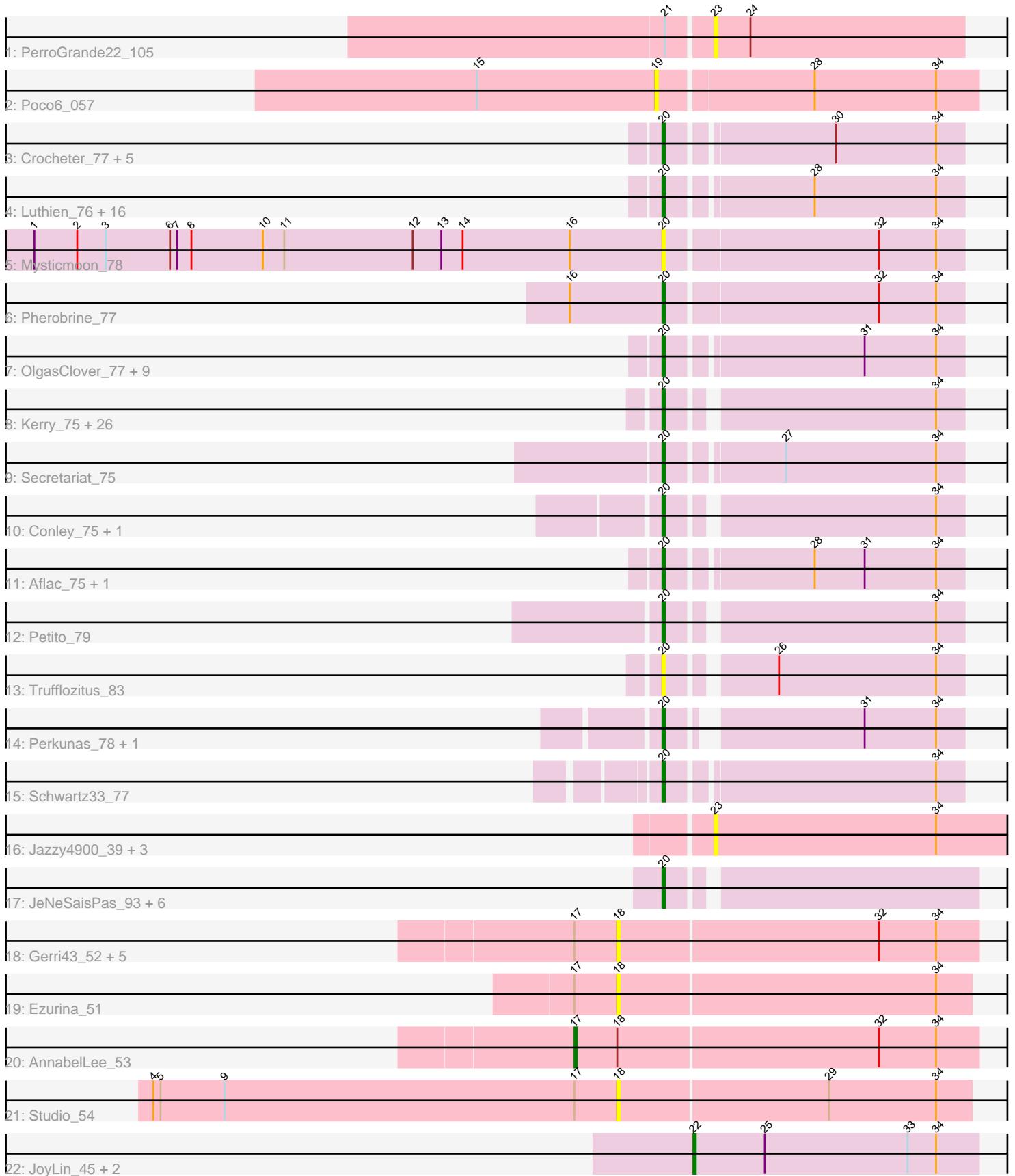


Pham 296432



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 296432 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296432 has 97 members, 34 are drafts.

