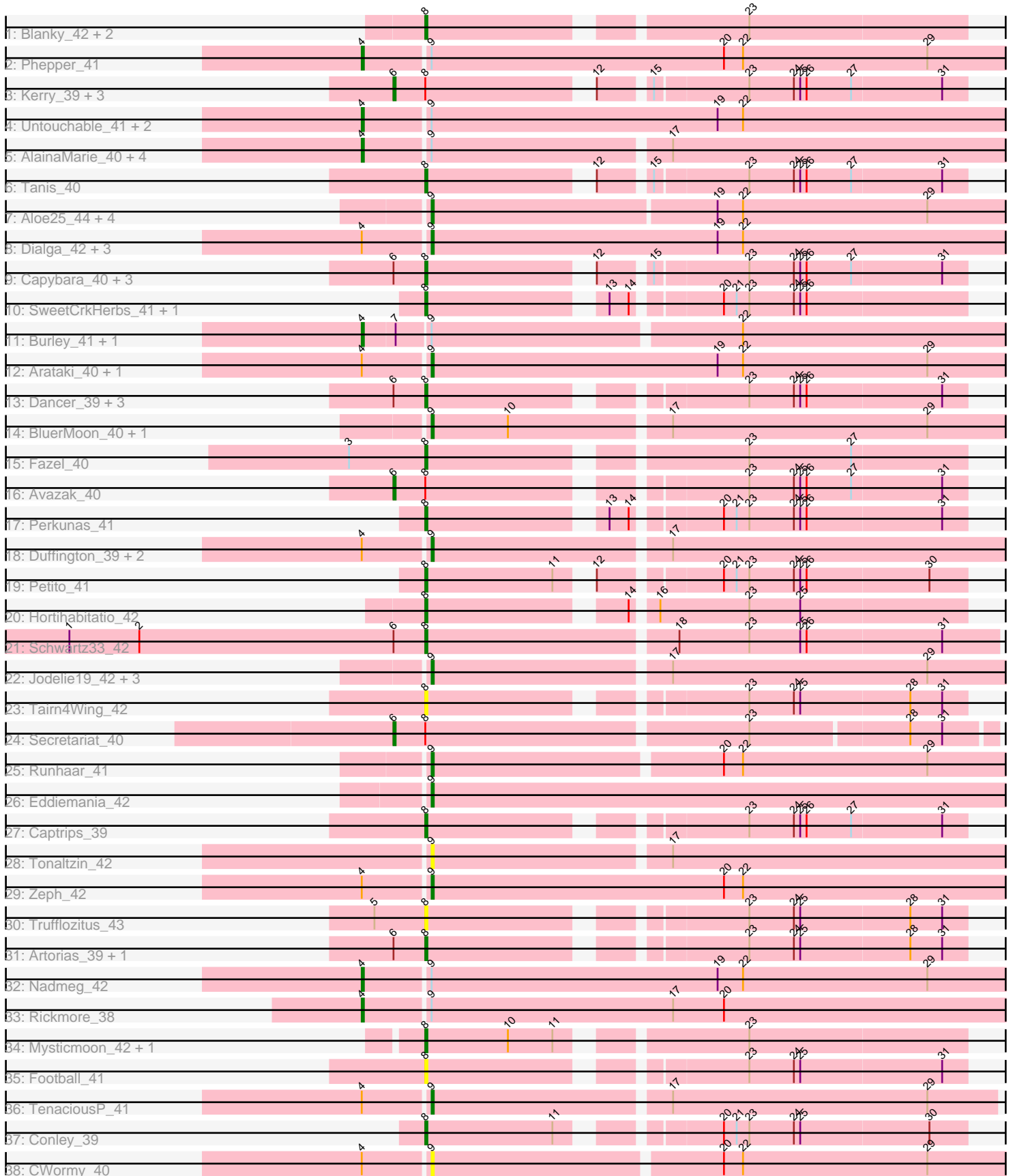


Pham 294686



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 294686 Report

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

Pham number 294686 has 73 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Blanky\_42, OhMyWard\_41, Mossy\_43
- Track 2 : Phepper\_41
- Track 3 : Kerry\_39, Magel\_41, Gravy\_39, Odesza\_39
- Track 4 : Untouchable\_41, Kenosha\_41, Crocheter\_41
- Track 5 : AlainaMarie\_40, Aflac\_40, Citrus\_40, Nithya\_40, Chikenjars\_40
- Track 6 : Tanis\_40
- Track 7 : Aloe25\_44, Gusicorn\_41, PestoPenguin\_45, ShaggyRogers\_42, BetterYeti\_41
- Track 8 : Dialga\_42, ArtetaBall\_42, Madvan\_41, Hydrus\_42
- Track 9 : Capybara\_40, Gill\_40, Roney\_40, NoPickles\_39
- Track 10 : SweetCrkHerbs\_41, Talon44\_41
- Track 11 : Burley\_41, Vardy\_41
- Track 12 : Arataki\_40, Demure\_39
- Track 13 : Dancer\_39, JulesRay\_39, ChickyNugget\_41, Bugg\_40
- Track 14 : BluerMoon\_40, Glintora\_42
- Track 15 : Fazel\_40
- Track 16 : Avazak\_40
- Track 17 : Perkunas\_41
- Track 18 : Duffington\_39, Luthien\_42, EndAve\_41
- Track 19 : Petite\_41
- Track 20 : Hortihabitatio\_42
- Track 21 : Schwartz33\_42
- Track 22 : Jodelie19\_42, Figliar\_41, MajinBuu\_41, OlgasClover\_41
- Track 23 : Tairn4Wing\_42
- Track 24 : Secretariat\_40
- Track 25 : Runhaar\_41
- Track 26 : Eddiemania\_42
- Track 27 : Captrips\_39
- Track 28 : Tonaltzin\_42
- Track 29 : Zeph\_42
- Track 30 : Trufflozitus\_43
- Track 31 : Artorias\_39, FortCran\_39
- Track 32 : Nadmeg\_42
