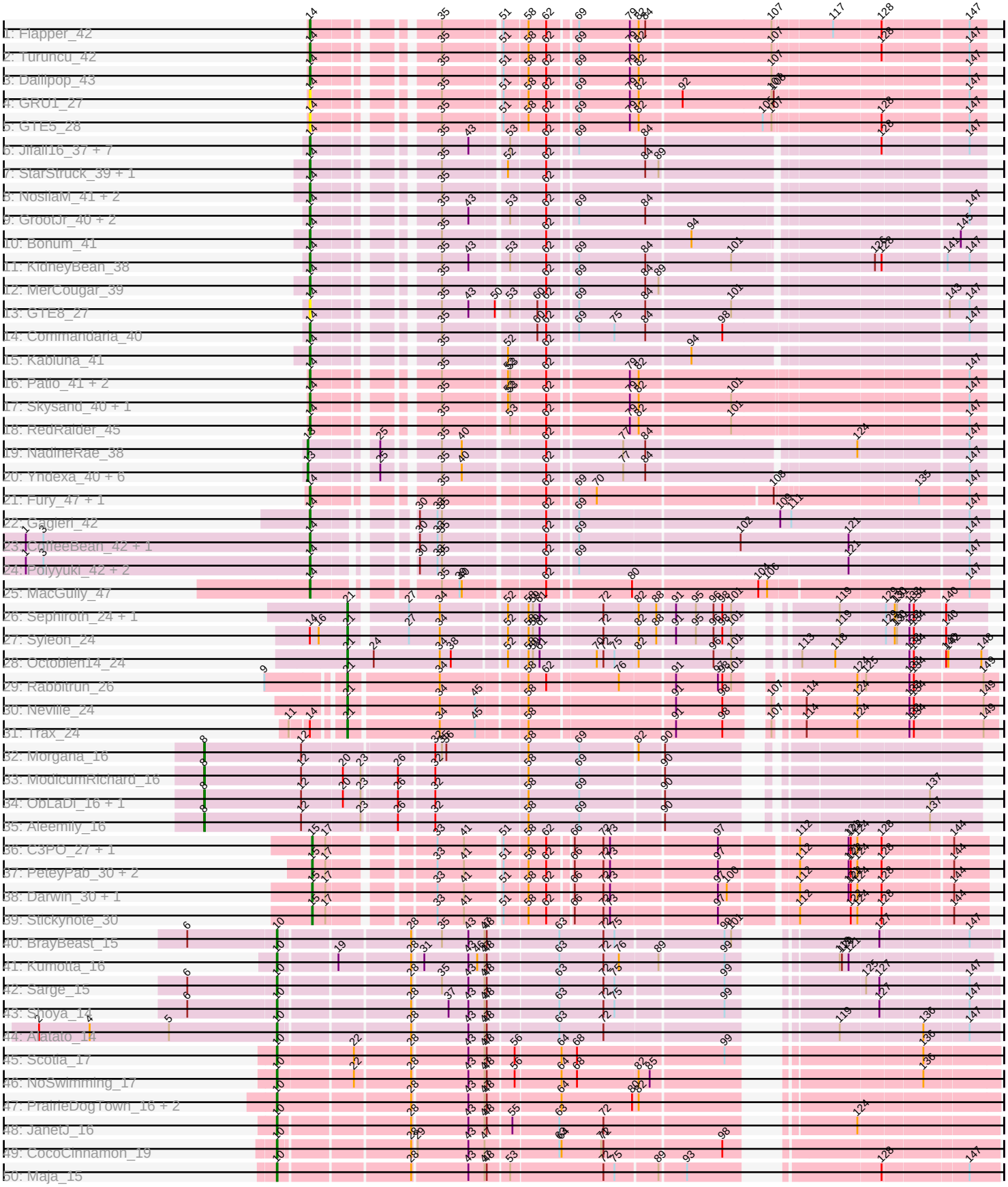
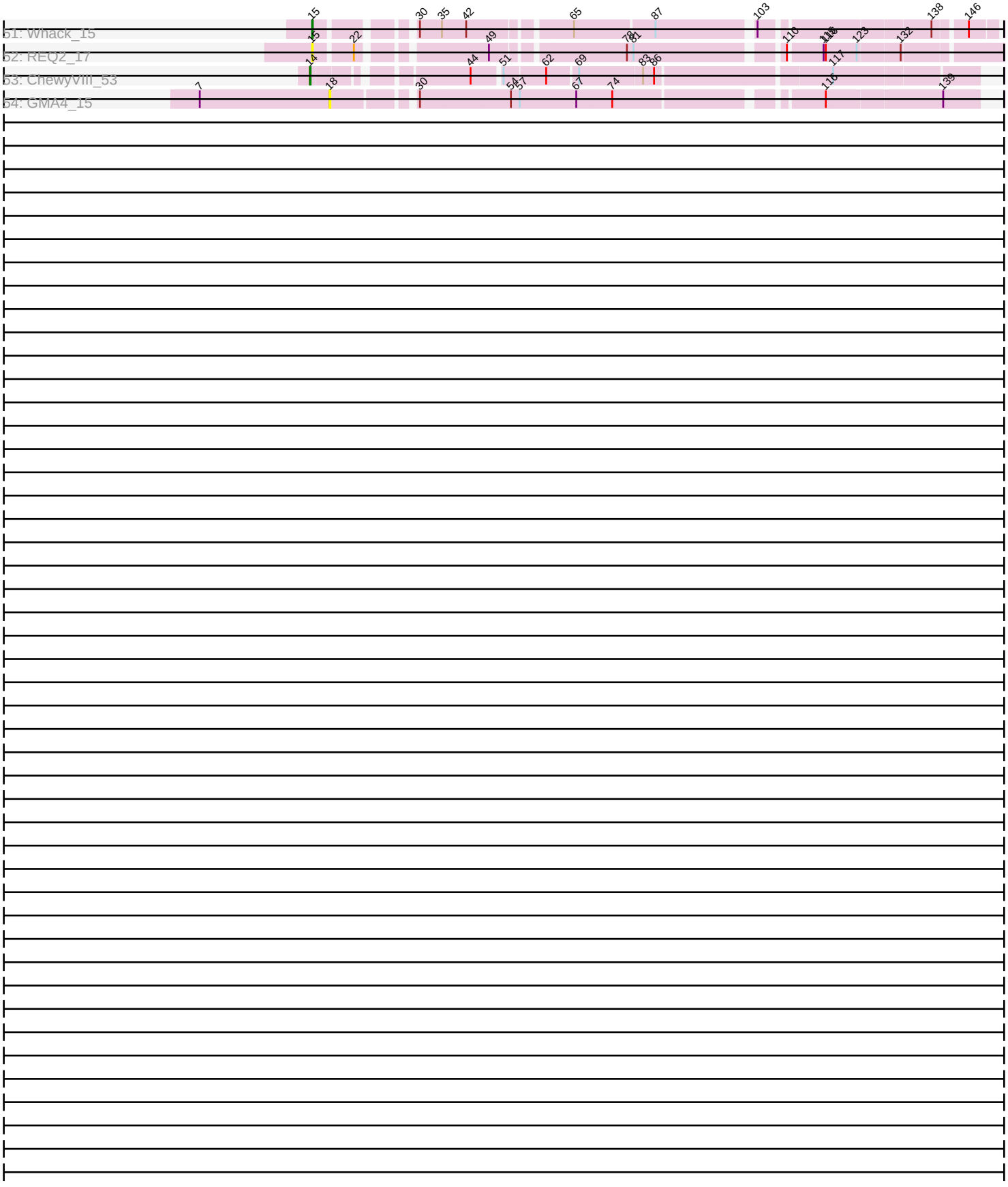
Pham 294634


