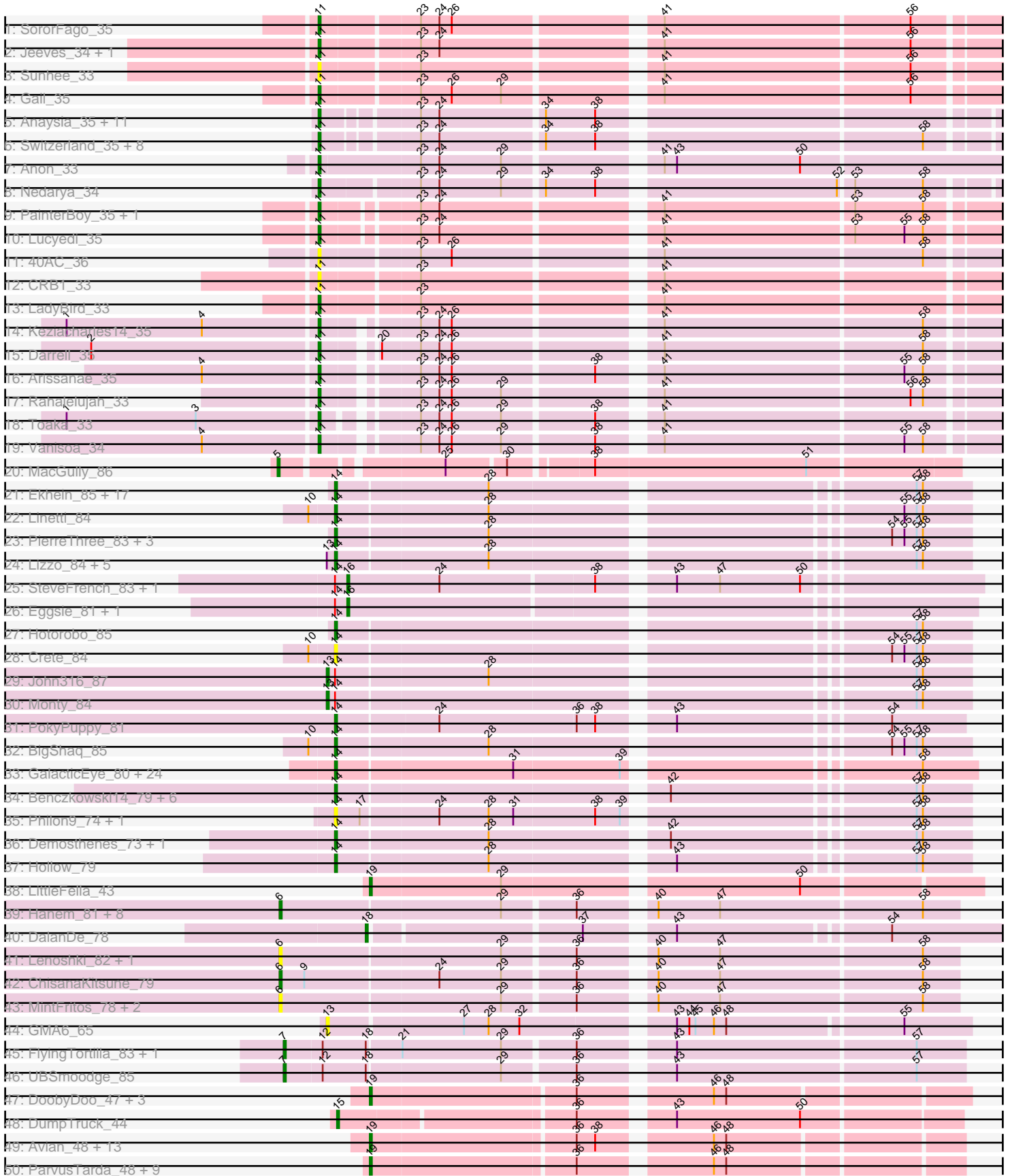
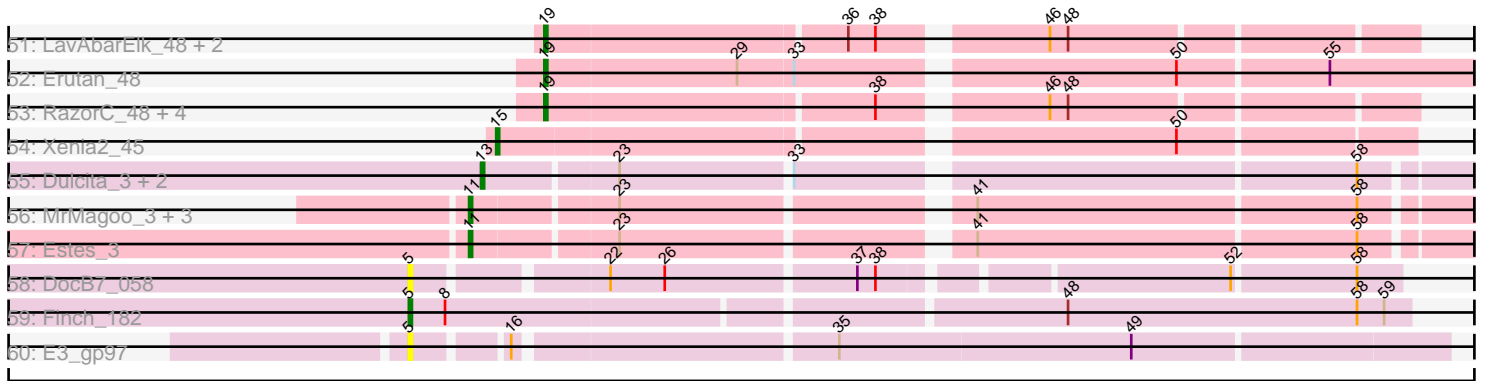


Pham 212323



Pham 212323



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 212323 Report

This analysis was run 02/22/25 on database version 588.

Pham number 212323 has 188 members, 36 are drafts.

Phages represented in each track:

- Track 1 : SororFago\_35
- Track 2 : Jeeves\_34, Luchador\_37
- Track 3 : Sunhee\_33
- Track 4 : Gail\_35
- Track 5 : Anaysia\_35, Boohoo\_35, LastResort\_35, KatherineG\_35, DekHockey33\_35, Rosalind\_35, Nebulosus\_35, Epsocamisio\_35, MinecraftSteve\_36, ReMo\_35, JSwag\_35, ShayRa\_36
- Track 6 : Switzerland\_35, Soups\_35, Warrior24\_36, Waits\_35, Remus\_35, Strosahl\_35, Oofda\_36, Looper\_36, Battleship\_36
- Track 7 : Anon\_33
- Track 8 : Nedarya\_34
- Track 9 : PainterBoy\_35, EagleEye\_36
- Track 10 : Lucyedi\_35
- Track 11 : 40AC\_36
- Track 12 : CRB1\_33
- Track 13 : LadyBird\_33
- Track 14 : Keziacharles14\_35
- Track 15 : Darrell\_35
- Track 16 : Arissanae\_35
- Track 17 : Rahalelujah\_33
- Track 18 : Toaka\_33
- Track 19 : Vanisoa\_34
- Track 20 : MacGully\_86
- Track 21 : Ekhein\_85, Gorko\_83, Adgers\_86, Poland\_87, CinnamonToast\_87, BirksAndSocks\_87, FelixAlejandro\_87, Sam12\_82, Exiguo\_82, RemRem\_86, Sombrero\_84, Beaver\_86, Jellybones\_84, Msay19\_87, Butterball\_85, Flakey\_84, Worcestershire\_82, Boneham\_86
- Track 22 : Linetti\_84
- Track 23 : PierreThree\_83, Chelms\_84, Dakiti\_85, BenoitCattle\_85
- Track 24 : Lizzo\_84, Breezic\_85, Squibbles\_84, CathyBurgh\_83, GourdThymes\_84, Barbochs\_83
- Track 25 : SteveFrench\_83, RoyalG\_84
- Track 26 : Eggsie\_81, Diabla\_89
- Track 27 : Hotorobo\_85
- Track 28 : Crete\_84
- Track 29 : John316\_87
- Track 30 : Monty\_84