- Track 33 : Rickmore\_38
- Track 34 : Mysticmoon\_42, Pherobrine\_42
- Track 35 : Football\_41
- Track 36 : TenaciousP\_41

- Track 37 : Conley\_39
- Track 38 : CWormy\_40

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

The start number called the most often in the published annotations is 8, it was called in 20 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Artorias\_39, Blanky\_42, Bugg\_40, Captrips\_39, Copybara\_40, ChickyNuggy\_41, Conley\_39, Dancer\_39, Fazel\_40, Football\_41, FortCran\_39, Gill\_40, Hortihabitatio\_42, JulesRay\_39, Mossy\_43, Mysticmoon\_42, NoPickles\_39, OhMyWard\_41, Perkunas\_41, Petito\_41, Pherobrine\_42, Roney\_40, Schwartz33\_42, SweetCrkHerbs\_41, Tairn4Wing\_42, Talon44\_41, Tanis\_40, Trufflozitus\_43,

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

- Avazak\_40, Gravy\_39, Kerry\_39, Magel\_41, Odesza\_39, Secretariat\_40,

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

- Aflac\_40, AlainaMarie\_40, Aloe25\_44, Arataki\_40, ArtetaBall\_42, BetterYeti\_41, BluerMoon\_40, Burley\_41, CWormy\_40, Chikenjars\_40, Citrus\_40, Crocheter\_41, Demure\_39, Dialga\_42, Duffington\_39, Eddiemania\_42, EndAve\_41, Figliar\_41, Glintora\_42, Gusicorn\_41, Hydrus\_42, Jodelie19\_42, Kenosha\_41, Luthien\_42, Madvan\_41, MajinBuu\_41, Nadmeg\_42, Nithya\_40, OlgasClover\_41, PestoPenguin\_45, Phepper\_41, Rickmore\_38, Runhaar\_41, ShaggyRogers\_42, TenaciousP\_41, Tonaltzin\_42, Untouchable\_41, Vardy\_41, Zeph\_42,

### **Summary by start number:**

Start 4:

- Found in 25 of 73 ( 34.2% ) of genes in pham
- Manual Annotations of this start: 13 of 56
- Called 52.0% of time when present
- Phage (with cluster) where this start called: Aflac\_40 (DJ), AlainaMarie\_40 (DJ), Burley\_41 (DJ), Chikenjars\_40 (DJ), Citrus\_40 (DJ), Crocheter\_41 (DJ), Kenosha\_41 (DJ), Nadmeg\_42 (DJ), Nithya\_40 (DJ), Phepper\_41 (DJ), Rickmore\_38 (DJ), Untouchable\_41 (DJ), Vardy\_41 (DJ),

Start 6:

- Found in 17 of 73 ( 23.3% ) of genes in pham
- Manual Annotations of this start: 6 of 56
- Called 35.3% of time when present
- Phage (with cluster) where this start called: Avazak\_40 (DJ), Gravy\_39 (DJ), Kerry\_39 (DJ), Magel\_41 (DJ), Odesza\_39 (DJ), Secretariat\_40 (DJ),

Start 8:

- Found in 34 of 73 ( 46.6% ) of genes in pham
- Manual Annotations of this start: 20 of 56
- Called 82.4% of time when present

- Phage (with cluster) where this start called: Artorias\_39 (DJ), Blanky\_42 (DJ), Bugg\_40 (DJ), Captrips\_39 (DJ), Copybara\_40 (DJ), ChickyNuggy\_41 (DJ), Conley\_39 (DJ), Dancer\_39 (DJ), Fazel\_40 (DJ), Football\_41 (DJ), FortCran\_39 (DJ), Gill\_40 (DJ), Hortihabitatio\_42 (DJ), JulesRay\_39 (DJ), Mossy\_43 (DJ), Mysticmoon\_42 (DJ), NoPickles\_39 (DJ), OhMyWard\_41 (DJ), Perkunas\_41 (DJ), Petite\_41 (DJ), Pherobrine\_42 (DJ), Roney\_40 (DJ), Schwartz33\_42 (DJ), SweetCrkHerbs\_41 (DJ), Tairn4Wing\_42 (DJ), Talon44\_41 (DJ), Tanis\_40 (DJ), Trufflozitus\_43 (DJ),

Start 9:

- Found in 39 of 73 ( 53.4% ) of genes in pham
- Manual Annotations of this start: 17 of 56
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Aloe25\_44 (DJ), Arataki\_40 (DJ), ArtetaBall\_42 (DJ), BetterYeti\_41 (DJ), BluerMoon\_40 (DJ), CWormy\_40 (DJ), Demure\_39 (DJ), Dialga\_42 (DJ), Duffington\_39 (DJ), Eddiemania\_42 (DJ), EndAve\_41 (DJ), Figliar\_41 (DJ), Glintora\_42 (DJ), Gusicorn\_41 (DJ), Hydrus\_42 (DJ), Jodelie19\_42 (DJ), Luthien\_42 (DJ), Madvan\_41 (DJ), MajinBuu\_41 (DJ), OlgasClover\_41 (DJ), PestoPenguin\_45 (DJ), Runhaar\_41 (DJ), ShaggyRogers\_42 (DJ), TenaciousP\_41 (DJ), Tonaltzin\_42 (DJ), Zeph\_42 (DJ),

### Summary by clusters:

There is one cluster represented in this pham: DJ

Info for manual annotations of cluster DJ:

- Start number 4 was manually annotated 13 times for cluster DJ.
- Start number 6 was manually annotated 6 times for cluster DJ.
- Start number 8 was manually annotated 20 times for cluster DJ.
- Start number 9 was manually annotated 17 times for cluster DJ.

