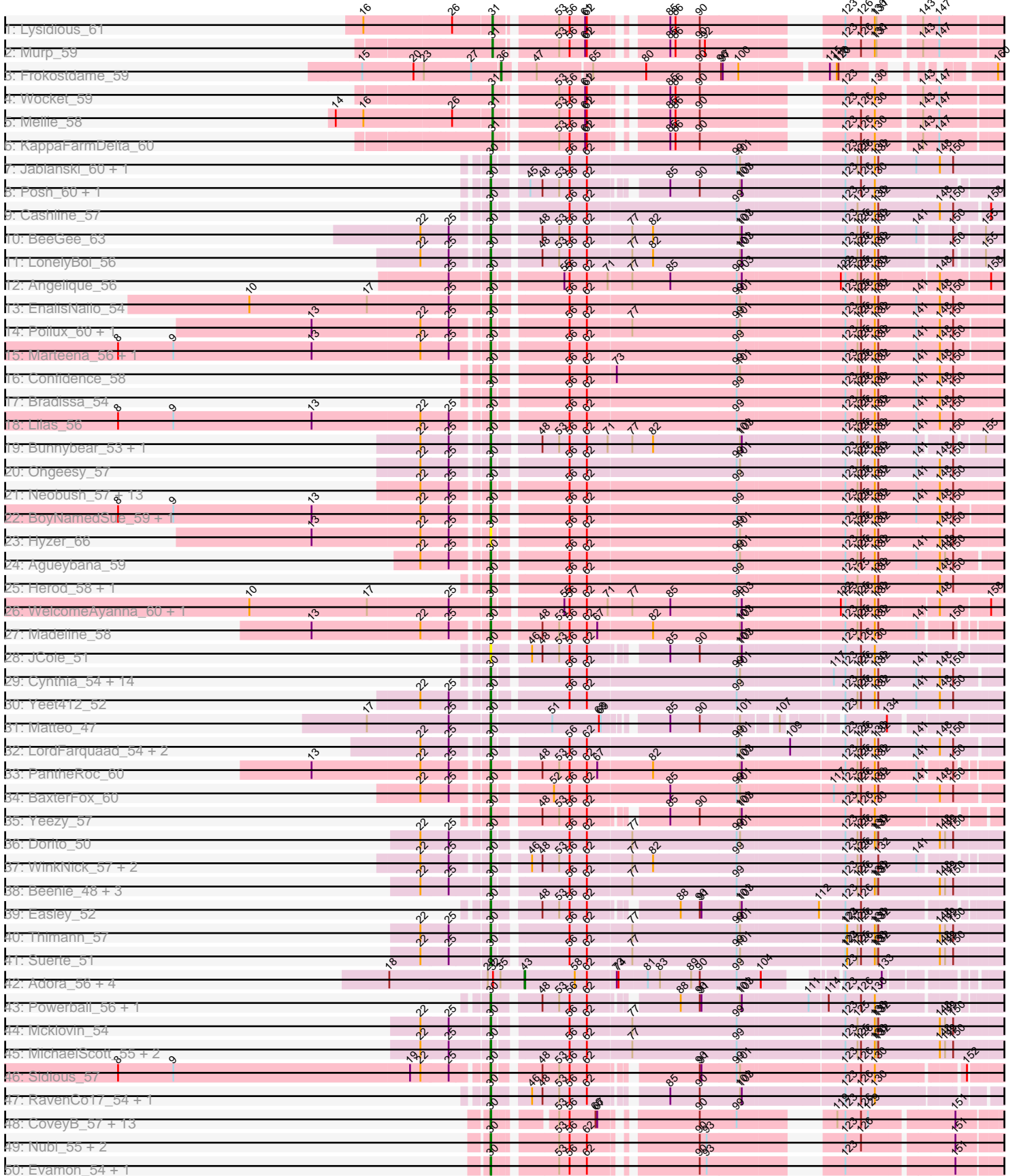
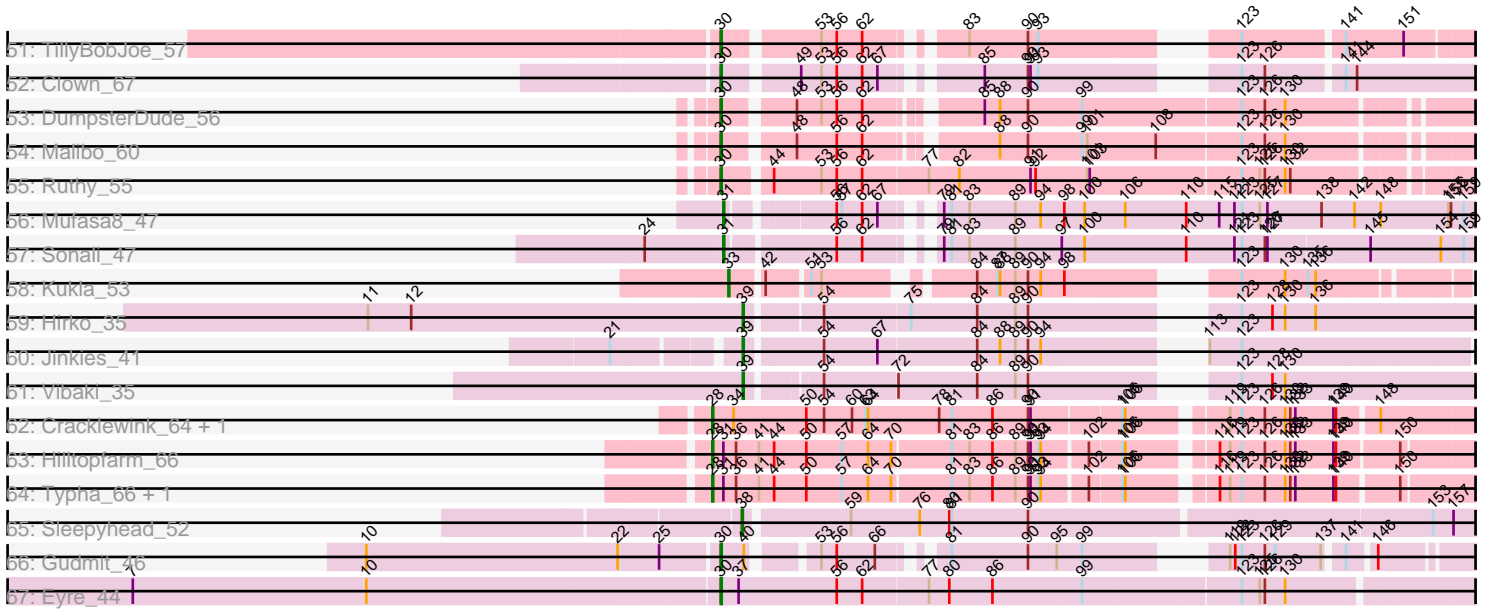


# Zoomed Pham 187964



# Zoomed Pham 187964



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 187964 Report

This analysis was run 11/02/24 on database version 579.

Pham number 187964 has 135 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Lysidious\_61
- Track 2 : Murp\_59
- Track 3 : Frokostdame\_59
- Track 4 : Wocket\_59
- Track 5 : Mellie\_58
- Track 6 : KappaFarmDelta\_60
- Track 7 : Jablanski\_60, Pytheas\_60
- Track 8 : Posh\_60, Wrigley\_62
- Track 9 : Cashline\_57
- Track 10 : BeeGee\_63
- Track 11 : LonelyBoi\_56
- Track 12 : Angelique\_56
- Track 13 : EnalisNailo\_54
- Track 14 : Pollux\_60, Floral\_58
- Track 15 : Marteena\_56, EMsquaredA\_57
- Track 16 : Confidence\_58
- Track 17 : Bradissa\_54
- Track 18 : Lilas\_56
- Track 19 : Bunnybear\_53, Maridalia\_61
- Track 20 : Ohgeesy\_57
- Track 21 : Neobush\_57, Antonio\_57, Bialota\_55, Kita\_58, Manasvini\_58, Trumpet\_57, Pickett\_50, Eudoria\_57, Polly\_54, EdnaMode\_51, Tayonia\_57, Zirinka\_54, Zameen\_57, Suscepit\_57
- Track 22 : BoyNamedSue\_59, AlumE\_59
- Track 23 : Hyzer\_66
- Track 24 : Agueybana\_59
- Track 25 : Herod\_58, Hugley\_56
- Track 26 : WelcomeAyanna\_60, ThankyouJordi\_60
- Track 27 : Madeline\_58
- Track 28 : JCole\_51
- Track 29 : Cynthia\_54, Ebert\_58, Sahara\_53, Bjanes7\_51, Savage\_54, Nettuno\_50, Lamberg\_50, GemG\_54, Gizermo\_54, Mocha12\_54, Whiteclaw\_54, Clap\_54, Haley23\_54, TuertoX\_54, Sproutie\_54
- Track 30 : Yeet412\_52
- Track 31 : Matteo\_47
- Track 32 : LordFarquaad\_54, Attis\_52, SoilAssassin\_52
- Track 33 : PantheRoc\_60

