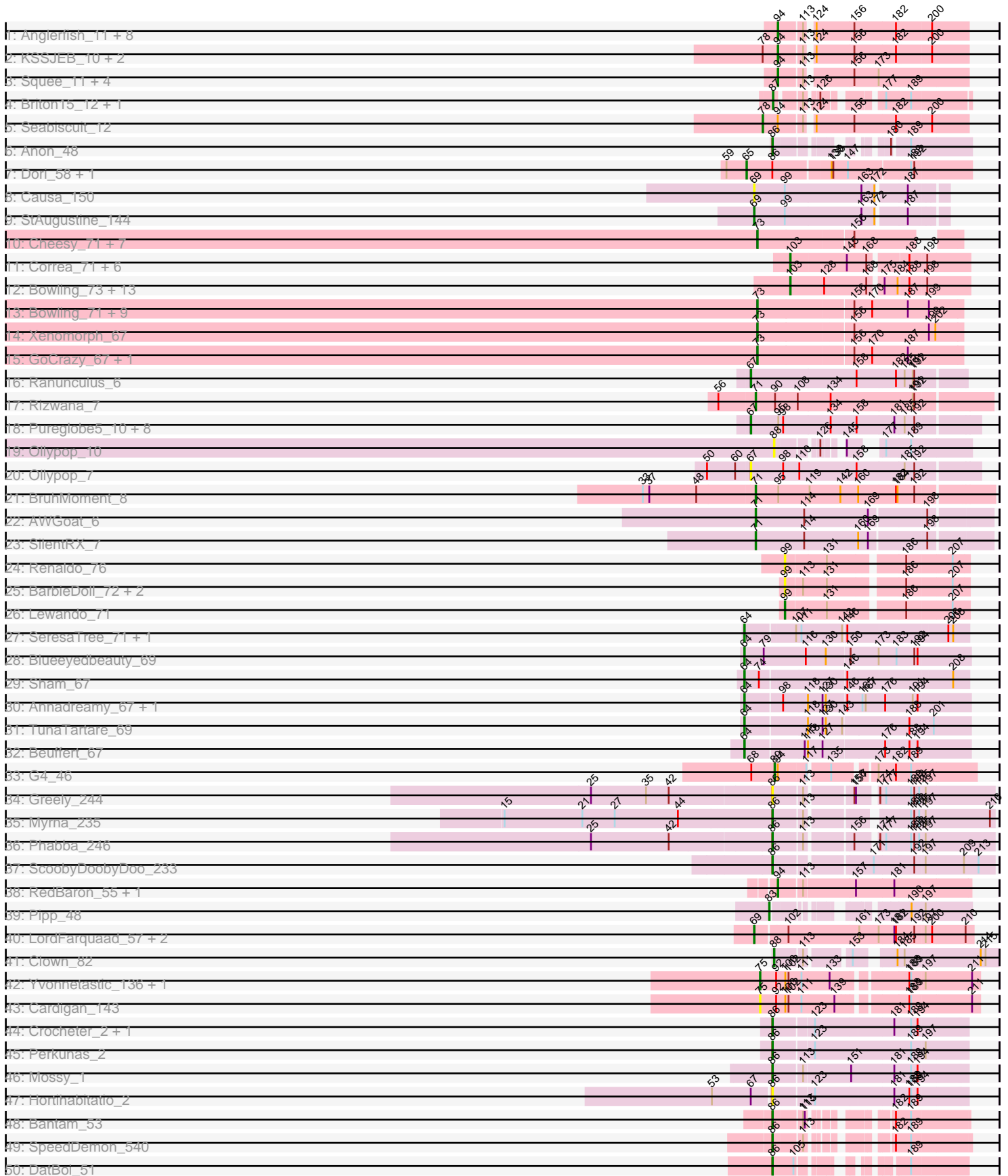
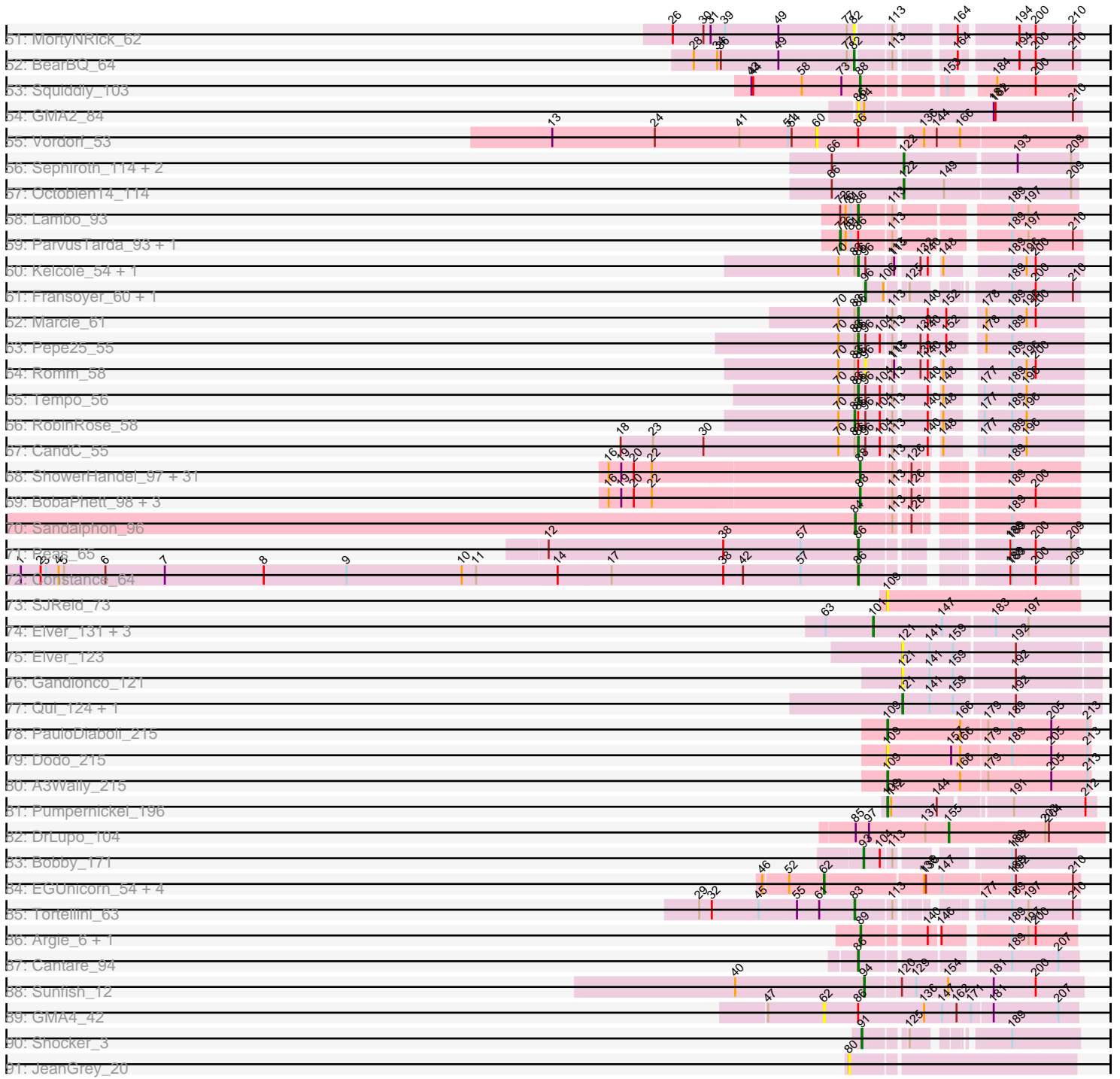


Pham 224294



Pham 224294



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 224294 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224294 has 208 members, 34 are drafts.

Phages represented in each track:

- Track 1 : Anglerfish\_11, McGuire\_11, Arcanine\_11, Rajelicia\_10, Slagathor\_11, PinkPlastic\_9, Manatee\_11, DreamCatcher\_12, Dynamix\_11
- Track 2 : KSSJEB\_10, U2\_10, Switzer\_11
- Track 3 : Squee\_11, Naira\_11, BeesKnees\_11, Atkinbua\_11, Fenn\_11
- Track 4 : Briton15\_12, Ichabod\_11
- Track 5 : Seabiscuit\_12
- Track 6 : Anon\_48
- Track 7 : Dori\_58, Mask\_58
- Track 8 : Causa\_150
- Track 9 : StAugustine\_144
- Track 10 : Cheesy\_71, Kardesai\_70, Nason\_70, Elsa\_70, Tribby\_74, Mooshroom\_71, Correa\_69, Arcadia\_70
- Track 11 : Correa\_71, Cheesy\_73, Nason\_72, Elsa\_72, Tribby\_76, Xenomorph\_69, Arcadia\_72
- Track 12 : Bowling\_73, Dynamite\_72, Heisenberger\_71, Kardesai\_72, NapoleonB\_73, JEGGS\_71, Mooshroom\_73, Circum\_74, Mudcat\_68, Benllo\_73, Hankly\_72, GoCrazy\_69, BenitoAntonio\_71, KeaneyLin\_68
- Track 13 : Bowling\_71, Dynamite\_70, Benllo\_71, JEGGS\_69, Mudcat\_66, NapoleonB\_71, BenitoAntonio\_69, Hankly\_70, Circum\_72, Heisenberger\_69
- Track 14 : Xenomorph\_67
- Track 15 : GoCrazy\_67, KeaneyLin\_66
- Track 16 : Ranunculus\_6
- Track 17 : Rizwana\_7
- Track 18 : Pureglobe5\_10, Pointis\_8, Kubulix\_8, Odyssey395\_10, DogYard\_7, RazzB\_6, Beagle\_10, MellowYellow\_8, Forrestell\_7
- Track 19 : Ollypop\_10
- Track 20 : Ollypop\_7
- Track 21 : BruhMoment\_8
- Track 22 : AWGoat\_6
- Track 23 : SilentRX\_7
- Track 24 : Renaldo\_76
- Track 25 : BarbieDoll\_72, Biscute\_71, Kinny\_72
- Track 26 : Lewando\_71
- Track 27 : SeresaTree\_71, Faust\_71
- Track 28 : Blueeyedbeauty\_69
- Track 29 : Sham\_67
- Track 30 : Annadreamy\_67, Limpid\_66

