro_17 (AZ1), Phives_18 (AZ1), Pixelle_17 (AZ1), Powerpuff_17 (AZ1), Pumpkins_17 (AZ1),

RockScotty_17 (AZ5), Sabourin_17 (AZ5), Schaffner_17 (AZ1), Simpson_19 (AZ1), Skelbel_18 (AZ1), Sooty_17 (AZ5), SpecialK_17 (AZ5), Stuu_17 (AZ5), Subaru_17 (AZ1), Tallboi_17 (AZ1), Tbone_17 (AZ1), TforTroy_17 (AZ1), ThursdayNight_16 (AZ), Tian_17 (AZ1), Tuck_18 (AZ1), Turab_17 (AZ1), Tutumahutu_17 (AZ1), Warda_17 (AZ1), Yang_17 (AZ1), YesChef_17 (AZ1),

Start 27:
• Found in 2 of 108 (1.9%) of genes in pham
• Manual Annotations of this start: 2 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: NoSwimming_19 (FO), Scotia_19 (FO),

Start 28:
• Found in 6 of 108 (5.6%) of genes in pham
• Manual Annotations of this start: 5 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aoka_18 (FO), EvenBluerMoon_18 (FO), Hereford_19 (FO), JanetJ_18 (FO), Morrey_27 (FO), PrairieDogTown_18 (FO),

Start 29:
• Found in 19 of 108 (17.6%) of genes in pham
• Manual Annotations of this start: 9 of 93
• Called 68.4% of time when present
• Phage (with cluster) where this start called: AceofSpades_16 (AZ4), AinMach_16 (AZ7), Emotion_16 (AZ4), Exile_16 (AZ6), FiveHead_17 (AZ4), JasmineDragon_16 (AZ4), JohnThicc_16 (AZ4), LadyAstra_16 (AZ4), MiniMommy_16 (AZ4), Origami_16 (AZ4), ShakeItOph_16 (AZ4), Soondubu_16 (AZ6), VroomVroom_16 (AZ4),

Start 30:
• Found in 2 of 108 (1.9%) of genes in pham
• Manual Annotations of this start: 2 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: LisoBros_16 (FP), LuckyBarnes_24 (singleton),

Summary by clusters:

There are 14 clusters represented in this pham: FP, singleton, AZ, AZ7, BC1, BQ, FG, AZ1, AZ2, FO, AZ4, AZ5, AZ6, BC3,

Info for manual annotations of cluster AZ:
•Start number 25 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:
•Start number 25 was manually annotated 37 times for cluster AZ1.

Info for manual annotations of cluster AZ2:
•Start number 25 was manually annotated 4 times for cluster AZ2.

Info for manual annotations of cluster AZ4:
•Start number 29 was manually annotated 8 times for cluster AZ4.

Info for manual annotations of cluster AZ5:

•Start number 25 was manually annotated 16 times for cluster AZ5.

Info for manual annotations of cluster AZ6:
•Start number 29 was manually annotated 1 time for cluster AZ6.

Info for manual annotations of cluster BC1:
•Start number 23 was manually annotated 3 times for cluster BC1.

Info for manual annotations of cluster BC3:
•Start number 22 was manually annotated 2 times for cluster BC3.
•Start number 23 was manually annotated 3 times for cluster BC3.

Info for manual annotations of cluster BQ:
•Start number 22 was manually annotated 2 times for cluster BQ.
•Start number 23 was manually annotated 3 times for cluster BQ.

Info for manual annotations of cluster FG:
•Start number 19 was manually annotated 3 times for cluster FG.

Info for manual annotations of cluster FO:
•Start number 27 was manually annotated 2 times for cluster FO.
•Start number 28 was manually annotated 5 times for cluster FO.

Info for manual annotations of cluster FP:
•Start number 30 was manually annotated 1 time for cluster FP.

Gene Information:

Gene: AEgle_17 Start: 13051, Stop: 13926, Start Num: 25
Candidate Starts for AEgle_17:
(Start: 25 @13051 has 59 MA's), (49, 13222), (57, 13297), (79, 13447), (89, 13501), (94, 13540), (105, 13597), (115, 13675), (119, 13690),

Gene: AGrandiflora_17 Start: 13035, Stop: 13910, Start Num: 25
Candidate Starts for AGrandiflora_17:
(Start: 25 @13035 has 59 MA's), (38, 13146), (53, 13239), (79, 13431), (115, 13659), (119, 13674),

Gene: AceofSpades_16 Start: 11238, Stop: 12098, Start Num: 29
Candidate Starts for AceofSpades_16:
(Start: 29 @11238 has 9 MA's), (32, 11274), (34, 11292), (77, 11613), (102, 11769), (108, 11805), (117, 11865), (127, 11931), (129, 11955),

