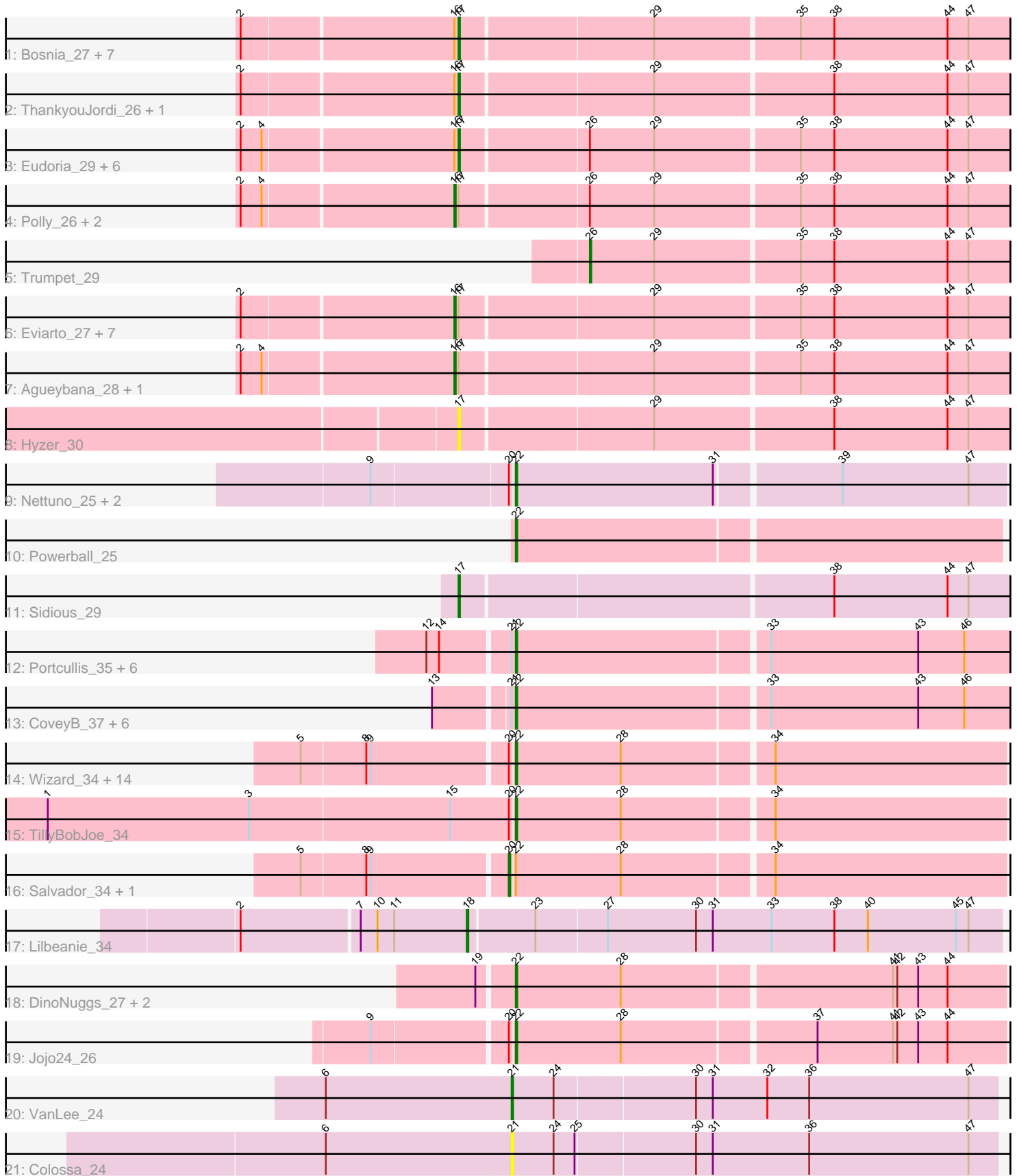


Pham 301323



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 301323 Report

This analysis was run 06/08/26 on database version 649.

