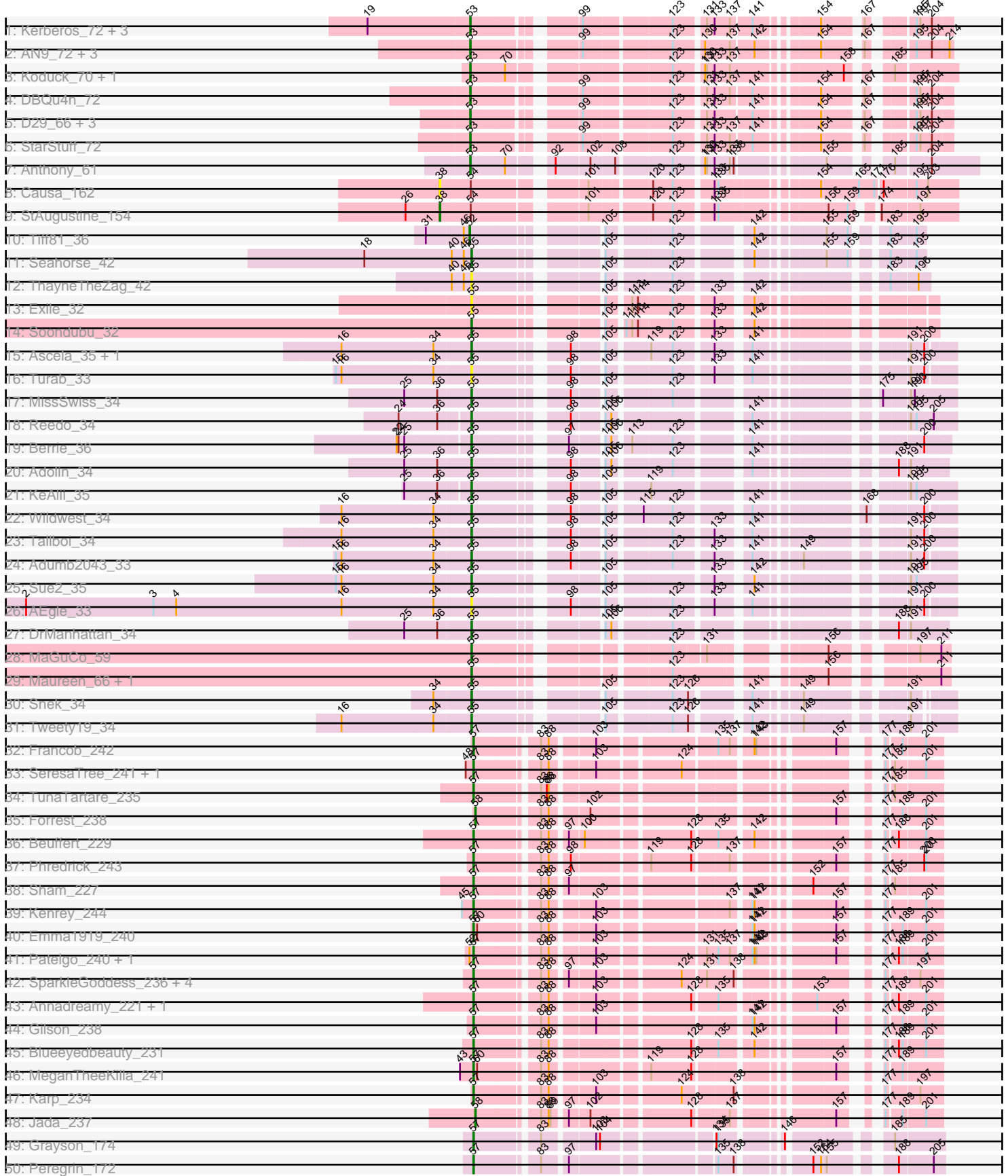
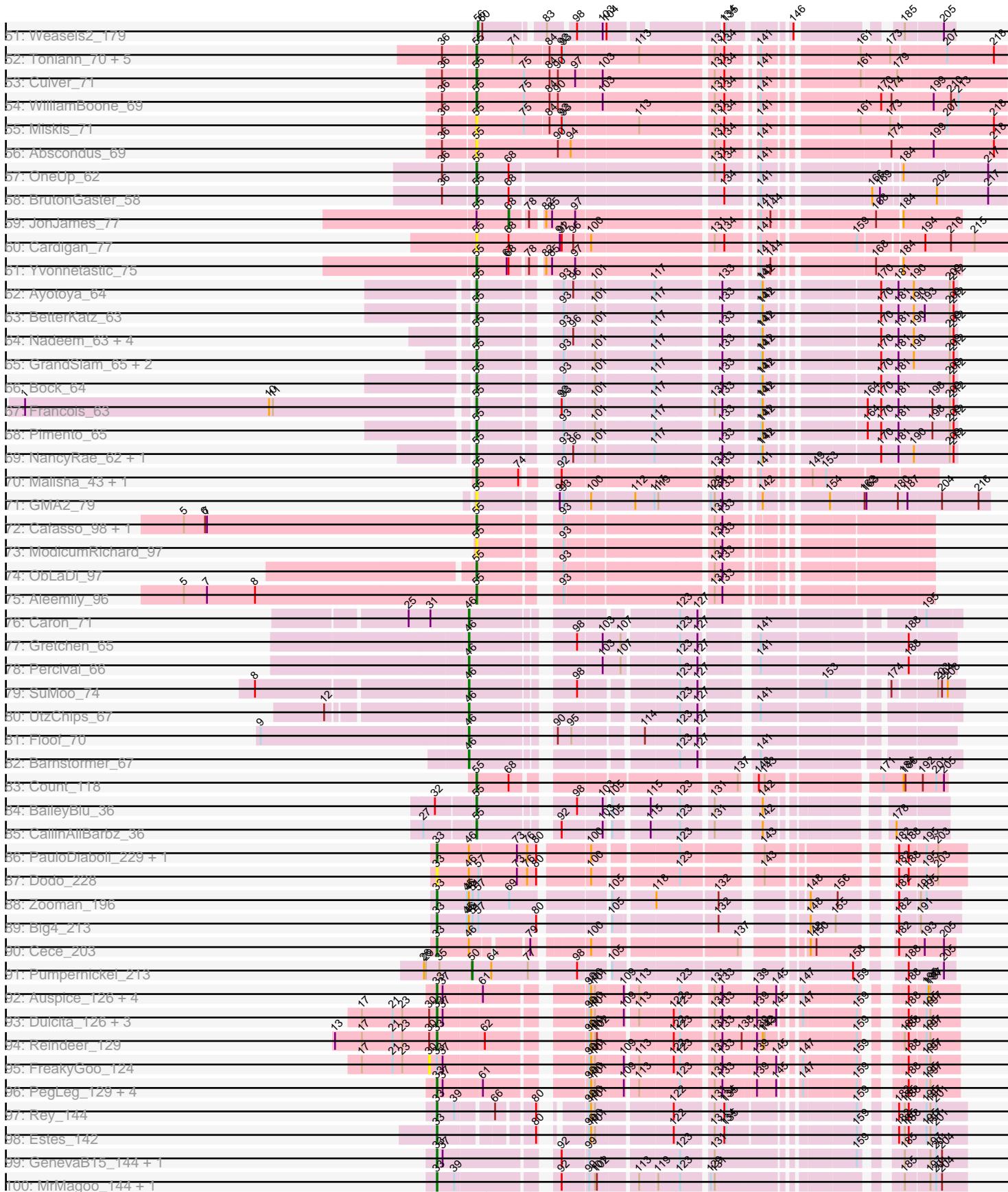


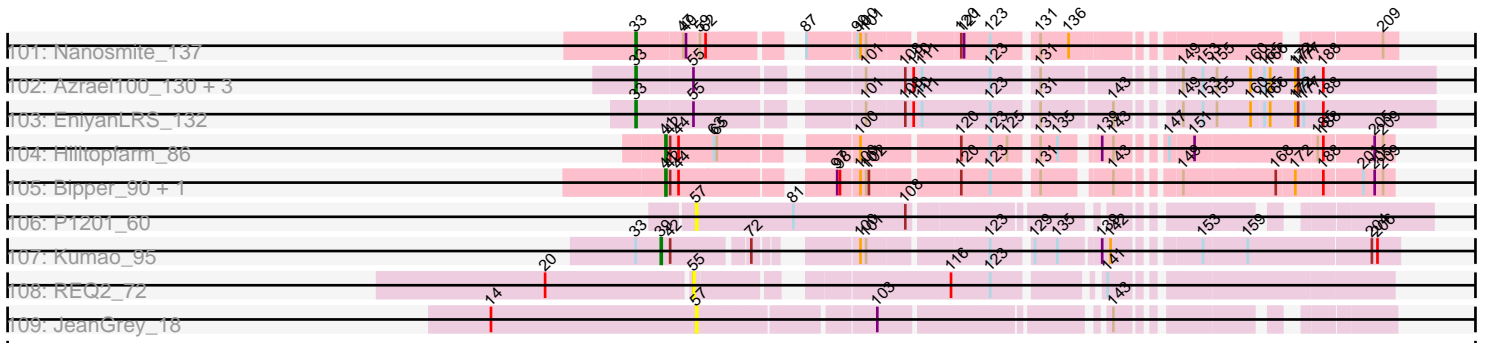
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Read ID	Start Position	End Position	Color
r01	33	209	Green
r02	51	209	Purple
r03	51	209	Yellow
r04	51	209	Red
r05	51	209	Blue
r06	51	209	Orange
r07	51	209	Pink
r08	51	209	Light Blue
r09	51	209	Light Purple

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 214043 Report

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

Pham number 214043 has 160 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Kerberos\_72, Pomar16\_71, Tomathan\_72, Duplo\_72
- Track 2 : AN9\_72, VC3\_71, C3\_65, ANI8\_72
- Track 3 : Koduck\_70, L5\_66
- Track 4 : DBQu4n\_72
- Track 5 : D29\_66, D32\_71, Travvers\_71, Naji\_72
- Track 6 : StarStuff\_72
- Track 7 : Anthony\_61
- Track 8 : Causa\_162
- Track 9 : StAugustine\_154
- Track 10 : Tiff81\_36
- Track 11 : Seahorse\_42
- Track 12 : ThayneTheZag\_42
- Track 13 : Exile\_32
- Track 14 : Soondubu\_32
- Track 15 : Ascela\_35, lter\_35
- Track 16 : Turab\_33
- Track 17 : MissSwiss\_34
- Track 18 : Reedo\_34
- Track 19 : Berrie\_36
- Track 20 : Adolin\_34
- Track 21 : KeAlii\_35
- Track 22 : Wildwest\_34
- Track 23 : Tallboi\_34
- Track 24 : Adumb2043\_33
- Track 25 : Sue2\_35
- Track 26 : AEgle\_33
- Track 27 : DrManhattan\_34
- Track 28 : MaGuCo\_59
- Track 29 : Maureen\_66, Liebe\_66
- Track 30 : Snek\_34
- Track 31 : Tweety19\_34
- Track 32 : Francob\_242
- Track 33 : SeresaTree\_241, Faust\_237
- Track 34 : TunaTartare\_235
- Track 35 : Forrest\_238
- Track 36 : Beuffert\_229
- Track 37 : Phredrick\_243