1: Flapper_42
2: Turuncu_42
3: Dallpop_43
4: GRU1_27
5: GTE5_28
6: Jiaji16_37 + 7
7: StarStruck_39 + 1
8: NosilaM_41 + 2
9: GrootJr_40 + 2
10: Bonum_41
11: KidneyBean_38
12: MerCougar_39
13: GTE8_27
14: Commandaria_40
15: Kabluna_41
16: Patio_41 + 2
17: Skysand_40 + 1
18: RedRaider_45
19: NadineRae_38
20: Yndexa_40 + 6
21: Fury_47 + 1
22: Gaglen_42
23: CoffeeBean_42 + 1
24: Polyyuki_42 + 2
25: MacGully_47
26: Sephiroth_24 + 1
27: Syleon_24
28: Octobien14_24
29: Rabbitrun_26
30: Neville_24
31: Trax_24
32: Morgana_16
33: ModicumRichard_16
34: ObLaDi_16 + 1
35: Aleemily_16
36: C3PO_27 + 1
37: PeteyPab_30 + 2
38: Darwin_30 + 1
39: Stickynote_30
40: BrayBeast_15
41: Kumotta_16
42: Sarge_15
43: Shoya_14
44: Alatato_14
45: Scotia_17
46: NoSwimming_17
47: PrairieDogTown_16 + 2
48: JanetJ_16
49: CocoCinnamon_19
50: Maja_15

Pham 294634


51: Whack_15
52: REQ2_17
53: ChewyVIII_53
54: GMA4_15
15
30
35
42
65
87
103
138
146
15
22
49
78
81
110
123
132
14
44
51
62
69
83
86
117
7
18
30
54
57
67
74
116
139

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 294634 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294634 has 87 members, 5 are drafts.

Phages represented in each track:
- Track 1 : Flapper_42
- Track 2 : Turuncu_42
- Track 3 : Dalilpop_43
- Track 4 : GRU1_27
- Track 5 : GTE5_28
- Track 6 : Jifall16_37, Foxboro_39, NatB6_37, Wheezy_38, Tracker_38, Kurt_38, Phomeo_37, Emianna_38
- Track 7 : StarStruck_39, Outis_39
- Track 8 : NosilaM_41, Buggaboo_39, SuperSulley_39
- Track 9 : GrootJr_40, NovumRegina_38, Arti_38
- Track 10 : Bonum_41
- Track 11 : KidneyBean_38
- Track 12 : MerCougar_39
- Track 13 : GTE8_27
- Track 14 : Commandaria_40
- Track 15 : Kabluna_41
- Track 16 : Patio_41, Ennea_44, Lollipop1437_43
- Track 17 : Skysand_40, Float294_40
- Track 18 : RedRaider_45
- Track 19 : NadineRae_38
- Track 20 : Yndexa_40, BiPauneto_41, HubbaBubba_36, Sukkupi_40, IDyn_39, WhoseManz_40, Marietta_40
- Track 21 : Fury_47, Pleakley_47
- Track 22 : Gagieri_42
- Track 23 : CoffeeBean_42, Maselop_42
- Track 24 : Polyyuki_42, Apiary_42, Braxoaddie_42
- Track 25 : MacGully_47
- Track 26 : Sephiroth_24, Kudefre_23
- Track 27 : Syleon_24
- Track 28 : Octobien14_24
- Track 29 : Rabbitrun_26
- Track 30 : Neville_24
- Track 31 : Trax_24
- Track 32 : Morgana_16
- Track 33 : ModicumRichard_16
- Track 34 : ObLaDi_16, Cafasso_16
- Track 35 : Aleemily_16

• Track 36 : C3PO_27, Cruella_28
• Track 37 : PeteyPab_30, PotatoChip_30, Zion_30
• Track 38 : Darwin_30, Kimchi1738_28
• Track 39 : Stickynote_30
• Track 40 : BrayBeast_15
• Track 41 : Kumotta_16
• Track 42 : Sarge_15
• Track 43 : Shoya_14
• Track 44 : Alatato_14
• Track 45 : Scotia_17
• Track 46 : NoSwimming_17
• Track 47 : PrairieDogTown_16, Aoka_16, EvenBluerMoon_16
• Track 48 : JanetJ_16
• Track 49 : CocoCinnamon_19
• Track 50 : Maja_15
• Track 51 : Whack_15
• Track 52 : REQ2_17
• Track 53 : ChewyVIII_53
• Track 54 : GMA4_15