- Track 34 : BaxterFox\_60
- Track 35 : Yeezy\_57
- Track 36 : Dorito\_50
- Track 37 : WinkNick\_57, Dolores\_56, Sekhmet\_56
- Track 38 : Beenie\_48, Samman98\_55, DobbysSock\_47, Clark\_54
- Track 39 : Easley\_52
- Track 40 : Thimann\_57
- Track 41 : Suerte\_51
- Track 42 : Adora\_56, Shlim410\_57, Howe\_59, Hortense\_59, Twinkle\_58
- Track 43 : Powerball\_56, PhriskyACE\_55
- Track 44 : Mcklovin\_54
- Track 45 : MichaelScott\_55, Annalisa\_57, Oregano\_58
- Track 46 : Sidious\_57
- Track 47 : RavenCo17\_54, Bosnia\_55
- Track 48 : CoveyB\_57, Valary\_57, Wizard\_54, KimmyK\_56, Halo3\_55, Barb\_57, PullumCavea\_54, Fugax\_58, PinkCoffee\_57, VanDeWege\_58, Gezellig\_57, RogerDodger\_58, Phlop\_54, ClamChowder\_57
- Track 49 : Nubi\_55, Togo\_54, SmokingBunny\_55
- Track 50 : Evamon\_54, Salvador\_54
- Track 51 : TillyBobJoe\_57
- Track 52 : Clown\_67
- Track 53 : DumpsterDude\_56
- Track 54 : Malibo\_60
- Track 55 : Ruthy\_55
- Track 56 : Mufasa8\_47
- Track 57 : Sonali\_47
- Track 58 : Kukla\_53
- Track 59 : Hirko\_35
- Track 60 : Jinkies\_41
- Track 61 : Vibaki\_35
- Track 62 : Cracklewink\_64, Bipper\_65
- Track 63 : Hilltopfarm\_66
- Track 64 : Typha\_66, AuntGwenStacy\_67
- Track 65 : Sleepyhead\_52
- Track 66 : Gudmit\_46
- Track 67 : Eyre\_44

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

The start number called the most often in the published annotations is 30, it was called in 105 of the 127 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana\_59, AlumE\_59, Angelique\_56, Annalisa\_57, Antonio\_57, Attis\_52, Barb\_57, BaxterFox\_60, BeeGee\_63, Beenie\_48, Bialota\_55, Bjanes7\_51, Bosnia\_55, BoyNamedSue\_59, Bradissa\_54, Bunnybear\_53, Cashline\_57, ClamChowder\_57, Clap\_54, Clark\_54, Clown\_67, Confidence\_58, CoveyB\_57, Cynthia\_54, DobbysSock\_47, Dolores\_56, Dorito\_50, DumpsterDude\_56, EMSquaredA\_57, Easley\_52, Ebert\_58, EdnaMode\_51, EnalisNailo\_54, Eudoria\_57, Evamon\_54, Eyre\_44, Floral\_58, Fugax\_58, GemG\_54, Gezellig\_57, Gizermo\_54,

Gudmit\_46, Haley23\_54, Halo3\_55, Herod\_58, Hugley\_56, Hyzer\_66, JCole\_51, Jablanski\_60, KimmyK\_56, Kita\_58, Lamberg\_50, Lilas\_56, LonelyBoi\_56, LordFarquaad\_54, Madeline\_58, Malibo\_60, Manasvini\_58, Maridalia\_61, Marteena\_56, Matteo\_47, Mcklovin\_54, MichaelScott\_55, Mocha12\_54, Neobush\_57, Nettuno\_50, Nubi\_55, Ohgeesy\_57, Oregano\_58, PantheRoc\_60, Phlop\_54, PhriskyACE\_55, Pickett\_50, PinkCoffee\_57, Pollux\_60, Polly\_54, Posh\_60, Powerball\_56, PullumCavea\_54, Pytheas\_60, RavenCo17\_54, RogerDodger\_58, Ruthy\_55, Sahara\_53, Salvador\_54, Samman98\_55, Savage\_54, Sekhmet\_56, Sidious\_57, SmokingBunny\_55, SoilAssassin\_52, Sproutie\_54, Suerte\_51, Suscepit\_57, Tayonia\_57, ThankyouJordi\_60, Thimann\_57, TillyBobJoe\_57, Togo\_54, Trumpet\_57, TuertoX\_54, Valary\_57, VanDeWege\_58, WelcomeAyanna\_60, Whiteclaw\_54, WinkNick\_57, Wizard\_54, Wrigley\_62, Yeet412\_52, Yeezy\_57, Zameen\_57, Zirinka\_54,

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

- 

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

- Adora\_56, AuntGwenStacy\_67, Bipper\_65, Cracklewink\_64, Frokostdame\_59, Hilltopfarm\_66, Hirko\_35, Hortense\_59, Howe\_59, Jinkies\_41, KappaFarmDelta\_60, Kukla\_53, Lysidious\_61, Mellie\_58, Mufasa8\_47, Murp\_59, Shlim410\_57, Sleepyhead\_52, Sonali\_47, Twinkle\_58, Typha\_66, Vibaki\_35, Wocket\_59,

### Summary by start number:

Start 28:

- Found in 5 of 135 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 4 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AuntGwenStacy\_67 (Y), Bipper\_65 (Y), Cracklewink\_64 (Y), Hilltopfarm\_66 (Y), Typha\_66 (Y),

Start 30:

- Found in 112 of 135 ( 83.0% ) of genes in pham
- Manual Annotations of this start: 105 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agueybana\_59 (CZ1), AlumE\_59 (CZ1), Angelique\_56 (CY1), Annalisa\_57 (CZ4), Antonio\_57 (CZ1), Attis\_52 (CZ2), Barb\_57 (DC1), BaxterFox\_60 (CZ3), BeeGee\_63 (CY), Beenie\_48 (CZ4), Bialota\_55 (CZ1), Bjanes7\_51 (CZ2), Bosnia\_55 (CZ1), BoyNamedSue\_59 (CZ1), Bradissa\_54 (CY1), Bunnybear\_53 (CZ), Cashline\_57 (CY), ClamChowder\_57 (DC1), Clap\_54 (CZ2), Clark\_54 (CZ4), Clown\_67 (DC2), Confidence\_58 (CY1), CoveyB\_57 (DC1), Cynthia\_54 (CZ2), DobbysSock\_47 (CZ4), Dolores\_56 (CZ4), Dorito\_50 (CZ4), DumpsterDude\_56 (DW), EMsquaredA\_57 (CY1), Easley\_52 (CZ4), Ebert\_58 (CZ2), EdnaMode\_51 (CZ2), EnalisNailo\_54 (CY1), Eudoria\_57 (CZ1), Evamon\_54 (DC1), Eyre\_44 (singleton), Floral\_58 (CY1), Fugax\_58 (DC1), GemG\_54 (CZ2), Gezellig\_57 (DC1), Gizermo\_54 (CZ2), Gudmit\_46 (singleton), Haley23\_54 (CZ2), Halo3\_55 (DC1), Herod\_58 (CZ1), Hugley\_56 (CZ1), Hyzer\_66 (CZ1), JCole\_51 (CZ2), Jablanski\_60 (CY), KimmyK\_56 (DC1), Kita\_58 (CZ1), Lamberg\_50 (CZ2), Lilas\_56 (CY1), LonelyBoi\_56 (CY), LordFarquaad\_54 (CZ2), Madeline\_58 (CZ1), Malibo\_60 (DW), Manasvini\_58 (CZ1), Maridalia\_61 (CZ1), Marteena\_56 (CY1), Matteo\_47 (CZ2), Mcklovin\_54 (CZ4), MichaelScott\_55 (CZ4), Mocha12\_54 (CZ2), Neobush\_57 (CZ1), Nettuno\_50 (CZ2), Nubi\_55 (DC1), Ohgeesy\_57 (CZ),

Oregano\_58 (CZ4), PantheRoc\_60 (CZ3), Phlop\_54 (DC1), PhriskyACE\_55 (CZ4), Pickett\_50 (CZ2), PinkCoffee\_57 (DC1), Pollux\_60 (CY1), Polly\_54 (CZ1), Posh\_60 (CY), Powerball\_56 (CZ4), PullumCavea\_54 (DC1), Pytheas\_60 (CY), RavenCo17\_54 (CZ8), RogerDodger\_58 (DC1), Ruthy\_55 (DW), Sahara\_53 (CZ2), Salvador\_54 (DC1), Samman98\_55 (CZ4), Savage\_54 (CZ2), Sekhmet\_56 (CZ4), Sidious\_57 (CZ7), SmokingBunny\_55 (DC1), SoilAssassin\_52 (CZ2), Sproutie\_54 (CZ2), Suerte\_51 (CZ4), Suscepit\_57 (CZ1), Tayonia\_57 (CZ1), ThankyouJordi\_60 (CZ1), Thimann\_57 (CZ4), TillyBobJoe\_57 (DC1), Togo\_54 (DC1), Trumpet\_57 (CZ1), TuertoX\_54 (CZ2), Valary\_57 (DC1), VanDeWege\_58 (DC1), WelcomeAyanna\_60 (CZ1), Whiteclaw\_54 (CZ2), WinkNick\_57 (CZ4), Wizard\_54 (DC1), Wrigley\_62 (CY), Yeet412\_52 (CZ2), Yeezy\_57 (CZ3), Zameen\_57 (CZ1), Zirinka\_54 (CZ1),

#### Start 31:

- Found in 10 of 135 ( 7.4% ) of genes in pham
- Manual Annotations of this start: 7 of 127
- Called 70.0% of time when present
- Phage (with cluster) where this start called: KappaFarmDelta\_60 (CV), Lysidious\_61 (CV), Mellie\_58 (CV), Mufasa8\_47 (FG), Murp\_59 (CV), Sonali\_47 (FG), Wocket\_59 (CV),

#### Start 33:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kukla\_53 (FJ),

#### Start 36:

- Found in 4 of 135 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Frokostdame\_59 (CV),

#### Start 38:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sleepyhead\_52 (singleton),

#### Start 39:

- Found in 3 of 135 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hirko\_35 (FL), Jinkies\_41 (FL), Vibaki\_35 (FL),

#### Start 43:

- Found in 5 of 135 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 5 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adora\_56 (CZ4), Hortense\_59 (CZ4), Howe\_59 (CZ4), Shlim410\_57 (CZ4), Twinkle\_58 (CZ4),

## Summary by clusters:

There are 18 clusters represented in this pham: CY1, CZ2, CZ3, CZ1, singleton, CZ4, CZ7, DC2, CZ, CY, CZ8, FG, Y, DW, FJ, FL, CV, DC1,

Info for manual annotations of cluster CV:

- Start number 31 was manually annotated 5 times for cluster CV.
- Start number 36 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CY:

- Start number 30 was manually annotated 7 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 30 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 30 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 30 was manually annotated 21 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 30 was manually annotated 22 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 30 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 30 was manually annotated 15 times for cluster CZ4.
- Start number 43 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 30 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster CZ8:

- Start number 30 was manually annotated 1 time for cluster CZ8.