- Track 38 : Sham\_227
- Track 39 : Kenrey\_244
- Track 40 : Emma1919\_240
- Track 41 : Patelgo\_240, Moab\_241
- Track 42 : SparkleGoddess\_236, Westy\_237, Comrade\_232, Belfort\_236, Stigma\_234
- Track 43 : Annadreamy\_221, Limpid\_228
- Track 44 : Gilson\_238
- Track 45 : Blueeyedbeauty\_231
- Track 46 : MeganTheeKilla\_241
- Track 47 : Karp\_234
- Track 48 : Jada\_237
- Track 49 : Grayson\_174
- Track 50 : Peregrin\_172
- Track 51 : Weasels2\_179
- Track 52 : Toniann\_70, PhinkBoden\_69, ClubL\_70, Geeche\_68, Norvs\_70, Cucurbita\_71
- Track 53 : Culver\_71
- Track 54 : WilliamBoone\_69
- Track 55 : Miskis\_71
- Track 56 : Abscondus\_69
- Track 57 : OneUp\_62
- Track 58 : BrutonGaster\_58
- Track 59 : JonJames\_77
- Track 60 : Cardigan\_77
- Track 61 : Yvonnetastic\_75
- Track 62 : Ayotoya\_64
- Track 63 : BetterKatz\_63
- Track 64 : Nadeem\_63, Brylie\_63, Mulch\_63, Parada\_63, WheatThin\_62
- Track 65 : GrandSlam\_65, Hamood\_65, Chop\_65
- Track 66 : Bock\_64
- Track 67 : Francois\_63
- Track 68 : Pimento\_65
- Track 69 : NancyRae\_62, DelRio\_64
- Track 70 : Malisha\_43, Squiddly\_43
- Track 71 : GMA2\_79
- Track 72 : Cafasso\_98, Morgana\_104
- Track 73 : ModicumRichard\_97
- Track 74 : ObLaDi\_97
- Track 75 : Aleemily\_96
- Track 76 : Caron\_71
- Track 77 : Gretchen\_65
- Track 78 : Percival\_66
- Track 79 : SuMoo\_74
- Track 80 : UtzChips\_67
- Track 81 : Floof\_70
- Track 82 : Barnstormer\_67
- Track 83 : Count\_118
- Track 84 : BaileyBlu\_36
- Track 85 : CallinAllBarbz\_36
- Track 86 : PauloDiaboli\_229, A3Wally\_229
- Track 87 : Dodo\_228
- Track 88 : Zooman\_196

- Track 89 : Big4\_213
- Track 90 : Cece\_203
- Track 91 : Pumpnickel\_213
- Track 92 : Auspice\_126, Bongo\_125, Bricole\_128, TyDawg\_121, IPhane7\_124
- Track 93 : Dulcita\_126, Diminimus\_126, Glaske16\_128, Izel\_124
- Track 94 : Reindeer\_129
- Track 95 : FreakyGoo\_124
- Track 96 : PegLeg\_129, KleverKiS\_129, LilhomieP\_126, Skinny\_132, SlimJimmy\_125
- Track 97 : Rey\_144
- Track 98 : Estes\_142
- Track 99 : GenevaB15\_144, Aziz\_141
- Track 100 : MrMagoo\_144, GardenSalsa\_142
- Track 101 : Nanosmite\_137
- Track 102 : Azrael100\_130, MaryV\_123, Cosmo\_138, Wildcat\_137
- Track 103 : EniyanLRS\_132
- Track 104 : Hilltopfarm\_86
- Track 105 : Bipper\_90, Cracklewink\_91
- Track 106 : P1201\_60
- Track 107 : Kumao\_95
- Track 108 : REQ2\_72
- Track 109 : JeanGrey\_18

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

The start number called the most often in the published annotations is 55, it was called in 53 of the 138 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle\_33, Abscondus\_69, Adolin\_34, Adumb2043\_33, Aleemily\_96, Ascela\_35, Ayotoya\_64, BaileyBlu\_36, Berrie\_36, BetterKatz\_63, Bock\_64, BrutonGaster\_58, Brylie\_63, Cafasso\_98, CallinAllBarbz\_36, Cardigan\_77, Chop\_65, ClubL\_70, Count\_118, Cucurbita\_71, Culver\_71, DelRio\_64, DrManhattan\_34, Exile\_32, Francois\_63, GMA2\_79, Geeche\_68, GrandSlam\_65, Hamood\_65, Iter\_35, KeAlii\_35, Liebe\_66, MaGuCo\_59, Malisha\_43, Maureen\_66, Miskis\_71, MissSwiss\_34, ModicumRichard\_97, Morgana\_104, Mulch\_63, Nadeem\_63, NancyRae\_62, Norvs\_70, ObLaDi\_97, OneUp\_62, Parada\_63, PhinkBoden\_69, Pimento\_65, REQ2\_72, Reedo\_34, Seahorse\_42, Snek\_34, Soondubu\_32, Squiddly\_43, Sue2\_35, Tallboi\_34, ThayneTheZag\_42, Toniann\_70, Turab\_33, Tweety19\_34, WheatThin\_62, Wildwest\_34, WilliamBoone\_69, Yvonnetastic\_75,

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

- Azrael100\_130, Cosmo\_138, EniyanLRS\_132, JonJames\_77, MaryV\_123, Wildcat\_137,

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

- A3Wally\_229, AN9\_72, ANI8\_72, Annadreamy\_221, Anthony\_61, Auspice\_126, Aziz\_141, Barnstormer\_67, Belfort\_236, Beuffert\_229, Big4\_213, Bipper\_90, Blueeyedbeauty\_231, Bongo\_125, Bricole\_128, C3\_65, Caron\_71, Causa\_162, Cece\_203, Comrade\_232, Cracklewink\_91, D29\_66, D32\_71, DBQu4n\_72,

Diminimus\_126, Dodo\_228, Dulcita\_126, Duplo\_72, Emma1919\_240, Estes\_142, Faust\_237, Floof\_70, Forrest\_238, Francob\_242, FreakyGoo\_124, GardenSalsa\_142, GenevaB15\_144, Gilson\_238, Glaske16\_128, Grayson\_174, Gretchen\_65, Hilltopfarm\_86, IPHane7\_124, Izel\_124, Jada\_237, JeanGrey\_18, Karp\_234, Kenrey\_244, Kerberos\_72, KleverKiS\_129, Koduck\_70, Kumao\_95, L5\_66, LilhomieP\_126, Limpid\_228, MeganTheeKilla\_241, Moab\_241, MrMagoo\_144, Naji\_72, Nanosmite\_137, P1201\_60, Patelgo\_240, PauloDiaboli\_229, PegLeg\_129, Percival\_66, Peregrin\_172, Phredrick\_243, Pomar16\_71, Pumpnickel\_213, Reindeer\_129, Rey\_144, SeresaTree\_241, Sham\_227, Skinny\_132, SlimJimmy\_125, SparkleGoddess\_236, StAugustine\_154, StarStuff\_72, Stigma\_234, SuMoo\_74, Tiff81\_36, Tomathan\_72, Travvers\_71, TunaTartare\_235, TyDawg\_121, UtzChips\_67, VC3\_71, Weasels2\_179, Westy\_237, Zooman\_196,

### Summary by start number:

#### Start 30:

- Found in 6 of 160 ( 3.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: FreakyGoo\_124 (M1),

#### Start 33:

- Found in 35 of 160 ( 21.9% ) of genes in pham
- Manual Annotations of this start: 30 of 138
- Called 94.3% of time when present
- Phage (with cluster) where this start called: A3Wally\_229 (GD1), Auspice\_126 (M1), Aziz\_141 (M2), Azrael100\_130 (V), Big4\_213 (GD2), Bongo\_125 (M1), Bricole\_128 (M1), Cece\_203 (GD3), Cosmo\_138 (V), Diminimus\_126 (M1), Dodo\_228 (GD1), Dulcita\_126 (M1), EniyanLRS\_132 (V), Estes\_142 (M2), GardenSalsa\_142 (M2), GenevaB15\_144 (M2), Glaske16\_128 (M1), IPHane7\_124 (M1), Izel\_124 (M1), KleverKiS\_129 (M1), LilhomieP\_126 (M1), MaryV\_123 (V), MrMagoo\_144 (M2), Nanosmite\_137 (M3), PauloDiaboli\_229 (GD1), PegLeg\_129 (M1), Reindeer\_129 (M1), Rey\_144 (M2), Skinny\_132 (M1), SlimJimmy\_125 (M1), TyDawg\_121 (M1), Wildcat\_137 (V), Zooman\_196 (GD2),

#### Start 38:

- Found in 2 of 160 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 138
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Causa\_162 (AI), StAugustine\_154 (AI),

#### Start 39:

- Found in 4 of 160 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 138
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Kumao\_95 (singleton),

#### Start 41:

- Found in 3 of 160 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 3 of 138
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bipper\_90 (Y), Cracklewink\_91 (Y), Hilltopfarm\_86 (Y),

Start 46:

- Found in 16 of 160 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 7 of 138
- Called 43.8% of time when present
- Phage (with cluster) where this start called: Barnstormer\_67 (EH), Caron\_71 (EH), Floof\_70 (EH), Gretchen\_65 (EH), Percival\_66 (EH), SuMoo\_74 (EH), UtzChips\_67 (EH),

Start 50:

- Found in 1 of 160 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 138
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pumpernickel\_213 (GD4),

Start 52:

- Found in 3 of 160 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 138
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Tiff81\_36 (AY),

Start 53:

- Found in 17 of 160 ( 10.6% ) of genes in pham
- Manual Annotations of this start: 15 of 138
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AN9\_72 (A2), ANI8\_72 (A2), Anthony\_61 (A20), C3\_65 (A2), D29\_66 (A2), D32\_71 (A2), DBQu4n\_72 (A2), Duplo\_72 (A2), Kerberos\_72 (A2), Koduck\_70 (A2), L5\_66 (A2), Naji\_72 (A2), Pomar16\_71 (A2), StarStuff\_72 (A2), Tomathan\_72 (A2), Travvers\_71 (A2), VC3\_71 (A2),

Start 55:

- Found in 70 of 160 ( 43.8% ) of genes in pham
- Manual Annotations of this start: 53 of 138
- Called 91.4% of time when present
- Phage (with cluster) where this start called: AEgle\_33 (AZ1), Abscondus\_69 (CQ1), Adolin\_34 (AZ1), Adumb2043\_33 (AZ1), Aleemily\_96 (DZ), Ascela\_35 (AZ1), Ayotoya\_64 (DI), BaileyBlu\_36 (FP), Berrie\_36 (AZ1), BetterKatz\_63 (DI), Bock\_64 (DI), BrutonGaster\_58 (CQ2), Brylie\_63 (DI), Cafasso\_98 (DZ), CallinAllBarbz\_36 (FP), Cardigan\_77 (DD), Chop\_65 (DI), ClubL\_70 (CQ1), Count\_118 (EL), Cucurbita\_71 (CQ1), Culver\_71 (CQ1), DelRio\_64 (DI), DrManhattan\_34 (AZ1), Exile\_32 (AZ), Francois\_63 (DI), GMA2\_79 (DS), Geeche\_68 (CQ1), GrandSlam\_65 (DI), Hamood\_65 (DI), Iter\_35 (AZ1), KeAlii\_35 (AZ1), Liebe\_66 (AZ2), MaGuCo\_59 (AZ2), Malisha\_43 (DN), Maureen\_66 (AZ2), Miskis\_71 (CQ1), MissSwiss\_34 (AZ1), ModicumRichard\_97 (DZ), Morgana\_104 (DZ), Mulch\_63 (DI), Nadeem\_63 (DI), NancyRae\_62 (DI), Norvs\_70 (CQ1), ObLaDi\_97 (DZ), OneUp\_62 (CQ2), Parada\_63 (DI), PhinkBoden\_69 (CQ1), Pimento\_65 (DI), REQ2\_72 (singleton), Reedo\_34 (AZ1), Seahorse\_42 (AY), Snek\_34 (AZ3), Soondubu\_32 (AZ), Squiddly\_43 (DN2), Sue2\_35 (AZ1), Tallboi\_34 (AZ1), ThayneTheZag\_42 (AY), Toniann\_70 (CQ1), Turab\_33 (AZ1), Tweety19\_34 (AZ3), WheatThin\_62 (DI), Wildwest\_34 (AZ1), WilliamBoone\_69 (CQ1), Yvonnetastic\_75 (DD),

Start 56:



- Found in 1 of 160 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 138
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Weasels2\_179 (CB),

Start 57:

- Found in 29 of 160 ( 18.1% ) of genes in pham
- Manual Annotations of this start: 22 of 138
- Called 89.7% of time when present
- Phage (with cluster) where this start called: Annadreamy\_221 (BK1), Belfort\_236 (BK1), Beuffert\_229 (BK1), Blueeyedbeauty\_231 (BK1), Comrade\_232 (BK1), Emma1919\_240 (BK1), Faust\_237 (BK1), Francob\_242 (BK1), Gilson\_238 (BK1), Grayson\_174 (CB), JeanGrey\_18 (singleton), Karp\_234 (BK1), Kenrey\_244 (BK1), Limpid\_228 (BK1), MeganTheeKilla\_241 (BK1), Moab\_241 (BK1), P1201\_60 (singleton), Patelgo\_240 (BK1), Peregrin\_172 (CB), Phredrick\_243 (BK1), SeresaTree\_241 (BK1), Sham\_227 (BK1), SparkleGoddess\_236 (BK1), Stigma\_234 (BK1), TunaTartare\_235 (BK1), Westy\_237 (BK1),

Start 58:

- Found in 2 of 160 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 138
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Forrest\_238 (BK1), Jada\_237 (BK1),

Start 68:

- Found in 6 of 160 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 1 of 138
- Called 16.7% of time when present
- Phage (with cluster) where this start called: JonJames\_77 (DD),

### Summary by clusters:

There are 31 clusters represented in this pham: DN, FP, GD2, AZ1, GD4, DI, DD, singleton, Y, GD3, DZ, M3, M2, DS, A2, DN2, CQ2, CQ1, EL, EH, AI, CB, BK1, V, AY, AZ, GD1, A20, M1, AZ2, AZ3,

Info for manual annotations of cluster A2:

- Start number 53 was manually annotated 14 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 53 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster AI:

- Start number 38 was manually annotated 1 time for cluster AI.

Info for manual annotations of cluster AY:

- Start number 52 was manually annotated 1 time for cluster AY.
- Start number 55 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster AZ:

- Start number 55 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 55 was manually annotated 12 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 55 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 55 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster BK1:

- Start number 57 was manually annotated 20 times for cluster BK1.
- Start number 58 was manually annotated 2 times for cluster BK1.

Info for manual annotations of cluster CB:

- Start number 56 was manually annotated 1 time for cluster CB.
- Start number 57 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CQ1:

- Start number 55 was manually annotated 7 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 55 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster DD:

- Start number 55 was manually annotated 1 time for cluster DD.
- Start number 68 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DI:

- Start number 55 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DN:

- Start number 55 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN2:

- Start number 55 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DZ:

- Start number 55 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster EH:

- Start number 46 was manually annotated 7 times for cluster EH.

Info for manual annotations of cluster EL:

- Start number 55 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster FP:

- Start number 55 was manually annotated 2 times for cluster FP.

Info for manual annotations of cluster GD1:

- Start number 33 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 33 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 33 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 50 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster M1:

- Start number 33 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 33 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 33 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 33 was manually annotated 5 times for cluster V.

Info for manual annotations of cluster Y:

- Start number 41 was manually annotated 3 times for cluster Y.

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

Gene: A3Wally\_229 Start: 122395, Stop: 123075, Start Num: 33

Candidate Starts for A3Wally\_229:

(Start: 33 @122395 has 30 MA's), (Start: 46 @122443 has 7 MA's), (73, 122512), (76, 122527), (80, 122539), (100, 122605), (123, 122722), (143, 122827), (182, 122974), (188, 122989), (195, 123013), (203, 123031),

Gene: AEgle\_33 Start: 24682, Stop: 25275, Start Num: 55

Candidate Starts for AEgle\_33:

(2, 23983), (3, 24184), (4, 24220), (16, 24481), (34, 24625), (Start: 55 @24682 has 53 MA's), (98, 24802), (105, 24844), (123, 24934), (133, 24988), (141, 25030), (191, 25216), (200, 25237),

Gene: AN9\_72 Start: 42782, Stop: 42180, Start Num: 53

Candidate Starts for AN9\_72:

(Start: 53 @42782 has 15 MA's), (99, 42647), (123, 42521), (130, 42482), (137, 42443), (142, 42410), (154, 42332), (167, 42284), (195, 42233), (204, 42209), (214, 42185),

Gene: ANI8\_72 Start: 42782, Stop: 42180, Start Num: 53

Candidate Starts for ANI8\_72:

(Start: 53 @42782 has 15 MA's), (99, 42647), (123, 42521), (130, 42482), (137, 42443), (142, 42410), (154, 42332), (167, 42284), (195, 42233), (204, 42209), (214, 42185),

Gene: Abscondus\_69 Start: 44768, Stop: 45538, Start Num: 55

Candidate Starts for Abscondus\_69:

(36, 44720), (Start: 55 @44768 has 53 MA's), (90, 44888), (94, 44906), (131, 45110), (134, 45125), (141, 45161), (174, 45329), (199, 45392), (218, 45485),

Gene: Adolin\_34 Start: 23539, Stop: 24129, Start Num: 55

Candidate Starts for Adolin\_34:

(25, 23437), (36, 23488), (Start: 55 @23539 has 53 MA's), (98, 23659), (105, 23701), (106, 23710), (123, 23791), (141, 23887), (188, 24058), (191, 24073),

Gene: Adumb2043\_33 Start: 24701, Stop: 25294, Start Num: 55

Candidate Starts for Adumb2043\_33:

(15, 24491), (16, 24500), (34, 24644), (Start: 55 @24701 has 53 MA's), (98, 24821), (105, 24863), (123, 24953), (133, 25007), (141, 25049), (149, 25106), (191, 25235), (200, 25256),

Gene: Aleemily\_96 Start: 56239, Stop: 56829, Start Num: 55

Candidate Starts for Aleemily\_96:

(5, 55786), (7, 55822), (8, 55897), (Start: 55 @56239 has 53 MA's), (93, 56338), (131, 56545), (133, 56557),

Gene: Annadreamy\_221 Start: 109127, Stop: 109699, Start Num: 57

Candidate Starts for Annadreamy\_221:

(Start: 57 @109127 has 22 MA's), (83, 109214), (88, 109226), (103, 109286), (128, 109412), (135, 109448), (153, 109562), (177, 109619), (188, 109634), (201, 109673),

Gene: Anthony\_61 Start: 39452, Stop: 38802, Start Num: 53

Candidate Starts for Anthony\_61:

(Start: 53 @39452 has 15 MA's), (70, 39401), (92, 39353), (102, 39302), (108, 39266), (123, 39188), (130, 39149), (131, 39146), (133, 39134), (137, 39110), (138, 39104), (155, 38993), (185, 38927), (204, 38876),

Gene: Ascela\_35 Start: 25061, Stop: 25654, Start Num: 55

Candidate Starts for Ascela\_35:

(16, 24860), (34, 25004), (Start: 55 @25061 has 53 MA's), (98, 25181), (105, 25223), (119, 25280), (123, 25313), (133, 25367), (141, 25409), (191, 25595), (200, 25616),

Gene: Auspice\_126 Start: 66089, Stop: 66748, Start Num: 33

Candidate Starts for Auspice\_126:

(Start: 33 @66089 has 30 MA's), (37, 66098), (61, 66155), (99, 66281), (100, 66284), (101, 66290), (109, 66332), (113, 66347), (123, 66407), (131, 66449), (133, 66461), (139, 66509), (145, 66539), (147, 66557), (159, 66635), (188, 66674), (195, 66698), (196, 66701), (197, 66704),

Gene: Ayotoya\_64 Start: 42200, Stop: 42832, Start Num: 55

Candidate Starts for Ayotoya\_64:

(Start: 55 @42200 has 53 MA's), (93, 42296), (96, 42308), (101, 42338), (117, 42422), (133, 42515), (141, 42566), (142, 42569), (170, 42719), (181, 42746), (190, 42770), (209, 42821), (212, 42827),

Gene: Aziz\_141 Start: 67316, Stop: 67996, Start Num: 33

Candidate Starts for Aziz\_141:

(Start: 33 @67316 has 30 MA's), (37, 67325), (92, 67472), (99, 67511), (123, 67637), (131, 67679), (159, 67868), (185, 67904), (197, 67940), (201, 67949), (204, 67958),

Gene: Azrael100\_130 Start: 65071, Stop: 65832, Start Num: 33

Candidate Starts for Azrael100\_130:

(Start: 33 @65071 has 30 MA's), (Start: 55 @65128 has 53 MA's), (101, 65278), (108, 65317), (110, 65326), (111, 65335), (123, 65407), (131, 65449), (149, 65566), (153, 65587), (155, 65602), (160, 65638), (165, 65650), (166, 65656), (172, 65683), (174, 65686), (177, 65692), (188, 65713),

