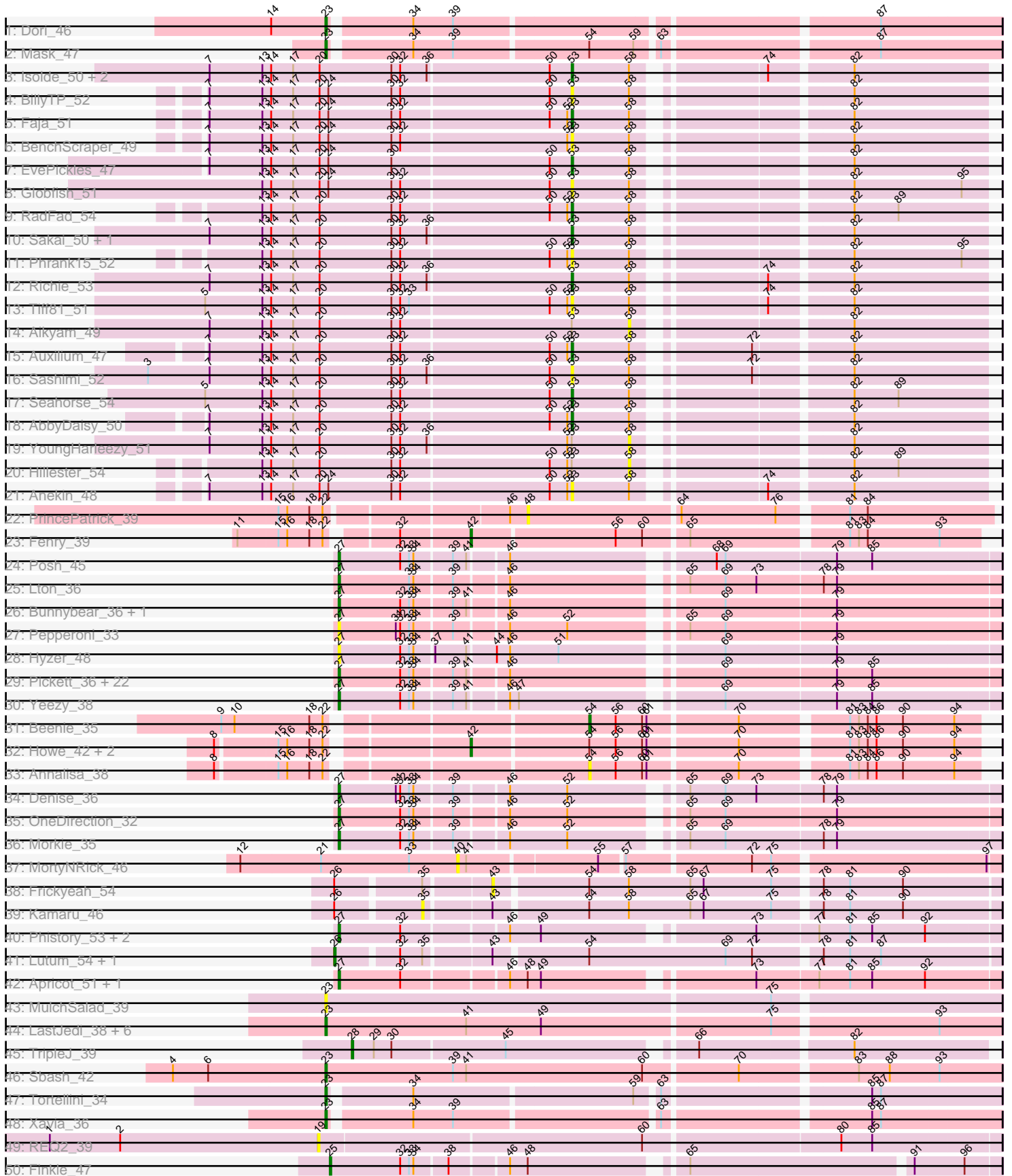
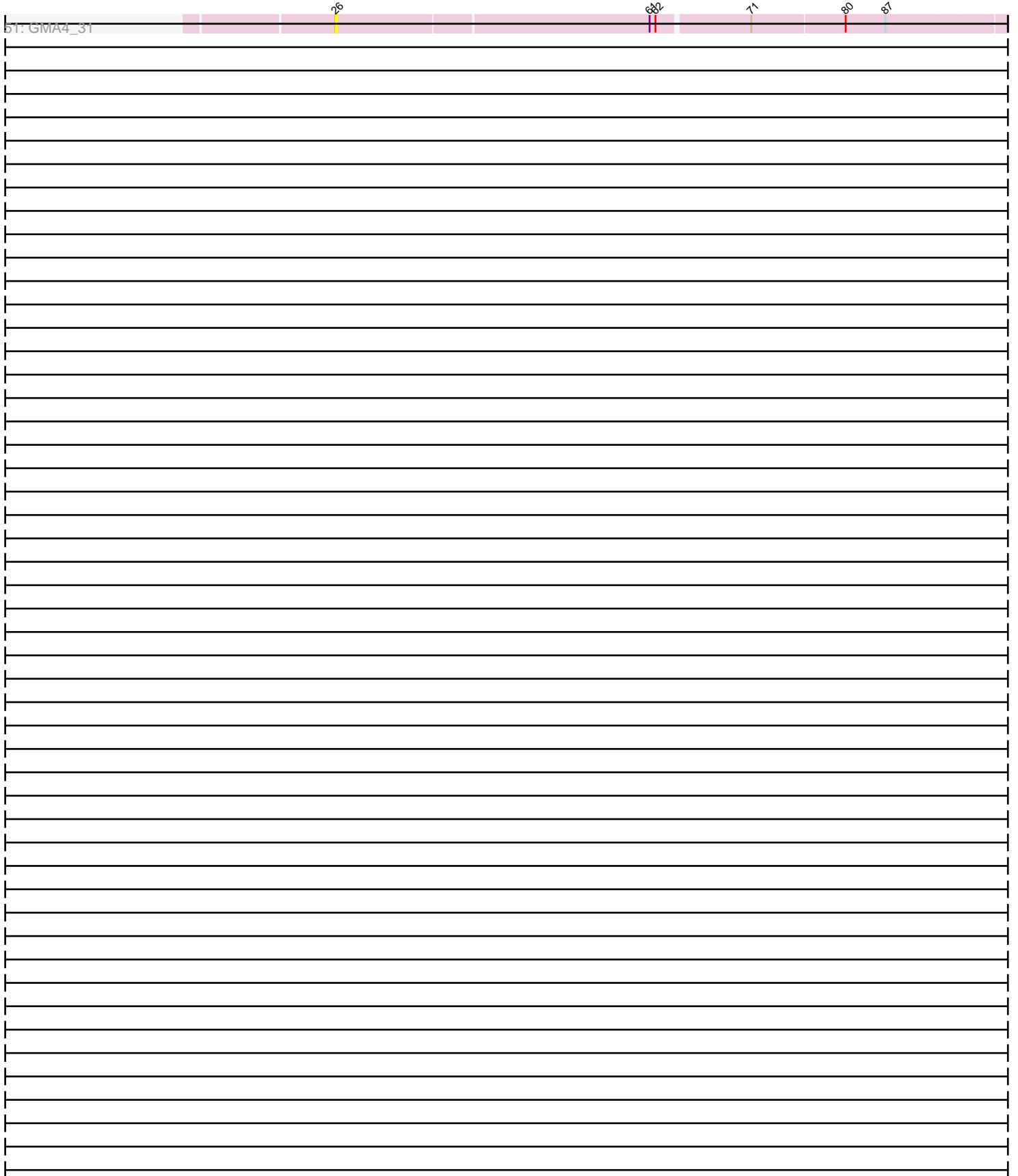


