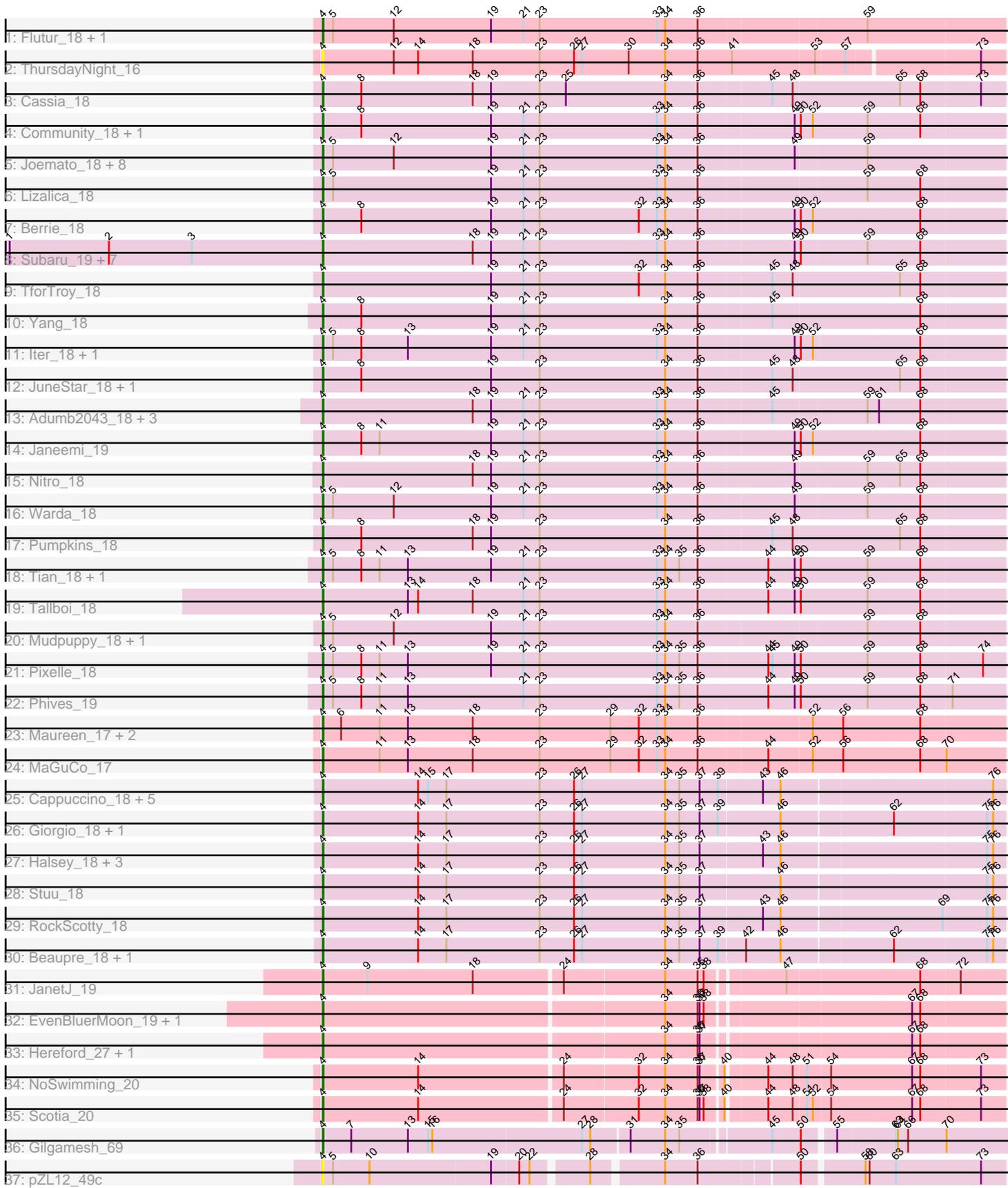# Pham 289349

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 289349 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289349 has 75 members, 15 are drafts.

