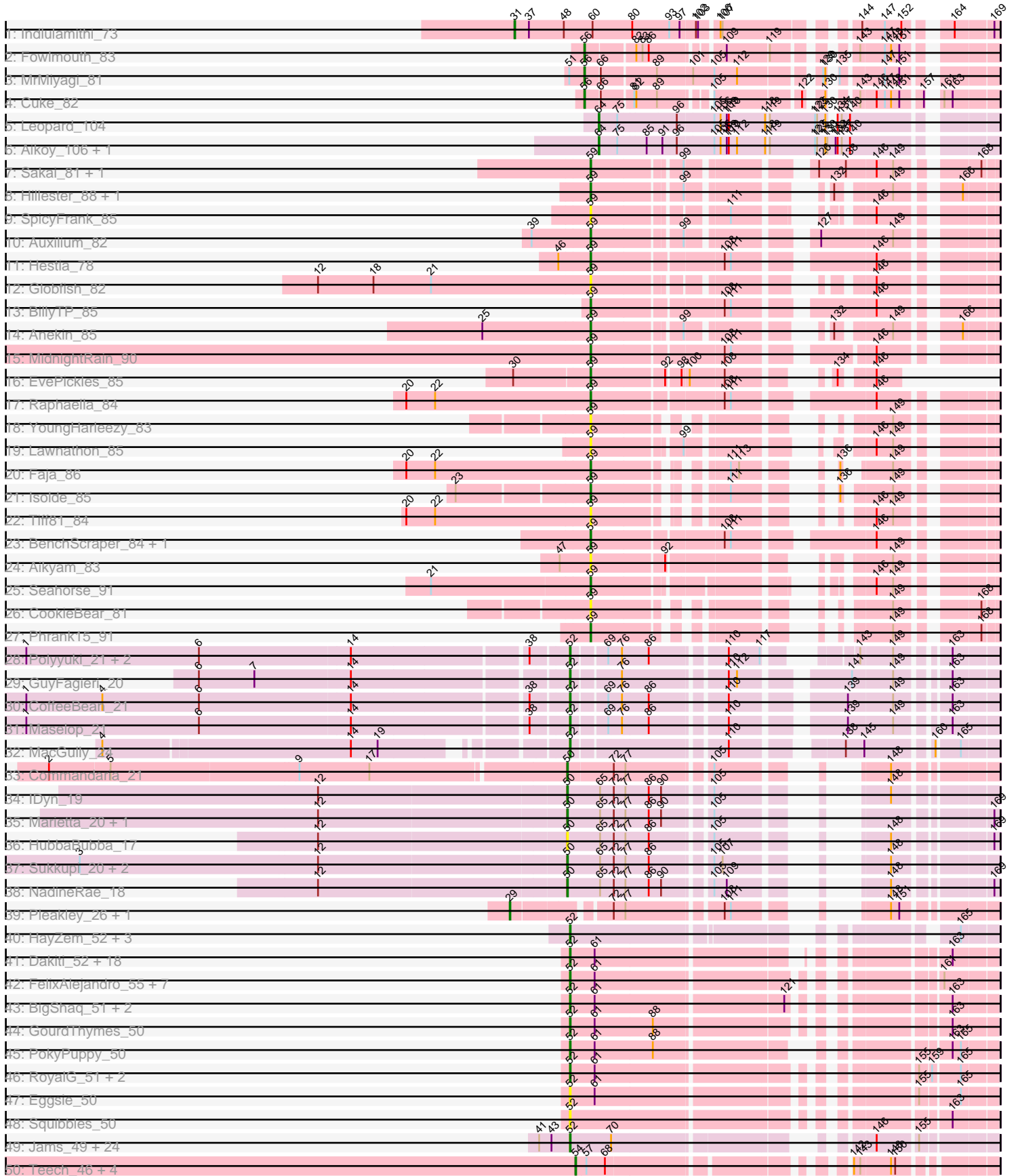
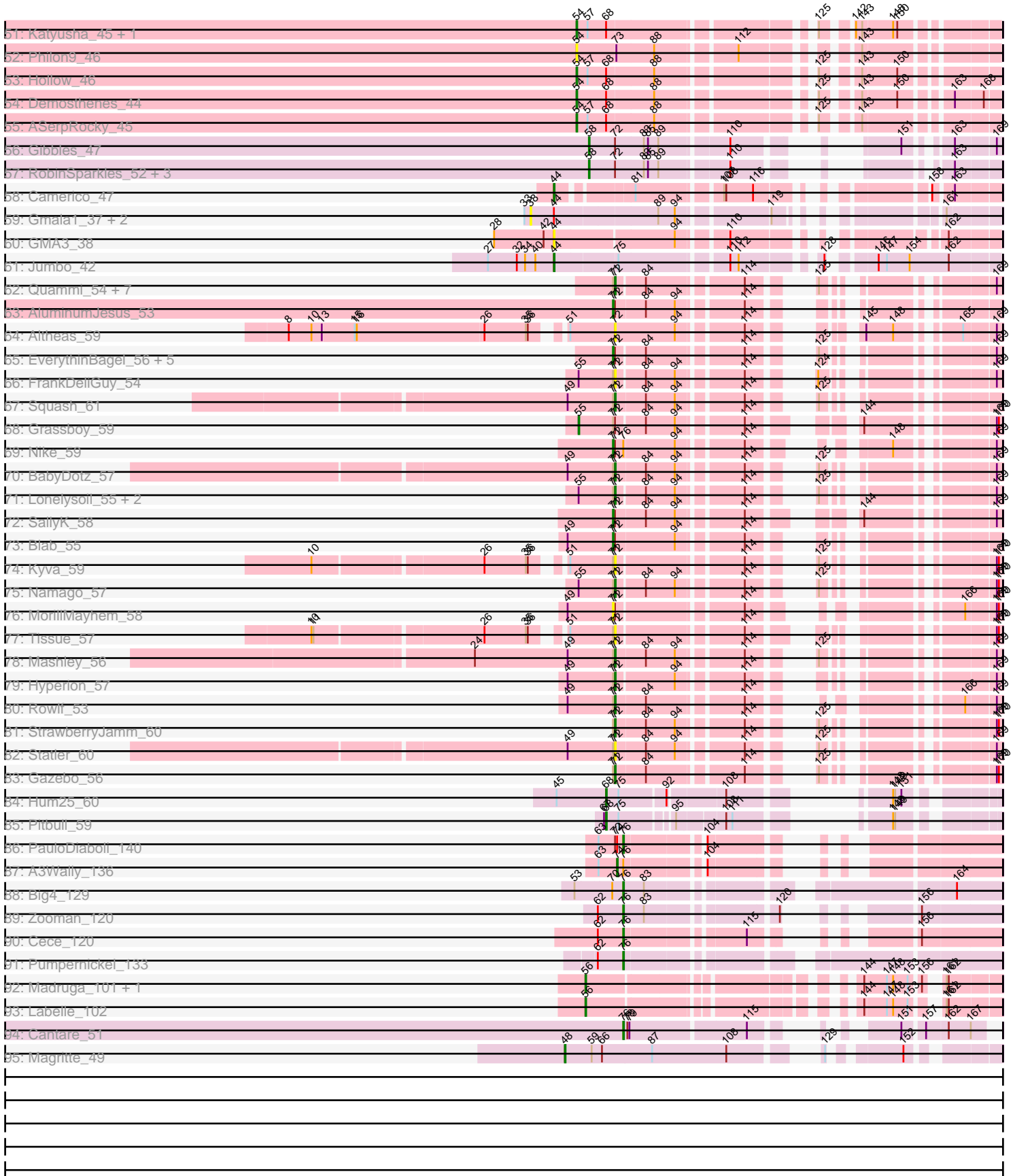


Pham 196313



Pham 196313



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 196313 Report

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

Pham number 196313 has 186 members, 35 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi\_73
- Track 2 : Fowlmouth\_83
- Track 3 : MrMiyagi\_81
- Track 4 : Cuke\_82
- Track 5 : Leopard\_104
- Track 6 : Aikoy\_106, Onyinye\_105
- Track 7 : Sakai\_81, Gorpy\_82
- Track 8 : Hillester\_88, RadFad\_89
- Track 9 : SpicyFrank\_85
- Track 10 : Auxilium\_82
- Track 11 : Hestia\_78
- Track 12 : Globfish\_82
- Track 13 : BillyTP\_85
- Track 14 : Anekin\_85
- Track 15 : MidnightRain\_90
- Track 16 : EvePickles\_85
- Track 17 : Raphaella\_84
- Track 18 : YoungHarleezy\_83
- Track 19 : Lawnathon\_85
- Track 20 : Faja\_86
- Track 21 : Isolde\_85
- Track 22 : Tiff81\_84
- Track 23 : BenchScraper\_84, Richie\_87
- Track 24 : Aikyam\_83
- Track 25 : Seahorse\_91
- Track 26 : CookieBear\_81
- Track 27 : Phrank15\_91
- Track 28 : Polyuyuki\_21, Braxoaddie\_21, Apiary\_21
- Track 29 : GuyFagieri\_20
- Track 30 : CoffeeBean\_21
- Track 31 : Maselop\_21
- Track 32 : MacGully\_24
- Track 33 : Commandaria\_21
- Track 34 : IDyn\_19
- Track 35 : Marietta\_20, WhoseManz\_20
- Track 36 : HubbaBubba\_17
- Track 37 : Sukkupi\_20, BiPauneto\_21, Yndexa\_20