Pham 163519



Pham 163519



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 163519 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163519 has 89 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Dori_46
- Track 2 : Mask_47
- Track 3 : Isolde_50, Raphaella_51, CookieBear_51
- Track 4 : BillyTP_52
- Track 5 : Faja_51
- Track 6 : BenchScraper_49
- Track 7 : EvePickles_47
- Track 8 : Globfish_51
- Track 9 : RadFad_54
- Track 10 : Sakai_50, Gorpy_51
- Track 11 : Phrank15_52
- Track 12 : Richie_53
- Track 13 : Tiff81_51
- Track 14 : Aikyam_49
- Track 15 : Auxilium_47
- Track 16 : Sashimi_52
- Track 17 : Seahorse_54
- Track 18 : AbbyDaisy_50
- Track 19 : YoungHarleezy_51
- Track 20 : Hillester_54
- Track 21 : Anekin_48
- Track 22 : PrincePatrick_39
- Track 23 : Fenry_39
- Track 24 : Posh_45
- Track 25 : Lton_36
- Track 26 : Bunnybear_36, Maridalia_44
- Track 27 : Pepperoni_33
- Track 28 : Hyzer_48
- Track 29 : Pickett_36, Manasvini_43, SoilAssassin_38, BoyNamedSue_43, Kita_44, Polly_40, EdnaMode_37, AlumE_43, LordFarquaad_40, Attis_38, Eudoria_43, Trumpet_43, Zameen_43, Zirinka_40, Lilas_40, Yeet412_38, Suscepit_43, EnalisNailo_37, Tayonia_43, Bradissa_38, Neobush_43, Antonio_43, Bialota_41
- Track 30 : Yeezy_38
- Track 31 : Beenie_35
- Track 32 : Howe_42, Hortense_42, Twinkle_41
- Track 33 : Annalisa_38
- Track 34 : Denise_36

- Track 35 : OneDirection_32
- Track 36 : Morkie_35
- Track 37 : MortyNRick_46
- Track 38 : Frickyeah_54
- Track 39 : Kamaru_46
- Track 40 : Phistory_53, CheeseTouch_56, Crater_51
- Track 41 : Lutum_54, Kenna_53
- Track 42 : Apricot_51, PhorbesPhlower_35
- Track 43 : MulchSalad_39
- Track 44 : LastJedi_38, Zizzle_48, Donkeykong_43, Brocalys_40, Pippy_42, Squirty_37, Clifton_39
- Track 45 : TripleJ_39
- Track 46 : Sbash_42
- Track 47 : Tortellini_34
- Track 48 : Xavia_36
- Track 49 : REQ2_39
- Track 50 : Finkle_47
- Track 51 : GMA4_31

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

The start number called the most often in the published annotations is 27, it was called in 35 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AlumE_43, Antonio_43, Apricot_51, Attis_38, Bialota_41, BoyNamedSue_43, Bradissa_38, Bunnybear_36, CheeseTouch_56, Crater_51, Denise_36, EdnaMode_37, EnalisNailo_37, Eudoria_43, Hyzer_48, Kita_44, Lilas_40, LordFarquaad_40, Lton_36, Manasvini_43, Maridalia_44, Morkie_35, Neobush_43, OneDirection_32, Pepperoni_33, Phistory_53, PhorbesPhlower_35, Pickett_36, Polly_40, Posh_45, SoilAssassin_38, Suscepit_43, Tayonia_43, Trumpet_43, Yeet412_38, Yeezy_38, Zameen_43, Zirinka_40,

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

-

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

- AbbyDaisy_50, Aikyam_49, Anekin_48, Annalisa_38, Auxilium_47, Beenie_35, BenchScraper_49, BillyTP_52, Brocalys_40, Clifton_39, CookieBear_51, Donkeykong_43, Dori_46, EvePickles_47, Faja_51, Fenry_39, Finkle_47, Frickyeah_54, GMA4_31, Globfish_51, Gorpy_51, Hillester_54, Hortense_42, Howe_42, Isolde_50, Kamaru_46, Kenna_53, LastJedi_38, Lutum_54, Mask_47, MortyNRick_46, MulchSalad_39, Phrank15_52, Pippy_42, PrincePatrick_39, REQ2_39, RadFad_54, Raphaella_51, Richie_53, Sakai_50, Sashimi_52, Sbash_42, Seahorse_54, Squirty_37, Tiff81_51, Tortellini_34, TripleJ_39, Twinkle_41, Xavia_36, YoungHarleezy_51, Zizzle_48,