- Track 31 : TunaTartare\_69
- Track 32 : Beuffert\_67
- Track 33 : G4\_46
- Track 34 : Greely\_244
- Track 35 : Myrna\_235
- Track 36 : Phabba\_246
- Track 37 : ScoobyDoobyDoo\_233
- Track 38 : RedBaron\_55, Nina\_52
- Track 39 : Pipp\_48
- Track 40 : LordFarquaad\_57, Attis\_55, SoilAssassin\_55
- Track 41 : Clown\_82
- Track 42 : Yvonnetastic\_136, JonJames\_139
- Track 43 : Cardigan\_143
- Track 44 : Crocheter\_2, Untouchable\_2
- Track 45 : Perkunas\_2
- Track 46 : Mossy\_1
- Track 47 : Hortihabitatio\_2
- Track 48 : Bantam\_53
- Track 49 : SpeedDemon\_540
- Track 50 : DatBoi\_51
- Track 51 : MortyNRick\_62
- Track 52 : BearBQ\_64
- Track 53 : Squiddly\_103
- Track 54 : GMA2\_84
- Track 55 : Vordorf\_53
- Track 56 : Sephiroth\_114, Kudefre\_118, Syleon\_119
- Track 57 : Octobien14\_114
- Track 58 : Lambo\_93
- Track 59 : ParvusTarda\_93, Wojtek\_85
- Track 60 : Kelcole\_54, OneinaGillian\_56
- Track 61 : Fransoyer\_60, SadLad\_63
- Track 62 : Marcie\_61
- Track 63 : Pepe25\_55
- Track 64 : Romm\_58
- Track 65 : Tempo\_56
- Track 66 : RobinRose\_58
- Track 67 : CandC\_55
- Track 68 : ShowerHandel\_97, Gorge\_95, Burwell21\_90, Brocalys\_88, Lizziana\_97, LastJedi\_87, Clifton\_88, Nivrat\_96, Crumble\_91, LilMoolah\_99, ByChance\_87, Yorick\_92, Philus\_98, James\_100, Jarcob\_99, Cabrinians\_93, Vivum\_98, Spoonbill\_96, Whouxphf\_100, FreddyB\_106, Minnie\_91, Maravista\_93, NormanBulbieJr\_94, Saal\_94, OlympiaSaint\_100, Pippy\_94, Blexus\_93, Koella\_89, Latretium\_99, Martik\_95, SwagPigglett\_98, Priscilla\_97
- Track 69 : BobaPhett\_98, Zizzle\_99, Mattes\_97, ShiLan\_99
- Track 70 : Sandalphon\_96
- Track 71 : Peas\_65
- Track 72 : Constance\_64
- Track 73 : SJReid\_73
- Track 74 : Elver\_131, Paella\_133, Gandionco\_129, Qui\_133
- Track 75 : Elver\_123
- Track 76 : Gandionco\_121
- Track 77 : Qui\_124, Paella\_124
- Track 78 : PauloDiaboli\_215

- Track 79 : Dodo\_215
- Track 80 : A3Wally\_215
- Track 81 : Pumpnickel\_196
- Track 82 : DrLupo\_104
- Track 83 : Bobby\_171
- Track 84 : EGUnicorn\_54, Magsby\_55, Xerxes\_55, Gex\_56, Pipsqueaks\_56
- Track 85 : Tortellini\_63
- Track 86 : Argie\_6, GodPhather\_6
- Track 87 : Cantare\_94
- Track 88 : Sunfish\_12
- Track 89 : GMA4\_42
- Track 90 : Shocker\_3
- Track 91 : JeanGrey\_20

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

The start number called the most often in the published annotations is 88, it was called in 37 of the 174 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Blexus\_93, BobaPhett\_98, Brocalys\_88, Burwell21\_90, ByChance\_87, Cabrinians\_93, Clifton\_88, Clown\_82, Crumble\_91, FreddyB\_106, Gorge\_95, James\_100, Jarcob\_99, Koella\_89, LastJedi\_87, Latretium\_99, LilMoolah\_99, Lizziana\_97, Maravista\_93, Martik\_95, Mattes\_97, Minnie\_91, Nivrat\_96, NormanBulbieJr\_94, Ollypop\_10, OlympiaSaint\_100, Philus\_98, Pippy\_94, Priscilla\_97, Saal\_94, ShiLan\_99, ShowerHandel\_97, Spoonbill\_96, Squiddly\_103, SwagPiggett\_98, Vivum\_98, Whouxphf\_100, Yorick\_92, Zizzle\_99,

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

- 

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

- A3Wally\_215, AWGoat\_6, Anglerfish\_11, Annadreamy\_67, Anon\_48, Arcadia\_70, Arcadia\_72, Arcanine\_11, Argie\_6, Atkinbua\_11, Attis\_55, Bantam\_53, BarbieDoll\_72, Beagle\_10, BearBQ\_64, BeesKnees\_11, BenitoAntonio\_69, BenitoAntonio\_71, Benllo\_71, Benllo\_73, Beuffert\_67, Biscute\_71, Blueeyedbeauty\_69, Bobby\_171, Bowling\_71, Bowling\_73, Briton15\_12, BruhMoment\_8, CandC\_55, Cantare\_94, Cardigan\_143, Causa\_150, Cheesy\_71, Cheesy\_73, Circum\_72, Circum\_74, Constance\_64, Correa\_69, Correa\_71, Crocheter\_2, DatBoi\_51, Dodo\_215, DogYard\_7, Dori\_58, DrLupo\_104, DreamCatcher\_12, Dynamite\_70, Dynamite\_72, Dynamix\_11, EGUnicorn\_54, Elsa\_70, Elsa\_72, Elver\_123, Elver\_131, Faust\_71, Fenn\_11, Forrestell\_7, Fransoyer\_60, G4\_46, GMA2\_84, GMA4\_42, Gandionco\_121, Gandionco\_129, Gex\_56, GoCrazy\_67, GoCrazy\_69, GodPhather\_6, Greely\_244, Hankly\_70, Hankly\_72, Heisenberger\_69, Heisenberger\_71, Hortihabitatio\_2, Ichabod\_11, JEGGS\_69, JEGGS\_71, JeanGrey\_20, JonJames\_139, KSSJEB\_10, Kardesai\_70, Kardesai\_72, KeaneyLin\_66, KeaneyLin\_68, Kelcole\_54, Kinny\_72, Kubulix\_8, Kudrefre\_118, Lambo\_93, Lewando\_71, Limpid\_66, LordFarquaad\_57, Magsby\_55, Manatee\_11, Marcie\_61, Mask\_58, McGuire\_11, MellowYellow\_8, Mooshroom\_71, Mooshroom\_73, MortyNRick\_62, Mossy\_1, Mudcat\_66, Mudcat\_68, Myrna\_235,

Naira\_11, NapoleonB\_71, NapoleonB\_73, Nason\_70, Nason\_72, Nina\_52, Octobien14\_114, Odyssey395\_10, Ollypop\_7, OneinaGillian\_56, Paella\_124, Paella\_133, ParvusTarda\_93, PauloDiaboli\_215, Peas\_65, Pepe25\_55, Perkunas\_2, Phabba\_246, PinkPlastic\_9, Pipp\_48, Pipsqueaks\_56, Pointis\_8, Pumpernickel\_196, Pureglobe5\_10, Qui\_124, Qui\_133, Rajelicia\_10, Ranunculus\_6, RazzB\_6, RedBaron\_55, Renaldo\_76, Rizwana\_7, RobinRose\_58, Romm\_58, SJReid\_73, SadLad\_63, Sandalphon\_96, ScoobyDoobyDoo\_233, Seabiscuit\_12, Sephiroth\_114, SeresaTree\_71, Sham\_67, Shocker\_3, SilentRX\_7, Slagathor\_11, SoilAssassin\_55, SpeedDemon\_540, Squee\_11, StAugustine\_144, Sunfish\_12, Switzer\_11, Syleon\_119, Tempo\_56, Tortellini\_63, Tribby\_74, Tribby\_76, TunaTartare\_69, U2\_10, Untouchable\_2, Vordorf\_53, Wojtek\_85, Xenomorph\_67, Xenomorph\_69, Xerxes\_55, Yvonnetastic\_136,

### Summary by start number:

#### Start 60:

- Found in 2 of 208 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Vordorf\_53 (DT),

#### Start 62:

- Found in 6 of 208 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 4 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EGUnicorn\_54 (N), GMA4\_42 (singleton), Gex\_56 (N), Magsby\_55 (N), Pipsqueaks\_56 (N), Xerxes\_55 (N),

#### Start 64:

- Found in 8 of 208 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 7 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy\_67 (BK1), Beuffert\_67 (BK1), Blueeyedbeauty\_69 (BK1), Faust\_71 (BK1), Limpid\_66 (BK1), SeresaTree\_71 (BK1), Sham\_67 (BK1), TunaTartare\_69 (BK1),

#### Start 65:

- Found in 2 of 208 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dori\_58 (AD), Mask\_58 (AD),

#### Start 67:

- Found in 12 of 208 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 6 of 174
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Beagle\_10 (AP2), DogYard\_7 (AP2), Forrestell\_7 (AP2), Kubulix\_8 (AP2), MellowYellow\_8 (AP2), Odyssey395\_10 (AP2), Ollypop\_7 (AP2), Pointis\_8 (AP2), Pureglobe5\_10 (AP2), Ranunculus\_6 (AP), RazzB\_6 (AP2),

#### Start 69:

- Found in 5 of 208 ( 2.4% ) of genes in pham

- Manual Annotations of this start: 4 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Attis\_55 (CZ2), Causa\_150 (AI), LordFarquaad\_57 (CZ2), SoilAssassin\_55 (CZ2), StAugustine\_144 (AI),

#### Start 71:

- Found in 4 of 208 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 4 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_6 (AP4), BruhMoment\_8 (AP3), Rizwana\_7 (AP1), SilentRX\_7 (AP4),

#### Start 72:

- Found in 3 of 208 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 66.7% of time when present
- Phage (with cluster) where this start called: ParvusTarda\_93 (DV), Wojtek\_85 (DV),

#### Start 73:

- Found in 22 of 208 ( 10.6% ) of genes in pham
- Manual Annotations of this start: 19 of 174
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Arcadia\_70 (AM), BenitoAntonio\_69 (AM), Benllo\_71 (AM), Bowling\_71 (AM), Cheesy\_71 (AM), Circum\_72 (AM), Correa\_69 (AM), Dynamite\_70 (AM), Elsa\_70 (AM), GoCrazy\_67 (AM), Hankly\_70 (AM), Heisenberger\_69 (AM), JEGGS\_69 (AM), Kardesai\_70 (AM), KeaneyLin\_66 (AM), Mooshroom\_71 (AM), Mudcat\_66 (AM), NapoleonB\_71 (AM), Nason\_70 (AM), Tribby\_74 (AM), Xenomorph\_67 (AM),

#### Start 75:

- Found in 3 of 208 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cardigan\_143 (DD), JonJames\_139 (DD), Yvonnetastic\_136 (DD),

#### Start 78:

- Found in 4 of 208 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Seabiscuit\_12 (A1),

#### Start 80:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JeanGrey\_20 (singleton),

#### Start 82:

- Found in 2 of 208 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BearBQ\_64 (DN), MortyNRick\_62 (DN),

Start 83:

- Found in 10 of 208 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 3 of 174
- Called 30.0% of time when present
- Phage (with cluster) where this start called: Pipp\_48 (CV), RobinRose\_58 (EG), Tortellini\_63 (P2),

Start 84:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sandalphon\_96 (F1),

Start 86:

- Found in 32 of 208 ( 15.4% ) of genes in pham
- Manual Annotations of this start: 21 of 174
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Anon\_48 (A15), Bantam\_53 (DL), CandC\_55 (EG), Cantare\_94 (singleton), Constance\_64 (FA), Crocheter\_2 (DJ), DatBoi\_51 (DL), GMA2\_84 (DS), Greely\_244 (C2), Hortihabitatio\_2 (DJ), Kelcole\_54 (EG), Lambo\_93 (DV), Marcie\_61 (EG), Mossy\_1 (DJ), Myrna\_235 (C2), OneinaGillian\_56 (EG), Peas\_65 (FA), Pepe25\_55 (EG), Perkunas\_2 (DJ), Phabba\_246 (C2), ScoobyDoobyDoo\_233 (C2), SpeedDemon\_540 (DL), Tempo\_56 (EG), Untouchable\_2 (DJ),