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

The start number called the most often in the published annotations is 14, it was called in 40 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Apiary_42, Arti_38, Bonum_41, Braxoaddie_42, Buggaboo_39, ChewyVIII_53, CoffeeBean_42, Commandaria_40, Dalilpop_43, Emianna_38, Ennea_44, Flapper_42, Float294_40, Foxboro_39, Fury_47, GRU1_27, GTE5_28, GTE8_27, Gagieri_42, GrootJr_40, Jifall16_37, Kabluna_41, KidneyBean_38, Kurt_38, Lollipop1437_43, MacGully_47, Maselop_42, MerCougar_39, NatB6_37, NosilaM_41, NovumRegina_38, Outis_39, Patio_41, Phomeo_37, Pleakley_47, Polyyuki_42, RedRaider_45, Skysand_40, StarStruck_39, SuperSulley_39, Tracker_38, Turuncu_42, Wheezy_38,

Genes that have the "Most Annotated" start but do not call it:
• Syleon_24, Trax_24,

Genes that do not have the "Most Annotated" start:
• Alatato_14, Aleemily_16, Aoka_16, BiPauneto_41, BrayBeast_15, C3PO_27, Cafasso_16, CocoCinnamon_19, Cruella_28, Darwin_30, EvenBluerMoon_16, GMA4_15, HubbaBubba_36, IDyn_39, JanetJ_16, Kimchi1738_28, Kudefre_23, Kumotta_16, Maja_15, Marietta_40, ModicumRichard_16, Morgana_16, NadineRae_38, Neville_24, NoSwimming_17, ObLaDi_16, Octobien14_24, PeteyPab_30, PotatoChip_30, PrairieDogTown_16, REQ2_17, Rabbitrun_26, Sarge_15, Scotia_17, Sephiroth_24, Shoya_14, Stickynote_30, Sukkupi_40, Whack_15, WhoseManz_40, Yndexa_40, Zion_30,

Summary by start number:

Start 8:
• Found in 5 of 87 (5.7%) of genes in pham
• Manual Annotations of this start: 5 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aleemily_16 (DZ), Cafasso_16 (DZ), ModicumRichard_16 (DZ), Morgana_16 (DZ), ObLaDi_16 (DZ),

Start 10:
• Found in 13 of 87 (14.9%) of genes in pham
• Manual Annotations of this start: 13 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alatato_14 (FB), Aoka_16 (FO), BrayBeast_15 (FB), CocoCinnamon_19 (FO), EvenBluerMoon_16 (FO), JanetJ_16 (FO), Kumotta_16 (FB), Maja_15 (FO), NoSwimming_17 (FO), PrairieDogTown_16 (FO), Sarge_15 (FB), Scotia_17 (FO), Shoya_14 (FB),

Start 13:
• Found in 8 of 87 (9.2%) of genes in pham
• Manual Annotations of this start: 8 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BiPauneto_41 (CR4), HubbaBubba_36 (CR4), IDyn_39 (CR4), Marietta_40 (CR4), NadineRae_38 (CR4), Sukkupi_40 (CR4), WhoseManz_40 (CR4), Yndexa_40 (CR4),

Start 14:
• Found in 45 of 87 (51.7%) of genes in pham
• Manual Annotations of this start: 40 of 82
• Called 95.6% of time when present
• Phage (with cluster) where this start called: Apiary_42 (CR6), Arti_38 (CR2), Bonum_41 (CR2), Braxoaddie_42 (CR6), Buggaboo_39 (CR2), ChewyVIII_53 (singleton), CoffeeBean_42 (CR6), Commandaria_40 (CR2), Dalilpop_43 (CR1), Emianna_38 (CR2), Ennea_44 (CR3), Flapper_42 (CR1), Float294_40 (CR3), Foxboro_39 (CR2), Fury_47 (CR5), GRU1_27 (CR1), GTE5_28 (CR1), GTE8_27 (CR2), Gagieri_42 (CR6), GrootJr_40 (CR2), Jifall16_37 (CR2), Kabluna_41 (CR2), KidneyBean_38 (CR2), Kurt_38 (CR2), Lollipop1437_43 (CR3), MacGully_47 (CR7), Maselop_42 (CR6), MerCougar_39 (CR2), NatB6_37 (CR2), NosilaM_41 (CR2), NovumRegina_38 (CR2), Outis_39 (CR2), Patio_41 (CR3), Phomeo_37 (CR2), Pleakley_47 (CR5), Polyyuki_42 (CR6), RedRaider_45 (CR3), Skysand_40 (CR3), StarStruck_39 (CR2), SuperSulley_39 (CR2), Tracker_38 (CR2), Turuncu_42 (CR1), Wheezy_38 (CR2),

Start 15:
• Found in 10 of 87 (11.5%) of genes in pham
• Manual Annotations of this start: 9 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: C3PO_27 (EN), Cruella_28 (EN), Darwin_30 (EN), Kimchi1738_28 (EN), PeteyPab_30 (EN), PotatoChip_30 (EN), REQ2_17 (singleton), Stickynote_30 (EN), Whack_15 (singleton), Zion_30 (EN),

Start 18:
• Found in 1 of 87 (1.1%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present

• Phage (with cluster) where this start called: GMA4_15 (singleton),

Start 21:
• Found in 7 of 87 (8.0%) of genes in pham
• Manual Annotations of this start: 7 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kudefre_23 (DU1), Neville_24 (DU2), Octobien14_24 (DU1), Rabbitrun_26 (DU2), Sephiroth_24 (DU1), Syleon_24 (DU1), Trax_24 (DU2),

Summary by clusters:

There are 14 clusters represented in this pham: CR2, CR3, singleton, EN, CR6, CR7, CR4, CR5, FB, CR1, DZ, DU1, DU2, FO,

Info for manual annotations of cluster CR1:
•Start number 14 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:
•Start number 14 was manually annotated 21 times for cluster CR2.

Info for manual annotations of cluster CR3:
•Start number 14 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:
•Start number 13 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:
•Start number 14 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:
•Start number 14 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster CR7:
•Start number 14 was manually annotated 1 time for cluster CR7.