- Track 31 : PokyPuppy\_81
- Track 32 : BigShaq\_85
- Track 33 : GalacticEye\_80, Berries\_80, Hello\_79, Luker\_81, Guillaume\_79, Charianelly\_80, Harambe\_79, Newt\_81, Damp\_80, Minos\_81, MrWormie\_80, Nimi13\_79, Kaseim\_79, Bianmat\_80, Lidong\_80, Jormungandr\_79, Teal\_79, Jams\_80, Woes\_79, Sticker17\_80, Anamika\_79, Hail2Pitt\_78, Lahirium\_80, Neoevie\_79, Shelley\_80
- Track 34 : Benczkowski14\_79, Kvothe\_78, Niagara\_78, Tredge\_78, Teech\_76, Katyusha\_77, Teatealatte\_79
- Track 35 : Philon9\_74, Vitaenoi\_74
- Track 36 : Demosthenes\_73, ASerpRocky\_73
- Track 37 : Hollow\_79
- Track 38 : LittleFella\_43
- Track 39 : Hanem\_81, Aloki\_77, Chidiebere\_82, Kabocha\_83, Pakusa\_78, Gray\_82, EmoNemo\_77, Twin\_77, Schomber\_80
- Track 40 : DalanDe\_78
- Track 41 : Lenoshki\_82, Beted\_82
- Track 42 : ChisanaKitsune\_79
- Track 43 : MintFritos\_78, Toneprano\_79, Oogie\_81
- Track 44 : GMA6\_65
- Track 45 : FlyingTortilla\_83, ScarletRaider\_82
- Track 46 : UBSmoodge\_85
- Track 47 : DoobyDoo\_47, Yikes\_50, Lila22\_49, DaviePasture\_49
- Track 48 : DumpTruck\_44
- Track 49 : Avian\_48, Apeppi\_45, Zany\_47, Wojtek\_47, Sampudon\_49, Jalebi\_48, MoiGyank\_52, Mima20\_50, Astralis\_49, Tillicus\_47, Gibbin\_50, Stormer\_50, Rumi\_49, LuckyLeo\_47
- Track 50 : ParvusTarda\_48, BirthdayBoy\_51, GOATification\_49, OtterstedtS21\_48, Fulcrum\_49, Alephilan\_49, GretelLyn\_48, Lambo\_48, Sadboi\_49, Ranch\_50
- Track 51 : LavAbarElk\_48, NorManre\_51, Patos\_51
- Track 52 : Erutan\_48
- Track 53 : RazorC\_48, Jamemuya19\_50, NovaSharks\_50, Alyssamiracle\_51, Genamy16\_51
- Track 54 : Xenia2\_45
- Track 55 : Dulcita\_3, Diminimus\_3, Glaske16\_3
- Track 56 : MrMagoo\_3, Aziz\_3, GenevaB15\_3, GardenSalsa\_3
- Track 57 : Estes\_3
- Track 58 : DocB7\_058
- Track 59 : Finch\_182
- Track 60 : E3\_gp97

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

The start number called the most often in the published annotations is 14, it was called in 60 of the 152 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky\_73, Adgers\_86, Anamika\_79, Barbochs\_83, Beaver\_86, Benczkowski14\_79, BenoitCattle\_85, Berries\_80, Bianmat\_80, BigShaq\_85, BirksAndSocks\_87, Boneham\_86, Breezic\_85, Butterball\_85, CathyBurgh\_83,

Charianelly\_80, Chelms\_84, CinnamonToast\_87, Crete\_84, Dakiti\_85, Damp\_80, Demosthenes\_73, Ekhein\_85, Exiguo\_82, FelixAlejandro\_87, Flakey\_84, GalacticEye\_80, Gorko\_83, GourdThymes\_84, Guillaume\_79, Hail2Pitt\_78, Harambe\_79, Hello\_79, Hollow\_79, Hotorobo\_85, Jams\_80, Jellybones\_84, Jormungandr\_79, Kaseim\_79, Katyusha\_77, Kvothe\_78, Lahirium\_80, Lidong\_80, Linetti\_84, Lizzo\_84, Luker\_81, Minos\_81, MrWormie\_80, Msay19\_87, Neoevie\_79, Newt\_81, Niagara\_78, Nimi13\_79, Philon9\_74, PierreThree\_83, PokyPuppy\_81, Poland\_87, RemRem\_86, Sam12\_82, Shelley\_80, Sombrero\_84, Squibbles\_84, Sticker17\_80, Teal\_79, Teatealatte\_79, Teech\_76, Tredge\_78, Vitaenoi\_74, Woes\_79, Worcestershire\_82,

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

- Diabla\_89, Eggsie\_81, John316\_87, Monty\_84, RoyalG\_84, SteveFrench\_83,

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

- 40AC\_36, Alephlan\_49, Aloki\_77, Alyssamiracle\_51, Anaysia\_35, Anon\_33, Apeppi\_45, Arissanae\_35, Astralis\_49, Avian\_48, Aziz\_3, Battleship\_36, Beted\_82, BirthdayBoy\_51, Boohoo\_35, CRB1\_33, Chidiebere\_82, ChisanaKitsune\_79, DalanDe\_78, Darrell\_35, DaviePasture\_49, DekHockey33\_35, Diminimus\_3, DocB7\_058, DoobyDoo\_47, Dulcita\_3, DumpTruck\_44, E3\_gp97, EagleEye\_36, EmoNemo\_77, Epsocamisio\_35, Erutan\_48, Estes\_3, Finch\_182, FlyingTortilla\_83, Fulcrum\_49, GMA6\_65, GOATification\_49, Gail\_35, GardenSalsa\_3, Genamy16\_51, GenevaB15\_3, Gibbin\_50, Glaske16\_3, Gray\_82, GretelLyn\_48, Hanem\_81, JSwag\_35, Jalebi\_48, Jamemuya19\_50, Jeeves\_34, Kabocha\_83, KatherineG\_35, Keziacharles14\_35, LadyBird\_33, Lambo\_48, LastResort\_35, LavAbarElk\_48, Lenoshki\_82, Lila22\_49, LittleFella\_43, Looper\_36, Luchador\_37, LuckyLeo\_47, Lucyedi\_35, MacGully\_86, Mima20\_50, MinecraftSteve\_36, MintFritos\_78, MoiGyank\_52, MrMagoo\_3, Nebulosus\_35, Nedarya\_34, NorManre\_51, NovaSharks\_50, Oofda\_36, Oogie\_81, OtterstedtS21\_48, PainterBoy\_35, Pakusa\_78, ParvusTarda\_48, Patos\_51, Rahalelujah\_33, Ranch\_50, RazorC\_48, ReMo\_35, Remus\_35, Rosalind\_35, Rumi\_49, Sadboi\_49, Sampudon\_49, ScarletRaider\_82, Schomber\_80, ShayRa\_36, SororFago\_35, Soups\_35, Stormer\_50, Strosahl\_35, Sunhee\_33, Switzerland\_35, Tillicus\_47, Toaka\_33, Toneprano\_79, Twin\_77, UBSmoodge\_85, Vanisoa\_34, Waits\_35, Warrior24\_36, Wojtek\_47, Xenia2\_45, Yikes\_50, Zany\_47,

### Summary by start number:

Start 5:

- Found in 4 of 188 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 2 of 152
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DocB7\_058 (singleton), E3\_gp97 (singleton), Finch\_182 (singleton), MacGully\_86 (CR),

Start 6:

- Found in 15 of 188 ( 8.0% ) of genes in pham
- Manual Annotations of this start: 6 of 152
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aloki\_77 (DQ), Beted\_82 (DQ), Chidiebere\_82 (DQ), ChisanaKitsune\_79 (DQ), EmoNemo\_77 (DQ), Gray\_82 (DQ), Hanem\_81 (DQ), Kabocha\_83 (DQ), Lenoshki\_82 (DQ), MintFritos\_78 (DQ), Oogie\_81 (DQ), Pakusa\_78 (DQ), Schomber\_80 (DQ), Toneprano\_79 (DQ), Twin\_77

(DQ),

Start 7:

- Found in 3 of 188 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 3 of 152
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FlyingTortilla\_83 (DQ), ScarletRaider\_82 (DQ), UBSmoodge\_85 (DQ),

Start 11:

- Found in 45 of 188 ( 23.9% ) of genes in pham
- Manual Annotations of this start: 40 of 152
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 40AC\_36 (A17), Anaysia\_35 (A15), Anon\_33 (A15), Arissanae\_35 (A9), Aziz\_3 (M2), Battleship\_36 (A15), Boohoo\_35 (A15), CRB1\_33 (A2), Darrell\_35 (A9), DekHockey33\_35 (A15), EagleEye\_36 (A16), Epsocamisio\_35 (A15), Estes\_3 (M2), Gail\_35 (A14), GardenSalsa\_3 (M2), GenevaB15\_3 (M2), JSwag\_35 (A15), Jeeves\_34 (A14), KatherineG\_35 (A15), Keziacharles14\_35 (A9), LadyBird\_33 (A2), LastResort\_35 (A15), Looper\_36 (A15), Luchador\_37 (A14), Lucyedi\_35 (A16), MinecraftSteve\_36 (A15), MrMagoo\_3 (M2), Nebulosus\_35 (A15), Nedarya\_34 (A15), Oofda\_36 (A15), PainterBoy\_35 (A16), Rahalelujah\_33 (A9), ReMo\_35 (A15), Remus\_35 (A15), Rosalind\_35 (A15), ShayRa\_36 (A15), SororFago\_35 (A14), Soups\_35 (A15), Strosahl\_35 (A15), Sunhee\_33 (A14), Switzerland\_35 (A15), Toaka\_33 (A9), Vanisoa\_34 (A9), Waits\_35 (A15), Warrior24\_36 (A15),

Start 13:

- Found in 12 of 188 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 5 of 152
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Diminimus\_3 (M1), Dulcita\_3 (M1), GMA6\_65 (DQ), Glaske16\_3 (M1), John316\_87 (CS2), Monty\_84 (CS2),

Start 14:

- Found in 76 of 188 ( 40.4% ) of genes in pham
- Manual Annotations of this start: 60 of 152
- Called 92.1% of time when present
- Phage (with cluster) where this start called: ASerpRocky\_73 (CS4), Adgers\_86 (CS2), Anamika\_79 (CS3), Barbochs\_83 (CS2), Beaver\_86 (CS2), Benczkowski14\_79 (CS4), BenoitCattle\_85 (CS2), Berries\_80 (CS3), Bianmat\_80 (CS3), BigShaq\_85 (CS2), BirksAndSocks\_87 (CS2), Boneham\_86 (CS2), Breezic\_85 (CS2), Butterball\_85 (CS2), CathyBurgh\_83 (CS2), Charianelly\_80 (CS3), Chelms\_84 (CS2), CinnamonToast\_87 (CS2), Crete\_84 (CS2), Dakiti\_85 (CS2), Damp\_80 (CS3), Demosthenes\_73 (CS4), Ekhein\_85 (CS2), Exiguo\_82 (CS2), FelixAlejandro\_87 (CS2), Flakey\_84 (CS2), GalacticEye\_80 (CS3), Gorko\_83 (CS2), GourdThymes\_84 (CS2), Guillaume\_79 (CS3), Hail2Pitt\_78 (CS3), Harambe\_79 (CS3), Hello\_79 (CS3), Hollow\_79 (CS4), Hotorobo\_85 (CS2), Jams\_80 (CS3), Jellybones\_84 (CS2), Jormungandr\_79 (CS3), Kaseim\_79 (CS3), Katyusha\_77 (CS4), Kvothe\_78 (CS4), Lahirium\_80 (CS3), Lidong\_80 (CS3), Linetti\_84 (CS2), Lizzo\_84 (CS2), Luker\_81 (CS3), Minos\_81 (CS3), MrWormie\_80 (CS3), Msay19\_87 (CS2), Neevee\_79 (CS3), Newt\_81 (CS3), Niagara\_78 (CS4), Nimi13\_79 (CS3), Philon9\_74 (CS4), PierreThree\_83 (CS2), PokyPuppy\_81 (CS2), Poland\_87 (CS2), RemRem\_86 (CS2), Sam12\_82 (CS2), Shelley\_80 (CS3), Sombrero\_84 (CS2),

Squibbles\_84 (CS2), Sticker17\_80 (CS3), Teal\_79 (CS3), Teatealatte\_79 (CS4), Teech\_76 (CS4), Tredge\_78 (CS4), Vitaenoi\_74 (CS4), Woes\_79 (CS3), Worcestershire\_82 (CS2),

Start 15:

- Found in 2 of 188 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 152
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DumpTruck\_44 (DV), Xenia2\_45 (DV),

Start 16:

- Found in 5 of 188 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 4 of 152
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Diabla\_89 (CS2), Eggsie\_81 (CS2), RoyalG\_84 (CS2), SteveFrench\_83 (CS2),

Start 18:

- Found in 4 of 188 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 152
- Called 25.0% of time when present
- Phage (with cluster) where this start called: DalanDe\_78 (DQ),

Start 19:

- Found in 38 of 188 ( 20.2% ) of genes in pham
- Manual Annotations of this start: 29 of 152
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alephilan\_49 (DV), Alyssamiracle\_51 (DV), Apeppi\_45 (DV), Astralis\_49 (DV), Avian\_48 (DV), BirthdayBoy\_51 (DV), DaviePasture\_49 (DV), DoobyDoo\_47 (DV), Erutan\_48 (DV), Fulcrum\_49 (DV), GOATification\_49 (DV), Genamy16\_51 (DV), Gibbin\_50 (DV), GretelLyn\_48 (DV), Jalebi\_48 (DV), Jamemuya19\_50 (DV), Lambo\_48 (DV), LavAbarElk\_48 (DV), Lila22\_49 (DV), LittleFella\_43 (DG2), LuckyLeo\_47 (DV), Mima20\_50 (DV), MoiGyank\_52 (DV), NorManre\_51 (DV), NovaSharks\_50 (DV), OtterstedtS21\_48 (DV), ParvusTarda\_48 (DV), Patos\_51 (DV), Ranch\_50 (DV), RazorC\_48 (DV), Rumi\_49 (DV), Sadboi\_49 (DV), Sampudon\_49 (DV), Stormer\_50 (DV), Tillicus\_47 (DV), Wojtek\_47 (DV), Yikes\_50 (DV), Zany\_47 (DV),

### Summary by clusters:

There are 16 clusters represented in this pham: A15, A14, singleton, A16, CR, A17, DG2, DV, A2, M1, M2, A9, CS4, DQ, CS3, CS2,

Info for manual annotations of cluster A14:

- Start number 11 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 11 was manually annotated 21 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 11 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 11 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A9:

- Start number 11 was manually annotated 6 times for cluster A9.

Info for manual annotations of cluster CR:

- Start number 5 was manually annotated 1 time for cluster CR.

Info for manual annotations of cluster CS2:

- Start number 13 was manually annotated 2 times for cluster CS2.
- Start number 14 was manually annotated 27 times for cluster CS2.
- Start number 16 was manually annotated 4 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 14 was manually annotated 24 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 14 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster DG2:

- Start number 19 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DQ:

- Start number 6 was manually annotated 6 times for cluster DQ.
- Start number 7 was manually annotated 3 times for cluster DQ.
- Start number 18 was manually annotated 1 time for cluster DQ.

Info for manual annotations of cluster DV:

- Start number 15 was manually annotated 2 times for cluster DV.
- Start number 19 was manually annotated 28 times for cluster DV.

Info for manual annotations of cluster M1:

- Start number 13 was manually annotated 3 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 11 was manually annotated 5 times for cluster M2.

### ***Gene Information:***

Gene: 40AC\_36 Start: 27174, Stop: 27485, Start Num: 11

Candidate Starts for 40AC\_36:

(Start: 11 @27174 has 40 MA's), (23, 27219), (26, 27234), (41, 27324), (58, 27447),

Gene: ASerpRocky\_73 Start: 61945, Stop: 61658, Start Num: 14

Candidate Starts for ASerpRocky\_73:

(Start: 14 @61945 has 60 MA's), (28, 61873), (42, 61795), (57, 61684), (58, 61681),

Gene: Adgers\_86 Start: 63065, Stop: 62778, Start Num: 14

Candidate Starts for Adgers\_86:

(Start: 14 @63065 has 60 MA's), (28, 62993), (57, 62804), (58, 62801),



Gene: Alephilan\_49 Start: 36436, Stop: 36702, Start Num: 19  
Candidate Starts for Alephilan\_49:  
(Start: 19 @36436 has 29 MA's), (36, 36532), (46, 36589), (48, 36595),

Gene: Alok\_i\_77 Start: 63427, Stop: 63738, Start Num: 6  
Candidate Starts for Alok\_i\_77:  
(Start: 6 @63427 has 6 MA's), (29, 63532), (36, 63565), (40, 63595), (47, 63625), (58, 63721),

Gene: Alyssamiracle\_51 Start: 35762, Stop: 36028, Start Num: 19  
Candidate Starts for Alyssamiracle\_51:  
(Start: 19 @35762 has 29 MA's), (38, 35867), (46, 35915), (48, 35921),

Gene: Anamika\_79 Start: 62898, Stop: 62608, Start Num: 14  
Candidate Starts for Anamika\_79:  
(Start: 14 @62898 has 60 MA's), (31, 62814), (39, 62763), (58, 62634),

Gene: Anaysia\_35 Start: 23891, Stop: 24199, Start Num: 11  
Candidate Starts for Anaysia\_35:  
(Start: 11 @23891 has 40 MA's), (23, 23933), (24, 23942), (34, 23990), (38, 24014),

Gene: Anon\_33 Start: 23831, Stop: 24154, Start Num: 11  
Candidate Starts for Anon\_33:  
(Start: 11 @23831 has 40 MA's), (23, 23879), (24, 23888), (29, 23918), (41, 23984), (43, 23990), (50, 24050),

Gene: Apeppi\_45 Start: 35938, Stop: 36207, Start Num: 19  
Candidate Starts for Apeppi\_45:  
(Start: 19 @35938 has 29 MA's), (36, 36034), (38, 36043), (46, 36091), (48, 36097),

Gene: Arissanae\_35 Start: 26851, Stop: 27159, Start Num: 11  
Candidate Starts for Arissanae\_35:  
(4, 26797), (Start: 11 @26851 has 40 MA's), (23, 26890), (24, 26899), (26, 26905), (38, 26971), (41, 26995), (55, 27109), (58, 27118),

Gene: Astralis\_49 Start: 35340, Stop: 35606, Start Num: 19  
Candidate Starts for Astralis\_49:  
(Start: 19 @35340 has 29 MA's), (36, 35436), (38, 35445), (46, 35493), (48, 35499),