- Track 38 : NadineRae\_18
- Track 39 : Pleakley\_26, Fury\_26
- Track 40 : HayZem\_52, GMA7\_42, GTE7\_41, Amore2\_53
- Track 41 : Dakiti\_52, Lizzo\_50, CathyBurgh\_50, Adgers\_52, Barbochs\_51, Chelms\_51, RemRem\_51, Hotorobo\_50, Flakey\_50, Linetti\_52, BirksAndSocks\_55, Gorko\_50, Ekhein\_51, Breezic\_50, John316\_54, Monty\_49, Sam12\_50, Beaver\_54, Exiguo\_50
- Track 42 : FelixAlejandro\_55, Msay19\_55, Butterball\_54, CinnamonToast\_56, Jellybones\_53, Boneham\_54, Poland\_55, Sombrero\_51
- Track 43 : BigShaq\_51, BenoitCattle\_52, PierreThree\_51
- Track 44 : GourdThymes\_50
- Track 45 : PokyPuppy\_50
- Track 46 : RoyalG\_51, Diabla\_54, SteveFrench\_50
- Track 47 : Eggsie\_50
- Track 48 : Squibbles\_50
- Track 49 : Jams\_49, Anamika\_49, Hail2Pitt\_48, Charianelly\_49, Jormungandr\_49, Shelley\_49, GalacticEye\_49, MrWormie\_49, Harambe\_49, Luker\_50, Kaseim\_49, Newt\_50, Damp\_49, Sticker17\_49, Nimi13\_49, Teal\_49, Hello\_49, Berries\_49, Lahirium\_49, Neoevie\_49, Woes\_49, Minos\_50, Lidong\_49, Bianmat\_49, Guillaume\_49
- Track 50 : Teech\_46, Teatealatte\_46, Tredge\_46, Niagara\_45, Kvothe\_45
- Track 51 : Katyusha\_45, Benczkowski14\_45
- Track 52 : Philon9\_46
- Track 53 : Hollow\_46
- Track 54 : Demosthenes\_44
- Track 55 : ASerpRocky\_45
- Track 56 : Gibbles\_47
- Track 57 : RobinSparkles\_52, Orchid\_48, Kampe\_49, PatrickStar\_49
- Track 58 : Camerico\_47
- Track 59 : Gmala1\_37, GordDuk1\_37, GordTnk2\_37
- Track 60 : GMA3\_38
- Track 61 : Jumbo\_42
- Track 62 : Quammi\_54, Wheelie\_56, Sillytadpoles\_57, DonaldDuck\_56, Viceroy\_55, Casend\_57, Wayne3\_58, Teehee\_57
- Track 63 : AluminumJesus\_53
- Track 64 : Altheas\_59
- Track 65 : EverythinBagel\_56, Llemily\_56, Zhafia\_59, Jehoshaphat\_58, Rudy\_54, Phabia\_56
- Track 66 : FrankDeliGuy\_54
- Track 67 : Squash\_61
- Track 68 : Grassboy\_59
- Track 69 : Nike\_59
- Track 70 : BabyDotz\_57
- Track 71 : Lonelysoil\_55, Zagie\_57, Judebell\_58
- Track 72 : SallyK\_58
- Track 73 : Blab\_55
- Track 74 : Kyva\_59
- Track 75 : Namago\_57
- Track 76 : MorillMayhem\_58
- Track 77 : Tissue\_57
- Track 78 : Mashley\_56
- Track 79 : Hyperion\_57
- Track 80 : Rowlf\_53

- Track 81 : StrawberryJamm\_60
- Track 82 : Statler\_60
- Track 83 : Gazebo\_56
- Track 84 : Hum25\_60
- Track 85 : Pitbull\_59
- Track 86 : PauloDiaboli\_140
- Track 87 : A3Wally\_136
- Track 88 : Big4\_129
- Track 89 : Zooman\_120
- Track 90 : Cece\_120
- Track 91 : Pumpernickel\_133
- Track 92 : Madrugá\_101, Patience\_103
- Track 93 : Labelle\_102
- Track 94 : Cantare\_51
- Track 95 : Magritte\_49

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

The start number called the most often in the published annotations is 52, it was called in 64 of the 151 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adgers\_52, Amore2\_53, Anamika\_49, Apiary\_21, Barbochs\_51, Beaver\_54, BenoitCattle\_52, Berries\_49, Bianmat\_49, BigShaq\_51, BirksAndSocks\_55, Boneham\_54, Braxoaddie\_21, Breezic\_50, Butterball\_54, CathyBurgh\_50, Charianelly\_49, Chelms\_51, CinnamonToast\_56, CoffeeBean\_21, Dakiti\_52, Damp\_49, Diabla\_54, Eggsie\_50, Ekhein\_51, Exiguo\_50, FelixAlejandro\_55, Flakey\_50, GMA7\_42, GTE7\_41, GalacticEye\_49, Gorko\_50, GourdThymes\_50, Guillaume\_49, GuyFagieri\_20, Hail2Pitt\_48, Harambe\_49, HayZem\_52, Hello\_49, Hotorobo\_50, Jams\_49, Jellybones\_53, John316\_54, Jormungandr\_49, Kaseim\_49, Lahirium\_49, Lidong\_49, Linetti\_52, Lizzo\_50, Luker\_50, MacGully\_24, Maselop\_21, Minos\_50, Monty\_49, MrWormie\_49, Msay19\_55, Neoevie\_49, Newt\_50, Nimi13\_49, PierreThree\_51, PokyPuppy\_50, Poland\_55, Polyuyuki\_21, RemRem\_51, RoyalG\_51, Sam12\_50, Shelley\_49, Sombrero\_51, Squibbles\_50, SteveFrench\_50, Sticker17\_49, Teal\_49, Woes\_49,

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

- 

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

- A3Wally\_136, ASerpRocky\_45, Aikoy\_106, Aikyam\_83, Altheas\_59, AluminumJesus\_53, Anekin\_85, Auxilium\_82, BabyDotz\_57, BenchScraper\_84, Benczkowski14\_45, BiPauneto\_21, Big4\_129, BillyTP\_85, Blab\_55, Camerico\_47, Cantare\_51, Casend\_57, Cece\_120, Commandaria\_21, CookieBear\_81, Cuke\_82, Demosthenes\_44, DonaldDuck\_56, EvePickles\_85, EverythinBagel\_56, Faja\_86, Fowlmouth\_83, FrankDeliGuy\_54, Fury\_26, GMA3\_38, Gazebo\_56, Gibbles\_47, Globfish\_82, Gmala1\_37, GordDuk1\_37, GordTnk2\_37, Gorpy\_82, Grassboy\_59, Hestia\_78, Hillester\_88, Hollow\_46, HubbaBubba\_17, Hum25\_60, Hyperion\_57, IDyn\_19, Indlulamithi\_73, Isolde\_85, Jehoshaphat\_58, Judebell\_58, Jumbo\_42, Kampe\_49, Katyusha\_45, Kvothe\_45, Kyva\_59, Labelle\_102, Lawnathon\_85,

Leopard\_104, Llemily\_56, Lonelysoil\_55, Madruga\_101, Magritte\_49, Marietta\_20, Mashley\_56, MidnightRain\_90, MorillMayhem\_58, MrMiyagi\_81, NadineRae\_18, Namago\_57, Niagara\_45, Nike\_59, Onyinye\_105, Orchid\_48, Patience\_103, PatrickStar\_49, PauloDiaboli\_140, Phabia\_56, Philon9\_46, Phrank15\_91, Pitbull\_59, Pleakley\_26, Pumpernickel\_133, Quammi\_54, RadFad\_89, Raphaella\_84, Richie\_87, RobinSparkles\_52, Rowlf\_53, Rudy\_54, Sakai\_81, SallyK\_58, Seahorse\_91, Sillytadpoles\_57, SpicyFrank\_85, Squash\_61, Statler\_60, StrawberryJamm\_60, Sukkupi\_20, Teatealatte\_46, Teech\_46, Teehee\_57, Tiff81\_84, Tissue\_57, Tredge\_46, Viceroy\_55, Wayne3\_58, Wheelie\_56, WhoseManz\_20, Yndexa\_20, YoungHarleezy\_83, Zagie\_57, Zhafia\_59, Zooman\_120,

### Summary by start number:

#### Start 29:

- Found in 2 of 186 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fury\_26 (CR5), Pleakley\_26 (CR5),

#### Start 31:

- Found in 1 of 186 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi\_73 (AC),

#### Start 38:

- Found in 8 of 186 ( 4.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Gmala1\_37 (DF1), GordDuk1\_37 (DF1), GordTnk2\_37 (DF1),

#### Start 44:

- Found in 6 of 186 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 2 of 151
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Camerico\_47 (DF), GMA3\_38 (DF2), Jumbo\_42 (DF3),

#### Start 48:

- Found in 2 of 186 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 151
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Magritte\_49 (singleton),

#### Start 50:

- Found in 9 of 186 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 8 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BiPauneto\_21 (CR4), Commandaria\_21 (CR2), HubbaBubba\_17 (CR4), IDyn\_19 (CR4), Marietta\_20 (CR4), NadineRae\_18 (CR4), Sukkupi\_20 (CR4), WhoseManz\_20 (CR4), Yndexa\_20 (CR4),

Start 52:

- Found in 73 of 186 ( 39.2% ) of genes in pham
- Manual Annotations of this start: 64 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adgers\_52 (CS2), Amore2\_53 (CS1), Anamika\_49 (CS3), Apiary\_21 (CR), Barbochs\_51 (CS2), Beaver\_54 (CS2), BenoitCattle\_52 (CS2), Berries\_49 (CS3), Bianmat\_49 (CS3), BigShaq\_51 (CS2), BirksAndSocks\_55 (CS2), Boneham\_54 (CS2), Braxoaddie\_21 (CR), Breezic\_50 (CS2), Butterball\_54 (CS2), CathyBurgh\_50 (CS2), Charianelly\_49 (CS3), Chelms\_51 (CS2), CinnamonToast\_56 (CS2), CoffeeBean\_21 (CR), Dakiti\_52 (CS2), Damp\_49 (CS3), Diabla\_54 (CS2), Eggsie\_50 (CS2), Ekhein\_51 (CS2), Exiguo\_50 (CS2), FelixAlejandro\_55 (CS2), Flakey\_50 (CS2), GMA7\_42 (CS1), GTE7\_41 (CS1), GalacticEye\_49 (CS3), Gorko\_50 (CS2), GourdThymes\_50 (CS2), Guillaume\_49 (CS3), GuyFagieri\_20 (CR), Hail2Pitt\_48 (CS3), Harambe\_49 (CS3), HayZem\_52 (CS1), Hello\_49 (CS3), Hotorobo\_50 (CS2), Jams\_49 (CS3), Jellybones\_53 (CS2), John316\_54 (CS2), Jormungandr\_49 (CS3), Kaseim\_49 (CS3), Lahirium\_49 (CS3), Lidong\_49 (CS3), Linetti\_52 (CS2), Lizzo\_50 (CS2), Luker\_50 (CS3), MacGully\_24 (CR), Maselop\_21 (CR), Minos\_50 (CS3), Monty\_49 (CS2), MrWormie\_49 (CS3), Msay19\_55 (CS2), Neoevie\_49 (CS3), Newt\_50 (CS3), Nimi13\_49 (CS3), PierreThree\_51 (CS2), PokyPuppy\_50 (CS2), Poland\_55 (CS2), Polyyuki\_21 (CR), RemRem\_51 (CS2), RoyalG\_51 (CS2), Sam12\_50 (CS2), Shelley\_49 (CS3), Sombrero\_51 (CS2), Squibbles\_50 (CS2), SteveFrench\_50 (CS2), Sticker17\_49 (CS3), Teal\_49 (CS3), Woes\_49 (CS3),