Info for manual annotations of cluster DC1:

- Start number 30 was manually annotated 18 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 30 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DW:

- Start number 30 was manually annotated 3 times for cluster DW.

Info for manual annotations of cluster FG:

- Start number 31 was manually annotated 2 times for cluster FG.

Info for manual annotations of cluster FJ:

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

Info for manual annotations of cluster FL:

- Start number 39 was manually annotated 3 times for cluster FL.

Info for manual annotations of cluster Y:

- Start number 28 was manually annotated 4 times for cluster Y.

### **Gene Information:**

Gene: Adora\_56 Start: 40644, Stop: 41663, Start Num: 43

Candidate Starts for Adora\_56:

(18, 40416), (29, 40581), (32, 40590), (35, 40602), (Start: 43 @40644 has 5 MA's), (58, 40728), (62, 40749), (73, 40794), (74, 40797), (81, 40845), (83, 40866), (89, 40920), (90, 40935), (99, 40998), (104, 41037), (123, 41118), (133, 41181), (161, 41343), (194, 41538),

Gene: Agueybana\_59 Start: 41420, Stop: 42568, Start Num: 30

Candidate Starts for Agueybana\_59:

(22, 41321), (25, 41366), (Start: 30 @41420 has 105 MA's), (56, 41528), (62, 41558), (99, 41813), (101, 41819), (123, 41987), (125, 42008), (126, 42014), (130, 42038), (132, 42044), (141, 42107), (148, 42143), (149, 42152), (150, 42164), (161, 42245), (168, 42293), (170, 42302),

Gene: AlumE\_59 Start: 41196, Stop: 42341, Start Num: 30

Candidate Starts for AlumE\_59:

(8, 40575), (9, 40671), (13, 40911), (22, 41097), (25, 41142), (Start: 30 @41196 has 105 MA's), (56, 41304), (62, 41334), (99, 41589), (123, 41763), (125, 41784), (126, 41790), (130, 41814), (132, 41820), (141, 41883), (148, 41919), (150, 41940),

Gene: Angelique\_56 Start: 41358, Stop: 42494, Start Num: 30

Candidate Starts for Angelique\_56:

(25, 41292), (Start: 30 @41358 has 105 MA's), (55, 41460), (56, 41469), (62, 41499), (71, 41535), (77, 41574), (85, 41640), (99, 41754), (103, 41763), (122, 41922), (123, 41928), (125, 41949), (126, 41955), (130, 41979), (132, 41985), (148, 42078), (158, 42150), (161, 42177), (168, 42225),

Gene: Annalisa\_57 Start: 37523, Stop: 38671, Start Num: 30

Candidate Starts for Annalisa\_57:

(22, 37412), (25, 37457), (Start: 30 @37523 has 105 MA's), (56, 37631), (62, 37661), (77, 37736), (99, 37916), (123, 38090), (125, 38111), (126, 38117), (130, 38141), (131, 38144), (132, 38147), (148, 38249), (149, 38258), (150, 38270), (161, 38351), (194, 38546),

Gene: Antonio\_57 Start: 39712, Stop: 40860, Start Num: 30

Candidate Starts for Antonio\_57:

(22, 39613), (25, 39658), (Start: 30 @39712 has 105 MA's), (56, 39823), (62, 39853), (99, 40108), (123, 40282), (125, 40303), (126, 40309), (130, 40333), (132, 40339), (141, 40402), (148, 40438), (150, 40459), (161, 40543), (168, 40591),

Gene: Attis\_52 Start: 36845, Stop: 37990, Start Num: 30

Candidate Starts for Attis\_52:

(22, 36746), (25, 36791), (Start: 30 @36845 has 105 MA's), (56, 36953), (62, 36983), (99, 37238), (101, 37244), (109, 37325), (123, 37412), (125, 37433), (126, 37439), (130, 37463), (132, 37469), (141, 37532), (148, 37568), (150, 37589), (161, 37670), (168, 37718), (170, 37727),

Gene: AuntGwenStacy\_67 Start: 46458, Stop: 47585, Start Num: 28

Candidate Starts for AuntGwenStacy\_67:



(Start: 28 @46458 has 4 MA's), (Start: 31 @46470 has 7 MA's), (Start: 36 @46485 has 1 MA's), (41, 46509), (44, 46527), (50, 46563), (57, 46602), (64, 46632), (70, 46659), (81, 46722), (83, 46743), (86, 46770), (89, 46797), (90, 46812), (91, 46815), (93, 46824), (94, 46827), (102, 46875), (105, 46905), (106, 46908), (116, 46995), (119, 47007), (123, 47019), (126, 47046), (130, 47070), (132, 47076), (133, 47082), (139, 47124), (140, 47127), (150, 47190), (166, 47301), (185, 47412), (192, 47454),

Gene: Barb\_57 Start: 42048, Stop: 42986, Start Num: 30

Candidate Starts for Barb\_57:

(Start: 30 @42048 has 105 MA's), (53, 42129), (56, 42147), (66, 42192), (67, 42195), (90, 42333), (99, 42396), (119, 42504), (123, 42516), (126, 42543), (129, 42555), (151, 42687), (169, 42807), (173, 42825), (182, 42876), (184, 42888), (191, 42933),

Gene: BaxterFox\_60 Start: 41905, Stop: 43053, Start Num: 30

Candidate Starts for BaxterFox\_60:

(22, 41806), (25, 41851), (Start: 30 @41905 has 105 MA's), (52, 41986), (56, 42013), (62, 42043), (85, 42184), (99, 42298), (101, 42304), (117, 42454), (123, 42472), (125, 42493), (126, 42499), (130, 42523), (132, 42529), (141, 42592), (148, 42628), (150, 42649), (161, 42730), (168, 42778), (170, 42787), (194, 42925),

Gene: BeeGee\_63 Start: 41627, Stop: 42757, Start Num: 30

Candidate Starts for BeeGee\_63:

(22, 41528), (25, 41573), (Start: 30 @41627 has 105 MA's), (48, 41702), (53, 41729), (56, 41747), (62, 41777), (77, 41852), (82, 41888), (101, 42038), (103, 42041), (123, 42206), (125, 42227), (126, 42233), (130, 42257), (132, 42263), (141, 42323), (150, 42371), (155, 42407), (168, 42488),

Gene: Beenie\_48 Start: 37101, Stop: 38252, Start Num: 30

Candidate Starts for Beenie\_48:

(22, 36990), (25, 37035), (Start: 30 @37101 has 105 MA's), (56, 37209), (62, 37239), (77, 37314), (99, 37494), (123, 37668), (125, 37689), (126, 37695), (130, 37719), (131, 37722), (132, 37725), (148, 37827), (149, 37836), (150, 37848), (161, 37929), (194, 38124), (203, 38184),

Gene: Bialota\_55 Start: 40344, Stop: 41492, Start Num: 30

Candidate Starts for Bialota\_55:

(22, 40245), (25, 40290), (Start: 30 @40344 has 105 MA's), (56, 40455), (62, 40485), (99, 40740), (123, 40914), (125, 40935), (126, 40941), (130, 40965), (132, 40971), (141, 41034), (148, 41070), (150, 41091), (161, 41175), (168, 41223),

Gene: Bipper\_65 Start: 45903, Stop: 47054, Start Num: 28

Candidate Starts for Bipper\_65:

(Start: 28 @45903 has 4 MA's), (34, 45927), (50, 46008), (54, 46029), (60, 46059), (63, 46074), (64, 46077), (78, 46161), (81, 46176), (86, 46224), (90, 46266), (91, 46269), (105, 46362), (106, 46365), (119, 46464), (123, 46476), (126, 46503), (130, 46527), (132, 46533), (133, 46539), (139, 46581), (140, 46584), (148, 46626), (185, 46878), (192, 46920), (205, 46995),

Gene: Bjaner7\_51 Start: 35732, Stop: 36880, Start Num: 30

Candidate Starts for Bjaner7\_51:

(Start: 30 @35732 has 105 MA's), (56, 35840), (62, 35870), (99, 36125), (101, 36131), (117, 36281), (123, 36299), (125, 36320), (126, 36326), (130, 36350), (132, 36356), (141, 36419), (148, 36455), (150, 36476), (161, 36557),

Gene: Bosnia\_55 Start: 41752, Stop: 42846, Start Num: 30

Candidate Starts for Bosnia\_55:

(Start: 30 @41752 has 105 MA's), (46, 41803), (48, 41821), (53, 41848), (56, 41866), (62, 41896), (85, 42001), (90, 42052), (101, 42121), (103, 42124), (123, 42289), (126, 42316), (130, 42340), (161, 42523),

Gene: BoyNamedSue\_59 Start: 41196, Stop: 42341, Start Num: 30

Candidate Starts for BoyNamedSue\_59:

(8, 40575), (9, 40671), (13, 40911), (22, 41097), (25, 41142), (Start: 30 @41196 has 105 MA's), (56, 41304), (62, 41334), (99, 41589), (123, 41763), (125, 41784), (126, 41790), (130, 41814), (132, 41820), (141, 41883), (148, 41919), (150, 41940),

Gene: Bradissa\_54 Start: 40795, Stop: 41940, Start Num: 30

Candidate Starts for Bradissa\_54:

(Start: 30 @40795 has 105 MA's), (56, 40903), (62, 40933), (99, 41188), (123, 41362), (125, 41383), (126, 41389), (130, 41413), (132, 41419), (141, 41482), (148, 41518), (150, 41539),

Gene: Bunnybear\_53 Start: 39210, Stop: 40340, Start Num: 30

Candidate Starts for Bunnybear\_53:

(22, 39111), (25, 39156), (Start: 30 @39210 has 105 MA's), (48, 39285), (53, 39312), (56, 39330), (62, 39360), (71, 39396), (77, 39435), (82, 39471), (101, 39621), (103, 39624), (123, 39789), (125, 39810), (126, 39816), (130, 39840), (132, 39846), (141, 39906), (150, 39954), (155, 39990), (168, 40071), (170, 40080),

Gene: Cashline\_57 Start: 41477, Stop: 42622, Start Num: 30

Candidate Starts for Cashline\_57:

(Start: 30 @41477 has 105 MA's), (56, 41585), (62, 41615), (99, 41870), (123, 42044), (125, 42065), (130, 42095), (132, 42101), (148, 42200), (150, 42221), (158, 42275), (161, 42302),

Gene: ClamChowder\_57 Start: 42048, Stop: 42986, Start Num: 30

Candidate Starts for ClamChowder\_57:

(Start: 30 @42048 has 105 MA's), (53, 42129), (56, 42147), (66, 42192), (67, 42195), (90, 42333), (99, 42396), (119, 42504), (123, 42516), (126, 42543), (129, 42555), (151, 42687), (169, 42807), (173, 42825), (182, 42876), (184, 42888), (191, 42933),

Gene: Clap\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Clap\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: Clark\_54 Start: 36918, Stop: 38069, Start Num: 30

Candidate Starts for Clark\_54:

(22, 36807), (25, 36852), (Start: 30 @36918 has 105 MA's), (56, 37026), (62, 37056), (77, 37131), (99, 37311), (123, 37485), (125, 37506), (126, 37512), (130, 37536), (131, 37539), (132, 37542), (148, 37644), (149, 37653), (150, 37665), (161, 37746), (194, 37941), (203, 38001),

Gene: Clown\_67 Start: 46683, Stop: 47642, Start Num: 30

Candidate Starts for Clown\_67:

(Start: 30 @46683 has 105 MA's), (49, 46755), (53, 46779), (56, 46797), (62, 46827), (67, 46845), (85, 46932), (90, 46983), (91, 46986), (93, 46995), (123, 47166), (126, 47193), (141, 47274), (144, 47286), (178, 47508), (182, 47541), (194, 47607),

Gene: Confidence\_58 Start: 39325, Stop: 40473, Start Num: 30

Candidate Starts for Confidence\_58:

(Start: 30 @39325 has 105 MA's), (56, 39433), (62, 39463), (73, 39511), (99, 39718), (101, 39724), (123, 39892), (125, 39913), (126, 39919), (130, 39943), (132, 39949), (141, 40012), (148, 40048), (150, 40069), (168, 40201),

Gene: CoveyB\_57 Start: 41726, Stop: 42664, Start Num: 30

Candidate Starts for CoveyB\_57:

(Start: 30 @41726 has 105 MA's), (53, 41807), (56, 41825), (66, 41870), (67, 41873), (90, 42011), (99, 42074), (119, 42182), (123, 42194), (126, 42221), (129, 42233), (151, 42365), (169, 42485), (173, 42503), (182, 42554), (184, 42566), (191, 42611),

Gene: Cracklewink\_64 Start: 44937, Stop: 46088, Start Num: 28

Candidate Starts for Cracklewink\_64:

(Start: 28 @44937 has 4 MA's), (34, 44961), (50, 45042), (54, 45063), (60, 45093), (63, 45108), (64, 45111), (78, 45195), (81, 45210), (86, 45258), (90, 45300), (91, 45303), (105, 45396), (106, 45399), (119, 45498), (123, 45510), (126, 45537), (130, 45561), (132, 45567), (133, 45573), (139, 45615), (140, 45618), (148, 45660), (185, 45912), (192, 45954), (205, 46029),

Gene: Cynthia\_54 Start: 35909, Stop: 37057, Start Num: 30

Candidate Starts for Cynthia\_54:

(Start: 30 @35909 has 105 MA's), (56, 36017), (62, 36047), (99, 36302), (101, 36308), (117, 36458), (123, 36476), (125, 36497), (126, 36503), (130, 36527), (132, 36533), (141, 36596), (148, 36632), (150, 36653), (161, 36734),

Gene: DobbysSock\_47 Start: 35760, Stop: 36911, Start Num: 30

Candidate Starts for DobbysSock\_47:

(22, 35649), (25, 35694), (Start: 30 @35760 has 105 MA's), (56, 35868), (62, 35898), (77, 35973), (99, 36153), (123, 36327), (125, 36348), (126, 36354), (130, 36378), (131, 36381), (132, 36384), (148, 36486), (149, 36495), (150, 36507), (161, 36588), (194, 36783), (203, 36843),

Gene: Dolores\_56 Start: 37680, Stop: 38807, Start Num: 30

Candidate Starts for Dolores\_56:

(22, 37581), (25, 37626), (Start: 30 @37680 has 105 MA's), (46, 37731), (48, 37749), (53, 37776), (56, 37794), (62, 37824), (77, 37899), (82, 37935), (99, 38079), (123, 38253), (125, 38274), (126, 38280), (132, 38310), (141, 38373), (161, 38487), (194, 38682),

Gene: Dorito\_50 Start: 35405, Stop: 36556, Start Num: 30

Candidate Starts for Dorito\_50:

(22, 35294), (25, 35339), (Start: 30 @35405 has 105 MA's), (56, 35513), (62, 35543), (77, 35618), (99, 35798), (101, 35804), (123, 35972), (125, 35993), (126, 35999), (130, 36023), (131, 36026), (132, 36029), (148, 36131), (149, 36140), (150, 36152), (161, 36233), (194, 36428),

Gene: DumpsterDude\_56 Start: 42953, Stop: 44038, Start Num: 30

Candidate Starts for DumpsterDude\_56:

(Start: 30 @42953 has 105 MA's), (48, 43025), (53, 43052), (56, 43070), (62, 43100), (85, 43205), (88, 43223), (90, 43256), (99, 43319), (123, 43493), (126, 43520), (130, 43544), (161, 43727), (168, 43775), (171, 43793), (194, 43922), (195, 43931), (203, 43970),

Gene: EMsquaredA\_57 Start: 40371, Stop: 41510, Start Num: 30

Candidate Starts for EMsquaredA\_57:

(8, 39750), (9, 39846), (13, 40086), (22, 40272), (25, 40317), (Start: 30 @40371 has 105 MA's), (56, 40479), (62, 40509), (99, 40764), (123, 40938), (125, 40959), (126, 40965), (130, 40989), (132, 40995), (141, 41058), (148, 41094), (150, 41115), (161, 41193),

Gene: Easley\_52 Start: 36887, Stop: 37981, Start Num: 30

Candidate Starts for Easley\_52:

(Start: 30 @36887 has 105 MA's), (48, 36956), (53, 36983), (56, 37001), (62, 37031), (88, 37154), (90, 37187), (91, 37190), (101, 37256), (103, 37259), (112, 37385), (123, 37424), (126, 37451), (161, 37658), (194, 37853),

Gene: Ebert\_58 Start: 36343, Stop: 37491, Start Num: 30

Candidate Starts for Ebert\_58:

(Start: 30 @36343 has 105 MA's), (56, 36451), (62, 36481), (99, 36736), (101, 36742), (117, 36892), (123, 36910), (125, 36931), (126, 36937), (130, 36961), (132, 36967), (141, 37030), (148, 37066), (150, 37087), (161, 37168),

Gene: EdnaMode\_51 Start: 35533, Stop: 36681, Start Num: 30

Candidate Starts for EdnaMode\_51:

(22, 35434), (25, 35479), (Start: 30 @35533 has 105 MA's), (56, 35644), (62, 35674), (99, 35929), (123, 36103), (125, 36124), (126, 36130), (130, 36154), (132, 36160), (141, 36223), (148, 36259), (150, 36280), (161, 36364), (168, 36412),

