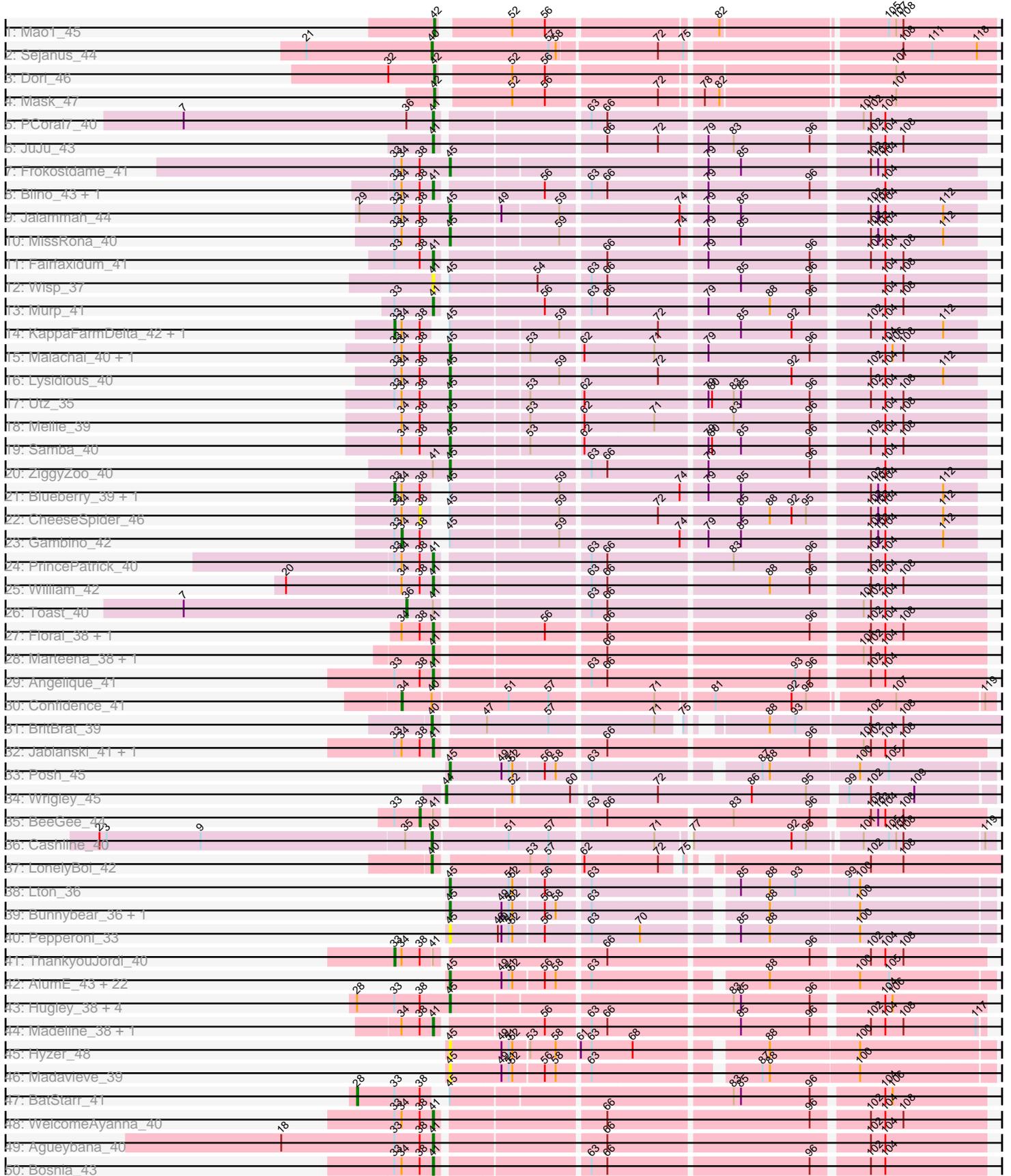
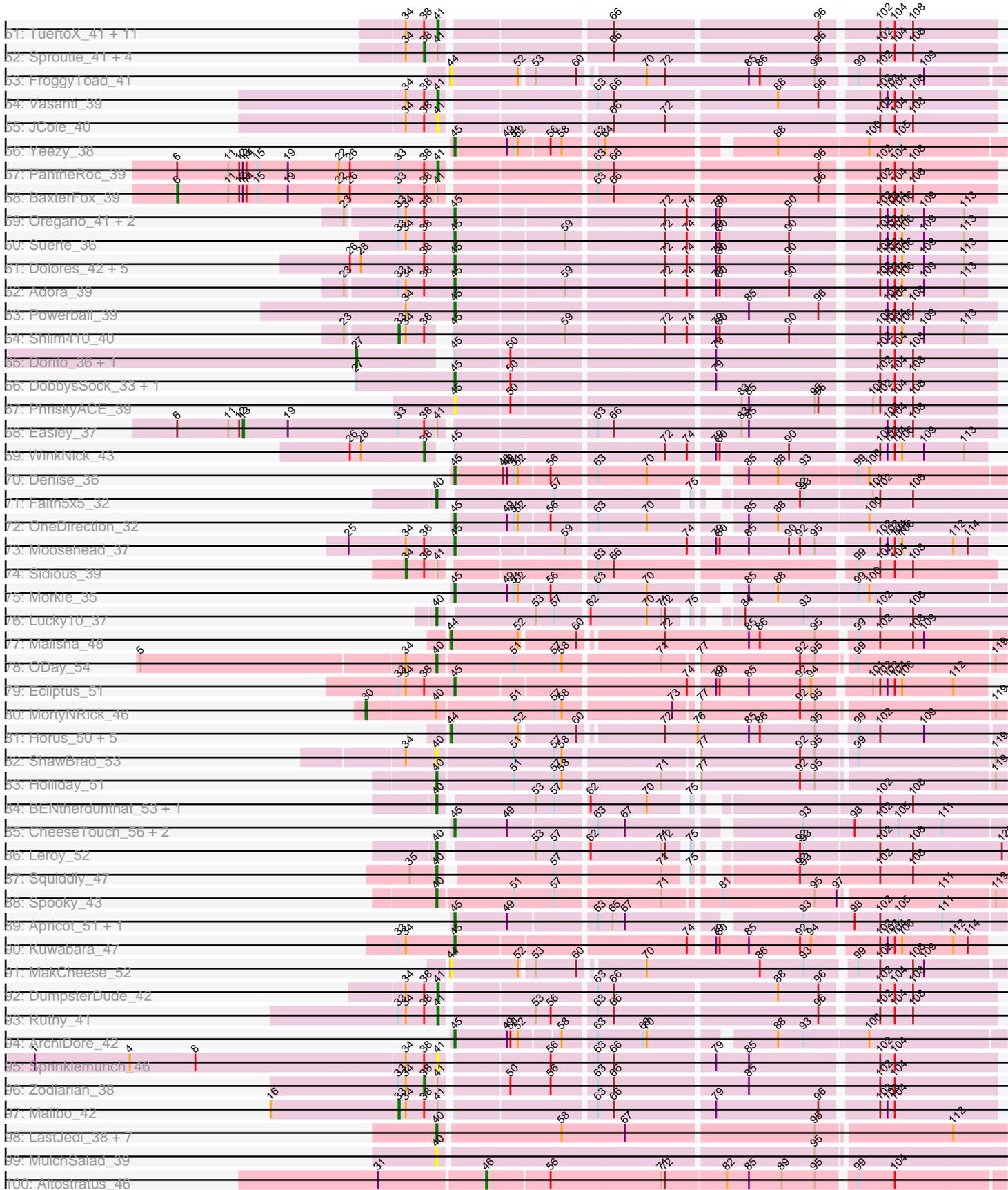


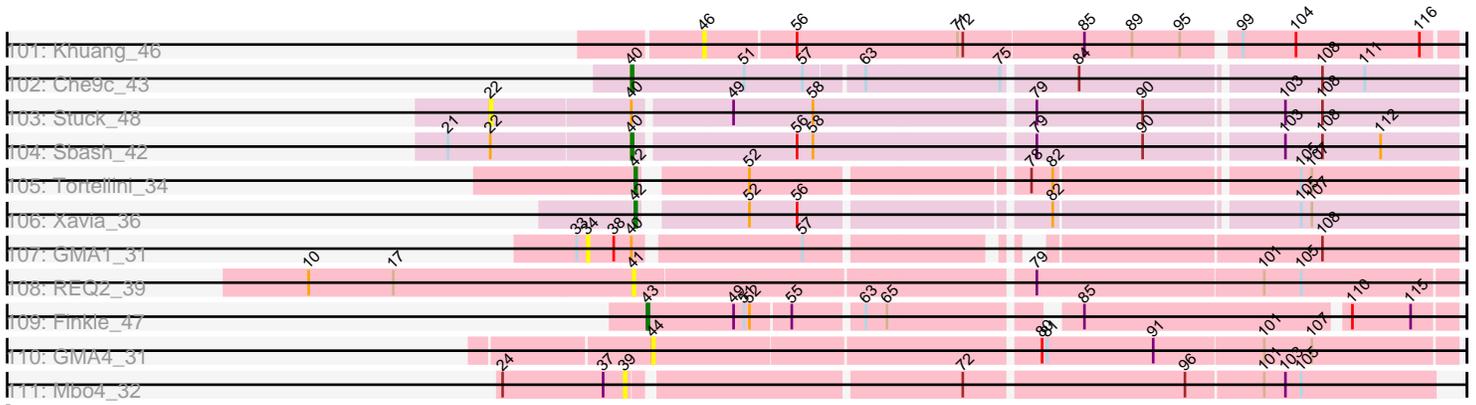
Pham 287627



Pham 287627



Pham 287627



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 287627 Report

This analysis was run 03/28/26 on database version 641.

Pham number 287627 has 186 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Mao1\_45
- Track 2 : Sejanus\_44
- Track 3 : Dori\_46
- Track 4 : Mask\_47
- Track 5 : PCoral7\_40
- Track 6 : JuJu\_43
- Track 7 : Frokostdame\_41
- Track 8 : Blino\_43, CarolAnn\_42
- Track 9 : Jalammah\_44
- Track 10 : MissRona\_40
- Track 11 : Fairfaxidum\_41
- Track 12 : Wisp\_37
- Track 13 : Murp\_41
- Track 14 : KappaFarmDelta\_42, Wocket\_41
- Track 15 : Malachai\_40, Begonia\_40
- Track 16 : Lysidious\_40
- Track 17 : Utz\_35
- Track 18 : Mellie\_39
- Track 19 : Samba\_40
- Track 20 : ZiggyZoo\_40
- Track 21 : Blueberry\_39, Azula\_40
- Track 22 : CheeseSpider\_46
- Track 23 : Gambino\_42
- Track 24 : PrincePatrick\_40
- Track 25 : William\_42
- Track 26 : Toast\_40
- Track 27 : Floral\_38, Pollux\_40
- Track 28 : Marteena\_38, EMSquaredA\_39
- Track 29 : Angelique\_41
- Track 30 : Confidence\_41
- Track 31 : BritBrat\_39
- Track 32 : Jablanski\_41, Pytheas\_41
- Track 33 : Posh\_45
- Track 34 : Wrigley\_45
- Track 35 : BeeGee\_44
- Track 36 : Cashline\_40
- Track 37 : LonelyBoi\_42