Gene: Adumb2043_17 Start: 13050, Stop: 13925, Start Num: 25
Candidate Starts for Adumb2043_17:
(Start: 25 @13050 has 59 MA's), (49, 13221), (57, 13296), (79, 13446), (89, 13500), (94, 13539), (105, 13596), (115, 13674), (119, 13689),

Gene: AinMach_16 Start: 12225, Stop: 13082, Start Num: 29
Candidate Starts for AinMach_16:

(Start: 29 @12225 has 9 MA's), (32, 12261), (39, 12330), (43, 12342), (51, 12402), (68, 12516), (69, 12531), (89, 12663), (92, 12675), (101, 12732), (132, 12969), (134, 13005),

Gene: Amploria_17 Start: 13050, Stop: 13925, Start Num: 25
Candidate Starts for Amploria_17:
(Start: 25 @13050 has 59 MA's), (49, 13221), (57, 13296), (79, 13446), (89, 13500), (94, 13539), (105, 13596), (115, 13674), (119, 13689),

Gene: Amyev_17 Start: 13063, Stop: 13938, Start Num: 25
Candidate Starts for Amyev_17:
(Start: 25 @13063 has 59 MA's), (79, 13459), (89, 13513), (115, 13687), (119, 13702),

Gene: Aoka_18 Start: 14198, Stop: 15058, Start Num: 28
Candidate Starts for Aoka_18:
(Start: 28 @14198 has 5 MA's), (90, 14639), (104, 14732), (116, 14822),

Gene: Asa16_17 Start: 13020, Stop: 13895, Start Num: 25
Candidate Starts for Asa16_17:
(Start: 25 @13020 has 59 MA's), (38, 13131), (49, 13191), (79, 13416), (89, 13470), (93, 13485), (94, 13509), (105, 13566), (115, 13644), (119, 13659),

Gene: Ascela_17 Start: 13047, Stop: 13922, Start Num: 25
Candidate Starts for Ascela_17:
(Start: 25 @13047 has 59 MA's), (79, 13443), (94, 13536), (107, 13611), (119, 13686), (129, 13776),

Gene: Ashes_17 Start: 12748, Stop: 13623, Start Num: 25
Candidate Starts for Ashes_17:
(Start: 25 @12748 has 59 MA's), (33, 12826), (50, 12937), (55, 12979), (70, 13078), (91, 13204), (109, 13327), (113, 13360), (138, 13588),

Gene: Austintatious_17 Start: 12200, Stop: 13096, Start Num: 23
Candidate Starts for Austintatious_17:
(1, 11099), (2, 11144), (3, 11201), (4, 11219), (5, 11246), (6, 11273), (7, 11327), (8, 11435), (9, 11498), (10, 11528), (11, 11561), (12, 11579), (13, 11705), (14, 11798), (15, 11825), (16, 11933), (20, 12173), (Start: 22 @12194 has 4 MA's), (Start: 23 @12200 has 9 MA's), (52, 12416), (53, 12419), (61, 12476), (66, 12506), (103, 12770), (109, 12809), (131, 12983),

Gene: Beaupre_17 Start: 12749, Stop: 13624, Start Num: 25
Candidate Starts for Beaupre_17:
(Start: 25 @12749 has 59 MA's), (33, 12827), (50, 12938), (55, 12980), (70, 13079), (91, 13205), (109, 13328), (113, 13361), (138, 13589),

Gene: Berrie_17 Start: 13181, Stop: 14056, Start Num: 25
Candidate Starts for Berrie_17:
(Start: 25 @13181 has 59 MA's), (79, 13577), (94, 13670), (115, 13805), (119, 13820),

Gene: Bioscum_17 Start: 12236, Stop: 13132, Start Num: 23
Candidate Starts for Bioscum_17:
(1, 11135), (2, 11180), (3, 11237), (4, 11255), (6, 11309), (7, 11363), (8, 11471), (9, 11534), (10, 11564), (11, 11597), (12, 11615), (13, 11741), (14, 11834), (15, 11861), (16, 11969), (20, 12209), (Start: 22 @12230 has 4 MA's), (Start: 23 @12236 has 9 MA's), (52, 12452), (53, 12455), (61, 12512), (66, 12542), (103, 12806), (109, 12845), (131, 13019),

Gene: Cappuccino_17 Start: 12656, Stop: 13531, Start Num: 25
Candidate Starts for Cappuccino_17:
(Start: 25 @12656 has 59 MA's), (33, 12734), (50, 12845), (55, 12887), (70, 12986), (91, 13112), (109, 13235), (113, 13268), (138, 13496),

