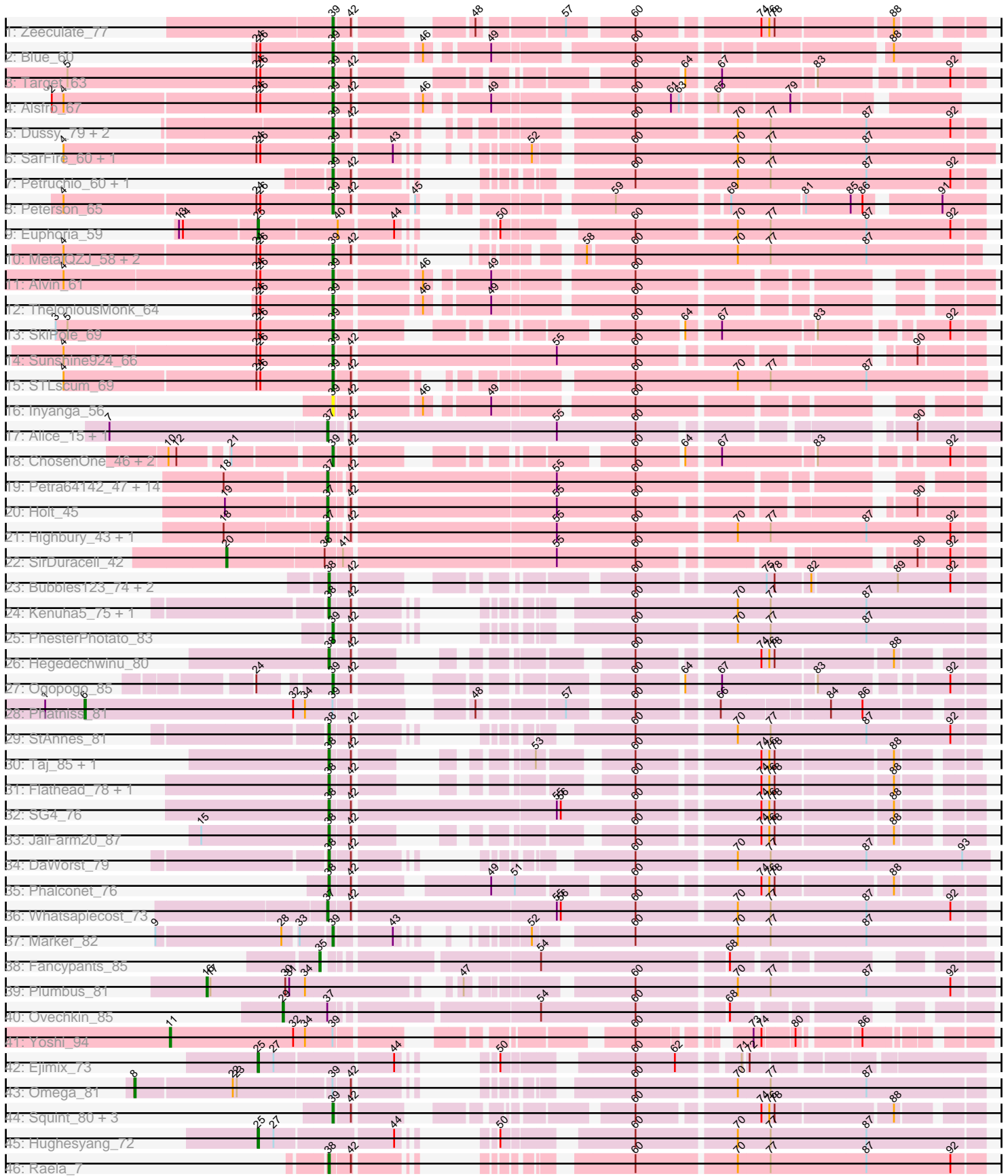


Pham 196482



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 196482 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196482 has 78 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Zeeculate\_77
- Track 2 : Blue\_60
- Track 3 : Target\_63
- Track 4 : Alsfro\_67
- Track 5 : Dussy\_79, Kenmech\_82, Abbyshoes\_80
- Track 6 : SarFire\_60, Thor\_60
- Track 7 : Petruchio\_60, Simpliphy\_43
- Track 8 : Peterson\_65
- Track 9 : Euphoria\_59
- Track 10 : MetalQZJ\_58, Corvo\_62, MaryBeth\_59
- Track 11 : Alvin\_61
- Track 12 : TheloniousMonk\_64
- Track 13 : SkiPole\_69
- Track 14 : Sunshine924\_66
- Track 15 : STLscum\_69
- Track 16 : Inyanga\_56
- Track 17 : Alice\_15, Flabslab\_16
- Track 18 : ChosenOne\_46, Lilpickle\_45, Elite2014\_45
- Track 19 : Petra64142\_47, Kostya\_43, Murica\_44, Terminus\_44, PhatBacter\_45, Phaux\_44, Nimrod\_45, Policronamos\_47, HufflyPuff\_44, BigBubba\_43, xkcd\_46, Misfit\_44, FireRed\_45, BugsBunny\_43, Palpatine\_45
- Track 20 : Holt\_45
- Track 21 : Highbury\_43, Saints25\_43
- Track 22 : SirDuracell\_42
- Track 23 : Bubbles123\_74, IrishSherpFalk\_79, WillSterrel\_78
- Track 24 : Kenuha5\_75, Gandalph\_77
- Track 25 : PhesterPotato\_83
- Track 26 : Hegedechwinu\_80
- Track 27 : Ogopogo\_85
- Track 28 : Phatniss\_81
- Track 29 : StAnnes\_81
- Track 30 : Taj\_85, Wee\_84
- Track 31 : Flathead\_78, Donkeykong\_83
- Track 32 : SG4\_76
- Track 33 : JalFarm20\_87
- Track 34 : DaWorst\_79
- Track 35 : Phalconet\_76

- Track 36 : Whatsapiecost\_73
- Track 37 : Marker\_82
- Track 38 : Fancypants\_85
- Track 39 : Plumbus\_81
- Track 40 : Ovechkin\_85
- Track 41 : Yoshi\_94
- Track 42 : Ejimix\_73
- Track 43 : Omega\_81
- Track 44 : Squint\_80, Ariel\_79, Porcelain\_79, MiaZeal\_80
- Track 45 : Hughesyang\_72
- Track 46 : Raela\_7

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