Phages represented in each track:
• Track 1 : Flutur_18, Tutumahutu_18
• Track 2 : ThursdayNight_16
• Track 3 : Cassia_18
• Track 4 : Community_18, Tuck_19
• Track 5 : Joemato_18, AGrandiflora_18, Cyan_18, JohnDoe_18, Kaylissa_18, Lego_18, Powerpuff_18, YesChef_18, Simpson_20
• Track 6 : Lizalica_18
• Track 7 : Berrie_18
• Track 8 : Subaru_19, Elezi_18, Jstan_19, Niobe_18, Skelbel_19, Eraser_18, Asa16_18, London_18
• Track 9 : TforTroy_18
• Track 10 : Yang_18
• Track 11 : Iter_18, Ascela_18
• Track 12 : JuneStar_18, Schaffner_18
• Track 13 : Adumb2043_18, Turab_18, AEgle_18, Amploria_18
• Track 14 : Janeemi_19
• Track 15 : Nitro_18
• Track 16 : Warda_18
• Track 17 : Pumpkins_18
• Track 18 : Tian_18, Amyev_18
• Track 19 : Tallboi_18
• Track 20 : Mudpuppy_18, Tbone_18
• Track 21 : Pixelle_18
• Track 22 : Phives_19
• Track 23 : Maureen_17, IUFootball_17, Liebe_17
• Track 24 : MaGuCo_17
• Track 25 : Cappuccino_18, Kalimba_18, Gambol_18, Donkey_18, Sabourin_18, Sooty_18
• Track 26 : Giorgio_18, Gumpizza_18
• Track 27 : Halsey_18, Moss_18, Ashes_18, SpecialK_18
• Track 28 : Stuu_18
• Track 29 : RockScotty_18
• Track 30 : Beaupre_18, Mysterium_18
• Track 31 : JanetJ_19
• Track 32 : EvenBluerMoon_19, PrairieDogTown_19
• Track 33 : Hereford_27, Aoka_19
• Track 34 : NoSwimming_20

- Track 35 : Scotia_20
- Track 36 : Gilgamesh_69
- Track 37 : pZL12_49c

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

The start number called the most often in the published annotations is 4, it was called in 60 of the 60 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- AEgle_18, AGrandiflora_18, Adumb2043_18, Amploria_18, Amyev_18, Aoka_19, Asa16_18, Ascela_18, Ashes_18, Beaupre_18, Berrie_18, Cappuccino_18, Cassia_18, Community_18, Cyan_18, Donkey_18, Elezi_18, Eraser_18, EvenBluerMoon_19, Flutur_18, Gambol_18, Gilgamesh_69, Giorgio_18, Gumpizza_18, Halsey_18, Hereford_27, IUFootball_17, Iter_18, Janeemi_19, JanetJ_19, Joemato_18, JohnDoe_18, Jstan_19, JuneStar_18, Kalimba_18, Kaylissa_18, Lego_18, Liebe_17, Lizalica_18, London_18, MaGuCo_17, Maureen_17, Moss_18, Mudpuppy_18, Mysterium_18, Niobe_18, Nitro_18, NoSwimming_20, Phives_19, Pixelle_18, Powerpuff_18, PrairieDogTown_19, Pumpkins_18, RockScotty_18, Sabourin_18, Schaffner_18, Scotia_20, Simpson_20, Skelbel_19, Sooty_18, SpecialK_18, Stuu_18, Subaru_19, Tallboi_18, Tbone_18, TforTroy_18, ThursdayNight_16, Tian_18, Tuck_19, Turab_18, Tutumahutu_18, Warda_18, Yang_18, YesChef_18, pZL12_49c,

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

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

Summary by start number:

Start 4:
- Found in 75 of 75 (100.0%) of genes in pham
- Manual Annotations of this start: 60 of 60
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AEgle_18 (AZ1), AGrandiflora_18 (AZ1), Adumb2043_18 (AZ1), Amploria_18 (AZ1), Amyev_18 (AZ1), Aoka_19 (FO), Asa16_18 (AZ1), Ascela_18 (AZ1), Ashes_18 (AZ5), Beaupre_18 (AZ5), Berrie_18 (AZ1), Cappuccino_18 (AZ5), Cassia_18 (AZ1), Community_18 (AZ1), Cyan_18 (AZ1), Donkey_18 (AZ5), Elezi_18 (AZ1), Eraser_18 (AZ1), EvenBluerMoon_19 (FO), Flutur_18 (AZ), Gambol_18 (AZ5), Gilgamesh_69 (singleton), Giorgio_18 (AZ5), Gumpizza_18 (AZ5), Halsey_18 (AZ5), Hereford_27 (FO), IUFootball_17 (AZ2), Iter_18 (AZ1), Janeemi_19 (AZ1), JanetJ_19 (FO), Joemato_18 (AZ1), JohnDoe_18 (AZ1), Jstan_19 (AZ1), JuneStar_18 (AZ1), Kalimba_18 (AZ5), Kaylissa_18 (AZ1), Lego_18 (AZ1), Liebe_17 (AZ2), Lizalica_18 (AZ1), London_18 (AZ1), MaGuCo_17 (AZ2), Maureen_17 (AZ2), Moss_18 (AZ5), Mudpuppy_18 (AZ1), Mysterium_18 (AZ5), Niobe_18 (AZ1), Nitro_18 (AZ1), NoSwimming_20 (FO), Phives_19 (AZ1), Pixelle_18 (AZ1), Powerpuff_18 (AZ1), PrairieDogTown_19 (FO), Pumpkins_18 (AZ1), RockScotty_18 (AZ5), Sabourin_18 (AZ5), Schaffner_18 (AZ1), Scotia_20