Info for manual annotations of cluster DU1:
•Start number 21 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:
•Start number 21 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster DZ:
•Start number 8 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster EN:
•Start number 15 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster FB:
•Start number 10 was manually annotated 5 times for cluster FB.

Info for manual annotations of cluster FO:
•Start number 10 was manually annotated 8 times for cluster FO.

Gene Information:

Gene: Alatato_14 Start: 8514, Stop: 9367, Start Num: 10
Candidate Starts for Alatato_14:
(2, 8190), (4, 8259), (5, 8367), (Start: 10 @8514 has 13 MA's), (28, 8676), (43, 8748), (47, 8769), (48, 8772), (63, 8862), (72, 8922), (119, 9165), (136, 9270), (147, 9327),

Gene: Aleemily_16 Start: 9981, Stop: 10933, Start Num: 8
Candidate Starts for Aleemily_16:
(Start: 8 @9981 has 5 MA's), (12, 10113), (23, 10191), (26, 10233), (32, 10278), (58, 10401), (69, 10470), (90, 10575), (137, 10866),

Gene: Aoka_16 Start: 10072, Stop: 10934, Start Num: 10
Candidate Starts for Aoka_16:
(Start: 10 @10072 has 13 MA's), (28, 10243), (43, 10315), (47, 10336), (48, 10339), (64, 10432), (80, 10528), (82, 10534),

Gene: Apiary_42 Start: 24321, Stop: 25141, Start Num: 14
Candidate Starts for Apiary_42:
(1, 23934), (3, 23958), (Start: 14 @24321 has 40 MA's), (30, 24420), (33, 24444), (35, 24450), (62, 24576), (69, 24609), (121, 24963), (147, 25116),

Gene: Arti_38 Start: 22581, Stop: 23383, Start Num: 14
Candidate Starts for Arti_38:
(Start: 14 @22581 has 40 MA's), (35, 22713), (43, 22749), (53, 22794), (62, 22839), (69, 22872), (84, 22962), (147, 23361),

Gene: BiPauneto_41 Start: 22337, Stop: 23145, Start Num: 13
Candidate Starts for BiPauneto_41:
(Start: 13 @22337 has 8 MA's), (25, 22412), (35, 22472), (40, 22499), (62, 22598), (77, 22691), (84, 22721), (147, 23123),

Gene: Bonum_41 Start: 22920, Stop: 23722, Start Num: 14
Candidate Starts for Bonum_41:
(Start: 14 @22920 has 40 MA's), (35, 23052), (62, 23178), (94, 23358), (145, 23688),

Gene: Braxoaddie_42 Start: 24310, Stop: 25130, Start Num: 14
Candidate Starts for Braxoaddie_42:
(1, 23923), (3, 23947), (Start: 14 @24310 has 40 MA's), (30, 24409), (33, 24433), (35, 24439), (62, 24565), (69, 24598), (121, 24952), (147, 25105),

Gene: BrayBeast_15 Start: 8914, Stop: 9761, Start Num: 10
Candidate Starts for BrayBeast_15:
(6, 8797), (Start: 10 @8914 has 13 MA's), (28, 9076), (35, 9112), (43, 9148), (47, 9169), (48, 9172), (63, 9262), (72, 9322), (75, 9337), (99, 9475), (101, 9484), (127, 9613), (147, 9724),

Gene: Buggaboo_39 Start: 23405, Stop: 24210, Start Num: 14
Candidate Starts for Buggaboo_39:
(Start: 14 @23405 has 40 MA's), (35, 23537), (62, 23663),

Gene: C3PO_27 Start: 20302, Stop: 21122, Start Num: 15
Candidate Starts for C3PO_27:
(Start: 15 @20302 has 9 MA's), (17, 20320), (33, 20440), (41, 20476), (51, 20521), (58, 20551), (62, 20575), (66, 20602), (72, 20641), (73, 20650), (97, 20788), (112, 20878), (121, 20944), (122, 20947), (124, 20956), (128, 20989), (144, 21076),

Gene: Cafasso_16 Start: 9969, Stop: 10921, Start Num: 8
Candidate Starts for Cafasso_16:
(Start: 8 @9969 has 5 MA's), (12, 10101), (20, 10155), (23, 10179), (26, 10221), (32, 10266), (58, 10389), (69, 10458), (90, 10563), (137, 10854),

Gene: ChewyVIII_53 Start: 31497, Stop: 32314, Start Num: 14
Candidate Starts for ChewyVIII_53:
(Start: 14 @31497 has 40 MA's), (44, 31674), (51, 31710), (62, 31764), (69, 31803), (83, 31887), (86, 31902), (117, 32127),

Gene: CocoCinnamon_19 Start: 10261, Stop: 11117, Start Num: 10
Candidate Starts for CocoCinnamon_19:
(Start: 10 @10261 has 13 MA's), (28, 10423), (29, 10426), (43, 10495), (47, 10516), (63, 10609), (64, 10612), (71, 10666), (72, 10669), (98, 10822),

Gene: CoffeeBean_42 Start: 24265, Stop: 25088, Start Num: 14
Candidate Starts for CoffeeBean_42:
(1, 23878), (3, 23902), (Start: 14 @24265 has 40 MA's), (30, 24364), (33, 24388), (35, 24394), (62, 24520), (69, 24553), (102, 24763), (121, 24910), (147, 25063),

Gene: Commandaria_40 Start: 23900, Stop: 24714, Start Num: 14
Candidate Starts for Commandaria_40:
(Start: 14 @23900 has 40 MA's), (35, 24032), (60, 24146), (62, 24158), (69, 24191), (75, 24239), (84, 24281), (98, 24380), (147, 24692),

Gene: Cruella_28 Start: 20302, Stop: 21122, Start Num: 15
Candidate Starts for Cruella_28:
(Start: 15 @20302 has 9 MA's), (17, 20320), (33, 20440), (41, 20476), (51, 20521), (58, 20551), (62, 20575), (66, 20602), (72, 20641), (73, 20650), (97, 20788), (112, 20878), (121, 20944), (122, 20947), (124, 20956), (128, 20989), (144, 21076),