Gene: Avian\_48 Start: 35490, Stop: 35756, Start Num: 19  
Candidate Starts for Avian\_48:  
(Start: 19 @35490 has 29 MA's), (36, 35586), (38, 35595), (46, 35643), (48, 35649),

Gene: Aziz\_3 Start: 1517, Stop: 1203, Start Num: 11  
Candidate Starts for Aziz\_3:  
(Start: 11 @1517 has 40 MA's), (23, 1472), (41, 1367), (58, 1244),

Gene: Barbochs\_83 Start: 62589, Stop: 62302, Start Num: 14  
Candidate Starts for Barbochs\_83:  
(Start: 13 @62592 has 5 MA's), (Start: 14 @62589 has 60 MA's), (28, 62517), (57, 62328), (58, 62325),

Gene: Battleship\_36 Start: 24003, Stop: 24311, Start Num: 11  
Candidate Starts for Battleship\_36:

(Start: 11 @24003 has 40 MA's), (23, 24045), (24, 24054), (34, 24102), (38, 24126), (58, 24273),

Gene: Beaver\_86 Start: 64337, Stop: 64050, Start Num: 14

Candidate Starts for Beaver\_86:

(Start: 14 @64337 has 60 MA's), (28, 64265), (57, 64076), (58, 64073),

Gene: Benczkowski14\_79 Start: 63193, Stop: 62906, Start Num: 14

Candidate Starts for Benczkowski14\_79:

(Start: 14 @63193 has 60 MA's), (42, 63043), (57, 62932), (58, 62929),

Gene: BenoitCattle\_85 Start: 63784, Stop: 63497, Start Num: 14

Candidate Starts for BenoitCattle\_85:

(Start: 14 @63784 has 60 MA's), (28, 63712), (54, 63535), (55, 63529), (57, 63523), (58, 63520),

Gene: Berries\_80 Start: 62870, Stop: 62580, Start Num: 14

Candidate Starts for Berries\_80:

(Start: 14 @62870 has 60 MA's), (31, 62786), (39, 62735), (58, 62606),

Gene: Beted\_82 Start: 65533, Stop: 65844, Start Num: 6

Candidate Starts for Beted\_82:

(Start: 6 @65533 has 6 MA's), (29, 65638), (36, 65671), (40, 65701), (47, 65731), (58, 65827),

Gene: Bianmat\_80 Start: 62910, Stop: 62620, Start Num: 14

Candidate Starts for Bianmat\_80:

(Start: 14 @62910 has 60 MA's), (31, 62826), (39, 62775), (58, 62646),

Gene: BigShaq\_85 Start: 63741, Stop: 63454, Start Num: 14

Candidate Starts for BigShaq\_85:

(10, 63753), (Start: 14 @63741 has 60 MA's), (28, 63669), (54, 63492), (55, 63486), (57, 63480), (58, 63477),

Gene: BirksAndSocks\_87 Start: 64508, Stop: 64221, Start Num: 14

Candidate Starts for BirksAndSocks\_87:

(Start: 14 @64508 has 60 MA's), (28, 64436), (57, 64247), (58, 64244),

Gene: BirthdayBoy\_51 Start: 37139, Stop: 37405, Start Num: 19

Candidate Starts for BirthdayBoy\_51:

(Start: 19 @37139 has 29 MA's), (36, 37235), (46, 37292), (48, 37298),

Gene: Boneham\_86 Start: 64433, Stop: 64146, Start Num: 14

Candidate Starts for Boneham\_86:

(Start: 14 @64433 has 60 MA's), (28, 64361), (57, 64172), (58, 64169),

Gene: Boohoo\_35 Start: 23891, Stop: 24199, Start Num: 11

Candidate Starts for Boohoo\_35:

(Start: 11 @23891 has 40 MA's), (23, 23933), (24, 23942), (34, 23990), (38, 24014),

Gene: Breezic\_85 Start: 63287, Stop: 63000, Start Num: 14

Candidate Starts for Breezic\_85:

(Start: 13 @63290 has 5 MA's), (Start: 14 @63287 has 60 MA's), (28, 63215), (57, 63026), (58, 63023),

Gene: Butterball\_85 Start: 64438, Stop: 64151, Start Num: 14

Candidate Starts for Butterball\_85:

(Start: 14 @64438 has 60 MA's), (28, 64366), (57, 64177), (58, 64174),

Gene: CRB1\_33 Start: 25366, Stop: 25680, Start Num: 11

Candidate Starts for CRB1\_33:

(Start: 11 @25366 has 40 MA's), (23, 25411), (41, 25516),

Gene: CathyBurgh\_83 Start: 63320, Stop: 63033, Start Num: 14

Candidate Starts for CathyBurgh\_83:

(Start: 13 @63323 has 5 MA's), (Start: 14 @63320 has 60 MA's), (28, 63248), (57, 63059), (58, 63056),

Gene: Charianelly\_80 Start: 62620, Stop: 62330, Start Num: 14

Candidate Starts for Charianelly\_80:

(Start: 14 @62620 has 60 MA's), (31, 62536), (39, 62485), (58, 62356),

Gene: Chelms\_84 Start: 63631, Stop: 63344, Start Num: 14

Candidate Starts for Chelms\_84:

(Start: 14 @63631 has 60 MA's), (28, 63559), (54, 63382), (55, 63376), (57, 63370), (58, 63367),

Gene: Chidiebere\_82 Start: 63960, Stop: 64271, Start Num: 6

Candidate Starts for Chidiebere\_82:

(Start: 6 @63960 has 6 MA's), (29, 64065), (36, 64098), (40, 64128), (47, 64158), (58, 64254),

Gene: ChisanaKitsune\_79 Start: 63137, Stop: 63448, Start Num: 6

Candidate Starts for ChisanaKitsune\_79:

(Start: 6 @63137 has 6 MA's), (9, 63149), (24, 63212), (29, 63242), (36, 63275), (40, 63305), (47, 63335), (58, 63431),

Gene: CinnamonToast\_87 Start: 64513, Stop: 64226, Start Num: 14

Candidate Starts for CinnamonToast\_87:

(Start: 14 @64513 has 60 MA's), (28, 64441), (57, 64252), (58, 64249),

Gene: Crete\_84 Start: 63558, Stop: 63271, Start Num: 14

Candidate Starts for Crete\_84:

(10, 63570), (Start: 14 @63558 has 60 MA's), (54, 63309), (55, 63303), (57, 63297), (58, 63294),

Gene: Dakiti\_85 Start: 64428, Stop: 64141, Start Num: 14

Candidate Starts for Dakiti\_85:

(Start: 14 @64428 has 60 MA's), (28, 64356), (54, 64179), (55, 64173), (57, 64167), (58, 64164),

Gene: DalanDe\_78 Start: 66553, Stop: 66846, Start Num: 18

Candidate Starts for DalanDe\_78:

(Start: 18 @66553 has 1 MA's), (37, 66649), (43, 66685), (54, 66781),

Gene: Damp\_80 Start: 61784, Stop: 61494, Start Num: 14

Candidate Starts for Damp\_80:

(Start: 14 @61784 has 60 MA's), (31, 61700), (39, 61649), (58, 61520),

Gene: Darrell\_35 Start: 26565, Stop: 26867, Start Num: 11

Candidate Starts for Darrell\_35:

(2, 26457), (Start: 11 @26565 has 40 MA's), (20, 26586), (23, 26604), (24, 26613), (26, 26619), (41, 26709), (58, 26832),

Gene: DaviePasture\_49 Start: 36780, Stop: 37049, Start Num: 19

Candidate Starts for DaviePasture\_49:  
(Start: 19 @36780 has 29 MA's), (36, 36876), (46, 36933), (48, 36939),

Gene: DekHockey33\_35 Start: 24010, Stop: 24318, Start Num: 11  
Candidate Starts for DekHockey33\_35:  
(Start: 11 @24010 has 40 MA's), (23, 24052), (24, 24061), (34, 24109), (38, 24133),

Gene: Demosthenes\_73 Start: 61967, Stop: 61680, Start Num: 14  
Candidate Starts for Demosthenes\_73:  
(Start: 14 @61967 has 60 MA's), (28, 61895), (42, 61817), (57, 61706), (58, 61703),

Gene: Diabla\_89 Start: 64671, Stop: 64387, Start Num: 16  
Candidate Starts for Diabla\_89:  
(Start: 14 @64677 has 60 MA's), (Start: 16 @64671 has 4 MA's),

Gene: Diminimus\_3 Start: 1498, Stop: 1187, Start Num: 13  
Candidate Starts for Diminimus\_3:  
(Start: 13 @1498 has 5 MA's), (23, 1456), (33, 1402), (58, 1228),

Gene: DocB7\_058 Start: 48463, Stop: 48164, Start Num: 5  
Candidate Starts for DocB7\_058:  
(Start: 5 @48463 has 2 MA's), (22, 48406), (26, 48388), (37, 48328), (38, 48322), (52, 48217), (58, 48178),