Gene: EnalisNailo\_54 Start: 40338, Stop: 41486, Start Num: 30

Candidate Starts for EnalisNailo\_54:

(10, 39933), (17, 40137), (25, 40272), (Start: 30 @40338 has 105 MA's), (56, 40449), (62, 40479), (99, 40734), (101, 40740), (123, 40908), (125, 40929), (126, 40935), (130, 40959), (132, 40965), (141, 41028), (148, 41064), (150, 41085),

Gene: Eudoria\_57 Start: 39712, Stop: 40860, Start Num: 30

Candidate Starts for Eudoria\_57:

(22, 39613), (25, 39658), (Start: 30 @39712 has 105 MA's), (56, 39823), (62, 39853), (99, 40108), (123, 40282), (125, 40303), (126, 40309), (130, 40333), (132, 40339), (141, 40402), (148, 40438), (150, 40459), (161, 40543), (168, 40591),

Gene: Evamon\_54 Start: 41774, Stop: 42724, Start Num: 30

Candidate Starts for Evamon\_54:

(Start: 30 @41774 has 105 MA's), (53, 41867), (56, 41885), (62, 41915), (90, 42071), (93, 42083), (123, 42254), (151, 42425), (169, 42545), (173, 42563), (182, 42614), (184, 42626), (191, 42671),

Gene: Eyre\_44 Start: 30889, Stop: 32133, Start Num: 30

Candidate Starts for Eyre\_44:

(1, 29851), (3, 29893), (7, 30208), (10, 30484), (Start: 30 @30889 has 105 MA's), (37, 30910), (56, 31024), (62, 31054), (77, 31129), (80, 31153), (86, 31204), (99, 31309), (123, 31486), (125, 31507), (126, 31513), (130, 31537), (196, 31939), (200, 31963),

Gene: Floral\_58 Start: 42256, Stop: 43395, Start Num: 30

Candidate Starts for Floral\_58:

(13, 41971), (22, 42157), (25, 42202), (Start: 30 @42256 has 105 MA's), (56, 42364), (62, 42394), (77, 42469), (99, 42649), (101, 42655), (123, 42823), (125, 42844), (126, 42850), (130, 42874), (132, 42880), (141, 42943), (148, 42979), (150, 43000), (161, 43078),

Gene: Frokostdame\_59 Start: 39496, Stop: 40542, Start Num: 36

Candidate Starts for Frokostdame\_59:

(15, 39265), (20, 39352), (23, 39370), (27, 39451), (Start: 36 @39496 has 1 MA's), (47, 39544), (65, 39631), (80, 39721), (90, 39814), (96, 39850), (97, 39853), (100, 39880), (115, 40024), (118, 40036), (120, 40039), (160, 40207), (175, 40306), (179, 40312), (183, 40351), (188, 40369), (189, 40372), (194, 40408), (199, 40441),

Gene: Fugax\_58 Start: 42040, Stop: 42978, Start Num: 30

Candidate Starts for Fugax\_58:

(Start: 30 @42040 has 105 MA's), (53, 42121), (56, 42139), (66, 42184), (67, 42187), (90, 42325), (99, 42388), (119, 42496), (123, 42508), (126, 42535), (129, 42547), (151, 42679), (169, 42799), (173, 42817), (182, 42868), (184, 42880), (191, 42925),

Gene: GemG\_54 Start: 35915, Stop: 37063, Start Num: 30

Candidate Starts for GemG\_54:

(Start: 30 @35915 has 105 MA's), (56, 36023), (62, 36053), (99, 36308), (101, 36314), (117, 36464), (123, 36482), (125, 36503), (126, 36509), (130, 36533), (132, 36539), (141, 36602), (148, 36638), (150, 36659), (161, 36740),

Gene: Gezellig\_57 Start: 41879, Stop: 42817, Start Num: 30

Candidate Starts for Gezellig\_57:

(Start: 30 @41879 has 105 MA's), (53, 41960), (56, 41978), (66, 42023), (67, 42026), (90, 42164), (99, 42227), (119, 42335), (123, 42347), (126, 42374), (129, 42386), (151, 42518), (169, 42638), (173, 42656), (182, 42707), (184, 42719), (191, 42764),

Gene: Gizermo\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Gizermo\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: Gudmit\_46 Start: 30435, Stop: 31343, Start Num: 30

Candidate Starts for Gudmit\_46:

(10, 30033), (22, 30327), (25, 30372), (Start: 30 @30435 has 105 MA's), (40, 30453), (53, 30513), (56, 30531), (66, 30576), (81, 30627), (90, 30717), (95, 30750), (99, 30780), (119, 30888), (122, 30894), (123, 30900), (126, 30927), (129, 30939), (137, 30990), (141, 31008), (146, 31035), (169, 31173), (173, 31191), (183, 31251), (194, 31308),

Gene: Haley23\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Haley23\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: Halo3\_55 Start: 42464, Stop: 43402, Start Num: 30

Candidate Starts for Halo3\_55:

(Start: 30 @42464 has 105 MA's), (53, 42545), (56, 42563), (66, 42608), (67, 42611), (90, 42749), (99, 42812), (119, 42920), (123, 42932), (126, 42959), (129, 42971), (151, 43103), (169, 43223), (173, 43241), (182, 43292), (184, 43304), (191, 43349),

Gene: Herod\_58 Start: 42170, Stop: 43321, Start Num: 30

Candidate Starts for Herod\_58:

(Start: 30 @42170 has 105 MA's), (56, 42278), (62, 42308), (99, 42563), (123, 42737), (125, 42758), (130, 42788), (132, 42794), (148, 42893), (150, 42914), (161, 42998), (168, 43046), (170, 43055), (194, 43193),

Gene: Hilltopfarm\_66 Start: 46161, Stop: 47291, Start Num: 28

Candidate Starts for Hilltopfarm\_66:

(Start: 28 @46161 has 4 MA's), (Start: 31 @46173 has 7 MA's), (Start: 36 @46188 has 1 MA's), (41, 46215), (44, 46233), (50, 46269), (57, 46308), (64, 46338), (70, 46365), (81, 46428), (83, 46449), (86, 46476), (89, 46503), (90, 46518), (91, 46521), (93, 46530), (94, 46533), (102, 46581), (105, 46611), (106, 46614), (116, 46701), (119, 46713), (123, 46725), (126, 46752), (130, 46776), (132, 46782), (133, 46788), (139, 46830), (140, 46833), (150, 46899), (166, 47010), (185, 47121),

Gene: Hirko\_35 Start: 30939, Stop: 32009, Start Num: 39

Candidate Starts for Hirko\_35:

(11, 30504), (12, 30555), (Start: 39 @30939 has 3 MA's), (54, 31017), (75, 31116), (84, 31191), (89, 31236), (90, 31251), (123, 31434), (128, 31470), (130, 31485), (136, 31521), (165, 31740), (187, 31860),

Gene: Hortense\_59 Start: 41999, Stop: 43018, Start Num: 43

Candidate Starts for Hortense\_59:

(18, 41771), (29, 41936), (32, 41945), (35, 41957), (Start: 43 @41999 has 5 MA's), (58, 42083), (62, 42104), (73, 42149), (74, 42152), (81, 42200), (83, 42221), (89, 42275), (90, 42290), (99, 42353), (104, 42392), (123, 42473), (133, 42536), (161, 42698), (194, 42893),

Gene: Howe\_59 Start: 41999, Stop: 43018, Start Num: 43

Candidate Starts for Howe\_59:

(18, 41771), (29, 41936), (32, 41945), (35, 41957), (Start: 43 @41999 has 5 MA's), (58, 42083), (62, 42104), (73, 42149), (74, 42152), (81, 42200), (83, 42221), (89, 42275), (90, 42290), (99, 42353), (104, 42392), (123, 42473), (133, 42536), (161, 42698), (194, 42893),

Gene: Hugley\_56 Start: 42150, Stop: 43301, Start Num: 30

Candidate Starts for Hugley\_56:

(Start: 30 @42150 has 105 MA's), (56, 42258), (62, 42288), (99, 42543), (123, 42717), (125, 42738), (130, 42768), (132, 42774), (148, 42873), (150, 42894), (161, 42978), (168, 43026), (170, 43035), (194, 43173),

Gene: Hyzer\_66 Start: 44114, Stop: 45265, Start Num: 30

Candidate Starts for Hyzer\_66:

(13, 43829), (22, 44015), (25, 44060), (Start: 30 @44114 has 105 MA's), (56, 44222), (62, 44252), (99, 44507), (101, 44513), (123, 44681), (125, 44702), (126, 44708), (130, 44732), (132, 44738), (148, 44837), (150, 44858), (180, 45044), (198, 45155),

Gene: JCole\_51 Start: 34606, Stop: 35700, Start Num: 30

Candidate Starts for JCole\_51:

(Start: 30 @34606 has 105 MA's), (46, 34657), (48, 34675), (53, 34702), (56, 34720), (62, 34750), (85, 34855), (90, 34906), (101, 34975), (103, 34978), (123, 35143), (126, 35170), (130, 35194), (161, 35383), (192, 35572),

Gene: Jablanski\_60 Start: 43190, Stop: 44338, Start Num: 30

Candidate Starts for Jablanski\_60:

(Start: 30 @43190 has 105 MA's), (56, 43298), (62, 43328), (99, 43583), (101, 43589), (123, 43757), (125, 43778), (126, 43784), (130, 43808), (132, 43814), (141, 43877), (148, 43913), (150, 43934), (161, 44018), (168, 44066),