Phages represented in each track:

- Track 1 : PerroGrande22\_105
- Track 2 : Poco6\_057
- Track 3 : Crocheter\_77, PestoPenguin\_81, ShaggyRogers\_76, Aloe25\_80, BetterYeti\_76, Gusicorn\_78
- Track 4 : Luthien\_76, Burley\_76, Jodelie19\_74, BluerMoon\_74, Eddiemania\_77, Glintora\_77, Arataki\_75, Figliar\_74, Zeph\_78, Vardy\_75, MajinBuu\_76, Rickmore\_74, Chikenjars\_75, TenaciousP\_76, Phepper\_77, EndAve\_77, Citrus\_75
- Track 5 : Mysticmoon\_78
- Track 6 : Pherobrine\_77
- Track 7 : OlgasClover\_77, Nithya\_75, Dialga\_78, Untouchable\_78, Nadmeg\_76, Runhaar\_75, ArtetaBall\_76, Madvan\_76, Duffington\_76, CWormy\_75
- Track 8 : Kerry\_75, Talon44\_80, Avazak\_79, Hortihabitatio\_79, Artorias\_78, Magel\_77, Mossy\_77, Roney\_75, Bugg\_82, Captrips\_77, NoPickles\_77, JulesRay\_78, ChickyNuggy\_81, Blanky\_74, AlainaMarie\_75, Kenosha\_75, Odesza\_75, Dancer\_78, Tairn4Wing\_81, Football\_81, Hydrus\_76, Tanis\_76, Capybara\_76, OhMyWard\_73, Gill\_76, Gravy\_75, FortCran\_78
- Track 9 : Secretariat\_75
- Track 10 : Conley\_75, Fazel\_80
- Track 11 : Aflac\_75, Tonaltzin\_79
- Track 12 : Petite\_79
- Track 13 : Trufflozitus\_83
- Track 14 : Perkunas\_78, SweetCrkHerbs\_79
- Track 15 : Schwartz33\_77
- Track 16 : Jazzy4900\_39, Sunny4976\_38, Arzan\_40, GermyBearimy\_43
- Track 17 : JeNeSaisPas\_93, Gandionco\_95, Elver\_98, Kureo\_97, Marianna39\_96, Paella\_99, Qui\_99
- Track 18 : Gerri43\_52, Neuville\_51, ChipsNGuac\_52, CardboardBox\_52, ChamoyPickle\_53, Roberts\_51
- Track 19 : Ezurina\_51
- Track 20 : AnnabelLee\_53
- Track 21 : Studio\_54
- Track 22 : JoyLin\_45, Eevee\_45, Yotsuba\_45

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

The start number called the most often in the published annotations is 20, it was called in 59 of the 63 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac\_75, AlainaMarie\_75, Aloe25\_80, Arataki\_75, ArtetaBall\_76, Artorias\_78, Avazak\_79, BetterYeti\_76, Blanky\_74, BluerMoon\_74, Bugg\_82, Burley\_76, CWormy\_75, Captrips\_77, Capybara\_76, ChickyNuggy\_81, Chikenjars\_75, Citrus\_75, Conley\_75, Crocheter\_77, Dancer\_78, Dialga\_78, Duffington\_76, Eddiemania\_77, Elver\_98, EndAve\_77, Fazel\_80, Figliar\_74, Football\_81, FortCran\_78, Gandionco\_95, Gill\_76, Glintora\_77, Gravy\_75, Gusicorn\_78, Hortihabitatio\_79, Hydrus\_76, JeNeSaisPas\_93, Jodelie19\_74, JulesRay\_78, Kenosha\_75, Kerry\_75, Kureo\_97, Luthien\_76, Madvan\_76, Magel\_77, MajinBuu\_76, Marianna39\_96, Mossy\_77, Mysticmoon\_78, Nadmeg\_76, Nithya\_75, NoPickles\_77, Odesza\_75, OhMyWard\_73, OlgasClover\_77, Paella\_99, Perkunas\_78, PestoPenguin\_81, Petite\_79, Phepper\_77, Pherobrine\_77, Qui\_99, Rickmore\_74, Roney\_75, Runhaar\_75, Schwartz33\_77, Secretariat\_75, ShaggyRogers\_76, SweetCrkHerbs\_79, Tairn4Wing\_81, Talon44\_80, Tanis\_76, TenaciousP\_76, Tonaltzin\_79, Trufflozitus\_83, Untouchable\_78, Vardy\_75, Zeph\_78,

