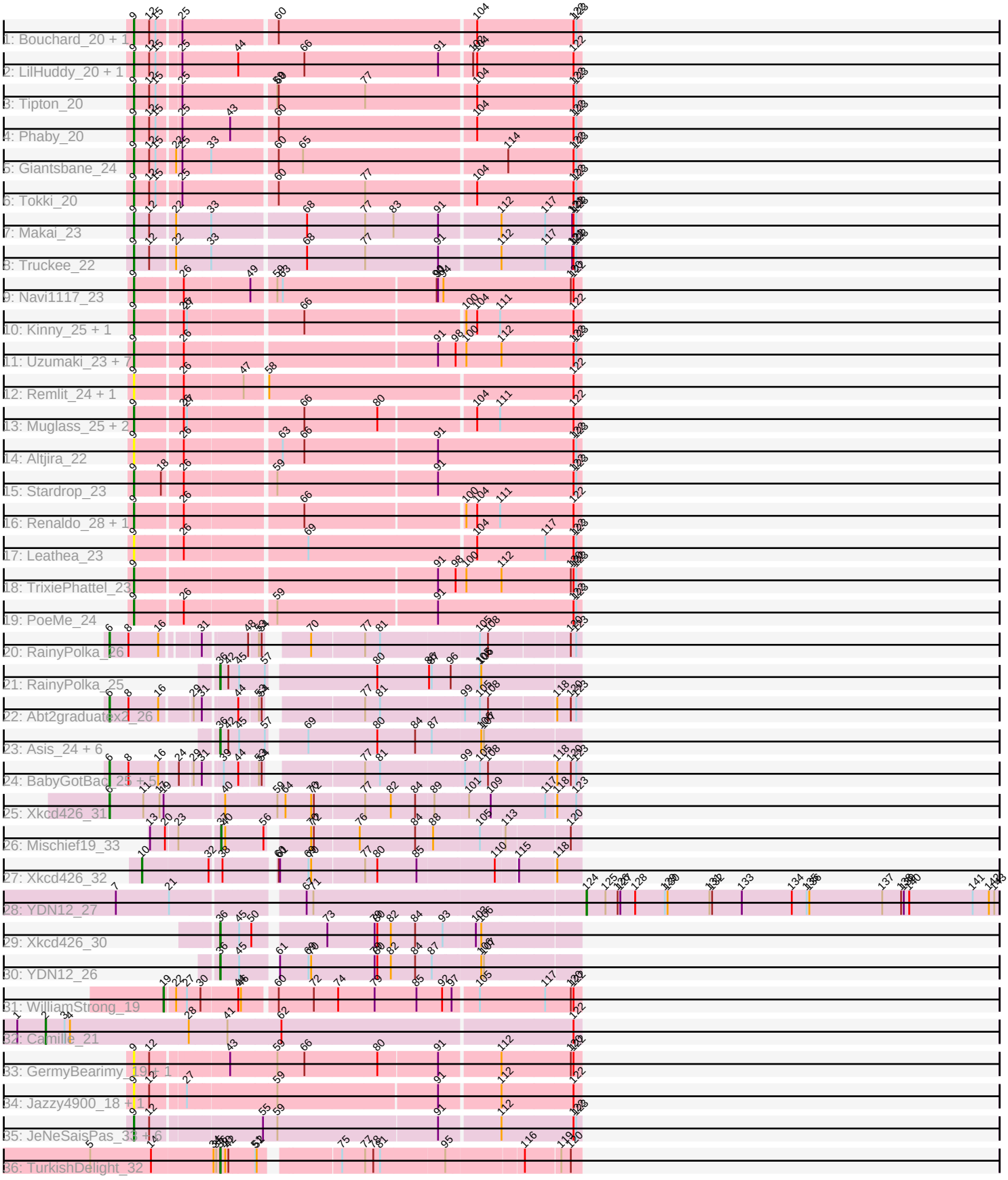
Pham 345706


1: Bouchard_20 + 1
2: LilHuddy_20 + 1
3: Tipton_20
4: Phaby_20
5: Giantsbane_24
6: Tokki_20
7: Makai_23
8: Truckee_22
9: Navi1117_23
10: Kinny_25 + 1
11: Uzumaki_23 + 7
12: Remlit_24 + 1
13: Muglass_25 + 2
14: Altjira_22
15: Stardrop_23
16: Renaldo_28 + 1
17: Leathea_23
18: TrixiePhattel_23
19: PoeMe_24
20: RainyPolka_26
21: RainyPolka_25
22: Abt2graduatex2_26
23: Asis_24 + 6
24: BabyGotBack_28 + 5
25: Xkcd426_31
26: Mischief19_33
27: Xkcd426_32
28: YDN12_27
29: Xkcd426_30
30: YDN12_26
31: WilliamStrong_19
32: Camille_21
33: GermyBearimy_19 + 1
34: Jazzy4900_18 + 1
35: JeNeSaisPas_33 + 6
36: TurkishDelight_32

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 345706 Report

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

Pham number 345706 has 69 members, 14 are drafts.