Start 87:

- Found in 2 of 208 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Briton15\_12 (A1), Ichabod\_11 (A1),

Start 88:

- Found in 39 of 208 ( 18.8% ) of genes in pham
- Manual Annotations of this start: 37 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Blexus\_93 (F1), BobaPhett\_98 (F1), Brocalys\_88 (F1), Burwell21\_90 (F1), ByChance\_87 (F1), Cabrinians\_93 (F1), Clifton\_88 (F1), Clown\_82 (DC2), Crumble\_91 (F1), FreddyB\_106 (F1), Gorge\_95 (F1), James\_100 (F1), Jarcob\_99 (F1), Koella\_89 (F1), LastJedi\_87 (F1), Latretium\_99 (F1), LilMoolah\_99 (F1), Lizziana\_97 (F1), Maravista\_93 (F1), Martik\_95 (F1), Mattes\_97 (F1), Minnie\_91 (F1), Nivrat\_96 (F1), NormanBulbieJr\_94 (F1), Ollipop\_10 (AP2), OlympiaSaint\_100 (F1), Philus\_98 (F1), Pippy\_94 (F1), Priscilla\_97 (F1), Saal\_94 (F1), ShiLan\_99 (F1), ShowerHandel\_97 (F1), Spoonbill\_96 (F1), Squiddly\_103 (DN2), SwagPiggett\_98 (F1), Vivum\_98 (F1), Whouxphf\_100 (F1), Yorick\_92 (F1), Zizzle\_99 (F1),

Start 89:

- Found in 3 of 208 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 3 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Argie\_6 (W), G4\_46 (BW), GodPhather\_6 (W),



Start 91:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shocker\_3 (singleton),

Start 93:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bobby\_171 (J),

Start 94:

- Found in 23 of 208 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 19 of 174
- Called 87.0% of time when present
- Phage (with cluster) where this start called: Anglerfish\_11 (A1), Arcanine\_11 (A1), Atkinbua\_11 (A1), BeesKnees\_11 (A1), DreamCatcher\_12 (A1), Dynamix\_11 (A1), Fenn\_11 (A1), KSSJEB\_10 (A1), Manatee\_11 (A1), McGuire\_11 (A1), Naira\_11 (A1), Nina\_52 (CT), PinkPlastic\_9 (A1), Rajelicia\_10 (A1), RedBaron\_55 (CT), Slagathor\_11 (A1), Squee\_11 (A1), Sunfish\_12 (singleton), Switzer\_11 (A1), U2\_10 (A1),

Start 96:

- Found in 9 of 208 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Fransoyer\_60 (EG), Romm\_58 (EG), SadLad\_63 (EG),

Start 99:

- Found in 7 of 208 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 71.4% of time when present
- Phage (with cluster) where this start called: BarbieDoll\_72 (AU6), Biscute\_71 (AU6), Kinny\_72 (AU6), Lewando\_71 (AU6), Renaldo\_76 (AU6),

Start 101:

- Found in 4 of 208 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elver\_131 (FK), Gandionco\_129 (FK), Paella\_133 (FK), Qui\_133 (FK),

Start 103:

- Found in 21 of 208 ( 10.1% ) of genes in pham
- Manual Annotations of this start: 19 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arcadia\_72 (AM), BenitoAntonio\_71 (AM), Benllo\_73 (AM), Bowling\_73 (AM), Cheesy\_73 (AM), Circum\_74 (AM), Correa\_71 (AM), Dynamite\_72 (AM), Elsa\_72 (AM), GoCrazy\_69 (AM), Hankly\_72 (AM), Heisenberger\_71 (AM), JEGGS\_71 (AM), Kardesai\_72 (AM), KeaneyLin\_68

(AM), Mooshroom\_73 (AM), Mudcat\_68 (AM), NapoleonB\_73 (AM), Nason\_72 (AM), Tribby\_76 (AM), Xenomorph\_69 (AM),

Start 109:

- Found in 5 of 208 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 3 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_215 (GD1), Dodo\_215 (GD1), PauloDiaboli\_215 (GD1), Pumpernickel\_196 (GD4), SJReid\_73 (FC),

Start 121:

- Found in 4 of 208 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elver\_123 (FK), Gandionco\_121 (FK), Paella\_124 (FK), Qui\_124 (FK),

Start 122:

- Found in 4 of 208 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 4 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kudefre\_118 (DU1), Octobien14\_114 (DU1), Sephiroth\_114 (DU1), Syleon\_119 (DU1),

Start 155:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DrLupo\_104 (H2),

### **Summary by clusters:**

There are 40 clusters represented in this pham: DN, GD1, singleton, DJ, AP2, AP3, DD, AP1, DL, AP4, FA, BW, DV, GD4, DT, FK, DS, A15, A1, CZ2, AU6, C2, P2, AD, AI, EG, J, AM, N, AP, BK1, W, DU1, DC2, CV, CT, F1, DN2, H2, FC,

Info for manual annotations of cluster A1:

- Start number 78 was manually annotated 1 time for cluster A1.
- Start number 87 was manually annotated 2 times for cluster A1.
- Start number 94 was manually annotated 17 times for cluster A1.

Info for manual annotations of cluster A15:

- Start number 86 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster AD:

- Start number 65 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster AI:

- Start number 69 was manually annotated 1 time for cluster AI.

Info for manual annotations of cluster AM:

- Start number 73 was manually annotated 19 times for cluster AM.
- Start number 103 was manually annotated 19 times for cluster AM.

Info for manual annotations of cluster AP:

- Start number 67 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 71 was manually annotated 1 time for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 67 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 71 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 71 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster AU6:

- Start number 99 was manually annotated 1 time for cluster AU6.

Info for manual annotations of cluster BK1:

- Start number 64 was manually annotated 7 times for cluster BK1.

Info for manual annotations of cluster BW:

- Start number 89 was manually annotated 1 time for cluster BW.

Info for manual annotations of cluster C2:

- Start number 86 was manually annotated 3 times for cluster C2.

Info for manual annotations of cluster CT:

- Start number 94 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster CV:

- Start number 83 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ2:

- Start number 69 was manually annotated 3 times for cluster CZ2.

Info for manual annotations of cluster DC2:

- Start number 88 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DD:

- Start number 75 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DJ:

- Start number 86 was manually annotated 4 times for cluster DJ.

Info for manual annotations of cluster DL:

- Start number 86 was manually annotated 3 times for cluster DL.

Info for manual annotations of cluster DN:

- Start number 82 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN2:

- Start number 88 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DU1:

- Start number 122 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DV:

- Start number 72 was manually annotated 2 times for cluster DV.
- Start number 86 was manually annotated 1 time for cluster DV.

Info for manual annotations of cluster EG:

- Start number 83 was manually annotated 1 time for cluster EG.
- Start number 86 was manually annotated 6 times for cluster EG.
- Start number 96 was manually annotated 2 times for cluster EG.

Info for manual annotations of cluster F1:

- Start number 84 was manually annotated 1 time for cluster F1.
- Start number 88 was manually annotated 35 times for cluster F1.

Info for manual annotations of cluster FA:

- Start number 86 was manually annotated 2 times for cluster FA.

Info for manual annotations of cluster FK:

- Start number 101 was manually annotated 2 times for cluster FK.
- Start number 121 was manually annotated 2 times for cluster FK.

Info for manual annotations of cluster GD1:

- Start number 109 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD4:

- Start number 109 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster H2:

- Start number 155 was manually annotated 1 time for cluster H2.

Info for manual annotations of cluster J:

- Start number 93 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster N:

- Start number 62 was manually annotated 4 times for cluster N.

Info for manual annotations of cluster P2:

- Start number 83 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster W:

- Start number 89 was manually annotated 2 times for cluster W.

***Gene Information:***

Gene: A3Wally\_215 Start: 115440, Stop: 115123, Start Num: 109  
Candidate Starts for A3Wally\_215:  
(Start: 109 @115440 has 3 MA's), (166, 115323), (179, 115284), (205, 115188), (213, 115128),

Gene: AWGoat\_6 Start: 2566, Stop: 2979, Start Num: 71  
Candidate Starts for AWGoat\_6:  
(Start: 71 @2566 has 4 MA's), (114, 2656), (169, 2773), (198, 2869),

Gene: Anglerfish\_11 Start: 6625, Stop: 6939, Start Num: 94  
Candidate Starts for Anglerfish\_11:  
(Start: 94 @6625 has 19 MA's), (113, 6664), (124, 6673), (156, 6742), (182, 6817), (200, 6877),

Gene: Annadreamy\_67 Start: 53881, Stop: 54282, Start Num: 64  
Candidate Starts for Annadreamy\_67:  
(Start: 64 @53881 has 7 MA's), (98, 53947), (118, 53992), (127, 54019), (130, 54025), (146, 54061),  
(165, 54088), (167, 54094), (176, 54130), (191, 54181), (194, 54187),

Gene: Anon\_48 Start: 31013, Stop: 30756, Start Num: 86  
Candidate Starts for Anon\_48:  
(Start: 86 @31013 has 21 MA's), (180, 30884), (189, 30860),

Gene: Arcadia\_70 Start: 43764, Stop: 44090, Start Num: 73  
Candidate Starts for Arcadia\_70:  
(Start: 73 @43764 has 19 MA's), (156, 43932),

Gene: Arcadia\_72 Start: 44474, Stop: 44782, Start Num: 103  
Candidate Starts for Arcadia\_72:  
(Start: 103 @44474 has 19 MA's), (145, 44576), (168, 44612), (188, 44675), (198, 44705),

Gene: Arcanine\_11 Start: 6591, Stop: 6905, Start Num: 94  
Candidate Starts for Arcanine\_11:  
(Start: 94 @6591 has 19 MA's), (113, 6630), (124, 6639), (156, 6708), (182, 6783), (200, 6843),

Gene: Argie\_6 Start: 3283, Stop: 3579, Start Num: 89  
Candidate Starts for Argie\_6:  
(Start: 89 @3283 has 3 MA's), (140, 3376), (146, 3391), (189, 3481), (197, 3505), (200, 3517),

Gene: Atkinbua\_11 Start: 6636, Stop: 6950, Start Num: 94  
Candidate Starts for Atkinbua\_11:  
(Start: 94 @6636 has 19 MA's), (113, 6675), (156, 6753), (173, 6798),

Gene: Attis\_55 Start: 39035, Stop: 39415, Start Num: 69  
Candidate Starts for Attis\_55:  
(Start: 69 @39035 has 4 MA's), (102, 39089), (161, 39218), (173, 39254), (181, 39281), (182, 39284),  
(192, 39314), (197, 39332), (200, 39344), (210, 39401),

Gene: Bantam\_53 Start: 43734, Stop: 44000, Start Num: 86  
Candidate Starts for Bantam\_53:  
(Start: 86 @43734 has 21 MA's), (113, 43782), (115, 43785), (182, 43878), (189, 43902),