Gene: DoobyDoo\_47 Start: 35594, Stop: 35863, Start Num: 19  
Candidate Starts for DoobyDoo\_47:  
(Start: 19 @35594 has 29 MA's), (36, 35690), (46, 35747), (48, 35753),

Gene: Dulcita\_3 Start: 1498, Stop: 1187, Start Num: 13  
Candidate Starts for Dulcita\_3:  
(Start: 13 @1498 has 5 MA's), (23, 1456), (33, 1402), (58, 1228),

Gene: DumpTruck\_44 Start: 34585, Stop: 34866, Start Num: 15  
Candidate Starts for DumpTruck\_44:  
(Start: 15 @34585 has 2 MA's), (36, 34693), (43, 34732), (50, 34792),

Gene: E3\_gp97 Start: 55687, Stop: 56010, Start Num: 5  
Candidate Starts for E3\_gp97:  
(Start: 5 @55687 has 2 MA's), (Start: 16 @55714 has 4 MA's), (35, 55813), (49, 55909),

Gene: EagleEye\_36 Start: 25599, Stop: 25907, Start Num: 11  
Candidate Starts for EagleEye\_36:  
(Start: 11 @25599 has 40 MA's), (23, 25641), (24, 25650), (41, 25746), (53, 25836), (58, 25869),

Gene: Eggsie\_81 Start: 62114, Stop: 61830, Start Num: 16  
Candidate Starts for Eggsie\_81:  
(Start: 14 @62120 has 60 MA's), (Start: 16 @62114 has 4 MA's),

Gene: Ekhein\_85 Start: 62977, Stop: 62690, Start Num: 14  
Candidate Starts for Ekhein\_85:  
(Start: 14 @62977 has 60 MA's), (28, 62905), (57, 62716), (58, 62713),

Gene: EmoNemo\_77 Start: 63427, Stop: 63738, Start Num: 6

Candidate Starts for EmoNemo\_77:

(Start: 6 @63427 has 6 MA's), (29, 63532), (36, 63565), (40, 63595), (47, 63625), (58, 63721),

Gene: Epsocamisio\_35 Start: 23888, Stop: 24196, Start Num: 11

Candidate Starts for Epsocamisio\_35:

(Start: 11 @23888 has 40 MA's), (23, 23930), (24, 23939), (34, 23987), (38, 24011),

Gene: Erutan\_48 Start: 36178, Stop: 36477, Start Num: 19

Candidate Starts for Erutan\_48:

(Start: 19 @36178 has 29 MA's), (29, 36241), (33, 36259), (50, 36376), (55, 36424),

Gene: Estes\_3 Start: 1528, Stop: 1214, Start Num: 11

Candidate Starts for Estes\_3:

(Start: 11 @1528 has 40 MA's), (23, 1483), (41, 1378), (58, 1255),

Gene: Exiguo\_82 Start: 62405, Stop: 62118, Start Num: 14

Candidate Starts for Exiguo\_82:

(Start: 14 @62405 has 60 MA's), (28, 62333), (57, 62144), (58, 62141),

Gene: FelixAlejandro\_87 Start: 64954, Stop: 64667, Start Num: 14

Candidate Starts for FelixAlejandro\_87:

(Start: 14 @64954 has 60 MA's), (28, 64882), (57, 64693), (58, 64690),

Gene: Finch\_182 Start: 109888, Stop: 110208, Start Num: 5

Candidate Starts for Finch\_182:

(Start: 5 @109888 has 2 MA's), (8, 109900), (48, 110095), (58, 110191), (59, 110200),

Gene: Flakey\_84 Start: 63880, Stop: 63593, Start Num: 14

Candidate Starts for Flakey\_84:

(Start: 14 @63880 has 60 MA's), (28, 63808), (57, 63619), (58, 63616),

Gene: FlyingTortilla\_83 Start: 67605, Stop: 67916, Start Num: 7

Candidate Starts for FlyingTortilla\_83:

(Start: 7 @67605 has 3 MA's), (12, 67623), (Start: 18 @67644 has 1 MA's), (21, 67659), (29, 67707), (36, 67740), (43, 67779), (57, 67893),

Gene: Fulcrum\_49 Start: 36433, Stop: 36699, Start Num: 19

Candidate Starts for Fulcrum\_49:

(Start: 19 @36433 has 29 MA's), (36, 36529), (46, 36586), (48, 36592),

Gene: GMA6\_65 Start: 54263, Stop: 54556, Start Num: 13

Candidate Starts for GMA6\_65:

(Start: 13 @54263 has 5 MA's), (27, 54326), (28, 54338), (32, 54353), (43, 54419), (44, 54425), (45, 54428), (46, 54437), (48, 54443), (55, 54524),

Gene: GOATification\_49 Start: 36433, Stop: 36699, Start Num: 19

Candidate Starts for GOATification\_49:

(Start: 19 @36433 has 29 MA's), (36, 36529), (46, 36586), (48, 36592),

Gene: Gail\_35 Start: 26258, Stop: 26569, Start Num: 11

Candidate Starts for Gail\_35:

(Start: 11 @26258 has 40 MA's), (23, 26303), (26, 26318), (29, 26342), (41, 26408), (56, 26525),

Gene: GalacticEye\_80 Start: 62581, Stop: 62291, Start Num: 14  
Candidate Starts for GalacticEye\_80:  
(Start: 14 @62581 has 60 MA's), (31, 62497), (39, 62446), (58, 62317),

Gene: GardenSalsa\_3 Start: 1528, Stop: 1214, Start Num: 11  
Candidate Starts for GardenSalsa\_3:  
(Start: 11 @1528 has 40 MA's), (23, 1483), (41, 1378), (58, 1255),

Gene: Genamy16\_51 Start: 35748, Stop: 36014, Start Num: 19  
Candidate Starts for Genamy16\_51:  
(Start: 19 @35748 has 29 MA's), (38, 35853), (46, 35901), (48, 35907),

Gene: GenevaB15\_3 Start: 1517, Stop: 1203, Start Num: 11  
Candidate Starts for GenevaB15\_3:  
(Start: 11 @1517 has 40 MA's), (23, 1472), (41, 1367), (58, 1244),

Gene: Gibbin\_50 Start: 37089, Stop: 37355, Start Num: 19  
Candidate Starts for Gibbin\_50:  
(Start: 19 @37089 has 29 MA's), (36, 37185), (38, 37194), (46, 37242), (48, 37248),

Gene: Glaske16\_3 Start: 1498, Stop: 1187, Start Num: 13  
Candidate Starts for Glaske16\_3:  
(Start: 13 @1498 has 5 MA's), (23, 1456), (33, 1402), (58, 1228),

Gene: Gorko\_83 Start: 62407, Stop: 62120, Start Num: 14  
Candidate Starts for Gorko\_83:  
(Start: 14 @62407 has 60 MA's), (28, 62335), (57, 62146), (58, 62143),

Gene: GourdThymes\_84 Start: 63347, Stop: 63060, Start Num: 14  
Candidate Starts for GourdThymes\_84:  
(Start: 13 @63350 has 5 MA's), (Start: 14 @63347 has 60 MA's), (28, 63275), (57, 63086), (58, 63083),

Gene: Gray\_82 Start: 63891, Stop: 64202, Start Num: 6  
Candidate Starts for Gray\_82:  
(Start: 6 @63891 has 6 MA's), (29, 63996), (36, 64029), (40, 64059), (47, 64089), (58, 64185),

Gene: GretellLyn\_48 Start: 37163, Stop: 37429, Start Num: 19  
Candidate Starts for GretellLyn\_48:  
(Start: 19 @37163 has 29 MA's), (36, 37259), (46, 37316), (48, 37322),

Gene: Guillaume\_79 Start: 62631, Stop: 62341, Start Num: 14  
Candidate Starts for Guillaume\_79:  
(Start: 14 @62631 has 60 MA's), (31, 62547), (39, 62496), (58, 62367),

Gene: Hail2Pitt\_78 Start: 63107, Stop: 62817, Start Num: 14  
Candidate Starts for Hail2Pitt\_78:  
(Start: 14 @63107 has 60 MA's), (31, 63023), (39, 62972), (58, 62843),

Gene: Hanem\_81 Start: 63427, Stop: 63738, Start Num: 6  
Candidate Starts for Hanem\_81:  
(Start: 6 @63427 has 6 MA's), (29, 63532), (36, 63565), (40, 63595), (47, 63625), (58, 63721),

Gene: Harambe\_79 Start: 62898, Stop: 62608, Start Num: 14

Candidate Starts for Harambe\_79:

(Start: 14 @62898 has 60 MA's), (31, 62814), (39, 62763), (58, 62634),

Gene: Hello\_79 Start: 62860, Stop: 62570, Start Num: 14

Candidate Starts for Hello\_79:

(Start: 14 @62860 has 60 MA's), (31, 62776), (39, 62725), (58, 62596),

Gene: Hollow\_79 Start: 63362, Stop: 63075, Start Num: 14

Candidate Starts for Hollow\_79:

(Start: 14 @63362 has 60 MA's), (28, 63290), (43, 63209), (57, 63101), (58, 63098),