- Track 38 : Lton\_36
- Track 39 : Bunnybear\_36, Maridalia\_44
- Track 40 : Pepperoni\_33
- Track 41 : ThankyouJordi\_40
- Track 42 : AlumE\_43, Pickett\_36, Manasvini\_43, SoilAssassin\_38, BoyNamedSue\_43, Kita\_44, Polly\_40, EdnaMode\_37, LordFarquaad\_40, Attis\_38, Eudoria\_43, Zirinka\_40, Zameen\_43, Trumpet\_43, Lilas\_40, Yeet412\_38, Susceptit\_43, Bialota\_41, EnalisNailo\_37, Tayonia\_43, Bradissa\_38, Neobush\_43, Antonio\_43
- Track 43 : Hugley\_38, Herod\_41, Eviarto\_41, Nymphadora\_41, TimTam\_41
- Track 44 : Madeline\_38, Ohgeesy\_41
- Track 45 : Hyzer\_48
- Track 46 : Madavieve\_39
- Track 47 : BatStarr\_41
- Track 48 : WelcomeAyanna\_40
- Track 49 : Agueybana\_40
- Track 50 : Bosnia\_43
- Track 51 : TuertoX\_41, Ebert\_43, Savage\_41, Lamberg\_37, Sahara\_40, Whiteclaw\_41, Clap\_41, Haley23\_41, Gizermo\_41, Mocha12\_41, Bjanes7\_38, Cynthia\_41
- Track 52 : Sproutie\_41, Jalleen\_40, GemG\_41, Matteo\_34, Nettuno\_37
- Track 53 : FroggyToad\_41
- Track 54 : Vasanti\_39
- Track 55 : JCole\_40
- Track 56 : Yeezy\_38
- Track 57 : PantheRoc\_39
- Track 58 : BaxterFox\_39
- Track 59 : Oregano\_41, Annalisa\_38, Tuti\_41
- Track 60 : Suerte\_36
- Track 61 : Dolores\_42, Invectra\_43, Sekhmet\_42, MichaelScott\_42, Clark\_41, Samman98\_42
- Track 62 : Adora\_39
- Track 63 : Powerball\_39
- Track 64 : Shlim410\_40
- Track 65 : Dorito\_36, Mcklovin\_38
- Track 66 : DobbysSock\_33, Thimann\_38
- Track 67 : PhriskyACE\_39
- Track 68 : Easley\_37
- Track 69 : WinkNick\_43
- Track 70 : Denise\_36
- Track 71 : Faith5x5\_32
- Track 72 : OneDirection\_32
- Track 73 : Moosehead\_37
- Track 74 : Sidious\_39
- Track 75 : Morkie\_35
- Track 76 : Lucky10\_37
- Track 77 : Malisha\_48
- Track 78 : ODay\_54
- Track 79 : Ecliptus\_51
- Track 80 : MortyNRick\_46
- Track 81 : Horus\_50, Asapag\_49, Birdsong\_49, BotCity\_51, Phabuloso\_50, LitninMcQueen\_45
- Track 82 : ShawBrad\_53

- Track 83 : Holliday\_51
- Track 84 : BENtherdunthat\_53, Budski\_51
- Track 85 : CheeseTouch\_56, Crater\_51, Phistory\_53
- Track 86 : Leroy\_52
- Track 87 : Squiddly\_47
- Track 88 : Spooky\_43
- Track 89 : Apricot\_51, PhorbesPhlower\_35
- Track 90 : Kuwabara\_47
- Track 91 : MakCheese\_52
- Track 92 : DumpsterDude\_42
- Track 93 : Ruthy\_41
- Track 94 : ArchiDore\_42
- Track 95 : Sprinklemunch\_46
- Track 96 : Zodiariah\_38
- Track 97 : Malibo\_42
- Track 98 : LastJedi\_38, Zizzle\_48, Donkeykong\_43, Jennelsea\_41, Brocalys\_40, Pippy\_42, Squirty\_37, Clifton\_39
- Track 99 : MulchSalad\_39
- Track 100 : Altostratus\_46
- Track 101 : Khuang\_46
- Track 102 : Che9c\_43
- Track 103 : Stuck\_48
- Track 104 : Sbash\_42
- Track 105 : Tortellini\_34
- Track 106 : Xavia\_36
- Track 107 : GMA1\_31
- Track 108 : REQ2\_39
- Track 109 : Finkle\_47
- Track 110 : GMA4\_31
- Track 111 : Mbo4\_32

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

The start number called the most often in the published annotations is 45, it was called in 67 of the 164 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adora\_39, AlumE\_43, Annalisa\_38, Antonio\_43, Apricot\_51, ArchiDore\_42, Attis\_38, Begonia\_40, Bialota\_41, BoyNamedSue\_43, Bradissa\_38, Bunnybear\_36, CheeseTouch\_56, Clark\_41, Crater\_51, Denise\_36, DobbysSock\_33, Dolores\_42, Ecliptus\_51, EdnaMode\_37, EnalisNailo\_37, Eudoria\_43, Eviarto\_41, Frokostdame\_41, Herod\_41, Hugley\_38, Hyzer\_48, Invecetra\_43, Jalammah\_44, Kita\_44, Kuwabara\_47, Lilas\_40, LordFarquaad\_40, Lton\_36, Lysidious\_40, Madavieve\_39, Malachai\_40, Manasvini\_43, Maridalia\_44, Mellie\_39, MichaelScott\_42, MissRona\_40, Moosehead\_37, Morkie\_35, Neobush\_43, Nymphadora\_41, OneDirection\_32, Oregano\_41, Pepperoni\_33, Phistory\_53, PhorbesPhlower\_35, PhriskyACE\_39, Pickett\_36, Polly\_40, Posh\_45, Powerball\_39, Samba\_40, Samman98\_42, Sekhmet\_42, SoilAssassin\_38, Suerte\_36, Suscepit\_43, Tayonia\_43, Thimann\_38, TimTam\_41, Trumpet\_43, Tuti\_41, Utz\_35, Yeet412\_38, Yeezy\_38, Zameen\_43, ZiggyZoo\_40, Zirinka\_40,

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

- Azula\_40, BatStarr\_41, Blueberry\_39, CheeseSpider\_46, Dorito\_36, Gambino\_42, KappaFarmDelta\_42, Mcklovin\_38, Shlim410\_40, WinkNick\_43, Wisp\_37, Wocket\_41,

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

- Agueybana\_40, Altostratus\_46, Angelique\_41, Asapag\_49, BENtherdunthat\_53, BaxterFox\_39, BeeGee\_44, Birdsong\_49, Bjanes7\_38, Blino\_43, Bosnia\_43, BotCity\_51, BritBrat\_39, Brocalys\_40, Budski\_51, CarolAnn\_42, Cashline\_40, Che9c\_43, Clap\_41, Clifton\_39, Confidence\_41, Cynthia\_41, Donkeykong\_43, Dori\_46, DumpsterDude\_42, EMSquaredA\_39, Easley\_37, Ebert\_43, Fairfaxidum\_41, Faith5x5\_32, Finkle\_47, Floral\_38, FroggyToad\_41, GMA1\_31, GMA4\_31, GemG\_41, Gizermo\_41, Haley23\_41, Holliday\_51, Horus\_50, JCole\_40, Jablanski\_41, Jalleen\_40, Jennelsea\_41, JuJu\_43, Khuang\_46, Lamberg\_37, LastJedi\_38, Leroy\_52, LitninMcQueen\_45, LonelyBoi\_42, Lucky10\_37, Madeline\_38, MakCheese\_52, Malibo\_42, Malisha\_48, Mao1\_45, Marteena\_38, Mask\_47, Matteo\_34, Mbo4\_32, Mocha12\_41, MortyNRick\_46, MulchSalad\_39, Murp\_41, Nettuno\_37, ODay\_54, Ohgeesy\_41, PCoral7\_40, PantheRoc\_39, Phabuloso\_50, Pippy\_42, Pollux\_40, PrincePatrick\_40, Pytheas\_41, REQ2\_39, Ruthy\_41, Sahara\_40, Savage\_41, Sbash\_42, Sejanus\_44, ShawBrad\_53, Sidious\_39, Spooky\_43, Sprinklemunch\_46, Sproutie\_41, Squiddly\_47, Squirty\_37, Stuck\_48, ThankyouJordi\_40, Toast\_40, Tortellini\_34, TuertoX\_41, Vasanti\_39, WelcomeAyanna\_40, Whiteclaw\_41, William\_42, Wrigley\_45, Xavia\_36, Zizzle\_48, Zodiariah\_38,

### Summary by start number:

Start 6:

- Found in 3 of 186 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 33.3% of time when present
- Phage (with cluster) where this start called: BaxterFox\_39 (CZ3),

Start 13:

- Found in 3 of 186 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Easley\_37 (CZ4),

Start 22:

- Found in 4 of 186 ( 2.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Stuck\_48 (I2),

Start 27:

- Found in 4 of 186 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 2 of 164
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dorito\_36 (CZ4), Mcklovin\_38 (CZ4),

Start 28:

- Found in 13 of 186 ( 7.0% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 7.7% of time when present
- Phage (with cluster) where this start called: BatStarr\_41 (CZ1),

#### Start 30:

- Found in 1 of 186 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MortyNRick\_46 (DN),

#### Start 33:

- Found in 47 of 186 ( 25.3% ) of genes in pham
- Manual Annotations of this start: 7 of 164
- Called 14.9% of time when present
- Phage (with cluster) where this start called: Azula\_40 (CV), Blueberry\_39 (CV), KappaFarmDelta\_42 (CV), Malibo\_42 (DW), Shlim410\_40 (CZ4), ThankyouJordi\_40 (CZ1), Wocket\_41 (CV),

#### Start 34:

- Found in 67 of 186 ( 36.0% ) of genes in pham
- Manual Annotations of this start: 3 of 164
- Called 6.0% of time when present
- Phage (with cluster) where this start called: Confidence\_41 (CY1), GMA1\_31 (singleton), Gambino\_42 (CV), Sidious\_39 (CZ7),

#### Start 36:

- Found in 2 of 186 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Toast\_40 (CV),

#### Start 38:

- Found in 82 of 186 ( 44.1% ) of genes in pham
- Manual Annotations of this start: 7 of 164
- Called 11.0% of time when present
- Phage (with cluster) where this start called: BeeGee\_44 (CY5), CheeseSpider\_46 (CV), GemG\_41 (CZ2), Jalleen\_40 (CZ2), Matteo\_34 (CZ2), Nettuno\_37 (CZ2), Sproutie\_41 (CZ2), WinkNick\_43 (CZ4), Zodiariah\_38 (DW),

#### Start 39:

- Found in 1 of 186 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mbo4\_32 (singleton),

#### Start 40:

- Found in 29 of 186 ( 15.6% ) of genes in pham
- Manual Annotations of this start: 22 of 164
- Called 86.2% of time when present
- Phage (with cluster) where this start called: BENtherdunthat\_53 (DN1), BritBrat\_39 (CY2), Brocalys\_40 (F1), Budski\_51 (DN), Cashline\_40 (CY6), Che9c\_43 (I2), Clifton\_39 (F1), Donkeykong\_43 (F1), Faith5x5\_32 (CZ6), Holliday\_51 (DN1),

Jennelsea\_41 (F1), LastJedi\_38 (F1), Leroy\_52 (DN1), LonelyBoi\_42 (CY7), Lucky10\_37 (DH), MulchSalad\_39 (F7), ODay\_54 (DN), Pippy\_42 (F1), Sbash\_42 (I2), Sejanus\_44 (AD), ShawBrad\_53 (DN1), Spooky\_43 (DN2), Squiddly\_47 (DN2), Squirty\_37 (F3), Zizzle\_48 (F1),

#### Start 41:

- Found in 54 of 186 ( 29.0% ) of genes in pham
- Manual Annotations of this start: 36 of 164
- Called 74.1% of time when present
- Phage (with cluster) where this start called: Agueybana\_40 (CZ1), Angelique\_41 (CY1), Bjanese7\_38 (CZ2), Blino\_43 (CV), Bosnia\_43 (CZ1), CarolAnn\_42 (CV), Clap\_41 (CZ2), Cynthia\_41 (CZ2), DumpsterDude\_42 (DW), EMSquaredA\_39 (CY1), Ebert\_43 (CZ2), Fairfaxidum\_41 (CV), Floral\_38 (CY1), Gizermo\_41 (CZ2), Haley23\_41 (CZ2), JCole\_40 (CZ2), Jablanski\_41 (CY3), JuJu\_43 (CV), Lamberg\_37 (CZ2), Madeline\_38 (CZ1), Marteena\_38 (CY1), Mocha12\_41 (CZ2), Murp\_41 (CV), Ohgeesy\_41 (CZ), PCoral7\_40 (CV), PantheRoc\_39 (CZ3), Pollux\_40 (CY1), PrincePatrick\_40 (CV), Pytheas\_41 (CY3), REQ2\_39 (singleton), Ruthy\_41 (DW), Sahara\_40 (CZ2), Savage\_41 (CZ2), Sprinklemunch\_46 (DW), TuertoX\_41 (CZ2), Vasanti\_39 (CZ2), WelcomeAyanna\_40 (CZ1), Whiteclaw\_41 (CZ2), William\_42 (CV), Wisp\_37 (CV),