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

- 

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

- AnnabelLee\_53, Arzan\_40, CardboardBox\_52, ChamoyPickle\_53, ChipsNGuac\_52, Eevee\_45, Ezurina\_51, GermyBearimy\_43, Gerri43\_52, Jazzy4900\_39, JoyLin\_45, Neuvillelette\_51, PerroGrande22\_105, Poco6\_057, Roberts\_51, Studio\_54, Sunny4976\_38, Yotsuba\_45,

### Summary by start number:

Start 17:

- Found in 9 of 97 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 1 of 63
- Called 11.1% of time when present
- Phage (with cluster) where this start called: AnnabelLee\_53 (FR),

Start 18:

- Found in 9 of 97 ( 9.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 88.9% of time when present
- Phage (with cluster) where this start called: CardboardBox\_52 (FR), ChamoyPickle\_53 (FR), ChipsNGuac\_52 (FR), Ezurina\_51 (FR), Gerri43\_52 (FR), Neuvillelette\_51 (FR), Roberts\_51 (FR), Studio\_54 (FR),

Start 19:

- Found in 1 of 97 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Poco6\_057 (CC),

Start 20:

- Found in 79 of 97 ( 81.4% ) of genes in pham

- Manual Annotations of this start: 59 of 63
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aflac\_75 (DJ), AlainaMarie\_75 (DJ), Aloe25\_80 (DJ), Arataki\_75 (DJ), ArtetaBall\_76 (DJ), Artorias\_78 (DJ), Avazak\_79 (DJ), BetterYeti\_76 (DJ), Blanky\_74 (DJ), BluerMoon\_74 (DJ), Bugg\_82 (DJ), Burley\_76 (DJ), CWormy\_75 (DJ), Captrips\_77 (DJ), Capybara\_76 (DJ), ChickyNuggy\_81 (DJ), Chikenjars\_75 (DJ), Citrus\_75 (DJ), Conley\_75 (DJ), Crocheter\_77 (DJ), Dancer\_78 (DJ), Dialga\_78 (DJ), Duffington\_76 (DJ), Eddiemania\_77 (DJ), Elver\_98 (FK), EndAve\_77 (DJ), Fazel\_80 (DJ), Figliar\_74 (DJ), Football\_81 (DJ), FortCran\_78 (DJ), Gandionco\_95 (FK), Gill\_76 (DJ), Glintora\_77 (DJ), Gravy\_75 (DJ), Gusicorn\_78 (DJ), Hortihabitatio\_79 (DJ), Hydrus\_76 (DJ), JeNeSaisPas\_93 (FK), Jodelie19\_74 (DJ), JulesRay\_78 (DJ), Kenosha\_75 (DJ), Kerry\_75 (DJ), Kureo\_97 (FK), Luthien\_76 (DJ), Madvan\_76 (DJ), Magel\_77 (DJ), MajinBuu\_76 (DJ), Marianna39\_96 (FK), Mossy\_77 (DJ), Mysticmoon\_78 (DJ), Nadmeg\_76 (DJ), Nithya\_75 (DJ), NoPickles\_77 (DJ), Odesza\_75 (DJ), OhMyWard\_73 (DJ), OlgasClover\_77 (DJ), Paella\_99 (FK), Perkunas\_78 (DJ), PestoPenguin\_81 (DJ), Petite\_79 (DJ), Phepper\_77 (DJ), Pherobrine\_77 (DJ), Qui\_99 (FK), Rickmore\_74 (DJ), Roney\_75 (DJ), Runhaar\_75 (DJ), Schwartz33\_77 (DJ), Secretariat\_75 (DJ), ShaggyRogers\_76 (DJ), SweetCrkHerbs\_79 (DJ), Tain4Wing\_81 (DJ), Talon44\_80 (DJ), Tanis\_76 (DJ), TenaciousP\_76 (DJ), Tonaltzin\_79 (DJ), Trufflozitus\_83 (DJ), Untouchable\_78 (DJ), Vardy\_75 (DJ), Zeph\_78 (DJ),

#### Start 22:

- Found in 3 of 97 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 3 of 63
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Eevee\_45 (JA), JoyLin\_45 (JA), Yotsuba\_45 (JA),

#### Start 23:

- Found in 5 of 97 ( 5.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arzan\_40 (FI), GermyBearimy\_43 (FI), Jazzy4900\_39 (FI), PerroGrande22\_105 (CC), Sunny4976\_38 (FI),

### Summary by clusters:

There are 6 clusters represented in this pham: FR, DJ, CC, FI, FK, JA,

#### Info for manual annotations of cluster DJ:

- Start number 20 was manually annotated 56 times for cluster DJ.