(FO), Simpson_20 (AZ1), Skelbel_19 (AZ1), Sooty_18 (AZ5), SpecialK_18 (AZ5), Stuu_18 (AZ5), Subaru_19 (AZ1), Tallboi_18 (AZ1), Tbone_18 (AZ1), TforTroy_18 (AZ1), ThursdayNight_16 (AZ), Tian_18 (AZ1), Tuck_19 (AZ1), Turab_18 (AZ1), Tutumahutu_18 (AZ1), Warda_18 (AZ1), Yang_18 (AZ1), YesChef_18 (AZ1), pZL12_49c (singleton),

Summary by clusters:

There are 6 clusters represented in this pham: singleton, AZ1, AZ2, AZ, AZ5, FO,

Info for manual annotations of cluster AZ1:
•Start number 4 was manually annotated 34 times for cluster AZ1.

Info for manual annotations of cluster AZ2:
•Start number 4 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ5:
•Start number 4 was manually annotated 16 times for cluster AZ5.

Info for manual annotations of cluster FO:
•Start number 4 was manually annotated 6 times for cluster FO.

Gene Information:

Gene: AEgle_18 Start: 13938, Stop: 14930, Start Num: 4
Candidate Starts for AEgle_18:
(Start: 4 @13938 has 60 MA's), (18, 14160), (19, 14187), (21, 14235), (23, 14259), (33, 14433), (34, 14445), (36, 14493), (45, 14598), (59, 14733), (61, 14748), (68, 14808),

Gene: AGrandiflora_18 Start: 13923, Stop: 14915, Start Num: 4
Candidate Starts for AGrandiflora_18:
(Start: 4 @13923 has 60 MA's), (5, 13938), (12, 14028), (19, 14172), (21, 14220), (23, 14244), (33, 14418), (34, 14430), (36, 14478), (49, 14616), (59, 14718),

Gene: Adumb2043_18 Start: 13937, Stop: 14929, Start Num: 4
Candidate Starts for Adumb2043_18:
(Start: 4 @13937 has 60 MA's), (18, 14159), (19, 14186), (21, 14234), (23, 14258), (33, 14432), (34, 14444), (36, 14492), (45, 14597), (59, 14732), (61, 14747), (68, 14807),

Gene: Amploria_18 Start: 13937, Stop: 14929, Start Num: 4
Candidate Starts for Amploria_18:
(Start: 4 @13937 has 60 MA's), (18, 14159), (19, 14186), (21, 14234), (23, 14258), (33, 14432), (34, 14444), (36, 14492), (45, 14597), (59, 14732), (61, 14747), (68, 14807),

Gene: Amyev_18 Start: 13952, Stop: 14950, Start Num: 4
Candidate Starts for Amyev_18:
(Start: 4 @13952 has 60 MA's), (5, 13967), (8, 14009), (11, 14036), (13, 14078), (19, 14201), (21, 14249), (23, 14273), (33, 14447), (34, 14459), (35, 14480), (36, 14507), (44, 14609), (49, 14648), (50, 14654), (59, 14753), (68, 14828),

Gene: Aoka_19 Start: 15069, Stop: 16034, Start Num: 4
Candidate Starts for Aoka_19:
(Start: 4 @15069 has 60 MA's), (34, 15561), (36, 15609), (37, 15612), (67, 15900), (68, 15912),

Gene: Asa16_18 Start: 13907, Stop: 14899, Start Num: 4
Candidate Starts for Asa16_18:
(1, 13445), (2, 13592), (3, 13715), (Start: 4 @13907 has 60 MA's), (18, 14129), (19, 14156), (21, 14204), (23, 14228), (33, 14402), (34, 14414), (36, 14462), (49, 14600), (50, 14606), (59, 14702), (68, 14777),

Gene: Ascela_18 Start: 13935, Stop: 14927, Start Num: 4
Candidate Starts for Ascela_18:
(Start: 4 @13935 has 60 MA's), (5, 13950), (8, 13992), (13, 14061), (19, 14184), (21, 14232), (23, 14256), (33, 14430), (34, 14442), (36, 14490), (49, 14628), (50, 14634), (52, 14652), (68, 14805),

Gene: Ashes_18 Start: 13636, Stop: 14622, Start Num: 4
Candidate Starts for Ashes_18:
(Start: 4 @13636 has 60 MA's), (14, 13777), (17, 13819), (23, 13957), (26, 14008), (27, 14020), (34, 14143), (35, 14164), (37, 14194), (43, 14281), (46, 14305), (75, 14596), (76, 14605),