#### Start 42:

- Found in 5 of 186 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 5 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dori\_46 (AD), Mao1\_45 (AD), Mask\_47 (AD), Tortellini\_34 (P2), Xavia\_36 (P3),

#### Start 43:

- Found in 1 of 186 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finkle\_47 (singleton),

#### Start 44:

- Found in 11 of 186 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 8 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag\_49 (DN1), Birdsong\_49 (DN), BotCity\_51 (DN), FroggyToad\_41 (CZ2), GMA4\_31 (singleton), Horus\_50 (DN1), LitninMcQueen\_45 (DN1), MakCheese\_52 (DW), Malisha\_48 (DN), Phabuloso\_50 (DN1), Wrigley\_45 (CY4),

#### Start 45:

- Found in 85 of 186 ( 45.7% ) of genes in pham
- Manual Annotations of this start: 67 of 164
- Called 85.9% of time when present
- Phage (with cluster) where this start called: Adora\_39 (CZ4), AlumE\_43 (CZ1), Annalisa\_38 (CZ4), Antonio\_43 (CZ1), Apricot\_51 (DN3), ArchiDore\_42 (DW), Attis\_38 (CZ2), Begonia\_40 (CV), Bialota\_41 (CZ1), BoyNamedSue\_43 (CZ1), Bradissa\_38 (CY1), Bunnybear\_36 (CZ), CheeseTouch\_56 (DN1), Clark\_41 (CZ4), Crater\_51 (DN3), Denise\_36 (CZ5), DobbysSock\_33 (CZ4), Dolores\_42 (CZ4), Ecliptus\_51 (DN), EdnaMode\_37 (CZ2), EnalisNailo\_37 (CY1), Eudoria\_43 (CZ1),

Eviarto\_41 (CZ1), Frokostdame\_41 (CV), Herod\_41 (CZ1), Hugley\_38 (CZ1), Hyzer\_48 (CZ1), Invectra\_43 (CZ4), Jalammah\_44 (CV), Kita\_44 (CZ1), Kuwabara\_47 (DN4), Lilas\_40 (CY1), LordFarquaad\_40 (CZ2), Lton\_36 (CZ), Lysidious\_40 (CV), Madavieve\_39 (CZ1), Malachai\_40 (CV), Manasvini\_43 (CZ1), Maridalia\_44 (CZ1), Mellie\_39 (CV), MichaelScott\_42 (CZ4), MissRona\_40 (CV), Moosehead\_37 (CZ6), Morkie\_35 (DH), Neobush\_43 (CZ1), Nymphadora\_41 (CZ1), OneDirection\_32 (CZ6), Oregano\_41 (CZ4), Pepperoni\_33 (CZ), Phistory\_53 (DN1), PhorbessPhlower\_35 (DH), PhriskyACE\_39 (CZ4), Pickett\_36 (CZ2), Polly\_40 (CZ1), Posh\_45 (CY4), Powerball\_39 (CZ4), Samba\_40 (CV), Samman98\_42 (CZ4), Sekhmet\_42 (CZ4), SoilAssassin\_38 (CZ2), Suerte\_36 (CZ4), Suscepit\_43 (CZ1), Tayonia\_43 (CZ1), Thimann\_38 (CZ4), TimTam\_41 (CZ1), Trumpet\_43 (CZ1), Tuti\_41 (CZ4), Utz\_35 (CV), Yeet412\_38 (CZ2), Yeezy\_38 (CZ3), Zameen\_43 (CZ1), ZiggyZoo\_40 (CV), Zirinka\_40 (CZ1),

Start 46:

- Found in 2 of 186 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altostratus\_46 (FS), Khuang\_46 (FS),

### Summary by clusters:

There are 32 clusters represented in this pham: DN, P2, singleton, FS, DH, CY2, CZ2, CZ3, CZ1, CZ6, CZ7, CZ4, CZ5, DW, CY6, I2, DN4, DN1, DN3, DN2, CY3, P3, CY1, CY7, AD, CY5, CY4, CZ, CV, F1, F3, F7,

Info for manual annotations of cluster AD:

- Start number 40 was manually annotated 1 time for cluster AD.
- Start number 42 was manually annotated 3 times for cluster AD.

Info for manual annotations of cluster CV:

- Start number 33 was manually annotated 4 times for cluster CV.
- Start number 34 was manually annotated 1 time for cluster CV.
- Start number 36 was manually annotated 1 time for cluster CV.
- Start number 41 was manually annotated 8 times for cluster CV.
- Start number 45 was manually annotated 10 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 34 was manually annotated 1 time for cluster CY1.
- Start number 41 was manually annotated 5 times for cluster CY1.
- Start number 45 was manually annotated 3 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 40 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:

- Start number 41 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 44 was manually annotated 1 time for cluster CY4.
- Start number 45 was manually annotated 1 time for cluster CY4.

Info for manual annotations of cluster CY5:

- Start number 38 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:

- Start number 40 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:

- Start number 40 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster CZ:

- Start number 41 was manually annotated 1 time for cluster CZ.
- Start number 45 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 28 was manually annotated 1 time for cluster CZ1.
- Start number 33 was manually annotated 1 time for cluster CZ1.
- Start number 41 was manually annotated 4 times for cluster CZ1.
- Start number 45 was manually annotated 19 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 38 was manually annotated 4 times for cluster CZ2.
- Start number 41 was manually annotated 13 times for cluster CZ2.
- Start number 45 was manually annotated 6 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 6 was manually annotated 1 time for cluster CZ3.
- Start number 41 was manually annotated 1 time for cluster CZ3.
- Start number 45 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 13 was manually annotated 1 time for cluster CZ4.
- Start number 27 was manually annotated 2 times for cluster CZ4.
- Start number 33 was manually annotated 1 time for cluster CZ4.
- Start number 38 was manually annotated 1 time for cluster CZ4.
- Start number 45 was manually annotated 13 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 45 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 40 was manually annotated 1 time for cluster CZ6.
- Start number 45 was manually annotated 2 times for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 34 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DH:

- Start number 40 was manually annotated 1 time for cluster DH.
- Start number 45 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 30 was manually annotated 1 time for cluster DN.
- Start number 40 was manually annotated 2 times for cluster DN.
- Start number 44 was manually annotated 3 times for cluster DN.

- Start number 45 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 40 was manually annotated 3 times for cluster DN1.
- Start number 44 was manually annotated 4 times for cluster DN1.
- Start number 45 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 40 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 45 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 45 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DW:

- Start number 33 was manually annotated 1 time for cluster DW.
- Start number 38 was manually annotated 1 time for cluster DW.
- Start number 41 was manually annotated 2 times for cluster DW.
- Start number 45 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster F1:

- Start number 40 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 40 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster FS:

- Start number 46 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster I2:

- Start number 40 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster P2:

- Start number 42 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 42 was manually annotated 1 time for cluster P3.

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

Gene: Adora\_39 Start: 32929, Stop: 32522, Start Num: 45

Candidate Starts for Adora\_39:

(23, 32998), (Start: 33 @32959 has 7 MA's), (Start: 34 @32953 has 3 MA's), (Start: 38 @32938 has 7 MA's), (Start: 45 @32929 has 67 MA's), (59, 32845), (72, 32770), (74, 32752), (79, 32734), (80, 32731), (90, 32674), (102, 32608), (103, 32602), (104, 32596), (106, 32590), (109, 32572), (113, 32539),

Gene: Agueybana\_40 Start: 32094, Stop: 31669, Start Num: 41

Candidate Starts for Agueybana\_40:

(18, 32217), (Start: 33 @32124 has 7 MA's), (Start: 38 @32103 has 7 MA's), (Start: 41 @32094 has 36 MA's), (66, 31968), (102, 31764), (104, 31752),

Gene: Altostratus\_46 Start: 28789, Stop: 28385, Start Num: 46

Candidate Starts for Altostratus\_46:

(31, 28873), (Start: 46 @28789 has 1 MA's), (56, 28741), (71, 28651), (72, 28648), (82, 28600), (85, 28582), (89, 28555), (95, 28528), (99, 28501), (104, 28471),

Gene: AlumE\_43 Start: 33874, Stop: 33458, Start Num: 45

Candidate Starts for AlumE\_43:

(Start: 45 @33874 has 67 MA's), (49, 33832), (51, 33826), (52, 33823), (56, 33799), (58, 33790), (63, 33766), (88, 33637), (100, 33565), (105, 33541),

Gene: Angelique\_41 Start: 32667, Stop: 32242, Start Num: 41

Candidate Starts for Angelique\_41:

(Start: 33 @32697 has 7 MA's), (Start: 38 @32676 has 7 MA's), (Start: 41 @32667 has 36 MA's), (63, 32553), (66, 32541), (93, 32391), (96, 32379), (102, 32337), (104, 32325),

Gene: Annalisa\_38 Start: 30286, Stop: 29879, Start Num: 45

Candidate Starts for Annalisa\_38:

(23, 30355), (Start: 33 @30316 has 7 MA's), (Start: 34 @30310 has 3 MA's), (Start: 38 @30295 has 7 MA's), (Start: 45 @30286 has 67 MA's), (72, 30127), (74, 30109), (79, 30091), (80, 30088), (90, 30031), (102, 29965), (103, 29959), (104, 29953), (106, 29947), (109, 29929), (113, 29896),

Gene: Antonio\_43 Start: 33147, Stop: 32731, Start Num: 45

Candidate Starts for Antonio\_43:

(Start: 45 @33147 has 67 MA's), (49, 33105), (51, 33099), (52, 33096), (56, 33072), (58, 33063), (63, 33039), (88, 32910), (100, 32838), (105, 32814),

Gene: Apricot\_51 Start: 33861, Stop: 33445, Start Num: 45

Candidate Starts for Apricot\_51:

(Start: 45 @33861 has 67 MA's), (49, 33819), (63, 33753), (65, 33741), (67, 33732), (93, 33603), (98, 33564), (102, 33543), (105, 33528), (111, 33492),

Gene: ArchiDore\_42 Start: 35044, Stop: 34631, Start Num: 45

Candidate Starts for ArchiDore\_42:

(Start: 45 @35044 has 67 MA's), (49, 35002), (50, 34999), (52, 34993), (58, 34963), (63, 34939), (69, 34903), (70, 34900), (88, 34810), (93, 34789), (100, 34738),

Gene: Asapag\_49 Start: 34231, Stop: 33809, Start Num: 44

Candidate Starts for Asapag\_49:

(Start: 44 @34231 has 8 MA's), (52, 34177), (60, 34135), (72, 34075), (76, 34048), (85, 34006), (86, 33997), (95, 33952), (99, 33925), (102, 33907), (109, 33871),

Gene: Attis\_38 Start: 30280, Stop: 29864, Start Num: 45

Candidate Starts for Attis\_38:

(Start: 45 @30280 has 67 MA's), (49, 30238), (51, 30232), (52, 30229), (56, 30205), (58, 30196), (63, 30172), (88, 30043), (100, 29971), (105, 29947),

Gene: Azula\_40 Start: 32407, Stop: 31970, Start Num: 33

Candidate Starts for Azula\_40:

(Start: 33 @32407 has 7 MA's), (Start: 34 @32401 has 3 MA's), (Start: 38 @32386 has 7 MA's), (Start: 45 @32377 has 67 MA's), (59, 32293), (74, 32200), (79, 32182), (85, 32155), (102, 32056), (103, 32050), (104, 32044), (112, 31996),

Gene: BENtherdunthat\_53 Start: 34239, Stop: 33820, Start Num: 40

Candidate Starts for BENtherdunthat\_53:

(Start: 40 @34239 has 22 MA's), (53, 34167), (57, 34152), (62, 34128), (70, 34083), (75, 34056), (102, 33927), (108, 33900),

Gene: BatStarr\_41 Start: 33776, Stop: 33300, Start Num: 28

Candidate Starts for BatStarr\_41:

(Start: 28 @33776 has 1 MA's), (Start: 33 @33746 has 7 MA's), (Start: 38 @33725 has 7 MA's), (Start: 45 @33716 has 67 MA's), (83, 33500), (85, 33494), (96, 33437), (104, 33383), (106, 33377),