Gene: BaileyBlu\_36 Start: 24839, Stop: 25417, Start Num: 55

Candidate Starts for BaileyBlu\_36:

(32, 24782), (Start: 55 @24839 has 53 MA's), (98, 24959), (103, 24995), (105, 25001), (115, 25049), (123, 25091), (131, 25133), (142, 25190),

Gene: Barnstormer\_67 Start: 41973, Stop: 42605, Start Num: 46

Candidate Starts for Barnstormer\_67:

(Start: 46 @41973 has 7 MA's), (123, 42237), (127, 42264), (141, 42333),

Gene: Belfort\_236 Start: 114585, Stop: 115154, Start Num: 57

Candidate Starts for Belfort\_236:

(Start: 57 @114585 has 22 MA's), (83, 114672), (88, 114684), (97, 114705), (103, 114744), (124, 114855), (131, 114888), (138, 114927), (177, 115074), (197, 115119),

Gene: Berrie\_36 Start: 26157, Stop: 26750, Start Num: 55

Candidate Starts for Berrie\_36:

(22, 26049), (24, 26052), (25, 26061), (Start: 55 @26157 has 53 MA's), (97, 26274), (105, 26319), (106, 26328), (113, 26349), (123, 26409), (141, 26505), (200, 26709),

Gene: BetterKatz\_63 Start: 41399, Stop: 42031, Start Num: 55

Candidate Starts for BetterKatz\_63:

(Start: 55 @41399 has 53 MA's), (93, 41495), (101, 41537), (117, 41621), (133, 41714), (141, 41765), (142, 41768), (170, 41918), (181, 41945), (190, 41969), (193, 41981), (209, 42020), (212, 42026),

Gene: Beuffert\_229 Start: 113280, Stop: 113852, Start Num: 57

Candidate Starts for Beuffert\_229:

(Start: 57 @113280 has 22 MA's), (83, 113367), (88, 113379), (97, 113400), (100, 113421), (128, 113565), (135, 113601), (142, 113643), (177, 113772), (188, 113787), (201, 113826),

Gene: Big4\_213 Start: 118520, Stop: 119200, Start Num: 33

Candidate Starts for Big4\_213:

(Start: 33 @118520 has 30 MA's), (45, 118565), (Start: 46 @118568 has 7 MA's), (51, 118574), (Start: 57 @118583 has 22 MA's), (80, 118670), (105, 118760), (132, 118904), (148, 119012), (155, 119048), (182, 119108), (191, 119138),

Gene: Bipper\_90 Start: 57652, Stop: 58302, Start Num: 41

Candidate Starts for Bipper\_90:

(Start: 41 @57652 has 3 MA's), (42, 57655), (44, 57664), (97, 57802), (98, 57805), (100, 57823), (101, 57829), (102, 57832), (120, 57916), (123, 57946), (131, 57988), (143, 58045), (149, 58093), (168, 58186), (172, 58204), (188, 58231), (201, 58270), (205, 58282), (209, 58291),

Gene: Blueeyedbeauty\_231 Start: 112888, Stop: 113460, Start Num: 57

Candidate Starts for Blueeyedbeauty\_231:

(Start: 57 @112888 has 22 MA's), (83, 112975), (88, 112987), (128, 113173), (135, 113209), (142, 113251), (177, 113380), (188, 113395), (189, 113401), (201, 113434),

Gene: Bock\_64 Start: 41419, Stop: 42051, Start Num: 55

Candidate Starts for Bock\_64:

(Start: 55 @41419 has 53 MA's), (93, 41515), (101, 41557), (117, 41641), (133, 41734), (141, 41785), (142, 41788), (170, 41938), (181, 41965), (209, 42040), (212, 42046),

Gene: Bongo\_125 Start: 65705, Stop: 66364, Start Num: 33

Candidate Starts for Bongo\_125:

(Start: 33 @65705 has 30 MA's), (37, 65714), (61, 65771), (99, 65897), (100, 65900), (101, 65906), (109, 65948), (113, 65963), (123, 66023), (131, 66065), (133, 66077), (139, 66125), (145, 66155), (147, 66173), (159, 66251), (188, 66290), (195, 66314), (196, 66317), (197, 66320),

Gene: Bricole\_128 Start: 65853, Stop: 66512, Start Num: 33

Candidate Starts for Bricole\_128:

(Start: 33 @65853 has 30 MA's), (37, 65862), (61, 65919), (99, 66045), (100, 66048), (101, 66054), (109, 66096), (113, 66111), (123, 66171), (131, 66213), (133, 66225), (139, 66273), (145, 66303), (147, 66321), (159, 66399), (188, 66438), (195, 66462), (196, 66465), (197, 66468),

Gene: BrutonGaster\_58 Start: 42764, Stop: 43525, Start Num: 55

Candidate Starts for BrutonGaster\_58:

(36, 42716), (Start: 55 @42764 has 53 MA's), (Start: 68 @42809 has 1 MA's), (134, 43118), (141, 43154), (166, 43295), (169, 43307), (202, 43382), (217, 43454),

Gene: Brylie\_63 Start: 41222, Stop: 41854, Start Num: 55

Candidate Starts for Brylie\_63:

(Start: 55 @41222 has 53 MA's), (93, 41318), (96, 41330), (101, 41360), (117, 41444), (133, 41537), (141, 41588), (142, 41591), (170, 41741), (181, 41768), (190, 41792), (209, 41843), (212, 41849),

Gene: C3\_65 Start: 42782, Stop: 42180, Start Num: 53

Candidate Starts for C3\_65:

(Start: 53 @42782 has 15 MA's), (99, 42647), (123, 42521), (130, 42482), (137, 42443), (142, 42410), (154, 42332), (167, 42284), (195, 42233), (204, 42209), (214, 42185),

Gene: Cafasso\_98 Start: 56790, Stop: 57380, Start Num: 55

Candidate Starts for Cafasso\_98:

(5, 56337), (6, 56370), (7, 56373), (Start: 55 @56790 has 53 MA's), (93, 56889), (131, 57096), (133, 57108),

Gene: CallinAllBarbz\_36 Start: 25236, Stop: 25814, Start Num: 55

Candidate Starts for CallinAllBarbz\_36:

(27, 25161), (Start: 55 @25236 has 53 MA's), (92, 25332), (103, 25392), (105, 25398), (115, 25446), (123, 25488), (131, 25530), (142, 25587), (178, 25737),

Gene: Cardigan\_77 Start: 51710, Stop: 52486, Start Num: 55

Candidate Starts for Cardigan\_77:

(Start: 55 @51710 has 53 MA's), (Start: 68 @51755 has 1 MA's), (91, 51833), (92, 51836), (96, 51854), (100, 51878), (131, 52055), (134, 52070), (141, 52106), (159, 52238), (194, 52325), (210, 52364), (215, 52400),

Gene: Caron\_71 Start: 42887, Stop: 43522, Start Num: 46

Candidate Starts for Caron\_71:

(25, 42794), (31, 42827), (Start: 46 @42887 has 7 MA's), (123, 43151), (127, 43178), (195, 43472),

Gene: Causa\_162 Start: 88983, Stop: 88279, Start Num: 38

Candidate Starts for Causa\_162:

(Start: 38 @88983 has 1 MA's), (54, 88935), (101, 88785), (120, 88701), (123, 88671), (133, 88617), (135, 88611), (154, 88479), (165, 88422), (171, 88398), (176, 88389), (195, 88344), (203, 88326),

Gene: Cece\_203 Start: 122712, Stop: 123350, Start Num: 33

Candidate Starts for Cece\_203:

(Start: 33 @122712 has 30 MA's), (Start: 46 @122760 has 7 MA's), (79, 122829), (100, 122898), (137, 123099), (148, 123171), (150, 123180), (182, 123267), (193, 123303), (205, 123333),

Gene: Chop\_65 Start: 42388, Stop: 43020, Start Num: 55

Candidate Starts for Chop\_65:

(Start: 55 @42388 has 53 MA's), (93, 42484), (101, 42526), (117, 42610), (133, 42703), (141, 42754), (142, 42757), (170, 42907), (181, 42934), (190, 42958), (209, 43009), (212, 43015),

Gene: ClubL\_70 Start: 44960, Stop: 45727, Start Num: 55

Candidate Starts for ClubL\_70:

(36, 44912), (Start: 55 @44960 has 53 MA's), (71, 45011), (84, 45065), (92, 45083), (93, 45086), (113, 45197), (131, 45302), (134, 45317), (141, 45353), (161, 45479), (173, 45524), (207, 45602), (218, 45674),

Gene: Comrade\_232 Start: 114781, Stop: 115350, Start Num: 57

Candidate Starts for Comrade\_232:

(Start: 57 @114781 has 22 MA's), (83, 114868), (88, 114880), (97, 114901), (103, 114940), (124, 115051), (131, 115084), (138, 115123), (177, 115270), (197, 115315),

Gene: Cosmo\_138 Start: 65501, Stop: 66262, Start Num: 33

Candidate Starts for Cosmo\_138:

(Start: 33 @65501 has 30 MA's), (Start: 55 @65558 has 53 MA's), (101, 65708), (108, 65747), (110, 65756), (111, 65765), (123, 65837), (131, 65879), (149, 65996), (153, 66017), (155, 66032), (160, 66068), (165, 66080), (166, 66086), (172, 66113), (174, 66116), (177, 66122), (188, 66143),

Gene: Count\_118 Start: 70497, Stop: 71108, Start Num: 55

Candidate Starts for Count\_118:

(Start: 55 @70497 has 53 MA's), (Start: 68 @70545 has 1 MA's), (137, 70836), (140, 70848), (143, 70857), (171, 71010), (184, 71040), (186, 71043), (192, 71070), (201, 71091), (205, 71103),

Gene: Cracklewink\_91 Start: 56847, Stop: 57497, Start Num: 41

Candidate Starts for Cracklewink\_91:

(Start: 41 @56847 has 3 MA's), (42, 56850), (44, 56859), (97, 56997), (98, 57000), (100, 57018), (101, 57024), (102, 57027), (120, 57111), (123, 57141), (131, 57183), (143, 57240), (149, 57288), (168, 57381), (172, 57399), (188, 57426), (201, 57465), (205, 57477), (209, 57486),

Gene: Cucurbita\_71 Start: 46325, Stop: 47092, Start Num: 55

Candidate Starts for Cucurbita\_71:

(36, 46277), (Start: 55 @46325 has 53 MA's), (71, 46376), (84, 46430), (92, 46448), (93, 46451), (113, 46562), (131, 46667), (134, 46682), (141, 46718), (161, 46844), (173, 46889), (207, 46967), (218, 47039),

Gene: Culver\_71 Start: 44642, Stop: 45409, Start Num: 55

Candidate Starts for Culver\_71:

(36, 44594), (Start: 55 @44642 has 53 MA's), (75, 44711), (84, 44750), (90, 44762), (97, 44789), (103, 44828), (131, 44987), (134, 45002), (141, 45038), (161, 45164), (179, 45215),