Gene: Cassia_17 Start: 13143, Stop: 14018, Start Num: 25
Candidate Starts for Cassia_17:
(Start: 25 @13143 has 59 MA's), (49, 13314), (53, 13347), (79, 13539), (89, 13593), (119, 13782), (129, 13872),

Gene: Community_17 Start: 14263, Stop: 15138, Start Num: 25
Candidate Starts for Community_17:
(Start: 25 @14263 has 59 MA's), (37, 14359), (49, 14434), (79, 14659), (94, 14752), (107, 14827), (119, 14902),

Gene: Cyan_17 Start: 13038, Stop: 13913, Start Num: 25
Candidate Starts for Cyan_17:
(Start: 25 @13038 has 59 MA's), (38, 13149), (53, 13242), (79, 13434), (115, 13662), (119, 13677),

Gene: Donkey_17 Start: 12656, Stop: 13531, Start Num: 25
Candidate Starts for Donkey_17:
(Start: 25 @12656 has 59 MA's), (33, 12734), (50, 12845), (55, 12887), (70, 12986), (91, 13112), (109, 13235), (113, 13268), (138, 13496),

Gene: Elezi_17 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for Elezi_17:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (105, 13567), (115, 13645), (119, 13660),

Gene: Emotion_16 Start: 11297, Stop: 12160, Start Num: 29
Candidate Starts for Emotion_16:
(Start: 29 @11297 has 9 MA's), (32, 11333), (35, 11354), (43, 11414), (77, 11672), (108, 11864),

Gene: Eraser_17 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for Eraser_17:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (94, 13510), (105, 13567), (115, 13645), (119, 13660),

Gene: EvenBluerMoon_18 Start: 14233, Stop: 15093, Start Num: 28
Candidate Starts for EvenBluerMoon_18:
(Start: 28 @14233 has 5 MA's), (90, 14674), (104, 14767), (116, 14857),

Gene: Exile_16 Start: 13694, Stop: 14551, Start Num: 29
Candidate Starts for Exile_16:
(Start: 29 @13694 has 9 MA's), (32, 13730), (68, 13985), (77, 14069), (84, 14105), (88, 14129), (92, 14144), (110, 14267),

Gene: FiveHead_17 Start: 11229, Stop: 12089, Start Num: 29
Candidate Starts for FiveHead_17:
(Start: 29 @11229 has 9 MA's), (32, 11265), (34, 11283), (40, 11337), (77, 11604), (93, 11682), (102, 11760), (108, 11796), (114, 11835), (117, 11856),

Gene: Flutur_17 Start: 13038, Stop: 13913, Start Num: 25

Candidate Starts for Flutur_17:
(Start: 25 @13038 has 59 MA's), (38, 13149), (53, 13242), (79, 13434), (115, 13662), (119, 13677),

Gene: Galactica_20 Start: 17668, Stop: 18558, Start Num: 22
Candidate Starts for Galactica_20:
(20, 17647), (Start: 22 @17668 has 4 MA's), (Start: 23 @17674 has 9 MA's), (Start: 29 @17713 has 9 MA's), (36, 17767), (50, 17869), (54, 17908), (58, 17929), (72, 18004), (75, 18058), (127, 18385),

Gene: Gambol_17 Start: 12656, Stop: 13531, Start Num: 25
Candidate Starts for Gambol_17:
(Start: 25 @12656 has 59 MA's), (33, 12734), (50, 12845), (55, 12887), (70, 12986), (91, 13112), (109, 13235), (113, 13268), (138, 13496),

Gene: Gilgamesh_68 Start: 62731, Stop: 63672, Start Num: 25
Candidate Starts for Gilgamesh_68:
(Start: 25 @62731 has 59 MA's), (41, 62884), (53, 62956), (59, 63025), (60, 63028), (81, 63196), (91, 63244), (92, 63250), (100, 63304), (106, 63346), (113, 63406), (128, 63502), (132, 63559), (135, 63598), (137, 63634), (139, 63640),

Gene: Giorgio_17 Start: 12756, Stop: 13631, Start Num: 25
Candidate Starts for Giorgio_17:
(Start: 25 @12756 has 59 MA's), (33, 12834), (50, 12945), (55, 12987), (70, 13086), (91, 13212), (109, 13335), (113, 13368), (138, 13596),

Gene: Gumpizza_17 Start: 12749, Stop: 13624, Start Num: 25
Candidate Starts for Gumpizza_17:
(Start: 25 @12749 has 59 MA's), (33, 12827), (50, 12938), (55, 12980), (70, 13079), (91, 13205), (109, 13328), (113, 13361), (138, 13589),