Gene: Beaupre_18 Start: 13637, Stop: 14623, Start Num: 4
Candidate Starts for Beaupre_18:
(Start: 4 @13637 has 60 MA's), (14, 13778), (17, 13820), (23, 13958), (26, 14009), (27, 14021), (34, 14144), (35, 14165), (37, 14195), (39, 14222), (42, 14258), (46, 14306), (62, 14462), (75, 14597), (76, 14606),

Gene: Berrie_18 Start: 14069, Stop: 15064, Start Num: 4
Candidate Starts for Berrie_18:
(Start: 4 @14069 has 60 MA's), (8, 14126), (19, 14318), (21, 14366), (23, 14390), (32, 14537), (33, 14564), (34, 14576), (36, 14624), (49, 14762), (50, 14768), (52, 14786), (68, 14942),

Gene: Cappuccino_18 Start: 13544, Stop: 14530, Start Num: 4
Candidate Starts for Cappuccino_18:
(Start: 4 @13544 has 60 MA's), (14, 13685), (15, 13700), (17, 13727), (23, 13865), (26, 13916), (27, 13928), (34, 14051), (35, 14072), (37, 14102), (39, 14129), (43, 14189), (46, 14213), (76, 14513),

Gene: Cassia_18 Start: 14031, Stop: 15026, Start Num: 4
Candidate Starts for Cassia_18:
(Start: 4 @14031 has 60 MA's), (8, 14088), (18, 14253), (19, 14280), (23, 14352), (25, 14391), (34, 14538), (36, 14586), (45, 14691), (48, 14721), (65, 14874), (68, 14904), (73, 14991),

Gene: Community_18 Start: 15151, Stop: 16146, Start Num: 4
Candidate Starts for Community_18:
(Start: 4 @15151 has 60 MA's), (8, 15208), (19, 15400), (21, 15448), (23, 15472), (33, 15646), (34, 15658), (36, 15706), (49, 15844), (50, 15850), (52, 15868), (59, 15949), (68, 16024),

Gene: Cyan_18 Start: 13926, Stop: 14918, Start Num: 4
Candidate Starts for Cyan_18:
(Start: 4 @13926 has 60 MA's), (5, 13941), (12, 14031), (19, 14175), (21, 14223), (23, 14247), (33, 14421), (34, 14433), (36, 14481), (49, 14619), (59, 14721),

Gene: Donkey_18 Start: 13544, Stop: 14530, Start Num: 4
Candidate Starts for Donkey_18:

(Start: 4 @13544 has 60 MA's), (14, 13685), (15, 13700), (17, 13727), (23, 13865), (26, 13916), (27, 13928), (34, 14051), (35, 14072), (37, 14102), (39, 14129), (43, 14189), (46, 14213), (76, 14513),

Gene: Elezi_18 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for Elezi_18:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: Eraser_18 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for Eraser_18:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: EvenBluerMoon_19 Start: 15104, Stop: 16069, Start Num: 4
Candidate Starts for EvenBluerMoon_19:
(Start: 4 @15104 has 60 MA's), (34, 15596), (36, 15644), (37, 15647), (38, 15653), (67, 15935), (68, 15947),

Gene: Flutur_18 Start: 13926, Stop: 14918, Start Num: 4
Candidate Starts for Flutur_18:
(Start: 4 @13926 has 60 MA's), (5, 13941), (12, 14031), (19, 14175), (21, 14223), (23, 14247), (33, 14421), (34, 14433), (36, 14481), (59, 14721),

Gene: Gambol_18 Start: 13544, Stop: 14530, Start Num: 4
Candidate Starts for Gambol_18:
(Start: 4 @13544 has 60 MA's), (14, 13685), (15, 13700), (17, 13727), (23, 13865), (26, 13916), (27, 13928), (34, 14051), (35, 14072), (37, 14102), (39, 14129), (43, 14189), (46, 14213), (76, 14513),

Gene: Gilgamesh_69 Start: 63750, Stop: 64724, Start Num: 4
Candidate Starts for Gilgamesh_69:
(Start: 4 @63750 has 60 MA's), (7, 63792), (13, 63876), (15, 63906), (16, 63912), (27, 64131), (28, 64143), (31, 64197), (34, 64248), (35, 64269), (45, 64389), (50, 64428), (55, 64470), (63, 64551), (64, 64554), (66, 64569), (70, 64626),