Gene: Dalilpop_43 Start: 24905, Stop: 25716, Start Num: 14
Candidate Starts for Dalilpop_43:
(Start: 14 @24905 has 40 MA's), (35, 25037), (51, 25109), (58, 25139), (62, 25163), (69, 25196), (79, 25265), (82, 25277), (107, 25451), (147, 25694),

Gene: Darwin_30 Start: 19987, Stop: 20807, Start Num: 15
Candidate Starts for Darwin_30:
(Start: 15 @19987 has 9 MA's), (17, 20005), (33, 20125), (41, 20161), (51, 20206), (58, 20236), (62, 20260), (66, 20287), (72, 20326), (73, 20335), (97, 20473), (100, 20485), (112, 20563), (121, 20629), (122, 20632), (124, 20641), (128, 20674), (144, 20761),

Gene: Emianna_38 Start: 23597, Stop: 24402, Start Num: 14
Candidate Starts for Emianna_38:
(Start: 14 @23597 has 40 MA's), (35, 23729), (43, 23765), (53, 23810), (62, 23855), (69, 23888), (84, 23978), (128, 24272), (147, 24380),

Gene: Ennea_44 Start: 24223, Stop: 25034, Start Num: 14
Candidate Starts for Ennea_44:
(Start: 14 @24223 has 40 MA's), (35, 24355), (52, 24433), (53, 24436), (62, 24481), (79, 24583), (82, 24595), (147, 25012),

Gene: EvenBluerMoon_16 Start: 10107, Stop: 10969, Start Num: 10
Candidate Starts for EvenBluerMoon_16:
(Start: 10 @10107 has 13 MA's), (28, 10278), (43, 10350), (47, 10371), (48, 10374), (64, 10467), (80, 10563), (82, 10569),

Gene: Flapper_42 Start: 23966, Stop: 24777, Start Num: 14
Candidate Starts for Flapper_42:
(Start: 14 @23966 has 40 MA's), (35, 24098), (51, 24170), (58, 24200), (62, 24224), (69, 24257), (79, 24326), (82, 24338), (84, 24347), (107, 24512), (117, 24584), (128, 24647), (147, 24755),

Gene: Float294_40 Start: 23662, Stop: 24473, Start Num: 14
Candidate Starts for Float294_40:
(Start: 14 @23662 has 40 MA's), (35, 23794), (52, 23872), (53, 23875), (62, 23920), (79, 24022), (82, 24034), (101, 24154), (147, 24451),

Gene: Foxboro_39 Start: 24103, Stop: 24908, Start Num: 14
Candidate Starts for Foxboro_39:
(Start: 14 @24103 has 40 MA's), (35, 24235), (43, 24271), (53, 24316), (62, 24361), (69, 24394), (84, 24484), (128, 24778), (147, 24886),

Gene: Fury_47 Start: 23325, Stop: 24127, Start Num: 14
Candidate Starts for Fury_47:
(Start: 14 @23325 has 40 MA's), (35, 23457), (62, 23583), (69, 23616), (70, 23640), (108, 23868), (135, 24042), (147, 24105),

Gene: GMA4_15 Start: 9946, Stop: 10748, Start Num: 18
Candidate Starts for GMA4_15:
(7, 9769), (18, 9946), (30, 10039), (54, 10159), (57, 10171), (67, 10246), (74, 10294), (116, 10546), (139, 10699),

Gene: GRU1_27 Start: 15854, Stop: 16665, Start Num: 14
Candidate Starts for GRU1_27:
(Start: 14 @15854 has 40 MA's), (35, 15986), (51, 16058), (58, 16088), (62, 16112), (69, 16145), (79, 16214), (82, 16226), (92, 16280), (107, 16400), (108, 16403), (147, 16643),

Gene: GTE5_28 Start: 16818, Stop: 17629, Start Num: 14
Candidate Starts for GTE5_28:
(Start: 14 @16818 has 40 MA's), (35, 16950), (51, 17022), (58, 17052), (62, 17076), (69, 17109), (79, 17178), (82, 17190), (105, 17352), (107, 17364), (128, 17499), (147, 17607),

Gene: GTE8_27 Start: 16862, Stop: 17667, Start Num: 14
Candidate Starts for GTE8_27:
(Start: 14 @16862 has 40 MA's), (35, 16994), (43, 17030), (50, 17063), (53, 17075), (60, 17108), (62, 17120), (69, 17153), (84, 17243), (101, 17354), (143, 17618), (147, 17645),

Gene: Gagieri_42 Start: 24140, Stop: 24963, Start Num: 14
Candidate Starts for Gagieri_42:

(Start: 14 @24140 has 40 MA's), (30, 24239), (33, 24263), (35, 24269), (62, 24395), (69, 24428), (109, 24692), (111, 24707), (147, 24938),

Gene: GrootJr_40 Start: 22976, Stop: 23778, Start Num: 14
Candidate Starts for GrootJr_40:
(Start: 14 @22976 has 40 MA's), (35, 23108), (43, 23144), (53, 23189), (62, 23234), (69, 23267), (84, 23357), (147, 23756),

Gene: HubbaBubba_36 Start: 19355, Stop: 20163, Start Num: 13
Candidate Starts for HubbaBubba_36:
(Start: 13 @19355 has 8 MA's), (25, 19430), (35, 19490), (40, 19517), (62, 19616), (77, 19709), (84, 19739), (147, 20141),

Gene: IDyn_39 Start: 20751, Stop: 21559, Start Num: 13
Candidate Starts for IDyn_39:
(Start: 13 @20751 has 8 MA's), (25, 20826), (35, 20886), (40, 20913), (62, 21012), (77, 21105), (84, 21135), (147, 21537),

Gene: JanetJ_16 Start: 9891, Stop: 10747, Start Num: 10
Candidate Starts for JanetJ_16:
(Start: 10 @9891 has 13 MA's), (28, 10056), (43, 10128), (47, 10149), (48, 10152), (55, 10182), (63, 10242), (72, 10302), (124, 10569),

Gene: Jifall16_37 Start: 23251, Stop: 24056, Start Num: 14
Candidate Starts for Jifall16_37:
(Start: 14 @23251 has 40 MA's), (35, 23383), (43, 23419), (53, 23464), (62, 23509), (69, 23542), (84, 23632), (128, 23926), (147, 24034),