Gene: Halsey_17 Start: 12748, Stop: 13623, Start Num: 25
Candidate Starts for Halsey_17:
(Start: 25 @12748 has 59 MA's), (33, 12826), (50, 12937), (55, 12979), (70, 13078), (91, 13204), (109, 13327), (113, 13360), (138, 13588),

Gene: Hereford_19 Start: 14357, Stop: 15217, Start Num: 28
Candidate Starts for Hereford_19:
(18, 14204), (Start: 28 @14357 has 5 MA's), (90, 14798), (104, 14891), (116, 14981),

Gene: Hiyaa_22 Start: 18704, Stop: 19594, Start Num: 22
Candidate Starts for Hiyaa_22:
(20, 18683), (Start: 22 @18704 has 4 MA's), (Start: 23 @18710 has 9 MA's), (Start: 29 @18749 has 9 MA's), (50, 18905), (52, 18920), (54, 18944), (65, 19010), (74, 19076), (96, 19214), (121, 19376), (127, 19421),

Gene: IUFootball_16 Start: 11562, Stop: 12437, Start Num: 25
Candidate Starts for IUFootball_16:
(Start: 25 @11562 has 59 MA's), (44, 11712), (89, 12012), (91, 12018), (105, 12108), (119, 12201),

Gene: Ididsumtinwong_17 Start: 12230, Stop: 13132, Start Num: 22
Candidate Starts for Ididsumtinwong_17:
(1, 11135), (2, 11180), (3, 11237), (4, 11255), (6, 11309), (7, 11363), (8, 11471), (9, 11534), (10, 11564), (11, 11597), (12, 11615), (13, 11741), (14, 11834), (15, 11861), (16, 11969), (20, 12209), (Start: 22 @12230 has 4 MA's), (Start: 23 @12236 has 9 MA's), (52, 12452), (53, 12455), (61, 12512),

(66, 12542), (103, 12806), (109, 12845), (131, 13019),

Gene: Iter_17 Start: 13047, Stop: 13922, Start Num: 25
Candidate Starts for Iter_17:
(Start: 25 @13047 has 59 MA's), (79, 13443), (94, 13536), (107, 13611), (119, 13686), (129, 13776),

Gene: Janeemi_18 Start: 14291, Stop: 15166, Start Num: 25
Candidate Starts for Janeemi_18:
(Start: 25 @14291 has 59 MA's), (49, 14462), (79, 14687), (94, 14780), (107, 14855), (119, 14930),

Gene: JanetJ_18 Start: 14015, Stop: 14875, Start Num: 28
Candidate Starts for JanetJ_18:
(Start: 28 @14015 has 5 MA's), (31, 14036), (65, 14282), (78, 14396), (82, 14414),

Gene: JasmineDragon_16 Start: 11227, Stop: 12087, Start Num: 29
Candidate Starts for JasmineDragon_16:
(Start: 29 @11227 has 9 MA's), (32, 11263), (34, 11281), (76, 11599), (93, 11680), (102, 11758), (108, 11794), (127, 11920), (129, 11944),

Gene: Joemato_17 Start: 13038, Stop: 13913, Start Num: 25
Candidate Starts for Joemato_17:
(Start: 25 @13038 has 59 MA's), (38, 13149), (53, 13242), (79, 13434), (115, 13662), (119, 13677),

Gene: JohnDoe_17 Start: 13033, Stop: 13908, Start Num: 25
Candidate Starts for JohnDoe_17:
(Start: 25 @13033 has 59 MA's), (38, 13144), (79, 13429), (115, 13657), (119, 13672),

Gene: JohnThicc_16 Start: 11229, Stop: 12089, Start Num: 29
Candidate Starts for JohnThicc_16:
(Start: 29 @11229 has 9 MA's), (32, 11265), (34, 11283), (77, 11604), (93, 11682), (102, 11760), (108, 11796), (114, 11835), (117, 11856),

Gene: Jstan_18 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for Jstan_18:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (94, 13510), (105, 13567), (115, 13645), (119, 13660),

Gene: JuneStar_17 Start: 13141, Stop: 14016, Start Num: 25
Candidate Starts for JuneStar_17:
(Start: 25 @13141 has 59 MA's), (79, 13537), (94, 13630), (119, 13780), (124, 13822),

Gene: Kalimba_17 Start: 12657, Stop: 13532, Start Num: 25
Candidate Starts for Kalimba_17:
(Start: 25 @12657 has 59 MA's), (33, 12735), (50, 12846), (55, 12888), (70, 12987), (91, 13113), (109, 13236), (113, 13269), (138, 13497),