Gene: Giorgio_18 Start: 13644, Stop: 14630, Start Num: 4
Candidate Starts for Giorgio_18:
(Start: 4 @13644 has 60 MA's), (14, 13785), (17, 13827), (23, 13965), (26, 14016), (27, 14028), (34, 14151), (35, 14172), (37, 14202), (39, 14229), (46, 14313), (62, 14469), (75, 14604), (76, 14613),

Gene: Gumpizza_18 Start: 13637, Stop: 14623, Start Num: 4
Candidate Starts for Gumpizza_18:
(Start: 4 @13637 has 60 MA's), (14, 13778), (17, 13820), (23, 13958), (26, 14009), (27, 14021), (34, 14144), (35, 14165), (37, 14195), (39, 14222), (46, 14306), (62, 14462), (75, 14597), (76, 14606),

Gene: Halsey_18 Start: 13636, Stop: 14622, Start Num: 4
Candidate Starts for Halsey_18:
(Start: 4 @13636 has 60 MA's), (14, 13777), (17, 13819), (23, 13957), (26, 14008), (27, 14020), (34, 14143), (35, 14164), (37, 14194), (43, 14281), (46, 14305), (75, 14596), (76, 14605),

Gene: Hereford_27 Start: 15228, Stop: 16193, Start Num: 4
Candidate Starts for Hereford_27:

(Start: 4 @15228 has 60 MA's), (34, 15720), (36, 15768), (37, 15771), (67, 16059), (68, 16071),

Gene: IUFootball_17 Start: 12447, Stop: 13442, Start Num: 4
Candidate Starts for IUFootball_17:
(Start: 4 @12447 has 60 MA's), (6, 12474), (11, 12531), (13, 12573), (18, 12669), (23, 12768), (29, 12873), (32, 12915), (33, 12942), (34, 12954), (36, 13002), (52, 13164), (56, 13209), (68, 13320),

Gene: Iter_18 Start: 13935, Stop: 14927, Start Num: 4
Candidate Starts for Iter_18:
(Start: 4 @13935 has 60 MA's), (5, 13950), (8, 13992), (13, 14061), (19, 14184), (21, 14232), (23, 14256), (33, 14430), (34, 14442), (36, 14490), (49, 14628), (50, 14634), (52, 14652), (68, 14805),

Gene: Janeemi_19 Start: 15179, Stop: 16174, Start Num: 4
Candidate Starts for Janeemi_19:
(Start: 4 @15179 has 60 MA's), (8, 15236), (11, 15263), (19, 15428), (21, 15476), (23, 15500), (33, 15674), (34, 15686), (36, 15734), (49, 15872), (50, 15878), (52, 15896), (68, 16052),

Gene: JanetJ_19 Start: 14886, Stop: 15851, Start Num: 4
Candidate Starts for JanetJ_19:
(Start: 4 @14886 has 60 MA's), (9, 14952), (18, 15108), (24, 15234), (34, 15378), (36, 15426), (38, 15435), (47, 15540), (68, 15729), (72, 15786),

Gene: Joemato_18 Start: 13926, Stop: 14918, Start Num: 4
Candidate Starts for Joemato_18:
(Start: 4 @13926 has 60 MA's), (5, 13941), (12, 14031), (19, 14175), (21, 14223), (23, 14247), (33, 14421), (34, 14433), (36, 14481), (49, 14619), (59, 14721),

Gene: JohnDoe_18 Start: 13921, Stop: 14913, Start Num: 4
Candidate Starts for JohnDoe_18:
(Start: 4 @13921 has 60 MA's), (5, 13936), (12, 14026), (19, 14170), (21, 14218), (23, 14242), (33, 14416), (34, 14428), (36, 14476), (49, 14614), (59, 14716),

Gene: Jstan_19 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for Jstan_19:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: JuneStar_18 Start: 14029, Stop: 15024, Start Num: 4
Candidate Starts for JuneStar_18:
(Start: 4 @14029 has 60 MA's), (8, 14086), (19, 14278), (23, 14350), (34, 14536), (36, 14584), (45, 14689), (48, 14719), (65, 14872), (68, 14902),

Gene: Kalimba_18 Start: 13545, Stop: 14531, Start Num: 4
Candidate Starts for Kalimba_18:
(Start: 4 @13545 has 60 MA's), (14, 13686), (15, 13701), (17, 13728), (23, 13866), (26, 13917), (27, 13929), (34, 14052), (35, 14073), (37, 14103), (39, 14130), (43, 14190), (46, 14214), (76, 14514),

Gene: Kaylissa_18 Start: 13927, Stop: 14919, Start Num: 4
Candidate Starts for Kaylissa_18:
(Start: 4 @13927 has 60 MA's), (5, 13942), (12, 14032), (19, 14176), (21, 14224), (23, 14248), (33, 14422), (34, 14434), (36, 14482), (49, 14620), (59, 14722),