Gene: BarbieDoll\_72 Start: 44655, Stop: 44960, Start Num: 99  
Candidate Starts for BarbieDoll\_72:  
(Start: 99 @44655 has 1 MA's), (113, 44685), (131, 44727), (186, 44853), (207, 44931),

Gene: Beagle\_10 Start: 3455, Stop: 3862, Start Num: 67

Candidate Starts for Beagle\_10:

(Start: 67 @3455 has 6 MA's), (95, 3506), (98, 3515), (134, 3602), (158, 3650), (181, 3716), (185, 3734), (192, 3752),

Gene: BearBQ\_64 Start: 41458, Stop: 41745, Start Num: 82

Candidate Starts for BearBQ\_64:

(28, 41194), (34, 41230), (36, 41236), (49, 41332), (77, 41446), (Start: 82 @41458 has 1 MA's), (113, 41503), (164, 41575), (194, 41653), (200, 41677), (210, 41734),

Gene: BeesKnees\_11 Start: 6720, Stop: 7034, Start Num: 94

Candidate Starts for BeesKnees\_11:

(Start: 94 @6720 has 19 MA's), (113, 6759), (156, 6837), (173, 6882),

Gene: BenitoAntonio\_69 Start: 43369, Stop: 43737, Start Num: 73

Candidate Starts for BenitoAntonio\_69:

(Start: 73 @43369 has 19 MA's), (156, 43537), (170, 43570), (187, 43636), (199, 43675),

Gene: BenitoAntonio\_71 Start: 44114, Stop: 44425, Start Num: 103

Candidate Starts for BenitoAntonio\_71:

(Start: 103 @44114 has 19 MA's), (128, 44177), (168, 44255), (175, 44276), (184, 44300), (188, 44318), (198, 44348),

Gene: Benllo\_71 Start: 44047, Stop: 44415, Start Num: 73

Candidate Starts for Benllo\_71:

(Start: 73 @44047 has 19 MA's), (156, 44215), (170, 44248), (187, 44314), (199, 44353),

Gene: Benllo\_73 Start: 44792, Stop: 45103, Start Num: 103

Candidate Starts for Benllo\_73:

(Start: 103 @44792 has 19 MA's), (128, 44855), (168, 44933), (175, 44954), (184, 44978), (188, 44996), (198, 45026),

Gene: Beuffert\_67 Start: 55006, Stop: 55407, Start Num: 64

Candidate Starts for Beuffert\_67:

(Start: 64 @55006 has 7 MA's), (115, 55111), (118, 55117), (127, 55144), (176, 55255), (188, 55300), (194, 55312),

Gene: Biscute\_71 Start: 44307, Stop: 44612, Start Num: 99

Candidate Starts for Biscute\_71:

(Start: 99 @44307 has 1 MA's), (113, 44337), (131, 44379), (186, 44505), (207, 44583),

Gene: Blexus\_93 Start: 53556, Stop: 53837, Start Num: 88

Candidate Starts for Blexus\_93:

(16, 53145), (19, 53166), (20, 53187), (22, 53217), (Start: 88 @53556 has 37 MA's), (113, 53601), (126, 53619), (189, 53736),

Gene: Blueeyedbeauty\_69 Start: 54393, Stop: 54800, Start Num: 64

Candidate Starts for Blueeyedbeauty\_69:

(Start: 64 @54393 has 7 MA's), (79, 54429), (116, 54507), (130, 54543), (150, 54582), (173, 54633), (183, 54666), (192, 54699), (194, 54705),

Gene: BobaPhett\_98 Start: 55238, Stop: 55519, Start Num: 88

Candidate Starts for BobaPhett\_98:

(16, 54827), (19, 54848), (20, 54869), (22, 54899), (Start: 88 @55238 has 37 MA's), (113, 55283), (126, 55301), (189, 55418), (200, 55454),

Gene: Bobby\_171 Start: 94727, Stop: 95017, Start Num: 93

Candidate Starts for Bobby\_171:

(Start: 93 @94727 has 1 MA's), (104, 94751), (113, 94766), (189, 94919), (192, 94925),

Gene: Bowling\_73 Start: 45068, Stop: 45379, Start Num: 103

Candidate Starts for Bowling\_73:

(Start: 103 @45068 has 19 MA's), (128, 45131), (168, 45209), (175, 45230), (184, 45254), (188, 45272), (198, 45302),

Gene: Bowling\_71 Start: 44323, Stop: 44691, Start Num: 73

Candidate Starts for Bowling\_71:

(Start: 73 @44323 has 19 MA's), (156, 44491), (170, 44524), (187, 44590), (199, 44629),

Gene: Briton15\_12 Start: 6774, Stop: 7046, Start Num: 87

Candidate Starts for Briton15\_12:

(Start: 87 @6774 has 2 MA's), (113, 6813), (126, 6831), (177, 6909), (189, 6948),

Gene: Brocalys\_88 Start: 50717, Stop: 50998, Start Num: 88

Candidate Starts for Brocalys\_88:

(16, 50306), (19, 50327), (20, 50348), (22, 50378), (Start: 88 @50717 has 37 MA's), (113, 50762), (126, 50780), (189, 50897),

Gene: BruhMoment\_8 Start: 3480, Stop: 3902, Start Num: 71

Candidate Starts for BruhMoment\_8:

(33, 3276), (37, 3288), (48, 3375), (Start: 71 @3480 has 4 MA's), (95, 3522), (119, 3579), (142, 3636), (160, 3669), (182, 3735), (184, 3738), (192, 3768),

Gene: Burwell21\_90 Start: 53003, Stop: 53284, Start Num: 88

Candidate Starts for Burwell21\_90:

(16, 52592), (19, 52613), (20, 52634), (22, 52664), (Start: 88 @53003 has 37 MA's), (113, 53048), (126, 53066), (189, 53183),

Gene: ByChance\_87 Start: 49075, Stop: 49356, Start Num: 88

Candidate Starts for ByChance\_87:

(16, 48664), (19, 48685), (20, 48706), (22, 48736), (Start: 88 @49075 has 37 MA's), (113, 49120), (126, 49138), (189, 49255),

Gene: Cabrinians\_93 Start: 52638, Stop: 52919, Start Num: 88

Candidate Starts for Cabrinians\_93:

(16, 52227), (19, 52248), (20, 52269), (22, 52299), (Start: 88 @52638 has 37 MA's), (113, 52683), (126, 52701), (189, 52818),

Gene: CandC\_55 Start: 37729, Stop: 37433, Start Num: 86

Candidate Starts for CandC\_55:

(18, 38122), (23, 38068), (30, 37984), (70, 37759), (Start: 83 @37732 has 3 MA's), (Start: 86 @37729 has 21 MA's), (Start: 96 @37717 has 2 MA's), (104, 37693), (113, 37678), (140, 37630), (148, 37621), (177, 37585), (189, 37543), (196, 37522),

Gene: Cantare\_94 Start: 71064, Stop: 71369, Start Num: 86

Candidate Starts for Cantare\_94:

(Start: 86 @71064 has 21 MA's), (189, 71268), (207, 71337),

Gene: Cardigan\_143 Start: 79014, Stop: 79379, Start Num: 75

Candidate Starts for Cardigan\_143:

(Start: 75 @79014 has 2 MA's), (92, 79044), (100, 79059), (102, 79065), (111, 79089), (139, 79149), (188, 79257), (189, 79260), (211, 79365),

Gene: Causa\_150 Start: 84210, Stop: 83881, Start Num: 69

Candidate Starts for Causa\_150:

(Start: 69 @84210 has 4 MA's), (Start: 99 @84153 has 1 MA's), (163, 84015), (172, 83991), (187, 83943),

Gene: Cheesy\_71 Start: 43557, Stop: 43883, Start Num: 73

Candidate Starts for Cheesy\_71:

(Start: 73 @43557 has 19 MA's), (156, 43725),

Gene: Cheesy\_73 Start: 44267, Stop: 44575, Start Num: 103

Candidate Starts for Cheesy\_73:

(Start: 103 @44267 has 19 MA's), (145, 44369), (168, 44405), (188, 44468), (198, 44498),

Gene: Circum\_74 Start: 44882, Stop: 45193, Start Num: 103

Candidate Starts for Circum\_74:

(Start: 103 @44882 has 19 MA's), (128, 44945), (168, 45023), (175, 45044), (184, 45068), (188, 45086), (198, 45116),

Gene: Circum\_72 Start: 44137, Stop: 44505, Start Num: 73

Candidate Starts for Circum\_72:

(Start: 73 @44137 has 19 MA's), (156, 44305), (170, 44338), (187, 44404), (199, 44443),

Gene: Clifton\_88 Start: 51692, Stop: 51973, Start Num: 88

Candidate Starts for Clifton\_88:

(16, 51281), (19, 51302), (20, 51323), (22, 51353), (Start: 88 @51692 has 37 MA's), (113, 51737), (126, 51755), (189, 51872),

Gene: Clown\_82 Start: 53661, Stop: 54005, Start Num: 88

Candidate Starts for Clown\_82:

(Start: 88 @53661 has 37 MA's), (113, 53709), (153, 53778), (184, 53832), (185, 53841), (214, 53973), (215, 53982),

Gene: Constance\_64 Start: 41355, Stop: 41633, Start Num: 86

Candidate Starts for Constance\_64:

(1, 39963), (2, 39996), (3, 40005), (4, 40026), (5, 40035), (6, 40104), (7, 40203), (8, 40368), (9, 40506), (10, 40698), (11, 40722), (14, 40857), (17, 40944), (38, 41130), (42, 41163), (57, 41259), (Start: 86 @41355 has 21 MA's), (188, 41529), (189, 41532), (200, 41568), (209, 41622),

Gene: Correa\_71 Start: 43841, Stop: 44149, Start Num: 103

Candidate Starts for Correa\_71:

(Start: 103 @43841 has 19 MA's), (145, 43943), (168, 43979), (188, 44042), (198, 44072),

Gene: Correa\_69 Start: 43131, Stop: 43457, Start Num: 73

Candidate Starts for Correa\_69:

(Start: 73 @43131 has 19 MA's), (156, 43299),



Gene: Crocheter\_2 Start: 479, Stop: 808, Start Num: 86  
Candidate Starts for Crocheter\_2:  
(Start: 86 @479 has 21 MA's), (123, 545), (181, 686), (189, 713), (194, 725),

Gene: Crumble\_91 Start: 49362, Stop: 49643, Start Num: 88  
Candidate Starts for Crumble\_91:  
(16, 48951), (19, 48972), (20, 48993), (22, 49023), (Start: 88 @49362 has 37 MA's), (113, 49407),  
(126, 49425), (189, 49542),

Gene: DatBoi\_51 Start: 43635, Stop: 43889, Start Num: 86  
Candidate Starts for DatBoi\_51:  
(Start: 86 @43635 has 21 MA's), (105, 43674), (189, 43791),

Gene: Dodo\_215 Start: 115242, Stop: 114925, Start Num: 109  
Candidate Starts for Dodo\_215:  
(Start: 109 @115242 has 3 MA's), (157, 115140), (166, 115125), (179, 115086), (189, 115047), (205,  
114990), (213, 114930),

Gene: DogYard\_7 Start: 3331, Stop: 3738, Start Num: 67  
Candidate Starts for DogYard\_7:  
(Start: 67 @3331 has 6 MA's), (95, 3382), (98, 3391), (134, 3478), (158, 3526), (181, 3592), (185,  
3610), (192, 3628),