Gene: D29\_66 Start: 43354, Stop: 42755, Start Num: 53

Candidate Starts for D29\_66:

(Start: 53 @43354 has 15 MA's), (99, 43222), (123, 43096), (131, 43054), (133, 43042), (141, 42988), (154, 42907), (167, 42859), (195, 42808), (197, 42802), (204, 42784),

Gene: D32\_71 Start: 43354, Stop: 42755, Start Num: 53

Candidate Starts for D32\_71:

(Start: 53 @43354 has 15 MA's), (99, 43222), (123, 43096), (131, 43054), (133, 43042), (141, 42988), (154, 42907), (167, 42859), (195, 42808), (197, 42802), (204, 42784),

Gene: DBQu4n\_72 Start: 43334, Stop: 42735, Start Num: 53

Candidate Starts for DBQu4n\_72:

(Start: 53 @43334 has 15 MA's), (99, 43202), (123, 43076), (131, 43034), (133, 43022), (137, 42998), (141, 42968), (154, 42887), (167, 42839), (195, 42788), (197, 42782), (204, 42764),

Gene: DelRio\_64 Start: 42409, Stop: 43041, Start Num: 55

Candidate Starts for DelRio\_64:

(Start: 55 @42409 has 53 MA's), (93, 42505), (96, 42517), (101, 42547), (117, 42631), (133, 42724), (141, 42775), (142, 42778), (170, 42928), (181, 42955), (190, 42979), (209, 43030), (212, 43036),

Gene: Diminimus\_126 Start: 65521, Stop: 66180, Start Num: 33

Candidate Starts for Diminimus\_126:

(17, 65404), (21, 65452), (23, 65467), (30, 65509), (Start: 33 @65521 has 30 MA's), (37, 65530), (99, 65713), (100, 65716), (101, 65722), (109, 65764), (113, 65779), (122, 65830), (123, 65839), (131, 65881), (133, 65893), (139, 65941), (145, 65971), (147, 65989), (159, 66067), (188, 66106), (195, 66130), (197, 66136),

Gene: Dodo\_228 Start: 122197, Stop: 122877, Start Num: 33

Candidate Starts for Dodo\_228:

(Start: 33 @122197 has 30 MA's), (Start: 46 @122245 has 7 MA's), (Start: 57 @122260 has 22 MA's), (73, 122314), (76, 122329), (80, 122341), (100, 122407), (123, 122524), (143, 122629), (182, 122776), (188, 122791), (195, 122815), (203, 122833),

Gene: DrManhattan\_34 Start: 23530, Stop: 24120, Start Num: 55

Candidate Starts for DrManhattan\_34:

(25, 23428), (36, 23479), (Start: 55 @23530 has 53 MA's), (105, 23692), (106, 23701), (123, 23782), (188, 24049), (191, 24064),

Gene: Dulcita\_126 Start: 65522, Stop: 66181, Start Num: 33

Candidate Starts for Dulcita\_126:

(17, 65405), (21, 65453), (23, 65468), (30, 65510), (Start: 33 @65522 has 30 MA's), (37, 65531), (99, 65714), (100, 65717), (101, 65723), (109, 65765), (113, 65780), (122, 65831), (123, 65840), (131, 65882), (133, 65894), (139, 65942), (145, 65972), (147, 65990), (159, 66068), (188, 66107), (195, 66131), (197, 66137),

Gene: Duplo\_72 Start: 43391, Stop: 42792, Start Num: 53

Candidate Starts for Duplo\_72:

(19, 43550), (Start: 53 @43391 has 15 MA's), (99, 43259), (123, 43133), (131, 43091), (133, 43079), (137, 43055), (141, 43025), (154, 42944), (167, 42896), (195, 42845), (197, 42839), (204, 42821),

Gene: Emma1919\_240 Start: 113814, Stop: 114383, Start Num: 57

Candidate Starts for Emma1919\_240:

(Start: 57 @113814 has 22 MA's), (60, 113820), (83, 113901), (88, 113913), (103, 113973), (141, 114171), (142, 114174), (157, 114273), (177, 114303), (189, 114324), (201, 114357),

Gene: EniyanLRS\_132 Start: 65728, Stop: 66489, Start Num: 33

Candidate Starts for EniyanLRS\_132:

(Start: 33 @65728 has 30 MA's), (Start: 55 @65785 has 53 MA's), (101, 65935), (108, 65974), (110, 65983), (111, 65992), (123, 66064), (131, 66106), (143, 66178), (149, 66223), (153, 66244), (155,



66259), (160, 66295), (165, 66307), (166, 66313), (172, 66340), (174, 66343), (177, 66349), (188, 66370),

Gene: Estes\_142 Start: 67527, Stop: 68168, Start Num: 33

Candidate Starts for Estes\_142:

(Start: 33 @67527 has 30 MA's), (80, 67647), (99, 67689), (100, 67692), (101, 67698), (122, 67806), (131, 67857), (134, 67872), (135, 67875), (159, 68040), (182, 68070), (185, 68076), (188, 68082), (195, 68106), (197, 68112), (201, 68121),

Gene: Exile\_32 Start: 26781, Stop: 27353, Start Num: 55

Candidate Starts for Exile\_32:

(Start: 55 @26781 has 53 MA's), (105, 26943), (113, 26973), (114, 26982), (123, 27033), (133, 27087), (142, 27132),

Gene: Faust\_237 Start: 115627, Stop: 116199, Start Num: 57

Candidate Starts for Faust\_237:

(48, 115615), (Start: 57 @115627 has 22 MA's), (83, 115714), (88, 115726), (103, 115786), (124, 115897), (177, 116119), (185, 116128), (201, 116173),

Gene: Floof\_70 Start: 43466, Stop: 44098, Start Num: 46

Candidate Starts for Floof\_70:

(9, 43148), (Start: 46 @43466 has 7 MA's), (90, 43568), (95, 43589), (114, 43682), (123, 43733), (127, 43760),

Gene: Forrest\_238 Start: 114575, Stop: 115141, Start Num: 58

Candidate Starts for Forrest\_238:

(Start: 58 @114575 has 2 MA's), (83, 114659), (88, 114671), (102, 114722), (157, 115031), (177, 115061), (189, 115082), (201, 115115),

Gene: Francob\_242 Start: 114823, Stop: 115392, Start Num: 57

Candidate Starts for Francob\_242:

(Start: 57 @114823 has 22 MA's), (83, 114910), (88, 114922), (103, 114982), (135, 115141), (137, 115159), (142, 115183), (143, 115186), (157, 115282), (177, 115312), (189, 115333), (201, 115366),

Gene: Francois\_63 Start: 41408, Stop: 42040, Start Num: 55

Candidate Starts for Francois\_63:

(1, 40730), (10, 41111), (11, 41117), (Start: 55 @41408 has 53 MA's), (92, 41501), (93, 41504), (101, 41546), (117, 41630), (131, 41711), (133, 41723), (141, 41774), (142, 41777), (164, 41906), (170, 41927), (181, 41954), (198, 42002), (209, 42029), (212, 42035),

Gene: FreakyGoo\_124 Start: 65994, Stop: 66665, Start Num: 30

Candidate Starts for FreakyGoo\_124:

(17, 65889), (21, 65937), (23, 65952), (30, 65994), (Start: 33 @66006 has 30 MA's), (37, 66015), (99, 66198), (100, 66201), (101, 66207), (109, 66249), (113, 66264), (122, 66315), (123, 66324), (131, 66366), (133, 66378), (139, 66426), (145, 66456), (147, 66474), (159, 66552), (188, 66591), (195, 66615), (197, 66621),

Gene: GMA2\_79 Start: 78731, Stop: 78057, Start Num: 55

Candidate Starts for GMA2\_79:

(Start: 55 @78731 has 53 MA's), (91, 78638), (93, 78632), (100, 78599), (112, 78539), (117, 78509), (119, 78503), (129, 78434), (131, 78428), (133, 78416), (142, 78374), (154, 78296), (162, 78248), (163, 78245), (180, 78197), (187, 78182), (204, 78131), (216, 78074),

Gene: GardenSalsa\_142 Start: 67658, Stop: 68338, Start Num: 33

Candidate Starts for GardenSalsa\_142:

(Start: 33 @67658 has 30 MA's), (Start: 39 @67685 has 1 MA's), (92, 67814), (99, 67853), (101, 67862), (102, 67865), (113, 67919), (119, 67946), (123, 67979), (129, 68015), (131, 68021), (185, 68246), (197, 68282), (201, 68291), (204, 68300),

Gene: Geeche\_68 Start: 44855, Stop: 45622, Start Num: 55

Candidate Starts for Geeche\_68:

(36, 44807), (Start: 55 @44855 has 53 MA's), (71, 44906), (84, 44960), (92, 44978), (93, 44981), (113, 45092), (131, 45197), (134, 45212), (141, 45248), (161, 45374), (173, 45419), (207, 45497), (218, 45569),

Gene: GenevaB15\_144 Start: 67316, Stop: 67996, Start Num: 33

Candidate Starts for GenevaB15\_144:

(Start: 33 @67316 has 30 MA's), (37, 67325), (92, 67472), (99, 67511), (123, 67637), (131, 67679), (159, 67868), (185, 67904), (197, 67940), (201, 67949), (204, 67958),

Gene: Gilson\_238 Start: 114088, Stop: 114657, Start Num: 57

Candidate Starts for Gilson\_238:

(Start: 57 @114088 has 22 MA's), (83, 114175), (88, 114187), (103, 114247), (141, 114445), (142, 114448), (157, 114547), (177, 114577), (189, 114598), (201, 114631),

Gene: Glaske16\_128 Start: 66640, Stop: 67299, Start Num: 33

Candidate Starts for Glaske16\_128:

(17, 66523), (21, 66571), (23, 66586), (30, 66628), (Start: 33 @66640 has 30 MA's), (37, 66649), (99, 66832), (100, 66835), (101, 66841), (109, 66883), (113, 66898), (122, 66949), (123, 66958), (131, 67000), (133, 67012), (139, 67060), (145, 67090), (147, 67108), (159, 67186), (188, 67225), (195, 67249), (197, 67255),

Gene: GrandSlam\_65 Start: 42388, Stop: 43020, Start Num: 55

Candidate Starts for GrandSlam\_65:

(Start: 55 @42388 has 53 MA's), (93, 42484), (101, 42526), (117, 42610), (133, 42703), (141, 42754), (142, 42757), (170, 42907), (181, 42934), (190, 42958), (209, 43009), (212, 43015),

Gene: Grayson\_174 Start: 92927, Stop: 93514, Start Num: 57

Candidate Starts for Grayson\_174:

(Start: 57 @92927 has 22 MA's), (83, 93014), (103, 93086), (104, 93092), (134, 93242), (135, 93245), (146, 93320), (185, 93440),