Pham number 301323 has 76 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Bosnia_27, Madeline_27, BoyNamedSue_28, AlumE_28, Madavieve_27, PantheRoc_28, SushiChef_29, Ohgeesy_27
- Track 2 : ThankyouJordi_26, WelcomeAyanna_26
- Track 3 : Eudoria_29, Suscepit_29, Antonio_29, Tayonia_29, Maridalia_28, Manasvini_29, Kita_29
- Track 4 : Polly_26, Neobush_29, Zameen_29
- Track 5 : Trumpet_29
- Track 6 : Eviarto_27, Zirinka_27, Nymphadora_27, TimTam_27, Herod_27, BatStarr_27, Bialota_27, Yeezy_29
- Track 7 : Agueybana_28, BaxterFox_27
- Track 8 : Hyzer_30
- Track 9 : Nettuno_25, Lamberg_25, EdnaMode_25
- Track 10 : Powerball_25
- Track 11 : Sidious_29
- Track 12 : Portcullis_35, Egi03_35, Shinji_35, Twister6_37, RogerDodger_38, Danyall_37, JohnPork_35
- Track 13 : CoveyB_37, PinkCoffee_37, ClamChowder_37, Arri_38, VanDeWege_38, Barb_37, Fugax_37
- Track 14 : Wizard_34, Valary_37, Jambalaya_34, Nubi_34, Sendy_35, SmokingBunny_34, CherryCola_37, KimmyK_36, Halo3_35, Evamon_34, Fireball_35, Phlop_34, Savbucketdawg_34, Gezellig_34, PullumCavea_34
- Track 15 : TillyBobJoe_34
- Track 16 : Salvador_34, Togo_34
- Track 17 : Lilbeanie_34
- Track 18 : DinoNuggs_27, DearBasketball_29, Reyja_27
- Track 19 : Jojo24_26
- Track 20 : VanLee_24
- Track 21 : Colossa_24

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

The start number called the most often in the published annotations is 22, it was called in 33 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arri_38, Barb_37, CherryCola_37, ClamChowder_37, CoveyB_37, Danyall_37, DearBasketball_29, DinoNuggs_27, EdnaMode_25, Egi03_35, Evamon_34, Fireball_35, Fugax_37, Gezellig_34, Halo3_35, Jambalaya_34, JohnPork_35, Jojo24_26, KimmyK_36, Lamberg_25, Nettuno_25, Nubi_34, Phlop_34, PinkCoffee_37, Portcullis_35, Powerball_25, PullumCavea_34, Reyja_27, RogerDodger_38, Savbucketdawg_34, Sendy_35, Shinji_35, SmokingBunny_34, TillyBobJoe_34, Twister6_37, Valary_37, VanDeWege_38, Wizard_34,

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

- Salvador_34, Togo_34,

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

- Agueybana_28, AlumE_28, Antonio_29, BatStarr_27, BaxterFox_27, Bialota_27, Bosnia_27, BoyNamedSue_28, Colossa_24, Eudoria_29, Eviarto_27, Herod_27, Hyzer_30, Kita_29, Lilbeanie_34, Madavieve_27, Madeline_27, Manasvini_29, Maridalia_28, Neobush_29, Nymphadora_27, Ohgeesy_27, PantheRoc_28, Polly_26, Sidious_29, Suscepit_29, SushiChef_29, Tayonia_29, ThankyouJordi_26, TimTam_27, Trumpet_29, VanLee_24, WelcomeAyanna_26, Yeezy_29, Zameen_29, Zirinka_27,

Summary by start number:

Start 16:

- Found in 30 of 76 (39.5%) of genes in pham
- Manual Annotations of this start: 13 of 67
- Called 43.3% of time when present
- Phage (with cluster) where this start called: Agueybana_28 (CZ1), BatStarr_27 (CZ1), BaxterFox_27 (CZ3), Bialota_27 (CZ1), Eviarto_27 (CZ1), Herod_27 (CZ1), Neobush_29 (CZ1), Nymphadora_27 (CZ1), Polly_26 (CZ1), TimTam_27 (CZ1), Yeezy_29 (CZ3), Zameen_29 (CZ1), Zirinka_27 (CZ1),

Start 17:

- Found in 32 of 76 (42.1%) of genes in pham
- Manual Annotations of this start: 16 of 67
- Called 59.4% of time when present
- Phage (with cluster) where this start called: AlumE_28 (CZ1), Antonio_29 (CZ1), Bosnia_27 (CZ1), BoyNamedSue_28 (CZ1), Eudoria_29 (CZ1), Hyzer_30 (CZ1), Kita_29 (CZ1), Madavieve_27 (CZ1), Madeline_27 (CZ1), Manasvini_29 (CZ1), Maridalia_28 (CZ1), Ohgeesy_27 (CZ), PantheRoc_28 (CZ3), Sidious_29 (CZ7), Suscepit_29 (CZ1), SushiChef_29 (CZ), Tayonia_29 (CZ1), ThankyouJordi_26 (CZ1), WelcomeAyanna_26 (CZ1),

Start 18:

- Found in 1 of 76 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie_34 (DE5),

Start 20:

- Found in 22 of 76 (28.9%) of genes in pham
- Manual Annotations of this start: 2 of 67
- Called 9.1% of time when present

- Phage (with cluster) where this start called: Salvador_34 (DC1), Togo_34 (DC1),

Start 21:

- Found in 16 of 76 (21.1%) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Colossa_24 (KA), VanLee_24 (KA),

Start 22:

- Found in 40 of 76 (52.6%) of genes in pham
- Manual Annotations of this start: 33 of 67
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Arri_38 (DC1), Barb_37 (DC1), CherryCola_37 (DC1), ClamChowder_37 (DC1), CoveyB_37 (DC1), Danyall_37 (DC1), DearBasketball_29 (DY), DinoNuggs_27 (DY), EdnaMode_25 (CZ2), Egi03_35 (DC1), Evamon_34 (DC1), Fireball_35 (DC1), Fugax_37 (DC1), Gezellig_34 (DC1), Halo3_35 (DC1), Jambalaya_34 (DC1), JohnPork_35 (DC1), Jojo24_26 (DY), KimmyK_36 (DC1), Lamberg_25 (CZ2), Nettuno_25 (CZ2), Nubi_34 (DC1), Phlop_34 (DC1), PinkCoffee_37 (DC1), Portcullis_35 (DC1), Powerball_25 (CZ4), PullumCavea_34 (DC1), Reyja_27 (DY), RogerDodger_38 (DC1), Savbucketdawg_34 (DC1), Sendy_35 (DC1), Shinji_35 (DC1), SmokingBunny_34 (DC1), TillyBobJoe_34 (DC1), Twister6_37 (DC1), Valary_37 (DC1), VanDeWege_38 (DC1), Wizard_34 (DC1),

Start 26:

- Found in 11 of 76 (14.5%) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Trumpet_29 (CZ1),

Summary by clusters:

There are 10 clusters represented in this pham: KA, CZ2, CZ3, CZ1, CZ7, CZ4, DE5, CZ, DY, DC1,

Info for manual annotations of cluster CZ:

- Start number 17 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 16 was manually annotated 11 times for cluster CZ1.
- Start number 17 was manually annotated 13 times for cluster CZ1.
- Start number 26 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 22 was manually annotated 3 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 16 was manually annotated 2 times for cluster CZ3.
- Start number 17 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 22 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 17 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DC1:

- Start number 20 was manually annotated 2 times for cluster DC1.
- Start number 22 was manually annotated 27 times for cluster DC1.

Info for manual annotations of cluster DE5:

- Start number 18 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DY:

- Start number 22 was manually annotated 2 times for cluster DY.

Info for manual annotations of cluster KA:

- Start number 21 was manually annotated 1 time for cluster KA.

Gene Information:

Gene: Agueybana_28 Start: 24305, Stop: 24688, Start Num: 16

Candidate Starts for Agueybana_28:

(2, 24158), (4, 24173), (Start: 16 @24305 has 13 MA's), (Start: 17 @24308 has 16 MA's), (29, 24440), (35, 24539), (38, 24563), (44, 24644), (47, 24659),

Gene: AlumE_28 Start: 24307, Stop: 24687, Start Num: 17

Candidate Starts for AlumE_28:

(2, 24157), (Start: 16 @24304 has 13 MA's), (Start: 17 @24307 has 16 MA's), (29, 24439), (35, 24538), (38, 24562), (44, 24643), (47, 24658),

Gene: Antonio_29 Start: 24428, Stop: 24808, Start Num: 17

Candidate Starts for Antonio_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Arri_38 Start: 30300, Stop: 30644, Start Num: 22

Candidate Starts for Arri_38:

(13, 30249), (Start: 21 @30297 has 1 MA's), (Start: 22 @30300 has 33 MA's), (33, 30474), (43, 30579), (46, 30612),