Gene: Lego_18 Start: 13926, Stop: 14918, Start Num: 4
Candidate Starts for Lego_18:
(Start: 4 @13926 has 60 MA's), (5, 13941), (12, 14031), (19, 14175), (21, 14223), (23, 14247), (33, 14421), (34, 14433), (36, 14481), (49, 14619), (59, 14721),

Gene: Liebe_17 Start: 12447, Stop: 13442, Start Num: 4
Candidate Starts for Liebe_17:
(Start: 4 @12447 has 60 MA's), (6, 12474), (11, 12531), (13, 12573), (18, 12669), (23, 12768), (29, 12873), (32, 12915), (33, 12942), (34, 12954), (36, 13002), (52, 13164), (56, 13209), (68, 13320),

Gene: Lizalica_18 Start: 13911, Stop: 14903, Start Num: 4
Candidate Starts for Lizalica_18:
(Start: 4 @13911 has 60 MA's), (5, 13926), (19, 14160), (21, 14208), (23, 14232), (33, 14406), (34, 14418), (36, 14466), (59, 14706), (68, 14781),

Gene: London_18 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for London_18:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: MaGuCo_17 Start: 12381, Stop: 13376, Start Num: 4
Candidate Starts for MaGuCo_17:
(Start: 4 @12381 has 60 MA's), (11, 12465), (13, 12507), (18, 12603), (23, 12702), (29, 12807), (32, 12849), (33, 12876), (34, 12888), (36, 12936), (44, 13035), (52, 13098), (56, 13143), (68, 13254), (70, 13290),

Gene: Maureen_17 Start: 12447, Stop: 13442, Start Num: 4
Candidate Starts for Maureen_17:
(Start: 4 @12447 has 60 MA's), (6, 12474), (11, 12531), (13, 12573), (18, 12669), (23, 12768), (29, 12873), (32, 12915), (33, 12942), (34, 12954), (36, 13002), (52, 13164), (56, 13209), (68, 13320),

Gene: Moss_18 Start: 13636, Stop: 14622, Start Num: 4
Candidate Starts for Moss_18:
(Start: 4 @13636 has 60 MA's), (14, 13777), (17, 13819), (23, 13957), (26, 14008), (27, 14020), (34, 14143), (35, 14164), (37, 14194), (43, 14281), (46, 14305), (75, 14596), (76, 14605),

Gene: Mudpuppy_18 Start: 13925, Stop: 14917, Start Num: 4
Candidate Starts for Mudpuppy_18:
(Start: 4 @13925 has 60 MA's), (5, 13940), (12, 14030), (19, 14174), (21, 14222), (23, 14246), (33, 14420), (34, 14432), (36, 14480), (59, 14720), (68, 14795),

Gene: Mysterium_18 Start: 13637, Stop: 14623, Start Num: 4
Candidate Starts for Mysterium_18:
(Start: 4 @13637 has 60 MA's), (14, 13778), (17, 13820), (23, 13958), (26, 14009), (27, 14021), (34, 14144), (35, 14165), (37, 14195), (39, 14222), (42, 14258), (46, 14306), (62, 14462), (75, 14597), (76, 14606),

Gene: Niobe_18 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for Niobe_18:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: Nitro_18 Start: 13933, Stop: 14928, Start Num: 4
Candidate Starts for Nitro_18:
(Start: 4 @13933 has 60 MA's), (18, 14155), (19, 14182), (21, 14230), (23, 14254), (33, 14428), (34, 14440), (36, 14488), (49, 14629), (59, 14731), (65, 14776), (68, 14806),

Gene: NoSwimming_20 Start: 16027, Stop: 16992, Start Num: 4
Candidate Starts for NoSwimming_20:
(Start: 4 @16027 has 60 MA's), (14, 16168), (24, 16375), (32, 16480), (34, 16519), (36, 16567), (37, 16570), (40, 16600), (44, 16654), (48, 16690), (51, 16708), (54, 16741), (67, 16858), (68, 16870), (73, 16957),

Gene: Phives_19 Start: 15012, Stop: 16010, Start Num: 4
Candidate Starts for Phives_19:
(Start: 4 @15012 has 60 MA's), (5, 15027), (8, 15069), (11, 15096), (13, 15138), (21, 15309), (23, 15333), (33, 15507), (34, 15519), (35, 15540), (36, 15567), (44, 15669), (49, 15708), (50, 15714), (59, 15813), (68, 15888), (71, 15933),

Gene: Pixelle_18 Start: 13955, Stop: 14953, Start Num: 4
Candidate Starts for Pixelle_18:
(Start: 4 @13955 has 60 MA's), (5, 13970), (8, 14012), (11, 14039), (13, 14081), (19, 14204), (21, 14252), (23, 14276), (33, 14450), (34, 14462), (35, 14483), (36, 14510), (44, 14612), (45, 14618), (49, 14651), (50, 14657), (59, 14756), (68, 14831), (74, 14921),