Gene: Gretchen\_65 Start: 42871, Stop: 43527, Start Num: 46

Candidate Starts for Gretchen\_65:

(Start: 46 @42871 has 7 MA's), (98, 43003), (103, 43039), (107, 43066), (123, 43147), (127, 43174), (141, 43243), (188, 43459),

Gene: Hamood\_65 Start: 42388, Stop: 43020, Start Num: 55

Candidate Starts for Hamood\_65:

(Start: 55 @42388 has 53 MA's), (93, 42484), (101, 42526), (117, 42610), (133, 42703), (141, 42754), (142, 42757), (170, 42907), (181, 42934), (190, 42958), (209, 43009), (212, 43015),

Gene: Hilltopfarm\_86 Start: 55522, Stop: 56172, Start Num: 41

Candidate Starts for Hilltopfarm\_86:

(Start: 41 @55522 has 3 MA's), (42, 55525), (44, 55534), (63, 55570), (65, 55573), (100, 55690), (120, 55783), (123, 55813), (125, 55831), (131, 55855), (135, 55873), (139, 55900), (143, 55912), (147,

55948), (151, 55972), (185, 56095), (188, 56101), (205, 56152), (209, 56161),

Gene: IPhone7\_124 Start: 65705, Stop: 66364, Start Num: 33

Candidate Starts for IPhone7\_124:

(Start: 33 @65705 has 30 MA's), (37, 65714), (61, 65771), (99, 65897), (100, 65900), (101, 65906), (109, 65948), (113, 65963), (123, 66023), (131, 66065), (133, 66077), (139, 66125), (145, 66155), (147, 66173), (159, 66251), (188, 66290), (195, 66314), (196, 66317), (197, 66320),

Gene: Iter\_35 Start: 25060, Stop: 25653, Start Num: 55

Candidate Starts for Iter\_35:

(16, 24859), (34, 25003), (Start: 55 @25060 has 53 MA's), (98, 25180), (105, 25222), (119, 25279), (123, 25312), (133, 25366), (141, 25408), (191, 25594), (200, 25615),

Gene: Izel\_124 Start: 65521, Stop: 66180, Start Num: 33

Candidate Starts for Izel\_124:

(17, 65404), (21, 65452), (23, 65467), (30, 65509), (Start: 33 @65521 has 30 MA's), (37, 65530), (99, 65713), (100, 65716), (101, 65722), (109, 65764), (113, 65779), (122, 65830), (123, 65839), (131, 65881), (133, 65893), (139, 65941), (145, 65971), (147, 65989), (159, 66067), (188, 66106), (195, 66130), (197, 66136),

Gene: Jada\_237 Start: 113815, Stop: 114381, Start Num: 58

Candidate Starts for Jada\_237:

(Start: 58 @113815 has 2 MA's), (83, 113899), (88, 113911), (89, 113914), (97, 113932), (102, 113962), (128, 114097), (137, 114148), (157, 114271), (177, 114301), (189, 114322), (201, 114355),

Gene: JeanGrey\_18 Start: 9097, Stop: 9705, Start Num: 57

Candidate Starts for JeanGrey\_18:

(14, 8878), (Start: 57 @9097 has 22 MA's), (103, 9268), (143, 9478),

Gene: JonJames\_77 Start: 52077, Stop: 52679, Start Num: 68

Candidate Starts for JonJames\_77:

(Start: 55 @52032 has 53 MA's), (Start: 68 @52077 has 1 MA's), (78, 52101), (82, 52116), (85, 52125), (97, 52161), (141, 52410), (144, 52425), (168, 52557), (184, 52593),

Gene: Karp\_234 Start: 115736, Stop: 116305, Start Num: 57

Candidate Starts for Karp\_234:

(Start: 57 @115736 has 22 MA's), (83, 115823), (88, 115835), (103, 115895), (124, 116006), (138, 116078), (177, 116225), (197, 116270),

Gene: KeAlii\_35 Start: 25205, Stop: 25810, Start Num: 55

Candidate Starts for KeAlii\_35:

(25, 25112), (36, 25163), (Start: 55 @25205 has 53 MA's), (98, 25325), (105, 25367), (119, 25424), (191, 25739), (195, 25748),

Gene: Kenrey\_244 Start: 115005, Stop: 115574, Start Num: 57

Candidate Starts for Kenrey\_244:

(45, 114987), (Start: 57 @115005 has 22 MA's), (83, 115092), (88, 115104), (103, 115164), (137, 115341), (141, 115362), (142, 115365), (157, 115464), (177, 115494), (201, 115548),

Gene: Kerberos\_72 Start: 43353, Stop: 42754, Start Num: 53

Candidate Starts for Kerberos\_72:

(19, 43512), (Start: 53 @43353 has 15 MA's), (99, 43221), (123, 43095), (131, 43053), (133, 43041), (137, 43017), (141, 42987), (154, 42906), (167, 42858), (195, 42807), (197, 42801), (204, 42783),

Gene: KleverKiS\_129 Start: 67190, Stop: 67849, Start Num: 33

Candidate Starts for KleverKiS\_129:

(Start: 33 @67190 has 30 MA's), (37, 67199), (61, 67256), (99, 67382), (100, 67385), (101, 67391), (109, 67433), (113, 67448), (123, 67508), (131, 67550), (133, 67562), (139, 67610), (145, 67640), (147, 67658), (159, 67736), (188, 67775), (195, 67799), (197, 67805),

Gene: Koduck\_70 Start: 42050, Stop: 41427, Start Num: 53

Candidate Starts for Koduck\_70:

(Start: 53 @42050 has 15 MA's), (70, 41999), (123, 41786), (130, 41747), (131, 41744), (133, 41732), (137, 41708), (158, 41558), (185, 41519),

Gene: Kumao\_95 Start: 58263, Stop: 58925, Start Num: 39

Candidate Starts for Kumao\_95:

(Start: 33 @58236 has 30 MA's), (Start: 39 @58263 has 1 MA's), (42, 58272), (72, 58344), (100, 58419), (101, 58425), (123, 58542), (129, 58578), (135, 58602), (139, 58641), (142, 58650), (153, 58722), (159, 58767), (204, 58896), (206, 58902),

Gene: L5\_66 Start: 42203, Stop: 41580, Start Num: 53

Candidate Starts for L5\_66:

(Start: 53 @42203 has 15 MA's), (70, 42152), (123, 41939), (130, 41900), (131, 41897), (133, 41885), (137, 41861), (158, 41711), (185, 41672),

Gene: Liebe\_66 Start: 43964, Stop: 44557, Start Num: 55

Candidate Starts for Liebe\_66:

(Start: 55 @43964 has 53 MA's), (123, 44216), (156, 44408), (211, 44543),

Gene: LilhomieP\_126 Start: 66983, Stop: 67642, Start Num: 33

Candidate Starts for LilhomieP\_126:

(Start: 33 @66983 has 30 MA's), (37, 66992), (61, 67049), (99, 67175), (100, 67178), (101, 67184), (109, 67226), (113, 67241), (123, 67301), (131, 67343), (133, 67355), (139, 67403), (145, 67433), (147, 67451), (159, 67529), (188, 67568), (195, 67592), (197, 67598),

Gene: Limpid\_228 Start: 114440, Stop: 115012, Start Num: 57

Candidate Starts for Limpid\_228:

(Start: 57 @114440 has 22 MA's), (83, 114527), (88, 114539), (103, 114599), (128, 114725), (135, 114761), (153, 114875), (177, 114932), (188, 114947), (201, 114986),

Gene: MaGuCo\_59 Start: 41964, Stop: 42545, Start Num: 55

Candidate Starts for MaGuCo\_59:

(Start: 55 @41964 has 53 MA's), (123, 42216), (131, 42258), (156, 42396), (197, 42498), (211, 42531),

Gene: Malisha\_43 Start: 30831, Stop: 31424, Start Num: 55

Candidate Starts for Malisha\_43:

(Start: 55 @30831 has 53 MA's), (74, 30891), (92, 30921), (131, 31140), (133, 31152), (141, 31191), (149, 31245), (153, 31266),

Gene: MaryV\_123 Start: 63561, Stop: 64322, Start Num: 33

Candidate Starts for MaryV\_123:

(Start: 33 @63561 has 30 MA's), (Start: 55 @63618 has 53 MA's), (101, 63768), (108, 63807), (110, 63816), (111, 63825), (123, 63897), (131, 63939), (149, 64056), (153, 64077), (155, 64092), (160, 64128), (165, 64140), (166, 64146), (172, 64173), (174, 64176), (177, 64182), (188, 64203),

Gene: Maureen\_66 Start: 43963, Stop: 44556, Start Num: 55  
Candidate Starts for Maureen\_66:  
(Start: 55 @43963 has 53 MA's), (123, 44215), (156, 44407), (211, 44542),

Gene: MeganTheeKilla\_241 Start: 113988, Stop: 114557, Start Num: 57  
Candidate Starts for MeganTheeKilla\_241:  
(43, 113967), (Start: 57 @113988 has 22 MA's), (60, 113994), (83, 114075), (88, 114087), (119, 114210), (128, 114273), (157, 114447), (177, 114477), (189, 114498),

Gene: Miskis\_71 Start: 44799, Stop: 45566, Start Num: 55  
Candidate Starts for Miskis\_71:  
(36, 44751), (Start: 55 @44799 has 53 MA's), (75, 44868), (84, 44904), (92, 44922), (93, 44925), (113, 45036), (131, 45141), (134, 45156), (141, 45192), (161, 45318), (173, 45363), (207, 45441), (218, 45513),

Gene: MissSwiss\_34 Start: 23588, Stop: 24193, Start Num: 55  
Candidate Starts for MissSwiss\_34:  
(25, 23486), (36, 23537), (Start: 55 @23588 has 53 MA's), (98, 23708), (105, 23750), (123, 23840), (175, 24086), (191, 24122), (193, 24128),

Gene: Moab\_241 Start: 116258, Stop: 116827, Start Num: 57  
Candidate Starts for Moab\_241:  
(Start: 52 @116252 has 1 MA's), (Start: 57 @116258 has 22 MA's), (83, 116345), (88, 116357), (103, 116417), (131, 116561), (135, 116576), (137, 116594), (141, 116615), (142, 116618), (143, 116621), (157, 116717), (177, 116747), (188, 116762), (189, 116768), (201, 116801),

Gene: ModicumRichard\_97 Start: 56428, Stop: 57018, Start Num: 55  
Candidate Starts for ModicumRichard\_97:  
(Start: 55 @56428 has 53 MA's), (93, 56527), (131, 56734), (133, 56746),

Gene: Morgana\_104 Start: 58639, Stop: 59229, Start Num: 55  
Candidate Starts for Morgana\_104:  
(5, 58186), (6, 58219), (7, 58222), (Start: 55 @58639 has 53 MA's), (93, 58738), (131, 58945), (133, 58957),