Gene: Dori\_58 Start: 47703, Stop: 48095, Start Num: 65  
Candidate Starts for Dori\_58:  
(59, 47673), (Start: 65 @47703 has 2 MA's), (Start: 86 @47751 has 21 MA's), (136, 47850), (138,  
47853), (147, 47880), (189, 47991), (192, 47997),

Gene: DrLupo\_104 Start: 65399, Stop: 65650, Start Num: 155  
Candidate Starts for DrLupo\_104:  
(85, 65246), (97, 65267), (137, 65360), (Start: 155 @65399 has 1 MA's), (203, 65552), (204, 65558),

Gene: DreamCatcher\_12 Start: 7365, Stop: 7679, Start Num: 94  
Candidate Starts for DreamCatcher\_12:  
(Start: 94 @7365 has 19 MA's), (113, 7404), (124, 7413), (156, 7482), (182, 7557), (200, 7617),

Gene: Dynamite\_70 Start: 43580, Stop: 43948, Start Num: 73  
Candidate Starts for Dynamite\_70:  
(Start: 73 @43580 has 19 MA's), (156, 43748), (170, 43781), (187, 43847), (199, 43886),

Gene: Dynamite\_72 Start: 44325, Stop: 44636, Start Num: 103  
Candidate Starts for Dynamite\_72:  
(Start: 103 @44325 has 19 MA's), (128, 44388), (168, 44466), (175, 44487), (184, 44511), (188,  
44529), (198, 44559),

Gene: Dynamix\_11 Start: 6722, Stop: 7036, Start Num: 94  
Candidate Starts for Dynamix\_11:  
(Start: 94 @6722 has 19 MA's), (113, 6761), (124, 6770), (156, 6839), (182, 6914), (200, 6974),

Gene: EGUunicorn\_54 Start: 35104, Stop: 35502, Start Num: 62  
Candidate Starts for EGUunicorn\_54:

(46, 35014), (52, 35050), (Start: 62 @35104 has 4 MA's), (136, 35257), (138, 35260), (147, 35287), (189, 35398), (192, 35404), (210, 35491),

Gene: Elsa\_72 Start: 44474, Stop: 44782, Start Num: 103

Candidate Starts for Elsa\_72:

(Start: 103 @44474 has 19 MA's), (145, 44576), (168, 44612), (188, 44675), (198, 44705),

Gene: Elsa\_70 Start: 43764, Stop: 44090, Start Num: 73

Candidate Starts for Elsa\_70:

(Start: 73 @43764 has 19 MA's), (156, 43932),

Gene: Elver\_131 Start: 70843, Stop: 71208, Start Num: 101

Candidate Starts for Elver\_131:

(63, 70765), (Start: 101 @70843 has 2 MA's), (147, 70954), (183, 71029), (197, 71080),

Gene: Elver\_123 Start: 67517, Stop: 67825, Start Num: 121

Candidate Starts for Elver\_123:

(Start: 121 @67517 has 2 MA's), (141, 67562), (159, 67601), (192, 67697),

Gene: Faust\_71 Start: 56000, Stop: 56389, Start Num: 64

Candidate Starts for Faust\_71:

(Start: 64 @56000 has 7 MA's), (107, 56087), (111, 56096), (143, 56168), (146, 56174), (206, 56351), (208, 56360),

Gene: Fenn\_11 Start: 6952, Stop: 7266, Start Num: 94

Candidate Starts for Fenn\_11:

(Start: 94 @6952 has 19 MA's), (113, 6991), (156, 7069), (173, 7114),

Gene: Forrestell\_7 Start: 3035, Stop: 3442, Start Num: 67

Candidate Starts for Forrestell\_7:

(Start: 67 @3035 has 6 MA's), (95, 3086), (98, 3095), (134, 3182), (158, 3230), (181, 3296), (185, 3314), (192, 3332),

Gene: Fransoyer\_60 Start: 45317, Stop: 45054, Start Num: 96

Candidate Starts for Fransoyer\_60:

(Start: 96 @45317 has 2 MA's), (106, 45290), (125, 45269), (189, 45158), (200, 45122), (210, 45065),

Gene: FreddyB\_106 Start: 54284, Stop: 54565, Start Num: 88

Candidate Starts for FreddyB\_106:

(16, 53873), (19, 53894), (20, 53915), (22, 53945), (Start: 88 @54284 has 37 MA's), (113, 54329), (126, 54347), (189, 54464),

Gene: G4\_46 Start: 30222, Stop: 30545, Start Num: 89

Candidate Starts for G4\_46:

(68, 30180), (Start: 89 @30222 has 3 MA's), (Start: 94 @30228 has 19 MA's), (117, 30276), (135, 30312), (173, 30378), (182, 30408), (189, 30432),

Gene: GMA2\_84 Start: 80351, Stop: 80010, Start Num: 86

Candidate Starts for GMA2\_84:

(Start: 86 @80351 has 21 MA's), (Start: 94 @80342 has 19 MA's), (181, 80141), (182, 80138), (210, 80021),

Gene: GMA4\_42 Start: 31658, Stop: 32065, Start Num: 62

Candidate Starts for GMA4\_42:

(47, 31565), (Start: 62 @31658 has 4 MA's), (Start: 86 @31715 has 21 MA's), (136, 31823), (147, 31853), (162, 31877), (171, 31901), (181, 31934), (207, 32033),

Gene: Gandionco\_121 Start: 66329, Stop: 66637, Start Num: 121

Candidate Starts for Gandionco\_121:

(Start: 121 @66329 has 2 MA's), (141, 66374), (159, 66413), (192, 66509),

Gene: Gandionco\_129 Start: 69661, Stop: 70026, Start Num: 101

Candidate Starts for Gandionco\_129:

(63, 69583), (Start: 101 @69661 has 2 MA's), (147, 69772), (183, 69847), (197, 69898),

Gene: Gex\_56 Start: 36283, Stop: 36681, Start Num: 62

Candidate Starts for Gex\_56:

(46, 36193), (52, 36229), (Start: 62 @36283 has 4 MA's), (136, 36436), (138, 36439), (147, 36466), (189, 36577), (192, 36583), (210, 36670),

Gene: GoCrazy\_67 Start: 43024, Stop: 43392, Start Num: 73

Candidate Starts for GoCrazy\_67:

(Start: 73 @43024 has 19 MA's), (156, 43192), (170, 43225), (187, 43291),

Gene: GoCrazy\_69 Start: 43769, Stop: 44080, Start Num: 103

Candidate Starts for GoCrazy\_69:

(Start: 103 @43769 has 19 MA's), (128, 43832), (168, 43910), (175, 43931), (184, 43955), (188, 43973), (198, 44003),

Gene: GodPhather\_6 Start: 3283, Stop: 3579, Start Num: 89

Candidate Starts for GodPhather\_6:

(Start: 89 @3283 has 3 MA's), (140, 3376), (146, 3391), (189, 3481), (197, 3505), (200, 3517),

Gene: Gorge\_95 Start: 53911, Stop: 54192, Start Num: 88

Candidate Starts for Gorge\_95:

(16, 53500), (19, 53521), (20, 53542), (22, 53572), (Start: 88 @53911 has 37 MA's), (113, 53956), (126, 53974), (189, 54091),

Gene: Greely\_244 Start: 137695, Stop: 138051, Start Num: 86

Candidate Starts for Greely\_244:

(25, 137374), (35, 137473), (42, 137515), (Start: 86 @137695 has 21 MA's), (113, 137746), (156, 137821), (157, 137824), (174, 137854), (177, 137863), (189, 137905), (192, 137911), (195, 137920), (197, 137929),

Gene: Hankly\_72 Start: 43963, Stop: 44274, Start Num: 103

Candidate Starts for Hankly\_72:

(Start: 103 @43963 has 19 MA's), (128, 44026), (168, 44104), (175, 44125), (184, 44149), (188, 44167), (198, 44197),

Gene: Hankly\_70 Start: 43218, Stop: 43586, Start Num: 73

Candidate Starts for Hankly\_70:

(Start: 73 @43218 has 19 MA's), (156, 43386), (170, 43419), (187, 43485), (199, 43524),

Gene: Heisenberger\_71 Start: 43731, Stop: 44042, Start Num: 103

Candidate Starts for Heisenberger\_71:

(Start: 103 @43731 has 19 MA's), (128, 43794), (168, 43872), (175, 43893), (184, 43917), (188, 43935), (198, 43965),

Gene: Heisenberger\_69 Start: 42986, Stop: 43354, Start Num: 73

Candidate Starts for Heisenberger\_69:

(Start: 73 @42986 has 19 MA's), (156, 43154), (170, 43187), (187, 43253), (199, 43292),

Gene: Hortihabitatio\_2 Start: 447, Stop: 776, Start Num: 86

Candidate Starts for Hortihabitatio\_2:

(53, 342), (Start: 67 @414 has 6 MA's), (Start: 86 @447 has 21 MA's), (123, 513), (181, 654), (188, 678), (189, 681), (194, 693),

Gene: Ichabod\_11 Start: 6739, Stop: 7011, Start Num: 87

Candidate Starts for Ichabod\_11:

(Start: 87 @6739 has 2 MA's), (113, 6778), (126, 6796), (177, 6874), (189, 6913),

Gene: JEGGS\_69 Start: 43065, Stop: 43433, Start Num: 73

Candidate Starts for JEGGS\_69:

(Start: 73 @43065 has 19 MA's), (156, 43233), (170, 43266), (187, 43332), (199, 43371),

Gene: JEGGS\_71 Start: 43810, Stop: 44121, Start Num: 103

Candidate Starts for JEGGS\_71:

(Start: 103 @43810 has 19 MA's), (128, 43873), (168, 43951), (175, 43972), (184, 43996), (188, 44014), (198, 44044),

Gene: James\_100 Start: 55293, Stop: 55574, Start Num: 88

Candidate Starts for James\_100:

(16, 54882), (19, 54903), (20, 54924), (22, 54954), (Start: 88 @55293 has 37 MA's), (113, 55338), (126, 55356), (189, 55473),

Gene: Jacob\_99 Start: 54892, Stop: 55173, Start Num: 88

Candidate Starts for Jacob\_99:

(16, 54481), (19, 54502), (20, 54523), (22, 54553), (Start: 88 @54892 has 37 MA's), (113, 54937), (126, 54955), (189, 55072),

Gene: JeanGrey\_20 Start: 10459, Stop: 10809, Start Num: 80

Candidate Starts for JeanGrey\_20:

(80, 10459),

Gene: JonJames\_139 Start: 79256, Stop: 79624, Start Num: 75

Candidate Starts for JonJames\_139:

(Start: 75 @79256 has 2 MA's), (92, 79286), (100, 79301), (102, 79307), (111, 79331), (133, 79382), (188, 79502), (189, 79505), (197, 79529), (211, 79610),

Gene: KSSJEB\_10 Start: 6483, Stop: 6797, Start Num: 94

Candidate Starts for KSSJEB\_10:

(Start: 78 @6456 has 1 MA's), (Start: 94 @6483 has 19 MA's), (113, 6522), (124, 6531), (156, 6600), (182, 6675), (200, 6735),