The start number called the most often in the published annotations is 39, it was called in 30 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abbyshoes\_80, Alsfro\_67, Alvin\_61, Ariel\_79, Blue\_60, ChosenOne\_46, Corvo\_62, Dussy\_79, Elite2014\_45, Inyanga\_56, Kenmech\_82, Lilpickle\_45, Marker\_82, MaryBeth\_59, MetalQZJ\_58, MiaZeal\_80, OgoPogo\_85, Peterson\_65, Petruchio\_60, PhesterPhotato\_83, Porcelain\_79, STLscum\_69, SarFire\_60, Simpliphy\_43, SkiPole\_69, Squint\_80, Sunshine924\_66, Target\_63, TheloniousMonk\_64, Thor\_60, Zeeculate\_77,

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

- Omega\_81, Phatniss\_81, Yoshi\_94,

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

- Alice\_15, BigBubba\_43, Bubbles123\_74, BugsBunny\_43, DaWorst\_79, Donkeykong\_83, Ejimix\_73, Euphoria\_59, Fancypants\_85, FireRed\_45, Flabslab\_16, Flathead\_78, Gandalph\_77, Hegedechwinu\_80, Highbury\_43, Holt\_45, HufflyPuff\_44, Hughesyang\_72, IrishSherpFalk\_79, JalFarm20\_87, Kenuha5\_75, Kostya\_43, Misfit\_44, Murica\_44, Nimrod\_45, Ovechkin\_85, Palpatine\_45, Petra64142\_47, Phalconet\_76, PhatBacter\_45, Phaux\_44, Plumbus\_81, Policronamos\_47, Raela\_7, SG4\_76, Saints25\_43, SirDuracell\_42, StAnnes\_81, Taj\_85, Terminus\_44, Wee\_84, Whatsapiecost\_73, WillSterrel\_78, xkcd\_46,

**Summary by start number:**

Start 6:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phatniss\_81 (F1),

Start 8:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Omega\_81 (J),

Start 11:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yoshi\_94 (F2),

Start 16:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Plumbus\_81 (F1),

Start 20:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SirDuracell\_42 (E),

Start 25:

- Found in 3 of 78 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 3 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ejimix\_73 (J), Euphoria\_59 (A1), Hughesyang\_72 (J),

Start 29:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ovechkin\_85 (F1),

Start 35:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fancypants\_85 (F1),

Start 37:

- Found in 22 of 78 ( 28.2% ) of genes in pham
- Manual Annotations of this start: 17 of 73
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Alice\_15 (C1), BigBubba\_43 (E), BugsBunny\_43 (E), FireRed\_45 (E), Flabslab\_16 (C1), Highbury\_43 (E), Holt\_45 (E), HufflyPuff\_44 (E), Kostya\_43 (E), Misfit\_44 (E), Murica\_44 (E), Nimrod\_45 (E), Palpatine\_45 (E), Petra64142\_47 (E), PhatBacter\_45 (E), Phaux\_44 (E), Policronamos\_47 (E), Saints25\_43 (E), Terminus\_44 (E), Whatsapiecost\_73 (F1), xkcd\_46 (E),

Start 38:

- Found in 16 of 78 ( 20.5% ) of genes in pham
- Manual Annotations of this start: 16 of 73

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bubbles123\_74 (F1), DaWorst\_79 (F1), Donkeykong\_83 (F1), Flathead\_78 (F1), Gandolph\_77 (F1), Hegedechwinu\_80 (F1), IrishSherpFalk\_79 (F1), JalFarm20\_87 (F1), Kenuha5\_75 (F1), Phalconet\_76 (F1), Raela\_7 (S), SG4\_76 (F1), StAnnes\_81 (F1), Taj\_85 (F1), Wee\_84 (F1), WillSterrel\_78 (F1),

Start 39:

- Found in 34 of 78 ( 43.6% ) of genes in pham
- Manual Annotations of this start: 30 of 73
- Called 91.2% of time when present
- Phage (with cluster) where this start called: Abbysshoes\_80 (A1), Alsfro\_67 (A1), Alvin\_61 (A1), Ariel\_79 (J), Blue\_60 (A1), ChosenOne\_46 (E), Corvo\_62 (A1), Dussy\_79 (A1), Elite2014\_45 (E), Inyanga\_56 (A1), Kenmech\_82 (A1), Lilpickle\_45 (E), Marker\_82 (F1), MaryBeth\_59 (A1), MetalQZJ\_58 (A1), MiaZeal\_80 (J), Ogopogo\_85 (F1), Peterson\_65 (A1), Petruccio\_60 (A1), PhesterPhotato\_83 (F1), Porcelain\_79 (J), STLscum\_69 (A1), SarFire\_60 (A1), Simpliphy\_43 (E), SkiPole\_69 (A1), Squint\_80 (J), Sunshine924\_66 (A1), Target\_63 (A1), TheloniousMonk\_64 (A1), Thor\_60 (A1), Zeeculate\_77 (A1),

### Summary by clusters:

There are 7 clusters represented in this pham: F1, F2, E, J, A1, S, C1,

Info for manual annotations of cluster A1:

- Start number 25 was manually annotated 1 time for cluster A1.
- Start number 39 was manually annotated 19 times for cluster A1.

Info for manual annotations of cluster C1:

- Start number 37 was manually annotated 2 times for cluster C1.

Info for manual annotations of cluster E:

- Start number 20 was manually annotated 1 time for cluster E.
- Start number 37 was manually annotated 14 times for cluster E.
- Start number 39 was manually annotated 4 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 6 was manually annotated 1 time for cluster F1.
- Start number 16 was manually annotated 1 time for cluster F1.
- Start number 29 was manually annotated 1 time for cluster F1.
- Start number 35 was manually annotated 1 time for cluster F1.
- Start number 37 was manually annotated 1 time for cluster F1.
- Start number 38 was manually annotated 15 times for cluster F1.
- Start number 39 was manually annotated 3 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 11 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster J:

- Start number 8 was manually annotated 1 time for cluster J.
- Start number 25 was manually annotated 2 times for cluster J.
- Start number 39 was manually annotated 4 times for cluster J.

Info for manual annotations of cluster S:

•Start number 38 was manually annotated 1 time for cluster S.

**Gene Information:**

Gene: Abbysshoes\_80 Start: 47965, Stop: 47543, Start Num: 39

Candidate Starts for Abbysshoes\_80:

(Start: 39 @47965 has 30 MA's), (42, 47953), (60, 47797), (70, 47725), (77, 47701), (87, 47629), (92, 47566),

Gene: Alice\_15 Start: 5418, Stop: 5885, Start Num: 37

Candidate Starts for Alice\_15:

(7, 5256), (Start: 37 @5418 has 17 MA's), (42, 5430), (55, 5580), (60, 5640), (90, 5811),

Gene: Alsfro\_67 Start: 41490, Stop: 41089, Start Num: 39

Candidate Starts for Alsfro\_67:

(2, 41700), (4, 41691), (24, 41547), (26, 41544), (Start: 39 @41490 has 30 MA's), (42, 41478), (46, 41433), (49, 41394), (60, 41298), (61, 41271), (63, 41265), (65, 41244), (79, 41196),