#### Info for manual annotations of cluster FK:

- Start number 20 was manually annotated 3 times for cluster FK.

#### Info for manual annotations of cluster FR:

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

#### Info for manual annotations of cluster JA:

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

**Gene Information:**

Gene: Aflac\_75 Start: 51259, Stop: 51378, Start Num: 20

Candidate Starts for Aflac\_75:

(Start: 20 @51259 has 59 MA's), (28, 51316), (31, 51337), (34, 51367),

Gene: AlainaMarie\_75 Start: 51316, Stop: 51435, Start Num: 20

Candidate Starts for AlainaMarie\_75:

(Start: 20 @51316 has 59 MA's), (34, 51424),

Gene: Aloe25\_80 Start: 51133, Stop: 51252, Start Num: 20

Candidate Starts for Aloe25\_80:

(Start: 20 @51133 has 59 MA's), (30, 51199), (34, 51241),

Gene: AnnabelLee\_53 Start: 32600, Stop: 32433, Start Num: 17

Candidate Starts for AnnabelLee\_53:

(Start: 17 @32600 has 1 MA's), (18, 32582), (32, 32474), (34, 32450),

Gene: Arataki\_75 Start: 50746, Stop: 50865, Start Num: 20

Candidate Starts for Arataki\_75:

(Start: 20 @50746 has 59 MA's), (28, 50803), (34, 50854),

Gene: ArtetaBall\_76 Start: 51306, Stop: 51425, Start Num: 20

Candidate Starts for ArtetaBall\_76:

(Start: 20 @51306 has 59 MA's), (31, 51384), (34, 51414),

Gene: Artorias\_78 Start: 50947, Stop: 51063, Start Num: 20

Candidate Starts for Artorias\_78:

(Start: 20 @50947 has 59 MA's), (34, 51052),

Gene: Arzan\_40 Start: 28874, Stop: 29023, Start Num: 23

Candidate Starts for Arzan\_40:

(23, 28874), (34, 28967),

Gene: Avazak\_79 Start: 51629, Stop: 51745, Start Num: 20

Candidate Starts for Avazak\_79:

(Start: 20 @51629 has 59 MA's), (34, 51734),

Gene: BetterYeti\_76 Start: 51132, Stop: 51251, Start Num: 20

Candidate Starts for BetterYeti\_76:

(Start: 20 @51132 has 59 MA's), (30, 51198), (34, 51240),

Gene: Blanky\_74 Start: 52228, Stop: 52347, Start Num: 20

Candidate Starts for Blanky\_74:

(Start: 20 @52228 has 59 MA's), (34, 52336),

Gene: BluerMoon\_74 Start: 51213, Stop: 51332, Start Num: 20

Candidate Starts for BluerMoon\_74:

(Start: 20 @51213 has 59 MA's), (28, 51270), (34, 51321),

Gene: Bugg\_82 Start: 50992, Stop: 51108, Start Num: 20  
Candidate Starts for Bugg\_82:  
(Start: 20 @50992 has 59 MA's), (34, 51097),

Gene: Burley\_76 Start: 50762, Stop: 50881, Start Num: 20  
Candidate Starts for Burley\_76:  
(Start: 20 @50762 has 59 MA's), (28, 50819), (34, 50870),

Gene: CWormy\_75 Start: 50723, Stop: 50842, Start Num: 20  
Candidate Starts for CWormy\_75:  
(Start: 20 @50723 has 59 MA's), (31, 50801), (34, 50831),

Gene: Captrips\_77 Start: 50777, Stop: 50893, Start Num: 20  
Candidate Starts for Captrips\_77:  
(Start: 20 @50777 has 59 MA's), (34, 50882),

Gene: Capybara\_76 Start: 50614, Stop: 50730, Start Num: 20  
Candidate Starts for Capybara\_76:  
(Start: 20 @50614 has 59 MA's), (34, 50719),

Gene: CardboardBox\_52 Start: 32585, Stop: 32436, Start Num: 18  
Candidate Starts for CardboardBox\_52:  
(Start: 17 @32603 has 1 MA's), (18, 32585), (32, 32477), (34, 32453),