Gene: BaxterFox\_39 Start: 32252, Stop: 31617, Start Num: 6

Candidate Starts for BaxterFox\_39:

(Start: 6 @32252 has 1 MA's), (11, 32210), (12, 32201), (Start: 13 @32198 has 1 MA's), (14, 32195), (15, 32186), (19, 32162), (22, 32120), (26, 32111), (Start: 33 @32072 has 7 MA's), (Start: 38 @32051 has 7 MA's), (Start: 41 @32042 has 36 MA's), (63, 31928), (66, 31916), (96, 31754), (102, 31712), (104, 31700), (108, 31685),

Gene: BeeGee\_44 Start: 33574, Stop: 33140, Start Num: 38

Candidate Starts for BeeGee\_44:

(Start: 33 @33595 has 7 MA's), (Start: 38 @33574 has 7 MA's), (Start: 41 @33565 has 36 MA's), (63, 33451), (66, 33439), (83, 33340), (96, 33277), (102, 33235), (103, 33229), (104, 33223), (108, 33208),

Gene: Begonia\_40 Start: 33887, Stop: 33471, Start Num: 45

Candidate Starts for Begonia\_40:

(Start: 33 @33917 has 7 MA's), (Start: 34 @33911 has 3 MA's), (Start: 38 @33896 has 7 MA's), (Start: 45 @33887 has 67 MA's), (53, 33827), (62, 33788), (71, 33731), (79, 33692), (96, 33608), (104, 33554), (106, 33548), (108, 33539),

Gene: Bialota\_41 Start: 33899, Stop: 33483, Start Num: 45

Candidate Starts for Bialota\_41:

(Start: 45 @33899 has 67 MA's), (49, 33857), (51, 33851), (52, 33848), (56, 33824), (58, 33815), (63, 33791), (88, 33662), (100, 33590), (105, 33566),

Gene: Birdsong\_49 Start: 34452, Stop: 34030, Start Num: 44

Candidate Starts for Birdsong\_49:

(Start: 44 @34452 has 8 MA's), (52, 34398), (60, 34356), (72, 34296), (76, 34269), (85, 34227), (86, 34218), (95, 34173), (99, 34146), (102, 34128), (109, 34092),

Gene: Bjaner7\_38 Start: 30276, Stop: 29851, Start Num: 41

Candidate Starts for Bjaner7\_38:

(Start: 34 @30300 has 3 MA's), (Start: 38 @30285 has 7 MA's), (Start: 41 @30276 has 36 MA's), (66, 30150), (96, 29988), (102, 29946), (104, 29934), (108, 29919),

Gene: Blino\_43 Start: 35401, Stop: 34976, Start Num: 41

Candidate Starts for Blino\_43:

(Start: 33 @35431 has 7 MA's), (Start: 34 @35425 has 3 MA's), (Start: 38 @35410 has 7 MA's), (Start: 41 @35401 has 36 MA's), (56, 35320), (63, 35287), (66, 35275), (79, 35197), (96, 35113), (104, 35059),

Gene: Blueberry\_39 Start: 32407, Stop: 31970, Start Num: 33

Candidate Starts for Blueberry\_39:

(Start: 33 @32407 has 7 MA's), (Start: 34 @32401 has 3 MA's), (Start: 38 @32386 has 7 MA's), (Start: 45 @32377 has 67 MA's), (59, 32293), (74, 32200), (79, 32182), (85, 32155), (102, 32056), (103, 32050), (104, 32044), (112, 31996),

Gene: Bosnia\_43 Start: 35655, Stop: 35230, Start Num: 41

Candidate Starts for Bosnia\_43:

(Start: 33 @35685 has 7 MA's), (Start: 34 @35679 has 3 MA's), (Start: 38 @35664 has 7 MA's), (Start: 41 @35655 has 36 MA's), (63, 35541), (66, 35529), (96, 35367), (102, 35325), (104, 35313),

Gene: BotCity\_51 Start: 34255, Stop: 33833, Start Num: 44

Candidate Starts for BotCity\_51:

(Start: 44 @34255 has 8 MA's), (52, 34201), (60, 34159), (72, 34099), (76, 34072), (85, 34030), (86, 34021), (95, 33976), (99, 33949), (102, 33931), (109, 33895),

Gene: BoyNamedSue\_43 Start: 33874, Stop: 33458, Start Num: 45

Candidate Starts for BoyNamedSue\_43:

(Start: 45 @33874 has 67 MA's), (49, 33832), (51, 33826), (52, 33823), (56, 33799), (58, 33790), (63, 33766), (88, 33637), (100, 33565), (105, 33541),

Gene: Bradissa\_38 Start: 33185, Stop: 32769, Start Num: 45

Candidate Starts for Bradissa\_38:

(Start: 45 @33185 has 67 MA's), (49, 33143), (51, 33137), (52, 33134), (56, 33110), (58, 33101), (63, 33077), (88, 32948), (100, 32876), (105, 32852),

Gene: BritBrat\_39 Start: 33527, Stop: 33108, Start Num: 40

Candidate Starts for BritBrat\_39:

(Start: 40 @33527 has 22 MA's), (47, 33491), (57, 33440), (71, 33359), (75, 33344), (88, 33296), (93, 33275), (102, 33215), (108, 33188),

Gene: Brocalys\_40 Start: 29944, Stop: 29501, Start Num: 40

Candidate Starts for Brocalys\_40:

(Start: 40 @29944 has 22 MA's), (58, 29848), (67, 29797), (95, 29647), (112, 29542),

Gene: Budski\_51 Start: 35130, Stop: 34711, Start Num: 40

Candidate Starts for Budski\_51:

(Start: 40 @35130 has 22 MA's), (53, 35058), (57, 35043), (62, 35019), (70, 34974), (75, 34947), (102, 34818), (108, 34791),

Gene: Bunnybear\_36 Start: 31549, Stop: 31133, Start Num: 45

Candidate Starts for Bunnybear\_36:

(Start: 45 @31549 has 67 MA's), (49, 31507), (51, 31501), (52, 31498), (56, 31474), (58, 31465), (63, 31441), (88, 31312), (100, 31240),

Gene: CarolAnn\_42 Start: 35400, Stop: 34975, Start Num: 41

Candidate Starts for CarolAnn\_42:

(Start: 33 @35430 has 7 MA's), (Start: 34 @35424 has 3 MA's), (Start: 38 @35409 has 7 MA's), (Start: 41 @35400 has 36 MA's), (56, 35319), (63, 35286), (66, 35274), (79, 35196), (96, 35112), (104, 35058),

Gene: Cashline\_40 Start: 33855, Stop: 33421, Start Num: 40

Candidate Starts for Cashline\_40:

(2, 34128), (3, 34122), (9, 34044), (35, 33876), (Start: 40 @33855 has 22 MA's), (51, 33795), (57, 33762), (71, 33681), (77, 33657), (92, 33576), (95, 33564), (101, 33525), (105, 33504), (107, 33498), (108, 33492), (119, 33429),

Gene: Che9c\_43 Start: 34201, Stop: 33758, Start Num: 40

Candidate Starts for Che9c\_43:

(Start: 40 @34201 has 22 MA's), (51, 34138), (57, 34105), (63, 34075), (75, 34000), (84, 33961), (108, 33832), (111, 33808),

Gene: CheeseSpider\_46 Start: 32174, Stop: 31758, Start Num: 38

Candidate Starts for CheeseSpider\_46:

(Start: 33 @32195 has 7 MA's), (Start: 34 @32189 has 3 MA's), (Start: 38 @32174 has 7 MA's), (Start: 45 @32165 has 67 MA's), (59, 32081), (72, 32006), (85, 31943), (88, 31919), (92, 31901), (95, 31889), (102, 31844), (103, 31838), (104, 31832), (112, 31784),

Gene: CheeseTouch\_56 Start: 32599, Stop: 32183, Start Num: 45

Candidate Starts for CheeseTouch\_56:

(Start: 45 @32599 has 67 MA's), (49, 32557), (63, 32491), (67, 32470), (93, 32341), (98, 32302), (102, 32281), (105, 32266), (111, 32230),

Gene: Clap\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Clap\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Clark\_41 Start: 30731, Stop: 30324, Start Num: 45

Candidate Starts for Clark\_41:

(26, 30800), (Start: 28 @30791 has 1 MA's), (Start: 38 @30740 has 7 MA's), (Start: 45 @30731 has 67 MA's), (72, 30572), (74, 30554), (79, 30536), (80, 30533), (90, 30476), (102, 30410), (103, 30404), (104, 30398), (106, 30392), (109, 30374), (113, 30341),

Gene: Clifton\_39 Start: 30295, Stop: 29852, Start Num: 40

Candidate Starts for Clifton\_39:

(Start: 40 @30295 has 22 MA's), (58, 30199), (67, 30148), (95, 29998), (112, 29893),

Gene: Confidence\_41 Start: 31704, Stop: 31246, Start Num: 34

Candidate Starts for Confidence\_41:

(Start: 34 @31704 has 3 MA's), (Start: 40 @31680 has 22 MA's), (51, 31620), (57, 31587), (71, 31506), (81, 31464), (92, 31401), (95, 31389), (107, 31323), (119, 31254),

Gene: Crater\_51 Start: 34256, Stop: 33840, Start Num: 45

Candidate Starts for Crater\_51:

(Start: 45 @34256 has 67 MA's), (49, 34214), (63, 34148), (67, 34127), (93, 33998), (98, 33959), (102, 33938), (105, 33923), (111, 33887),

Gene: Cynthia\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Cynthia\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Denise\_36 Start: 28917, Stop: 28501, Start Num: 45

Candidate Starts for Denise\_36:

(Start: 45 @28917 has 67 MA's), (48, 28878), (49, 28875), (51, 28869), (52, 28866), (56, 28842), (63, 28809), (70, 28770), (85, 28704), (88, 28680), (93, 28659), (99, 28617), (100, 28608),

Gene: DobbysSock\_33 Start: 29249, Stop: 28833, Start Num: 45

Candidate Starts for DobbysSock\_33:

(Start: 27 @29312 has 2 MA's), (Start: 45 @29249 has 67 MA's), (50, 29207), (79, 29054), (102, 28928), (104, 28916), (108, 28901),

Gene: Dolores\_42 Start: 31603, Stop: 31196, Start Num: 45

Candidate Starts for Dolores\_42:

(26, 31672), (Start: 28 @31663 has 1 MA's), (Start: 38 @31612 has 7 MA's), (Start: 45 @31603 has 67 MA's), (72, 31444), (74, 31426), (79, 31408), (80, 31405), (90, 31348), (102, 31282), (103, 31276), (104, 31270), (106, 31264), (109, 31246), (113, 31213),

Gene: Donkeykong\_43 Start: 34315, Stop: 33872, Start Num: 40

Candidate Starts for Donkeykong\_43:

(Start: 40 @34315 has 22 MA's), (58, 34219), (67, 34168), (95, 34018), (112, 33913),

Gene: Dori\_46 Start: 42481, Stop: 42059, Start Num: 42

Candidate Starts for Dori\_46:

(32, 42517), (Start: 42 @42481 has 5 MA's), (52, 42430), (56, 42403), (107, 42139),

Gene: Dorito\_36 Start: 28956, Stop: 28477, Start Num: 27

Candidate Starts for Dorito\_36:

(Start: 27 @28956 has 2 MA's), (Start: 45 @28893 has 67 MA's), (50, 28851), (79, 28698), (102, 28572), (104, 28560), (108, 28545),

Gene: DumpsterDude\_42 Start: 35820, Stop: 35395, Start Num: 41

Candidate Starts for DumpsterDude\_42:

(Start: 34 @35844 has 3 MA's), (Start: 38 @35829 has 7 MA's), (Start: 41 @35820 has 36 MA's), (63, 35706), (66, 35694), (88, 35565), (96, 35532), (102, 35490), (104, 35478), (108, 35463),

Gene: EMSquaredA\_39 Start: 31766, Stop: 31341, Start Num: 41

Candidate Starts for EMSquaredA\_39:

(Start: 41 @31766 has 36 MA's), (66, 31640), (101, 31442), (102, 31436), (104, 31424),