Gene: Alvin\_61 Start: 40955, Stop: 40545, Start Num: 39

Candidate Starts for Alvin\_61:

(4, 41156), (24, 41012), (26, 41009), (Start: 39 @40955 has 30 MA's), (46, 40898), (49, 40859), (60, 40763),

Gene: Ariel\_79 Start: 48566, Stop: 48168, Start Num: 39

Candidate Starts for Ariel\_79:

(Start: 39 @48566 has 30 MA's), (42, 48554), (60, 48398), (74, 48314), (76, 48308), (78, 48305), (88, 48221),

Gene: BigBubba\_43 Start: 35101, Stop: 34667, Start Num: 37

Candidate Starts for BigBubba\_43:

(18, 35173), (Start: 37 @35101 has 17 MA's), (42, 35089), (55, 34939), (60, 34879),

Gene: Blue\_60 Start: 41591, Stop: 41178, Start Num: 39

Candidate Starts for Blue\_60:

(24, 41648), (26, 41645), (Start: 39 @41591 has 30 MA's), (46, 41534), (49, 41495), (60, 41399), (88, 41228),

Gene: Bubbles123\_74 Start: 48058, Stop: 48471, Start Num: 38

Candidate Starts for Bubbles123\_74:

(Start: 38 @48058 has 16 MA's), (42, 48073), (60, 48229), (75, 48316), (78, 48322), (82, 48346), (89, 48409), (92, 48448),

Gene: BugsBunny\_43 Start: 35586, Stop: 35152, Start Num: 37

Candidate Starts for BugsBunny\_43:

(18, 35658), (Start: 37 @35586 has 17 MA's), (42, 35574), (55, 35424), (60, 35364),

Gene: ChosenOne\_46 Start: 35277, Stop: 34882, Start Num: 39

Candidate Starts for ChosenOne\_46:

(10, 35379), (12, 35373), (21, 35343), (Start: 39 @35277 has 30 MA's), (42, 35265), (60, 35109), (64, 35076), (67, 35055), (83, 34989), (92, 34905),

Gene: Corvo\_62 Start: 41848, Stop: 41459, Start Num: 39

Candidate Starts for Corvo\_62:

(4, 42049), (24, 41905), (26, 41902), (Start: 39 @41848 has 30 MA's), (42, 41836), (58, 41749), (60, 41716), (70, 41638), (77, 41614), (87, 41542),

Gene: DaWorst\_79 Start: 47793, Stop: 48188, Start Num: 38

Candidate Starts for DaWorst\_79:

(Start: 38 @47793 has 16 MA's), (42, 47808), (60, 47928), (70, 48000), (77, 48024), (87, 48096), (93, 48168),

Gene: Donkeykong\_83 Start: 49734, Stop: 50111, Start Num: 38

Candidate Starts for Donkeykong\_83:

(Start: 38 @49734 has 16 MA's), (42, 49749), (60, 49884), (74, 49968), (76, 49974), (78, 49977), (88, 50061),

Gene: Dussy\_79 Start: 47985, Stop: 47563, Start Num: 39

Candidate Starts for Dussy\_79:

(Start: 39 @47985 has 30 MA's), (42, 47973), (60, 47817), (70, 47745), (77, 47721), (87, 47649), (92, 47586),

Gene: Ejimix\_73 Start: 51773, Stop: 51354, Start Num: 25

Candidate Starts for Ejimix\_73:

(Start: 25 @51773 has 3 MA's), (27, 51761), (44, 51677), (50, 51659), (60, 51581), (62, 51551), (71, 51512), (72, 51509),

Gene: Elite2014\_45 Start: 35276, Stop: 34881, Start Num: 39

Candidate Starts for Elite2014\_45:

(10, 35378), (12, 35372), (21, 35342), (Start: 39 @35276 has 30 MA's), (42, 35264), (60, 35108), (64, 35075), (67, 35054), (83, 34988), (92, 34904),

Gene: Euphoria\_59 Start: 40555, Stop: 40109, Start Num: 25

Candidate Starts for Euphoria\_59:

(13, 40612), (14, 40609), (Start: 25 @40555 has 3 MA's), (40, 40498), (44, 40459), (50, 40441), (60, 40363), (70, 40291), (77, 40267), (87, 40195), (92, 40132),

Gene: Fancypants\_85 Start: 50404, Stop: 50835, Start Num: 35

Candidate Starts for Fancypants\_85:

(Start: 35 @50404 has 1 MA's), (54, 50548), (68, 50683),

Gene: FireRed\_45 Start: 36025, Stop: 35591, Start Num: 37

Candidate Starts for FireRed\_45:

(18, 36097), (Start: 37 @36025 has 17 MA's), (42, 36013), (55, 35863), (60, 35803),

Gene: Flabslab\_16 Start: 5015, Stop: 5452, Start Num: 37

Candidate Starts for Flabslab\_16:

(7, 4853), (Start: 37 @5015 has 17 MA's), (42, 5027), (55, 5177), (60, 5237), (90, 5408),

Gene: Flathead\_78 Start: 47777, Stop: 48157, Start Num: 38

Candidate Starts for Flathead\_78:

(Start: 38 @47777 has 16 MA's), (42, 47792), (60, 47927), (74, 48011), (76, 48017), (78, 48020), (88, 48104),

Gene: Gandalph\_77 Start: 45404, Stop: 45799, Start Num: 38

Candidate Starts for Gandalph\_77:

(Start: 38 @45404 has 16 MA's), (42, 45419), (60, 45539), (70, 45617), (77, 45641), (87, 45713),

Gene: Hegedechwinu\_80 Start: 46978, Stop: 47358, Start Num: 38

Candidate Starts for Hegedechwinu\_80:

(Start: 38 @46978 has 16 MA's), (42, 46993), (60, 47128), (74, 47212), (76, 47218), (78, 47221), (88, 47305),

Gene: Highbury\_43 Start: 34897, Stop: 34421, Start Num: 37

Candidate Starts for Highbury\_43:

(18, 34969), (Start: 37 @34897 has 17 MA's), (42, 34885), (55, 34735), (60, 34675), (70, 34603), (77, 34579), (87, 34507), (92, 34444),

Gene: Holt\_45 Start: 35325, Stop: 34888, Start Num: 37

Candidate Starts for Holt\_45:

(19, 35397), (Start: 37 @35325 has 17 MA's), (42, 35313), (55, 35163), (60, 35103), (90, 34932),

Gene: HufflyPuff\_44 Start: 35981, Stop: 35547, Start Num: 37

Candidate Starts for HufflyPuff\_44:

(18, 36053), (Start: 37 @35981 has 17 MA's), (42, 35969), (55, 35819), (60, 35759),

Gene: Hughesyang\_72 Start: 50943, Stop: 50497, Start Num: 25

Candidate Starts for Hughesyang\_72:

(Start: 25 @50943 has 3 MA's), (27, 50931), (44, 50847), (50, 50829), (60, 50751), (70, 50679), (77, 50655), (87, 50583),

Gene: Inyanga\_56 Start: 40763, Stop: 40362, Start Num: 39

Candidate Starts for Inyanga\_56:

(Start: 39 @40763 has 30 MA's), (42, 40751), (46, 40706), (49, 40667), (60, 40571),

Gene: IrishSherpFalk\_79 Start: 48781, Stop: 49194, Start Num: 38

Candidate Starts for IrishSherpFalk\_79:

(Start: 38 @48781 has 16 MA's), (42, 48796), (60, 48952), (75, 49039), (78, 49045), (82, 49069), (89, 49132), (92, 49171),

Gene: JalFarm20\_87 Start: 48995, Stop: 49375, Start Num: 38

Candidate Starts for JalFarm20\_87:

(15, 48899), (Start: 38 @48995 has 16 MA's), (42, 49010), (60, 49145), (74, 49229), (76, 49235), (78, 49238), (88, 49322),

Gene: Kenmech\_82 Start: 49111, Stop: 48689, Start Num: 39

Candidate Starts for Kenmech\_82:

(Start: 39 @49111 has 30 MA's), (42, 49099), (60, 48943), (70, 48871), (77, 48847), (87, 48775), (92, 48712),

Gene: Kenuha5\_75 Start: 48762, Stop: 49157, Start Num: 38

Candidate Starts for Kenuha5\_75:

(Start: 38 @48762 has 16 MA's), (42, 48777), (60, 48897), (70, 48975), (77, 48999), (87, 49071),

Gene: Kostya\_43 Start: 35472, Stop: 35038, Start Num: 37

Candidate Starts for Kostya\_43:

(18, 35544), (Start: 37 @35472 has 17 MA's), (42, 35460), (55, 35310), (60, 35250),



Gene: Lilpickle\_45 Start: 35276, Stop: 34881, Start Num: 39

Candidate Starts for Lilpickle\_45:

(10, 35378), (12, 35372), (21, 35342), (Start: 39 @35276 has 30 MA's), (42, 35264), (60, 35108), (64, 35075), (67, 35054), (83, 34988), (92, 34904),