Summary by start number:

Start 19:

- Found in 1 of 89 (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: REQ2_39 (singleton),

Start 23:

- Found in 13 of 89 (14.6%) of genes in pham
- Manual Annotations of this start: 12 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Brocalys_40 (F1), Clifton_39 (F1), Donkeykong_43 (F1), Dori_46 (AD), LastJedi_38 (F1), Mask_47 (AD), MulchSalad_39 (F), Pippy_42 (F1), Sbash_42 (I2), Squirty_37 (F3), Tortellini_34 (P2), Xavia_36 (P3), Zizzle_48 (F1),

Start 25:

- Found in 1 of 89 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finkle_47 (singleton),

Start 26:

- Found in 5 of 89 (5.6%) of genes in pham
- Manual Annotations of this start: 2 of 66
- Called 60.0% of time when present
- Phage (with cluster) where this start called: GMA4_31 (singleton), Kenna_53 (DN1), Lutum_54 (DN1),

Start 27:

- Found in 38 of 89 (42.7%) of genes in pham
- Manual Annotations of this start: 35 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AlumE_43 (CZ1), Antonio_43 (CZ1), Apricot_51 (DN3), Attis_38 (CZ2), Bialota_41 (CZ1), BoyNamedSue_43 (CZ1), Bradissa_38 (CY1), Bunnybear_36 (CZ), CheeseTouch_56 (DN1), Crater_51 (DN3), Denise_36 (CZ5), EdnaMode_37 (CZ2), EnalisNailo_37 (CY1), Eudoria_43 (CZ1), Hyzer_48 (CZ1), Kita_44 (CZ1), Lilas_40 (CY1), LordFarquaad_40 (CZ2), Lton_36 (CZ), Manasvini_43 (CZ1), Maridalia_44 (CZ1), Morkie_35 (DH), Neobush_43 (CZ1), OneDirection_32 (CZ6), Pepperoni_33 (CZ), Phistory_53 (DN1), PhorbesPhlower_35 (DH), Pickett_36 (CZ2), Polly_40 (CZ1), Posh_45 (CY), SoilAssassin_38 (CZ2), Suscepit_43 (CZ1), Tayonia_43 (CZ1), Trumpet_43 (CZ1), Yeet412_38 (CZ2), Yeezy_38 (CZ3), Zameen_43 (CZ1), Zirinka_40 (CZ1),

Start 28:

- Found in 1 of 89 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TripleJ_39 (FJ),

Start 35:

- Found in 4 of 89 (4.5%) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Kamaru_46 (DN1),

Start 40:

- Found in 1 of 89 (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: MortyNRick_46 (DN),

Start 42:

- Found in 4 of 89 (4.5%) of genes in pham
- Manual Annotations of this start: 4 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fenry_39 (CV), Hortense_42 (CZ4), Howe_42 (CZ4), Twinkle_41 (CZ4),

Start 43:

- Found in 4 of 89 (4.5%) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Frickyeah_54 (DN1),

Start 48:

- Found in 4 of 89 (4.5%) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: PrincePatrick_39 (CV),

Start 53:

- Found in 22 of 89 (24.7%) of genes in pham
- Manual Annotations of this start: 10 of 66
- Called 86.4% of time when present
- Phage (with cluster) where this start called: AbbyDaisy_50 (AY), Anekin_48 (AY), Auxilium_47 (AY), BenchScraper_49 (AY), BillyTP_52 (AY), CookieBear_51 (AY), EvePickles_47 (AY), Faja_51 (AY), Globfish_51 (AY), Gorpy_51 (AY), Isolde_50 (AY), Phrank15_52 (AY), RadFad_54 (AY), Raphaella_51 (AY), Richie_53 (AY), Sakai_50 (AY), Sashimi_52 (AY), Seahorse_54 (AY), Tiff81_51 (AY),

Start 54:

- Found in 10 of 89 (11.2%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Annalisa_38 (CZ4), Beenie_35 (CZ4),

Start 58:

- Found in 24 of 89 (27.0%) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Aikyam_49 (AY), Hillester_54 (AY), YoungHarleezy_51 (AY),

Summary by clusters:

There are 24 clusters represented in this pham: DN, singleton, DH, CZ2, CZ3, CZ1, CZ6, CZ4, CZ5, FJ, I2, DN1, DN3, P2, P3, CY1, AD, F, CZ, CY, AY, CV, F1, F3,

Info for manual annotations of cluster AD:

- Start number 23 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster AY:

- Start number 53 was manually annotated 10 times for cluster AY.

Info for manual annotations of cluster CV:

- Start number 42 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CY:

- Start number 27 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 27 was manually annotated 3 times for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 27 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 27 was manually annotated 15 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 27 was manually annotated 5 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 27 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 42 was manually annotated 3 times for cluster CZ4.
- Start number 54 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 27 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 27 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DH:

- Start number 27 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN1:

- Start number 26 was manually annotated 2 times for cluster DN1.
- Start number 27 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 27 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster F1:

- Start number 23 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 23 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster FJ:

- Start number 28 was manually annotated 1 time for cluster FJ.

Info for manual annotations of cluster I2:

- Start number 23 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster P2:

- Start number 23 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 23 was manually annotated 1 time for cluster P3.