Gene: Hotorobo\_85 Start: 63857, Stop: 63570, Start Num: 14

Candidate Starts for Hotorobo\_85:

(Start: 14 @63857 has 60 MA's), (57, 63596), (58, 63593),

Gene: JSwag\_35 Start: 23874, Stop: 24182, Start Num: 11

Candidate Starts for JSwag\_35:

(Start: 11 @23874 has 40 MA's), (23, 23916), (24, 23925), (34, 23973), (38, 23997),

Gene: Jalebi\_48 Start: 37508, Stop: 37777, Start Num: 19

Candidate Starts for Jalebi\_48:

(Start: 19 @37508 has 29 MA's), (36, 37604), (38, 37613), (46, 37661), (48, 37667),

Gene: Jamemuya19\_50 Start: 35353, Stop: 35619, Start Num: 19

Candidate Starts for Jamemuya19\_50:

(Start: 19 @35353 has 29 MA's), (38, 35458), (46, 35506), (48, 35512),

Gene: Jams\_80 Start: 62070, Stop: 61780, Start Num: 14

Candidate Starts for Jams\_80:

(Start: 14 @62070 has 60 MA's), (31, 61986), (39, 61935), (58, 61806),

Gene: Jeeves\_34 Start: 24950, Stop: 25261, Start Num: 11

Candidate Starts for Jeeves\_34:

(Start: 11 @24950 has 40 MA's), (23, 24995), (24, 25004), (41, 25100), (56, 25217),

Gene: Jellybones\_84 Start: 64148, Stop: 63861, Start Num: 14

Candidate Starts for Jellybones\_84:

(Start: 14 @64148 has 60 MA's), (28, 64076), (57, 63887), (58, 63884),

Gene: John316\_87 Start: 64461, Stop: 64171, Start Num: 13

Candidate Starts for John316\_87:

(Start: 13 @64461 has 5 MA's), (Start: 14 @64458 has 60 MA's), (28, 64386), (57, 64197), (58, 64194),

Gene: Jormungandr\_79 Start: 62613, Stop: 62323, Start Num: 14

Candidate Starts for Jormungandr\_79:

(Start: 14 @62613 has 60 MA's), (31, 62529), (39, 62478), (58, 62349),

Gene: Kabocha\_83 Start: 64773, Stop: 65084, Start Num: 6

Candidate Starts for Kabocha\_83:

(Start: 6 @64773 has 6 MA's), (29, 64878), (36, 64911), (40, 64941), (47, 64971), (58, 65067),

Gene: Kaseim\_79 Start: 62055, Stop: 61765, Start Num: 14

Candidate Starts for Kaseim\_79:

(Start: 14 @62055 has 60 MA's), (31, 61971), (39, 61920), (58, 61791),

Gene: KatherineG\_35 Start: 24010, Stop: 24318, Start Num: 11

Candidate Starts for KatherineG\_35:

(Start: 11 @24010 has 40 MA's), (23, 24052), (24, 24061), (34, 24109), (38, 24133),

Gene: Katyusha\_77 Start: 63193, Stop: 62906, Start Num: 14

Candidate Starts for Katyusha\_77:

(Start: 14 @63193 has 60 MA's), (42, 63043), (57, 62932), (58, 62929),

Gene: Keziacharles14\_35 Start: 26920, Stop: 27228, Start Num: 11

Candidate Starts for Keziacharles14\_35:

(1, 26800), (4, 26866), (Start: 11 @26920 has 40 MA's), (23, 26959), (24, 26968), (26, 26974), (41, 27064), (58, 27187),

Gene: Kvothe\_78 Start: 63202, Stop: 62915, Start Num: 14

Candidate Starts for Kvothe\_78:

(Start: 14 @63202 has 60 MA's), (42, 63052), (57, 62941), (58, 62938),

Gene: LadyBird\_33 Start: 25560, Stop: 25874, Start Num: 11

Candidate Starts for LadyBird\_33:

(Start: 11 @25560 has 40 MA's), (23, 25605), (41, 25710),

Gene: Lahirium\_80 Start: 63649, Stop: 63359, Start Num: 14

Candidate Starts for Lahirium\_80:

(Start: 14 @63649 has 60 MA's), (31, 63565), (39, 63514), (58, 63385),

Gene: Lambo\_48 Start: 36534, Stop: 36803, Start Num: 19

Candidate Starts for Lambo\_48:

(Start: 19 @36534 has 29 MA's), (36, 36630), (46, 36687), (48, 36693),

Gene: LastResort\_35 Start: 23891, Stop: 24199, Start Num: 11

Candidate Starts for LastResort\_35:

(Start: 11 @23891 has 40 MA's), (23, 23933), (24, 23942), (34, 23990), (38, 24014),

Gene: LavAbarElk\_48 Start: 35649, Stop: 35915, Start Num: 19

Candidate Starts for LavAbarElk\_48:

(Start: 19 @35649 has 29 MA's), (36, 35745), (38, 35754), (46, 35802), (48, 35808),

Gene: Lenoshki\_82 Start: 65533, Stop: 65844, Start Num: 6

Candidate Starts for Lenoshki\_82:

(Start: 6 @65533 has 6 MA's), (29, 65638), (36, 65671), (40, 65701), (47, 65731), (58, 65827),

Gene: Lidong\_80 Start: 62870, Stop: 62580, Start Num: 14

Candidate Starts for Lidong\_80:

(Start: 14 @62870 has 60 MA's), (31, 62786), (39, 62735), (58, 62606),

Gene: Lila22\_49 Start: 37131, Stop: 37397, Start Num: 19

Candidate Starts for Lila22\_49:

(Start: 19 @37131 has 29 MA's), (36, 37227), (46, 37284), (48, 37290),

Gene: Linetti\_84 Start: 64741, Stop: 64454, Start Num: 14

Candidate Starts for Linetti\_84:



(10, 64753), (Start: 14 @64741 has 60 MA's), (28, 64669), (55, 64486), (57, 64480), (58, 64477),

Gene: LittleFella\_43 Start: 34111, Stop: 34392, Start Num: 19

Candidate Starts for LittleFella\_43:

(Start: 19 @34111 has 29 MA's), (29, 34174), (50, 34309),

Gene: Lizzo\_84 Start: 63320, Stop: 63033, Start Num: 14

Candidate Starts for Lizzo\_84:

(Start: 13 @63323 has 5 MA's), (Start: 14 @63320 has 60 MA's), (28, 63248), (57, 63059), (58, 63056),

Gene: Looper\_36 Start: 23888, Stop: 24196, Start Num: 11

Candidate Starts for Looper\_36:

(Start: 11 @23888 has 40 MA's), (23, 23930), (24, 23939), (34, 23987), (38, 24011), (58, 24158),

Gene: Luchador\_37 Start: 27458, Stop: 27769, Start Num: 11

Candidate Starts for Luchador\_37:

(Start: 11 @27458 has 40 MA's), (23, 27503), (24, 27512), (41, 27608), (56, 27725),

Gene: LuckyLeo\_47 Start: 35938, Stop: 36207, Start Num: 19

Candidate Starts for LuckyLeo\_47:

(Start: 19 @35938 has 29 MA's), (36, 36034), (38, 36043), (46, 36091), (48, 36097),

Gene: Lucyedi\_35 Start: 25600, Stop: 25908, Start Num: 11

Candidate Starts for Lucyedi\_35:

(Start: 11 @25600 has 40 MA's), (23, 25642), (24, 25651), (41, 25747), (53, 25837), (55, 25861), (58, 25870),

Gene: Luker\_81 Start: 63088, Stop: 62798, Start Num: 14

Candidate Starts for Luker\_81:

(Start: 14 @63088 has 60 MA's), (31, 63004), (39, 62953), (58, 62824),

Gene: MacGully\_86 Start: 58582, Stop: 58277, Start Num: 5

Candidate Starts for MacGully\_86:

(Start: 5 @58582 has 2 MA's), (25, 58513), (30, 58486), (38, 58450), (51, 58348),

Gene: Mima20\_50 Start: 36680, Stop: 36946, Start Num: 19

Candidate Starts for Mima20\_50:

(Start: 19 @36680 has 29 MA's), (36, 36776), (38, 36785), (46, 36833), (48, 36839),

Gene: MinecraftSteve\_36 Start: 24010, Stop: 24318, Start Num: 11

Candidate Starts for MinecraftSteve\_36:

(Start: 11 @24010 has 40 MA's), (23, 24052), (24, 24061), (34, 24109), (38, 24133),

Gene: Minos\_81 Start: 62612, Stop: 62322, Start Num: 14

Candidate Starts for Minos\_81:

(Start: 14 @62612 has 60 MA's), (31, 62528), (39, 62477), (58, 62348),

Gene: MintFritos\_78 Start: 63398, Stop: 63709, Start Num: 6

Candidate Starts for MintFritos\_78:

(Start: 6 @63398 has 6 MA's), (29, 63503), (36, 63536), (40, 63566), (47, 63596), (58, 63692),