Gene: Powerpuff_18 Start: 13977, Stop: 14969, Start Num: 4
Candidate Starts for Powerpuff_18:
(Start: 4 @13977 has 60 MA's), (5, 13992), (12, 14082), (19, 14226), (21, 14274), (23, 14298), (33, 14472), (34, 14484), (36, 14532), (49, 14670), (59, 14772),

Gene: PrairieDogTown_19 Start: 15106, Stop: 16071, Start Num: 4
Candidate Starts for PrairieDogTown_19:
(Start: 4 @15106 has 60 MA's), (34, 15598), (36, 15646), (37, 15649), (38, 15655), (67, 15937), (68, 15949),

Gene: Pumpkins_18 Start: 14041, Stop: 15036, Start Num: 4
Candidate Starts for Pumpkins_18:
(Start: 4 @14041 has 60 MA's), (8, 14098), (18, 14263), (19, 14290), (23, 14362), (34, 14548), (36, 14596), (45, 14701), (48, 14731), (65, 14884), (68, 14914),

Gene: RockScotty_18 Start: 13636, Stop: 14622, Start Num: 4
Candidate Starts for RockScotty_18:
(Start: 4 @13636 has 60 MA's), (14, 13777), (17, 13819), (23, 13957), (26, 14008), (27, 14020), (34, 14143), (35, 14164), (37, 14194), (43, 14281), (46, 14305), (69, 14533), (75, 14596), (76, 14605),

Gene: Sabourin_18 Start: 13543, Stop: 14529, Start Num: 4
Candidate Starts for Sabourin_18:
(Start: 4 @13543 has 60 MA's), (14, 13684), (15, 13699), (17, 13726), (23, 13864), (26, 13915), (27, 13927), (34, 14050), (35, 14071), (37, 14101), (39, 14128), (43, 14188), (46, 14212), (76, 14512),

Gene: Schaffner_18 Start: 14028, Stop: 15023, Start Num: 4
Candidate Starts for Schaffner_18:
(Start: 4 @14028 has 60 MA's), (8, 14085), (19, 14277), (23, 14349), (34, 14535), (36, 14583), (45, 14688), (48, 14718), (65, 14871), (68, 14901),

Gene: Scotia_20 Start: 16027, Stop: 16992, Start Num: 4
Candidate Starts for Scotia_20:
(Start: 4 @16027 has 60 MA's), (14, 16168), (24, 16375), (32, 16480), (34, 16519), (36, 16567), (37, 16570), (38, 16576), (40, 16600), (44, 16654), (48, 16690), (51, 16708), (52, 16717), (54, 16741), (67, 16858), (68, 16870), (73, 16957),

Gene: Simpson_20 Start: 13926, Stop: 14918, Start Num: 4
Candidate Starts for Simpson_20:
(Start: 4 @13926 has 60 MA's), (5, 13941), (12, 14031), (19, 14175), (21, 14223), (23, 14247), (33, 14421), (34, 14433), (36, 14481), (49, 14619), (59, 14721),

Gene: Skelbel_19 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for Skelbel_19:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: Sooty_18 Start: 13546, Stop: 14532, Start Num: 4
Candidate Starts for Sooty_18:
(Start: 4 @13546 has 60 MA's), (14, 13687), (15, 13702), (17, 13729), (23, 13867), (26, 13918), (27, 13930), (34, 14053), (35, 14074), (37, 14104), (39, 14131), (43, 14191), (46, 14215), (76, 14515),

Gene: SpecialK_18 Start: 13543, Stop: 14529, Start Num: 4
Candidate Starts for SpecialK_18:
(Start: 4 @13543 has 60 MA's), (14, 13684), (17, 13726), (23, 13864), (26, 13915), (27, 13927), (34, 14050), (35, 14071), (37, 14101), (43, 14188), (46, 14212), (75, 14503), (76, 14512),

Gene: Stuu_18 Start: 13636, Stop: 14622, Start Num: 4
Candidate Starts for Stuu_18:
(Start: 4 @13636 has 60 MA's), (14, 13777), (17, 13819), (23, 13957), (26, 14008), (27, 14020), (34, 14143), (35, 14164), (37, 14194), (46, 14305), (75, 14596), (76, 14605),

Gene: Subaru_19 Start: 13908, Stop: 14900, Start Num: 4
Candidate Starts for Subaru_19:
(1, 13446), (2, 13593), (3, 13716), (Start: 4 @13908 has 60 MA's), (18, 14130), (19, 14157), (21, 14205), (23, 14229), (33, 14403), (34, 14415), (36, 14463), (49, 14601), (50, 14607), (59, 14703), (68, 14778),