Phages represented in each track:
- Track 1 : Bouchard_20, Chlochlo_20
- Track 2 : LilHuddy_20, Shepard_20
- Track 3 : Tipton_20
- Track 4 : Phaby_20
- Track 5 : Giantsbane_24
- Track 6 : Tokki_20
- Track 7 : Makai_23
- Track 8 : Truckee_22
- Track 9 : Navi1117_23
- Track 10 : Kinny_25, BarbieDoll_26
- Track 11 : Uzumaki_23, GantcherGoblin_22, Mardi_24, Zeina_23, Argan_22, Tenney120_23, KevinMinion_23, Phaila_22
- Track 12 : Remlit_24, BlackHoleSun_24
- Track 13 : Muglass_25, Biscute_24, Barbonzobean_25
- Track 14 : Altjira_22
- Track 15 : Stardrop_23
- Track 16 : Renaldo_28, Lewando_26
- Track 17 : Leathea_23
- Track 18 : TrixiePhattel_23
- Track 19 : PoeMe_24
- Track 20 : RainyPolka_26
- Track 21 : RainyPolka_25
- Track 22 : Abt2graduatex2_26
- Track 23 : Asis_24, BabyGotBac_24, TP1604_24, Salete_24, BayC_24, Abt2graduatex2_25, Maih_24
- Track 24 : BabyGotBac_25, TP1604_25, Salete_25, BayC_25, Asis_25, Maih_25
- Track 25 : Xkcd426_31
- Track 26 : Mischief19_33
- Track 27 : Xkcd426_32
- Track 28 : YDN12_27
- Track 29 : Xkcd426_30
- Track 30 : YDN12_26
- Track 31 : WilliamStrong_19
- Track 32 : Camille_21
- Track 33 : GermyBearimy_19, Arzan_16
- Track 34 : Jazzy4900_18, Sunny4976_17

• Track 35 : JeNeSaisPas_33, Gandionco_35, Marianna39_35, Paella_34, Qui_34, Elver_34, Kureo_35
• Track 36 : TurkishDelight_32

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

The start number called the most often in the published annotations is 9, it was called in 30 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Altjira_22, Argan_22, Arzan_16, BarbieDoll_26, Barbonzobean_25, Biscute_24, BlackHoleSun_24, Bouchard_20, Chlochlo_20, Elver_34, Gandionco_35, GantcherGoblin_22, GermyBearimy_19, Giantsbane_24, Jazzy4900_18, JeNeSaisPas_33, KevinMinion_23, Kinny_25, Kureo_35, Leathea_23, Lewando_26, LilHuddy_20, Makai_23, Mardi_24, Marianna39_35, Muglass_25, Navi1117_23, Paella_34, Phaby_20, Phaila_22, PoeMe_24, Qui_34, Remlit_24, Renaldo_28, Shepard_20, Stardrop_23, Sunny4976_17, Tenney120_23, Tipton_20, Tokki_20, TrixiePhattel_23, Truckee_22, Uzumaki_23, Zeina_23,

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

Genes that do not have the "Most Annotated" start:
• Abt2graduatex2_25, Abt2graduatex2_26, Asis_24, Asis_25, BabyGotBac_24, BabyGotBac_25, BayC_24, BayC_25, Camille_21, Maih_24, Maih_25, Mischief19_33, RainyPolka_25, RainyPolka_26, Salete_24, Salete_25, TP1604_24, TP1604_25, TurkishDelight_32, WilliamStrong_19, Xkcd426_30, Xkcd426_31, Xkcd426_32, YDN12_26, YDN12_27,

Summary by start number:

Start 2:
• Found in 1 of 69 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 55
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Camille_21 (EL),

Start 6:
• Found in 9 of 69 (13.0%) of genes in pham
• Manual Annotations of this start: 9 of 55
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Abt2graduatex2_26 (BG), Asis_25 (BG), BabyGotBac_25 (BG), BayC_25 (BG), Maih_25 (BG), RainyPolka_26 (BG), Salete_25 (BG), TP1604_25 (BG), Xkcd426_31 (BG),