Gene: Kabluna_41 Start: 22320, Stop: 23125, Start Num: 14
Candidate Starts for Kabluna_41:
(Start: 14 @22320 has 40 MA's), (35, 22452), (52, 22530), (62, 22578), (94, 22758),

Gene: KidneyBean_38 Start: 23375, Stop: 24177, Start Num: 14
Candidate Starts for KidneyBean_38:
(Start: 14 @23375 has 40 MA's), (35, 23507), (43, 23543), (53, 23588), (62, 23633), (69, 23666), (84, 23756), (101, 23867), (126, 24038), (128, 24047), (141, 24125), (147, 24155),

Gene: Kimchi1738_28 Start: 19390, Stop: 20210, Start Num: 15
Candidate Starts for Kimchi1738_28:
(Start: 15 @19390 has 9 MA's), (17, 19408), (33, 19528), (41, 19564), (51, 19609), (58, 19639), (62, 19663), (66, 19690), (72, 19729), (73, 19738), (97, 19876), (100, 19888), (112, 19966), (121, 20032), (122, 20035), (124, 20044), (128, 20077), (144, 20164),

Gene: Kudefre_23 Start: 13087, Stop: 13844, Start Num: 21
Candidate Starts for Kudefre_23:
(Start: 21 @13087 has 7 MA's), (27, 13156), (34, 13198), (52, 13279), (58, 13303), (59, 13309), (61, 13318), (72, 13396), (82, 13441), (88, 13465), (91, 13486), (95, 13513), (96, 13537), (98, 13549), (101, 13561), (119, 13654), (129, 13714), (130, 13726), (131, 13729), (133, 13744), (134, 13750), (140, 13789),

Gene: Kumotta_16 Start: 9768, Stop: 10615, Start Num: 10
Candidate Starts for Kumotta_16:

(Start: 10 @9768 has 13 MA's), (19, 9840), (28, 9933), (31, 9945), (43, 10005), (46, 10017), (47, 10026), (48, 10029), (63, 10119), (72, 10179), (76, 10200), (89, 10251), (99, 10335), (119, 10422), (120, 10425), (121, 10434),

Gene: Kurt_38 Start: 23612, Stop: 24417, Start Num: 14
Candidate Starts for Kurt_38:
(Start: 14 @23612 has 40 MA's), (35, 23744), (43, 23780), (53, 23825), (62, 23870), (69, 23903), (84, 23993), (128, 24287), (147, 24395),

Gene: Lollipop1437_43 Start: 24211, Stop: 25022, Start Num: 14
Candidate Starts for Lollipop1437_43:
(Start: 14 @24211 has 40 MA's), (35, 24343), (52, 24421), (53, 24424), (62, 24469), (79, 24571), (82, 24583), (147, 25000),

Gene: MacGully_47 Start: 24813, Stop: 25627, Start Num: 14
Candidate Starts for MacGully_47:
(Start: 14 @24813 has 40 MA's), (35, 24942), (39, 24966), (40, 24969), (62, 25068), (80, 25173), (104, 25335), (106, 25347), (147, 25602),

Gene: Maja_15 Start: 9389, Stop: 10245, Start Num: 10
Candidate Starts for Maja_15:
(Start: 10 @9389 has 13 MA's), (28, 9554), (43, 9626), (47, 9647), (48, 9650), (53, 9677), (72, 9800), (75, 9815), (89, 9869), (93, 9902), (128, 10097), (147, 10205),

Gene: Marietta_40 Start: 20667, Stop: 21475, Start Num: 13
Candidate Starts for Marietta_40:
(Start: 13 @20667 has 8 MA's), (25, 20742), (35, 20802), (40, 20829), (62, 20928), (77, 21021), (84, 21051), (147, 21453),

Gene: Maselop_42 Start: 24341, Stop: 25164, Start Num: 14
Candidate Starts for Maselop_42:
(1, 23954), (3, 23978), (Start: 14 @24341 has 40 MA's), (30, 24440), (33, 24464), (35, 24470), (62, 24596), (69, 24629), (102, 24839), (121, 24986), (147, 25139),

Gene: MerCougar_39 Start: 23519, Stop: 24324, Start Num: 14
Candidate Starts for MerCougar_39:
(Start: 14 @23519 has 40 MA's), (35, 23651), (62, 23777), (69, 23810), (84, 23900), (89, 23918),

Gene: ModicumRichard_16 Start: 9969, Stop: 10921, Start Num: 8
Candidate Starts for ModicumRichard_16:
(Start: 8 @9969 has 5 MA's), (12, 10101), (20, 10155), (23, 10179), (26, 10221), (32, 10266), (58, 10389), (69, 10458), (90, 10563),

Gene: Morgana_16 Start: 9973, Stop: 10925, Start Num: 8
Candidate Starts for Morgana_16:
(Start: 8 @9973 has 5 MA's), (12, 10105), (32, 10270), (35, 10279), (36, 10285), (58, 10393), (69, 10462), (82, 10537), (90, 10567),

Gene: NadineRae_38 Start: 19914, Stop: 20722, Start Num: 13
Candidate Starts for NadineRae_38:
(Start: 13 @19914 has 8 MA's), (25, 19989), (35, 20049), (40, 20076), (62, 20175), (77, 20268), (84, 20298), (124, 20562), (147, 20700),

Gene: NatB6_37 Start: 22648, Stop: 23453, Start Num: 14
Candidate Starts for NatB6_37:
(Start: 14 @22648 has 40 MA's), (35, 22780), (43, 22816), (53, 22861), (62, 22906), (69, 22939), (84, 23029), (128, 23323), (147, 23431),

Gene: Neville_24 Start: 14339, Stop: 15126, Start Num: 21
Candidate Starts for Neville_24:
(Start: 21 @14339 has 7 MA's), (34, 14456), (45, 14504), (58, 14564), (91, 14747), (98, 14810), (107, 14846), (114, 14876), (124, 14945), (133, 15011), (134, 15017), (149, 15107),