### Gene Information:

Gene: Aflac\_40 Start: 32891, Stop: 33190, Start Num: 4

Candidate Starts for Aflac\_40:

(Start: 4 @32891 has 13 MA's), (Start: 9 @32921 has 17 MA's), (17, 33029),

Gene: AlainaMarie\_40 Start: 32870, Stop: 33169, Start Num: 4

Candidate Starts for AlainaMarie\_40:

(Start: 4 @32870 has 13 MA's), (Start: 9 @32900 has 17 MA's), (17, 33008),

Gene: Aloe25\_44 Start: 32966, Stop: 33238, Start Num: 9

Candidate Starts for Aloe25\_44:

(Start: 9 @32966 has 17 MA's), (19, 33098), (22, 33110), (29, 33197),

Gene: Arataki\_40 Start: 32260, Stop: 32535, Start Num: 9

Candidate Starts for Arataki\_40:

(Start: 4 @32230 has 13 MA's), (Start: 9 @32260 has 17 MA's), (19, 32395), (22, 32407), (29, 32494),

Gene: ArtetaBall\_42 Start: 33460, Stop: 33735, Start Num: 9

Candidate Starts for ArtetaBall\_42:

(Start: 4 @33430 has 13 MA's), (Start: 9 @33460 has 17 MA's), (19, 33595), (22, 33607),

Gene: Artorias\_39 Start: 30605, Stop: 30838, Start Num: 8

Candidate Starts for Artorias\_39:

(Start: 6 @30590 has 6 MA's), (Start: 8 @30605 has 20 MA's), (23, 30737), (24, 30758), (25, 30761), (28, 30812), (31, 30827),

Gene: Avazak\_40 Start: 30958, Stop: 31206, Start Num: 6

Candidate Starts for Avazak\_40:

(Start: 6 @30958 has 6 MA's), (Start: 8 @30973 has 20 MA's), (23, 31105), (24, 31126), (25, 31129), (26, 31132), (27, 31153), (31, 31195),

Gene: BetterYeti\_41 Start: 32965, Stop: 33237, Start Num: 9

Candidate Starts for BetterYeti\_41:

(Start: 9 @32965 has 17 MA's), (19, 33097), (22, 33109), (29, 33196),

Gene: Blanky\_42 Start: 34564, Stop: 34800, Start Num: 8

Candidate Starts for Blanky\_42:

(Start: 8 @34564 has 20 MA's), (23, 34699),

Gene: BluerMoon\_40 Start: 32917, Stop: 33186, Start Num: 9

Candidate Starts for BluerMoon\_40:

(Start: 9 @32917 has 17 MA's), (10, 32953), (17, 33025), (29, 33145),

Gene: Bugg\_40 Start: 30652, Stop: 30885, Start Num: 8

Candidate Starts for Bugg\_40:

(Start: 6 @30637 has 6 MA's), (Start: 8 @30652 has 20 MA's), (23, 30784), (24, 30805), (25, 30808), (26, 30811), (31, 30874),

Gene: Burley\_41 Start: 32894, Stop: 33193, Start Num: 4

Candidate Starts for Burley\_41:

(Start: 4 @32894 has 13 MA's), (7, 32909), (Start: 9 @32924 has 17 MA's), (22, 33065),

Gene: CWormy\_40 Start: 32625, Stop: 32894, Start Num: 9

Candidate Starts for CWormy\_40:

(Start: 4 @32595 has 13 MA's), (Start: 9 @32625 has 17 MA's), (20, 32757), (22, 32766), (29, 32853),

Gene: Captrips\_39 Start: 30645, Stop: 30878, Start Num: 8

Candidate Starts for Captrips\_39:

(Start: 8 @30645 has 20 MA's), (23, 30777), (24, 30798), (25, 30801), (26, 30804), (27, 30825), (31, 30867),

Gene: Capybara\_40 Start: 31035, Stop: 31268, Start Num: 8

Candidate Starts for Capybara\_40:

(Start: 6 @31020 has 6 MA's), (Start: 8 @31035 has 20 MA's), (12, 31104), (15, 31125), (23, 31167), (24, 31188), (25, 31191), (26, 31194), (27, 31215), (31, 31257),

Gene: ChickyNuggy\_41 Start: 30714, Stop: 30947, Start Num: 8

Candidate Starts for ChickyNuggy\_41:

(Start: 6 @30699 has 6 MA's), (Start: 8 @30714 has 20 MA's), (23, 30846), (24, 30867), (25, 30870), (26, 30873), (31, 30936),