Gene: MrMagoo\_144 Start: 67659, Stop: 68339, Start Num: 33  
Candidate Starts for MrMagoo\_144:  
(Start: 33 @67659 has 30 MA's), (Start: 39 @67686 has 1 MA's), (92, 67815), (99, 67854), (101, 67863), (102, 67866), (113, 67920), (119, 67947), (123, 67980), (129, 68016), (131, 68022), (185, 68247), (197, 68283), (201, 68292), (204, 68301),

Gene: Mulch\_63 Start: 41222, Stop: 41854, Start Num: 55  
Candidate Starts for Mulch\_63:  
(Start: 55 @41222 has 53 MA's), (93, 41318), (96, 41330), (101, 41360), (117, 41444), (133, 41537), (141, 41588), (142, 41591), (170, 41741), (181, 41768), (190, 41792), (209, 41843), (212, 41849),

Gene: Nadeem\_63 Start: 41210, Stop: 41842, Start Num: 55  
Candidate Starts for Nadeem\_63:  
(Start: 55 @41210 has 53 MA's), (93, 41306), (96, 41318), (101, 41348), (117, 41432), (133, 41525), (141, 41576), (142, 41579), (170, 41729), (181, 41756), (190, 41780), (209, 41831), (212, 41837),

Gene: Naji\_72 Start: 43354, Stop: 42755, Start Num: 53  
Candidate Starts for Naji\_72:

(Start: 53 @43354 has 15 MA's), (99, 43222), (123, 43096), (131, 43054), (133, 43042), (141, 42988), (154, 42907), (167, 42859), (195, 42808), (197, 42802), (204, 42784),

Gene: NancyRae\_62 Start: 41160, Stop: 41792, Start Num: 55

Candidate Starts for NancyRae\_62:

(Start: 55 @41160 has 53 MA's), (93, 41256), (96, 41268), (101, 41298), (117, 41382), (133, 41475), (141, 41526), (142, 41529), (170, 41679), (181, 41706), (190, 41730), (209, 41781), (212, 41787),

Gene: Nanosmite\_137 Start: 67537, Stop: 68211, Start Num: 33

Candidate Starts for Nanosmite\_137:

(Start: 33 @67537 has 30 MA's), (47, 67585), (49, 67588), (59, 67600), (62, 67606), (87, 67678), (99, 67729), (100, 67732), (101, 67738), (120, 67825), (121, 67828), (123, 67855), (131, 67897), (136, 67927), (209, 68197),

Gene: Norvs\_70 Start: 45038, Stop: 45805, Start Num: 55

Candidate Starts for Norvs\_70:

(36, 44990), (Start: 55 @45038 has 53 MA's), (71, 45089), (84, 45143), (92, 45161), (93, 45164), (113, 45275), (131, 45380), (134, 45395), (141, 45431), (161, 45557), (173, 45602), (207, 45680), (218, 45752),

Gene: ObLaDi\_97 Start: 56474, Stop: 57064, Start Num: 55

Candidate Starts for ObLaDi\_97:

(Start: 55 @56474 has 53 MA's), (93, 56573), (131, 56780), (133, 56792),

Gene: OneUp\_62 Start: 44461, Stop: 45207, Start Num: 55

Candidate Starts for OneUp\_62:

(36, 44413), (Start: 55 @44461 has 53 MA's), (Start: 68 @44506 has 1 MA's), (131, 44800), (134, 44815), (141, 44851), (184, 45022), (217, 45139),

Gene: P1201\_60 Start: 48819, Stop: 48157, Start Num: 57

Candidate Starts for P1201\_60:

(Start: 57 @48819 has 22 MA's), (81, 48717), (108, 48597),

Gene: Parada\_63 Start: 41222, Stop: 41854, Start Num: 55

Candidate Starts for Parada\_63:

(Start: 55 @41222 has 53 MA's), (93, 41318), (96, 41330), (101, 41360), (117, 41444), (133, 41537), (141, 41588), (142, 41591), (170, 41741), (181, 41768), (190, 41792), (209, 41843), (212, 41849),

Gene: Patelgo\_240 Start: 116499, Stop: 117068, Start Num: 57

Candidate Starts for Patelgo\_240:

(Start: 52 @116493 has 1 MA's), (Start: 57 @116499 has 22 MA's), (83, 116586), (88, 116598), (103, 116658), (131, 116802), (135, 116817), (137, 116835), (141, 116856), (142, 116859), (143, 116862), (157, 116958), (177, 116988), (188, 117003), (189, 117009), (201, 117042),

Gene: PauloDiaboli\_229 Start: 120608, Stop: 121288, Start Num: 33

Candidate Starts for PauloDiaboli\_229:

(Start: 33 @120608 has 30 MA's), (Start: 46 @120656 has 7 MA's), (73, 120725), (76, 120740), (80, 120752), (100, 120818), (123, 120935), (143, 121040), (182, 121187), (188, 121202), (195, 121226), (203, 121244),

Gene: PegLeg\_129 Start: 66867, Stop: 67526, Start Num: 33

Candidate Starts for PegLeg\_129:

(Start: 33 @66867 has 30 MA's), (37, 66876), (61, 66933), (99, 67059), (100, 67062), (101, 67068), (109, 67110), (113, 67125), (123, 67185), (131, 67227), (133, 67239), (139, 67287), (145, 67317), (147, 67335), (159, 67413), (188, 67452), (195, 67476), (197, 67482),

Gene: Percival\_66 Start: 42771, Stop: 43427, Start Num: 46

Candidate Starts for Percival\_66:

(Start: 46 @42771 has 7 MA's), (103, 42939), (107, 42966), (123, 43047), (127, 43074), (141, 43143), (188, 43359),

Gene: Peregrin\_172 Start: 92358, Stop: 92945, Start Num: 57

Candidate Starts for Peregrin\_172:

(Start: 57 @92358 has 22 MA's), (83, 92445), (97, 92478), (135, 92676), (138, 92700), (152, 92784), (154, 92796), (155, 92802), (188, 92877), (205, 92928),

Gene: PhinkBoden\_69 Start: 45419, Stop: 46186, Start Num: 55

Candidate Starts for PhinkBoden\_69:

(36, 45371), (Start: 55 @45419 has 53 MA's), (71, 45470), (84, 45524), (92, 45542), (93, 45545), (113, 45656), (131, 45761), (134, 45776), (141, 45812), (161, 45938), (173, 45983), (207, 46061), (218, 46133),

Gene: Phredrick\_243 Start: 113870, Stop: 114439, Start Num: 57

Candidate Starts for Phredrick\_243:

(Start: 57 @113870 has 22 MA's), (83, 113957), (88, 113969), (98, 113993), (119, 114092), (128, 114155), (137, 114206), (157, 114329), (177, 114359), (200, 114410), (201, 114413),

Gene: Pimento\_65 Start: 41117, Stop: 41749, Start Num: 55

Candidate Starts for Pimento\_65:

(Start: 55 @41117 has 53 MA's), (93, 41213), (101, 41255), (117, 41339), (133, 41432), (141, 41483), (142, 41486), (164, 41615), (170, 41636), (181, 41663), (198, 41711), (209, 41738), (212, 41744),

Gene: Pomar16\_71 Start: 43394, Stop: 42795, Start Num: 53

Candidate Starts for Pomar16\_71:

(19, 43553), (Start: 53 @43394 has 15 MA's), (99, 43262), (123, 43136), (131, 43094), (133, 43082), (137, 43058), (141, 43028), (154, 42947), (167, 42899), (195, 42848), (197, 42842), (204, 42824),

Gene: Pumpernickel\_213 Start: 122012, Stop: 122635, Start Num: 50

Candidate Starts for Pumpernickel\_213:

(28, 121937), (29, 121940), (35, 121961), (Start: 50 @122012 has 1 MA's), (64, 122042), (77, 122099), (98, 122162), (105, 122204), (158, 122519), (188, 122567), (205, 122618),

Gene: REQ2\_72 Start: 44418, Stop: 45047, Start Num: 55

Candidate Starts for REQ2\_72:

(20, 44271), (Start: 55 @44418 has 53 MA's), (116, 44646), (123, 44685), (141, 44778),

Gene: Reedo\_34 Start: 23546, Stop: 24151, Start Num: 55

Candidate Starts for Reedo\_34:

(24, 23444), (36, 23504), (Start: 55 @23546 has 53 MA's), (98, 23666), (105, 23708), (106, 23717), (141, 23894), (191, 24080), (195, 24089), (205, 24116),

Gene: Reindeer\_129 Start: 68120, Stop: 68779, Start Num: 33

Candidate Starts for Reindeer\_129:

(13, 67961), (17, 68003), (21, 68051), (23, 68066), (30, 68108), (Start: 33 @68120 has 30 MA's), (62, 68189), (99, 68312), (100, 68315), (101, 68321), (102, 68324), (122, 68429), (123, 68438), (131,

68480), (133, 68492), (138, 68522), (139, 68540), (142, 68549), (143, 68552), (159, 68666), (185, 68699), (188, 68705), (195, 68729), (197, 68735),

Gene: Rey\_144 Start: 67232, Stop: 67873, Start Num: 33

Candidate Starts for Rey\_144:

(Start: 33 @67232 has 30 MA's), (Start: 39 @67259 has 1 MA's), (66, 67307), (80, 67352), (99, 67394), (100, 67397), (101, 67403), (122, 67511), (131, 67562), (134, 67577), (135, 67580), (159, 67745), (182, 67775), (185, 67781), (188, 67787), (195, 67811), (197, 67817), (201, 67826),

Gene: Seahorse\_42 Start: 29837, Stop: 29280, Start Num: 55

Candidate Starts for Seahorse\_42:

(18, 30002), (40, 29867), (Start: 46 @29849 has 7 MA's), (Start: 55 @29837 has 53 MA's), (105, 29675), (123, 29585), (142, 29489), (155, 29402), (159, 29369), (183, 29330), (195, 29294),

Gene: SeresaTree\_241 Start: 115852, Stop: 116424, Start Num: 57

Candidate Starts for SeresaTree\_241:

(48, 115840), (Start: 57 @115852 has 22 MA's), (83, 115939), (88, 115951), (103, 116011), (124, 116122), (177, 116344), (185, 116353), (201, 116398),

Gene: Sham\_227 Start: 115383, Stop: 115955, Start Num: 57

Candidate Starts for Sham\_227:

(Start: 57 @115383 has 22 MA's), (83, 115470), (88, 115482), (97, 115503), (152, 115812), (177, 115875), (185, 115884),

Gene: Skinny\_132 Start: 67984, Stop: 68643, Start Num: 33

Candidate Starts for Skinny\_132:

(Start: 33 @67984 has 30 MA's), (37, 67993), (61, 68050), (99, 68176), (100, 68179), (101, 68185), (109, 68227), (113, 68242), (123, 68302), (131, 68344), (133, 68356), (139, 68404), (145, 68434), (147, 68452), (159, 68530), (188, 68569), (195, 68593), (197, 68599),