Gene Information:

Gene: AbbyDaisy_50 Start: 31666, Stop: 31412, Start Num: 53

Candidate Starts for AbbyDaisy_50:

(7, 31909), (13, 31873), (14, 31867), (17, 31852), (20, 31834), (30, 31786), (32, 31780), (50, 31681), (52, 31669), (Start: 53 @31666 has 10 MA's), (58, 31627), (82, 31501),

Gene: Aikyam_49 Start: 29332, Stop: 29117, Start Num: 58

Candidate Starts for Aikyam_49:

(7, 29614), (13, 29578), (14, 29572), (17, 29557), (20, 29539), (30, 29491), (32, 29485), (Start: 53 @29371 has 10 MA's), (58, 29332), (82, 29206),

Gene: AlumE_43 Start: 33874, Stop: 33458, Start Num: 27

Candidate Starts for AlumE_43:

(Start: 27 @33874 has 35 MA's), (32, 33832), (33, 33826), (34, 33823), (39, 33799), (41, 33790), (46, 33766), (69, 33637), (79, 33565), (85, 33541),

Gene: Anekin_48 Start: 30801, Stop: 30547, Start Num: 53

Candidate Starts for Anekin_48:

(7, 31044), (13, 31008), (14, 31002), (17, 30987), (20, 30969), (24, 30963), (30, 30921), (32, 30915), (50, 30816), (52, 30804), (Start: 53 @30801 has 10 MA's), (58, 30762), (74, 30687), (82, 30636),

Gene: Annalisa_38 Start: 30127, Stop: 29879, Start Num: 54

Candidate Starts for Annalisa_38:

(8, 30355), (15, 30316), (16, 30310), (18, 30295), (22, 30286), (Start: 54 @30127 has 1 MA's), (56, 30109), (60, 30091), (61, 30088), (70, 30031), (81, 29965), (83, 29959), (84, 29953), (86, 29947), (90, 29929), (94, 29896),

Gene: Antonio_43 Start: 33147, Stop: 32731, Start Num: 27

Candidate Starts for Antonio_43:

(Start: 27 @33147 has 35 MA's), (32, 33105), (33, 33099), (34, 33096), (39, 33072), (41, 33063), (46, 33039), (69, 32910), (79, 32838), (85, 32814),

Gene: Apricot_51 Start: 33861, Stop: 33445, Start Num: 27

Candidate Starts for Apricot_51:

(Start: 27 @33861 has 35 MA's), (32, 33819), (46, 33753), (48, 33741), (49, 33732), (73, 33603), (77, 33564), (81, 33543), (85, 33528), (92, 33492),

Gene: Attis_38 Start: 30280, Stop: 29864, Start Num: 27

Candidate Starts for Attis_38:

(Start: 27 @30280 has 35 MA's), (32, 30238), (33, 30232), (34, 30229), (39, 30205), (41, 30196), (46, 30172), (69, 30043), (79, 29971), (85, 29947),

Gene: Auxilium_47 Start: 28937, Stop: 28683, Start Num: 53

Candidate Starts for Auxilium_47:

(7, 29180), (13, 29144), (14, 29138), (17, 29123), (20, 29105), (30, 29057), (32, 29051), (50, 28952), (52, 28940), (Start: 53 @28937 has 10 MA's), (58, 28898), (72, 28832), (82, 28772),

Gene: Beenie_35 Start: 30755, Stop: 30507, Start Num: 54

Candidate Starts for Beenie_35:

(9, 30983), (10, 30974), (18, 30923), (22, 30914), (Start: 54 @30755 has 1 MA's), (56, 30737), (60, 30719), (61, 30716), (70, 30659), (81, 30593), (83, 30587), (84, 30581), (86, 30575), (90, 30557), (94, 30524),

Gene: BenchScraper_49 Start: 30687, Stop: 30433, Start Num: 53

Candidate Starts for BenchScraper_49:

(7, 30930), (13, 30894), (14, 30888), (17, 30873), (20, 30855), (24, 30849), (30, 30807), (32, 30801), (52, 30690), (Start: 53 @30687 has 10 MA's), (58, 30648), (82, 30522),

Gene: Bialota_41 Start: 33899, Stop: 33483, Start Num: 27

Candidate Starts for Bialota_41:

(Start: 27 @33899 has 35 MA's), (32, 33857), (33, 33851), (34, 33848), (39, 33824), (41, 33815), (46, 33791), (69, 33662), (79, 33590), (85, 33566),

Gene: BillyTP_52 Start: 32558, Stop: 32304, Start Num: 53

Candidate Starts for BillyTP_52:

(7, 32801), (13, 32765), (14, 32759), (17, 32744), (20, 32726), (24, 32720), (30, 32678), (32, 32672), (50, 32573), (Start: 53 @32558 has 10 MA's), (58, 32519), (82, 32393),

Gene: BoyNamedSue_43 Start: 33874, Stop: 33458, Start Num: 27

Candidate Starts for BoyNamedSue_43:

(Start: 27 @33874 has 35 MA's), (32, 33832), (33, 33826), (34, 33823), (39, 33799), (41, 33790), (46, 33766), (69, 33637), (79, 33565), (85, 33541),

Gene: Bradissa_38 Start: 33185, Stop: 32769, Start Num: 27

Candidate Starts for Bradissa_38:

(Start: 27 @33185 has 35 MA's), (32, 33143), (33, 33137), (34, 33134), (39, 33110), (41, 33101), (46, 33077), (69, 32948), (79, 32876), (85, 32852),

Gene: Brocalys_40 Start: 29944, Stop: 29501, Start Num: 23

Candidate Starts for Brocalys_40:

(Start: 23 @29944 has 12 MA's), (41, 29848), (49, 29797), (75, 29647), (93, 29542),

Gene: Bunnybear_36 Start: 31549, Stop: 31133, Start Num: 27

Candidate Starts for Bunnybear_36:

(Start: 27 @31549 has 35 MA's), (32, 31507), (33, 31501), (34, 31498), (39, 31474), (41, 31465), (46, 31441), (69, 31312), (79, 31240),

Gene: CheeseTouch_56 Start: 32599, Stop: 32183, Start Num: 27

Candidate Starts for CheeseTouch_56:

(Start: 27 @32599 has 35 MA's), (32, 32557), (46, 32491), (49, 32470), (73, 32341), (77, 32302), (81, 32281), (85, 32266), (92, 32230),

Gene: Clifton_39 Start: 30295, Stop: 29852, Start Num: 23

Candidate Starts for Clifton_39:

(Start: 23 @30295 has 12 MA's), (41, 30199), (49, 30148), (75, 29998), (93, 29893),

Gene: CookieBear_51 Start: 31351, Stop: 31097, Start Num: 53

Candidate Starts for CookieBear_51:

(7, 31594), (13, 31558), (14, 31552), (17, 31537), (20, 31519), (30, 31471), (32, 31465), (36, 31447), (50, 31366), (Start: 53 @31351 has 10 MA's), (58, 31312), (74, 31237), (82, 31186),

Gene: Crater_51 Start: 34256, Stop: 33840, Start Num: 27

Candidate Starts for Crater_51:

(Start: 27 @34256 has 35 MA's), (32, 34214), (46, 34148), (49, 34127), (73, 33998), (77, 33959), (81, 33938), (85, 33923), (92, 33887),

Gene: Denise_36 Start: 28917, Stop: 28501, Start Num: 27

Candidate Starts for Denise_36:

(Start: 27 @28917 has 35 MA's), (31, 28878), (32, 28875), (33, 28869), (34, 28866), (39, 28842), (46, 28809), (52, 28770), (65, 28704), (69, 28680), (73, 28659), (78, 28617), (79, 28608),

Gene: Donkeykong_43 Start: 34315, Stop: 33872, Start Num: 23

Candidate Starts for Donkeykong_43:

(Start: 23 @34315 has 12 MA's), (41, 34219), (49, 34168), (75, 34018), (93, 33913),

Gene: Dori_46 Start: 42481, Stop: 42059, Start Num: 23

Candidate Starts for Dori_46:

(14, 42517), (Start: 23 @42481 has 12 MA's), (34, 42430), (39, 42403), (87, 42139),

Gene: EdnaMode_37 Start: 28968, Stop: 28552, Start Num: 27

Candidate Starts for EdnaMode_37:

(Start: 27 @28968 has 35 MA's), (32, 28926), (33, 28920), (34, 28917), (39, 28893), (41, 28884), (46, 28860), (69, 28731), (79, 28659), (85, 28635),

Gene: EnalisNailo_37 Start: 32719, Stop: 32303, Start Num: 27

Candidate Starts for EnalisNailo_37:

(Start: 27 @32719 has 35 MA's), (32, 32677), (33, 32671), (34, 32668), (39, 32644), (41, 32635), (46, 32611), (69, 32482), (79, 32410), (85, 32386),

Gene: Eudoria_43 Start: 33147, Stop: 32731, Start Num: 27

Candidate Starts for Eudoria_43:

(Start: 27 @33147 has 35 MA's), (32, 33105), (33, 33099), (34, 33096), (39, 33072), (41, 33063), (46, 33039), (69, 32910), (79, 32838), (85, 32814),

Gene: EvePickles_47 Start: 31556, Stop: 31302, Start Num: 53

Candidate Starts for EvePickles_47:

(7, 31799), (13, 31763), (14, 31757), (17, 31742), (20, 31724), (24, 31718), (30, 31676), (50, 31571), (Start: 53 @31556 has 10 MA's), (58, 31517), (82, 31391),

Gene: Faja_51 Start: 32526, Stop: 32272, Start Num: 53

Candidate Starts for Faja_51:

(7, 32769), (13, 32733), (14, 32727), (17, 32712), (20, 32694), (24, 32688), (30, 32646), (32, 32640), (50, 32541), (52, 32529), (Start: 53 @32526 has 10 MA's), (58, 32487), (82, 32361),

Gene: Fenry_39 Start: 32680, Stop: 32357, Start Num: 42

Candidate Starts for Fenry_39:

(11, 32821), (15, 32794), (16, 32788), (18, 32773), (22, 32764), (32, 32725), (Start: 42 @32680 has 4 MA's), (56, 32587), (60, 32569), (65, 32542), (81, 32443), (83, 32437), (84, 32431), (93, 32383),

Gene: Finkle_47 Start: 33372, Stop: 32953, Start Num: 25

Candidate Starts for Finkle_47:

(Start: 25 @33372 has 1 MA's), (32, 33324), (33, 33318), (34, 33315), (38, 33294), (46, 33258), (48, 33246), (65, 33153), (91, 33009), (96, 32976),

Gene: Frickyeah_54 Start: 33610, Stop: 33284, Start Num: 43

Candidate Starts for Frickyeah_54:

(Start: 26 @33706 has 2 MA's), (35, 33652), (43, 33610), (Start: 54 @33550 has 1 MA's), (58, 33523), (65, 33481), (67, 33472), (75, 33427), (78, 33400), (81, 33382), (90, 33346),

Gene: GMA4_31 Start: 27079, Stop: 26645, Start Num: 26

Candidate Starts for GMA4_31:

(Start: 26 @27079 has 2 MA's), (61, 26872), (62, 26869), (71, 26809), (80, 26749), (87, 26722),

Gene: Globfish_51 Start: 31449, Stop: 31195, Start Num: 53

Candidate Starts for Globfish_51:

(13, 31656), (14, 31650), (17, 31635), (20, 31617), (24, 31611), (30, 31569), (32, 31563), (50, 31464), (Start: 53 @31449 has 10 MA's), (58, 31410), (82, 31284), (95, 31212),

Gene: Gorpy_51 Start: 32343, Stop: 32089, Start Num: 53

Candidate Starts for Gorpy_51:

(7, 32586), (13, 32550), (14, 32544), (17, 32529), (20, 32511), (30, 32463), (32, 32457), (36, 32439), (Start: 53 @32343 has 10 MA's), (58, 32304), (82, 32178),

Gene: Hillester_54 Start: 32245, Stop: 32030, Start Num: 58

Candidate Starts for Hillester_54:

(13, 32491), (14, 32485), (17, 32470), (20, 32452), (30, 32404), (32, 32398), (50, 32299), (52, 32287), (Start: 53 @32284 has 10 MA's), (58, 32245), (82, 32119), (89, 32089),