Gene: Chikenjars\_40 Start: 32881, Stop: 33180, Start Num: 4

Candidate Starts for Chikenjars\_40:  
(Start: 4 @32881 has 13 MA's), (Start: 9 @32911 has 17 MA's), (17, 33019),

Gene: Citrus\_40 Start: 33157, Stop: 33456, Start Num: 4  
Candidate Starts for Citrus\_40:  
(Start: 4 @33157 has 13 MA's), (Start: 9 @33187 has 17 MA's), (17, 33295),

Gene: Conley\_39 Start: 31573, Stop: 31806, Start Num: 8  
Candidate Starts for Conley\_39:  
(Start: 8 @31573 has 20 MA's), (11, 31633), (20, 31693), (21, 31699), (23, 31705), (24, 31726), (25, 31729), (30, 31789),

Gene: Crocheter\_41 Start: 33288, Stop: 33593, Start Num: 4  
Candidate Starts for Crocheter\_41:  
(Start: 4 @33288 has 13 MA's), (Start: 9 @33318 has 17 MA's), (19, 33453), (22, 33465),

Gene: Dancer\_39 Start: 30345, Stop: 30578, Start Num: 8  
Candidate Starts for Dancer\_39:  
(Start: 6 @30330 has 6 MA's), (Start: 8 @30345 has 20 MA's), (23, 30477), (24, 30498), (25, 30501), (26, 30504), (31, 30567),

Gene: Demure\_39 Start: 32260, Stop: 32535, Start Num: 9  
Candidate Starts for Demure\_39:  
(Start: 4 @32230 has 13 MA's), (Start: 9 @32260 has 17 MA's), (19, 32395), (22, 32407), (29, 32494),

Gene: Dialga\_42 Start: 33479, Stop: 33754, Start Num: 9  
Candidate Starts for Dialga\_42:  
(Start: 4 @33449 has 13 MA's), (Start: 9 @33479 has 17 MA's), (19, 33614), (22, 33626),

Gene: Duffington\_39 Start: 32573, Stop: 32842, Start Num: 9  
Candidate Starts for Duffington\_39:  
(Start: 4 @32543 has 13 MA's), (Start: 9 @32573 has 17 MA's), (17, 32681),

Gene: Eddiemania\_42 Start: 33826, Stop: 34101, Start Num: 9  
Candidate Starts for Eddiemania\_42:  
(Start: 9 @33826 has 17 MA's),

Gene: EndAve\_41 Start: 33080, Stop: 33349, Start Num: 9  
Candidate Starts for EndAve\_41:  
(Start: 4 @33050 has 13 MA's), (Start: 9 @33080 has 17 MA's), (17, 33188),

Gene: Fazel\_40 Start: 32562, Stop: 32798, Start Num: 8  
Candidate Starts for Fazel\_40:  
(3, 32526), (Start: 8 @32562 has 20 MA's), (23, 32697), (27, 32745),

Gene: Figliar\_41 Start: 33226, Stop: 33495, Start Num: 9  
Candidate Starts for Figliar\_41:  
(Start: 9 @33226 has 17 MA's), (17, 33334), (29, 33454),

Gene: Football\_41 Start: 30351, Stop: 30584, Start Num: 8  
Candidate Starts for Football\_41:  
(Start: 8 @30351 has 20 MA's), (23, 30483), (24, 30504), (25, 30507), (31, 30573),

Gene: FortCran\_39 Start: 30605, Stop: 30838, Start Num: 8  
Candidate Starts for FortCran\_39:  
(Start: 6 @30590 has 6 MA's), (Start: 8 @30605 has 20 MA's), (23, 30737), (24, 30758), (25, 30761),  
(28, 30812), (31, 30827),

Gene: Gill\_40 Start: 31052, Stop: 31285, Start Num: 8  
Candidate Starts for Gill\_40:  
(Start: 6 @31037 has 6 MA's), (Start: 8 @31052 has 20 MA's), (12, 31121), (15, 31142), (23, 31184),  
(24, 31205), (25, 31208), (26, 31211), (27, 31232), (31, 31274),