Start 9:
• Found in 44 of 69 (63.8%) of genes in pham
• Manual Annotations of this start: 30 of 55
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Altjira_22 (AU6), Argan_22 (AU6), Arzan_16 (FI), BarbieDoll_26 (AU6), Barbonzobean_25 (AU6), Biscute_24 (AU6), BlackHoleSun_24 (AU6), Bouchard_20 (AU2), Chlochlo_20 (AU2), Elver_34 (FK), Gandionco_35 (FK), GantcherGoblin_22 (AU6), GermyBearimy_19 (FI), Giantsbane_24 (AU2), Jazzy4900_18 (FI), JeNeSaisPas_33 (FK), KevinMinion_23 (AU6), Kinny_25 (AU6), Kureo_35 (FK), Leathea_23 (AU6), Lewando_26 (AU6), LilHuddy_20 (AU2), Makai_23 (AU5), Mardi_24 (AU6), Marianna39_35 (FK), Muglass_25 (AU6), Navi1117_23 (AU6), Paella_34 (FK), Phaby_20 (AU2), Phaila_22 (AU6), PoeMe_24 (AU6), Qui_34 (FK), Remlit_24 (AU6), Renaldo_28 (AU6), Shepard_20 (AU2), Stardrop_23 (AU6), Sunny4976_17 (FI), Tenney120_23 (AU6), Tipton_20 (AU2), Tokki_20 (AU2), TrixiePhattel_23 (AU6), Truckee_22 (AU5), Uzumaki_23 (AU6), Zeina_23 (AU6),

Start 10:
• Found in 1 of 69 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 55
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Xkcd426_32 (BG),

Start 19:
• Found in 2 of 69 (2.9%) of genes in pham
• Manual Annotations of this start: 1 of 55
• Called 50.0% of time when present
• Phage (with cluster) where this start called: WilliamStrong_19 (EA6),

Start 36:
• Found in 11 of 69 (15.9%) of genes in pham
• Manual Annotations of this start: 11 of 55
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Abt2graduatex2_25 (BG), Asis_24 (BG), BabyGotBac_24 (BG), BayC_24 (BG), Maih_24 (BG), RainyPolka_25 (BG), Salete_24 (BG), TP1604_24 (BG), TurkishDelight_32 (singleton), Xkcd426_30 (BG), YDN12_26 (BG),

Start 37:
• Found in 1 of 69 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 55
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Mischief19_33 (BG),

Start 124:
• Found in 1 of 69 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 55
• Called 100.0% of time when present
• Phage (with cluster) where this start called: YDN12_27 (BG),

Summary by clusters:

There are 9 clusters represented in this pham: EL, singleton, BG, AU2, AU5, AU6, FI, FK, EA6,

Info for manual annotations of cluster AU2:
•Start number 9 was manually annotated 8 times for cluster AU2.

Info for manual annotations of cluster AU5:
•Start number 9 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:
•Start number 9 was manually annotated 16 times for cluster AU6.

Info for manual annotations of cluster BG:
•Start number 6 was manually annotated 9 times for cluster BG.
•Start number 10 was manually annotated 1 time for cluster BG.
•Start number 36 was manually annotated 10 times for cluster BG.
•Start number 37 was manually annotated 1 time for cluster BG.
•Start number 124 was manually annotated 1 time for cluster BG.

Info for manual annotations of cluster EA6:
•Start number 19 was manually annotated 1 time for cluster EA6.

Info for manual annotations of cluster EL:
•Start number 2 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster FK:
•Start number 9 was manually annotated 4 times for cluster FK.

Gene Information:

Gene: Abt2graduatex2_26 Start: 24514, Stop: 25437, Start Num: 6
Candidate Starts for Abt2graduatex2_26:
(Start: 6 @24514 has 9 MA's), (8, 24556), (16, 24622), (29, 24682), (31, 24700), (44, 24760), (53, 24799), (54, 24805), (77, 24982), (81, 25015), (99, 25192), (105, 25225), (108, 25243), (118, 25384), (120, 25414), (123, 25426),

Gene: Abt2graduatex2_25 Start: 23773, Stop: 24504, Start Num: 36
Candidate Starts for Abt2graduatex2_25:
(Start: 36 @23773 has 11 MA's), (42, 23788), (45, 23809), (57, 23866), (69, 23932), (80, 24079), (84, 24160), (87, 24196), (106, 24298), (107, 24304),

Gene: Altjira_22 Start: 18054, Stop: 18980, Start Num: 9
Candidate Starts for Altjira_22:
(Start: 9 @18054 has 30 MA's), (26, 18150), (63, 18336), (66, 18384), (91, 18666), (122, 18963), (123, 18969),