Start 54:

- Found in 11 of 186 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 9 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky\_45 (CS4), Benczkowski14\_45 (CS4), Demosthenes\_44 (CS4), Hollow\_46 (CS4), Katyusha\_45 (CS4), Kvothe\_45 (CS4), Niagara\_45 (CS4), Philon9\_46 (CS4), Teatealatte\_46 (CS4), Teech\_46 (CS4), Tredge\_46 (CS4),

Start 55:

- Found in 6 of 186 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 1 of 151
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Grassboy\_59 (EG),

Start 56:

- Found in 6 of 186 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 6 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cuke\_82 (AC), Fowlmouth\_83 (AC), Labelle\_102 (U), Madrugá\_101 (U), MrMiyagi\_81 (AC), Patience\_103 (U),

Start 58:

- Found in 5 of 186 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 5 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gibbles\_47 (CX), Kampe\_49 (CX), Orchid\_48 (CX), PatrickStar\_49 (CX), RobinSparkles\_52 (CX),

Start 59:

- Found in 25 of 186 ( 13.4% ) of genes in pham
- Manual Annotations of this start: 16 of 151
- Called 96.0% of time when present
- Phage (with cluster) where this start called: Aikyam\_83 (AY), Anekin\_85 (AY), Auxilium\_82 (AY), BenchScraper\_84 (AY), BillyTP\_85 (AY), CookieBear\_81 (AY), EvePickles\_85 (AY), Faja\_86 (AY), Globfish\_82 (AY), Gorpy\_82 (AY), Hestia\_78 (AY), Hillester\_88 (AY), Isolde\_85 (AY), Lawnathon\_85 (AY), MidnightRain\_90 (AY), Phrank15\_91 (AY), RadFad\_89 (AY), Raphaella\_84 (AY), Richie\_87 (AY), Sakai\_81 (AY), Seahorse\_91 (AY), SpicyFrank\_85 (AY), Tiff81\_84 (AY), YoungHarleezy\_83 (AY),

Start 64:

- Found in 3 of 186 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 3 of 151
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy\_106 (AE), Leopard\_104 (AE), Onyinye\_105 (AE),

Start 68:

- Found in 12 of 186 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 2 of 151
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Hum25\_60 (FQ), Pitbull\_59 (FQ),

Start 71:

- Found in 35 of 186 ( 18.8% ) of genes in pham
- Manual Annotations of this start: 7 of 151
- Called 31.4% of time when present
- Phage (with cluster) where this start called: AluminumJesus\_53 (EG), Blab\_55 (EG), EverythinBagel\_56 (EG), Jehoshaphat\_58 (EG), Llemily\_56 (EG), MorillMayhem\_58 (EG), Nike\_59 (EG), Phabia\_56 (EG), Rudy\_54 (EG), SallyK\_58 (EG), Zhafia\_59 (EG),

Start 72:

- Found in 53 of 186 ( 28.5% ) of genes in pham
- Manual Annotations of this start: 17 of 151
- Called 45.3% of time when present
- Phage (with cluster) where this start called: Altheas\_59 (EG), BabyDotz\_57 (EG), Casend\_57 (EG), DonaldDuck\_56 (EG), FrankDeliGuy\_54 (EG), Gazebo\_56 (EG), Hyperion\_57 (EG), Judebell\_58 (EG), Kyva\_59 (EG), Lonelysoil\_55 (EG), Mashley\_56 (EG), Namago\_57 (EG), Quammi\_54 (EG), Rowlf\_53 (EG), Sillytadpoles\_57 (EG), Squash\_61 (EG), Statler\_60 (EG), StrawberryJamm\_60 (EG), Teehee\_57 (EG), Tissue\_57 (EG), Viceroy\_55 (EG), Wayne3\_58 (EG), Wheelie\_56 (EG), Zagie\_57 (EG),

Start 74:

- Found in 2 of 186 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 151
- Called 50.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_136 (GD1),

Start 76:



- Found in 14 of 186 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 6 of 151
- Called 42.9% of time when present
- Phage (with cluster) where this start called: Big4\_129 (GD2), Cantare\_51 (singleton), Cece\_120 (GD3), PauloDiaboli\_140 (GD1), Pumpnickel\_133 (GD4), Zooman\_120 (GD2),

### **Summary by clusters:**

There are 24 clusters represented in this pham: FQ, GD2, GD3, GD4, GD1, DF, singleton, DF1, DF3, DF2, CS4, CS1, CS3, CS2, AC, AE, EG, CX, U, AY, CR, CR2, CR4, CR5,

Info for manual annotations of cluster AC:

- Start number 31 was manually annotated 1 time for cluster AC.
- Start number 56 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 64 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AY:

- Start number 59 was manually annotated 16 times for cluster AY.

Info for manual annotations of cluster CR:

- Start number 52 was manually annotated 7 times for cluster CR.

Info for manual annotations of cluster CR2:

- Start number 50 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR4:

- Start number 50 was manually annotated 7 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 29 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CS1:

- Start number 52 was manually annotated 2 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 52 was manually annotated 31 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 52 was manually annotated 24 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 54 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 58 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF:

- Start number 44 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:

- Start number 44 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster EG:

- Start number 55 was manually annotated 1 time for cluster EG.
- Start number 71 was manually annotated 7 times for cluster EG.
- Start number 72 was manually annotated 17 times for cluster EG.

Info for manual annotations of cluster FQ:

- Start number 68 was manually annotated 2 times for cluster FQ.

Info for manual annotations of cluster GD1:

- Start number 74 was manually annotated 1 time for cluster GD1.
- Start number 76 was manually annotated 1 time for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 76 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 76 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 76 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster U:

- Start number 56 was manually annotated 3 times for cluster U.

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

Gene: A3Wally\_136 Start: 86849, Stop: 87247, Start Num: 74

Candidate Starts for A3Wally\_136:

(63, 86822), (Start: 74 @86849 has 1 MA's), (Start: 76 @86858 has 6 MA's), (104, 86957),

Gene: ASerpRocky\_45 Start: 46949, Stop: 46455, Start Num: 54

Candidate Starts for ASerpRocky\_45:

(Start: 54 @46949 has 9 MA's), (57, 46934), (Start: 68 @46907 has 2 MA's), (88, 46841), (125, 46658), (143, 46619),

Gene: Adgers\_52 Start: 46769, Stop: 46248, Start Num: 52

Candidate Starts for Adgers\_52:

(Start: 52 @46769 has 64 MA's), (61, 46733), (163, 46307),

Gene: Aikoy\_106 Start: 67335, Stop: 67865, Start Num: 64

Candidate Starts for Aikoy\_106:

(Start: 64 @67335 has 3 MA's), (75, 67362), (85, 67401), (91, 67422), (96, 67443), (105, 67494), (106, 67503), (109, 67512), (110, 67515), (112, 67527), (118, 67566), (119, 67569), (123, 67635), (125, 67638), (130, 67650), (131, 67653), (133, 67665), (134, 67668), (137, 67674), (140, 67686),

Gene: Aikyam\_83 Start: 45953, Stop: 46399, Start Num: 59

Candidate Starts for Aikyam\_83:

(47, 45908), (Start: 59 @45953 has 16 MA's), (92, 46055), (149, 46286),

Gene: Altheas\_59 Start: 43024, Stop: 42620, Start Num: 72

Candidate Starts for Altheas\_59:

(8, 43459), (10, 43426), (13, 43411), (15, 43366), (16, 43363), (26, 43180), (35, 43120), (36, 43117), (51, 43087), (Start: 72 @43024 has 17 MA's), (94, 42937), (114, 42856), (145, 42775), (148, 42739), (165, 42670), (169, 42628),

Gene: AluminumJesus\_53 Start: 41962, Stop: 41567, Start Num: 71

Candidate Starts for AluminumJesus\_53:

(Start: 71 @41962 has 7 MA's), (Start: 72 @41959 has 17 MA's), (84, 41917), (94, 41875), (114, 41794),

Gene: Amore2\_53 Start: 47169, Stop: 46684, Start Num: 52

Candidate Starts for Amore2\_53:

(Start: 52 @47169 has 64 MA's), (165, 46731),

Gene: Anamika\_49 Start: 47821, Stop: 47318, Start Num: 52

Candidate Starts for Anamika\_49:

(41, 47866), (43, 47848), (Start: 52 @47821 has 64 MA's), (70, 47761), (146, 47470), (155, 47416),

Gene: Anekin\_85 Start: 48188, Stop: 48622, Start Num: 59

Candidate Starts for Anekin\_85:

(25, 48032), (Start: 59 @48188 has 16 MA's), (99, 48305), (132, 48443), (149, 48509), (166, 48578),

Gene: Apiary\_21 Start: 10881, Stop: 11363, Start Num: 52

Candidate Starts for Apiary\_21:

(1, 10119), (6, 10371), (14, 10587), (38, 10830), (Start: 52 @10881 has 64 MA's), (69, 10926), (Start: 76 @10944 has 6 MA's), (86, 10980), (110, 11076), (117, 11121), (143, 11196), (149, 11241), (163, 11301),