Gene: Barb_37 Start: 30318, Stop: 30662, Start Num: 22

Candidate Starts for Barb_37:

(13, 30267), (Start: 21 @30315 has 1 MA's), (Start: 22 @30318 has 33 MA's), (33, 30492), (43, 30597), (46, 30630),

Gene: BatStarr_27 Start: 24428, Stop: 24811, Start Num: 16

Candidate Starts for BatStarr_27:

(2, 24281), (Start: 16 @24428 has 13 MA's), (Start: 17 @24431 has 16 MA's), (29, 24563), (35, 24662), (38, 24686), (44, 24767), (47, 24782),

Gene: BaxterFox_27 Start: 23628, Stop: 24011, Start Num: 16

Candidate Starts for BaxterFox_27:

(2, 23481), (4, 23496), (Start: 16 @23628 has 13 MA's), (Start: 17 @23631 has 16 MA's), (29, 23763), (35, 23862), (38, 23886), (44, 23967), (47, 23982),

Gene: Bialota_27 Start: 24440, Stop: 24823, Start Num: 16

Candidate Starts for Bialota_27:

(2, 24293), (Start: 16 @24440 has 13 MA's), (Start: 17 @24443 has 16 MA's), (29, 24575), (35, 24674), (38, 24698), (44, 24779), (47, 24794),

Gene: Bosnia_27 Start: 24431, Stop: 24811, Start Num: 17

Candidate Starts for Bosnia_27:

(2, 24281), (Start: 16 @24428 has 13 MA's), (Start: 17 @24431 has 16 MA's), (29, 24563), (35, 24662), (38, 24686), (44, 24767), (47, 24782),

Gene: BoyNamedSue_28 Start: 24307, Stop: 24687, Start Num: 17

Candidate Starts for BoyNamedSue_28:

(2, 24157), (Start: 16 @24304 has 13 MA's), (Start: 17 @24307 has 16 MA's), (29, 24439), (35, 24538), (38, 24562), (44, 24643), (47, 24658),

Gene: CherryCola_37 Start: 31076, Stop: 31417, Start Num: 22

Candidate Starts for CherryCola_37:

(5, 30932), (8, 30977), (9, 30980), (Start: 20 @31073 has 2 MA's), (Start: 22 @31076 has 33 MA's), (28, 31151), (34, 31253),

Gene: ClamChowder_37 Start: 30318, Stop: 30662, Start Num: 22

Candidate Starts for ClamChowder_37:

(13, 30267), (Start: 21 @30315 has 1 MA's), (Start: 22 @30318 has 33 MA's), (33, 30492), (43, 30597), (46, 30630),

Gene: Colossa_24 Start: 20680, Stop: 21021, Start Num: 21

Candidate Starts for Colossa_24:

(6, 20548), (Start: 21 @20680 has 1 MA's), (24, 20710), (25, 20725), (30, 20806), (31, 20818), (36, 20887), (47, 21001),

Gene: CoveyB_37 Start: 30118, Stop: 30462, Start Num: 22

Candidate Starts for CoveyB_37:

(13, 30067), (Start: 21 @30115 has 1 MA's), (Start: 22 @30118 has 33 MA's), (33, 30292), (43, 30397), (46, 30430),

Gene: Danyall_37 Start: 30120, Stop: 30464, Start Num: 22

Candidate Starts for Danyall_37:

(12, 30063), (14, 30072), (Start: 21 @30117 has 1 MA's), (Start: 22 @30120 has 33 MA's), (33, 30294), (43, 30399), (46, 30432),

Gene: DearBasketball_29 Start: 21597, Stop: 21938, Start Num: 22

Candidate Starts for DearBasketball_29:

(19, 21573), (Start: 22 @21597 has 33 MA's), (28, 21672), (41, 21858), (42, 21861), (43, 21876), (44, 21897),

Gene: DinoNuggs_27 Start: 21563, Stop: 21904, Start Num: 22

Candidate Starts for DinoNuggs_27:

(19, 21539), (Start: 22 @21563 has 33 MA's), (28, 21638), (41, 21824), (42, 21827), (43, 21842), (44, 21863),

Gene: EdnaMode_25 Start: 20961, Stop: 21302, Start Num: 22

Candidate Starts for EdnaMode_25:

(9, 20865), (Start: 20 @20958 has 2 MA's), (Start: 22 @20961 has 33 MA's), (31, 21102), (39, 21186), (47, 21276),

Gene: Egi03_35 Start: 29798, Stop: 30142, Start Num: 22

Candidate Starts for Egi03_35:

(12, 29741), (14, 29750), (Start: 21 @29795 has 1 MA's), (Start: 22 @29798 has 33 MA's), (33, 29972), (43, 30077), (46, 30110),

Gene: Eudoria_29 Start: 24428, Stop: 24808, Start Num: 17

Candidate Starts for Eudoria_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Evamon_34 Start: 30142, Stop: 30483, Start Num: 22

Candidate Starts for Evamon_34:

(5, 29998), (8, 30043), (9, 30046), (Start: 20 @30139 has 2 MA's), (Start: 22 @30142 has 33 MA's), (28, 30217), (34, 30319),

Gene: Eviarto_27 Start: 24428, Stop: 24811, Start Num: 16

Candidate Starts for Eviarto_27:

(2, 24281), (Start: 16 @24428 has 13 MA's), (Start: 17 @24431 has 16 MA's), (29, 24563), (35, 24662), (38, 24686), (44, 24767), (47, 24782),

Gene: Fireball_35 Start: 30265, Stop: 30606, Start Num: 22

Candidate Starts for Fireball_35:

(5, 30121), (8, 30166), (9, 30169), (Start: 20 @30262 has 2 MA's), (Start: 22 @30265 has 33 MA's), (28, 30340), (34, 30442),

Gene: Fugax_37 Start: 30318, Stop: 30662, Start Num: 22

Candidate Starts for Fugax_37:

(13, 30267), (Start: 21 @30315 has 1 MA's), (Start: 22 @30318 has 33 MA's), (33, 30492), (43, 30597), (46, 30630),

Gene: Gezellig_34 Start: 30274, Stop: 30615, Start Num: 22

Candidate Starts for Gezellig_34:

(5, 30130), (8, 30175), (9, 30178), (Start: 20 @30271 has 2 MA's), (Start: 22 @30274 has 33 MA's), (28, 30349), (34, 30451),

Gene: Halo3_35 Start: 30567, Stop: 30908, Start Num: 22

Candidate Starts for Halo3_35:

(5, 30423), (8, 30468), (9, 30471), (Start: 20 @30564 has 2 MA's), (Start: 22 @30567 has 33 MA's), (28, 30642), (34, 30744),

Gene: Herod_27 Start: 24428, Stop: 24811, Start Num: 16

Candidate Starts for Herod_27:

(2, 24281), (Start: 16 @24428 has 13 MA's), (Start: 17 @24431 has 16 MA's), (29, 24563), (35, 24662), (38, 24686), (44, 24767), (47, 24782),

Gene: Hyzer_30 Start: 25507, Stop: 25887, Start Num: 17

Candidate Starts for Hyzer_30:

(Start: 17 @25507 has 16 MA's), (29, 25639), (38, 25762), (44, 25843), (47, 25858),

Gene: Jambalaya_34 Start: 29921, Stop: 30262, Start Num: 22

Candidate Starts for Jambalaya_34:

(5, 29777), (8, 29822), (9, 29825), (Start: 20 @29918 has 2 MA's), (Start: 22 @29921 has 33 MA's), (28, 29996), (34, 30098),

Gene: JohnPork_35 Start: 29639, Stop: 29983, Start Num: 22

Candidate Starts for JohnPork_35:

(12, 29582), (14, 29591), (Start: 21 @29636 has 1 MA's), (Start: 22 @29639 has 33 MA's), (33, 29813), (43, 29918), (46, 29951),

Gene: Jojo24_26 Start: 21388, Stop: 21729, Start Num: 22

Candidate Starts for Jojo24_26:

(9, 21295), (Start: 20 @21385 has 2 MA's), (Start: 22 @21388 has 33 MA's), (28, 21463), (37, 21595), (41, 21649), (42, 21652), (43, 21667), (44, 21688),

Gene: KimmyK_36 Start: 30856, Stop: 31197, Start Num: 22

Candidate Starts for KimmyK_36:

(5, 30712), (8, 30757), (9, 30760), (Start: 20 @30853 has 2 MA's), (Start: 22 @30856 has 33 MA's), (28, 30931), (34, 31033),