Gene: Argan_22 Start: 17327, Stop: 18250, Start Num: 9
Candidate Starts for Argan_22:
(Start: 9 @17327 has 30 MA's), (26, 17423), (91, 17939), (98, 17978), (100, 17999), (112, 18077), (122, 18233), (123, 18239),

Gene: Arzan_16 Start: 12657, Stop: 13586, Start Num: 9
Candidate Starts for Arzan_16:
(Start: 9 @12657 has 30 MA's), (12, 12690), (43, 12837), (59, 12939), (66, 12999), (80, 13155), (91, 13284), (112, 13413), (120, 13563), (122, 13569),

Gene: Asis_24 Start: 23188, Stop: 23919, Start Num: 36
Candidate Starts for Asis_24:
(Start: 36 @23188 has 11 MA's), (42, 23203), (45, 23224), (57, 23281), (69, 23347), (80, 23494), (84, 23575), (87, 23611), (106, 23713), (107, 23719),

Gene: Asis_25 Start: 23929, Stop: 24852, Start Num: 6
Candidate Starts for Asis_25:
(Start: 6 @23929 has 9 MA's), (8, 23971), (16, 24037), (24, 24070), (29, 24097), (31, 24115), (39, 24148), (44, 24175), (53, 24214), (54, 24220), (77, 24397), (81, 24430), (99, 24607), (105, 24640), (108, 24658), (118, 24799), (120, 24829), (123, 24841),

Gene: BabyGotBac_25 Start: 23929, Stop: 24852, Start Num: 6
Candidate Starts for BabyGotBac_25:
(Start: 6 @23929 has 9 MA's), (8, 23971), (16, 24037), (24, 24070), (29, 24097), (31, 24115), (39, 24148), (44, 24175), (53, 24214), (54, 24220), (77, 24397), (81, 24430), (99, 24607), (105, 24640), (108, 24658), (118, 24799), (120, 24829), (123, 24841),

Gene: BabyGotBac_24 Start: 23188, Stop: 23919, Start Num: 36
Candidate Starts for BabyGotBac_24:
(Start: 36 @23188 has 11 MA's), (42, 23203), (45, 23224), (57, 23281), (69, 23347), (80, 23494), (84, 23575), (87, 23611), (106, 23713), (107, 23719),

Gene: BarbieDoll_26 Start: 19306, Stop: 20223, Start Num: 9
Candidate Starts for BarbieDoll_26:
(Start: 9 @19306 has 30 MA's), (26, 19402), (27, 19405), (66, 19636), (100, 19969), (104, 19993), (111, 20044), (122, 20206),

Gene: Barbonzobean_25 Start: 18903, Stop: 19820, Start Num: 9
Candidate Starts for Barbonzobean_25:
(Start: 9 @18903 has 30 MA's), (26, 18999), (27, 19002), (66, 19233), (80, 19389), (104, 19590), (111, 19641), (122, 19803),

Gene: BayC_24 Start: 23188, Stop: 23919, Start Num: 36
Candidate Starts for BayC_24:
(Start: 36 @23188 has 11 MA's), (42, 23203), (45, 23224), (57, 23281), (69, 23347), (80, 23494), (84, 23575), (87, 23611), (106, 23713), (107, 23719),

Gene: BayC_25 Start: 23929, Stop: 24852, Start Num: 6
Candidate Starts for BayC_25:
(Start: 6 @23929 has 9 MA's), (8, 23971), (16, 24037), (24, 24070), (29, 24097), (31, 24115), (39, 24148), (44, 24175), (53, 24214), (54, 24220), (77, 24397), (81, 24430), (99, 24607), (105, 24640), (108, 24658), (118, 24799), (120, 24829), (123, 24841),

Gene: Biscute_24 Start: 18954, Stop: 19871, Start Num: 9
Candidate Starts for Biscute_24:
(Start: 9 @18954 has 30 MA's), (26, 19050), (27, 19053), (66, 19284), (80, 19440), (104, 19641), (111, 19692), (122, 19854),

Gene: BlackHoleSun_24 Start: 17061, Stop: 17984, Start Num: 9
Candidate Starts for BlackHoleSun_24:
(Start: 9 @17061 has 30 MA's), (26, 17157), (47, 17274), (58, 17316), (122, 17967),

Gene: Bouchard_20 Start: 14932, Stop: 15852, Start Num: 9
Candidate Starts for Bouchard_20:
(Start: 9 @14932 has 30 MA's), (12, 14965), (15, 14977), (25, 15022), (60, 15208), (104, 15622), (122, 15835), (123, 15841),