Gene: Tallboi_18 Start: 13934, Stop: 14932, Start Num: 4
Candidate Starts for Tallboi_18:
(Start: 4 @13934 has 60 MA's), (13, 14060), (14, 14075), (18, 14156), (21, 14231), (23, 14255), (33, 14429), (34, 14441), (36, 14489), (44, 14591), (49, 14630), (50, 14636), (59, 14735), (68, 14810),

Gene: Tbone_18 Start: 13930, Stop: 14922, Start Num: 4
Candidate Starts for Tbone_18:
(Start: 4 @13930 has 60 MA's), (5, 13945), (12, 14035), (19, 14179), (21, 14227), (23, 14251), (33, 14425), (34, 14437), (36, 14485), (59, 14725), (68, 14800),

Gene: TforTroy_18 Start: 14059, Stop: 15054, Start Num: 4
Candidate Starts for TforTroy_18:
(Start: 4 @14059 has 60 MA's), (19, 14308), (21, 14356), (23, 14380), (32, 14527), (34, 14566), (36, 14614), (45, 14719), (48, 14749), (65, 14902), (68, 14932),

Gene: ThursdayNight_16 Start: 12673, Stop: 13659, Start Num: 4
Candidate Starts for ThursdayNight_16:
(Start: 4 @12673 has 60 MA's), (12, 12778), (14, 12814), (18, 12895), (23, 12994), (26, 13045), (27, 13057), (30, 13126), (34, 13180), (36, 13228), (41, 13279), (53, 13399), (57, 13441), (73, 13624),

Gene: Tian_18 Start: 13952, Stop: 14950, Start Num: 4
Candidate Starts for Tian_18:
(Start: 4 @13952 has 60 MA's), (5, 13967), (8, 14009), (11, 14036), (13, 14078), (19, 14201), (21, 14249), (23, 14273), (33, 14447), (34, 14459), (35, 14480), (36, 14507), (44, 14609), (49, 14648), (50, 14654), (59, 14753), (68, 14828),

Gene: Tuck_19 Start: 15131, Stop: 16126, Start Num: 4
Candidate Starts for Tuck_19:
(Start: 4 @15131 has 60 MA's), (8, 15188), (19, 15380), (21, 15428), (23, 15452), (33, 15626), (34, 15638), (36, 15686), (49, 15824), (50, 15830), (52, 15848), (59, 15929), (68, 16004),

Gene: Turab_18 Start: 13937, Stop: 14929, Start Num: 4
Candidate Starts for Turab_18:
(Start: 4 @13937 has 60 MA's), (18, 14159), (19, 14186), (21, 14234), (23, 14258), (33, 14432), (34, 14444), (36, 14492), (45, 14597), (59, 14732), (61, 14747), (68, 14807),

Gene: Tutumahutu_18 Start: 13977, Stop: 14969, Start Num: 4
Candidate Starts for Tutumahutu_18:
(Start: 4 @13977 has 60 MA's), (5, 13992), (12, 14082), (19, 14226), (21, 14274), (23, 14298), (33, 14472), (34, 14484), (36, 14532), (59, 14772),

Gene: Warda_18 Start: 13922, Stop: 14914, Start Num: 4
Candidate Starts for Warda_18:
(Start: 4 @13922 has 60 MA's), (5, 13937), (12, 14027), (19, 14171), (21, 14219), (23, 14243), (33, 14417), (34, 14429), (36, 14477), (49, 14615), (59, 14717), (68, 14792),

Gene: Yang_18 Start: 14030, Stop: 15025, Start Num: 4
Candidate Starts for Yang_18:
(Start: 4 @14030 has 60 MA's), (8, 14087), (19, 14279), (21, 14327), (23, 14351), (34, 14537), (36, 14585), (45, 14690), (68, 14903),

Gene: YesChef_18 Start: 13977, Stop: 14969, Start Num: 4
Candidate Starts for YesChef_18:
(Start: 4 @13977 has 60 MA's), (5, 13992), (12, 14082), (19, 14226), (21, 14274), (23, 14298), (33, 14472), (34, 14484), (36, 14532), (49, 14670), (59, 14772),

Gene: pZL12_49c Start: 38471, Stop: 37530, Start Num: 4
Candidate Starts for pZL12_49c:
(Start: 4 @38471 has 60 MA's), (5, 38456), (10, 38405), (19, 38228), (20, 38189), (22, 38174), (28, 38099), (34, 38003), (36, 37955), (50, 37820), (58, 37736), (60, 37730), (63, 37691), (73, 37565),