Gene: Auxilium\_82 Start: 45357, Stop: 45833, Start Num: 59

Candidate Starts for Auxilium\_82:

(39, 45273), (Start: 59 @45357 has 16 MA's), (99, 45474), (127, 45618), (149, 45720),

Gene: BabyDotz\_57 Start: 43429, Stop: 43037, Start Num: 72

Candidate Starts for BabyDotz\_57:

(49, 43498), (Start: 71 @43432 has 7 MA's), (Start: 72 @43429 has 17 MA's), (84, 43387), (94, 43345), (114, 43264), (125, 43219), (169, 43045),

Gene: Barbochs\_51 Start: 46513, Stop: 45992, Start Num: 52

Candidate Starts for Barbochs\_51:

(Start: 52 @46513 has 64 MA's), (61, 46477), (163, 46051),

Gene: Beaver\_54 Start: 48283, Stop: 47762, Start Num: 52

Candidate Starts for Beaver\_54:

(Start: 52 @48283 has 64 MA's), (61, 48247), (163, 47821),

Gene: BenchScraper\_84 Start: 46314, Stop: 46808, Start Num: 59

Candidate Starts for BenchScraper\_84:

(Start: 59 @46314 has 16 MA's), (108, 46491), (111, 46500), (146, 46671),

Gene: Benczkowski14\_45 Start: 47238, Stop: 46744, Start Num: 54

Candidate Starts for Benczkowski14\_45:

(Start: 54 @47238 has 9 MA's), (57, 47223), (Start: 68 @47196 has 2 MA's), (125, 46947), (142, 46917), (143, 46908), (148, 46866), (150, 46860),

Gene: BenoitCattle\_52 Start: 47030, Stop: 46509, Start Num: 52

Candidate Starts for BenoitCattle\_52:

(Start: 52 @47030 has 64 MA's), (61, 46994), (121, 46736), (163, 46568),

Gene: Berries\_49 Start: 47793, Stop: 47290, Start Num: 52

Candidate Starts for Berries\_49:

(41, 47838), (43, 47820), (Start: 52 @47793 has 64 MA's), (70, 47733), (146, 47442), (155, 47388),

Gene: BiPauneto\_21 Start: 8586, Stop: 9044, Start Num: 50

Candidate Starts for BiPauneto\_21:

(3, 7887), (12, 8232), (Start: 50 @8586 has 8 MA's), (65, 8634), (Start: 72 @8652 has 17 MA's), (77, 8667), (86, 8700), (105, 8775), (107, 8787), (148, 8916),

Gene: Bianmat\_49 Start: 47833, Stop: 47330, Start Num: 52

Candidate Starts for Bianmat\_49:

(41, 47878), (43, 47860), (Start: 52 @47833 has 64 MA's), (70, 47773), (146, 47482), (155, 47428),

Gene: Big4\_129 Start: 85559, Stop: 86026, Start Num: 76

Candidate Starts for Big4\_129:

(53, 85493), (70, 85544), (Start: 76 @85559 has 6 MA's), (83, 85589), (164, 85961),

Gene: BigShaq\_51 Start: 47035, Stop: 46514, Start Num: 52

Candidate Starts for BigShaq\_51:

(Start: 52 @47035 has 64 MA's), (61, 46999), (121, 46741), (163, 46573),

Gene: BillyTP\_85 Start: 48420, Stop: 48914, Start Num: 59

Candidate Starts for BillyTP\_85:

(Start: 59 @48420 has 16 MA's), (108, 48597), (111, 48606), (146, 48777),

Gene: BirksAndSocks\_55 Start: 48633, Stop: 48112, Start Num: 52

Candidate Starts for BirksAndSocks\_55:

(Start: 52 @48633 has 64 MA's), (61, 48597), (163, 48171),

Gene: Blab\_55 Start: 42584, Stop: 42189, Start Num: 71

Candidate Starts for Blab\_55:

(49, 42650), (Start: 71 @42584 has 7 MA's), (Start: 72 @42581 has 17 MA's), (94, 42497), (114, 42416),

Gene: Boneham\_54 Start: 48534, Stop: 48013, Start Num: 52

Candidate Starts for Boneham\_54:

(Start: 52 @48534 has 64 MA's), (61, 48498), (161, 48084),

Gene: Braxoaddie\_21 Start: 10869, Stop: 11351, Start Num: 52

Candidate Starts for Braxoaddie\_21:

(1, 10107), (6, 10359), (14, 10575), (38, 10818), (Start: 52 @10869 has 64 MA's), (69, 10914), (Start: 76 @10932 has 6 MA's), (86, 10968), (110, 11064), (117, 11109), (143, 11184), (149, 11229), (163, 11289),

Gene: Breezic\_50 Start: 46526, Stop: 46005, Start Num: 52

Candidate Starts for Breezic\_50:

(Start: 52 @46526 has 64 MA's), (61, 46490), (163, 46064),

Gene: Butterball\_54 Start: 48539, Stop: 48018, Start Num: 52

Candidate Starts for Butterball\_54:

(Start: 52 @48539 has 64 MA's), (61, 48503), (161, 48089),

Gene: Camerico\_47 Start: 46654, Stop: 46154, Start Num: 44

Candidate Starts for Camerico\_47:

(Start: 44 @46654 has 2 MA's), (81, 46561), (107, 46453), (108, 46450), (116, 46411), (158, 46240), (163, 46216),

Gene: Cantare\_51 Start: 46110, Stop: 46487, Start Num: 76

Candidate Starts for Cantare\_51:

(Start: 76 @46110 has 6 MA's), (78, 46116), (79, 46119), (115, 46278), (151, 46380), (157, 46407), (162, 46437), (167, 46467),

Gene: Casend\_57 Start: 42837, Stop: 42448, Start Num: 72

Candidate Starts for Casend\_57:

(Start: 71 @42840 has 7 MA's), (Start: 72 @42837 has 17 MA's), (84, 42798), (114, 42675), (125, 42630), (169, 42456),

Gene: CathyBurgh\_50 Start: 47103, Stop: 46582, Start Num: 52

Candidate Starts for CathyBurgh\_50:

(Start: 52 @47103 has 64 MA's), (61, 47067), (163, 46641),

Gene: Cece\_120 Start: 88234, Stop: 88626, Start Num: 76

Candidate Starts for Cece\_120:

(62, 88198), (Start: 76 @88234 has 6 MA's), (115, 88387), (156, 88513),

Gene: Charianelly\_49 Start: 47543, Stop: 47040, Start Num: 52

Candidate Starts for Charianelly\_49:

(41, 47588), (43, 47570), (Start: 52 @47543 has 64 MA's), (70, 47483), (146, 47192), (155, 47138),

Gene: Chelms\_51 Start: 47023, Stop: 46514, Start Num: 52

Candidate Starts for Chelms\_51:

(Start: 52 @47023 has 64 MA's), (61, 46987), (163, 46573),

Gene: CinnamonToast\_56 Start: 48593, Stop: 48072, Start Num: 52

Candidate Starts for CinnamonToast\_56:

(Start: 52 @48593 has 64 MA's), (61, 48557), (161, 48143),

Gene: CoffeeBean\_21 Start: 10806, Stop: 11321, Start Num: 52

Candidate Starts for CoffeeBean\_21:

(1, 10044), (4, 10155), (6, 10296), (14, 10512), (38, 10755), (Start: 52 @10806 has 64 MA's), (69, 10851), (Start: 76 @10869 has 6 MA's), (86, 10905), (110, 11001), (139, 11136), (149, 11199), (163, 11259),

Gene: Commandaria\_21 Start: 9793, Stop: 10248, Start Num: 50

Candidate Starts for Commandaria\_21:

(2, 9061), (5, 9148), (9, 9418), (17, 9520), (Start: 50 @9793 has 8 MA's), (Start: 72 @9856 has 17 MA's), (77, 9871), (105, 9979), (148, 10120),

Gene: CookieBear\_81 Start: 46991, Stop: 47392, Start Num: 59

Candidate Starts for CookieBear\_81:

(Start: 59 @46991 has 16 MA's), (149, 47279), (168, 47372),

Gene: Cuke\_82 Start: 48535, Stop: 49002, Start Num: 56

Candidate Starts for Cuke\_82:

(Start: 56 @48535 has 6 MA's), (66, 48553), (81, 48595), (82, 48598), (89, 48628), (105, 48685), (122, 48799), (130, 48817), (143, 48841), (146, 48862), (147, 48874), (148, 48883), (151, 48895), (157, 48922), (161, 48928), (163, 48940),

Gene: Dakiti\_52 Start: 47891, Stop: 47382, Start Num: 52

Candidate Starts for Dakiti\_52:

(Start: 52 @47891 has 64 MA's), (61, 47855), (163, 47441),

Gene: Damp\_49 Start: 46707, Stop: 46204, Start Num: 52

Candidate Starts for Damp\_49:

(41, 46752), (43, 46734), (Start: 52 @46707 has 64 MA's), (70, 46647), (146, 46356), (155, 46302),

Gene: Demosthenes\_44 Start: 46925, Stop: 46431, Start Num: 54

Candidate Starts for Demosthenes\_44:

(Start: 54 @46925 has 9 MA's), (Start: 68 @46883 has 2 MA's), (88, 46817), (125, 46634), (143, 46595), (150, 46547), (163, 46490), (168, 46451),

Gene: Diabla\_54 Start: 48464, Stop: 47943, Start Num: 52

Candidate Starts for Diabla\_54:

(Start: 52 @48464 has 64 MA's), (61, 48428), (155, 48041), (159, 48026), (165, 47990),

Gene: DonaldDuck\_56 Start: 42186, Stop: 41797, Start Num: 72

Candidate Starts for DonaldDuck\_56:

(Start: 71 @42189 has 7 MA's), (Start: 72 @42186 has 17 MA's), (84, 42147), (114, 42024), (125, 41979), (169, 41805),

Gene: Eggsie\_50 Start: 46426, Stop: 45905, Start Num: 52

Candidate Starts for Eggsie\_50:

(Start: 52 @46426 has 64 MA's), (61, 46390), (155, 46003), (165, 45952),

Gene: Ekhein\_51 Start: 46231, Stop: 45710, Start Num: 52

Candidate Starts for Ekhein\_51:

(Start: 52 @46231 has 64 MA's), (61, 46195), (163, 45769),

Gene: EvePickles\_85 Start: 48837, Stop: 49178, Start Num: 59

Candidate Starts for EvePickles\_85:

(30, 48729), (Start: 59 @48837 has 16 MA's), (92, 48939), (98, 48957), (100, 48966), (108, 49014), (134, 49107), (146, 49143),

Gene: EverythinBagel\_56 Start: 42550, Stop: 42158, Start Num: 71

Candidate Starts for EverythinBagel\_56:

(Start: 71 @42550 has 7 MA's), (Start: 72 @42547 has 17 MA's), (84, 42508), (114, 42385), (125, 42340), (169, 42166),

Gene: Exiguo\_50 Start: 46243, Stop: 45722, Start Num: 52

Candidate Starts for Exiguo\_50:

(Start: 52 @46243 has 64 MA's), (61, 46207), (163, 45781),

Gene: Faja\_86 Start: 48359, Stop: 48745, Start Num: 59

Candidate Starts for Faja\_86:

(20, 48092), (22, 48134), (Start: 59 @48359 has 16 MA's), (111, 48506), (113, 48518), (136, 48587), (149, 48632),

Gene: FelixAlejandro\_55 Start: 48737, Stop: 48216, Start Num: 52

Candidate Starts for FelixAlejandro\_55:

(Start: 52 @48737 has 64 MA's), (61, 48701), (161, 48287),

Gene: Flakey\_50 Start: 47107, Stop: 46586, Start Num: 52

Candidate Starts for Flakey\_50:

(Start: 52 @47107 has 64 MA's), (61, 47071), (163, 46645),

Gene: Fowlmouth\_83 Start: 51110, Stop: 51577, Start Num: 56

Candidate Starts for Fowlmouth\_83:

(Start: 56 @51110 has 6 MA's), (82, 51173), (83, 51182), (86, 51191), (109, 51278), (119, 51335), (143, 51416), (147, 51449), (148, 51458), (151, 51470),

Gene: FrankDeliGuy\_54 Start: 42165, Stop: 41773, Start Num: 72

Candidate Starts for FrankDeliGuy\_54:

(Start: 55 @42216 has 1 MA's), (Start: 71 @42168 has 7 MA's), (Start: 72 @42165 has 17 MA's), (84, 42126), (94, 42084), (114, 42003), (124, 41958), (169, 41781),

Gene: Fury\_26 Start: 10463, Stop: 10972, Start Num: 29

Candidate Starts for Fury\_26:

(Start: 29 @10463 has 2 MA's), (Start: 72 @10580 has 17 MA's), (77, 10595), (108, 10718), (111, 10727), (148, 10844), (151, 10856),

Gene: GMA3\_38 Start: 40837, Stop: 40325, Start Num: 44

Candidate Starts for GMA3\_38:

(28, 40918), (42, 40849), (Start: 44 @40837 has 2 MA's), (94, 40669), (110, 40609), (162, 40390),

Gene: GMA7\_42 Start: 41383, Stop: 40898, Start Num: 52

Candidate Starts for GMA7\_42:

(Start: 52 @41383 has 64 MA's), (165, 40945),

Gene: GTE7\_41 Start: 41414, Stop: 40929, Start Num: 52

Candidate Starts for GTE7\_41:

(Start: 52 @41414 has 64 MA's), (165, 40976),

Gene: GalacticEye\_49 Start: 47504, Stop: 47001, Start Num: 52

Candidate Starts for GalacticEye\_49:

(41, 47549), (43, 47531), (Start: 52 @47504 has 64 MA's), (70, 47444), (146, 47153), (155, 47099),

Gene: Gazebo\_56 Start: 42670, Stop: 42278, Start Num: 72

Candidate Starts for Gazebo\_56:

(Start: 71 @42673 has 7 MA's), (Start: 72 @42670 has 17 MA's), (84, 42628), (114, 42505), (125, 42460), (169, 42286), (170, 42283),

Gene: Gibbles\_47 Start: 45170, Stop: 44748, Start Num: 58

Candidate Starts for Gibbles\_47:

(Start: 58 @45170 has 5 MA's), (Start: 72 @45134 has 17 MA's), (83, 45095), (85, 45089), (89, 45074), (110, 44984), (151, 44855), (163, 44810), (169, 44756),

Gene: Globfish\_82 Start: 46114, Stop: 46545, Start Num: 59

Candidate Starts for Globfish\_82:

(12, 45718), (18, 45799), (21, 45883), (Start: 59 @46114 has 16 MA's), (146, 46408),

Gene: Gmala1\_37 Start: 39458, Stop: 38919, Start Num: 38

Candidate Starts for Gmala1\_37:

(33, 39467), (38, 39458), (Start: 44 @39425 has 2 MA's), (89, 39281), (94, 39257), (119, 39143), (161, 38987),

Gene: GordDuk1\_37 Start: 39399, Stop: 38860, Start Num: 38

Candidate Starts for GordDuk1\_37:

(33, 39408), (38, 39399), (Start: 44 @39366 has 2 MA's), (89, 39222), (94, 39198), (119, 39084), (161, 38928),

Gene: GordTnk2\_37 Start: 39365, Stop: 38826, Start Num: 38

Candidate Starts for GordTnk2\_37:

(33, 39374), (38, 39365), (Start: 44 @39332 has 2 MA's), (89, 39188), (94, 39164), (119, 39050), (161, 38894),

Gene: Gorko\_50 Start: 46235, Stop: 45714, Start Num: 52

Candidate Starts for Gorko\_50:

(Start: 52 @46235 has 64 MA's), (61, 46199), (163, 45773),

Gene: Gorpy\_82 Start: 48333, Stop: 48809, Start Num: 59

Candidate Starts for Gorpy\_82:

(Start: 59 @48333 has 16 MA's), (99, 48450), (126, 48591), (138, 48630), (146, 48672), (149, 48696), (168, 48789),

Gene: GourdThymes\_50 Start: 47109, Stop: 46588, Start Num: 52

Candidate Starts for GourdThymes\_50:

(Start: 52 @47109 has 64 MA's), (61, 47073), (88, 46989), (163, 46647),

Gene: Grassboy\_59 Start: 43110, Stop: 42643, Start Num: 55

Candidate Starts for Grassboy\_59:

(Start: 55 @43110 has 1 MA's), (Start: 71 @43062 has 7 MA's), (Start: 72 @43059 has 17 MA's), (84, 43020), (94, 42978), (114, 42897), (144, 42801), (169, 42651), (170, 42648),

Gene: Guillaume\_49 Start: 47554, Stop: 47051, Start Num: 52

Candidate Starts for Guillaume\_49:

(41, 47599), (43, 47581), (Start: 52 @47554 has 64 MA's), (70, 47494), (146, 47203), (155, 47149),

Gene: GuyFagieri\_20 Start: 10423, Stop: 10938, Start Num: 52

Candidate Starts for GuyFagieri\_20:

(6, 9913), (7, 9994), (14, 10129), (Start: 52 @10423 has 64 MA's), (Start: 76 @10486 has 6 MA's), (110, 10618), (112, 10630), (141, 10759), (149, 10816), (163, 10876),

Gene: Hail2Pitt\_48 Start: 48030, Stop: 47527, Start Num: 52

Candidate Starts for Hail2Pitt\_48:

(41, 48075), (43, 48057), (Start: 52 @48030 has 64 MA's), (70, 47970), (146, 47679), (155, 47625),



Gene: Harambe\_49 Start: 47821, Stop: 47318, Start Num: 52  
Candidate Starts for Harambe\_49:  
(41, 47866), (43, 47848), (Start: 52 @47821 has 64 MA's), (70, 47761), (146, 47470), (155, 47416),

Gene: HayZem\_52 Start: 47166, Stop: 46681, Start Num: 52  
Candidate Starts for HayZem\_52:  
(Start: 52 @47166 has 64 MA's), (165, 46728),

Gene: Hello\_49 Start: 47783, Stop: 47280, Start Num: 52  
Candidate Starts for Hello\_49:  
(41, 47828), (43, 47810), (Start: 52 @47783 has 64 MA's), (70, 47723), (146, 47432), (155, 47378),

Gene: Hestia\_78 Start: 45289, Stop: 45783, Start Num: 59  
Candidate Starts for Hestia\_78:  
(46, 45244), (Start: 59 @45289 has 16 MA's), (108, 45466), (111, 45475), (146, 45646),

Gene: Hillester\_88 Start: 48096, Stop: 48530, Start Num: 59  
Candidate Starts for Hillester\_88:  
(Start: 59 @48096 has 16 MA's), (99, 48213), (132, 48351), (149, 48417), (166, 48486),

Gene: Hollow\_46 Start: 47574, Stop: 47080, Start Num: 54  
Candidate Starts for Hollow\_46:  
(Start: 54 @47574 has 9 MA's), (57, 47559), (Start: 68 @47532 has 2 MA's), (88, 47466), (125, 47283), (143, 47244), (150, 47196),

Gene: Hotorobo\_50 Start: 47114, Stop: 46593, Start Num: 52  
Candidate Starts for Hotorobo\_50:  
(Start: 52 @47114 has 64 MA's), (61, 47078), (163, 46652),

Gene: HubbaBubba\_17 Start: 7112, Stop: 7570, Start Num: 50  
Candidate Starts for HubbaBubba\_17:  
(12, 6758), (Start: 50 @7112 has 8 MA's), (65, 7160), (Start: 72 @7178 has 17 MA's), (77, 7193), (86, 7226), (105, 7301), (148, 7442), (169, 7562),

Gene: Hum25\_60 Start: 34774, Stop: 35166, Start Num: 68  
Candidate Starts for Hum25\_60:  
(45, 34702), (Start: 68 @34774 has 2 MA's), (75, 34792), (92, 34855), (108, 34930), (148, 35050), (149, 35053), (151, 35062),