Gene: Kita_29 Start: 24428, Stop: 24808, Start Num: 17

Candidate Starts for Kita_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Lamberg_25 Start: 20961, Stop: 21302, Start Num: 22

Candidate Starts for Lamberg_25:

(9, 20865), (Start: 20 @20958 has 2 MA's), (Start: 22 @20961 has 33 MA's), (31, 21102), (39, 21186), (47, 21276),

Gene: Lilbeanie_34 Start: 27982, Stop: 28356, Start Num: 18

Candidate Starts for Lilbeanie_34:

(2, 27826), (7, 27907), (10, 27919), (11, 27931), (Start: 18 @27982 has 1 MA's), (23, 28027), (27, 28075), (30, 28138), (31, 28150), (33, 28192), (38, 28237), (40, 28261), (45, 28324), (47, 28333),

Gene: Madavieve_27 Start: 24711, Stop: 25091, Start Num: 17

Candidate Starts for Madavieve_27:

(2, 24561), (Start: 16 @24708 has 13 MA's), (Start: 17 @24711 has 16 MA's), (29, 24843), (35, 24942), (38, 24966), (44, 25047), (47, 25062),

Gene: Madeline_27 Start: 24729, Stop: 25109, Start Num: 17

Candidate Starts for Madeline_27:

(2, 24579), (Start: 16 @24726 has 13 MA's), (Start: 17 @24729 has 16 MA's), (29, 24861), (35, 24960), (38, 24984), (44, 25065), (47, 25080),

Gene: Manasvini_29 Start: 24428, Stop: 24808, Start Num: 17

Candidate Starts for Manasvini_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Maridalia_28 Start: 24428, Stop: 24808, Start Num: 17

Candidate Starts for Maridalia_28:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Neobush_29 Start: 24425, Stop: 24808, Start Num: 16

Candidate Starts for Neobush_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Nettuno_25 Start: 20961, Stop: 21302, Start Num: 22

Candidate Starts for Nettuno_25:

(9, 20865), (Start: 20 @20958 has 2 MA's), (Start: 22 @20961 has 33 MA's), (31, 21102), (39, 21186), (47, 21276),

Gene: Nubi_34 Start: 30144, Stop: 30485, Start Num: 22

Candidate Starts for Nubi_34:

(5, 30000), (8, 30045), (9, 30048), (Start: 20 @30141 has 2 MA's), (Start: 22 @30144 has 33 MA's), (28, 30219), (34, 30321),

Gene: Nymphadora_27 Start: 24428, Stop: 24811, Start Num: 16

Candidate Starts for Nymphadora_27:

(2, 24281), (Start: 16 @24428 has 13 MA's), (Start: 17 @24431 has 16 MA's), (29, 24563), (35, 24662), (38, 24686), (44, 24767), (47, 24782),

Gene: Ohgeesy_27 Start: 24054, Stop: 24434, Start Num: 17

Candidate Starts for Ohgeesy_27:

(2, 23904), (Start: 16 @24051 has 13 MA's), (Start: 17 @24054 has 16 MA's), (29, 24186), (35, 24285), (38, 24309), (44, 24390), (47, 24405),

Gene: PantheRoc_28 Start: 23626, Stop: 24006, Start Num: 17

Candidate Starts for PantheRoc_28:

(2, 23476), (Start: 16 @23623 has 13 MA's), (Start: 17 @23626 has 16 MA's), (29, 23758), (35, 23857), (38, 23881), (44, 23962), (47, 23977),

Gene: Phlop_34 Start: 30226, Stop: 30567, Start Num: 22

Candidate Starts for Phlop_34:

(5, 30082), (8, 30127), (9, 30130), (Start: 20 @30223 has 2 MA's), (Start: 22 @30226 has 33 MA's), (28, 30301), (34, 30403),

Gene: PinkCoffee_37 Start: 30327, Stop: 30671, Start Num: 22

Candidate Starts for PinkCoffee_37:

(13, 30276), (Start: 21 @30324 has 1 MA's), (Start: 22 @30327 has 33 MA's), (33, 30501), (43, 30606), (46, 30639),

Gene: Polly_26 Start: 23868, Stop: 24251, Start Num: 16

Candidate Starts for Polly_26:

(2, 23721), (4, 23736), (Start: 16 @23868 has 13 MA's), (Start: 17 @23871 has 16 MA's), (Start: 26 @23958 has 1 MA's), (29, 24003), (35, 24102), (38, 24126), (44, 24207), (47, 24222),

Gene: Portcullis_35 Start: 29639, Stop: 29983, Start Num: 22

Candidate Starts for Portcullis_35:

(12, 29582), (14, 29591), (Start: 21 @29636 has 1 MA's), (Start: 22 @29639 has 33 MA's), (33, 29813), (43, 29918), (46, 29951),

Gene: Powerball_25 Start: 22259, Stop: 22597, Start Num: 22
Candidate Starts for Powerball_25:
(Start: 22 @22259 has 33 MA's),

Gene: PullumCavea_34 Start: 30226, Stop: 30567, Start Num: 22
Candidate Starts for PullumCavea_34:
(5, 30082), (8, 30127), (9, 30130), (Start: 20 @30223 has 2 MA's), (Start: 22 @30226 has 33 MA's),
(28, 30301), (34, 30403),

Gene: Reyja_27 Start: 21563, Stop: 21904, Start Num: 22
Candidate Starts for Reyja_27:
(19, 21539), (Start: 22 @21563 has 33 MA's), (28, 21638), (41, 21824), (42, 21827), (43, 21842), (44,
21863),

Gene: RogerDodger_38 Start: 30468, Stop: 30812, Start Num: 22
Candidate Starts for RogerDodger_38:
(12, 30411), (14, 30420), (Start: 21 @30465 has 1 MA's), (Start: 22 @30468 has 33 MA's), (33, 30642),
(43, 30747), (46, 30780),

Gene: Salvador_34 Start: 30137, Stop: 30481, Start Num: 20
Candidate Starts for Salvador_34:
(5, 29996), (8, 30041), (9, 30044), (Start: 20 @30137 has 2 MA's), (Start: 22 @30140 has 33 MA's),
(28, 30215), (34, 30317),

Gene: Savbucketdawg_34 Start: 29921, Stop: 30262, Start Num: 22
Candidate Starts for Savbucketdawg_34:
(5, 29777), (8, 29822), (9, 29825), (Start: 20 @29918 has 2 MA's), (Start: 22 @29921 has 33 MA's),
(28, 29996), (34, 30098),

Gene: Sendy_35 Start: 30346, Stop: 30687, Start Num: 22
Candidate Starts for Sendy_35:
(5, 30202), (8, 30247), (9, 30250), (Start: 20 @30343 has 2 MA's), (Start: 22 @30346 has 33 MA's),
(28, 30421), (34, 30523),

Gene: Shinji_35 Start: 29580, Stop: 29924, Start Num: 22
Candidate Starts for Shinji_35:
(12, 29523), (14, 29532), (Start: 21 @29577 has 1 MA's), (Start: 22 @29580 has 33 MA's), (33, 29754),
(43, 29859), (46, 29892),

Gene: Sidious_29 Start: 24838, Stop: 25218, Start Num: 17
Candidate Starts for Sidious_29:
(Start: 17 @24838 has 16 MA's), (38, 25093), (44, 25174), (47, 25189),

Gene: SmokingBunny_34 Start: 30131, Stop: 30472, Start Num: 22
Candidate Starts for SmokingBunny_34:
(5, 29987), (8, 30032), (9, 30035), (Start: 20 @30128 has 2 MA's), (Start: 22 @30131 has 33 MA's),
(28, 30206), (34, 30308),

Gene: Suscepit_29 Start: 24428, Stop: 24802, Start Num: 17
Candidate Starts for Suscepit_29:
(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26
@24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: SushiChef_29 Start: 24630, Stop: 25010, Start Num: 17

Candidate Starts for SushiChef_29:

(2, 24480), (Start: 16 @24627 has 13 MA's), (Start: 17 @24630 has 16 MA's), (29, 24762), (35, 24861), (38, 24885), (44, 24966), (47, 24981),

Gene: Tayonia_29 Start: 24428, Stop: 24808, Start Num: 17

Candidate Starts for Tayonia_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: ThankyouJordi_26 Start: 24409, Stop: 24789, Start Num: 17

Candidate Starts for ThankyouJordi_26:

(2, 24259), (Start: 16 @24406 has 13 MA's), (Start: 17 @24409 has 16 MA's), (29, 24541), (38, 24664), (44, 24745), (47, 24760),

Gene: TillyBobJoe_34 Start: 29935, Stop: 30276, Start Num: 22

Candidate Starts for TillyBobJoe_34:

(1, 29605), (3, 29749), (15, 29890), (Start: 20 @29932 has 2 MA's), (Start: 22 @29935 has 33 MA's), (28, 30010), (34, 30112),

Gene: TimTam_27 Start: 24428, Stop: 24811, Start Num: 16

Candidate Starts for TimTam_27:

(2, 24281), (Start: 16 @24428 has 13 MA's), (Start: 17 @24431 has 16 MA's), (29, 24563), (35, 24662), (38, 24686), (44, 24767), (47, 24782),

Gene: Togo_34 Start: 30128, Stop: 30472, Start Num: 20

Candidate Starts for Togo_34:

(5, 29987), (8, 30032), (9, 30035), (Start: 20 @30128 has 2 MA's), (Start: 22 @30131 has 33 MA's), (28, 30206), (34, 30308),

Gene: Trumpet_29 Start: 24516, Stop: 24809, Start Num: 26

Candidate Starts for Trumpet_29:

(Start: 26 @24516 has 1 MA's), (29, 24561), (35, 24660), (38, 24684), (44, 24765), (47, 24780),

Gene: Twister6_37 Start: 30031, Stop: 30375, Start Num: 22

Candidate Starts for Twister6_37:

(12, 29974), (14, 29983), (Start: 21 @30028 has 1 MA's), (Start: 22 @30031 has 33 MA's), (33, 30205), (43, 30310), (46, 30343),

Gene: Valary_37 Start: 31076, Stop: 31417, Start Num: 22

Candidate Starts for Valary_37:

(5, 30932), (8, 30977), (9, 30980), (Start: 20 @31073 has 2 MA's), (Start: 22 @31076 has 33 MA's), (28, 31151), (34, 31253),

Gene: VanDeWege_38 Start: 30365, Stop: 30709, Start Num: 22

Candidate Starts for VanDeWege_38:

(13, 30314), (Start: 21 @30362 has 1 MA's), (Start: 22 @30365 has 33 MA's), (33, 30539), (43, 30644), (46, 30677),

Gene: VanLee_24 Start: 20694, Stop: 21035, Start Num: 21

Candidate Starts for VanLee_24:

(6, 20562), (Start: 21 @20694 has 1 MA's), (24, 20724), (30, 20820), (31, 20832), (32, 20871), (36, 20901), (47, 21015),

Gene: WelcomeAyanna_26 Start: 24409, Stop: 24789, Start Num: 17

Candidate Starts for WelcomeAyanna_26:

(2, 24259), (Start: 16 @24406 has 13 MA's), (Start: 17 @24409 has 16 MA's), (29, 24541), (38, 24664), (44, 24745), (47, 24760),

Gene: Wizard_34 Start: 30274, Stop: 30615, Start Num: 22

Candidate Starts for Wizard_34:

(5, 30130), (8, 30175), (9, 30178), (Start: 20 @30271 has 2 MA's), (Start: 22 @30274 has 33 MA's), (28, 30349), (34, 30451),

Gene: Yeezy_29 Start: 23647, Stop: 24030, Start Num: 16

Candidate Starts for Yeezy_29:

(2, 23500), (Start: 16 @23647 has 13 MA's), (Start: 17 @23650 has 16 MA's), (29, 23782), (35, 23881), (38, 23905), (44, 23986), (47, 24001),

Gene: Zameen_29 Start: 24425, Stop: 24808, Start Num: 16

Candidate Starts for Zameen_29:

(2, 24278), (4, 24293), (Start: 16 @24425 has 13 MA's), (Start: 17 @24428 has 16 MA's), (Start: 26 @24515 has 1 MA's), (29, 24560), (35, 24659), (38, 24683), (44, 24764), (47, 24779),

Gene: Zirinka_27 Start: 24440, Stop: 24823, Start Num: 16

Candidate Starts for Zirinka_27:

(2, 24293), (Start: 16 @24440 has 13 MA's), (Start: 17 @24443 has 16 MA's), (29, 24575), (35, 24674), (38, 24698), (44, 24779), (47, 24794),