Gene: Glintora\_42 Start: 33542, Stop: 33811, Start Num: 9  
Candidate Starts for Glintora\_42:  
(Start: 9 @33542 has 17 MA's), (10, 33578), (17, 33650), (29, 33770),

Gene: Gravy\_39 Start: 30710, Stop: 30958, Start Num: 6  
Candidate Starts for Gravy\_39:  
(Start: 6 @30710 has 6 MA's), (Start: 8 @30725 has 20 MA's), (12, 30794), (15, 30815), (23, 30857),  
(24, 30878), (25, 30881), (26, 30884), (27, 30905), (31, 30947),

Gene: Gusicorn\_41 Start: 32966, Stop: 33238, Start Num: 9  
Candidate Starts for Gusicorn\_41:  
(Start: 9 @32966 has 17 MA's), (19, 33098), (22, 33110), (29, 33197),

Gene: Hortihabitatio\_42 Start: 33009, Stop: 33245, Start Num: 8  
Candidate Starts for Hortihabitatio\_42:  
(Start: 8 @33009 has 20 MA's), (14, 33093), (16, 33102), (23, 33144), (25, 33168),

Gene: Hydrus\_42 Start: 33836, Stop: 34111, Start Num: 9  
Candidate Starts for Hydrus\_42:  
(Start: 4 @33806 has 13 MA's), (Start: 9 @33836 has 17 MA's), (19, 33971), (22, 33983),

Gene: Jodelie19\_42 Start: 34681, Stop: 34950, Start Num: 9  
Candidate Starts for Jodelie19\_42:  
(Start: 9 @34681 has 17 MA's), (17, 34789), (29, 34909),

Gene: JulesRay\_39 Start: 30639, Stop: 30872, Start Num: 8  
Candidate Starts for JulesRay\_39:  
(Start: 6 @30624 has 6 MA's), (Start: 8 @30639 has 20 MA's), (23, 30771), (24, 30792), (25, 30795),  
(26, 30798), (31, 30861),

Gene: Kenosha\_41 Start: 33698, Stop: 34003, Start Num: 4  
Candidate Starts for Kenosha\_41:  
(Start: 4 @33698 has 13 MA's), (Start: 9 @33728 has 17 MA's), (19, 33863), (22, 33875),

Gene: Kerry\_39 Start: 30710, Stop: 30958, Start Num: 6  
Candidate Starts for Kerry\_39:  
(Start: 6 @30710 has 6 MA's), (Start: 8 @30725 has 20 MA's), (12, 30794), (15, 30815), (23, 30857),  
(24, 30878), (25, 30881), (26, 30884), (27, 30905), (31, 30947),

Gene: Luthien\_42 Start: 33078, Stop: 33347, Start Num: 9  
Candidate Starts for Luthien\_42:  
(Start: 4 @33048 has 13 MA's), (Start: 9 @33078 has 17 MA's), (17, 33186),

Gene: Madvan\_41 Start: 32959, Stop: 33234, Start Num: 9

Candidate Starts for Madvan\_41:

(Start: 4 @32929 has 13 MA's), (Start: 9 @32959 has 17 MA's), (19, 33094), (22, 33106),

Gene: Magel\_41 Start: 30941, Stop: 31189, Start Num: 6

Candidate Starts for Magel\_41:

(Start: 6 @30941 has 6 MA's), (Start: 8 @30956 has 20 MA's), (12, 31025), (15, 31046), (23, 31088), (24, 31109), (25, 31112), (26, 31115), (27, 31136), (31, 31178),

Gene: MajinBuu\_41 Start: 33253, Stop: 33522, Start Num: 9

Candidate Starts for MajinBuu\_41:

(Start: 9 @33253 has 17 MA's), (17, 33361), (29, 33481),

Gene: Mossy\_43 Start: 34779, Stop: 35015, Start Num: 8

Candidate Starts for Mossy\_43:

(Start: 8 @34779 has 20 MA's), (23, 34914),

Gene: Mysticmoon\_42 Start: 33303, Stop: 33539, Start Num: 8

Candidate Starts for Mysticmoon\_42:

(Start: 8 @33303 has 20 MA's), (10, 33342), (11, 33363), (23, 33438),

Gene: Nadmeg\_42 Start: 34361, Stop: 34666, Start Num: 4

Candidate Starts for Nadmeg\_42:

(Start: 4 @34361 has 13 MA's), (Start: 9 @34391 has 17 MA's), (19, 34526), (22, 34538), (29, 34625),

Gene: Nithya\_40 Start: 32871, Stop: 33170, Start Num: 4

Candidate Starts for Nithya\_40:

(Start: 4 @32871 has 13 MA's), (Start: 9 @32901 has 17 MA's), (17, 33009),

Gene: NoPickles\_39 Start: 30357, Stop: 30590, Start Num: 8

Candidate Starts for NoPickles\_39:

(Start: 6 @30342 has 6 MA's), (Start: 8 @30357 has 20 MA's), (12, 30426), (15, 30447), (23, 30489), (24, 30510), (25, 30513), (26, 30516), (27, 30537), (31, 30579),

Gene: Odesza\_39 Start: 30711, Stop: 30959, Start Num: 6

Candidate Starts for Odesza\_39:

(Start: 6 @30711 has 6 MA's), (Start: 8 @30726 has 20 MA's), (12, 30795), (15, 30816), (23, 30858), (24, 30879), (25, 30882), (26, 30885), (27, 30906), (31, 30948),

Gene: OhMyWard\_41 Start: 34121, Stop: 34357, Start Num: 8

Candidate Starts for OhMyWard\_41:

(Start: 8 @34121 has 20 MA's), (23, 34256),

Gene: OlgasClover\_41 Start: 33965, Stop: 34234, Start Num: 9

Candidate Starts for OlgasClover\_41:

(Start: 9 @33965 has 17 MA's), (17, 34073), (29, 34193),

Gene: Perkunas\_41 Start: 31004, Stop: 31237, Start Num: 8

Candidate Starts for Perkunas\_41:

(Start: 8 @31004 has 20 MA's), (13, 31079), (14, 31088), (20, 31124), (21, 31130), (23, 31136), (24, 31157), (25, 31160), (26, 31163), (31, 31226),

Gene: PestoPenguin\_45 Start: 32966, Stop: 33238, Start Num: 9

Candidate Starts for PestoPenguin\_45:  
(Start: 9 @32966 has 17 MA's), (19, 33098), (22, 33110), (29, 33197),

Gene: Petito\_41 Start: 32107, Stop: 32340, Start Num: 8  
Candidate Starts for Petito\_41:  
(Start: 8 @32107 has 20 MA's), (11, 32167), (12, 32176), (20, 32227), (21, 32233), (23, 32239), (24, 32260), (25, 32263), (26, 32266), (30, 32323),

Gene: Phepper\_41 Start: 32928, Stop: 33233, Start Num: 4  
Candidate Starts for Phepper\_41:  
(Start: 4 @32928 has 13 MA's), (Start: 9 @32958 has 17 MA's), (20, 33096), (22, 33105), (29, 33192),

Gene: Pherobrine\_42 Start: 33604, Stop: 33840, Start Num: 8  
Candidate Starts for Pherobrine\_42:  
(Start: 8 @33604 has 20 MA's), (10, 33643), (11, 33664), (23, 33739),

Gene: Rickmore\_38 Start: 30983, Stop: 31288, Start Num: 4  
Candidate Starts for Rickmore\_38:  
(Start: 4 @30983 has 13 MA's), (Start: 9 @31013 has 17 MA's), (17, 31127), (20, 31151),

Gene: Roney\_40 Start: 31047, Stop: 31280, Start Num: 8  
Candidate Starts for Roney\_40:  
(Start: 6 @31032 has 6 MA's), (Start: 8 @31047 has 20 MA's), (12, 31116), (15, 31137), (23, 31179), (24, 31200), (25, 31203), (26, 31206), (27, 31227), (31, 31269),