Gene: Hyperion\_57 Start: 42845, Stop: 42456, Start Num: 72  
Candidate Starts for Hyperion\_57:  
(49, 42914), (Start: 71 @42848 has 7 MA's), (Start: 72 @42845 has 17 MA's), (94, 42764), (114, 42683), (169, 42464),

Gene: IDyn\_19 Start: 8503, Stop: 8961, Start Num: 50  
Candidate Starts for IDyn\_19:  
(12, 8149), (Start: 50 @8503 has 8 MA's), (65, 8551), (Start: 72 @8569 has 17 MA's), (77, 8584), (86, 8617), (90, 8635), (105, 8692), (148, 8833),

Gene: Indlulamithi\_73 Start: 51686, Stop: 52294, Start Num: 31  
Candidate Starts for Indlulamithi\_73:  
(Start: 31 @51686 has 1 MA's), (37, 51707), (Start: 48 @51758 has 1 MA's), (60, 51800), (80, 51857), (93, 51911), (97, 51926), (102, 51947), (103, 51950), (106, 51974), (107, 51977), (144, 52136), (147,

52166), (152, 52190), (164, 52235), (169, 52286),

Gene: Isolde\_85 Start: 48621, Stop: 49019, Start Num: 59

Candidate Starts for Isolde\_85:

(23, 48438), (Start: 59 @48621 has 16 MA's), (111, 48768), (136, 48849), (149, 48906),

Gene: Jams\_49 Start: 46993, Stop: 46490, Start Num: 52

Candidate Starts for Jams\_49:

(41, 47038), (43, 47020), (Start: 52 @46993 has 64 MA's), (70, 46933), (146, 46642), (155, 46588),

Gene: Jehoshaphat\_58 Start: 43108, Stop: 42716, Start Num: 71

Candidate Starts for Jehoshaphat\_58:

(Start: 71 @43108 has 7 MA's), (Start: 72 @43105 has 17 MA's), (84, 43066), (114, 42943), (125, 42898), (169, 42724),

Gene: Jellybones\_53 Start: 48215, Stop: 47694, Start Num: 52

Candidate Starts for Jellybones\_53:

(Start: 52 @48215 has 64 MA's), (61, 48179), (161, 47765),

Gene: John316\_54 Start: 48272, Stop: 47751, Start Num: 52

Candidate Starts for John316\_54:

(Start: 52 @48272 has 64 MA's), (61, 48236), (163, 47810),

Gene: Jormungandr\_49 Start: 47536, Stop: 47033, Start Num: 52

Candidate Starts for Jormungandr\_49:

(41, 47581), (43, 47563), (Start: 52 @47536 has 64 MA's), (70, 47476), (146, 47185), (155, 47131),

Gene: Judebell\_58 Start: 42554, Stop: 42165, Start Num: 72

Candidate Starts for Judebell\_58:

(Start: 55 @42605 has 1 MA's), (Start: 71 @42557 has 7 MA's), (Start: 72 @42554 has 17 MA's), (84, 42515), (94, 42473), (114, 42392), (125, 42347), (169, 42173),

Gene: Jumbo\_42 Start: 45467, Stop: 44925, Start Num: 44

Candidate Starts for Jumbo\_42:

(27, 45563), (32, 45521), (34, 45509), (40, 45494), (Start: 44 @45467 has 2 MA's), (75, 45380), (110, 45239), (112, 45227), (128, 45140), (146, 45095), (147, 45083), (154, 45050), (162, 44993),

Gene: Kampe\_49 Start: 45153, Stop: 44731, Start Num: 58

Candidate Starts for Kampe\_49:

(Start: 58 @45153 has 5 MA's), (Start: 72 @45117 has 17 MA's), (83, 45078), (85, 45072), (89, 45057), (110, 44967), (163, 44793),

Gene: Kaseim\_49 Start: 46978, Stop: 46475, Start Num: 52

Candidate Starts for Kaseim\_49:

(41, 47023), (43, 47005), (Start: 52 @46978 has 64 MA's), (70, 46918), (146, 46627), (155, 46573),

Gene: Katyusha\_45 Start: 47238, Stop: 46744, Start Num: 54

Candidate Starts for Katyusha\_45:

(Start: 54 @47238 has 9 MA's), (57, 47223), (Start: 68 @47196 has 2 MA's), (125, 46947), (142, 46917), (143, 46908), (148, 46866), (150, 46860),

Gene: Kvothe\_45 Start: 47137, Stop: 46643, Start Num: 54

Candidate Starts for Kvothe\_45:

(Start: 54 @47137 has 9 MA's), (57, 47122), (Start: 68 @47095 has 2 MA's), (142, 46816), (143, 46807), (148, 46765), (150, 46759),

Gene: Kyva\_59 Start: 43089, Stop: 42700, Start Num: 72

Candidate Starts for Kyva\_59:

(10, 43476), (26, 43245), (35, 43185), (36, 43182), (51, 43152), (Start: 71 @43092 has 7 MA's), (Start: 72 @43089 has 17 MA's), (114, 42927), (125, 42882), (169, 42708), (170, 42705),

Gene: Labelle\_102 Start: 64800, Stop: 65264, Start Num: 56

Candidate Starts for Labelle\_102:

(Start: 56 @64800 has 6 MA's), (144, 65106), (147, 65136), (148, 65145), (153, 65166), (161, 65190), (162, 65193),

Gene: Lahirium\_49 Start: 48058, Stop: 47555, Start Num: 52

Candidate Starts for Lahirium\_49:

(41, 48103), (43, 48085), (Start: 52 @48058 has 64 MA's), (70, 47998), (146, 47707), (155, 47653),

Gene: Lawnathon\_85 Start: 47552, Stop: 47980, Start Num: 59

Candidate Starts for Lawnathon\_85:

(Start: 59 @47552 has 16 MA's), (99, 47669), (146, 47843), (149, 47867),

Gene: Leopard\_104 Start: 67266, Stop: 67778, Start Num: 64

Candidate Starts for Leopard\_104:

(Start: 64 @67266 has 3 MA's), (75, 67293), (96, 67374), (105, 67425), (106, 67434), (109, 67443), (110, 67446), (118, 67497), (119, 67500), (123, 67566), (125, 67569), (130, 67581), (134, 67584), (137, 67590), (140, 67599),

Gene: Lidong\_49 Start: 47793, Stop: 47290, Start Num: 52

Candidate Starts for Lidong\_49:

(41, 47838), (43, 47820), (Start: 52 @47793 has 64 MA's), (70, 47733), (146, 47442), (155, 47388),

Gene: Linetti\_52 Start: 48032, Stop: 47523, Start Num: 52

Candidate Starts for Linetti\_52:

(Start: 52 @48032 has 64 MA's), (61, 47996), (163, 47582),

Gene: Lizzo\_50 Start: 47103, Stop: 46582, Start Num: 52

Candidate Starts for Lizzo\_50:

(Start: 52 @47103 has 64 MA's), (61, 47067), (163, 46641),

Gene: Llemily\_56 Start: 41884, Stop: 41492, Start Num: 71

Candidate Starts for Llemily\_56:

(Start: 71 @41884 has 7 MA's), (Start: 72 @41881 has 17 MA's), (84, 41842), (114, 41719), (125, 41674), (169, 41500),

Gene: Lonelysoil\_55 Start: 42037, Stop: 41648, Start Num: 72

Candidate Starts for Lonelysoil\_55:

(Start: 55 @42088 has 1 MA's), (Start: 71 @42040 has 7 MA's), (Start: 72 @42037 has 17 MA's), (84, 41998), (94, 41956), (114, 41875), (125, 41830), (169, 41656),

Gene: Luker\_50 Start: 48011, Stop: 47508, Start Num: 52

Candidate Starts for Luker\_50:

(41, 48056), (43, 48038), (Start: 52 @48011 has 64 MA's), (70, 47951), (146, 47660), (155, 47606),

Gene: MacGully\_24 Start: 10356, Stop: 10865, Start Num: 52

Candidate Starts for MacGully\_24:

(4, 9750), (14, 10098), (19, 10137), (Start: 52 @10356 has 64 MA's), (110, 10551), (138, 10677), (145, 10704), (160, 10785), (165, 10815),

Gene: Madruga\_101 Start: 64424, Stop: 64888, Start Num: 56

Candidate Starts for Madruga\_101:

(Start: 56 @64424 has 6 MA's), (144, 64730), (147, 64760), (148, 64769), (153, 64790), (156, 64802), (161, 64814), (162, 64817),

Gene: Magritte\_49 Start: 48175, Stop: 48675, Start Num: 48

Candidate Starts for Magritte\_49:

(Start: 48 @48175 has 1 MA's), (Start: 59 @48214 has 16 MA's), (66, 48229), (87, 48301), (108, 48409), (129, 48493), (152, 48571),

Gene: Marietta\_20 Start: 8429, Stop: 8887, Start Num: 50

Candidate Starts for Marietta\_20:

(12, 8075), (Start: 50 @8429 has 8 MA's), (65, 8477), (Start: 72 @8495 has 17 MA's), (77, 8510), (86, 8543), (90, 8561), (105, 8618), (169, 8879),

Gene: Maselop\_21 Start: 10882, Stop: 11397, Start Num: 52

Candidate Starts for Maselop\_21:

(1, 10120), (6, 10372), (14, 10588), (38, 10831), (Start: 52 @10882 has 64 MA's), (69, 10927), (Start: 76 @10945 has 6 MA's), (86, 10981), (110, 11077), (139, 11212), (149, 11275), (163, 11335),

Gene: Mashley\_56 Start: 42624, Stop: 42232, Start Num: 72

Candidate Starts for Mashley\_56:

(24, 42828), (49, 42693), (Start: 71 @42627 has 7 MA's), (Start: 72 @42624 has 17 MA's), (84, 42582), (94, 42540), (114, 42459), (125, 42414), (169, 42240),

Gene: MidnightRain\_90 Start: 48881, Stop: 49366, Start Num: 59

Candidate Starts for MidnightRain\_90:

(Start: 59 @48881 has 16 MA's), (108, 49058), (111, 49067), (146, 49229),

Gene: Minos\_50 Start: 47535, Stop: 47032, Start Num: 52

Candidate Starts for Minos\_50:

(41, 47580), (43, 47562), (Start: 52 @47535 has 64 MA's), (70, 47475), (146, 47184), (155, 47130),

Gene: Monty\_49 Start: 46253, Stop: 45732, Start Num: 52

Candidate Starts for Monty\_49:

(Start: 52 @46253 has 64 MA's), (61, 46217), (163, 45791),

Gene: MorillMayhem\_58 Start: 42963, Stop: 42565, Start Num: 71

Candidate Starts for MorillMayhem\_58:

(49, 43029), (Start: 71 @42963 has 7 MA's), (Start: 72 @42960 has 17 MA's), (114, 42798), (166, 42612), (169, 42573), (170, 42570),

Gene: MrMiyagi\_81 Start: 51354, Stop: 51842, Start Num: 56

Candidate Starts for MrMiyagi\_81:

(51, 51333), (Start: 56 @51354 has 6 MA's), (66, 51372), (89, 51447), (101, 51495), (105, 51525), (112, 51558), (129, 51654), (130, 51657), (135, 51660), (147, 51714), (151, 51735),

Gene: MrWormie\_49 Start: 46696, Stop: 46193, Start Num: 52

Candidate Starts for MrWormie\_49:

(41, 46741), (43, 46723), (Start: 52 @46696 has 64 MA's), (70, 46636), (146, 46345), (155, 46291),

Gene: Msay19\_55 Start: 48726, Stop: 48205, Start Num: 52

Candidate Starts for Msay19\_55:

(Start: 52 @48726 has 64 MA's), (61, 48690), (161, 48276),

Gene: NadineRae\_18 Start: 7679, Stop: 8137, Start Num: 50

Candidate Starts for NadineRae\_18:

(12, 7325), (Start: 50 @7679 has 8 MA's), (65, 7727), (Start: 72 @7745 has 17 MA's), (77, 7760), (86, 7793), (90, 7811), (105, 7868), (109, 7886), (148, 8009), (169, 8129),

Gene: Namago\_57 Start: 42027, Stop: 41638, Start Num: 72

Candidate Starts for Namago\_57:

(Start: 55 @42078 has 1 MA's), (Start: 71 @42030 has 7 MA's), (Start: 72 @42027 has 17 MA's), (84, 41988), (94, 41946), (114, 41865), (125, 41820), (169, 41646), (170, 41643),

Gene: Neoevie\_49 Start: 47797, Stop: 47294, Start Num: 52

Candidate Starts for Neoevie\_49:

(41, 47842), (43, 47824), (Start: 52 @47797 has 64 MA's), (70, 47737), (146, 47446), (155, 47392),

Gene: Newt\_50 Start: 48025, Stop: 47522, Start Num: 52

Candidate Starts for Newt\_50:

(41, 48070), (43, 48052), (Start: 52 @48025 has 64 MA's), (70, 47965), (146, 47674), (155, 47620),

Gene: Niagara\_45 Start: 47216, Stop: 46722, Start Num: 54

Candidate Starts for Niagara\_45:

(Start: 54 @47216 has 9 MA's), (57, 47201), (Start: 68 @47174 has 2 MA's), (142, 46895), (143, 46886), (148, 46844), (150, 46838),

Gene: Nike\_59 Start: 43351, Stop: 42950, Start Num: 71

Candidate Starts for Nike\_59:

(Start: 71 @43351 has 7 MA's), (Start: 72 @43348 has 17 MA's), (Start: 76 @43336 has 6 MA's), (94, 43264), (114, 43183), (148, 43069), (169, 42958),

Gene: Nimi13\_49 Start: 47544, Stop: 47041, Start Num: 52

Candidate Starts for Nimi13\_49:

(41, 47589), (43, 47571), (Start: 52 @47544 has 64 MA's), (70, 47484), (146, 47193), (155, 47139),

Gene: Onyinye\_105 Start: 67128, Stop: 67658, Start Num: 64

Candidate Starts for Onyinye\_105:

(Start: 64 @67128 has 3 MA's), (75, 67155), (85, 67194), (91, 67215), (96, 67236), (105, 67287), (106, 67296), (109, 67305), (110, 67308), (112, 67320), (118, 67359), (119, 67362), (123, 67428), (125, 67431), (130, 67443), (131, 67446), (133, 67458), (134, 67461), (137, 67467), (140, 67479),

Gene: Orchid\_48 Start: 45154, Stop: 44732, Start Num: 58

Candidate Starts for Orchid\_48:

(Start: 58 @45154 has 5 MA's), (Start: 72 @45118 has 17 MA's), (83, 45079), (85, 45073), (89, 45058), (110, 44968), (163, 44794),

Gene: Patience\_103 Start: 65328, Stop: 65792, Start Num: 56

Candidate Starts for Patience\_103:

(Start: 56 @65328 has 6 MA's), (144, 65634), (147, 65664), (148, 65673), (153, 65694), (156, 65706), (161, 65718), (162, 65721),

Gene: PatrickStar\_49 Start: 45153, Stop: 44731, Start Num: 58

Candidate Starts for PatrickStar\_49:

(Start: 58 @45153 has 5 MA's), (Start: 72 @45117 has 17 MA's), (83, 45078), (85, 45072), (89, 45057), (110, 44967), (163, 44793),

Gene: PauloDiaboli\_140 Start: 86201, Stop: 86590, Start Num: 76

Candidate Starts for PauloDiaboli\_140:

(63, 86165), (Start: 72 @86189 has 17 MA's), (Start: 74 @86192 has 1 MA's), (Start: 76 @86201 has 6 MA's), (104, 86300),

Gene: Phabia\_56 Start: 42299, Stop: 41907, Start Num: 71

Candidate Starts for Phabia\_56:

(Start: 71 @42299 has 7 MA's), (Start: 72 @42296 has 17 MA's), (84, 42257), (114, 42134), (125, 42089), (169, 41915),

Gene: Philon9\_46 Start: 48247, Stop: 47753, Start Num: 54

Candidate Starts for Philon9\_46:

(Start: 54 @48247 has 9 MA's), (73, 48193), (88, 48139), (112, 48037), (143, 47917),

Gene: Phrank15\_91 Start: 48788, Stop: 49189, Start Num: 59

Candidate Starts for Phrank15\_91:

(Start: 59 @48788 has 16 MA's), (149, 49076), (168, 49169),

Gene: PierreThree\_51 Start: 47781, Stop: 47260, Start Num: 52

Candidate Starts for PierreThree\_51:

(Start: 52 @47781 has 64 MA's), (61, 47745), (121, 47487), (163, 47319),

Gene: Pitbull\_59 Start: 33633, Stop: 34013, Start Num: 68

Candidate Starts for Pitbull\_59:

(67, 33630), (Start: 68 @33633 has 2 MA's), (75, 33651), (95, 33717), (108, 33777), (111, 33786), (148, 33897), (149, 33900),

Gene: Pleakley\_26 Start: 10464, Stop: 10973, Start Num: 29

Candidate Starts for Pleakley\_26:

(Start: 29 @10464 has 2 MA's), (Start: 72 @10581 has 17 MA's), (77, 10596), (108, 10719), (111, 10728), (148, 10845), (151, 10857),

Gene: PokyPuppy\_50 Start: 47715, Stop: 47209, Start Num: 52

Candidate Starts for PokyPuppy\_50:

(Start: 52 @47715 has 64 MA's), (61, 47679), (88, 47595), (163, 47268), (165, 47256),

Gene: Poland\_55 Start: 48705, Stop: 48184, Start Num: 52

Candidate Starts for Poland\_55:

(Start: 52 @48705 has 64 MA's), (61, 48669), (161, 48255),

Gene: Polyuki\_21 Start: 10892, Stop: 11374, Start Num: 52

Candidate Starts for Polyuki\_21:

(1, 10130), (6, 10382), (14, 10598), (38, 10841), (Start: 52 @10892 has 64 MA's), (69, 10937), (Start: 76 @10955 has 6 MA's), (86, 10991), (110, 11087), (117, 11132), (143, 11207), (149, 11252), (163, 11312),

Gene: Pumpernickel\_133 Start: 86998, Stop: 87462, Start Num: 76

Candidate Starts for Pumpernickel\_133:

(62, 86962), (Start: 76 @86998 has 6 MA's),

Gene: Quammi\_54 Start: 41996, Stop: 41607, Start Num: 72

Candidate Starts for Quammi\_54:

(Start: 71 @41999 has 7 MA's), (Start: 72 @41996 has 17 MA's), (84, 41957), (114, 41834), (125, 41789), (169, 41615),

Gene: RadFad\_89 Start: 48096, Stop: 48530, Start Num: 59

Candidate Starts for RadFad\_89:

(Start: 59 @48096 has 16 MA's), (99, 48213), (132, 48351), (149, 48417), (166, 48486),

Gene: Raphaella\_84 Start: 46653, Stop: 47147, Start Num: 59

Candidate Starts for Raphaella\_84:

(20, 46386), (22, 46428), (Start: 59 @46653 has 16 MA's), (108, 46830), (111, 46839), (146, 47010),

Gene: RemRem\_51 Start: 46243, Stop: 45722, Start Num: 52

Candidate Starts for RemRem\_51:

(Start: 52 @46243 has 64 MA's), (61, 46207), (163, 45781),

Gene: Richie\_87 Start: 48886, Stop: 49380, Start Num: 59

Candidate Starts for Richie\_87:

(Start: 59 @48886 has 16 MA's), (108, 49063), (111, 49072), (146, 49243),

Gene: RobinSparkles\_52 Start: 45706, Stop: 45284, Start Num: 58

Candidate Starts for RobinSparkles\_52:

(Start: 58 @45706 has 5 MA's), (Start: 72 @45670 has 17 MA's), (83, 45631), (85, 45625), (89, 45610), (110, 45520), (163, 45346),