Gene: ChamoyPickle\_53 Start: 33125, Stop: 32976, Start Num: 18  
Candidate Starts for ChamoyPickle\_53:  
(Start: 17 @33143 has 1 MA's), (18, 33125), (32, 33017), (34, 32993),

Gene: ChickyNuggy\_81 Start: 51371, Stop: 51487, Start Num: 20  
Candidate Starts for ChickyNuggy\_81:  
(Start: 20 @51371 has 59 MA's), (34, 51476),

Gene: Chikenjars\_75 Start: 51562, Stop: 51681, Start Num: 20  
Candidate Starts for Chikenjars\_75:  
(Start: 20 @51562 has 59 MA's), (28, 51619), (34, 51670),

Gene: ChipsNGuac\_52 Start: 32585, Stop: 32436, Start Num: 18  
Candidate Starts for ChipsNGuac\_52:  
(Start: 17 @32603 has 1 MA's), (18, 32585), (32, 32477), (34, 32453),

Gene: Citrus\_75 Start: 51612, Stop: 51731, Start Num: 20  
Candidate Starts for Citrus\_75:  
(Start: 20 @51612 has 59 MA's), (28, 51669), (34, 51720),

Gene: Conley\_75 Start: 51077, Stop: 51193, Start Num: 20  
Candidate Starts for Conley\_75:  
(Start: 20 @51077 has 59 MA's), (34, 51182),

Gene: Crocheter\_77 Start: 51226, Stop: 51345, Start Num: 20  
Candidate Starts for Crocheter\_77:  
(Start: 20 @51226 has 59 MA's), (30, 51292), (34, 51334),

Gene: Dancer\_78 Start: 50684, Stop: 50800, Start Num: 20  
Candidate Starts for Dancer\_78:  
(Start: 20 @50684 has 59 MA's), (34, 50789),

Gene: Dialga\_78 Start: 51325, Stop: 51444, Start Num: 20  
Candidate Starts for Dialga\_78:  
(Start: 20 @51325 has 59 MA's), (31, 51403), (34, 51433),

Gene: Duffington\_76 Start: 51530, Stop: 51649, Start Num: 20  
Candidate Starts for Duffington\_76:  
(Start: 20 @51530 has 59 MA's), (31, 51608), (34, 51638),

Gene: Eddiemania\_77 Start: 51804, Stop: 51923, Start Num: 20  
Candidate Starts for Eddiemania\_77:  
(Start: 20 @51804 has 59 MA's), (28, 51861), (34, 51912),

Gene: Eevee\_45 Start: 34471, Stop: 34590, Start Num: 22  
Candidate Starts for Eevee\_45:  
(Start: 22 @34471 has 3 MA's), (25, 34501), (33, 34561), (34, 34573),

Gene: Elver\_98 Start: 54542, Stop: 54664, Start Num: 20  
Candidate Starts for Elver\_98:  
(Start: 20 @54542 has 59 MA's),

Gene: EndAve\_77 Start: 51506, Stop: 51625, Start Num: 20  
Candidate Starts for EndAve\_77:  
(Start: 20 @51506 has 59 MA's), (28, 51563), (34, 51614),

Gene: Ezurina\_51 Start: 33562, Stop: 33416, Start Num: 18  
Candidate Starts for Ezurina\_51:  
(Start: 17 @33580 has 1 MA's), (18, 33562), (34, 33430),

Gene: Fazel\_80 Start: 51692, Stop: 51811, Start Num: 20  
Candidate Starts for Fazel\_80:  
(Start: 20 @51692 has 59 MA's), (34, 51800),

Gene: Figliar\_74 Start: 51330, Stop: 51449, Start Num: 20  
Candidate Starts for Figliar\_74:  
(Start: 20 @51330 has 59 MA's), (28, 51387), (34, 51438),

Gene: Football\_81 Start: 50574, Stop: 50690, Start Num: 20  
Candidate Starts for Football\_81:  
(Start: 20 @50574 has 59 MA's), (34, 50679),

Gene: FortCran\_78 Start: 50947, Stop: 51063, Start Num: 20  
Candidate Starts for FortCran\_78:  
(Start: 20 @50947 has 59 MA's), (34, 51052),

Gene: Gandionco\_95 Start: 53398, Stop: 53520, Start Num: 20  
Candidate Starts for Gandionco\_95:  
(Start: 20 @53398 has 59 MA's),