Gene: Easley\_37 Start: 29189, Stop: 28608, Start Num: 13

Candidate Starts for Easley\_37:

(Start: 6 @29243 has 1 MA's), (11, 29201), (12, 29192), (Start: 13 @29189 has 1 MA's), (19, 29153), (Start: 33 @29063 has 7 MA's), (Start: 38 @29042 has 7 MA's), (Start: 41 @29033 has 36 MA's), (63, 28919), (66, 28907), (83, 28808), (85, 28802), (103, 28697), (104, 28691), (108, 28676),

Gene: Ebert\_43 Start: 30379, Stop: 29954, Start Num: 41

Candidate Starts for Ebert\_43:

(Start: 34 @30403 has 3 MA's), (Start: 38 @30388 has 7 MA's), (Start: 41 @30379 has 36 MA's), (66, 30253), (96, 30091), (102, 30049), (104, 30037), (108, 30022),

Gene: Ecliptus\_51 Start: 35343, Stop: 34936, Start Num: 45

Candidate Starts for Ecliptus\_51:

(Start: 33 @35373 has 7 MA's), (Start: 34 @35367 has 3 MA's), (Start: 38 @35352 has 7 MA's), (Start: 45 @35343 has 67 MA's), (74, 35166), (79, 35148), (80, 35145), (85, 35121), (92, 35079), (94, 35070), (101, 35028), (102, 35022), (103, 35016), (104, 35010), (106, 35004), (112, 34962),

Gene: EdnaMode\_37 Start: 28968, Stop: 28552, Start Num: 45

Candidate Starts for EdnaMode\_37:

(Start: 45 @28968 has 67 MA's), (49, 28926), (51, 28920), (52, 28917), (56, 28893), (58, 28884), (63, 28860), (88, 28731), (100, 28659), (105, 28635),

Gene: EnalisNailo\_37 Start: 32719, Stop: 32303, Start Num: 45

Candidate Starts for EnalisNailo\_37:

(Start: 45 @32719 has 67 MA's), (49, 32677), (51, 32671), (52, 32668), (56, 32644), (58, 32635), (63, 32611), (88, 32482), (100, 32410), (105, 32386),

Gene: Eudoria\_43 Start: 33147, Stop: 32731, Start Num: 45

Candidate Starts for Eudoria\_43:

(Start: 45 @33147 has 67 MA's), (49, 33105), (51, 33099), (52, 33096), (56, 33072), (58, 33063), (63, 33039), (88, 32910), (100, 32838), (105, 32814),

Gene: Eviarto\_41 Start: 33692, Stop: 33276, Start Num: 45

Candidate Starts for Eviarto\_41:

(Start: 28 @33752 has 1 MA's), (Start: 33 @33722 has 7 MA's), (Start: 38 @33701 has 7 MA's), (Start: 45 @33692 has 67 MA's), (83, 33476), (85, 33470), (96, 33413), (104, 33359), (106, 33353),

Gene: Fairfaxidum\_41 Start: 32795, Stop: 32370, Start Num: 41

Candidate Starts for Fairfaxidum\_41:

(Start: 33 @32825 has 7 MA's), (Start: 38 @32804 has 7 MA's), (Start: 41 @32795 has 36 MA's), (66, 32669), (79, 32591), (96, 32507), (102, 32465), (104, 32453), (108, 32438),

Gene: Faith5x5\_32 Start: 26770, Stop: 26351, Start Num: 40

Candidate Starts for Faith5x5\_32:

(Start: 40 @26770 has 22 MA's), (57, 26683), (75, 26587), (92, 26521), (93, 26518), (101, 26464), (102, 26458), (108, 26431),

Gene: Finkle\_47 Start: 33372, Stop: 32953, Start Num: 43

Candidate Starts for Finkle\_47:

(Start: 43 @33372 has 1 MA's), (49, 33324), (51, 33318), (52, 33315), (55, 33294), (63, 33258), (65, 33246), (85, 33153), (110, 33009), (115, 32976),

Gene: Floral\_38 Start: 33839, Stop: 33414, Start Num: 41

Candidate Starts for Floral\_38:

(Start: 34 @33863 has 3 MA's), (Start: 38 @33848 has 7 MA's), (Start: 41 @33839 has 36 MA's), (56, 33758), (66, 33713), (96, 33551), (102, 33509), (104, 33497), (108, 33482),

Gene: FroggyToad\_41 Start: 30890, Stop: 30468, Start Num: 44

Candidate Starts for FroggyToad\_41:

(Start: 44 @30890 has 8 MA's), (52, 30836), (53, 30827), (60, 30794), (70, 30749), (72, 30734), (85, 30665), (86, 30656), (95, 30611), (99, 30584), (102, 30566), (109, 30530),

Gene: Frokostdame\_41 Start: 32700, Stop: 32293, Start Num: 45

Candidate Starts for Frokostdame\_41:

(Start: 33 @32730 has 7 MA's), (Start: 34 @32724 has 3 MA's), (Start: 38 @32709 has 7 MA's), (Start: 45 @32700 has 67 MA's), (79, 32505), (85, 32478), (102, 32379), (103, 32373), (104, 32367),

Gene: GMA1\_31 Start: 24915, Stop: 24478, Start Num: 34

Candidate Starts for GMA1\_31:

(Start: 33 @24921 has 7 MA's), (Start: 34 @24915 has 3 MA's), (Start: 38 @24900 has 7 MA's), (Start: 40 @24891 has 22 MA's), (57, 24804), (108, 24552),

Gene: GMA4\_31 Start: 27079, Stop: 26645, Start Num: 44

Candidate Starts for GMA4\_31:

(Start: 44 @27079 has 8 MA's), (80, 26872), (81, 26869), (91, 26809), (101, 26749), (107, 26722),

Gene: Gambino\_42 Start: 32401, Stop: 31970, Start Num: 34

Candidate Starts for Gambino\_42:

(Start: 33 @32407 has 7 MA's), (Start: 34 @32401 has 3 MA's), (Start: 38 @32386 has 7 MA's), (Start: 45 @32377 has 67 MA's), (59, 32293), (74, 32200), (79, 32182), (85, 32155), (102, 32056), (103, 32050), (104, 32044), (112, 31996),

Gene: GemG\_41 Start: 30464, Stop: 30030, Start Num: 38

Candidate Starts for GemG\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Gizermo\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Gizermo\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Haley23\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Haley23\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Herod\_41 Start: 33716, Stop: 33300, Start Num: 45

Candidate Starts for Herod\_41:

(Start: 28 @33776 has 1 MA's), (Start: 33 @33746 has 7 MA's), (Start: 38 @33725 has 7 MA's), (Start: 45 @33716 has 67 MA's), (83, 33500), (85, 33494), (96, 33437), (104, 33383), (106, 33377),

Gene: Holliday\_51 Start: 34485, Stop: 34051, Start Num: 40

Candidate Starts for Holliday\_51:

(Start: 40 @34485 has 22 MA's), (51, 34425), (57, 34392), (58, 34386), (71, 34311), (77, 34287), (92, 34206), (95, 34194), (119, 34059),

Gene: Horus\_50 Start: 34860, Stop: 34438, Start Num: 44

Candidate Starts for Horus\_50:

(Start: 44 @34860 has 8 MA's), (52, 34806), (60, 34764), (72, 34704), (76, 34677), (85, 34635), (86, 34626), (95, 34581), (99, 34554), (102, 34536), (109, 34500),

Gene: Hugley\_38 Start: 33715, Stop: 33299, Start Num: 45

Candidate Starts for Hugley\_38:

(Start: 28 @33775 has 1 MA's), (Start: 33 @33745 has 7 MA's), (Start: 38 @33724 has 7 MA's), (Start: 45 @33715 has 67 MA's), (83, 33499), (85, 33493), (96, 33436), (104, 33382), (106, 33376),

Gene: Hyzer\_48 Start: 36153, Stop: 35734, Start Num: 45

Candidate Starts for Hyzer\_48:

(Start: 45 @36153 has 67 MA's), (49, 36111), (51, 36105), (52, 36102), (53, 36090), (58, 36069), (61, 36051), (63, 36042), (68, 36009), (88, 35913), (100, 35841),

Gene: Invecetra\_43 Start: 32305, Stop: 31898, Start Num: 45

Candidate Starts for Invecetra\_43:

(26, 32374), (Start: 28 @32365 has 1 MA's), (Start: 38 @32314 has 7 MA's), (Start: 45 @32305 has 67 MA's), (72, 32146), (74, 32128), (79, 32110), (80, 32107), (90, 32050), (102, 31984), (103, 31978), (104, 31972), (106, 31966), (109, 31948), (113, 31915),

Gene: JCole\_40 Start: 29723, Stop: 29298, Start Num: 41

Candidate Starts for JCole\_40:

(Start: 34 @29747 has 3 MA's), (Start: 38 @29732 has 7 MA's), (Start: 41 @29723 has 36 MA's), (66, 29597), (72, 29555), (102, 29393), (104, 29381), (108, 29366),

Gene: Jablanski\_41 Start: 33024, Stop: 32599, Start Num: 41

Candidate Starts for Jablanski\_41:

(Start: 33 @33054 has 7 MA's), (Start: 34 @33048 has 3 MA's), (Start: 38 @33033 has 7 MA's), (Start: 41 @33024 has 36 MA's), (66, 32898), (96, 32736), (101, 32700), (102, 32694), (104, 32682), (108, 32667),

Gene: Jalammah\_44 Start: 34077, Stop: 33670, Start Num: 45

Candidate Starts for Jalammah\_44:

(29, 34134), (Start: 33 @34107 has 7 MA's), (Start: 34 @34101 has 3 MA's), (Start: 38 @34086 has 7 MA's), (Start: 45 @34077 has 67 MA's), (49, 34038), (59, 33993), (74, 33900), (79, 33882), (85, 33855), (102, 33756), (103, 33750), (104, 33744), (112, 33696),

Gene: Jalleen\_40 Start: 30103, Stop: 29669, Start Num: 38

Candidate Starts for Jalleen\_40:

(Start: 34 @30118 has 3 MA's), (Start: 38 @30103 has 7 MA's), (Start: 41 @30094 has 36 MA's), (66, 29968), (96, 29806), (102, 29764), (104, 29752), (108, 29737),

Gene: Jennelsea\_41 Start: 31598, Stop: 31155, Start Num: 40

Candidate Starts for Jennelsea\_41:

(Start: 40 @31598 has 22 MA's), (58, 31502), (67, 31451), (95, 31301), (112, 31196),

Gene: JuJu\_43 Start: 33227, Stop: 32802, Start Num: 41

Candidate Starts for JuJu\_43:

(Start: 41 @33227 has 36 MA's), (66, 33101), (72, 33059), (79, 33023), (83, 33002), (96, 32939), (102, 32897), (104, 32885), (108, 32870),

Gene: KappaFarmDelta\_42 Start: 31734, Stop: 31297, Start Num: 33

Candidate Starts for KappaFarmDelta\_42:

(Start: 33 @31734 has 7 MA's), (Start: 34 @31728 has 3 MA's), (Start: 38 @31713 has 7 MA's), (Start: 45 @31704 has 67 MA's), (59, 31620), (72, 31545), (85, 31482), (92, 31440), (102, 31383), (104, 31371), (112, 31323),

Gene: Khuang\_46 Start: 28987, Stop: 28583, Start Num: 46

Candidate Starts for Khuang\_46:

(Start: 46 @28987 has 1 MA's), (56, 28939), (71, 28849), (72, 28846), (85, 28780), (89, 28753), (95, 28726), (99, 28699), (104, 28669), (116, 28600),

Gene: Kita\_44 Start: 33156, Stop: 32740, Start Num: 45

Candidate Starts for Kita\_44:

(Start: 45 @33156 has 67 MA's), (49, 33114), (51, 33108), (52, 33105), (56, 33081), (58, 33072), (63, 33048), (88, 32919), (100, 32847), (105, 32823),

Gene: Kuwabara\_47 Start: 33695, Stop: 33288, Start Num: 45

Candidate Starts for Kuwabara\_47:

(Start: 33 @33725 has 7 MA's), (Start: 34 @33719 has 3 MA's), (Start: 45 @33695 has 67 MA's), (74, 33518), (79, 33500), (80, 33497), (85, 33473), (92, 33431), (94, 33422), (102, 33374), (103, 33368), (104, 33362), (106, 33356), (112, 33314), (114, 33302),

Gene: Lamberg\_37 Start: 28964, Stop: 28539, Start Num: 41

Candidate Starts for Lamberg\_37:

(Start: 34 @28988 has 3 MA's), (Start: 38 @28973 has 7 MA's), (Start: 41 @28964 has 36 MA's), (66, 28838), (96, 28676), (102, 28634), (104, 28622), (108, 28607),

Gene: LastJedi\_38 Start: 30338, Stop: 29895, Start Num: 40

Candidate Starts for LastJedi\_38:

(Start: 40 @30338 has 22 MA's), (58, 30242), (67, 30191), (95, 30041), (112, 29936),

Gene: Leroy\_52 Start: 35141, Stop: 34722, Start Num: 40

Candidate Starts for Leroy\_52:

(Start: 40 @35141 has 22 MA's), (53, 35069), (57, 35054), (62, 35030), (71, 34973), (72, 34970), (75, 34958), (92, 34892), (93, 34889), (102, 34829), (108, 34802), (120, 34730),

Gene: Lilas\_40 Start: 34430, Stop: 34014, Start Num: 45

Candidate Starts for Lilas\_40:

(Start: 45 @34430 has 67 MA's), (49, 34388), (51, 34382), (52, 34379), (56, 34355), (58, 34346), (63, 34322), (88, 34193), (100, 34121), (105, 34097),

Gene: LitninMcQueen\_45 Start: 33001, Stop: 32579, Start Num: 44

Candidate Starts for LitninMcQueen\_45:

(Start: 44 @33001 has 8 MA's), (52, 32947), (60, 32905), (72, 32845), (76, 32818), (85, 32776), (86, 32767), (95, 32722), (99, 32695), (102, 32677), (109, 32641),

Gene: LonelyBoi\_42 Start: 35097, Stop: 34678, Start Num: 40

Candidate Starts for LonelyBoi\_42:

(Start: 40 @35097 has 22 MA's), (53, 35025), (57, 35010), (62, 34986), (72, 34926), (75, 34914), (102, 34785), (108, 34758),

Gene: LordFarquaad\_40 Start: 30261, Stop: 29845, Start Num: 45

Candidate Starts for LordFarquaad\_40:

(Start: 45 @30261 has 67 MA's), (49, 30219), (51, 30213), (52, 30210), (56, 30186), (58, 30177), (63, 30153), (88, 30024), (100, 29952), (105, 29928),

Gene: Lton\_36 Start: 26921, Stop: 26505, Start Num: 45

Candidate Starts for Lton\_36:

(Start: 45 @26921 has 67 MA's), (51, 26873), (52, 26870), (56, 26846), (63, 26813), (85, 26708), (88, 26684), (93, 26663), (99, 26621), (100, 26612),

Gene: Lucky10\_37 Start: 29939, Stop: 29520, Start Num: 40

Candidate Starts for Lucky10\_37:

(Start: 40 @29939 has 22 MA's), (53, 29867), (57, 29852), (62, 29828), (70, 29783), (71, 29771), (72, 29768), (75, 29756), (84, 29735), (93, 29687), (102, 29627), (108, 29600),

Gene: Lysidious\_40 Start: 32794, Stop: 32387, Start Num: 45

Candidate Starts for Lysidious\_40:

(Start: 33 @32824 has 7 MA's), (Start: 34 @32818 has 3 MA's), (Start: 38 @32803 has 7 MA's), (Start: 45 @32794 has 67 MA's), (59, 32710), (72, 32635), (92, 32530), (102, 32473), (104, 32461), (112, 32413),

Gene: Madavieve\_39 Start: 32963, Stop: 32547, Start Num: 45

Candidate Starts for Madavieve\_39:

(Start: 45 @32963 has 67 MA's), (49, 32921), (51, 32915), (52, 32912), (56, 32888), (58, 32879), (63, 32855), (87, 32732), (88, 32726), (100, 32654),

Gene: Madeline\_38 Start: 32781, Stop: 32359, Start Num: 41

Candidate Starts for Madeline\_38:

(Start: 34 @32805 has 3 MA's), (Start: 38 @32790 has 7 MA's), (Start: 41 @32781 has 36 MA's), (56, 32700), (63, 32667), (66, 32655), (85, 32550), (96, 32493), (102, 32451), (104, 32439), (108, 32424), (117, 32364),

Gene: MakCheese\_52 Start: 37112, Stop: 36690, Start Num: 44

Candidate Starts for MakCheese\_52:

(Start: 44 @37112 has 8 MA's), (52, 37058), (53, 37049), (60, 37016), (70, 36971), (86, 36878), (93, 36842), (99, 36806), (102, 36788), (108, 36761), (109, 36752),

Gene: Malachai\_40 Start: 33887, Stop: 33471, Start Num: 45

Candidate Starts for Malachai\_40:

(Start: 33 @33917 has 7 MA's), (Start: 34 @33911 has 3 MA's), (Start: 38 @33896 has 7 MA's), (Start: 45 @33887 has 67 MA's), (53, 33827), (62, 33788), (71, 33731), (79, 33692), (96, 33608), (104, 33554), (106, 33548), (108, 33539),

Gene: Malibo\_42 Start: 33467, Stop: 33012, Start Num: 33

Candidate Starts for Malibo\_42:

(16, 33569), (Start: 33 @33467 has 7 MA's), (Start: 34 @33461 has 3 MA's), (Start: 38 @33446 has 7 MA's), (Start: 41 @33437 has 36 MA's), (63, 33323), (66, 33311), (79, 33233), (96, 33149), (102, 33107), (103, 33101), (104, 33095),

Gene: Malisha\_48 Start: 33889, Stop: 33467, Start Num: 44

Candidate Starts for Malisha\_48:

(Start: 44 @33889 has 8 MA's), (52, 33835), (60, 33793), (72, 33733), (85, 33664), (86, 33655), (95, 33610), (99, 33583), (102, 33565), (108, 33538), (109, 33529),

Gene: Manasvini\_43 Start: 33148, Stop: 32732, Start Num: 45

Candidate Starts for Manasvini\_43:

(Start: 45 @33148 has 67 MA's), (49, 33106), (51, 33100), (52, 33097), (56, 33073), (58, 33064), (63, 33040), (88, 32911), (100, 32839), (105, 32815),

Gene: Mao1\_45 Start: 40715, Stop: 40293, Start Num: 42

Candidate Starts for Mao1\_45:

(Start: 42 @40715 has 5 MA's), (52, 40664), (56, 40637), (82, 40508), (105, 40379), (107, 40373), (108, 40367),

Gene: Maridalia\_44 Start: 33295, Stop: 32879, Start Num: 45

Candidate Starts for Maridalia\_44:

(Start: 45 @33295 has 67 MA's), (49, 33253), (51, 33247), (52, 33244), (56, 33220), (58, 33211), (63, 33187), (88, 33058), (100, 32986),

Gene: Marteenaa\_38 Start: 31766, Stop: 31341, Start Num: 41

Candidate Starts for Marteena\_38:

(Start: 41 @31766 has 36 MA's), (66, 31640), (101, 31442), (102, 31436), (104, 31424),

Gene: Mask\_47 Start: 43714, Stop: 43292, Start Num: 42

Candidate Starts for Mask\_47:

(Start: 42 @43714 has 5 MA's), (52, 43663), (56, 43636), (72, 43549), (78, 43519), (82, 43507), (107, 43372),

Gene: Matteo\_34 Start: 28015, Stop: 27581, Start Num: 38

Candidate Starts for Matteo\_34:

(Start: 34 @28030 has 3 MA's), (Start: 38 @28015 has 7 MA's), (Start: 41 @28006 has 36 MA's), (66, 27880), (96, 27718), (102, 27676), (104, 27664), (108, 27649),

Gene: Mbo4\_32 Start: 30257, Stop: 29826, Start Num: 39

Candidate Starts for Mbo4\_32:

(24, 30326), (37, 30269), (39, 30257), (72, 30083), (96, 29963), (101, 29921), (103, 29909), (105, 29900),

Gene: Mcklovin\_38 Start: 35728, Stop: 35249, Start Num: 27

Candidate Starts for Mcklovin\_38:

(Start: 27 @35728 has 2 MA's), (Start: 45 @35665 has 67 MA's), (50, 35623), (79, 35470), (102, 35344), (104, 35332), (108, 35317),

Gene: Mellie\_39 Start: 31603, Stop: 31187, Start Num: 45

Candidate Starts for Mellie\_39:

(Start: 34 @31627 has 3 MA's), (Start: 38 @31612 has 7 MA's), (Start: 45 @31603 has 67 MA's), (53, 31543), (62, 31504), (71, 31447), (83, 31387), (96, 31324), (104, 31270), (108, 31255),

Gene: MichaelScott\_42 Start: 32207, Stop: 31800, Start Num: 45

Candidate Starts for MichaelScott\_42:

(26, 32276), (Start: 28 @32267 has 1 MA's), (Start: 38 @32216 has 7 MA's), (Start: 45 @32207 has 67 MA's), (72, 32048), (74, 32030), (79, 32012), (80, 32009), (90, 31952), (102, 31886), (103, 31880), (104, 31874), (106, 31868), (109, 31850), (113, 31817),

Gene: MissRona\_40 Start: 32378, Stop: 31971, Start Num: 45

Candidate Starts for MissRona\_40:

(Start: 33 @32408 has 7 MA's), (Start: 34 @32402 has 3 MA's), (Start: 38 @32387 has 7 MA's), (Start: 45 @32378 has 67 MA's), (59, 32294), (74, 32201), (79, 32183), (85, 32156), (102, 32057), (103, 32051), (104, 32045), (112, 31997),

Gene: Mocha12\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Mocha12\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Moosehead\_37 Start: 27045, Stop: 26638, Start Num: 45

Candidate Starts for Moosehead\_37:

(25, 27114), (Start: 34 @27069 has 3 MA's), (Start: 38 @27054 has 7 MA's), (Start: 45 @27045 has 67 MA's), (59, 26961), (74, 26868), (79, 26850), (80, 26847), (85, 26823), (90, 26790), (92, 26781), (95, 26769), (102, 26724), (103, 26718), (104, 26712), (105, 26709), (106, 26706), (112, 26664), (114, 26652),

Gene: Morkie\_35 Start: 27876, Stop: 27460, Start Num: 45

Candidate Starts for Morkie\_35:

(Start: 45 @27876 has 67 MA's), (49, 27834), (51, 27828), (52, 27825), (56, 27801), (63, 27768), (70, 27729), (85, 27663), (88, 27639), (99, 27576), (100, 27567),

Gene: MortyNRick\_46 Start: 35208, Stop: 34720, Start Num: 30

Candidate Starts for MortyNRick\_46:

(Start: 30 @35208 has 1 MA's), (Start: 40 @35154 has 22 MA's), (51, 35094), (57, 35061), (58, 35055), (73, 34971), (77, 34956), (92, 34875), (95, 34863), (119, 34728),

Gene: MulchSalad\_39 Start: 30079, Stop: 29636, Start Num: 40

Candidate Starts for MulchSalad\_39:

(Start: 40 @30079 has 22 MA's), (95, 29782),

Gene: Murp\_41 Start: 34198, Stop: 33773, Start Num: 41

Candidate Starts for Murp\_41:

(Start: 33 @34228 has 7 MA's), (Start: 41 @34198 has 36 MA's), (56, 34117), (63, 34084), (66, 34072), (79, 33994), (88, 33943), (96, 33910), (104, 33856), (108, 33841),

Gene: Neobush\_43 Start: 33141, Stop: 32725, Start Num: 45

Candidate Starts for Neobush\_43:

(Start: 45 @33141 has 67 MA's), (49, 33099), (51, 33093), (52, 33090), (56, 33066), (58, 33057), (63, 33033), (88, 32904), (100, 32832), (105, 32808),

Gene: Nettuno\_37 Start: 28973, Stop: 28539, Start Num: 38

Candidate Starts for Nettuno\_37:

(Start: 34 @28988 has 3 MA's), (Start: 38 @28973 has 7 MA's), (Start: 41 @28964 has 36 MA's), (66, 28838), (96, 28676), (102, 28634), (104, 28622), (108, 28607),

Gene: Nymphadora\_41 Start: 33716, Stop: 33300, Start Num: 45

Candidate Starts for Nymphadora\_41:

(Start: 28 @33776 has 1 MA's), (Start: 33 @33746 has 7 MA's), (Start: 38 @33725 has 7 MA's), (Start: 45 @33716 has 67 MA's), (83, 33500), (85, 33494), (96, 33437), (104, 33383), (106, 33377),

Gene: ODay\_54 Start: 35640, Stop: 35206, Start Num: 40

Candidate Starts for ODay\_54:

(5, 35877), (Start: 34 @35664 has 3 MA's), (Start: 40 @35640 has 22 MA's), (51, 35580), (57, 35547), (58, 35541), (71, 35466), (77, 35442), (92, 35361), (95, 35349), (99, 35322), (119, 35214),

Gene: Ohgeesy\_41 Start: 33576, Stop: 33154, Start Num: 41

Candidate Starts for Ohgeesy\_41:

(Start: 34 @33600 has 3 MA's), (Start: 38 @33585 has 7 MA's), (Start: 41 @33576 has 36 MA's), (56, 33495), (63, 33462), (66, 33450), (85, 33345), (96, 33288), (102, 33246), (104, 33234), (108, 33219), (117, 33159),

Gene: OneDirection\_32 Start: 26498, Stop: 26082, Start Num: 45

Candidate Starts for OneDirection\_32:

(Start: 45 @26498 has 67 MA's), (49, 26456), (51, 26450), (52, 26447), (56, 26423), (63, 26390), (70, 26351), (85, 26285), (88, 26261), (100, 26189),

Gene: Oregano\_41 Start: 30919, Stop: 30512, Start Num: 45

Candidate Starts for Oregano\_41:

(23, 30988), (Start: 33 @30949 has 7 MA's), (Start: 34 @30943 has 3 MA's), (Start: 38 @30928 has 7 MA's), (Start: 45 @30919 has 67 MA's), (72, 30760), (74, 30742), (79, 30724), (80, 30721), (90,

30664), (102, 30598), (103, 30592), (104, 30586), (106, 30580), (109, 30562), (113, 30529),

Gene: PCoral7\_40 Start: 32596, Stop: 32171, Start Num: 41

Candidate Starts for PCoral7\_40:

(7, 32800), (Start: 36 @32617 has 1 MA's), (Start: 41 @32596 has 36 MA's), (63, 32482), (66, 32470), (101, 32272), (102, 32266), (104, 32254),

Gene: PantheRoc\_39 Start: 31017, Stop: 30592, Start Num: 41

Candidate Starts for PantheRoc\_39:

(Start: 6 @31227 has 1 MA's), (11, 31185), (12, 31176), (Start: 13 @31173 has 1 MA's), (14, 31170), (15, 31161), (19, 31137), (22, 31095), (26, 31086), (Start: 33 @31047 has 7 MA's), (Start: 38 @31026 has 7 MA's), (Start: 41 @31017 has 36 MA's), (63, 30903), (66, 30891), (96, 30729), (102, 30687), (104, 30675), (108, 30660),

Gene: Pepperoni\_33 Start: 27643, Stop: 27227, Start Num: 45

Candidate Starts for Pepperoni\_33:

(Start: 45 @27643 has 67 MA's), (48, 27604), (49, 27601), (51, 27595), (52, 27592), (56, 27568), (63, 27535), (70, 27496), (85, 27430), (88, 27406), (100, 27334),

Gene: Phabuloso\_50 Start: 34086, Stop: 33664, Start Num: 44

Candidate Starts for Phabuloso\_50:

(Start: 44 @34086 has 8 MA's), (52, 34032), (60, 33990), (72, 33930), (76, 33903), (85, 33861), (86, 33852), (95, 33807), (99, 33780), (102, 33762), (109, 33726),

Gene: Phistory\_53 Start: 34808, Stop: 34392, Start Num: 45

Candidate Starts for Phistory\_53:

(Start: 45 @34808 has 67 MA's), (49, 34766), (63, 34700), (67, 34679), (93, 34550), (98, 34511), (102, 34490), (105, 34475), (111, 34439),

Gene: PhorbesPhlower\_35 Start: 27304, Stop: 26888, Start Num: 45

Candidate Starts for PhorbesPhlower\_35:

(Start: 45 @27304 has 67 MA's), (49, 27262), (63, 27196), (65, 27184), (67, 27175), (93, 27046), (98, 27007), (102, 26986), (105, 26971), (111, 26935),

Gene: PhriskyACE\_39 Start: 31628, Stop: 31212, Start Num: 45

Candidate Starts for PhriskyACE\_39:

(Start: 45 @31628 has 67 MA's), (50, 31586), (83, 31412), (85, 31406), (95, 31352), (96, 31349), (101, 31313), (102, 31307), (104, 31295), (108, 31280),

Gene: Pickett\_36 Start: 27444, Stop: 27028, Start Num: 45

Candidate Starts for Pickett\_36:

(Start: 45 @27444 has 67 MA's), (49, 27402), (51, 27396), (52, 27393), (56, 27369), (58, 27360), (63, 27336), (88, 27207), (100, 27135), (105, 27111),

Gene: Pippy\_42 Start: 31901, Stop: 31458, Start Num: 40

Candidate Starts for Pippy\_42:

(Start: 40 @31901 has 22 MA's), (58, 31805), (67, 31754), (95, 31604), (112, 31499),

Gene: Pollux\_40 Start: 33839, Stop: 33414, Start Num: 41

Candidate Starts for Pollux\_40:

(Start: 34 @33863 has 3 MA's), (Start: 38 @33848 has 7 MA's), (Start: 41 @33839 has 36 MA's), (56, 33758), (66, 33713), (96, 33551), (102, 33509), (104, 33497), (108, 33482),

Gene: Polly\_40 Start: 32590, Stop: 32174, Start Num: 45

Candidate Starts for Polly\_40:

(Start: 45 @32590 has 67 MA's), (49, 32548), (51, 32542), (52, 32539), (56, 32515), (58, 32506), (63, 32482), (88, 32353), (100, 32281), (105, 32257),

Gene: Posh\_45 Start: 34831, Stop: 34415, Start Num: 45

Candidate Starts for Posh\_45:

(Start: 45 @34831 has 67 MA's), (49, 34789), (51, 34783), (52, 34780), (56, 34756), (58, 34747), (63, 34723), (87, 34600), (88, 34594), (100, 34522), (105, 34498),

Gene: Powerball\_39 Start: 31217, Stop: 30801, Start Num: 45

Candidate Starts for Powerball\_39:

(Start: 34 @31241 has 3 MA's), (Start: 45 @31217 has 67 MA's), (85, 30995), (96, 30938), (103, 30890), (104, 30884), (108, 30869),

Gene: PrincePatrick\_40 Start: 31419, Stop: 30994, Start Num: 41

Candidate Starts for PrincePatrick\_40:

(Start: 33 @31449 has 7 MA's), (Start: 34 @31443 has 3 MA's), (Start: 38 @31428 has 7 MA's), (Start: 41 @31419 has 36 MA's), (63, 31305), (66, 31293), (83, 31194), (96, 31131), (102, 31089), (104, 31077),

Gene: Pytheas\_41 Start: 33023, Stop: 32598, Start Num: 41

Candidate Starts for Pytheas\_41:

(Start: 33 @33053 has 7 MA's), (Start: 34 @33047 has 3 MA's), (Start: 38 @33032 has 7 MA's), (Start: 41 @33023 has 36 MA's), (66, 32897), (96, 32735), (101, 32699), (102, 32693), (104, 32681), (108, 32666),

Gene: REQ2\_39 Start: 31992, Stop: 31546, Start Num: 41

Candidate Starts for REQ2\_39:

(10, 32175), (17, 32127), (Start: 41 @31992 has 36 MA's), (79, 31776), (101, 31650), (105, 31629),

Gene: Ruthy\_41 Start: 33805, Stop: 33380, Start Num: 41

Candidate Starts for Ruthy\_41:

(Start: 33 @33835 has 7 MA's), (Start: 34 @33829 has 3 MA's), (Start: 38 @33814 has 7 MA's), (Start: 41 @33805 has 36 MA's), (53, 33736), (56, 33724), (63, 33691), (66, 33679), (96, 33517), (102, 33475), (104, 33463), (108, 33448),

Gene: Sahara\_40 Start: 30202, Stop: 29777, Start Num: 41

Candidate Starts for Sahara\_40:

(Start: 34 @30226 has 3 MA's), (Start: 38 @30211 has 7 MA's), (Start: 41 @30202 has 36 MA's), (66, 30076), (96, 29914), (102, 29872), (104, 29860), (108, 29845),

Gene: Samba\_40 Start: 33996, Stop: 33580, Start Num: 45

Candidate Starts for Samba\_40:

(Start: 34 @34020 has 3 MA's), (Start: 38 @34005 has 7 MA's), (Start: 45 @33996 has 67 MA's), (53, 33936), (62, 33897), (79, 33801), (80, 33798), (85, 33774), (96, 33717), (102, 33675), (104, 33663), (108, 33648),

Gene: Samman98\_42 Start: 30834, Stop: 30427, Start Num: 45

Candidate Starts for Samman98\_42:

(26, 30903), (Start: 28 @30894 has 1 MA's), (Start: 38 @30843 has 7 MA's), (Start: 45 @30834 has 67 MA's), (72, 30675), (74, 30657), (79, 30639), (80, 30636), (90, 30579), (102, 30513), (103, 30507), (104, 30501), (106, 30495), (109, 30477), (113, 30444),

Gene: Savage\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Savage\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Sbash\_42 Start: 35113, Stop: 34670, Start Num: 40

Candidate Starts for Sbash\_42:

(21, 35215), (22, 35191), (Start: 40 @35113 has 22 MA's), (56, 35026), (58, 35017), (79, 34897), (90, 34837), (103, 34765), (108, 34744), (112, 34711),

Gene: Sejanus\_44 Start: 41143, Stop: 40700, Start Num: 40

Candidate Starts for Sejanus\_44:

(21, 41245), (Start: 40 @41143 has 22 MA's), (57, 41047), (58, 41041), (72, 40963), (75, 40942), (108, 40774), (111, 40750), (118, 40714),

Gene: Sekhmet\_42 Start: 31734, Stop: 31327, Start Num: 45

Candidate Starts for Sekhmet\_42:

(26, 31803), (Start: 28 @31794 has 1 MA's), (Start: 38 @31743 has 7 MA's), (Start: 45 @31734 has 67 MA's), (72, 31575), (74, 31557), (79, 31539), (80, 31536), (90, 31479), (102, 31413), (103, 31407), (104, 31401), (106, 31395), (109, 31377), (113, 31344),

Gene: ShawBrad\_53 Start: 34025, Stop: 33591, Start Num: 40

Candidate Starts for ShawBrad\_53:

(Start: 34 @34049 has 3 MA's), (Start: 40 @34025 has 22 MA's), (51, 33965), (57, 33932), (58, 33926), (77, 33827), (92, 33746), (95, 33734), (99, 33707), (119, 33599),

Gene: Shlim410\_40 Start: 34314, Stop: 33877, Start Num: 33

Candidate Starts for Shlim410\_40:

(23, 34353), (Start: 33 @34314 has 7 MA's), (Start: 34 @34308 has 3 MA's), (Start: 38 @34293 has 7 MA's), (Start: 45 @34284 has 67 MA's), (59, 34200), (72, 34125), (74, 34107), (79, 34089), (80, 34086), (90, 34029), (102, 33963), (103, 33957), (104, 33951), (106, 33945), (109, 33927), (113, 33894),

Gene: Sidious\_39 Start: 32458, Stop: 32009, Start Num: 34

Candidate Starts for Sidious\_39:

(Start: 34 @32458 has 3 MA's), (Start: 38 @32443 has 7 MA's), (Start: 41 @32434 has 36 MA's), (63, 32320), (66, 32308), (99, 32122), (102, 32104), (104, 32092), (108, 32077),