Gene: NoSwimming_17 Start: 11047, Stop: 11906, Start Num: 10
Candidate Starts for NoSwimming_17:
(Start: 10 @11047 has 13 MA's), (22, 11143), (28, 11215), (43, 11287), (47, 11308), (48, 11311), (56, 11344), (64, 11404), (68, 11425), (82, 11506), (85, 11521), (136, 11809),

Gene: NosilaM_41 Start: 23217, Stop: 24022, Start Num: 14
Candidate Starts for NosilaM_41:
(Start: 14 @23217 has 40 MA's), (35, 23349), (62, 23475),

Gene: NovumRegina_38 Start: 22975, Stop: 23777, Start Num: 14
Candidate Starts for NovumRegina_38:
(Start: 14 @22975 has 40 MA's), (35, 23107), (43, 23143), (53, 23188), (62, 23233), (69, 23266), (84, 23356), (147, 23755),

Gene: ObLaDi_16 Start: 9957, Stop: 10909, Start Num: 8
Candidate Starts for ObLaDi_16:
(Start: 8 @9957 has 5 MA's), (12, 10089), (20, 10143), (23, 10167), (26, 10209), (32, 10254), (58, 10377), (69, 10446), (90, 10551), (137, 10842),

Gene: Octobien14_24 Start: 14131, Stop: 14903, Start Num: 21
Candidate Starts for Octobien14_24:
(Start: 21 @14131 has 7 MA's), (24, 14167), (34, 14257), (38, 14272), (52, 14338), (58, 14362), (59, 14368), (61, 14377), (70, 14446), (72, 14455), (75, 14470), (82, 14500), (96, 14596), (101, 14620), (113, 14662), (118, 14707), (133, 14803), (134, 14809), (140, 14848), (142, 14851), (148, 14896),

Gene: Outis_39 Start: 23207, Stop: 24012, Start Num: 14
Candidate Starts for Outis_39:
(Start: 14 @23207 has 40 MA's), (35, 23339), (52, 23417), (62, 23465), (84, 23588), (89, 23606),

Gene: Patio_41 Start: 23447, Stop: 24258, Start Num: 14
Candidate Starts for Patio_41:
(Start: 14 @23447 has 40 MA's), (35, 23579), (52, 23657), (53, 23660), (62, 23705), (79, 23807), (82, 23819), (147, 24236),

Gene: PeteyPab_30 Start: 21147, Stop: 21967, Start Num: 15
Candidate Starts for PeteyPab_30:
(Start: 15 @21147 has 9 MA's), (17, 21165), (33, 21285), (41, 21321), (51, 21366), (58, 21396), (62, 21420), (66, 21447), (72, 21486), (73, 21495), (97, 21633), (112, 21723), (121, 21789), (122, 21792), (124, 21801), (128, 21834), (144, 21921),

Gene: Phomeo_37 Start: 23247, Stop: 24052, Start Num: 14
Candidate Starts for Phomeo_37:

(Start: 14 @23247 has 40 MA's), (35, 23379), (43, 23415), (53, 23460), (62, 23505), (69, 23538), (84, 23628), (128, 23922), (147, 24030),

Gene: Pleakley_47 Start: 23326, Stop: 24128, Start Num: 14
Candidate Starts for Pleakley_47:
(Start: 14 @23326 has 40 MA's), (35, 23458), (62, 23584), (69, 23617), (70, 23641), (108, 23869), (135, 24043), (147, 24106),

Gene: Polyyuki_42 Start: 24333, Stop: 25153, Start Num: 14
Candidate Starts for Polyyuki_42:
(1, 23946), (3, 23970), (Start: 14 @24333 has 40 MA's), (30, 24432), (33, 24456), (35, 24462), (62, 24588), (69, 24621), (121, 24975), (147, 25128),

Gene: PotatoChip_30 Start: 21149, Stop: 21969, Start Num: 15
Candidate Starts for PotatoChip_30:
(Start: 15 @21149 has 9 MA's), (17, 21167), (33, 21287), (41, 21323), (51, 21368), (58, 21398), (62, 21422), (66, 21449), (72, 21488), (73, 21497), (97, 21635), (112, 21725), (121, 21791), (122, 21794), (124, 21803), (128, 21836), (144, 21923),

Gene: PrairieDogTown_16 Start: 10109, Stop: 10971, Start Num: 10
Candidate Starts for PrairieDogTown_16:
(Start: 10 @10109 has 13 MA's), (28, 10280), (43, 10352), (47, 10373), (48, 10376), (64, 10469), (80, 10565), (82, 10571),

Gene: REQ2_17 Start: 11626, Stop: 12441, Start Num: 15
Candidate Starts for REQ2_17:
(Start: 15 @11626 has 9 MA's), (22, 11674), (49, 11821), (78, 11983), (81, 11992), (110, 12175), (115, 12217), (116, 12220), (123, 12262), (132, 12316),

Gene: Rabbitrun_26 Start: 14785, Stop: 15572, Start Num: 21
Candidate Starts for Rabbitrun_26:
(9, 14689), (Start: 21 @14785 has 7 MA's), (34, 14902), (58, 15010), (62, 15034), (76, 15124), (91, 15193), (97, 15250), (98, 15256), (101, 15268), (124, 15391), (125, 15400), (133, 15457), (134, 15463), (149, 15553),

Gene: RedRaider_45 Start: 25472, Stop: 26283, Start Num: 14
Candidate Starts for RedRaider_45:
(Start: 14 @25472 has 40 MA's), (35, 25604), (53, 25685), (62, 25730), (79, 25832), (82, 25844), (101, 25964), (147, 26261),

Gene: Sarge_15 Start: 8825, Stop: 9672, Start Num: 10
Candidate Starts for Sarge_15:
(6, 8708), (Start: 10 @8825 has 13 MA's), (28, 8987), (35, 9023), (43, 9059), (47, 9080), (48, 9083), (63, 9173), (72, 9233), (75, 9248), (99, 9386), (125, 9506), (127, 9524), (147, 9635),