Gene: GermyBearimy\_43 Start: 29294, Stop: 29443, Start Num: 23

Candidate Starts for GermyBearimy\_43:  
(23, 29294), (34, 29387),

Gene: Gerri43\_52 Start: 32585, Stop: 32436, Start Num: 18  
Candidate Starts for Gerri43\_52:  
(Start: 17 @32603 has 1 MA's), (18, 32585), (32, 32477), (34, 32453),

Gene: Gill\_76 Start: 50642, Stop: 50758, Start Num: 20  
Candidate Starts for Gill\_76:  
(Start: 20 @50642 has 59 MA's), (34, 50747),

Gene: Glintora\_77 Start: 51707, Stop: 51826, Start Num: 20  
Candidate Starts for Glintora\_77:  
(Start: 20 @51707 has 59 MA's), (28, 51764), (34, 51815),

Gene: Gravy\_75 Start: 50304, Stop: 50420, Start Num: 20  
Candidate Starts for Gravy\_75:  
(Start: 20 @50304 has 59 MA's), (34, 50409),

Gene: Gusicorn\_78 Start: 51133, Stop: 51252, Start Num: 20  
Candidate Starts for Gusicorn\_78:  
(Start: 20 @51133 has 59 MA's), (30, 51199), (34, 51241),

Gene: Hortihabitatio\_79 Start: 52082, Stop: 52201, Start Num: 20  
Candidate Starts for Hortihabitatio\_79:  
(Start: 20 @52082 has 59 MA's), (34, 52190),

Gene: Hydrus\_76 Start: 51523, Stop: 51642, Start Num: 20  
Candidate Starts for Hydrus\_76:  
(Start: 20 @51523 has 59 MA's), (34, 51631),

Gene: Jazzy4900\_39 Start: 29823, Stop: 29972, Start Num: 23  
Candidate Starts for Jazzy4900\_39:  
(23, 29823), (34, 29916),

Gene: JeNeSaisPas\_93 Start: 53972, Stop: 54094, Start Num: 20  
Candidate Starts for JeNeSaisPas\_93:  
(Start: 20 @53972 has 59 MA's),

Gene: Jodelie19\_74 Start: 52497, Stop: 52616, Start Num: 20  
Candidate Starts for Jodelie19\_74:  
(Start: 20 @52497 has 59 MA's), (28, 52554), (34, 52605),

Gene: JoyLin\_45 Start: 34591, Stop: 34710, Start Num: 22  
Candidate Starts for JoyLin\_45:  
(Start: 22 @34591 has 3 MA's), (25, 34621), (33, 34681), (34, 34693),

Gene: JulesRay\_78 Start: 51296, Stop: 51412, Start Num: 20  
Candidate Starts for JulesRay\_78:  
(Start: 20 @51296 has 59 MA's), (34, 51401),

Gene: Kenosha\_75 Start: 51351, Stop: 51470, Start Num: 20  
Candidate Starts for Kenosha\_75:

(Start: 20 @51351 has 59 MA's), (34, 51459),

Gene: Kerry\_75 Start: 50367, Stop: 50483, Start Num: 20

Candidate Starts for Kerry\_75:

(Start: 20 @50367 has 59 MA's), (34, 50472),

Gene: Kureo\_97 Start: 53552, Stop: 53674, Start Num: 20

Candidate Starts for Kureo\_97:

(Start: 20 @53552 has 59 MA's),

Gene: Luthien\_76 Start: 51501, Stop: 51620, Start Num: 20

Candidate Starts for Luthien\_76:

(Start: 20 @51501 has 59 MA's), (28, 51558), (34, 51609),

Gene: Madvan\_76 Start: 50818, Stop: 50937, Start Num: 20

Candidate Starts for Madvan\_76:

(Start: 20 @50818 has 59 MA's), (31, 50896), (34, 50926),

Gene: Magel\_77 Start: 50557, Stop: 50673, Start Num: 20

Candidate Starts for Magel\_77:

(Start: 20 @50557 has 59 MA's), (34, 50662),

Gene: MajinBuu\_76 Start: 51712, Stop: 51831, Start Num: 20

Candidate Starts for MajinBuu\_76:

(Start: 20 @51712 has 59 MA's), (28, 51769), (34, 51820),

Gene: Marianna39\_96 Start: 53967, Stop: 54089, Start Num: 20

Candidate Starts for Marianna39\_96:

(Start: 20 @53967 has 59 MA's),

Gene: Mossy\_77 Start: 52440, Stop: 52559, Start Num: 20

Candidate Starts for Mossy\_77:

(Start: 20 @52440 has 59 MA's), (34, 52548),

Gene: Mysticmoon\_78 Start: 52079, Stop: 52201, Start Num: 20

Candidate Starts for Mysticmoon\_78:

(1, 51815), (2, 51833), (3, 51845), (6, 51872), (7, 51875), (8, 51881), (10, 51911), (11, 51920), (12, 51974), (13, 51986), (14, 51995), (16, 52040), (Start: 20 @52079 has 59 MA's), (32, 52166), (34, 52190),

Gene: Nadmeg\_76 Start: 51821, Stop: 51940, Start Num: 20

Candidate Starts for Nadmeg\_76:

(Start: 20 @51821 has 59 MA's), (31, 51899), (34, 51929),

Gene: Neuville\_51 Start: 32585, Stop: 32436, Start Num: 18

Candidate Starts for Neuville\_51:

(Start: 17 @32603 has 1 MA's), (18, 32585), (32, 32477), (34, 32453),

Gene: Nithya\_75 Start: 51204, Stop: 51323, Start Num: 20

Candidate Starts for Nithya\_75:

(Start: 20 @51204 has 59 MA's), (31, 51282), (34, 51312),

Gene: NoPickles\_77 Start: 50463, Stop: 50579, Start Num: 20

Candidate Starts for NoPickles\_77:  
(Start: 20 @50463 has 59 MA's), (34, 50568),

Gene: Odesza\_75 Start: 50501, Stop: 50617, Start Num: 20  
Candidate Starts for Odesza\_75:  
(Start: 20 @50501 has 59 MA's), (34, 50606),

Gene: OhMyWard\_73 Start: 52199, Stop: 52318, Start Num: 20  
Candidate Starts for OhMyWard\_73:  
(Start: 20 @52199 has 59 MA's), (34, 52307),

Gene: OlgasClover\_77 Start: 52120, Stop: 52239, Start Num: 20  
Candidate Starts for OlgasClover\_77:  
(Start: 20 @52120 has 59 MA's), (31, 52198), (34, 52228),

Gene: Paella\_99 Start: 55132, Stop: 55254, Start Num: 20  
Candidate Starts for Paella\_99:  
(Start: 20 @55132 has 59 MA's),

Gene: Perkunas\_78 Start: 50566, Stop: 50679, Start Num: 20  
Candidate Starts for Perkunas\_78:  
(Start: 20 @50566 has 59 MA's), (31, 50638), (34, 50668),

Gene: PerroGrande22\_105 Start: 67639, Stop: 67743, Start Num: 23  
Candidate Starts for PerroGrande22\_105:  
(21, 67624), (23, 67639), (24, 67654),

Gene: PestoPenguin\_81 Start: 51133, Stop: 51252, Start Num: 20  
Candidate Starts for PestoPenguin\_81:  
(Start: 20 @51133 has 59 MA's), (30, 51199), (34, 51241),

Gene: Petite\_79 Start: 52029, Stop: 52145, Start Num: 20  
Candidate Starts for Petite\_79:  
(Start: 20 @52029 has 59 MA's), (34, 52134),

Gene: Phepper\_77 Start: 51060, Stop: 51179, Start Num: 20  
Candidate Starts for Phepper\_77:  
(Start: 20 @51060 has 59 MA's), (28, 51117), (34, 51168),

Gene: Pherobrine\_77 Start: 52134, Stop: 52256, Start Num: 20  
Candidate Starts for Pherobrine\_77:  
(16, 52095), (Start: 20 @52134 has 59 MA's), (32, 52221), (34, 52245),

Gene: Poco6\_057 Start: 66807, Stop: 66938, Start Num: 19  
Candidate Starts for Poco6\_057:  
(15, 66732), (19, 66807), (28, 66870), (34, 66921),

Gene: Qui\_99 Start: 55132, Stop: 55254, Start Num: 20  
Candidate Starts for Qui\_99:  
(Start: 20 @55132 has 59 MA's),

Gene: Rickmore\_74 Start: 49877, Stop: 49996, Start Num: 20  
Candidate Starts for Rickmore\_74:

(Start: 20 @49877 has 59 MA's), (28, 49934), (34, 49985),

Gene: Roberts\_51 Start: 32585, Stop: 32436, Start Num: 18

Candidate Starts for Roberts\_51:

(Start: 17 @32603 has 1 MA's), (18, 32585), (32, 32477), (34, 32453),

Gene: Roney\_75 Start: 50667, Stop: 50783, Start Num: 20

Candidate Starts for Roney\_75:

(Start: 20 @50667 has 59 MA's), (34, 50772),

Gene: Runhaar\_75 Start: 50869, Stop: 50988, Start Num: 20

Candidate Starts for Runhaar\_75:

(Start: 20 @50869 has 59 MA's), (31, 50947), (34, 50977),

Gene: Schwartz33\_77 Start: 51200, Stop: 51319, Start Num: 20

Candidate Starts for Schwartz33\_77:

(Start: 20 @51200 has 59 MA's), (34, 51308),

Gene: Secretariat\_75 Start: 50334, Stop: 50453, Start Num: 20

Candidate Starts for Secretariat\_75:

(Start: 20 @50334 has 59 MA's), (27, 50379), (34, 50442),

Gene: ShaggyRogers\_76 Start: 50863, Stop: 50982, Start Num: 20

Candidate Starts for ShaggyRogers\_76:

(Start: 20 @50863 has 59 MA's), (30, 50929), (34, 50971),

Gene: Studio\_54 Start: 33799, Stop: 33653, Start Num: 18

Candidate Starts for Studio\_54:

(4, 33994), (5, 33991), (9, 33964), (Start: 17 @33817 has 1 MA's), (18, 33799), (29, 33712), (34, 33667),

Gene: Sunny4976\_38 Start: 29823, Stop: 29972, Start Num: 23

Candidate Starts for Sunny4976\_38:

(23, 29823), (34, 29916),

Gene: SweetCrkHerbs\_79 Start: 50579, Stop: 50692, Start Num: 20

Candidate Starts for SweetCrkHerbs\_79:

(Start: 20 @50579 has 59 MA's), (31, 50651), (34, 50681),

Gene: Tairn4Wing\_81 Start: 50785, Stop: 50901, Start Num: 20

Candidate Starts for Tairn4Wing\_81:

(Start: 20 @50785 has 59 MA's), (34, 50890),

Gene: Talon44\_80 Start: 51415, Stop: 51531, Start Num: 20

Candidate Starts for Talon44\_80:

(Start: 20 @51415 has 59 MA's), (34, 51520),

Gene: Tanis\_76 Start: 50487, Stop: 50603, Start Num: 20

Candidate Starts for Tanis\_76:

(Start: 20 @50487 has 59 MA's), (34, 50592),

Gene: TenaciousP\_76 Start: 52459, Stop: 52578, Start Num: 20

Candidate Starts for TenaciousP\_76:

(Start: 20 @52459 has 59 MA's), (28, 52516), (34, 52567),

Gene: Tonaltzin\_79 Start: 51027, Stop: 51146, Start Num: 20

Candidate Starts for Tonaltzin\_79:

(Start: 20 @51027 has 59 MA's), (28, 51084), (31, 51105), (34, 51135),

Gene: Trufflozitus\_83 Start: 51300, Stop: 51416, Start Num: 20

Candidate Starts for Trufflozitus\_83:

(Start: 20 @51300 has 59 MA's), (26, 51339), (34, 51405),

Gene: Untouchable\_78 Start: 52057, Stop: 52176, Start Num: 20

Candidate Starts for Untouchable\_78:

(Start: 20 @52057 has 59 MA's), (31, 52135), (34, 52165),

Gene: Vardy\_75 Start: 50756, Stop: 50875, Start Num: 20

Candidate Starts for Vardy\_75:

(Start: 20 @50756 has 59 MA's), (28, 50813), (34, 50864),

Gene: Yotsuba\_45 Start: 34609, Stop: 34728, Start Num: 22

Candidate Starts for Yotsuba\_45:

(Start: 22 @34609 has 3 MA's), (25, 34639), (33, 34699), (34, 34711),

Gene: Zeph\_78 Start: 51894, Stop: 52013, Start Num: 20

Candidate Starts for Zeph\_78:

(Start: 20 @51894 has 59 MA's), (28, 51951), (34, 52002),