Gene: Camille_21 Start: 14413, Stop: 15567, Start Num: 2
Candidate Starts for Camille_21:
(1, 14350), (Start: 2 @14413 has 1 MA's), (3, 14455), (4, 14467), (28, 14725), (41, 14806), (62, 14920), (122, 15550),

Gene: Chlochlo_20 Start: 14961, Stop: 15881, Start Num: 9
Candidate Starts for Chlochlo_20:
(Start: 9 @14961 has 30 MA's), (12, 14994), (15, 15006), (25, 15051), (60, 15237), (104, 15651), (122, 15864), (123, 15870),

Gene: Elver_34 Start: 23694, Stop: 24623, Start Num: 9
Candidate Starts for Elver_34:
(Start: 9 @23694 has 30 MA's), (12, 23727), (55, 23946), (59, 23976), (91, 24321), (112, 24450), (122, 24606), (123, 24612),

Gene: Gandionco_35 Start: 24216, Stop: 25145, Start Num: 9
Candidate Starts for Gandionco_35:
(Start: 9 @24216 has 30 MA's), (12, 24249), (55, 24468), (59, 24498), (91, 24843), (112, 24972), (122, 25128), (123, 25134),

Gene: GantcherGoblin_22 Start: 17366, Stop: 18289, Start Num: 9
Candidate Starts for GantcherGoblin_22:
(Start: 9 @17366 has 30 MA's), (26, 17462), (91, 17978), (98, 18017), (100, 18038), (112, 18116), (122, 18272), (123, 18278),

Gene: GermyBearimy_19 Start: 13082, Stop: 14011, Start Num: 9
Candidate Starts for GermyBearimy_19:
(Start: 9 @13082 has 30 MA's), (12, 13115), (43, 13262), (59, 13364), (66, 13424), (80, 13580), (91, 13709), (112, 13838), (120, 13988), (122, 13994),

Gene: Giantsbane_24 Start: 17626, Stop: 18546, Start Num: 9
Candidate Starts for Giantsbane_24:
(Start: 9 @17626 has 30 MA's), (12, 17659), (15, 17671), (22, 17707), (25, 17716), (33, 17773), (60, 17902), (65, 17956), (114, 18385), (122, 18529), (123, 18535),

Gene: Jazzy4900_18 Start: 12693, Stop: 13619, Start Num: 9
Candidate Starts for Jazzy4900_18:
(Start: 9 @12693 has 30 MA's), (12, 12726), (27, 12789), (59, 12975), (91, 13317), (112, 13446), (122, 13602),

Gene: JeNeSaisPas_33 Start: 24229, Stop: 25158, Start Num: 9
Candidate Starts for JeNeSaisPas_33:
(Start: 9 @24229 has 30 MA's), (12, 24262), (55, 24481), (59, 24511), (91, 24856), (112, 24985), (122, 25141), (123, 25147),

Gene: KevinMinion_23 Start: 18460, Stop: 19383, Start Num: 9
Candidate Starts for KevinMinion_23:

(Start: 9 @18460 has 30 MA's), (26, 18556), (91, 19072), (98, 19111), (100, 19132), (112, 19210), (122, 19366), (123, 19372),

Gene: Kinny_25 Start: 19219, Stop: 20136, Start Num: 9
Candidate Starts for Kinny_25:
(Start: 9 @19219 has 30 MA's), (26, 19315), (27, 19318), (66, 19549), (100, 19882), (104, 19906), (111, 19957), (122, 20119),

Gene: Kureo_35 Start: 23039, Stop: 23968, Start Num: 9
Candidate Starts for Kureo_35:
(Start: 9 @23039 has 30 MA's), (12, 23072), (55, 23291), (59, 23321), (91, 23666), (112, 23795), (122, 23951), (123, 23957),

Gene: Leathea_23 Start: 17352, Stop: 18275, Start Num: 9
Candidate Starts for Leathea_23:
(Start: 9 @17352 has 30 MA's), (26, 17448), (69, 17691), (104, 18045), (117, 18195), (122, 18258), (123, 18264),

Gene: Lewando_26 Start: 19288, Stop: 20205, Start Num: 9
Candidate Starts for Lewando_26:
(Start: 9 @19288 has 30 MA's), (26, 19384), (66, 19618), (100, 19951), (104, 19975), (111, 20026), (122, 20188),

Gene: LilHuddy_20 Start: 14940, Stop: 15875, Start Num: 9
Candidate Starts for LilHuddy_20:
(Start: 9 @14940 has 30 MA's), (12, 14973), (15, 14985), (25, 15030), (44, 15144), (66, 15285), (91, 15573), (102, 15639), (104, 15648), (122, 15858),