Gene: MoiGyank\_52 Start: 37577, Stop: 37846, Start Num: 19

Candidate Starts for MoiGyank\_52:

(Start: 19 @37577 has 29 MA's), (36, 37673), (38, 37682), (46, 37730), (48, 37736),

Gene: Monty\_84 Start: 63023, Stop: 62733, Start Num: 13

Candidate Starts for Monty\_84:

(Start: 13 @63023 has 5 MA's), (Start: 14 @63020 has 60 MA's), (57, 62759), (58, 62756),

Gene: MrMagoo\_3 Start: 1528, Stop: 1214, Start Num: 11

Candidate Starts for MrMagoo\_3:

(Start: 11 @1528 has 40 MA's), (23, 1483), (41, 1378), (58, 1255),

Gene: MrWormie\_80 Start: 61773, Stop: 61483, Start Num: 14

Candidate Starts for MrWormie\_80:

(Start: 14 @61773 has 60 MA's), (31, 61689), (39, 61638), (58, 61509),

Gene: Msay19\_87 Start: 64749, Stop: 64462, Start Num: 14

Candidate Starts for Msay19\_87:

(Start: 14 @64749 has 60 MA's), (28, 64677), (57, 64488), (58, 64485),

Gene: Nebulosus\_35 Start: 23888, Stop: 24196, Start Num: 11

Candidate Starts for Nebulosus\_35:

(Start: 11 @23888 has 40 MA's), (23, 23930), (24, 23939), (34, 23987), (38, 24011),

Gene: Nedarya\_34 Start: 24504, Stop: 24815, Start Num: 11

Candidate Starts for Nedarya\_34:

(Start: 11 @24504 has 40 MA's), (23, 24549), (24, 24558), (29, 24588), (34, 24606), (38, 24630), (52, 24738), (53, 24744), (58, 24777),

Gene: Neoevie\_79 Start: 62874, Stop: 62584, Start Num: 14

Candidate Starts for Neoevie\_79:

(Start: 14 @62874 has 60 MA's), (31, 62790), (39, 62739), (58, 62610),

Gene: Newt\_81 Start: 63102, Stop: 62812, Start Num: 14

Candidate Starts for Newt\_81:

(Start: 14 @63102 has 60 MA's), (31, 63018), (39, 62967), (58, 62838),

Gene: Niagara\_78 Start: 63126, Stop: 62839, Start Num: 14

Candidate Starts for Niagara\_78:

(Start: 14 @63126 has 60 MA's), (42, 62976), (57, 62865), (58, 62862),

Gene: Nimi13\_79 Start: 62621, Stop: 62331, Start Num: 14

Candidate Starts for Nimi13\_79:

(Start: 14 @62621 has 60 MA's), (31, 62537), (39, 62486), (58, 62357),

Gene: NorManre\_51 Start: 36789, Stop: 37055, Start Num: 19

Candidate Starts for NorManre\_51:

(Start: 19 @36789 has 29 MA's), (36, 36885), (38, 36894), (46, 36942), (48, 36948),

Gene: NovaSharks\_50 Start: 35339, Stop: 35605, Start Num: 19

Candidate Starts for NovaSharks\_50:

(Start: 19 @35339 has 29 MA's), (38, 35444), (46, 35492), (48, 35498),

Gene: Oofda\_36 Start: 23862, Stop: 24170, Start Num: 11

Candidate Starts for Oofda\_36:

(Start: 11 @23862 has 40 MA's), (23, 23904), (24, 23913), (34, 23961), (38, 23985), (58, 24132),

Gene: Oogie\_81 Start: 65586, Stop: 65897, Start Num: 6

Candidate Starts for Oogie\_81:

(Start: 6 @65586 has 6 MA's), (29, 65691), (36, 65724), (40, 65754), (47, 65784), (58, 65880),

Gene: OtterstedtS21\_48 Start: 36449, Stop: 36715, Start Num: 19

Candidate Starts for OtterstedtS21\_48:

(Start: 19 @36449 has 29 MA's), (36, 36545), (46, 36602), (48, 36608),

Gene: PainterBoy\_35 Start: 25536, Stop: 25844, Start Num: 11

Candidate Starts for PainterBoy\_35:

(Start: 11 @25536 has 40 MA's), (23, 25578), (24, 25587), (41, 25683), (53, 25773), (58, 25806),

Gene: Pakusa\_78 Start: 63153, Stop: 63464, Start Num: 6

Candidate Starts for Pakusa\_78:

(Start: 6 @63153 has 6 MA's), (29, 63258), (36, 63291), (40, 63321), (47, 63351), (58, 63447),

Gene: ParvusTarda\_48 Start: 35951, Stop: 36217, Start Num: 19

Candidate Starts for ParvusTarda\_48:

(Start: 19 @35951 has 29 MA's), (36, 36047), (46, 36104), (48, 36110),

Gene: Patos\_51 Start: 36788, Stop: 37054, Start Num: 19

Candidate Starts for Patos\_51:

(Start: 19 @36788 has 29 MA's), (36, 36884), (38, 36893), (46, 36941), (48, 36947),

Gene: Philon9\_74 Start: 63265, Stop: 62978, Start Num: 14

Candidate Starts for Philon9\_74:

(Start: 14 @63265 has 60 MA's), (17, 63253), (24, 63217), (28, 63193), (31, 63181), (38, 63142), (39, 63130), (57, 63004), (58, 63001),

Gene: PierreThree\_83 Start: 64059, Stop: 63772, Start Num: 14

Candidate Starts for PierreThree\_83:

(Start: 14 @64059 has 60 MA's), (28, 63987), (54, 63810), (55, 63804), (57, 63798), (58, 63795),

Gene: PokyPuppy\_81 Start: 63325, Stop: 63041, Start Num: 14

Candidate Starts for PokyPuppy\_81:

(Start: 14 @63325 has 60 MA's), (24, 63277), (36, 63211), (38, 63202), (43, 63172), (54, 63076),

Gene: Poland\_87 Start: 64728, Stop: 64441, Start Num: 14

Candidate Starts for Poland\_87:

(Start: 14 @64728 has 60 MA's), (28, 64656), (57, 64467), (58, 64464),

Gene: Rahalelujah\_33 Start: 25038, Stop: 25346, Start Num: 11

Candidate Starts for Rahalelujah\_33:

(Start: 11 @25038 has 40 MA's), (23, 25077), (24, 25086), (26, 25092), (29, 25116), (41, 25182), (56, 25299), (58, 25305),

Gene: Ranch\_50 Start: 35621, Stop: 35887, Start Num: 19

Candidate Starts for Ranch\_50:

(Start: 19 @35621 has 29 MA's), (36, 35717), (46, 35774), (48, 35780),

Gene: RazorC\_48 Start: 35492, Stop: 35758, Start Num: 19

Candidate Starts for RazorC\_48:  
(Start: 19 @35492 has 29 MA's), (38, 35597), (46, 35645), (48, 35651),

Gene: ReMo\_35 Start: 23888, Stop: 24196, Start Num: 11  
Candidate Starts for ReMo\_35:  
(Start: 11 @23888 has 40 MA's), (23, 23930), (24, 23939), (34, 23987), (38, 24011),

Gene: RemRem\_86 Start: 62960, Stop: 62673, Start Num: 14  
Candidate Starts for RemRem\_86:  
(Start: 14 @62960 has 60 MA's), (28, 62888), (57, 62699), (58, 62696),

Gene: Remus\_35 Start: 23852, Stop: 24160, Start Num: 11  
Candidate Starts for Remus\_35:  
(Start: 11 @23852 has 40 MA's), (23, 23894), (24, 23903), (34, 23951), (38, 23975), (58, 24122),

Gene: Rosalind\_35 Start: 24010, Stop: 24318, Start Num: 11  
Candidate Starts for Rosalind\_35:  
(Start: 11 @24010 has 40 MA's), (23, 24052), (24, 24061), (34, 24109), (38, 24133),

Gene: RoyalG\_84 Start: 63422, Stop: 63135, Start Num: 16  
Candidate Starts for RoyalG\_84:  
(Start: 14 @63428 has 60 MA's), (Start: 16 @63422 has 4 MA's), (24, 63377), (38, 63305), (43, 63275),  
(47, 63254), (50, 63215),

Gene: Rumi\_49 Start: 35036, Stop: 35302, Start Num: 19  
Candidate Starts for Rumi\_49:  
(Start: 19 @35036 has 29 MA's), (36, 35132), (38, 35141), (46, 35189), (48, 35195),

Gene: Sadboi\_49 Start: 37164, Stop: 37430, Start Num: 19  
Candidate Starts for Sadboi\_49:  
(Start: 19 @37164 has 29 MA's), (36, 37260), (46, 37317), (48, 37323),

Gene: Sam12\_82 Start: 62405, Stop: 62118, Start Num: 14  
Candidate Starts for Sam12\_82:  
(Start: 14 @62405 has 60 MA's), (28, 62333), (57, 62144), (58, 62141),