Gene: Kardesai\_72 Start: 44083, Stop: 44394, Start Num: 103

Candidate Starts for Kardesai\_72:

(Start: 103 @44083 has 19 MA's), (128, 44146), (168, 44224), (175, 44245), (184, 44269), (188, 44287), (198, 44317),

Gene: Kardesai\_70 Start: 43374, Stop: 43706, Start Num: 73

Candidate Starts for Kardesai\_70:

(Start: 73 @43374 has 19 MA's), (156, 43542),

Gene: KeaneyLin\_66 Start: 43024, Stop: 43392, Start Num: 73

Candidate Starts for KeaneyLin\_66:

(Start: 73 @43024 has 19 MA's), (156, 43192), (170, 43225), (187, 43291),

Gene: KeaneyLin\_68 Start: 43769, Stop: 44080, Start Num: 103

Candidate Starts for KeaneyLin\_68:

(Start: 103 @43769 has 19 MA's), (128, 43832), (168, 43910), (175, 43931), (184, 43955), (188, 43973), (198, 44003),

Gene: Kelcole\_54 Start: 37921, Stop: 37628, Start Num: 86

Candidate Starts for Kelcole\_54:

(70, 37951), (Start: 83 @37924 has 3 MA's), (Start: 86 @37921 has 21 MA's), (Start: 96 @37909 has 2 MA's), (113, 37870), (115, 37867), (132, 37834), (140, 37822), (148, 37813), (189, 37735), (196, 37714), (200, 37699),

Gene: Kinny\_72 Start: 45135, Stop: 45440, Start Num: 99

Candidate Starts for Kinny\_72:

(Start: 99 @45135 has 1 MA's), (113, 45165), (131, 45207), (186, 45333), (207, 45411),

Gene: Koella\_89 Start: 50055, Stop: 50336, Start Num: 88

Candidate Starts for Koella\_89:

(16, 49644), (19, 49665), (20, 49686), (22, 49716), (Start: 88 @50055 has 37 MA's), (113, 50100), (126, 50118), (189, 50235),

Gene: Kubulix\_8 Start: 3460, Stop: 3867, Start Num: 67

Candidate Starts for Kubulix\_8:

(Start: 67 @3460 has 6 MA's), (95, 3511), (98, 3520), (134, 3607), (158, 3655), (181, 3721), (185, 3739), (192, 3757),

Gene: Kudetre\_118 Start: 64805, Stop: 65071, Start Num: 122

Candidate Starts for Kudetre\_118:

(66, 64688), (Start: 122 @64805 has 4 MA's), (193, 64979), (209, 65060),

Gene: Lambo\_93 Start: 64770, Stop: 65072, Start Num: 86

Candidate Starts for Lambo\_93:

(Start: 72 @64743 has 2 MA's), (76, 64752), (81, 64761), (Start: 86 @64770 has 21 MA's), (113, 64818), (189, 64971), (197, 64995),

Gene: LastJedi\_87 Start: 51112, Stop: 51393, Start Num: 88

Candidate Starts for LastJedi\_87:

(16, 50701), (19, 50722), (20, 50743), (22, 50773), (Start: 88 @51112 has 37 MA's), (113, 51157), (126, 51175), (189, 51292),

Gene: Latretium\_99 Start: 54158, Stop: 54439, Start Num: 88

Candidate Starts for Latretium\_99:

(16, 53747), (19, 53768), (20, 53789), (22, 53819), (Start: 88 @54158 has 37 MA's), (113, 54203), (126, 54221), (189, 54338),

Gene: Lewando\_71 Start: 44727, Stop: 45032, Start Num: 99  
Candidate Starts for Lewando\_71:  
(Start: 99 @44727 has 1 MA's), (131, 44799), (186, 44925), (207, 45003),

Gene: LilMoolah\_99 Start: 54092, Stop: 54373, Start Num: 88  
Candidate Starts for LilMoolah\_99:  
(16, 53681), (19, 53702), (20, 53723), (22, 53753), (Start: 88 @54092 has 37 MA's), (113, 54137),  
(126, 54155), (189, 54272),

Gene: Limpid\_66 Start: 53880, Stop: 54281, Start Num: 64  
Candidate Starts for Limpid\_66:  
(Start: 64 @53880 has 7 MA's), (98, 53946), (118, 53991), (127, 54018), (130, 54024), (146, 54060),  
(165, 54087), (167, 54093), (176, 54129), (191, 54180), (194, 54186),

Gene: Lizziana\_97 Start: 54360, Stop: 54641, Start Num: 88  
Candidate Starts for Lizziana\_97:  
(16, 53949), (19, 53970), (20, 53991), (22, 54021), (Start: 88 @54360 has 37 MA's), (113, 54405),  
(126, 54423), (189, 54540),

Gene: LordFarquaad\_57 Start: 39016, Stop: 39396, Start Num: 69  
Candidate Starts for LordFarquaad\_57:  
(Start: 69 @39016 has 4 MA's), (102, 39070), (161, 39199), (173, 39235), (181, 39262), (182, 39265),  
(192, 39295), (197, 39313), (200, 39325), (210, 39382),

Gene: Magsby\_55 Start: 36284, Stop: 36682, Start Num: 62  
Candidate Starts for Magsby\_55:  
(46, 36194), (52, 36230), (Start: 62 @36284 has 4 MA's), (136, 36437), (138, 36440), (147, 36467),  
(189, 36578), (192, 36584), (210, 36671),

Gene: Manatee\_11 Start: 6673, Stop: 6987, Start Num: 94  
Candidate Starts for Manatee\_11:  
(Start: 94 @6673 has 19 MA's), (113, 6712), (124, 6721), (156, 6790), (182, 6865), (200, 6925),

Gene: Maravista\_93 Start: 55020, Stop: 55301, Start Num: 88  
Candidate Starts for Maravista\_93:  
(16, 54609), (19, 54630), (20, 54651), (22, 54681), (Start: 88 @55020 has 37 MA's), (113, 55065),  
(126, 55083), (189, 55200),

Gene: Marcie\_61 Start: 38811, Stop: 38491, Start Num: 86  
Candidate Starts for Marcie\_61:  
(70, 38841), (Start: 83 @38814 has 3 MA's), (Start: 86 @38811 has 21 MA's), (113, 38760), (140,  
38712), (152, 38682), (178, 38637), (189, 38598), (196, 38577), (200, 38562),

Gene: Martik\_95 Start: 54823, Stop: 55104, Start Num: 88  
Candidate Starts for Martik\_95:  
(16, 54412), (19, 54433), (20, 54454), (22, 54484), (Start: 88 @54823 has 37 MA's), (113, 54868),  
(126, 54886), (189, 55003),

Gene: Mask\_58 Start: 48446, Stop: 48838, Start Num: 65  
Candidate Starts for Mask\_58:  
(59, 48416), (Start: 65 @48446 has 2 MA's), (Start: 86 @48494 has 21 MA's), (136, 48593), (138,  
48596), (147, 48623), (189, 48734), (192, 48740),

Gene: Mattes\_97 Start: 54029, Stop: 54310, Start Num: 88  
Candidate Starts for Mattes\_97:  
(16, 53618), (19, 53639), (20, 53660), (22, 53690), (Start: 88 @54029 has 37 MA's), (113, 54074),  
(126, 54092), (189, 54209), (200, 54245),

Gene: McGuire\_11 Start: 6718, Stop: 7032, Start Num: 94  
Candidate Starts for McGuire\_11:  
(Start: 94 @6718 has 19 MA's), (113, 6757), (124, 6766), (156, 6835), (182, 6910), (200, 6970),

Gene: MellowYellow\_8 Start: 3065, Stop: 3472, Start Num: 67  
Candidate Starts for MellowYellow\_8:  
(Start: 67 @3065 has 6 MA's), (95, 3116), (98, 3125), (134, 3212), (158, 3260), (181, 3326), (185,  
3344), (192, 3362),

Gene: Minnie\_91 Start: 54441, Stop: 54722, Start Num: 88  
Candidate Starts for Minnie\_91:  
(16, 54030), (19, 54051), (20, 54072), (22, 54102), (Start: 88 @54441 has 37 MA's), (113, 54486),  
(126, 54504), (189, 54621),

Gene: Mooshroom\_71 Start: 43374, Stop: 43706, Start Num: 73  
Candidate Starts for Mooshroom\_71:  
(Start: 73 @43374 has 19 MA's), (156, 43542),

Gene: Mooshroom\_73 Start: 44083, Stop: 44394, Start Num: 103  
Candidate Starts for Mooshroom\_73:  
(Start: 103 @44083 has 19 MA's), (128, 44146), (168, 44224), (175, 44245), (184, 44269), (188,  
44287), (198, 44317),

Gene: MortyNRick\_62 Start: 41583, Stop: 41870, Start Num: 82  
Candidate Starts for MortyNRick\_62:  
(26, 41283), (30, 41334), (31, 41346), (39, 41370), (49, 41457), (77, 41571), (Start: 82 @41583 has 1  
MA's), (113, 41628), (164, 41700), (194, 41778), (200, 41802), (210, 41859),

Gene: Mossy\_1 Start: 220, Stop: 549, Start Num: 86  
Candidate Starts for Mossy\_1:  
(Start: 86 @220 has 21 MA's), (113, 268), (151, 352), (181, 427), (189, 454), (194, 466),

Gene: Mudcat\_66 Start: 44423, Stop: 44791, Start Num: 73  
Candidate Starts for Mudcat\_66:  
(Start: 73 @44423 has 19 MA's), (156, 44591), (170, 44624), (187, 44690), (199, 44729),

Gene: Mudcat\_68 Start: 45168, Stop: 45479, Start Num: 103  
Candidate Starts for Mudcat\_68:  
(Start: 103 @45168 has 19 MA's), (128, 45231), (168, 45309), (175, 45330), (184, 45354), (188,  
45372), (198, 45402),

Gene: Myrna\_235 Start: 137260, Stop: 137607, Start Num: 86  
Candidate Starts for Myrna\_235:  
(15, 136774), (21, 136918), (27, 136978), (44, 137095), (Start: 86 @137260 has 21 MA's), (113,  
137311), (189, 137461), (192, 137467), (195, 137476), (197, 137485), (216, 137599),

Gene: Naira\_11 Start: 6952, Stop: 7266, Start Num: 94  
Candidate Starts for Naira\_11:

(Start: 94 @6952 has 19 MA's), (113, 6991), (156, 7069), (173, 7114),

Gene: NapoleonB\_71 Start: 43580, Stop: 43948, Start Num: 73

Candidate Starts for NapoleonB\_71:

(Start: 73 @43580 has 19 MA's), (156, 43748), (170, 43781), (187, 43847), (199, 43886),

Gene: NapoleonB\_73 Start: 44325, Stop: 44636, Start Num: 103

Candidate Starts for NapoleonB\_73:

(Start: 103 @44325 has 19 MA's), (128, 44388), (168, 44466), (175, 44487), (184, 44511), (188, 44529), (198, 44559),

Gene: Nason\_70 Start: 43764, Stop: 44090, Start Num: 73

Candidate Starts for Nason\_70:

(Start: 73 @43764 has 19 MA's), (156, 43932),

Gene: Nason\_72 Start: 44474, Stop: 44782, Start Num: 103

Candidate Starts for Nason\_72:

(Start: 103 @44474 has 19 MA's), (145, 44576), (168, 44612), (188, 44675), (198, 44705),

Gene: Nina\_52 Start: 37854, Stop: 37525, Start Num: 94

Candidate Starts for Nina\_52:

(Start: 94 @37854 has 19 MA's), (113, 37815), (157, 37722), (181, 37653),

Gene: Nivrat\_96 Start: 53965, Stop: 54246, Start Num: 88

Candidate Starts for Nivrat\_96:

(16, 53554), (19, 53575), (20, 53596), (22, 53626), (Start: 88 @53965 has 37 MA's), (113, 54010), (126, 54028), (189, 54145),

Gene: NormanBulbieJr\_94 Start: 54069, Stop: 54350, Start Num: 88

Candidate Starts for NormanBulbieJr\_94:

(16, 53658), (19, 53679), (20, 53700), (22, 53730), (Start: 88 @54069 has 37 MA's), (113, 54114), (126, 54132), (189, 54249),

Gene: Octobien14\_114 Start: 63585, Stop: 63860, Start Num: 122

Candidate Starts for Octobien14\_114:

(66, 63468), (Start: 122 @63585 has 4 MA's), (149, 63651), (209, 63849),

Gene: Odyssey395\_10 Start: 3459, Stop: 3866, Start Num: 67

Candidate Starts for Odyssey395\_10:

(Start: 67 @3459 has 6 MA's), (95, 3510), (98, 3519), (134, 3606), (158, 3654), (181, 3720), (185, 3738), (192, 3756),

Gene: Ollypop\_10 Start: 4172, Stop: 4435, Start Num: 88

Candidate Starts for Ollypop\_10:

(Start: 88 @4172 has 37 MA's), (126, 4235), (145, 4256), (177, 4292), (189, 4331),

Gene: Ollypop\_7 Start: 3116, Stop: 3523, Start Num: 67

Candidate Starts for Ollypop\_7:

(50, 3041), (60, 3092), (Start: 67 @3116 has 6 MA's), (98, 3176), (110, 3206), (158, 3311), (185, 3395), (192, 3413),

Gene: OlympiaSaint\_100 Start: 54235, Stop: 54516, Start Num: 88

Candidate Starts for OlympiaSaint\_100:



(16, 53824), (19, 53845), (20, 53866), (22, 53896), (Start: 88 @54235 has 37 MA's), (113, 54280), (126, 54298), (189, 54415),

Gene: OneinaGillian\_56 Start: 37823, Stop: 37530, Start Num: 86

Candidate Starts for OneinaGillian\_56:

(70, 37853), (Start: 83 @37826 has 3 MA's), (Start: 86 @37823 has 21 MA's), (Start: 96 @37811 has 2 MA's), (113, 37772), (115, 37769), (132, 37736), (140, 37724), (148, 37715), (189, 37637), (196, 37616), (200, 37601),

Gene: Paella\_133 Start: 71406, Stop: 71771, Start Num: 101

Candidate Starts for Paella\_133:

(63, 71328), (Start: 101 @71406 has 2 MA's), (147, 71517), (183, 71592), (197, 71643),

Gene: Paella\_124 Start: 68080, Stop: 68388, Start Num: 121

Candidate Starts for Paella\_124:

(Start: 121 @68080 has 2 MA's), (141, 68125), (159, 68164), (192, 68260),

Gene: ParvusTarda\_93 Start: 64024, Stop: 64359, Start Num: 72

Candidate Starts for ParvusTarda\_93:

(Start: 72 @64024 has 2 MA's), (76, 64033), (81, 64042), (Start: 86 @64051 has 21 MA's), (113, 64099), (189, 64252), (197, 64276), (210, 64345),

Gene: PauloDiaboli\_215 Start: 113653, Stop: 113336, Start Num: 109

Candidate Starts for PauloDiaboli\_215:

(Start: 109 @113653 has 3 MA's), (166, 113536), (179, 113497), (189, 113458), (205, 113401), (213, 113341),

Gene: Peas\_65 Start: 41993, Stop: 42271, Start Num: 86

Candidate Starts for Peas\_65:

(12, 41477), (38, 41768), (57, 41897), (Start: 86 @41993 has 21 MA's), (188, 42167), (189, 42170), (200, 42206), (209, 42260),

Gene: Pepe25\_55 Start: 37387, Stop: 37064, Start Num: 86

Candidate Starts for Pepe25\_55:

(70, 37417), (Start: 83 @37390 has 3 MA's), (Start: 86 @37387 has 21 MA's), (Start: 96 @37375 has 2 MA's), (104, 37351), (113, 37336), (132, 37300), (140, 37288), (152, 37258), (178, 37213), (189, 37174),

Gene: Perkunas\_2 Start: 448, Stop: 780, Start Num: 86

Candidate Starts for Perkunas\_2:

(Start: 86 @448 has 21 MA's), (123, 514), (189, 682), (197, 706),

Gene: Phabba\_246 Start: 137077, Stop: 137433, Start Num: 86

Candidate Starts for Phabba\_246:

(25, 136756), (42, 136897), (Start: 86 @137077 has 21 MA's), (113, 137128), (156, 137203), (174, 137236), (177, 137245), (189, 137287), (192, 137293), (195, 137302), (197, 137311),

Gene: Philus\_98 Start: 54977, Stop: 55258, Start Num: 88

Candidate Starts for Philus\_98:

(16, 54566), (19, 54587), (20, 54608), (22, 54638), (Start: 88 @54977 has 37 MA's), (113, 55022), (126, 55040), (189, 55157),

Gene: PinkPlastic\_9 Start: 6480, Stop: 6794, Start Num: 94

Candidate Starts for PinkPlastic\_9:

(Start: 94 @6480 has 19 MA's), (113, 6519), (124, 6528), (156, 6597), (182, 6672), (200, 6732),

Gene: Pipp\_48 Start: 34437, Stop: 34712, Start Num: 83

Candidate Starts for Pipp\_48:

(Start: 83 @34437 has 3 MA's), (190, 34608), (197, 34632),

Gene: Pippy\_94 Start: 52340, Stop: 52621, Start Num: 88

Candidate Starts for Pippy\_94:

(16, 51929), (19, 51950), (20, 51971), (22, 52001), (Start: 88 @52340 has 37 MA's), (113, 52385), (126, 52403), (189, 52520),

Gene: Pipsqueaks\_56 Start: 36265, Stop: 36663, Start Num: 62

Candidate Starts for Pipsqueaks\_56:

(46, 36175), (52, 36211), (Start: 62 @36265 has 4 MA's), (136, 36418), (138, 36421), (147, 36448), (189, 36559), (192, 36565), (210, 36652),

Gene: Pointis\_8 Start: 3460, Stop: 3867, Start Num: 67

Candidate Starts for Pointis\_8:

(Start: 67 @3460 has 6 MA's), (95, 3511), (98, 3520), (134, 3607), (158, 3655), (181, 3721), (185, 3739), (192, 3757),

Gene: Priscilla\_97 Start: 54167, Stop: 54448, Start Num: 88

Candidate Starts for Priscilla\_97:

(16, 53756), (19, 53777), (20, 53798), (22, 53828), (Start: 88 @54167 has 37 MA's), (113, 54212), (126, 54230), (189, 54347),

Gene: Pumpernickel\_196 Start: 112347, Stop: 112042, Start Num: 109

Candidate Starts for Pumpernickel\_196:

(Start: 109 @112347 has 3 MA's), (112, 112341), (144, 112272), (191, 112170), (212, 112059),

Gene: Pureglobe5\_10 Start: 3473, Stop: 3880, Start Num: 67

Candidate Starts for Pureglobe5\_10:

(Start: 67 @3473 has 6 MA's), (95, 3524), (98, 3533), (134, 3620), (158, 3668), (181, 3734), (185, 3752), (192, 3770),

Gene: Qui\_124 Start: 68080, Stop: 68388, Start Num: 121

Candidate Starts for Qui\_124:

(Start: 121 @68080 has 2 MA's), (141, 68125), (159, 68164), (192, 68260),

Gene: Qui\_133 Start: 71406, Stop: 71771, Start Num: 101

Candidate Starts for Qui\_133:

(63, 71328), (Start: 101 @71406 has 2 MA's), (147, 71517), (183, 71592), (197, 71643),

Gene: Rajelicia\_10 Start: 6620, Stop: 6934, Start Num: 94

Candidate Starts for Rajelicia\_10:

(Start: 94 @6620 has 19 MA's), (113, 6659), (124, 6668), (156, 6737), (182, 6812), (200, 6872),

Gene: Ranunculus\_6 Start: 3041, Stop: 3424, Start Num: 67

Candidate Starts for Ranunculus\_6:

(Start: 67 @3041 has 6 MA's), (158, 3236), (182, 3305), (185, 3320), (191, 3335), (192, 3338),

Gene: RazzB\_6 Start: 2835, Stop: 3242, Start Num: 67

Candidate Starts for RazzB\_6:

(Start: 67 @2835 has 6 MA's), (95, 2886), (98, 2895), (134, 2982), (158, 3030), (181, 3096), (185, 3114), (192, 3132),

Gene: RedBaron\_55 Start: 37907, Stop: 37578, Start Num: 94

Candidate Starts for RedBaron\_55:

(Start: 94 @37907 has 19 MA's), (113, 37868), (157, 37775), (181, 37706),

Gene: Renaldo\_76 Start: 45093, Stop: 45398, Start Num: 99

Candidate Starts for Renaldo\_76:

(Start: 99 @45093 has 1 MA's), (131, 45165), (186, 45291), (207, 45369),

Gene: Rizwana\_7 Start: 3422, Stop: 3844, Start Num: 71

Candidate Starts for Rizwana\_7:

(56, 3356), (Start: 71 @3422 has 4 MA's), (90, 3458), (108, 3500), (134, 3560), (191, 3707), (192, 3710),

Gene: RobinRose\_58 Start: 38338, Stop: 38039, Start Num: 83

Candidate Starts for RobinRose\_58:

(70, 38365), (Start: 83 @38338 has 3 MA's), (Start: 86 @38335 has 21 MA's), (Start: 96 @38323 has 2 MA's), (104, 38299), (113, 38284), (140, 38236), (148, 38227), (177, 38191), (189, 38149), (196, 38128),

Gene: Romm\_58 Start: 38320, Stop: 38039, Start Num: 96

Candidate Starts for Romm\_58:

(70, 38362), (Start: 83 @38335 has 3 MA's), (Start: 86 @38332 has 21 MA's), (Start: 96 @38320 has 2 MA's), (113, 38281), (115, 38278), (132, 38245), (140, 38233), (148, 38224), (189, 38146), (196, 38125), (200, 38110),

Gene: SJReid\_73 Start: 30780, Stop: 31085, Start Num: 109

Candidate Starts for SJReid\_73:

(Start: 109 @30780 has 3 MA's),

Gene: Saal\_94 Start: 53731, Stop: 54012, Start Num: 88

Candidate Starts for Saal\_94:

(16, 53320), (19, 53341), (20, 53362), (22, 53392), (Start: 88 @53731 has 37 MA's), (113, 53776), (126, 53794), (189, 53911),