Gene: Maih_24 Start: 23187, Stop: 23918, Start Num: 36
Candidate Starts for Maih_24:
(Start: 36 @23187 has 11 MA's), (42, 23202), (45, 23223), (57, 23280), (69, 23346), (80, 23493), (84, 23574), (87, 23610), (106, 23712), (107, 23718),

Gene: Maih_25 Start: 23928, Stop: 24851, Start Num: 6
Candidate Starts for Maih_25:
(Start: 6 @23928 has 9 MA's), (8, 23970), (16, 24036), (24, 24069), (29, 24096), (31, 24114), (39, 24147), (44, 24174), (53, 24213), (54, 24219), (77, 24396), (81, 24429), (99, 24606), (105, 24639), (108, 24657), (118, 24798), (120, 24828), (123, 24840),

Gene: Makai_23 Start: 18454, Stop: 19380, Start Num: 9
Candidate Starts for Makai_23:
(Start: 9 @18454 has 30 MA's), (12, 18487), (22, 18535), (33, 18601), (68, 18793), (77, 18916), (83, 18979), (91, 19075), (112, 19204), (117, 19300), (121, 19360), (122, 19363), (123, 19369),

Gene: Mardi_24 Start: 17894, Stop: 18817, Start Num: 9
Candidate Starts for Mardi_24:
(Start: 9 @17894 has 30 MA's), (26, 17990), (91, 18506), (98, 18545), (100, 18566), (112, 18644), (122, 18800), (123, 18806),

Gene: Marianna39_35 Start: 24216, Stop: 25145, Start Num: 9
Candidate Starts for Marianna39_35:
(Start: 9 @24216 has 30 MA's), (12, 24249), (55, 24468), (59, 24498), (91, 24843), (112, 24972), (122, 25128), (123, 25134),

Gene: Mischief19_33 Start: 33795, Stop: 34517, Start Num: 37
Candidate Starts for Mischief19_33:
(13, 33657), (20, 33690), (23, 33714), (Start: 37 @33795 has 1 MA's), (40, 33804), (56, 33885), (70, 33960), (72, 33966), (76, 34062), (84, 34179), (88, 34215), (105, 34314), (113, 34365), (120, 34494),

Gene: Muglass_25 Start: 18858, Stop: 19775, Start Num: 9
Candidate Starts for Muglass_25:
(Start: 9 @18858 has 30 MA's), (26, 18954), (27, 18957), (66, 19188), (80, 19344), (104, 19545), (111, 19596), (122, 19758),

Gene: Navi1117_23 Start: 17617, Stop: 18540, Start Num: 9
Candidate Starts for Navi1117_23:
(Start: 9 @17617 has 30 MA's), (26, 17713), (49, 17845), (59, 17890), (63, 17899), (90, 18226), (91, 18229), (94, 18241), (120, 18517), (122, 18523),

Gene: Paella_34 Start: 23696, Stop: 24625, Start Num: 9
Candidate Starts for Paella_34:
(Start: 9 @23696 has 30 MA's), (12, 23729), (55, 23948), (59, 23978), (91, 24323), (112, 24452), (122, 24608), (123, 24614),

Gene: Phaby_20 Start: 14926, Stop: 15846, Start Num: 9
Candidate Starts for Phaby_20:
(Start: 9 @14926 has 30 MA's), (12, 14959), (15, 14971), (25, 15016), (43, 15112), (60, 15202), (104, 15616), (122, 15829), (123, 15835),

Gene: Phaila_22 Start: 16944, Stop: 17867, Start Num: 9
Candidate Starts for Phaila_22:
(Start: 9 @16944 has 30 MA's), (26, 17040), (91, 17556), (98, 17595), (100, 17616), (112, 17694), (122, 17850), (123, 17856),

Gene: PoeMe_24 Start: 18219, Stop: 19145, Start Num: 9
Candidate Starts for PoeMe_24:
(Start: 9 @18219 has 30 MA's), (26, 18315), (59, 18492), (91, 18831), (122, 19128), (123, 19134),

Gene: Qui_34 Start: 23696, Stop: 24625, Start Num: 9
Candidate Starts for Qui_34:
(Start: 9 @23696 has 30 MA's), (12, 23729), (55, 23948), (59, 23978), (91, 24323), (112, 24452), (122, 24608), (123, 24614),