Gene: Kaylissa_17 Start: 13039, Stop: 13914, Start Num: 25
Candidate Starts for Kaylissa_17:
(Start: 25 @13039 has 59 MA's), (38, 13150), (53, 13243), (79, 13435), (115, 13663), (119, 13678),

Gene: Keanu_22 Start: 18751, Stop: 19635, Start Num: 23
Candidate Starts for Keanu_22:

(Start: 23 @18751 has 9 MA's), (Start: 29 @18790 has 9 MA's), (50, 18946), (54, 18985), (64, 19048), (66, 19054), (72, 19081), (73, 19084), (74, 19117), (75, 19135), (76, 19141), (85, 19192), (96, 19255), (118, 19396),

Gene: Kokushibo_22 Start: 18725, Stop: 19609, Start Num: 23
Candidate Starts for Kokushibo_22:
(20, 18698), (Start: 22 @18719 has 4 MA's), (Start: 23 @18725 has 9 MA's), (Start: 29 @18764 has 9 MA's), (50, 18920), (52, 18935), (54, 18959), (65, 19025), (66, 19028), (74, 19091), (96, 19229), (127, 19436),

Gene: LadyAstra_16 Start: 11229, Stop: 12089, Start Num: 29
Candidate Starts for LadyAstra_16:
(Start: 29 @11229 has 9 MA's), (32, 11265), (34, 11283), (77, 11604), (93, 11682), (102, 11760), (108, 11796), (114, 11835), (117, 11856),

Gene: Lego_17 Start: 13038, Stop: 13913, Start Num: 25
Candidate Starts for Lego_17:
(Start: 25 @13038 has 59 MA's), (38, 13149), (53, 13242), (79, 13434), (115, 13662), (119, 13677),

Gene: Liebe_16 Start: 11562, Stop: 12437, Start Num: 25
Candidate Starts for Liebe_16:
(Start: 25 @11562 has 59 MA's), (44, 11712), (89, 12012), (91, 12018), (105, 12108), (119, 12201),

Gene: Lishka_17 Start: 12194, Stop: 13096, Start Num: 22
Candidate Starts for Lishka_17:
(1, 11099), (2, 11144), (3, 11201), (4, 11219), (5, 11246), (6, 11273), (7, 11327), (8, 11435), (9, 11498), (10, 11528), (11, 11561), (12, 11579), (13, 11705), (14, 11798), (15, 11825), (16, 11933), (20, 12173), (Start: 22 @12194 has 4 MA's), (Start: 23 @12200 has 9 MA's), (52, 12416), (53, 12419), (61, 12476), (66, 12506), (103, 12770), (109, 12809), (131, 12983),

Gene: LisoBros_16 Start: 13016, Stop: 13882, Start Num: 30
Candidate Starts for LisoBros_16:
(Start: 30 @13016 has 2 MA's), (53, 13208), (56, 13235), (77, 13400), (91, 13469), (93, 13478), (99, 13526), (117, 13652), (122, 13688), (132, 13769),

Gene: Lizalica_17 Start: 13023, Stop: 13898, Start Num: 25
Candidate Starts for Lizalica_17:
(Start: 25 @13023 has 59 MA's), (38, 13134), (49, 13194), (79, 13419), (115, 13647), (119, 13662),

Gene: London_17 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for London_17:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (94, 13510), (105, 13567), (115, 13645), (119, 13660),

Gene: LuckyBarnes_24 Start: 20004, Stop: 20891, Start Num: 30
Candidate Starts for LuckyBarnes_24:
(Start: 30 @20004 has 2 MA's), (36, 20070), (46, 20145), (53, 20193), (67, 20289), (80, 20400), (83, 20418), (93, 20460), (95, 20496), (97, 20511), (123, 20688), (125, 20697), (126, 20700), (133, 20781), (136, 20823),

Gene: MaGuCo_16 Start: 11496, Stop: 12371, Start Num: 25
Candidate Starts for MaGuCo_16:

(Start: 25 @11496 has 59 MA's), (44, 11646), (89, 11946), (91, 11952), (105, 12042), (109, 12075), (119, 12135),

Gene: Maruru_17 Start: 17270, Stop: 18190, Start Num: 19
Candidate Starts for Maruru_17:
(Start: 19 @17270 has 3 MA's), (38, 17426), (42, 17450), (46, 17471), (74, 17687), (103, 17864), (125, 18014), (127, 18029), (130, 18062),

Gene: Maureen_16 Start: 11562, Stop: 12437, Start Num: 25
Candidate Starts for Maureen_16:
(Start: 25 @11562 has 59 MA's), (44, 11712), (89, 12012), (91, 12018), (105, 12108), (119, 12201),