Gene: Marker\_82 Start: 48016, Stop: 48423, Start Num: 39

Candidate Starts for Marker\_82:

(9, 47893), (28, 47986), (33, 47995), (Start: 39 @48016 has 30 MA's), (43, 48055), (52, 48100), (60, 48163), (70, 48241), (77, 48265), (87, 48337),

Gene: MaryBeth\_59 Start: 41225, Stop: 40836, Start Num: 39

Candidate Starts for MaryBeth\_59:

(4, 41426), (24, 41282), (26, 41279), (Start: 39 @41225 has 30 MA's), (42, 41213), (58, 41126), (60, 41093), (70, 41015), (77, 40991), (87, 40919),

Gene: MetalQZJ\_58 Start: 41225, Stop: 40836, Start Num: 39

Candidate Starts for MetalQZJ\_58:

(4, 41426), (24, 41282), (26, 41279), (Start: 39 @41225 has 30 MA's), (42, 41213), (58, 41126), (60, 41093), (70, 41015), (77, 40991), (87, 40919),

Gene: MiaZeal\_80 Start: 49238, Stop: 48840, Start Num: 39

Candidate Starts for MiaZeal\_80:

(Start: 39 @49238 has 30 MA's), (42, 49226), (60, 49070), (74, 48986), (76, 48980), (78, 48977), (88, 48893),

Gene: Misfit\_44 Start: 36046, Stop: 35612, Start Num: 37

Candidate Starts for Misfit\_44:

(18, 36118), (Start: 37 @36046 has 17 MA's), (42, 36034), (55, 35884), (60, 35824),

Gene: Murica\_44 Start: 35981, Stop: 35547, Start Num: 37

Candidate Starts for Murica\_44:

(18, 36053), (Start: 37 @35981 has 17 MA's), (42, 35969), (55, 35819), (60, 35759),

Gene: Nimrod\_45 Start: 36239, Stop: 35805, Start Num: 37

Candidate Starts for Nimrod\_45:

(18, 36311), (Start: 37 @36239 has 17 MA's), (42, 36227), (55, 36077), (60, 36017),

Gene: Ogopogo\_85 Start: 48076, Stop: 48471, Start Num: 39

Candidate Starts for Ogopogo\_85:

(24, 48034), (Start: 39 @48076 has 30 MA's), (42, 48088), (60, 48244), (64, 48277), (67, 48298), (83, 48364), (92, 48448),

Gene: Omega\_81 Start: 52384, Stop: 51857, Start Num: 8

Candidate Starts for Omega\_81:

(Start: 8 @52384 has 1 MA's), (22, 52312), (23, 52309), (Start: 39 @52243 has 30 MA's), (42, 52231), (60, 52111), (70, 52039), (77, 52015), (87, 51943),

Gene: Ovechkin\_85 Start: 49845, Stop: 50309, Start Num: 29

Candidate Starts for Ovechkin\_85:

(Start: 29 @49845 has 1 MA's), (Start: 37 @49878 has 17 MA's), (54, 50022), (60, 50094), (68, 50157),

Gene: Palpatine\_45 Start: 36011, Stop: 35577, Start Num: 37  
Candidate Starts for Palpatine\_45:  
(18, 36083), (Start: 37 @36011 has 17 MA's), (42, 35999), (55, 35849), (60, 35789),

Gene: Peterson\_65 Start: 43369, Stop: 42962, Start Num: 39  
Candidate Starts for Peterson\_65:  
(4, 43570), (24, 43426), (26, 43423), (Start: 39 @43369 has 30 MA's), (42, 43357), (45, 43318), (59, 43216), (69, 43138), (81, 43084), (85, 43051), (86, 43042), (91, 42994),

Gene: Petra64142\_47 Start: 36475, Stop: 36041, Start Num: 37  
Candidate Starts for Petra64142\_47:  
(18, 36547), (Start: 37 @36475 has 17 MA's), (42, 36463), (55, 36313), (60, 36253),

Gene: Petruccio\_60 Start: 40166, Stop: 39780, Start Num: 39  
Candidate Starts for Petruccio\_60:  
(Start: 39 @40166 has 30 MA's), (42, 40154), (60, 40034), (70, 39962), (77, 39938), (87, 39866), (92, 39803),

Gene: Phalconet\_76 Start: 47337, Stop: 47762, Start Num: 38  
Candidate Starts for Phalconet\_76:  
(Start: 38 @47337 has 16 MA's), (42, 47352), (49, 47436), (51, 47454), (60, 47532), (74, 47616), (76, 47622), (78, 47625), (88, 47709),