Gene: RainyPolka_26 Start: 24385, Stop: 25302, Start Num: 6
Candidate Starts for RainyPolka_26:
(Start: 6 @24385 has 9 MA's), (8, 24427), (16, 24493), (31, 24565), (48, 24646), (53, 24664), (54, 24670), (70, 24736), (77, 24847), (81, 24880), (105, 25090), (108, 25108), (120, 25279), (123, 25291),

Gene: RainyPolka_25 Start: 23647, Stop: 24375, Start Num: 36
Candidate Starts for RainyPolka_25:
(Start: 36 @23647 has 11 MA's), (42, 23662), (45, 23683), (57, 23740), (80, 23950), (86, 24061), (87, 24067), (96, 24106), (105, 24166), (106, 24169),

Gene: Remlit_24 Start: 16915, Stop: 17838, Start Num: 9
Candidate Starts for Remlit_24:
(Start: 9 @16915 has 30 MA's), (26, 17011), (47, 17128), (58, 17170), (122, 17821),

Gene: Renaldo_28 Start: 19297, Stop: 20214, Start Num: 9
Candidate Starts for Renaldo_28:
(Start: 9 @19297 has 30 MA's), (26, 19393), (66, 19627), (100, 19960), (104, 19984), (111, 20035), (122, 20197),

Gene: Salete_25 Start: 23929, Stop: 24852, Start Num: 6
Candidate Starts for Salete_25:
(Start: 6 @23929 has 9 MA's), (8, 23971), (16, 24037), (24, 24070), (29, 24097), (31, 24115), (39, 24148), (44, 24175), (53, 24214), (54, 24220), (77, 24397), (81, 24430), (99, 24607), (105, 24640), (108, 24658), (118, 24799), (120, 24829), (123, 24841),

Gene: Salete_24 Start: 23188, Stop: 23919, Start Num: 36
Candidate Starts for Salete_24:
(Start: 36 @23188 has 11 MA's), (42, 23203), (45, 23224), (57, 23281), (69, 23347), (80, 23494), (84, 23575), (87, 23611), (106, 23713), (107, 23719),

Gene: Shepard_20 Start: 14937, Stop: 15872, Start Num: 9
Candidate Starts for Shepard_20:
(Start: 9 @14937 has 30 MA's), (12, 14970), (15, 14982), (25, 15027), (44, 15141), (66, 15282), (91, 15570), (102, 15636), (104, 15645), (122, 15855),

Gene: Stardrop_23 Start: 17915, Stop: 18841, Start Num: 9
Candidate Starts for Stardrop_23:
(Start: 9 @17915 has 30 MA's), (18, 17972), (26, 18011), (59, 18188), (91, 18527), (122, 18824), (123, 18830),

Gene: Sunny4976_17 Start: 12693, Stop: 13619, Start Num: 9
Candidate Starts for Sunny4976_17:
(Start: 9 @12693 has 30 MA's), (12, 12726), (27, 12789), (59, 12975), (91, 13317), (112, 13446), (122, 13602),

Gene: TP1604_24 Start: 23188, Stop: 23919, Start Num: 36
Candidate Starts for TP1604_24:
(Start: 36 @23188 has 11 MA's), (42, 23203), (45, 23224), (57, 23281), (69, 23347), (80, 23494), (84, 23575), (87, 23611), (106, 23713), (107, 23719),

Gene: TP1604_25 Start: 23929, Stop: 24852, Start Num: 6
Candidate Starts for TP1604_25:
(Start: 6 @23929 has 9 MA's), (8, 23971), (16, 24037), (24, 24070), (29, 24097), (31, 24115), (39, 24148), (44, 24175), (53, 24214), (54, 24220), (77, 24397), (81, 24430), (99, 24607), (105, 24640), (108, 24658), (118, 24799), (120, 24829), (123, 24841),

Gene: Tenney120_23 Start: 17652, Stop: 18575, Start Num: 9
Candidate Starts for Tenney120_23:
(Start: 9 @17652 has 30 MA's), (26, 17748), (91, 18264), (98, 18303), (100, 18324), (112, 18402), (122, 18558), (123, 18564),

Gene: Tipton_20 Start: 14967, Stop: 15887, Start Num: 9
Candidate Starts for Tipton_20:
(Start: 9 @14967 has 30 MA's), (12, 15000), (15, 15012), (25, 15057), (59, 15240), (60, 15243), (77, 15429), (104, 15657), (122, 15870), (123, 15876),

Gene: Tokki_20 Start: 14976, Stop: 15896, Start Num: 9
Candidate Starts for Tokki_20:
(Start: 9 @14976 has 30 MA's), (12, 15009), (15, 15021), (25, 15066), (60, 15252), (77, 15438), (104, 15666), (122, 15879), (123, 15885),