Gene: Michkear_20 Start: 14910, Stop: 15779, Start Num: 25
Candidate Starts for Michkear_20:
(Start: 25 @14910 has 59 MA's), (79, 15300), (86, 15342), (91, 15360), (119, 15543),

Gene: MiniMommy_16 Start: 11228, Stop: 12088, Start Num: 29
Candidate Starts for MiniMommy_16:
(Start: 29 @11228 has 9 MA's), (32, 11264), (34, 11282), (76, 11600), (93, 11681), (102, 11759), (108, 11795), (127, 11921), (129, 11945),

Gene: Mojorita_17 Start: 12339, Stop: 13232, Start Num: 23
Candidate Starts for Mojorita_17:
(Start: 23 @12339 has 9 MA's), (24, 12348), (53, 12555), (65, 12639), (103, 12906), (111, 12972), (118, 13002), (131, 13119),

Gene: Morrey_27 Start: 14235, Stop: 15095, Start Num: 28
Candidate Starts for Morrey_27:
(Start: 28 @14235 has 5 MA's), (90, 14676), (104, 14769), (116, 14859),

Gene: Moss_17 Start: 12748, Stop: 13623, Start Num: 25
Candidate Starts for Moss_17:
(Start: 25 @12748 has 59 MA's), (33, 12826), (50, 12937), (55, 12979), (70, 13078), (91, 13204), (109, 13327), (113, 13360), (138, 13588),

Gene: Mudpuppy_17 Start: 13037, Stop: 13912, Start Num: 25
Candidate Starts for Mudpuppy_17:
(Start: 25 @13037 has 59 MA's), (38, 13148), (79, 13433), (115, 13661), (119, 13676),

Gene: Mysterium_17 Start: 12749, Stop: 13624, Start Num: 25
Candidate Starts for Mysterium_17:
(Start: 25 @12749 has 59 MA's), (33, 12827), (50, 12938), (55, 12980), (70, 13079), (91, 13205), (109, 13328), (113, 13361), (138, 13589),

Gene: Niobe_17 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for Niobe_17:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (94, 13510), (105, 13567), (115, 13645), (119, 13660),

Gene: Nitro_17 Start: 13045, Stop: 13920, Start Num: 25
Candidate Starts for Nitro_17:
(17, 12886), (Start: 25 @13045 has 59 MA's), (49, 13216), (79, 13441), (94, 13534), (105, 13591), (114, 13660), (115, 13669), (119, 13684), (123, 13723),

Gene: NoSwimming_19 Start: 15157, Stop: 16017, Start Num: 27
Candidate Starts for NoSwimming_19:
(26, 15148), (Start: 27 @15157 has 2 MA's), (62, 15406), (68, 15445), (82, 15556), (89, 15595), (91, 15601), (104, 15691), (119, 15787),

Gene: Origami_16 Start: 11229, Stop: 12089, Start Num: 29
Candidate Starts for Origami_16:
(Start: 29 @11229 has 9 MA's), (32, 11265), (34, 11283), (77, 11604), (93, 11682), (102, 11760), (108, 11796), (114, 11835), (117, 11856),

Gene: PapayaSalad_17 Start: 12206, Stop: 13102, Start Num: 23
Candidate Starts for PapayaSalad_17:
(14, 11804), (15, 11831), (16, 11939), (20, 12179), (Start: 22 @12200 has 4 MA's), (Start: 23 @12206 has 9 MA's), (36, 12305), (52, 12422), (53, 12425), (61, 12482), (66, 12512), (109, 12815), (131, 12989),

Gene: Phives_18 Start: 14123, Stop: 14998, Start Num: 25
Candidate Starts for Phives_18:
(Start: 25 @14123 has 59 MA's), (79, 14519), (89, 14573), (115, 14747), (119, 14762),

Gene: Picard_17 Start: 12333, Stop: 13226, Start Num: 23
Candidate Starts for Picard_17:
(Start: 23 @12333 has 9 MA's), (24, 12342), (53, 12549), (65, 12633), (103, 12900), (111, 12966), (118, 12996), (131, 13113),

Gene: Pixelle_17 Start: 13066, Stop: 13941, Start Num: 25
Candidate Starts for Pixelle_17:
(Start: 25 @13066 has 59 MA's), (89, 13516), (115, 13690), (119, 13705),

Gene: Powerpuff_17 Start: 13089, Stop: 13964, Start Num: 25
Candidate Starts for Powerpuff_17:
(Start: 25 @13089 has 59 MA's), (38, 13200), (53, 13293), (79, 13485), (115, 13713), (119, 13728),