Gene: Hortense_42 Start: 34200, Stop: 33877, Start Num: 42

Candidate Starts for Hortense_42:

(8, 34353), (15, 34314), (16, 34308), (18, 34293), (22, 34284), (Start: 42 @34200 has 4 MA's), (Start: 54 @34125 has 1 MA's), (56, 34107), (60, 34089), (61, 34086), (70, 34029), (81, 33963), (83, 33957), (84, 33951), (86, 33945), (90, 33927), (94, 33894),

Gene: Howe_42 Start: 34200, Stop: 33877, Start Num: 42

Candidate Starts for Howe_42:

(8, 34353), (15, 34314), (16, 34308), (18, 34293), (22, 34284), (Start: 42 @34200 has 4 MA's), (Start: 54 @34125 has 1 MA's), (56, 34107), (60, 34089), (61, 34086), (70, 34029), (81, 33963), (83, 33957), (84, 33951), (86, 33945), (90, 33927), (94, 33894),

Gene: Hyzer_48 Start: 36153, Stop: 35734, Start Num: 27

Candidate Starts for Hyzer_48:

(Start: 27 @36153 has 35 MA's), (32, 36111), (33, 36105), (34, 36102), (37, 36090), (41, 36069), (44, 36051), (46, 36042), (51, 36009), (69, 35913), (79, 35841),

Gene: Isolde_50 Start: 31020, Stop: 30766, Start Num: 53

Candidate Starts for Isolde_50:

(7, 31263), (13, 31227), (14, 31221), (17, 31206), (20, 31188), (30, 31140), (32, 31134), (36, 31116), (50, 31035), (Start: 53 @31020 has 10 MA's), (58, 30981), (74, 30906), (82, 30855),

Gene: Kamaru_46 Start: 33198, Stop: 32830, Start Num: 35

Candidate Starts for Kamaru_46:

(Start: 26 @33252 has 2 MA's), (35, 33198), (43, 33156), (Start: 54 @33096 has 1 MA's), (58, 33069), (65, 33027), (67, 33018), (75, 32973), (78, 32946), (81, 32928), (90, 32892),

Gene: Kenna_53 Start: 35132, Stop: 34710, Start Num: 26

Candidate Starts for Kenna_53:

(Start: 26 @35132 has 2 MA's), (32, 35093), (35, 35078), (43, 35036), (Start: 54 @34976 has 1 MA's), (69, 34883), (72, 34865), (78, 34826), (81, 34808), (87, 34787),

Gene: Kita_44 Start: 33156, Stop: 32740, Start Num: 27

Candidate Starts for Kita_44:

(Start: 27 @33156 has 35 MA's), (32, 33114), (33, 33108), (34, 33105), (39, 33081), (41, 33072), (46, 33048), (69, 32919), (79, 32847), (85, 32823),

Gene: LastJedi_38 Start: 30338, Stop: 29895, Start Num: 23

Candidate Starts for LastJedi_38:

(Start: 23 @30338 has 12 MA's), (41, 30242), (49, 30191), (75, 30041), (93, 29936),

Gene: Lilas_40 Start: 34430, Stop: 34014, Start Num: 27

Candidate Starts for Lilas_40:

(Start: 27 @34430 has 35 MA's), (32, 34388), (33, 34382), (34, 34379), (39, 34355), (41, 34346), (46, 34322), (69, 34193), (79, 34121), (85, 34097),

Gene: LordFarquaad_40 Start: 30261, Stop: 29845, Start Num: 27

Candidate Starts for LordFarquaad_40:

(Start: 27 @30261 has 35 MA's), (32, 30219), (33, 30213), (34, 30210), (39, 30186), (41, 30177), (46, 30153), (69, 30024), (79, 29952), (85, 29928),

Gene: Lton_36 Start: 26921, Stop: 26505, Start Num: 27

Candidate Starts for Lton_36:

(Start: 27 @26921 has 35 MA's), (33, 26873), (34, 26870), (39, 26846), (46, 26813), (65, 26708), (69, 26684), (73, 26663), (78, 26621), (79, 26612),

Gene: Lutum_54 Start: 35132, Stop: 34710, Start Num: 26

Candidate Starts for Lutum_54:

(Start: 26 @35132 has 2 MA's), (32, 35093), (35, 35078), (43, 35036), (Start: 54 @34976 has 1 MA's), (69, 34883), (72, 34865), (78, 34826), (81, 34808), (87, 34787),

Gene: Manasvini_43 Start: 33148, Stop: 32732, Start Num: 27

Candidate Starts for Manasvini_43:

(Start: 27 @33148 has 35 MA's), (32, 33106), (33, 33100), (34, 33097), (39, 33073), (41, 33064), (46, 33040), (69, 32911), (79, 32839), (85, 32815),

Gene: Maridalia_44 Start: 33295, Stop: 32879, Start Num: 27

Candidate Starts for Maridalia_44:

(Start: 27 @33295 has 35 MA's), (32, 33253), (33, 33247), (34, 33244), (39, 33220), (41, 33211), (46, 33187), (69, 33058), (79, 32986),

Gene: Mask_47 Start: 43714, Stop: 43292, Start Num: 23

Candidate Starts for Mask_47:

(Start: 23 @43714 has 12 MA's), (34, 43663), (39, 43636), (Start: 54 @43549 has 1 MA's), (59, 43519), (63, 43507), (87, 43372),

Gene: Morkie_35 Start: 27876, Stop: 27460, Start Num: 27

Candidate Starts for Morkie_35:

(Start: 27 @27876 has 35 MA's), (32, 27834), (33, 27828), (34, 27825), (39, 27801), (46, 27768), (52, 27729), (65, 27663), (69, 27639), (78, 27576), (79, 27567),

Gene: MortyNRick_46 Start: 35061, Stop: 34720, Start Num: 40

Candidate Starts for MortyNRick_46:

(12, 35208), (21, 35154), (33, 35094), (40, 35061), (41, 35055), (55, 34971), (57, 34956), (72, 34875), (75, 34863), (97, 34728),