Gene: Jinkies\_41 Start: 32040, Stop: 33080, Start Num: 39

Candidate Starts for Jinkies\_41:

(21, 31914), (Start: 39 @32040 has 3 MA's), (54, 32124), (67, 32187), (84, 32298), (88, 32325), (89, 32343), (90, 32358), (94, 32373), (113, 32505), (123, 32541), (186, 32940), (187, 32943), (190, 32961), (201, 33030),

Gene: KappaFarmDelta\_60 Start: 38335, Stop: 39300, Start Num: 31

Candidate Starts for KappaFarmDelta\_60:

(Start: 31 @38335 has 7 MA's), (53, 38422), (56, 38440), (61, 38467), (62, 38470), (85, 38575), (86, 38584), (90, 38626), (123, 38809), (126, 38836), (130, 38860), (143, 38926), (147, 38953), (193, 39238),

Gene: KimmyK\_56 Start: 42482, Stop: 43420, Start Num: 30

Candidate Starts for KimmyK\_56:

(Start: 30 @42482 has 105 MA's), (53, 42563), (56, 42581), (66, 42626), (67, 42629), (90, 42767), (99, 42830), (119, 42938), (123, 42950), (126, 42977), (129, 42989), (151, 43121), (169, 43241), (173, 43259), (182, 43310), (184, 43322), (191, 43367),

Gene: Kita\_58 Start: 39721, Stop: 40869, Start Num: 30

Candidate Starts for Kita\_58:

(22, 39622), (25, 39667), (Start: 30 @39721 has 105 MA's), (56, 39832), (62, 39862), (99, 40117), (123, 40291), (125, 40312), (126, 40318), (130, 40342), (132, 40348), (141, 40411), (148, 40447), (150, 40468), (161, 40552), (168, 40600),

Gene: Kukla\_53 Start: 33677, Stop: 34645, Start Num: 33

Candidate Starts for Kukla\_53:

(Start: 33 @33677 has 1 MA's), (42, 33710), (51, 33755), (53, 33764), (84, 33908), (87, 33932), (88, 33935), (89, 33953), (90, 33968), (94, 33983), (98, 34010), (123, 34151), (130, 34202), (135, 34229), (136, 34238), (202, 34634),

Gene: Lamberg\_50 Start: 34420, Stop: 35568, Start Num: 30

Candidate Starts for Lamberg\_50:

(Start: 30 @34420 has 105 MA's), (56, 34528), (62, 34558), (99, 34813), (101, 34819), (117, 34969), (123, 34987), (125, 35008), (126, 35014), (130, 35038), (132, 35044), (141, 35107), (148, 35143), (150, 35164), (161, 35245),

Gene: Lilas\_56 Start: 42094, Stop: 43239, Start Num: 30

Candidate Starts for Lilas\_56:

(2, 41095), (8, 41473), (9, 41569), (13, 41809), (22, 41995), (25, 42040), (Start: 30 @42094 has 105 MA's), (56, 42202), (62, 42232), (99, 42487), (123, 42661), (125, 42682), (126, 42688), (130, 42712), (132, 42718), (141, 42781), (148, 42817), (150, 42838),

Gene: LonelyBoi\_56 Start: 42240, Stop: 43370, Start Num: 30

Candidate Starts for LonelyBoi\_56:

(22, 42141), (25, 42186), (Start: 30 @42240 has 105 MA's), (48, 42315), (53, 42342), (56, 42360), (62, 42390), (77, 42465), (82, 42501), (101, 42651), (103, 42654), (123, 42819), (125, 42840), (126, 42846), (130, 42870), (132, 42876), (150, 42984), (155, 43020), (168, 43101),

Gene: LordFarquaad\_54 Start: 36826, Stop: 37971, Start Num: 30

Candidate Starts for LordFarquaad\_54:

(22, 36727), (25, 36772), (Start: 30 @36826 has 105 MA's), (56, 36934), (62, 36964), (99, 37219), (101, 37225), (109, 37306), (123, 37393), (125, 37414), (126, 37420), (130, 37444), (132, 37450), (141, 37513), (148, 37549), (150, 37570), (161, 37651), (168, 37699), (170, 37708),

Gene: Lysidious\_61 Start: 40833, Stop: 41798, Start Num: 31

Candidate Starts for Lysidious\_61:

(16, 40620), (26, 40770), (Start: 31 @40833 has 7 MA's), (53, 40920), (56, 40938), (61, 40965), (62, 40968), (85, 41073), (86, 41082), (90, 41124), (123, 41307), (126, 41334), (130, 41358), (131, 41361),

(143, 41424), (147, 41451), (189, 41703), (193, 41736),

Gene: Madeline\_58 Start: 41610, Stop: 42737, Start Num: 30

Candidate Starts for Madeline\_58:

(13, 41325), (22, 41511), (25, 41556), (Start: 30 @41610 has 105 MA's), (48, 41685), (53, 41712), (56, 41730), (62, 41760), (67, 41778), (82, 41871), (101, 42021), (103, 42024), (123, 42189), (125, 42210), (126, 42216), (130, 42240), (132, 42246), (141, 42306), (150, 42354), (161, 42420), (168, 42468), (181, 42546),

Gene: Malibo\_60 Start: 41295, Stop: 42374, Start Num: 30

Candidate Starts for Malibo\_60:

(Start: 30 @41295 has 105 MA's), (48, 41367), (56, 41412), (62, 41442), (88, 41565), (90, 41598), (99, 41661), (101, 41667), (108, 41742), (123, 41835), (126, 41862), (130, 41886), (194, 42264), (195, 42273), (203, 42306),

Gene: Manasvini\_58 Start: 39736, Stop: 40884, Start Num: 30

Candidate Starts for Manasvini\_58:

(22, 39637), (25, 39682), (Start: 30 @39736 has 105 MA's), (56, 39847), (62, 39877), (99, 40132), (123, 40306), (125, 40327), (126, 40333), (130, 40357), (132, 40363), (141, 40426), (148, 40462), (150, 40483), (161, 40567), (168, 40615),

Gene: Maridalia\_61 Start: 40956, Stop: 42086, Start Num: 30

Candidate Starts for Maridalia\_61:

(22, 40857), (25, 40902), (Start: 30 @40956 has 105 MA's), (48, 41031), (53, 41058), (56, 41076), (62, 41106), (71, 41142), (77, 41181), (82, 41217), (101, 41367), (103, 41370), (123, 41535), (125, 41556), (126, 41562), (130, 41586), (132, 41592), (141, 41652), (150, 41700), (155, 41736), (168, 41817), (170, 41826),

Gene: Marteena\_56 Start: 40371, Stop: 41510, Start Num: 30

Candidate Starts for Marteena\_56:

(8, 39750), (9, 39846), (13, 40086), (22, 40272), (25, 40317), (Start: 30 @40371 has 105 MA's), (56, 40479), (62, 40509), (99, 40764), (123, 40938), (125, 40959), (126, 40965), (130, 40989), (132, 40995), (141, 41058), (148, 41094), (150, 41115), (161, 41193),

Gene: Matteo\_47 Start: 33447, Stop: 34499, Start Num: 30

Candidate Starts for Matteo\_47:

(17, 33246), (25, 33381), (Start: 30 @33447 has 105 MA's), (51, 33543), (68, 33621), (69, 33624), (85, 33711), (90, 33762), (101, 33825), (107, 33870), (123, 33945), (134, 34017), (161, 34182), (192, 34371),

Gene: Mcklovin\_54 Start: 42931, Stop: 44091, Start Num: 30

Candidate Starts for Mcklovin\_54:

(22, 42820), (25, 42865), (Start: 30 @42931 has 105 MA's), (56, 43039), (62, 43069), (77, 43144), (99, 43324), (123, 43498), (125, 43519), (130, 43549), (131, 43552), (132, 43555), (148, 43657), (149, 43666), (150, 43678), (161, 43759), (194, 43954),

Gene: Mellie\_58 Start: 38843, Stop: 39808, Start Num: 31

Candidate Starts for Mellie\_58:

(14, 38582), (16, 38630), (26, 38780), (Start: 31 @38843 has 7 MA's), (53, 38930), (56, 38948), (61, 38975), (62, 38978), (85, 39083), (86, 39092), (90, 39134), (123, 39317), (126, 39344), (130, 39368), (143, 39434), (147, 39461), (167, 39605), (193, 39746),

Gene: MichaelScott\_55 Start: 38395, Stop: 39543, Start Num: 30



Candidate Starts for MichaelScott\_55:

(22, 38284), (25, 38329), (Start: 30 @38395 has 105 MA's), (56, 38503), (62, 38533), (77, 38608), (99, 38788), (123, 38962), (125, 38983), (126, 38989), (130, 39013), (131, 39016), (132, 39019), (148, 39121), (149, 39130), (150, 39142), (161, 39223), (194, 39418),

Gene: Mocha12\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Mocha12\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: Mufasa8\_47 Start: 35178, Stop: 36302, Start Num: 31

Candidate Starts for Mufasa8\_47:

(Start: 31 @35178 has 7 MA's), (56, 35280), (57, 35286), (62, 35310), (67, 35328), (79, 35367), (81, 35376), (83, 35397), (89, 35451), (94, 35481), (98, 35508), (100, 35532), (106, 35580), (110, 35652), (115, 35691), (121, 35709), (123, 35718), (125, 35739), (127, 35748), (138, 35808), (142, 35847), (148, 35877), (155, 35955), (156, 35958), (159, 35973), (161, 35991), (163, 36003), (165, 36027), (168, 36042), (172, 36069), (176, 36081), (177, 36084), (197, 36207), (204, 36258),

Gene: Murp\_59 Start: 41608, Stop: 42573, Start Num: 31

Candidate Starts for Murp\_59:

(Start: 31 @41608 has 7 MA's), (53, 41695), (56, 41713), (61, 41740), (62, 41743), (85, 41848), (86, 41857), (90, 41899), (92, 41908), (123, 42082), (126, 42109), (130, 42133), (131, 42136), (143, 42199), (147, 42226), (193, 42511),

Gene: Neobush\_57 Start: 39706, Stop: 40854, Start Num: 30

Candidate Starts for Neobush\_57:

(22, 39607), (25, 39652), (Start: 30 @39706 has 105 MA's), (56, 39817), (62, 39847), (99, 40102), (123, 40276), (125, 40297), (126, 40303), (130, 40327), (132, 40333), (141, 40396), (148, 40432), (150, 40453), (161, 40537), (168, 40585),

Gene: Nettuno\_50 Start: 34420, Stop: 35568, Start Num: 30

Candidate Starts for Nettuno\_50:

(Start: 30 @34420 has 105 MA's), (56, 34528), (62, 34558), (99, 34813), (101, 34819), (117, 34969), (123, 34987), (125, 35008), (126, 35014), (130, 35038), (132, 35044), (141, 35107), (148, 35143), (150, 35164), (161, 35245),

Gene: Nubi\_55 Start: 41879, Stop: 42829, Start Num: 30

Candidate Starts for Nubi\_55:

(Start: 30 @41879 has 105 MA's), (53, 41972), (56, 41990), (62, 42020), (90, 42176), (93, 42188), (123, 42359), (126, 42386), (151, 42530), (169, 42650), (173, 42668), (182, 42719), (184, 42731), (191, 42776),

Gene: Ohgeesy\_57 Start: 40387, Stop: 41541, Start Num: 30

Candidate Starts for Ohgeesy\_57:

(22, 40288), (25, 40333), (Start: 30 @40387 has 105 MA's), (56, 40495), (62, 40525), (99, 40780), (101, 40786), (123, 40954), (125, 40975), (126, 40981), (130, 41005), (132, 41011), (141, 41074), (148, 41110), (150, 41131), (168, 41266), (170, 41275),

Gene: Oregano\_58 Start: 38155, Stop: 39303, Start Num: 30

Candidate Starts for Oregano\_58:

(22, 38044), (25, 38089), (Start: 30 @38155 has 105 MA's), (56, 38263), (62, 38293), (77, 38368), (99, 38548), (123, 38722), (125, 38743), (126, 38749), (130, 38773), (131, 38776), (132, 38779), (148,

38881), (149, 38890), (150, 38902), (161, 38983), (194, 39178),

Gene: PantheRoc\_60 Start: 40974, Stop: 42104, Start Num: 30

Candidate Starts for PantheRoc\_60:

(13, 40689), (22, 40875), (25, 40920), (Start: 30 @40974 has 105 MA's), (48, 41049), (53, 41076), (56, 41094), (62, 41124), (67, 41142), (82, 41235), (101, 41385), (103, 41388), (123, 41553), (125, 41574), (126, 41580), (130, 41604), (132, 41610), (141, 41670), (150, 41718), (161, 41784), (168, 41832), (170, 41841), (183, 41922),

Gene: Phlop\_54 Start: 41954, Stop: 42892, Start Num: 30

Candidate Starts for Phlop\_54:

(Start: 30 @41954 has 105 MA's), (53, 42035), (56, 42053), (66, 42098), (67, 42101), (90, 42239), (99, 42302), (119, 42410), (123, 42422), (126, 42449), (129, 42461), (151, 42593), (169, 42713), (173, 42731), (182, 42782), (184, 42794), (191, 42839),

Gene: PhriskyACE\_55 Start: 38287, Stop: 39378, Start Num: 30

Candidate Starts for PhriskyACE\_55:

(Start: 30 @38287 has 105 MA's), (48, 38356), (53, 38383), (56, 38401), (62, 38431), (88, 38554), (90, 38587), (91, 38590), (101, 38656), (103, 38659), (111, 38767), (114, 38797), (123, 38824), (126, 38851), (130, 38875), (161, 39058), (190, 39229), (194, 39253),

Gene: Pickett\_50 Start: 34009, Stop: 35157, Start Num: 30

Candidate Starts for Pickett\_50:

(22, 33910), (25, 33955), (Start: 30 @34009 has 105 MA's), (56, 34120), (62, 34150), (99, 34405), (123, 34579), (125, 34600), (126, 34606), (130, 34630), (132, 34636), (141, 34699), (148, 34735), (150, 34756), (161, 34840), (168, 34888),

Gene: PinkCoffee\_57 Start: 42057, Stop: 42995, Start Num: 30

Candidate Starts for PinkCoffee\_57:

(Start: 30 @42057 has 105 MA's), (53, 42138), (56, 42156), (66, 42201), (67, 42204), (90, 42342), (99, 42405), (119, 42513), (123, 42525), (126, 42552), (129, 42564), (151, 42696), (169, 42816), (173, 42834), (182, 42885), (184, 42897), (191, 42942),

Gene: Pollux\_60 Start: 42256, Stop: 43395, Start Num: 30

Candidate Starts for Pollux\_60:

(13, 41971), (22, 42157), (25, 42202), (Start: 30 @42256 has 105 MA's), (56, 42364), (62, 42394), (77, 42469), (99, 42649), (101, 42655), (123, 42823), (125, 42844), (126, 42850), (130, 42874), (132, 42880), (141, 42943), (148, 42979), (150, 43000), (161, 43078),

Gene: Polly\_54 Start: 39155, Stop: 40303, Start Num: 30

Candidate Starts for Polly\_54:

(22, 39056), (25, 39101), (Start: 30 @39155 has 105 MA's), (56, 39266), (62, 39296), (99, 39551), (123, 39725), (125, 39746), (126, 39752), (130, 39776), (132, 39782), (141, 39845), (148, 39881), (150, 39902), (161, 39986), (168, 40034),

Gene: Posh\_60 Start: 42119, Stop: 43222, Start Num: 30

Candidate Starts for Posh\_60:

(Start: 30 @42119 has 105 MA's), (45, 42170), (48, 42191), (53, 42218), (56, 42236), (62, 42266), (85, 42371), (90, 42422), (101, 42491), (103, 42494), (123, 42659), (126, 42686), (130, 42710),

Gene: Powerball\_56 Start: 38413, Stop: 39507, Start Num: 30

Candidate Starts for Powerball\_56:

(Start: 30 @38413 has 105 MA's), (48, 38482), (53, 38509), (56, 38527), (62, 38557), (88, 38680), (90, 38713), (91, 38716), (101, 38782), (103, 38785), (111, 38893), (114, 38923), (123, 38950), (126, 38977), (130, 39001), (161, 39184), (190, 39355), (194, 39379),

Gene: PullumCavea\_54 Start: 41954, Stop: 42892, Start Num: 30

Candidate Starts for PullumCavea\_54:

(Start: 30 @41954 has 105 MA's), (53, 42035), (56, 42053), (66, 42098), (67, 42101), (90, 42239), (99, 42302), (119, 42410), (123, 42422), (126, 42449), (129, 42461), (151, 42593), (169, 42713), (173, 42731), (182, 42782), (184, 42794), (191, 42839),

Gene: Pytheas\_60 Start: 43189, Stop: 44337, Start Num: 30

Candidate Starts for Pytheas\_60:

(Start: 30 @43189 has 105 MA's), (56, 43297), (62, 43327), (99, 43582), (101, 43588), (123, 43756), (125, 43777), (126, 43783), (130, 43807), (132, 43813), (141, 43876), (148, 43912), (150, 43933), (161, 44017), (168, 44065),

Gene: RavenCo17\_54 Start: 39554, Stop: 40645, Start Num: 30

Candidate Starts for RavenCo17\_54:

(Start: 30 @39554 has 105 MA's), (46, 39605), (48, 39623), (53, 39650), (56, 39668), (62, 39698), (85, 39803), (90, 39854), (101, 39923), (103, 39926), (123, 40091), (126, 40118), (130, 40142), (161, 40325),

Gene: RogerDodger\_58 Start: 42076, Stop: 43014, Start Num: 30

Candidate Starts for RogerDodger\_58:

(Start: 30 @42076 has 105 MA's), (53, 42157), (56, 42175), (66, 42220), (67, 42223), (90, 42361), (99, 42424), (119, 42532), (123, 42544), (126, 42571), (129, 42583), (151, 42715), (169, 42835), (173, 42853), (182, 42904), (184, 42916), (191, 42961),

Gene: Ruthy\_55 Start: 40488, Stop: 41606, Start Num: 30

Candidate Starts for Ruthy\_55:

(Start: 30 @40488 has 105 MA's), (44, 40533), (53, 40587), (56, 40605), (62, 40635), (77, 40710), (82, 40746), (91, 40830), (92, 40836), (101, 40896), (103, 40899), (123, 41064), (125, 41085), (126, 41091), (130, 41115), (132, 41121), (168, 41343), (194, 41490), (195, 41499), (201, 41538),