Gene: Runhaar\_41 Start: 32958, Stop: 33227, Start Num: 9  
Candidate Starts for Runhaar\_41:  
(Start: 9 @32958 has 17 MA's), (20, 33090), (22, 33099), (29, 33186),

Gene: Schwartz33\_42 Start: 33399, Stop: 33662, Start Num: 8  
Candidate Starts for Schwartz33\_42:  
(1, 33231), (2, 33264), (Start: 6 @33384 has 6 MA's), (Start: 8 @33399 has 20 MA's), (18, 33513), (23, 33546), (25, 33570), (26, 33573), (31, 33636),

Gene: Secretariat\_40 Start: 32327, Stop: 32599, Start Num: 6  
Candidate Starts for Secretariat\_40:  
(Start: 6 @32327 has 6 MA's), (Start: 8 @32342 has 20 MA's), (23, 32489), (28, 32561), (31, 32576),

Gene: ShaggyRogers\_42 Start: 32964, Stop: 33236, Start Num: 9  
Candidate Starts for ShaggyRogers\_42:  
(Start: 9 @32964 has 17 MA's), (19, 33096), (22, 33108), (29, 33195),

Gene: SweetCrkHerbs\_41 Start: 30677, Stop: 30910, Start Num: 8  
Candidate Starts for SweetCrkHerbs\_41:  
(Start: 8 @30677 has 20 MA's), (13, 30752), (14, 30761), (20, 30797), (21, 30803), (23, 30809), (24, 30830), (25, 30833), (26, 30836),

Gene: Tairn4Wing\_42 Start: 30995, Stop: 31228, Start Num: 8  
Candidate Starts for Tairn4Wing\_42:  
(Start: 8 @30995 has 20 MA's), (23, 31127), (24, 31148), (25, 31151), (28, 31202), (31, 31217),

Gene: Talon44\_41 Start: 31019, Stop: 31252, Start Num: 8  
Candidate Starts for Talon44\_41:

(Start: 8 @31019 has 20 MA's), (13, 31094), (14, 31103), (20, 31139), (21, 31145), (23, 31151), (24, 31172), (25, 31175), (26, 31178),

Gene: Tanis\_40 Start: 30898, Stop: 31131, Start Num: 8

Candidate Starts for Tanis\_40:

(Start: 8 @30898 has 20 MA's), (12, 30967), (15, 30988), (23, 31030), (24, 31051), (25, 31054), (26, 31057), (27, 31078), (31, 31120),

Gene: TenaciousP\_41 Start: 34346, Stop: 34606, Start Num: 9

Candidate Starts for TenaciousP\_41:

(Start: 4 @34316 has 13 MA's), (Start: 9 @34346 has 17 MA's), (17, 34454), (29, 34574),

Gene: Tonaltzin\_42 Start: 32916, Stop: 33185, Start Num: 9

Candidate Starts for Tonaltzin\_42:

(Start: 9 @32916 has 17 MA's), (17, 33024),

Gene: Trufflozitus\_43 Start: 30996, Stop: 31229, Start Num: 8

Candidate Starts for Trufflozitus\_43:

(5, 30972), (Start: 8 @30996 has 20 MA's), (23, 31128), (24, 31149), (25, 31152), (28, 31203), (31, 31218),

Gene: Untouchable\_41 Start: 33288, Stop: 33593, Start Num: 4

Candidate Starts for Untouchable\_41:

(Start: 4 @33288 has 13 MA's), (Start: 9 @33318 has 17 MA's), (19, 33453), (22, 33465),

Gene: Vardy\_41 Start: 32895, Stop: 33194, Start Num: 4

Candidate Starts for Vardy\_41:

(Start: 4 @32895 has 13 MA's), (7, 32910), (Start: 9 @32925 has 17 MA's), (22, 33066),

Gene: Zeph\_42 Start: 33816, Stop: 34091, Start Num: 9

Candidate Starts for Zeph\_42:

(Start: 4 @33786 has 13 MA's), (Start: 9 @33816 has 17 MA's), (20, 33954), (22, 33963),