Gene: MulchSalad_39 Start: 30079, Stop: 29636, Start Num: 23

Candidate Starts for MulchSalad_39:

(Start: 23 @30079 has 12 MA's), (75, 29782),

Gene: Neobush_43 Start: 33141, Stop: 32725, Start Num: 27

Candidate Starts for Neobush_43:

(Start: 27 @33141 has 35 MA's), (32, 33099), (33, 33093), (34, 33090), (39, 33066), (41, 33057), (46, 33033), (69, 32904), (79, 32832), (85, 32808),

Gene: OneDirection_32 Start: 26498, Stop: 26082, Start Num: 27

Candidate Starts for OneDirection_32:

(Start: 27 @26498 has 35 MA's), (32, 26456), (33, 26450), (34, 26447), (39, 26423), (46, 26390), (52, 26351), (65, 26285), (69, 26261), (79, 26189),

Gene: Pepperoni_33 Start: 27643, Stop: 27227, Start Num: 27

Candidate Starts for Pepperoni_33:

(Start: 27 @27643 has 35 MA's), (31, 27604), (32, 27601), (33, 27595), (34, 27592), (39, 27568), (46, 27535), (52, 27496), (65, 27430), (69, 27406), (79, 27334),

Gene: Phistory_53 Start: 34808, Stop: 34392, Start Num: 27

Candidate Starts for Phistory_53:

(Start: 27 @34808 has 35 MA's), (32, 34766), (46, 34700), (49, 34679), (73, 34550), (77, 34511), (81, 34490), (85, 34475), (92, 34439),

Gene: PhorbesPhlower_35 Start: 27304, Stop: 26888, Start Num: 27

Candidate Starts for PhorbesPhlower_35:

(Start: 27 @27304 has 35 MA's), (32, 27262), (46, 27196), (48, 27184), (49, 27175), (73, 27046), (77, 27007), (81, 26986), (85, 26971), (92, 26935),

Gene: Phrank15_52 Start: 31309, Stop: 31055, Start Num: 53

Candidate Starts for Phrank15_52:

(13, 31516), (14, 31510), (17, 31495), (20, 31477), (30, 31429), (32, 31423), (50, 31324), (52, 31312), (Start: 53 @31309 has 10 MA's), (58, 31270), (82, 31144), (95, 31072),

Gene: Pickett_36 Start: 27444, Stop: 27028, Start Num: 27

Candidate Starts for Pickett_36:

(Start: 27 @27444 has 35 MA's), (32, 27402), (33, 27396), (34, 27393), (39, 27369), (41, 27360), (46, 27336), (69, 27207), (79, 27135), (85, 27111),

Gene: Pippy_42 Start: 31901, Stop: 31458, Start Num: 23

Candidate Starts for Pippy_42:

(Start: 23 @31901 has 12 MA's), (41, 31805), (49, 31754), (75, 31604), (93, 31499),

Gene: Polly_40 Start: 32590, Stop: 32174, Start Num: 27

Candidate Starts for Polly_40:

(Start: 27 @32590 has 35 MA's), (32, 32548), (33, 32542), (34, 32539), (39, 32515), (41, 32506), (46, 32482), (69, 32353), (79, 32281), (85, 32257),

Gene: Posh_45 Start: 34831, Stop: 34415, Start Num: 27

Candidate Starts for Posh_45:

(Start: 27 @34831 has 35 MA's), (32, 34789), (33, 34783), (34, 34780), (39, 34756), (41, 34747), (46, 34723), (68, 34600), (69, 34594), (79, 34522), (85, 34498),

Gene: PrincePatrick_39 Start: 31293, Stop: 30994, Start Num: 48

Candidate Starts for PrincePatrick_39:

(15, 31449), (16, 31443), (18, 31428), (22, 31419), (46, 31305), (48, 31293), (64, 31194), (76, 31131), (81, 31089), (84, 31077),

Gene: REQ2_39 Start: 31992, Stop: 31546, Start Num: 19

Candidate Starts for REQ2_39:

(1, 32175), (2, 32127), (19, 31992), (60, 31776), (80, 31650), (85, 31629),

Gene: RadFad_54 Start: 32284, Stop: 32030, Start Num: 53

Candidate Starts for RadFad_54:

(13, 32491), (14, 32485), (17, 32470), (20, 32452), (30, 32404), (32, 32398), (50, 32299), (52, 32287), (Start: 53 @32284 has 10 MA's), (58, 32245), (82, 32119), (89, 32089),

Gene: Raphaella_51 Start: 30952, Stop: 30698, Start Num: 53

Candidate Starts for Raphaella_51:

(7, 31195), (13, 31159), (14, 31153), (17, 31138), (20, 31120), (30, 31072), (32, 31066), (36, 31048), (50, 30967), (Start: 53 @30952 has 10 MA's), (58, 30913), (74, 30838), (82, 30787),

Gene: Richie_53 Start: 32021, Stop: 31767, Start Num: 53

Candidate Starts for Richie_53:

(7, 32264), (13, 32228), (14, 32222), (17, 32207), (20, 32189), (30, 32141), (32, 32135), (36, 32117), (Start: 53 @32021 has 10 MA's), (58, 31982), (74, 31907), (82, 31856),

Gene: Sakai_50 Start: 31054, Stop: 30800, Start Num: 53

Candidate Starts for Sakai_50:

(7, 31297), (13, 31261), (14, 31255), (17, 31240), (20, 31222), (30, 31174), (32, 31168), (36, 31150), (Start: 53 @31054 has 10 MA's), (58, 31015), (82, 30889),

Gene: Sashimi_52 Start: 32287, Stop: 32033, Start Num: 53

Candidate Starts for Sashimi_52:

(3, 32572), (7, 32530), (13, 32494), (14, 32488), (17, 32473), (20, 32455), (30, 32407), (32, 32401), (36, 32383), (50, 32302), (Start: 53 @32287 has 10 MA's), (58, 32248), (72, 32182), (82, 32122),