Gene: TrixiePhattel_23 Start: 17568, Stop: 18491, Start Num: 9
Candidate Starts for TrixiePhattel_23:
(Start: 9 @17568 has 30 MA's), (91, 18180), (98, 18219), (100, 18240), (112, 18318), (120, 18468), (122, 18474), (123, 18480),

Gene: Truckee_22 Start: 18499, Stop: 19425, Start Num: 9
Candidate Starts for Truckee_22:
(Start: 9 @18499 has 30 MA's), (12, 18532), (22, 18580), (33, 18646), (68, 18838), (77, 18961), (91, 19120), (112, 19249), (117, 19345), (121, 19405), (122, 19408), (123, 19414),

Gene: TurkishDelight_32 Start: 29754, Stop: 30473, Start Num: 36
Candidate Starts for TurkishDelight_32:
(5, 29469), (14, 29604), (34, 29739), (35, 29745), (Start: 36 @29754 has 11 MA's), (40, 29763), (42, 29769), (51, 29826), (52, 29829), (75, 29979), (77, 30027), (78, 30045), (81, 30060), (95, 30198), (116, 30357), (119, 30429), (120, 30450),

Gene: Uzumaki_23 Start: 18185, Stop: 19108, Start Num: 9
Candidate Starts for Uzumaki_23:
(Start: 9 @18185 has 30 MA's), (26, 18281), (91, 18797), (98, 18836), (100, 18857), (112, 18935), (122, 19091), (123, 19097),

Gene: WilliamStrong_19 Start: 16962, Stop: 17843, Start Num: 19
Candidate Starts for WilliamStrong_19:
(Start: 19 @16962 has 1 MA's), (22, 16983), (27, 17007), (30, 17037), (44, 17115), (46, 17121), (60, 17190), (72, 17268), (74, 17319), (79, 17400), (85, 17493), (92, 17550), (97, 17571), (105, 17622), (117, 17766), (120, 17820), (122, 17826),

Gene: Xkcd426_31 Start: 31289, Stop: 32287, Start Num: 6
Candidate Starts for Xkcd426_31:
(Start: 6 @31289 has 9 MA's), (11, 31364), (17, 31400), (Start: 19 @31409 has 1 MA's), (40, 31526), (59, 31640), (64, 31658), (70, 31715), (72, 31721), (77, 31826), (82, 31883), (84, 31937), (89, 31976), (101, 32045), (109, 32093), (117, 32213), (118, 32234), (123, 32276),

Gene: Xkcd426_32 Start: 32302, Stop: 33195, Start Num: 10
Candidate Starts for Xkcd426_32:
(Start: 10 @32302 has 1 MA's), (32, 32443), (38, 32464), (60, 32566), (61, 32569), (69, 32629), (70, 32635), (77, 32746), (80, 32773), (85, 32860), (110, 33025), (115, 33067), (118, 33142),

Gene: Xkcd426_30 Start: 30543, Stop: 31274, Start Num: 36
Candidate Starts for Xkcd426_30:
(Start: 36 @30543 has 11 MA's), (45, 30579), (50, 30606), (73, 30744), (79, 30846), (80, 30852), (82, 30882), (84, 30930), (93, 30990), (103, 31056), (106, 31068),

Gene: YDN12_27 Start: 23900, Stop: 24817, Start Num: 124
Candidate Starts for YDN12_27:
(7, 22943), (21, 23057), (67, 23312), (71, 23327), (Start: 124 @23900 has 1 MA's), (125, 23942), (126, 23969), (127, 23975), (128, 24008), (129, 24074), (130, 24080), (131, 24173), (132, 24179), (133, 24245), (134, 24356), (135, 24389), (136, 24395), (137, 24557), (138, 24599), (139, 24605), (140,

24617), (141, 24758), (142, 24794), (143, 24806),

Gene: YDN12_26 Start: 23157, Stop: 23888, Start Num: 36
Candidate Starts for YDN12_26:
(Start: 36 @23157 has 11 MA's), (45, 23193), (61, 23256), (69, 23316), (70, 23322), (79, 23457), (80, 23463), (82, 23493), (84, 23544), (87, 23580), (106, 23682), (107, 23688),

Gene: Zeina_23 Start: 17566, Stop: 18489, Start Num: 9
Candidate Starts for Zeina_23:
(Start: 9 @17566 has 30 MA's), (26, 17662), (91, 18178), (98, 18217), (100, 18238), (112, 18316), (122, 18472), (123, 18478),