Gene: PrairieDogTown_18 Start: 14235, Stop: 15095, Start Num: 28
Candidate Starts for PrairieDogTown_18:
(Start: 28 @14235 has 5 MA's), (90, 14676), (104, 14769), (116, 14859),

Gene: Pumpkins_17 Start: 13153, Stop: 14028, Start Num: 25
Candidate Starts for Pumpkins_17:
(Start: 25 @13153 has 59 MA's), (49, 13324), (53, 13357), (79, 13549), (89, 13603), (119, 13792), (129, 13882),

Gene: RockScotty_17 Start: 12748, Stop: 13623, Start Num: 25
Candidate Starts for RockScotty_17:
(Start: 25 @12748 has 59 MA's), (33, 12826), (50, 12937), (55, 12979), (70, 13078), (91, 13204), (109, 13327), (113, 13360), (138, 13588),

Gene: SV1_17 Start: 12442, Stop: 13338, Start Num: 23
Candidate Starts for SV1_17:
(20, 12415), (Start: 22 @12436 has 4 MA's), (Start: 23 @12442 has 9 MA's), (47, 12619), (48, 12622), (52, 12658), (53, 12661), (61, 12718), (66, 12748), (105, 13018), (127, 13174), (131, 13225),

Gene: Sabourin_17 Start: 12655, Stop: 13530, Start Num: 25
Candidate Starts for Sabourin_17:
(Start: 25 @12655 has 59 MA's), (33, 12733), (50, 12844), (55, 12886), (70, 12985), (91, 13111), (109, 13234), (113, 13267), (138, 13495),

Gene: Schaffner_17 Start: 13140, Stop: 14015, Start Num: 25
Candidate Starts for Schaffner_17:
(Start: 25 @13140 has 59 MA's), (49, 13311), (53, 13344), (79, 13536), (89, 13590), (94, 13629), (119, 13779), (124, 13821),

Gene: Scotia_19 Start: 15157, Stop: 16017, Start Num: 27
Candidate Starts for Scotia_19:
(26, 15148), (Start: 27 @15157 has 2 MA's), (62, 15406), (68, 15445), (82, 15556), (89, 15595), (91, 15601), (104, 15691), (119, 15787),

Gene: ShakeItOph_16 Start: 11227, Stop: 12087, Start Num: 29
Candidate Starts for ShakeItOph_16:
(Start: 29 @11227 has 9 MA's), (32, 11263), (34, 11281), (76, 11599), (93, 11680), (102, 11758), (108, 11794), (127, 11920), (129, 11944),

Gene: Simpson_19 Start: 13038, Stop: 13913, Start Num: 25
Candidate Starts for Simpson_19:
(Start: 25 @13038 has 59 MA's), (38, 13149), (53, 13242), (79, 13434), (115, 13662), (119, 13677),

Gene: Skelbel_18 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for Skelbel_18:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (94, 13510), (105, 13567), (115, 13645), (119, 13660),

Gene: Sonali_17 Start: 17836, Stop: 18756, Start Num: 19
Candidate Starts for Sonali_17:
(Start: 19 @17836 has 3 MA's), (38, 17992), (42, 18016), (46, 18037), (74, 18253), (103, 18430), (124, 18574), (125, 18580), (127, 18595),

Gene: Soondubu_16 Start: 13702, Stop: 14559, Start Num: 29
Candidate Starts for Soondubu_16:
(Start: 29 @13702 has 9 MA's), (32, 13738), (68, 13993), (77, 14077), (84, 14113), (88, 14137), (92, 14152), (110, 14275),

Gene: Sooty_17 Start: 12658, Stop: 13533, Start Num: 25
Candidate Starts for Sooty_17:
(Start: 25 @12658 has 59 MA's), (33, 12736), (50, 12847), (55, 12889), (70, 12988), (91, 13114), (109, 13237), (113, 13270), (138, 13498),

Gene: SpecialK_17 Start: 12655, Stop: 13530, Start Num: 25
Candidate Starts for SpecialK_17:
(Start: 25 @12655 has 59 MA's), (33, 12733), (50, 12844), (55, 12886), (70, 12985), (91, 13111), (109, 13234), (113, 13267), (138, 13495),

Gene: Spocter_22 Start: 18698, Stop: 19582, Start Num: 23
Candidate Starts for Spocter_22:
(20, 18671), (Start: 22 @18692 has 4 MA's), (Start: 23 @18698 has 9 MA's), (Start: 29 @18737 has 9 MA's), (50, 18893), (52, 18908), (54, 18932), (65, 18998), (66, 19001), (74, 19064), (96, 19202), (127,