Gene: Scotia_17 Start: 11047, Stop: 11906, Start Num: 10
Candidate Starts for Scotia_17:
(Start: 10 @11047 has 13 MA's), (22, 11143), (28, 11215), (43, 11287), (47, 11308), (48, 11311), (56, 11344), (64, 11404), (68, 11425), (99, 11617), (136, 11809),

Gene: Sephiroth_24 Start: 13258, Stop: 14015, Start Num: 21
Candidate Starts for Sephiroth_24:

(Start: 21 @13258 has 7 MA's), (27, 13327), (34, 13369), (52, 13450), (58, 13474), (59, 13480), (61, 13489), (72, 13567), (82, 13612), (88, 13636), (91, 13657), (95, 13684), (96, 13708), (98, 13720), (101, 13732), (119, 13825), (129, 13885), (130, 13897), (131, 13900), (133, 13915), (134, 13921), (140, 13960),

Gene: Shoya_14 Start: 8461, Stop: 9308, Start Num: 10
Candidate Starts for Shoya_14:
(6, 8344), (Start: 10 @8461 has 13 MA's), (28, 8623), (37, 8668), (43, 8695), (47, 8716), (48, 8719), (63, 8809), (72, 8869), (75, 8884), (99, 9022), (127, 9160), (147, 9271),

Gene: Skysand_40 Start: 23664, Stop: 24475, Start Num: 14
Candidate Starts for Skysand_40:
(Start: 14 @23664 has 40 MA's), (35, 23796), (52, 23874), (53, 23877), (62, 23922), (79, 24024), (82, 24036), (101, 24156), (147, 24453),

Gene: StarStruck_39 Start: 23207, Stop: 24012, Start Num: 14
Candidate Starts for StarStruck_39:
(Start: 14 @23207 has 40 MA's), (35, 23339), (52, 23417), (62, 23465), (84, 23588), (89, 23606),

Gene: Stickynote_30 Start: 20569, Stop: 21389, Start Num: 15
Candidate Starts for Stickynote_30:
(Start: 15 @20569 has 9 MA's), (17, 20587), (33, 20707), (41, 20743), (51, 20788), (58, 20818), (62, 20842), (66, 20869), (72, 20908), (73, 20917), (97, 21055), (112, 21145), (122, 21214), (124, 21223), (128, 21256), (144, 21343),

Gene: Sukkupi_40 Start: 22228, Stop: 23036, Start Num: 13
Candidate Starts for Sukkupi_40:
(Start: 13 @22228 has 8 MA's), (25, 22303), (35, 22363), (40, 22390), (62, 22489), (77, 22582), (84, 22612), (147, 23014),

Gene: SuperSulley_39 Start: 23405, Stop: 24210, Start Num: 14
Candidate Starts for SuperSulley_39:
(Start: 14 @23405 has 40 MA's), (35, 23537), (62, 23663),

Gene: Syleon_24 Start: 13180, Stop: 13937, Start Num: 21
Candidate Starts for Syleon_24:
(Start: 14 @13132 has 40 MA's), (16, 13144), (Start: 21 @13180 has 7 MA's), (27, 13249), (34, 13291), (52, 13372), (58, 13396), (59, 13402), (61, 13411), (72, 13489), (82, 13534), (88, 13558), (91, 13579), (95, 13606), (96, 13630), (98, 13642), (101, 13654), (119, 13747), (129, 13807), (130, 13819), (131, 13822), (133, 13837), (134, 13843), (140, 13882),

Gene: Tracker_38 Start: 22375, Stop: 23180, Start Num: 14
Candidate Starts for Tracker_38:
(Start: 14 @22375 has 40 MA's), (35, 22507), (43, 22543), (53, 22588), (62, 22633), (69, 22666), (84, 22756), (128, 23050), (147, 23158),

Gene: Trax_24 Start: 14648, Stop: 15435, Start Num: 21
Candidate Starts for Trax_24:
(11, 14594), (Start: 14 @14615 has 40 MA's), (Start: 21 @14648 has 7 MA's), (34, 14765), (45, 14813), (58, 14873), (91, 15056), (98, 15119), (107, 15155), (114, 15185), (124, 15254), (133, 15320), (134, 15326), (149, 15416),

Gene: Turuncu_42 Start: 23671, Stop: 24482, Start Num: 14

Candidate Starts for Turuncu_42:
(Start: 14 @23671 has 40 MA's), (35, 23803), (51, 23875), (58, 23905), (62, 23929), (69, 23962), (79, 24031), (82, 24043), (107, 24217), (128, 24352), (147, 24460),

Gene: Whack_15 Start: 9533, Stop: 10330, Start Num: 15
Candidate Starts for Whack_15:
(Start: 15 @9533 has 9 MA's), (30, 9635), (35, 9665), (42, 9698), (65, 9818), (87, 9923), (103, 10046), (138, 10256), (146, 10295),

Gene: Wheezy_38 Start: 22580, Stop: 23385, Start Num: 14
Candidate Starts for Wheezy_38:
(Start: 14 @22580 has 40 MA's), (35, 22712), (43, 22748), (53, 22793), (62, 22838), (69, 22871), (84, 22961), (128, 23255), (147, 23363),

Gene: WhoseManz_40 Start: 20280, Stop: 21088, Start Num: 13
Candidate Starts for WhoseManz_40:
(Start: 13 @20280 has 8 MA's), (25, 20355), (35, 20415), (40, 20442), (62, 20541), (77, 20634), (84, 20664), (147, 21066),

Gene: Yndexa_40 Start: 22228, Stop: 23036, Start Num: 13
Candidate Starts for Yndexa_40:
(Start: 13 @22228 has 8 MA's), (25, 22303), (35, 22363), (40, 22390), (62, 22489), (77, 22582), (84, 22612), (147, 23014),

Gene: Zion_30 Start: 21147, Stop: 21967, Start Num: 15
Candidate Starts for Zion_30:
(Start: 15 @21147 has 9 MA's), (17, 21165), (33, 21285), (41, 21321), (51, 21366), (58, 21396), (62, 21420), (66, 21447), (72, 21486), (73, 21495), (97, 21633), (112, 21723), (121, 21789), (122, 21792), (124, 21801), (128, 21834), (144, 21921),