Gene: PhatBacter\_45 Start: 36025, Stop: 35591, Start Num: 37  
Candidate Starts for PhatBacter\_45:  
(18, 36097), (Start: 37 @36025 has 17 MA's), (42, 36013), (55, 35863), (60, 35803),

Gene: Phatniss\_81 Start: 48507, Stop: 49100, Start Num: 6  
Candidate Starts for Phatniss\_81:  
(1, 48477), (Start: 6 @48507 has 1 MA's), (32, 48666), (34, 48675), (Start: 39 @48696 has 30 MA's), (48, 48771), (57, 48828), (60, 48870), (66, 48924), (84, 48999), (86, 49023),

Gene: Phaux\_44 Start: 36023, Stop: 35589, Start Num: 37  
Candidate Starts for Phaux\_44:  
(18, 36095), (Start: 37 @36023 has 17 MA's), (42, 36011), (55, 35861), (60, 35801),

Gene: PhesterPhotato\_83 Start: 48607, Stop: 48993, Start Num: 39  
Candidate Starts for PhesterPhotato\_83:  
(Start: 39 @48607 has 30 MA's), (42, 48619), (60, 48739), (70, 48811), (77, 48835), (87, 48907),

Gene: Plumbus\_81 Start: 45998, Stop: 46525, Start Num: 16  
Candidate Starts for Plumbus\_81:  
(Start: 16 @45998 has 1 MA's), (17, 46001), (30, 46058), (31, 46061), (34, 46073), (47, 46163), (60, 46265), (70, 46337), (77, 46361), (87, 46433), (92, 46496),

Gene: Policronamos\_47 Start: 36023, Stop: 35589, Start Num: 37  
Candidate Starts for Policronamos\_47:  
(18, 36095), (Start: 37 @36023 has 17 MA's), (42, 36011), (55, 35861), (60, 35801),

Gene: Porcelain\_79 Start: 49238, Stop: 48840, Start Num: 39  
Candidate Starts for Porcelain\_79:  
(Start: 39 @49238 has 30 MA's), (42, 49226), (60, 49070), (74, 48986), (76, 48980), (78, 48977), (88, 48893),

Gene: Raela\_7 Start: 2533, Stop: 2922, Start Num: 38

Candidate Starts for Raela\_7:

(Start: 38 @2533 has 16 MA's), (42, 2548), (60, 2668), (70, 2740), (77, 2764), (87, 2836), (92, 2899),

Gene: SG4\_76 Start: 47114, Stop: 47569, Start Num: 38

Candidate Starts for SG4\_76:

(Start: 38 @47114 has 16 MA's), (42, 47129), (55, 47279), (56, 47282), (60, 47339), (74, 47423), (76, 47429), (78, 47432), (88, 47516),

Gene: STLscum\_69 Start: 42972, Stop: 42544, Start Num: 39

Candidate Starts for STLscum\_69:

(4, 43173), (24, 43029), (26, 43026), (Start: 39 @42972 has 30 MA's), (42, 42960), (60, 42804), (70, 42726), (77, 42702), (87, 42630),

Gene: Saints25\_43 Start: 34897, Stop: 34421, Start Num: 37

Candidate Starts for Saints25\_43:

(18, 34969), (Start: 37 @34897 has 17 MA's), (42, 34885), (55, 34735), (60, 34675), (70, 34603), (77, 34579), (87, 34507), (92, 34444),

Gene: SarFire\_60 Start: 40901, Stop: 40488, Start Num: 39

Candidate Starts for SarFire\_60:

(4, 41102), (24, 40958), (26, 40955), (Start: 39 @40901 has 30 MA's), (43, 40862), (52, 40817), (60, 40754), (70, 40676), (77, 40652), (87, 40580),

Gene: Simpliphy\_43 Start: 34882, Stop: 34496, Start Num: 39

Candidate Starts for Simpliphy\_43:

(Start: 39 @34882 has 30 MA's), (42, 34870), (60, 34750), (70, 34678), (77, 34654), (87, 34582), (92, 34519),

Gene: SirDuracell\_42 Start: 34192, Stop: 33677, Start Num: 20

Candidate Starts for SirDuracell\_42:

(Start: 20 @34192 has 1 MA's), (36, 34120), (41, 34108), (55, 33952), (60, 33892), (90, 33721), (92, 33700),

Gene: SkiPole\_69 Start: 42424, Stop: 42029, Start Num: 39

Candidate Starts for SkiPole\_69:

(3, 42634), (5, 42625), (24, 42481), (26, 42478), (Start: 39 @42424 has 30 MA's), (60, 42256), (64, 42223), (67, 42202), (83, 42136), (92, 42052),

Gene: Squint\_80 Start: 49357, Stop: 48959, Start Num: 39

Candidate Starts for Squint\_80:

(Start: 39 @49357 has 30 MA's), (42, 49345), (60, 49189), (74, 49105), (76, 49099), (78, 49096), (88, 49012),

Gene: StAnnes\_81 Start: 49578, Stop: 49967, Start Num: 38

Candidate Starts for StAnnes\_81:

(Start: 38 @49578 has 16 MA's), (42, 49593), (60, 49713), (70, 49785), (77, 49809), (87, 49881), (92, 49944),

Gene: Sunshine924\_66 Start: 41648, Stop: 41211, Start Num: 39

Candidate Starts for Sunshine924\_66:

(4, 41849), (24, 41705), (26, 41702), (Start: 39 @41648 has 30 MA's), (42, 41636), (55, 41486), (60, 41426), (90, 41255),

Gene: Taj\_85 Start: 49957, Stop: 50334, Start Num: 38

Candidate Starts for Taj\_85:

(Start: 38 @49957 has 16 MA's), (42, 49972), (53, 50050), (60, 50107), (74, 50191), (76, 50197), (78, 50200), (88, 50284),

Gene: Target\_63 Start: 40851, Stop: 40456, Start Num: 39

Candidate Starts for Target\_63:

(5, 41052), (24, 40908), (26, 40905), (Start: 39 @40851 has 30 MA's), (42, 40839), (60, 40683), (64, 40650), (67, 40629), (83, 40563), (92, 40479),

Gene: Terminus\_44 Start: 36046, Stop: 35612, Start Num: 37

Candidate Starts for Terminus\_44:

(18, 36118), (Start: 37 @36046 has 17 MA's), (42, 36034), (55, 35884), (60, 35824),

Gene: TheloniousMonk\_64 Start: 43165, Stop: 42755, Start Num: 39

Candidate Starts for TheloniousMonk\_64:

(24, 43222), (26, 43219), (Start: 39 @43165 has 30 MA's), (46, 43108), (49, 43069), (60, 42973),

Gene: Thor\_60 Start: 40259, Stop: 39846, Start Num: 39

Candidate Starts for Thor\_60:

(4, 40460), (24, 40316), (26, 40313), (Start: 39 @40259 has 30 MA's), (43, 40220), (52, 40175), (60, 40112), (70, 40034), (77, 40010), (87, 39938),

Gene: Wee\_84 Start: 50033, Stop: 50410, Start Num: 38

Candidate Starts for Wee\_84:

(Start: 38 @50033 has 16 MA's), (42, 50048), (53, 50126), (60, 50183), (74, 50267), (76, 50273), (78, 50276), (88, 50360),

Gene: Whatsapiecost\_73 Start: 43853, Stop: 44332, Start Num: 37

Candidate Starts for Whatsapiecost\_73:

(Start: 37 @43853 has 17 MA's), (42, 43868), (55, 44018), (56, 44021), (60, 44078), (70, 44150), (77, 44174), (87, 44246), (92, 44309),

Gene: WillSterrel\_78 Start: 48814, Stop: 49227, Start Num: 38

Candidate Starts for WillSterrel\_78:

(Start: 38 @48814 has 16 MA's), (42, 48829), (60, 48985), (75, 49072), (78, 49078), (82, 49102), (89, 49165), (92, 49204),

Gene: Yoshi\_94 Start: 49980, Stop: 50474, Start Num: 11

Candidate Starts for Yoshi\_94:

(Start: 11 @49980 has 1 MA's), (32, 50073), (34, 50082), (Start: 39 @50103 has 30 MA's), (60, 50268), (73, 50331), (74, 50337), (80, 50358), (86, 50397),

Gene: Zeeculate\_77 Start: 48542, Stop: 48138, Start Num: 39

Candidate Starts for Zeeculate\_77:

(Start: 39 @48542 has 30 MA's), (42, 48530), (48, 48467), (57, 48410), (60, 48368), (74, 48284), (76, 48278), (78, 48275), (88, 48191),

Gene: xkcd\_46 Start: 36166, Stop: 35732, Start Num: 37

Candidate Starts for xkcd\_46:

(18, 36238), (Start: 37 @36166 has 17 MA's), (42, 36154), (55, 36004), (60, 35944),