19409),

Gene: Stuu_17 Start: 12748, Stop: 13623, Start Num: 25
Candidate Starts for Stuu_17:
(Start: 25 @12748 has 59 MA's), (33, 12826), (50, 12937), (55, 12979), (70, 13078), (91, 13204), (109, 13327), (113, 13360), (138, 13588),

Gene: Subaru_17 Start: 13021, Stop: 13896, Start Num: 25
Candidate Starts for Subaru_17:
(Start: 25 @13021 has 59 MA's), (38, 13132), (49, 13192), (79, 13417), (89, 13471), (93, 13486), (105, 13567), (115, 13645), (119, 13660),

Gene: Sunshine23_18 Start: 17848, Stop: 18768, Start Num: 19
Candidate Starts for Sunshine23_18:
(Start: 19 @17848 has 3 MA's), (38, 18004), (42, 18028), (46, 18049), (74, 18265), (87, 18346), (103, 18442), (124, 18586), (125, 18592), (127, 18607),

Gene: Tallboi_17 Start: 13048, Stop: 13923, Start Num: 25
Candidate Starts for Tallboi_17:
(Start: 25 @13048 has 59 MA's), (49, 13219), (79, 13444), (89, 13498), (105, 13594), (115, 13672), (119, 13687), (129, 13777),

Gene: Tbone_17 Start: 13042, Stop: 13917, Start Num: 25
Candidate Starts for Tbone_17:
(Start: 25 @13042 has 59 MA's), (38, 13153), (79, 13438), (115, 13666), (119, 13681),

Gene: TforTroy_17 Start: 13171, Stop: 14046, Start Num: 25
Candidate Starts for TforTroy_17:
(Start: 25 @13171 has 59 MA's), (49, 13342), (79, 13567), (94, 13660), (119, 13810), (124, 13852),

Gene: ThursdayNight_16 Start: 11797, Stop: 12663, Start Num: 25
Candidate Starts for ThursdayNight_16:
(Start: 25 @11797 has 59 MA's), (33, 11866), (45, 11944), (57, 12037), (109, 12367), (119, 12427), (129, 12517), (134, 12586),

Gene: Tian_17 Start: 13063, Stop: 13938, Start Num: 25
Candidate Starts for Tian_17:
(Start: 25 @13063 has 59 MA's), (79, 13459), (89, 13513), (115, 13687), (119, 13702),

Gene: Tuck_18 Start: 14243, Stop: 15118, Start Num: 25
Candidate Starts for Tuck_18:
(Start: 25 @14243 has 59 MA's), (37, 14339), (49, 14414), (79, 14639), (94, 14732), (107, 14807), (119, 14882),

Gene: Turab_17 Start: 13050, Stop: 13925, Start Num: 25
Candidate Starts for Turab_17:
(Start: 25 @13050 has 59 MA's), (49, 13221), (57, 13296), (79, 13446), (89, 13500), (94, 13539), (105, 13596), (115, 13674), (119, 13689),

Gene: Tutumahutu_17 Start: 13089, Stop: 13964, Start Num: 25
Candidate Starts for Tutumahutu_17:
(Start: 25 @13089 has 59 MA's), (38, 13200), (79, 13485), (115, 13713), (119, 13728),

Gene: VroomVroom_16 Start: 11238, Stop: 12098, Start Num: 29
Candidate Starts for VroomVroom_16:
(Start: 29 @11238 has 9 MA's), (32, 11274), (34, 11292), (77, 11613), (102, 11769), (108, 11805), (117, 11865), (127, 11931), (129, 11955),

Gene: Warda_17 Start: 13034, Stop: 13909, Start Num: 25
Candidate Starts for Warda_17:
(Start: 25 @13034 has 59 MA's), (38, 13145), (79, 13430), (115, 13658), (119, 13673),

Gene: Yang_17 Start: 13141, Stop: 14016, Start Num: 25
Candidate Starts for Yang_17:
(Start: 25 @13141 has 59 MA's), (79, 13537), (119, 13780), (140, 14005),

Gene: YesChef_17 Start: 13089, Stop: 13964, Start Num: 25
Candidate Starts for YesChef_17:
(Start: 25 @13089 has 59 MA's), (38, 13200), (53, 13293), (79, 13485), (115, 13713), (119, 13728),

Gene: pZL12_50c Start: 39384, Stop: 38482, Start Num: 21
Candidate Starts for pZL12_50c:
(21, 39384), (Start: 29 @39333 has 9 MA's), (39, 39246), (42, 39237), (49, 39201), (54, 39147), (55, 39144), (63, 39090), (64, 39084), (71, 39051), (98, 38856), (112, 38754), (120, 38715), (122, 38682),