Gene: SadLad\_63 Start: 46437, Stop: 46174, Start Num: 96

Candidate Starts for SadLad\_63:

(Start: 96 @46437 has 2 MA's), (106, 46410), (125, 46389), (189, 46278), (200, 46242), (210, 46185),

Gene: Sandalphon\_96 Start: 54715, Stop: 55005, Start Num: 84

Candidate Starts for Sandalphon\_96:

(Start: 84 @54715 has 1 MA's), (113, 54769), (126, 54787), (189, 54904),

Gene: ScoobyDoobyDoo\_233 Start: 134075, Stop: 134443, Start Num: 86

Candidate Starts for ScoobyDoobyDoo\_233:

(Start: 86 @134075 has 21 MA's), (171, 134234), (192, 134303), (197, 134321), (209, 134387), (213, 134414),

Gene: Seabiscuit\_12 Start: 6693, Stop: 7034, Start Num: 78

Candidate Starts for Seabiscuit\_12:

(Start: 78 @6693 has 1 MA's), (Start: 94 @6720 has 19 MA's), (113, 6759), (124, 6768), (156, 6837), (182, 6912), (200, 6972),

Gene: Sephiroth\_114 Start: 64560, Stop: 64826, Start Num: 122  
Candidate Starts for Sephiroth\_114:  
(66, 64443), (Start: 122 @64560 has 4 MA's), (193, 64734), (209, 64815),

Gene: SeresaTree\_71 Start: 55390, Stop: 55779, Start Num: 64  
Candidate Starts for SeresaTree\_71:  
(Start: 64 @55390 has 7 MA's), (107, 55477), (111, 55486), (143, 55558), (146, 55564), (206, 55741), (208, 55750),

Gene: Sham\_67 Start: 56064, Stop: 56453, Start Num: 64  
Candidate Starts for Sham\_67:  
(Start: 64 @56064 has 7 MA's), (74, 56091), (146, 56238), (208, 56424),

Gene: ShiLan\_99 Start: 55748, Stop: 56029, Start Num: 88  
Candidate Starts for ShiLan\_99:  
(16, 55337), (19, 55358), (20, 55379), (22, 55409), (Start: 88 @55748 has 37 MA's), (113, 55793), (126, 55811), (189, 55928), (200, 55964),

Gene: Shocker\_3 Start: 902, Stop: 1168, Start Num: 91  
Candidate Starts for Shocker\_3:  
(Start: 91 @902 has 1 MA's), (125, 956), (189, 1067),

Gene: ShowerHandel\_97 Start: 53013, Stop: 53294, Start Num: 88  
Candidate Starts for ShowerHandel\_97:  
(16, 52602), (19, 52623), (20, 52644), (22, 52674), (Start: 88 @53013 has 37 MA's), (113, 53058), (126, 53076), (189, 53193),

Gene: SilentRX\_7 Start: 2575, Stop: 2988, Start Num: 71  
Candidate Starts for SilentRX\_7:  
(Start: 71 @2575 has 4 MA's), (114, 2665), (160, 2764), (169, 2782), (198, 2878),

Gene: Slagathor\_11 Start: 6591, Stop: 6905, Start Num: 94  
Candidate Starts for Slagathor\_11:  
(Start: 94 @6591 has 19 MA's), (113, 6630), (124, 6639), (156, 6708), (182, 6783), (200, 6843),

Gene: SoilAssassin\_55 Start: 39034, Stop: 39414, Start Num: 69  
Candidate Starts for SoilAssassin\_55:  
(Start: 69 @39034 has 4 MA's), (102, 39088), (161, 39217), (173, 39253), (181, 39280), (182, 39283), (192, 39313), (197, 39331), (200, 39343), (210, 39400),

Gene: SpeedDemon\_540 Start: 45518, Stop: 45787, Start Num: 86  
Candidate Starts for SpeedDemon\_540:  
(Start: 86 @45518 has 21 MA's), (113, 45566), (182, 45662), (189, 45686),

Gene: Spoonbill\_96 Start: 51661, Stop: 51942, Start Num: 88  
Candidate Starts for Spoonbill\_96:  
(16, 51250), (19, 51271), (20, 51292), (22, 51322), (Start: 88 @51661 has 37 MA's), (113, 51706), (126, 51724), (189, 51841),

Gene: Squee\_11 Start: 7115, Stop: 7429, Start Num: 94

Candidate Starts for Squee\_11:

(Start: 94 @7115 has 19 MA's), (113, 7154), (156, 7232), (173, 7277),

Gene: Squiddly\_103 Start: 56800, Stop: 57090, Start Num: 88

Candidate Starts for Squiddly\_103:

(43, 56620), (44, 56623), (58, 56704), (Start: 73 @56770 has 19 MA's), (Start: 88 @56800 has 37 MA's), (153, 56917), (184, 56971), (200, 57028),

Gene: StAugustine\_144 Start: 85407, Stop: 85078, Start Num: 69

Candidate Starts for StAugustine\_144:

(Start: 69 @85407 has 4 MA's), (Start: 99 @85350 has 1 MA's), (163, 85212), (172, 85188), (187, 85140),

Gene: Sunfish\_12 Start: 3876, Stop: 4208, Start Num: 94

Candidate Starts for Sunfish\_12:

(40, 3663), (Start: 94 @3876 has 19 MA's), (120, 3927), (129, 3951), (154, 4002), (181, 4071), (200, 4134),

Gene: SwagPigglett\_98 Start: 54867, Stop: 55148, Start Num: 88

Candidate Starts for SwagPigglett\_98:

(16, 54456), (19, 54477), (20, 54498), (22, 54528), (Start: 88 @54867 has 37 MA's), (113, 54912), (126, 54930), (189, 55047),

Gene: Switzer\_11 Start: 6599, Stop: 6913, Start Num: 94

Candidate Starts for Switzer\_11:

(Start: 78 @6572 has 1 MA's), (Start: 94 @6599 has 19 MA's), (113, 6638), (124, 6647), (156, 6716), (182, 6791), (200, 6851),

Gene: Syleon\_119 Start: 65342, Stop: 65608, Start Num: 122

Candidate Starts for Syleon\_119:

(66, 65225), (Start: 122 @65342 has 4 MA's), (193, 65516), (209, 65597),

Gene: Tempo\_56 Start: 38215, Stop: 37919, Start Num: 86

Candidate Starts for Tempo\_56:

(70, 38245), (Start: 83 @38218 has 3 MA's), (Start: 86 @38215 has 21 MA's), (Start: 96 @38203 has 2 MA's), (104, 38179), (113, 38164), (140, 38116), (148, 38107), (177, 38071), (189, 38029), (196, 38008),

Gene: Tortellini\_63 Start: 43457, Stop: 43750, Start Num: 83

Candidate Starts for Tortellini\_63:

(29, 43202), (32, 43223), (45, 43301), (55, 43364), (61, 43400), (Start: 83 @43457 has 3 MA's), (113, 43511), (177, 43607), (189, 43646), (197, 43670), (210, 43739),

Gene: Tribby\_76 Start: 45227, Stop: 45535, Start Num: 103

Candidate Starts for Tribby\_76:

(Start: 103 @45227 has 19 MA's), (145, 45329), (168, 45365), (188, 45428), (198, 45458),

Gene: Tribby\_74 Start: 44517, Stop: 44843, Start Num: 73

Candidate Starts for Tribby\_74:

(Start: 73 @44517 has 19 MA's), (156, 44685),

Gene: TunaTartare\_69 Start: 56371, Stop: 56772, Start Num: 64

Candidate Starts for TunaTartare\_69:

(Start: 64 @56371 has 7 MA's), (118, 56482), (127, 56509), (130, 56515), (143, 56545), (188, 56665), (201, 56704),

Gene: U2\_10 Start: 6601, Stop: 6915, Start Num: 94

Candidate Starts for U2\_10:

(Start: 78 @6574 has 1 MA's), (Start: 94 @6601 has 19 MA's), (113, 6640), (124, 6649), (156, 6718), (182, 6793), (200, 6853),

Gene: Untouchable\_2 Start: 479, Stop: 808, Start Num: 86

Candidate Starts for Untouchable\_2:

(Start: 86 @479 has 21 MA's), (123, 545), (181, 686), (189, 713), (194, 725),

Gene: Vivum\_98 Start: 55102, Stop: 55383, Start Num: 88

Candidate Starts for Vivum\_98:

(16, 54691), (19, 54712), (20, 54733), (22, 54763), (Start: 88 @55102 has 37 MA's), (113, 55147), (126, 55165), (189, 55282),

Gene: Vordorf\_53 Start: 39065, Stop: 39475, Start Num: 60

Candidate Starts for Vordorf\_53:

(13, 38624), (24, 38795), (41, 38936), (51, 39017), (54, 39023), (60, 39065), (Start: 86 @39131 has 21 MA's), (136, 39221), (144, 39242), (166, 39278),

Gene: Whouxphf\_100 Start: 54173, Stop: 54454, Start Num: 88

Candidate Starts for Whouxphf\_100:

(16, 53762), (19, 53783), (20, 53804), (22, 53834), (Start: 88 @54173 has 37 MA's), (113, 54218), (126, 54236), (189, 54353),

Gene: Wojtek\_85 Start: 64679, Stop: 65014, Start Num: 72

Candidate Starts for Wojtek\_85:

(Start: 72 @64679 has 2 MA's), (76, 64688), (81, 64697), (Start: 86 @64706 has 21 MA's), (113, 64754), (189, 64907), (197, 64931), (210, 65000),

Gene: Xenomorph\_69 Start: 44753, Stop: 45061, Start Num: 103

Candidate Starts for Xenomorph\_69:

(Start: 103 @44753 has 19 MA's), (145, 44855), (168, 44891), (188, 44954), (198, 44984),

Gene: Xenomorph\_67 Start: 44001, Stop: 44369, Start Num: 73

Candidate Starts for Xenomorph\_67:

(Start: 73 @44001 has 19 MA's), (156, 44169), (199, 44307), (202, 44319),

Gene: Xerxes\_55 Start: 36284, Stop: 36682, Start Num: 62

Candidate Starts for Xerxes\_55:

(46, 36194), (52, 36230), (Start: 62 @36284 has 4 MA's), (136, 36437), (138, 36440), (147, 36467), (189, 36578), (192, 36584), (210, 36671),

Gene: Yorick\_92 Start: 54408, Stop: 54689, Start Num: 88

Candidate Starts for Yorick\_92:

(16, 53997), (19, 54018), (20, 54039), (22, 54069), (Start: 88 @54408 has 37 MA's), (113, 54453), (126, 54471), (189, 54588),

Gene: Yvonnetastic\_136 Start: 75890, Stop: 76258, Start Num: 75

Candidate Starts for Yvonnetastic\_136:

(Start: 75 @75890 has 2 MA's), (92, 75920), (100, 75935), (102, 75941), (111, 75965), (133, 76016), (188, 76136), (189, 76139), (197, 76163), (211, 76244),

Gene: Zizzle\_99 Start: 55058, Stop: 55339, Start Num: 88

Candidate Starts for Zizzle\_99:

(16, 54647), (19, 54668), (20, 54689), (22, 54719), (Start: 88 @55058 has 37 MA's), (113, 55103), (126, 55121), (189, 55238), (200, 55274),