Gene: Sampudon\_49 Start: 37508, Stop: 37777, Start Num: 19  
Candidate Starts for Sampudon\_49:  
(Start: 19 @37508 has 29 MA's), (36, 37604), (38, 37613), (46, 37661), (48, 37667),

Gene: ScarletRaider\_82 Start: 66870, Stop: 67181, Start Num: 7  
Candidate Starts for ScarletRaider\_82:  
(Start: 7 @66870 has 3 MA's), (12, 66888), (Start: 18 @66909 has 1 MA's), (21, 66924), (29, 66972),  
(36, 67005), (43, 67044), (57, 67158),

Gene: Schomber\_80 Start: 63161, Stop: 63472, Start Num: 6  
Candidate Starts for Schomber\_80:  
(Start: 6 @63161 has 6 MA's), (29, 63266), (36, 63299), (40, 63329), (47, 63359), (58, 63455),

Gene: ShayRa\_36 Start: 24010, Stop: 24318, Start Num: 11  
Candidate Starts for ShayRa\_36:  
(Start: 11 @24010 has 40 MA's), (23, 24052), (24, 24061), (34, 24109), (38, 24133),

Gene: Shelley\_80 Start: 62097, Stop: 61807, Start Num: 14  
Candidate Starts for Shelley\_80:  
(Start: 14 @62097 has 60 MA's), (31, 62013), (39, 61962), (58, 61833),

Gene: Sombrero\_84 Start: 63030, Stop: 62743, Start Num: 14  
Candidate Starts for Sombrero\_84:  
(Start: 14 @63030 has 60 MA's), (28, 62958), (57, 62769), (58, 62766),

Gene: SororFago\_35 Start: 26230, Stop: 26541, Start Num: 11  
Candidate Starts for SororFago\_35:  
(Start: 11 @26230 has 40 MA's), (23, 26275), (24, 26284), (26, 26290), (41, 26380), (56, 26497),

Gene: Soups\_35 Start: 24010, Stop: 24318, Start Num: 11  
Candidate Starts for Soups\_35:  
(Start: 11 @24010 has 40 MA's), (23, 24052), (24, 24061), (34, 24109), (38, 24133), (58, 24280),

Gene: Squibbles\_84 Start: 63837, Stop: 63550, Start Num: 14  
Candidate Starts for Squibbles\_84:  
(Start: 13 @63840 has 5 MA's), (Start: 14 @63837 has 60 MA's), (28, 63765), (57, 63576), (58, 63573),

Gene: SteveFrench\_83 Start: 63662, Stop: 63375, Start Num: 16  
Candidate Starts for SteveFrench\_83:  
(Start: 14 @63668 has 60 MA's), (Start: 16 @63662 has 4 MA's), (24, 63617), (38, 63545), (43, 63515),  
(47, 63494), (50, 63455),

Gene: Sticker17\_80 Start: 62585, Stop: 62295, Start Num: 14  
Candidate Starts for Sticker17\_80:  
(Start: 14 @62585 has 60 MA's), (31, 62501), (39, 62450), (58, 62321),

Gene: Stormer\_50 Start: 35040, Stop: 35306, Start Num: 19  
Candidate Starts for Stormer\_50:  
(Start: 19 @35040 has 29 MA's), (36, 35136), (38, 35145), (46, 35193), (48, 35199),

Gene: Strosahl\_35 Start: 23852, Stop: 24160, Start Num: 11  
Candidate Starts for Strosahl\_35:  
(Start: 11 @23852 has 40 MA's), (23, 23894), (24, 23903), (34, 23951), (38, 23975), (58, 24122),

Gene: Sunhee\_33 Start: 25057, Stop: 25368, Start Num: 11  
Candidate Starts for Sunhee\_33:  
(Start: 11 @25057 has 40 MA's), (23, 25102), (41, 25207), (56, 25324),

Gene: Switzerland\_35 Start: 24004, Stop: 24312, Start Num: 11  
Candidate Starts for Switzerland\_35:  
(Start: 11 @24004 has 40 MA's), (23, 24046), (24, 24055), (34, 24103), (38, 24127), (58, 24274),

Gene: Teal\_79 Start: 63079, Stop: 62789, Start Num: 14  
Candidate Starts for Teal\_79:  
(Start: 14 @63079 has 60 MA's), (31, 62995), (39, 62944), (58, 62815),

Gene: Teatealatte\_79 Start: 63023, Stop: 62736, Start Num: 14  
Candidate Starts for Teatealatte\_79:  
(Start: 14 @63023 has 60 MA's), (42, 62873), (57, 62762), (58, 62759),

Gene: Teech\_76 Start: 62839, Stop: 62552, Start Num: 14  
Candidate Starts for Teech\_76:  
(Start: 14 @62839 has 60 MA's), (42, 62689), (57, 62578), (58, 62575),

Gene: Tillicus\_47 Start: 35870, Stop: 36139, Start Num: 19  
Candidate Starts for Tillicus\_47:  
(Start: 19 @35870 has 29 MA's), (36, 35966), (38, 35975), (46, 36023), (48, 36029),

Gene: Toaka\_33 Start: 25436, Stop: 25741, Start Num: 11  
Candidate Starts for Toaka\_33:  
(1, 25316), (3, 25379), (Start: 11 @25436 has 40 MA's), (23, 25472), (24, 25481), (26, 25487), (29, 25511), (38, 25553), (41, 25577),

Gene: Toneprano\_79 Start: 63396, Stop: 63707, Start Num: 6  
Candidate Starts for Toneprano\_79:  
(Start: 6 @63396 has 6 MA's), (29, 63501), (36, 63534), (40, 63564), (47, 63594), (58, 63690),

Gene: Tredge\_78 Start: 63023, Stop: 62736, Start Num: 14  
Candidate Starts for Tredge\_78:  
(Start: 14 @63023 has 60 MA's), (42, 62873), (57, 62762), (58, 62759),

Gene: Twin\_77 Start: 63426, Stop: 63737, Start Num: 6  
Candidate Starts for Twin\_77:  
(Start: 6 @63426 has 6 MA's), (29, 63531), (36, 63564), (40, 63594), (47, 63624), (58, 63720),

Gene: UBSmoodge\_85 Start: 67310, Stop: 67621, Start Num: 7  
Candidate Starts for UBSmoodge\_85:  
(Start: 7 @67310 has 3 MA's), (12, 67328), (Start: 18 @67349 has 1 MA's), (29, 67412), (36, 67445), (43, 67484), (57, 67598),

Gene: Vanisoa\_34 Start: 26675, Stop: 26983, Start Num: 11  
Candidate Starts for Vanisoa\_34:  
(4, 26621), (Start: 11 @26675 has 40 MA's), (23, 26714), (24, 26723), (26, 26729), (29, 26753), (38, 26795), (41, 26819), (55, 26933), (58, 26942),

Gene: Vitaenoi\_74 Start: 63249, Stop: 62962, Start Num: 14  
Candidate Starts for Vitaenoi\_74:  
(Start: 14 @63249 has 60 MA's), (17, 63237), (24, 63201), (28, 63177), (31, 63165), (38, 63126), (39, 63114), (57, 62988), (58, 62985),

Gene: Waits\_35 Start: 23858, Stop: 24166, Start Num: 11  
Candidate Starts for Waits\_35:  
(Start: 11 @23858 has 40 MA's), (23, 23900), (24, 23909), (34, 23957), (38, 23981), (58, 24128),

Gene: Warrior24\_36 Start: 23862, Stop: 24170, Start Num: 11  
Candidate Starts for Warrior24\_36:  
(Start: 11 @23862 has 40 MA's), (23, 23904), (24, 23913), (34, 23961), (38, 23985), (58, 24132),

Gene: Woes\_79 Start: 63130, Stop: 62840, Start Num: 14  
Candidate Starts for Woes\_79:  
(Start: 14 @63130 has 60 MA's), (31, 63046), (39, 62995), (58, 62866),

Gene: Wojtek\_47 Start: 35962, Stop: 36231, Start Num: 19

Candidate Starts for Wojtek\_47:

(Start: 19 @35962 has 29 MA's), (36, 36058), (38, 36067), (46, 36115), (48, 36121),

Gene: Worcestershire\_82 Start: 62385, Stop: 62098, Start Num: 14

Candidate Starts for Worcestershire\_82:

(Start: 14 @62385 has 60 MA's), (28, 62313), (57, 62124), (58, 62121),

Gene: Xenia2\_45 Start: 34630, Stop: 34914, Start Num: 15

Candidate Starts for Xenia2\_45:

(Start: 15 @34630 has 2 MA's), (50, 34840),

Gene: Yikes\_50 Start: 37575, Stop: 37841, Start Num: 19

Candidate Starts for Yikes\_50:

(Start: 19 @37575 has 29 MA's), (36, 37671), (46, 37728), (48, 37734),

Gene: Zany\_47 Start: 36574, Stop: 36843, Start Num: 19

Candidate Starts for Zany\_47:

(Start: 19 @36574 has 29 MA's), (36, 36670), (38, 36679), (46, 36727), (48, 36733),