Gene: Sbash_42 Start: 35113, Stop: 34670, Start Num: 23

Candidate Starts for Sbash_42:

(4, 35215), (6, 35191), (Start: 23 @35113 has 12 MA's), (39, 35026), (41, 35017), (60, 34897), (70, 34837), (83, 34765), (88, 34744), (93, 34711),

Gene: Seahorse_54 Start: 33286, Stop: 33032, Start Num: 53

Candidate Starts for Seahorse_54:

(5, 33532), (13, 33493), (14, 33487), (17, 33472), (20, 33454), (30, 33406), (32, 33400), (50, 33301), (Start: 53 @33286 has 10 MA's), (58, 33247), (82, 33121), (89, 33091),

Gene: SoilAssassin_38 Start: 30279, Stop: 29863, Start Num: 27

Candidate Starts for SoilAssassin_38:

(Start: 27 @30279 has 35 MA's), (32, 30237), (33, 30231), (34, 30228), (39, 30204), (41, 30195), (46, 30171), (69, 30042), (79, 29970), (85, 29946),

Gene: Squirty_37 Start: 31074, Stop: 30631, Start Num: 23

Candidate Starts for Squirty_37:

(Start: 23 @31074 has 12 MA's), (41, 30978), (49, 30927), (75, 30777), (93, 30672),

Gene: Susceptit_43 Start: 33148, Stop: 32732, Start Num: 27

Candidate Starts for Susceptit_43:

(Start: 27 @33148 has 35 MA's), (32, 33106), (33, 33100), (34, 33097), (39, 33073), (41, 33064), (46, 33040), (69, 32911), (79, 32839), (85, 32815),

Gene: Tayonia_43 Start: 33147, Stop: 32731, Start Num: 27

Candidate Starts for Tayonia_43:

(Start: 27 @33147 has 35 MA's), (32, 33105), (33, 33099), (34, 33096), (39, 33072), (41, 33063), (46, 33039), (69, 32910), (79, 32838), (85, 32814),

Gene: Tiff81_51 Start: 29465, Stop: 29211, Start Num: 53

Candidate Starts for Tiff81_51:

(5, 29711), (13, 29672), (14, 29666), (17, 29651), (20, 29633), (30, 29585), (32, 29579), (33, 29573), (50, 29480), (52, 29468), (Start: 53 @29465 has 10 MA's), (58, 29426), (74, 29351), (82, 29300),

Gene: Tortellini_34 Start: 31506, Stop: 31084, Start Num: 23

Candidate Starts for Tortellini_34:

(Start: 23 @31506 has 12 MA's), (34, 31455), (59, 31311), (63, 31299), (85, 31170), (87, 31164),

Gene: TripleJ_39 Start: 28726, Stop: 28325, Start Num: 28

Candidate Starts for TripleJ_39:

(Start: 28 @28726 has 1 MA's), (29, 28711), (30, 28699), (45, 28624), (66, 28510), (82, 28414),

Gene: Trumpet_43 Start: 33148, Stop: 32732, Start Num: 27

Candidate Starts for Trumpet_43:

(Start: 27 @33148 has 35 MA's), (32, 33106), (33, 33100), (34, 33097), (39, 33073), (41, 33064), (46, 33040), (69, 32911), (79, 32839), (85, 32815),

Gene: Twinkle_41 Start: 35259, Stop: 34936, Start Num: 42

Candidate Starts for Twinkle_41:

(8, 35412), (15, 35373), (16, 35367), (18, 35352), (22, 35343), (Start: 42 @35259 has 4 MA's), (Start: 54 @35184 has 1 MA's), (56, 35166), (60, 35148), (61, 35145), (70, 35088), (81, 35022), (83, 35016), (84, 35010), (86, 35004), (90, 34986), (94, 34953),

Gene: Xavia_36 Start: 32193, Stop: 31771, Start Num: 23

Candidate Starts for Xavia_36:

(Start: 23 @32193 has 12 MA's), (34, 32142), (39, 32115), (63, 31986), (85, 31857), (87, 31851),

Gene: Yeet412_38 Start: 30280, Stop: 29864, Start Num: 27

Candidate Starts for Yeet412_38:

(Start: 27 @30280 has 35 MA's), (32, 30238), (33, 30232), (34, 30229), (39, 30205), (41, 30196), (46, 30172), (69, 30043), (79, 29971), (85, 29947),

Gene: Yeezy_38 Start: 30822, Stop: 30406, Start Num: 27

Candidate Starts for Yeezy_38:

(Start: 27 @30822 has 35 MA's), (32, 30780), (33, 30774), (34, 30771), (39, 30747), (41, 30738), (46, 30714), (47, 30708), (69, 30585), (79, 30513), (85, 30489),

Gene: YoungHarleezy_51 Start: 31479, Stop: 31264, Start Num: 58

Candidate Starts for YoungHarleezy_51:

(7, 31761), (13, 31725), (14, 31719), (17, 31704), (20, 31686), (30, 31638), (32, 31632), (36, 31614), (52, 31521), (Start: 53 @31518 has 10 MA's), (58, 31479), (82, 31353),

Gene: Zameen_43 Start: 33147, Stop: 32731, Start Num: 27

Candidate Starts for Zameen_43:

(Start: 27 @33147 has 35 MA's), (32, 33105), (33, 33099), (34, 33096), (39, 33072), (41, 33063), (46, 33039), (69, 32910), (79, 32838), (85, 32814),

Gene: Zirinka_40 Start: 33887, Stop: 33471, Start Num: 27

Candidate Starts for Zirinka_40:

(Start: 27 @33887 has 35 MA's), (32, 33845), (33, 33839), (34, 33836), (39, 33812), (41, 33803), (46, 33779), (69, 33650), (79, 33578), (85, 33554),

Gene: Zizzle_48 Start: 34743, Stop: 34300, Start Num: 23

Candidate Starts for Zizzle_48:

(Start: 23 @34743 has 12 MA's), (41, 34647), (49, 34596), (75, 34446), (93, 34341),