Gene: Rowlf\_53 Start: 41900, Stop: 41508, Start Num: 72

Candidate Starts for Rowlf\_53:

(49, 41969), (Start: 71 @41903 has 7 MA's), (Start: 72 @41900 has 17 MA's), (84, 41858), (114, 41735), (166, 41555), (169, 41516),

Gene: RoyalG\_51 Start: 47075, Stop: 46554, Start Num: 52

Candidate Starts for RoyalG\_51:

(Start: 52 @47075 has 64 MA's), (61, 47039), (155, 46652), (159, 46637), (165, 46601),

Gene: Rudy\_54 Start: 42035, Stop: 41643, Start Num: 71

Candidate Starts for Rudy\_54:

(Start: 71 @42035 has 7 MA's), (Start: 72 @42032 has 17 MA's), (84, 41993), (114, 41870), (125, 41825), (169, 41651),

Gene: Sakai\_81 Start: 47044, Stop: 47520, Start Num: 59

Candidate Starts for Sakai\_81:

(Start: 59 @47044 has 16 MA's), (99, 47161), (126, 47302), (138, 47341), (146, 47383), (149, 47407), (168, 47500),

Gene: SallyK\_58 Start: 43182, Stop: 42760, Start Num: 71

Candidate Starts for SallyK\_58:

(Start: 71 @43182 has 7 MA's), (Start: 72 @43179 has 17 MA's), (84, 43137), (94, 43095), (114, 43014), (144, 42918), (169, 42768),

Gene: Sam12\_50 Start: 46243, Stop: 45722, Start Num: 52

Candidate Starts for Sam12\_50:

(Start: 52 @46243 has 64 MA's), (61, 46207), (163, 45781),

Gene: Seahorse\_91 Start: 52291, Stop: 52725, Start Num: 59

Candidate Starts for Seahorse\_91:

(21, 52063), (Start: 59 @52291 has 16 MA's), (146, 52588), (149, 52612),

Gene: Shelley\_49 Start: 47020, Stop: 46517, Start Num: 52

Candidate Starts for Shelley\_49:

(41, 47065), (43, 47047), (Start: 52 @47020 has 64 MA's), (70, 46960), (146, 46669), (155, 46615),

Gene: Sillytadpoles\_57 Start: 41869, Stop: 41480, Start Num: 72

Candidate Starts for Sillytadpoles\_57:

(Start: 71 @41872 has 7 MA's), (Start: 72 @41869 has 17 MA's), (84, 41830), (114, 41707), (125, 41662), (169, 41488),

Gene: Sombrero\_51 Start: 46616, Stop: 46095, Start Num: 52

Candidate Starts for Sombrero\_51:

(Start: 52 @46616 has 64 MA's), (61, 46580), (161, 46166),

Gene: SpicyFrank\_85 Start: 47210, Stop: 47635, Start Num: 59

Candidate Starts for SpicyFrank\_85:

(Start: 59 @47210 has 16 MA's), (111, 47375), (146, 47498),

Gene: Squash\_61 Start: 43540, Stop: 43148, Start Num: 72

Candidate Starts for Squash\_61:

(49, 43609), (Start: 71 @43543 has 7 MA's), (Start: 72 @43540 has 17 MA's), (84, 43498), (94, 43456), (114, 43375), (125, 43330),

Gene: Squibbles\_50 Start: 47106, Stop: 46585, Start Num: 52

Candidate Starts for Squibbles\_50:

(Start: 52 @47106 has 64 MA's), (163, 46644),

Gene: Statler\_60 Start: 42619, Stop: 42227, Start Num: 72

Candidate Starts for Statler\_60:

(49, 42688), (Start: 71 @42622 has 7 MA's), (Start: 72 @42619 has 17 MA's), (84, 42577), (94, 42535), (114, 42454), (125, 42409), (169, 42235),

Gene: SteveFrench\_50 Start: 47315, Stop: 46794, Start Num: 52

Candidate Starts for SteveFrench\_50:

(Start: 52 @47315 has 64 MA's), (61, 47279), (155, 46892), (159, 46877), (165, 46841),

Gene: Sticker17\_49 Start: 47535, Stop: 47032, Start Num: 52

Candidate Starts for Sticker17\_49:

(41, 47580), (43, 47562), (Start: 52 @47535 has 64 MA's), (70, 47475), (146, 47184), (155, 47130),

Gene: StrawberryJamm\_60 Start: 42333, Stop: 41941, Start Num: 72

Candidate Starts for StrawberryJamm\_60:



(Start: 71 @42336 has 7 MA's), (Start: 72 @42333 has 17 MA's), (84, 42291), (94, 42249), (114, 42168), (125, 42123), (169, 41949), (170, 41946),

Gene: Sukkupi\_20 Start: 8477, Stop: 8935, Start Num: 50

Candidate Starts for Sukkupi\_20:

(3, 7778), (12, 8123), (Start: 50 @8477 has 8 MA's), (65, 8525), (Start: 72 @8543 has 17 MA's), (77, 8558), (86, 8591), (105, 8666), (107, 8678), (148, 8807),

Gene: Teal\_49 Start: 48002, Stop: 47499, Start Num: 52

Candidate Starts for Teal\_49:

(41, 48047), (43, 48029), (Start: 52 @48002 has 64 MA's), (70, 47942), (146, 47651), (155, 47597),

Gene: Teatealatte\_46 Start: 47140, Stop: 46646, Start Num: 54

Candidate Starts for Teatealatte\_46:

(Start: 54 @47140 has 9 MA's), (57, 47125), (Start: 68 @47098 has 2 MA's), (142, 46819), (143, 46810), (148, 46768), (150, 46762),

Gene: Teech\_46 Start: 46941, Stop: 46447, Start Num: 54

Candidate Starts for Teech\_46:

(Start: 54 @46941 has 9 MA's), (57, 46926), (Start: 68 @46899 has 2 MA's), (142, 46620), (143, 46611), (148, 46569), (150, 46563),

Gene: Teehee\_57 Start: 43102, Stop: 42713, Start Num: 72

Candidate Starts for Teehee\_57:

(Start: 71 @43105 has 7 MA's), (Start: 72 @43102 has 17 MA's), (84, 43063), (114, 42940), (125, 42895), (169, 42721),

Gene: Tiff81\_84 Start: 45794, Stop: 46192, Start Num: 59

Candidate Starts for Tiff81\_84:

(20, 45527), (22, 45569), (Start: 59 @45794 has 16 MA's), (146, 46055), (149, 46079),

Gene: Tissue\_57 Start: 42946, Stop: 42539, Start Num: 72

Candidate Starts for Tissue\_57:

(10, 43333), (11, 43330), (26, 43102), (35, 43042), (36, 43039), (51, 43009), (Start: 71 @42949 has 7 MA's), (Start: 72 @42946 has 17 MA's), (114, 42784), (169, 42547), (170, 42544),

Gene: Tredge\_46 Start: 47140, Stop: 46646, Start Num: 54

Candidate Starts for Tredge\_46:

(Start: 54 @47140 has 9 MA's), (57, 47125), (Start: 68 @47098 has 2 MA's), (142, 46819), (143, 46810), (148, 46768), (150, 46762),

Gene: Viceroy\_55 Start: 42002, Stop: 41613, Start Num: 72

Candidate Starts for Viceroy\_55:

(Start: 71 @42005 has 7 MA's), (Start: 72 @42002 has 17 MA's), (84, 41963), (114, 41840), (125, 41795), (169, 41621),

Gene: Wayne3\_58 Start: 42865, Stop: 42476, Start Num: 72

Candidate Starts for Wayne3\_58:

(Start: 71 @42868 has 7 MA's), (Start: 72 @42865 has 17 MA's), (84, 42826), (114, 42703), (125, 42658), (169, 42484),

Gene: Wheelie\_56 Start: 42186, Stop: 41797, Start Num: 72

Candidate Starts for Wheelie\_56:

(Start: 71 @42189 has 7 MA's), (Start: 72 @42186 has 17 MA's), (84, 42147), (114, 42024), (125, 41979), (169, 41805),

Gene: WhoseManz\_20 Start: 8040, Stop: 8498, Start Num: 50

Candidate Starts for WhoseManz\_20:

(12, 7686), (Start: 50 @8040 has 8 MA's), (65, 8088), (Start: 72 @8106 has 17 MA's), (77, 8121), (86, 8154), (90, 8172), (105, 8229), (169, 8490),

Gene: Woes\_49 Start: 48053, Stop: 47550, Start Num: 52

Candidate Starts for Woes\_49:

(41, 48098), (43, 48080), (Start: 52 @48053 has 64 MA's), (70, 47993), (146, 47702), (155, 47648),

Gene: Yndexa\_20 Start: 8477, Stop: 8935, Start Num: 50

Candidate Starts for Yndexa\_20:

(3, 7778), (12, 8123), (Start: 50 @8477 has 8 MA's), (65, 8525), (Start: 72 @8543 has 17 MA's), (77, 8558), (86, 8591), (105, 8666), (107, 8678), (148, 8807),

Gene: YoungHarleezy\_83 Start: 48259, Stop: 48660, Start Num: 59

Candidate Starts for YoungHarleezy\_83:

(Start: 59 @48259 has 16 MA's), (149, 48547),

Gene: Zagie\_57 Start: 42527, Stop: 42138, Start Num: 72

Candidate Starts for Zagie\_57:

(Start: 55 @42578 has 1 MA's), (Start: 71 @42530 has 7 MA's), (Start: 72 @42527 has 17 MA's), (84, 42488), (94, 42446), (114, 42365), (125, 42320), (169, 42146),

Gene: Zhafia\_59 Start: 42669, Stop: 42277, Start Num: 71

Candidate Starts for Zhafia\_59:

(Start: 71 @42669 has 7 MA's), (Start: 72 @42666 has 17 MA's), (84, 42627), (114, 42504), (125, 42459), (169, 42285),

Gene: Zooman\_120 Start: 82979, Stop: 83374, Start Num: 76

Candidate Starts for Zooman\_120:

(62, 82943), (Start: 76 @82979 has 6 MA's), (83, 83009), (120, 83171), (156, 83261),