Gene: SlimJimmy\_125 Start: 66693, Stop: 67352, Start Num: 33

Candidate Starts for SlimJimmy\_125:

(Start: 33 @66693 has 30 MA's), (37, 66702), (61, 66759), (99, 66885), (100, 66888), (101, 66894), (109, 66936), (113, 66951), (123, 67011), (131, 67053), (133, 67065), (139, 67113), (145, 67143), (147, 67161), (159, 67239), (188, 67278), (195, 67302), (197, 67308),

Gene: Snek\_34 Start: 23894, Stop: 24478, Start Num: 55

Candidate Starts for Snek\_34:

(34, 23837), (Start: 55 @23894 has 53 MA's), (105, 24056), (123, 24146), (126, 24170), (141, 24242), (149, 24299), (191, 24428),

Gene: Soondubu\_32 Start: 26785, Stop: 27357, Start Num: 55

Candidate Starts for Soondubu\_32:

(Start: 55 @26785 has 53 MA's), (105, 26947), (111, 26968), (113, 26977), (114, 26986), (123, 27037), (133, 27091), (142, 27136),

Gene: SparkleGoddess\_236 Start: 115010, Stop: 115579, Start Num: 57

Candidate Starts for SparkleGoddess\_236:

(Start: 57 @115010 has 22 MA's), (83, 115097), (88, 115109), (97, 115130), (103, 115169), (124, 115280), (131, 115313), (138, 115352), (177, 115499), (197, 115544),

Gene: Squiddly\_43 Start: 31863, Stop: 32456, Start Num: 55

Candidate Starts for Squiddly\_43:



(Start: 55 @31863 has 53 MA's), (74, 31923), (92, 31953), (131, 32172), (133, 32184), (141, 32223), (149, 32277), (153, 32298),

Gene: StAugustine\_154 Start: 90081, Stop: 89398, Start Num: 38

Candidate Starts for StAugustine\_154:

(26, 90135), (Start: 38 @90081 has 1 MA's), (54, 90033), (101, 89883), (120, 89799), (123, 89769), (133, 89715), (135, 89709), (156, 89568), (159, 89538), (174, 89511), (197, 89457),

Gene: StarStuff\_72 Start: 43356, Stop: 42757, Start Num: 53

Candidate Starts for StarStuff\_72:

(Start: 53 @43356 has 15 MA's), (99, 43224), (123, 43098), (131, 43056), (133, 43044), (137, 43020), (141, 42990), (154, 42909), (167, 42861), (195, 42810), (197, 42804), (204, 42786),

Gene: Stigma\_234 Start: 114975, Stop: 115544, Start Num: 57

Candidate Starts for Stigma\_234:

(Start: 57 @114975 has 22 MA's), (83, 115062), (88, 115074), (97, 115095), (103, 115134), (124, 115245), (131, 115278), (138, 115317), (177, 115464), (197, 115509),

Gene: SuMoo\_74 Start: 44793, Stop: 45428, Start Num: 46

Candidate Starts for SuMoo\_74:

(8, 44481), (Start: 46 @44793 has 7 MA's), (98, 44925), (123, 45057), (127, 45084), (153, 45249), (174, 45324), (203, 45387), (204, 45393), (208, 45402),

Gene: Sue2\_35 Start: 25637, Stop: 26242, Start Num: 55

Candidate Starts for Sue2\_35:

(15, 25427), (16, 25436), (34, 25580), (Start: 55 @25637 has 53 MA's), (105, 25799), (133, 25943), (142, 25988), (191, 26171), (195, 26180),

Gene: Tallboi\_34 Start: 26234, Stop: 26827, Start Num: 55

Candidate Starts for Tallboi\_34:

(16, 26033), (34, 26177), (Start: 55 @26234 has 53 MA's), (98, 26354), (105, 26396), (123, 26486), (133, 26540), (141, 26582), (191, 26768), (200, 26789),

Gene: ThayneTheZag\_42 Start: 28365, Stop: 27802, Start Num: 55

Candidate Starts for ThayneTheZag\_42:

(40, 28395), (Start: 46 @28377 has 7 MA's), (Start: 55 @28365 has 53 MA's), (105, 28203), (123, 28113), (183, 27858), (196, 27819),

Gene: Tiff81\_36 Start: 25430, Stop: 24873, Start Num: 52

Candidate Starts for Tiff81\_36:

(31, 25496), (Start: 46 @25439 has 7 MA's), (Start: 52 @25430 has 1 MA's), (105, 25268), (123, 25178), (142, 25082), (155, 24995), (159, 24962), (183, 24923), (195, 24887),

Gene: Tomathan\_72 Start: 43467, Stop: 42868, Start Num: 53

Candidate Starts for Tomathan\_72:

(19, 43626), (Start: 53 @43467 has 15 MA's), (99, 43335), (123, 43209), (131, 43167), (133, 43155), (137, 43131), (141, 43101), (154, 43020), (167, 42972), (195, 42921), (197, 42915), (204, 42897),

Gene: Toniann\_70 Start: 44981, Stop: 45748, Start Num: 55

Candidate Starts for Toniann\_70:

(36, 44933), (Start: 55 @44981 has 53 MA's), (71, 45032), (84, 45086), (92, 45104), (93, 45107), (113, 45218), (131, 45323), (134, 45338), (141, 45374), (161, 45500), (173, 45545), (207, 45623), (218, 45695),

Gene: Travvers\_71 Start: 43353, Stop: 42754, Start Num: 53

Candidate Starts for Travvers\_71:

(Start: 53 @43353 has 15 MA's), (99, 43221), (123, 43095), (131, 43053), (133, 43041), (141, 42987), (154, 42906), (167, 42858), (195, 42807), (197, 42801), (204, 42783),

Gene: TunaTartare\_235 Start: 117713, Stop: 118285, Start Num: 57

Candidate Starts for TunaTartare\_235:

(Start: 57 @117713 has 22 MA's), (83, 117800), (86, 117809), (88, 117812), (177, 118205), (185, 118214),

Gene: Turab\_33 Start: 24701, Stop: 25294, Start Num: 55

Candidate Starts for Turab\_33:

(15, 24491), (16, 24500), (34, 24644), (Start: 55 @24701 has 53 MA's), (98, 24821), (105, 24863), (123, 24953), (133, 25007), (141, 25049), (191, 25235), (200, 25256),

Gene: Tweety19\_34 Start: 23893, Stop: 24477, Start Num: 55

Candidate Starts for Tweety19\_34:

(16, 23692), (34, 23836), (Start: 55 @23893 has 53 MA's), (105, 24055), (123, 24145), (126, 24169), (141, 24241), (149, 24298), (191, 24427),

Gene: TyDawg\_121 Start: 65708, Stop: 66367, Start Num: 33

Candidate Starts for TyDawg\_121:

(Start: 33 @65708 has 30 MA's), (37, 65717), (61, 65774), (99, 65900), (100, 65903), (101, 65909), (109, 65951), (113, 65966), (123, 66026), (131, 66068), (133, 66080), (139, 66128), (145, 66158), (147, 66176), (159, 66254), (188, 66293), (195, 66317), (196, 66320), (197, 66323),

Gene: UtzChips\_67 Start: 41958, Stop: 42590, Start Num: 46

Candidate Starts for UtzChips\_67:

(12, 41760), (Start: 46 @41958 has 7 MA's), (123, 42222), (127, 42249), (141, 42318),

Gene: VC3\_71 Start: 42782, Stop: 42180, Start Num: 53

Candidate Starts for VC3\_71:

(Start: 53 @42782 has 15 MA's), (99, 42647), (123, 42521), (130, 42482), (137, 42443), (142, 42410), (154, 42332), (167, 42284), (195, 42233), (204, 42209), (214, 42185),

Gene: Weasels2\_179 Start: 96946, Stop: 97533, Start Num: 56

Candidate Starts for Weasels2\_179:

(Start: 56 @96946 has 1 MA's), (60, 96952), (83, 97033), (98, 97069), (103, 97105), (104, 97111), (134, 97261), (135, 97264), (146, 97339), (185, 97459), (205, 97516),

Gene: Westy\_237 Start: 115764, Stop: 116333, Start Num: 57

Candidate Starts for Westy\_237:

(Start: 57 @115764 has 22 MA's), (83, 115851), (88, 115863), (97, 115884), (103, 115923), (124, 116034), (131, 116067), (138, 116106), (177, 116253), (197, 116298),

Gene: WheatThin\_62 Start: 41210, Stop: 41842, Start Num: 55

Candidate Starts for WheatThin\_62:

(Start: 55 @41210 has 53 MA's), (93, 41306), (96, 41318), (101, 41348), (117, 41432), (133, 41525), (141, 41576), (142, 41579), (170, 41729), (181, 41756), (190, 41780), (209, 41831), (212, 41837),

Gene: Wildcat\_137 Start: 65454, Stop: 66215, Start Num: 33

Candidate Starts for Wildcat\_137:

(Start: 33 @65454 has 30 MA's), (Start: 55 @65511 has 53 MA's), (101, 65661), (108, 65700), (110, 65709), (111, 65718), (123, 65790), (131, 65832), (149, 65949), (153, 65970), (155, 65985), (160, 66021), (165, 66033), (166, 66039), (172, 66066), (174, 66069), (177, 66075), (188, 66096),

Gene: Wildwest\_34 Start: 24787, Stop: 25380, Start Num: 55

Candidate Starts for Wildwest\_34:

(16, 24586), (34, 24730), (Start: 55 @24787 has 53 MA's), (98, 24907), (105, 24949), (115, 24997), (123, 25039), (141, 25135), (168, 25270), (200, 25339),

Gene: WilliamBoone\_69 Start: 43939, Stop: 44712, Start Num: 55

Candidate Starts for WilliamBoone\_69:

(36, 43891), (Start: 55 @43939 has 53 MA's), (75, 44008), (84, 44047), (90, 44059), (103, 44125), (131, 44284), (134, 44299), (141, 44335), (170, 44488), (174, 44503), (199, 44566), (210, 44593), (213, 44605),

Gene: Yvonnetastic\_75 Start: 49573, Stop: 50220, Start Num: 55

Candidate Starts for Yvonnetastic\_75:

(Start: 55 @49573 has 53 MA's), (67, 49615), (Start: 68 @49618 has 1 MA's), (78, 49642), (82, 49657), (85, 49666), (97, 49702), (141, 49951), (144, 49966), (168, 50098), (184, 50134),

Gene: Zooman\_196 Start: 115164, Stop: 115838, Start Num: 33

Candidate Starts for Zooman\_196:

(Start: 33 @115164 has 30 MA's), (45, 115209), (Start: 46 @115212 has 7 MA's), (51, 115218), (Start: 57 @115227 has 22 MA's), (69, 115275), (105, 115404), (118, 115458), (132, 115548), (148, 115650), (156, 115689), (182, 115746), (191, 115776), (195, 115785),