Gene: SoilAssassin\_38 Start: 30279, Stop: 29863, Start Num: 45

Candidate Starts for SoilAssassin\_38:

(Start: 45 @30279 has 67 MA's), (49, 30237), (51, 30231), (52, 30228), (56, 30204), (58, 30195), (63, 30171), (88, 30042), (100, 29970), (105, 29946),

Gene: Spooky\_43 Start: 32309, Stop: 31875, Start Num: 40

Candidate Starts for Spooky\_43:

(Start: 40 @32309 has 22 MA's), (51, 32249), (57, 32216), (71, 32135), (81, 32093), (95, 32018), (97, 32000), (111, 31922), (119, 31883),

Gene: Sprinklemunch\_46 Start: 34645, Stop: 34220, Start Num: 41

Candidate Starts for Sprinklemunch\_46:

(1, 34972), (4, 34894), (8, 34840), (Start: 34 @34669 has 3 MA's), (Start: 38 @34654 has 7 MA's), (Start: 41 @34645 has 36 MA's), (56, 34564), (63, 34531), (66, 34519), (79, 34441), (85, 34414), (102,

34315), (104, 34303),

Gene: Sproutie\_41 Start: 30464, Stop: 30030, Start Num: 38

Candidate Starts for Sproutie\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Squiddly\_47 Start: 34769, Stop: 34353, Start Num: 40

Candidate Starts for Squiddly\_47:

(35, 34790), (Start: 40 @34769 has 22 MA's), (57, 34685), (71, 34604), (75, 34589), (92, 34523), (93, 34520), (102, 34460), (108, 34433),

Gene: Squirty\_37 Start: 31074, Stop: 30631, Start Num: 40

Candidate Starts for Squirty\_37:

(Start: 40 @31074 has 22 MA's), (58, 30978), (67, 30927), (95, 30777), (112, 30672),

Gene: Stuck\_48 Start: 37460, Stop: 36939, Start Num: 22

Candidate Starts for Stuck\_48:

(22, 37460), (Start: 40 @37382 has 22 MA's), (49, 37331), (58, 37286), (79, 37166), (90, 37106), (103, 37034), (108, 37013),

Gene: Suerte\_36 Start: 30205, Stop: 29798, Start Num: 45

Candidate Starts for Suerte\_36:

(Start: 33 @30235 has 7 MA's), (Start: 34 @30229 has 3 MA's), (Start: 38 @30214 has 7 MA's), (Start: 45 @30205 has 67 MA's), (59, 30121), (72, 30046), (74, 30028), (79, 30010), (80, 30007), (90, 29950), (102, 29884), (103, 29878), (104, 29872), (106, 29866), (109, 29848), (113, 29815),

Gene: Suscepit\_43 Start: 33148, Stop: 32732, Start Num: 45

Candidate Starts for Suscepit\_43:

(Start: 45 @33148 has 67 MA's), (49, 33106), (51, 33100), (52, 33097), (56, 33073), (58, 33064), (63, 33040), (88, 32911), (100, 32839), (105, 32815),

Gene: Tayonia\_43 Start: 33147, Stop: 32731, Start Num: 45

Candidate Starts for Tayonia\_43:

(Start: 45 @33147 has 67 MA's), (49, 33105), (51, 33099), (52, 33096), (56, 33072), (58, 33063), (63, 33039), (88, 32910), (100, 32838), (105, 32814),

Gene: ThankyouJordi\_40 Start: 33282, Stop: 32827, Start Num: 33

Candidate Starts for ThankyouJordi\_40:

(Start: 33 @33282 has 7 MA's), (Start: 34 @33276 has 3 MA's), (Start: 38 @33261 has 7 MA's), (Start: 41 @33252 has 36 MA's), (66, 33126), (96, 32964), (102, 32922), (104, 32910), (108, 32895),

Gene: Thimann\_38 Start: 29775, Stop: 29359, Start Num: 45

Candidate Starts for Thimann\_38:

(Start: 27 @29838 has 2 MA's), (Start: 45 @29775 has 67 MA's), (50, 29733), (79, 29580), (102, 29454), (104, 29442), (108, 29427),

Gene: TimTam\_41 Start: 33716, Stop: 33300, Start Num: 45

Candidate Starts for TimTam\_41:

(Start: 28 @33776 has 1 MA's), (Start: 33 @33746 has 7 MA's), (Start: 38 @33725 has 7 MA's), (Start: 45 @33716 has 67 MA's), (83, 33500), (85, 33494), (96, 33437), (104, 33383), (106, 33377),

Gene: Toast\_40 Start: 32617, Stop: 32171, Start Num: 36

Candidate Starts for Toast\_40:

(7, 32800), (Start: 36 @32617 has 1 MA's), (Start: 41 @32596 has 36 MA's), (63, 32482), (66, 32470), (101, 32272), (102, 32266), (104, 32254),

Gene: Tortellini\_34 Start: 31506, Stop: 31084, Start Num: 42

Candidate Starts for Tortellini\_34:

(Start: 42 @31506 has 5 MA's), (52, 31455), (78, 31311), (82, 31299), (105, 31170), (107, 31164),

Gene: Trumpet\_43 Start: 33148, Stop: 32732, Start Num: 45

Candidate Starts for Trumpet\_43:

(Start: 45 @33148 has 67 MA's), (49, 33106), (51, 33100), (52, 33097), (56, 33073), (58, 33064), (63, 33040), (88, 32911), (100, 32839), (105, 32815),

Gene: TuertoX\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for TuertoX\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: Tuti\_41 Start: 31311, Stop: 30904, Start Num: 45

Candidate Starts for Tuti\_41:

(23, 31380), (Start: 33 @31341 has 7 MA's), (Start: 34 @31335 has 3 MA's), (Start: 38 @31320 has 7 MA's), (Start: 45 @31311 has 67 MA's), (72, 31152), (74, 31134), (79, 31116), (80, 31113), (90, 31056), (102, 30990), (103, 30984), (104, 30978), (106, 30972), (109, 30954), (113, 30921),

Gene: Utz\_35 Start: 32686, Stop: 32270, Start Num: 45

Candidate Starts for Utz\_35:

(Start: 33 @32716 has 7 MA's), (Start: 34 @32710 has 3 MA's), (Start: 38 @32695 has 7 MA's), (Start: 45 @32686 has 67 MA's), (53, 32626), (62, 32587), (79, 32491), (80, 32488), (83, 32470), (85, 32464), (96, 32407), (102, 32365), (104, 32353), (108, 32338),

Gene: Vasanti\_39 Start: 29720, Stop: 29295, Start Num: 41

Candidate Starts for Vasanti\_39:

(Start: 34 @29744 has 3 MA's), (Start: 38 @29729 has 7 MA's), (Start: 41 @29720 has 36 MA's), (63, 29606), (66, 29594), (88, 29465), (96, 29432), (102, 29390), (103, 29384), (104, 29378), (108, 29363),

Gene: WelcomeAyanna\_40 Start: 33399, Stop: 32974, Start Num: 41

Candidate Starts for WelcomeAyanna\_40:

(Start: 33 @33429 has 7 MA's), (Start: 34 @33423 has 3 MA's), (Start: 38 @33408 has 7 MA's), (Start: 41 @33399 has 36 MA's), (66, 33273), (96, 33111), (102, 33069), (104, 33057), (108, 33042),

Gene: Whiteclaw\_41 Start: 30455, Stop: 30030, Start Num: 41

Candidate Starts for Whiteclaw\_41:

(Start: 34 @30479 has 3 MA's), (Start: 38 @30464 has 7 MA's), (Start: 41 @30455 has 36 MA's), (66, 30329), (96, 30167), (102, 30125), (104, 30113), (108, 30098),

Gene: William\_42 Start: 33105, Stop: 32680, Start Num: 41

Candidate Starts for William\_42:

(20, 33222), (Start: 34 @33129 has 3 MA's), (Start: 38 @33114 has 7 MA's), (Start: 41 @33105 has 36 MA's), (63, 32991), (66, 32979), (88, 32850), (96, 32817), (102, 32775), (104, 32763), (108, 32748),

Gene: WinkNick\_43 Start: 31535, Stop: 31119, Start Num: 38

Candidate Starts for WinkNick\_43:

(26, 31595), (Start: 28 @31586 has 1 MA's), (Start: 38 @31535 has 7 MA's), (Start: 45 @31526 has 67 MA's), (72, 31367), (74, 31349), (79, 31331), (80, 31328), (90, 31271), (102, 31205), (103, 31199), (104, 31193), (106, 31187), (109, 31169), (113, 31136),

Gene: Wisp\_37 Start: 31135, Stop: 30710, Start Num: 41

Candidate Starts for Wisp\_37:

(Start: 41 @31135 has 36 MA's), (Start: 45 @31129 has 67 MA's), (54, 31060), (63, 31021), (66, 31009), (85, 30904), (96, 30847), (104, 30793), (108, 30778),

Gene: Wocket\_41 Start: 31899, Stop: 31462, Start Num: 33

Candidate Starts for Wocket\_41:

(Start: 33 @31899 has 7 MA's), (Start: 34 @31893 has 3 MA's), (Start: 38 @31878 has 7 MA's), (Start: 45 @31869 has 67 MA's), (59, 31785), (72, 31710), (85, 31647), (92, 31605), (102, 31548), (104, 31536), (112, 31488),

Gene: Wrigley\_45 Start: 33632, Stop: 33210, Start Num: 44

Candidate Starts for Wrigley\_45:

(Start: 44 @33632 has 8 MA's), (52, 33578), (60, 33536), (72, 33476), (86, 33398), (95, 33353), (99, 33326), (102, 33308), (109, 33272),

Gene: Xavia\_36 Start: 32193, Stop: 31771, Start Num: 42

Candidate Starts for Xavia\_36:

(Start: 42 @32193 has 5 MA's), (52, 32142), (56, 32115), (82, 31986), (105, 31857), (107, 31851),

Gene: Yeet412\_38 Start: 30280, Stop: 29864, Start Num: 45

Candidate Starts for Yeet412\_38:

(Start: 45 @30280 has 67 MA's), (49, 30238), (51, 30232), (52, 30229), (56, 30205), (58, 30196), (63, 30172), (88, 30043), (100, 29971), (105, 29947),

Gene: Yeezy\_38 Start: 30822, Stop: 30406, Start Num: 45

Candidate Starts for Yeezy\_38:

(Start: 45 @30822 has 67 MA's), (49, 30780), (51, 30774), (52, 30771), (56, 30747), (58, 30738), (63, 30714), (64, 30708), (88, 30585), (100, 30513), (105, 30489),

Gene: Zameen\_43 Start: 33147, Stop: 32731, Start Num: 45

Candidate Starts for Zameen\_43:

(Start: 45 @33147 has 67 MA's), (49, 33105), (51, 33099), (52, 33096), (56, 33072), (58, 33063), (63, 33039), (88, 32910), (100, 32838), (105, 32814),

Gene: ZiggyZoo\_40 Start: 32348, Stop: 31929, Start Num: 45

Candidate Starts for ZiggyZoo\_40:

(Start: 41 @32354 has 36 MA's), (Start: 45 @32348 has 67 MA's), (63, 32240), (66, 32228), (79, 32150), (96, 32066), (104, 32012),

Gene: Zirinka\_40 Start: 33887, Stop: 33471, Start Num: 45

Candidate Starts for Zirinka\_40:

(Start: 45 @33887 has 67 MA's), (49, 33845), (51, 33839), (52, 33836), (56, 33812), (58, 33803), (63, 33779), (88, 33650), (100, 33578), (105, 33554),

Gene: Zizzle\_48 Start: 34743, Stop: 34300, Start Num: 40

Candidate Starts for Zizzle\_48:

(Start: 40 @34743 has 22 MA's), (58, 34647), (67, 34596), (95, 34446), (112, 34341),

Gene: Zodiariah\_38 Start: 33465, Stop: 33031, Start Num: 38

Candidate Starts for Zodiariah\_38:

(Start: 33 @33486 has 7 MA's), (Start: 34 @33480 has 3 MA's), (Start: 38 @33465 has 7 MA's), (Start: 41 @33456 has 36 MA's), (50, 33408), (56, 33375), (63, 33342), (66, 33330), (85, 33225), (102, 33126), (104, 33114),