Gene: Sahara\_53 Start: 35658, Stop: 36806, Start Num: 30

Candidate Starts for Sahara\_53:

(Start: 30 @35658 has 105 MA's), (56, 35766), (62, 35796), (99, 36051), (101, 36057), (117, 36207), (123, 36225), (125, 36246), (126, 36252), (130, 36276), (132, 36282), (141, 36345), (148, 36381), (150, 36402), (161, 36483),

Gene: Salvador\_54 Start: 41772, Stop: 42722, Start Num: 30

Candidate Starts for Salvador\_54:

(Start: 30 @41772 has 105 MA's), (53, 41865), (56, 41883), (62, 41913), (90, 42069), (93, 42081), (123, 42252), (151, 42423), (169, 42543), (173, 42561), (182, 42612), (184, 42624), (191, 42669),

Gene: Samman98\_55 Start: 37021, Stop: 38172, Start Num: 30

Candidate Starts for Samman98\_55:

(22, 36910), (25, 36955), (Start: 30 @37021 has 105 MA's), (56, 37129), (62, 37159), (77, 37234), (99, 37414), (123, 37588), (125, 37609), (126, 37615), (130, 37639), (131, 37642), (132, 37645), (148, 37747), (149, 37756), (150, 37768), (161, 37849), (194, 38044), (203, 38104),

Gene: Savage\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Savage\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: Sekhmet\_56 Start: 38079, Stop: 39206, Start Num: 30

Candidate Starts for Sekhmet\_56:

(22, 37980), (25, 38025), (Start: 30 @38079 has 105 MA's), (46, 38130), (48, 38148), (53, 38175), (56, 38193), (62, 38223), (77, 38298), (82, 38334), (99, 38478), (123, 38652), (125, 38673), (126, 38679), (132, 38709), (141, 38772), (161, 38886), (194, 39081),

Gene: Shlim410\_57 Start: 41999, Stop: 43018, Start Num: 43

Candidate Starts for Shlim410\_57:

(18, 41771), (29, 41936), (32, 41945), (35, 41957), (Start: 43 @41999 has 5 MA's), (58, 42083), (62, 42104), (73, 42149), (74, 42152), (81, 42200), (83, 42221), (89, 42275), (90, 42290), (99, 42353), (104, 42392), (123, 42473), (133, 42536), (161, 42698), (194, 42893),

Gene: Sidious\_57 Start: 40481, Stop: 41569, Start Num: 30

Candidate Starts for Sidious\_57:

(8, 39860), (9, 39956), (19, 40364), (22, 40382), (25, 40427), (Start: 30 @40481 has 105 MA's), (48, 40547), (53, 40574), (56, 40592), (62, 40622), (90, 40778), (91, 40781), (99, 40841), (101, 40847), (123, 41015), (126, 41042), (130, 41066), (152, 41198), (161, 41252), (206, 41522),

Gene: Sleepyhead\_52 Start: 35211, Stop: 36374, Start Num: 38

Candidate Starts for Sleepyhead\_52:

(Start: 38 @35211 has 1 MA's), (59, 35319), (76, 35400), (80, 35433), (81, 35436), (90, 35526), (153, 35979), (157, 36000), (162, 36042), (179, 36144), (185, 36192), (188, 36201),

Gene: SmokingBunny\_55 Start: 41865, Stop: 42815, Start Num: 30

Candidate Starts for SmokingBunny\_55:

(Start: 30 @41865 has 105 MA's), (53, 41958), (56, 41976), (62, 42006), (90, 42162), (93, 42174), (123, 42345), (126, 42372), (151, 42516), (169, 42636), (173, 42654), (182, 42705), (184, 42717), (191, 42762),

Gene: SoilAssassin\_52 Start: 36844, Stop: 37989, Start Num: 30

Candidate Starts for SoilAssassin\_52:

(22, 36745), (25, 36790), (Start: 30 @36844 has 105 MA's), (56, 36952), (62, 36982), (99, 37237), (101, 37243), (109, 37324), (123, 37411), (125, 37432), (126, 37438), (130, 37462), (132, 37468), (141, 37531), (148, 37567), (150, 37588), (161, 37669), (168, 37717), (170, 37726),

Gene: Sonali\_47 Start: 37499, Stop: 38617, Start Num: 31

Candidate Starts for Sonali\_47:

(24, 37409), (Start: 31 @37499 has 7 MA's), (56, 37613), (62, 37643), (79, 37700), (81, 37709), (83, 37730), (89, 37784), (97, 37838), (100, 37865), (110, 37985), (121, 38042), (123, 38051), (126, 38078), (127, 38081), (145, 38198), (154, 38276), (159, 38303), (164, 38342), (172, 38402), (174, 38405), (190, 38501), (197, 38540), (204, 38570),

Gene: Sproutie\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Sproutie\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: Suerte\_51 Start: 36995, Stop: 38143, Start Num: 30

Candidate Starts for Suerte\_51:

(22, 36884), (25, 36929), (Start: 30 @36995 has 105 MA's), (56, 37103), (62, 37133), (77, 37208), (99, 37388), (101, 37394), (123, 37562), (124, 37565), (125, 37583), (126, 37589), (130, 37613), (131, 37616), (132, 37619), (148, 37721), (149, 37730), (150, 37742), (161, 37823), (194, 38018),

Gene: Suscepit\_57 Start: 39713, Stop: 40861, Start Num: 30

Candidate Starts for Suscepit\_57:

(22, 39614), (25, 39659), (Start: 30 @39713 has 105 MA's), (56, 39824), (62, 39854), (99, 40109), (123, 40283), (125, 40304), (126, 40310), (130, 40334), (132, 40340), (141, 40403), (148, 40439), (150, 40460), (161, 40544), (168, 40592),

Gene: Tayonia\_57 Start: 39712, Stop: 40860, Start Num: 30

Candidate Starts for Tayonia\_57:

(22, 39613), (25, 39658), (Start: 30 @39712 has 105 MA's), (56, 39823), (62, 39853), (99, 40108), (123, 40282), (125, 40303), (126, 40309), (130, 40333), (132, 40339), (141, 40402), (148, 40438), (150, 40459), (161, 40543), (168, 40591),

Gene: ThankyouJordi\_60 Start: 42528, Stop: 43664, Start Num: 30

Candidate Starts for ThankyouJordi\_60:

(4, 41562), (5, 41640), (6, 41652), (10, 42123), (17, 42327), (25, 42462), (Start: 30 @42528 has 105 MA's), (55, 42630), (56, 42639), (62, 42669), (71, 42705), (77, 42744), (85, 42810), (99, 42924), (103, 42933), (122, 43092), (123, 43098), (125, 43119), (126, 43125), (130, 43149), (132, 43155), (148, 43248), (158, 43320), (161, 43347), (168, 43395),

Gene: Thimann\_57 Start: 38439, Stop: 39587, Start Num: 30

Candidate Starts for Thimann\_57:

(22, 38328), (25, 38373), (Start: 30 @38439 has 105 MA's), (56, 38547), (62, 38577), (77, 38652), (99, 38832), (101, 38838), (123, 39006), (124, 39009), (125, 39027), (126, 39033), (130, 39057), (131, 39060), (132, 39063), (148, 39165), (149, 39174), (150, 39186), (161, 39267), (194, 39462), (203, 39522),

Gene: TillyBobJoe\_57 Start: 43373, Stop: 44326, Start Num: 30

Candidate Starts for TillyBobJoe\_57:

(Start: 30 @43373 has 105 MA's), (53, 43466), (56, 43484), (62, 43514), (83, 43601), (90, 43670), (93, 43682), (123, 43853), (141, 43961), (151, 44024), (169, 44147), (173, 44165), (182, 44216), (191, 44273),

Gene: Togo\_54 Start: 41865, Stop: 42815, Start Num: 30

Candidate Starts for Togo\_54:

(Start: 30 @41865 has 105 MA's), (53, 41958), (56, 41976), (62, 42006), (90, 42162), (93, 42174), (123, 42345), (126, 42372), (151, 42516), (169, 42636), (173, 42654), (182, 42705), (184, 42717), (191, 42762),

Gene: Trumpet\_57 Start: 39713, Stop: 40861, Start Num: 30

Candidate Starts for Trumpet\_57:

(22, 39614), (25, 39659), (Start: 30 @39713 has 105 MA's), (56, 39824), (62, 39854), (99, 40109), (123, 40283), (125, 40304), (126, 40310), (130, 40334), (132, 40340), (141, 40403), (148, 40439), (150, 40460), (161, 40544), (168, 40592),

Gene: TuertoX\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for TuertoX\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634),

(150, 36655), (161, 36736),

Gene: Twinkle\_58 Start: 43058, Stop: 44077, Start Num: 43

Candidate Starts for Twinkle\_58:

(18, 42830), (29, 42995), (32, 43004), (35, 43016), (Start: 43 @43058 has 5 MA's), (58, 43142), (62, 43163), (73, 43208), (74, 43211), (81, 43259), (83, 43280), (89, 43334), (90, 43349), (99, 43412), (104, 43451), (123, 43532), (133, 43595), (161, 43757), (194, 43952),

Gene: Typha\_66 Start: 46458, Stop: 47585, Start Num: 28

Candidate Starts for Typha\_66:

(Start: 28 @46458 has 4 MA's), (Start: 31 @46470 has 7 MA's), (Start: 36 @46485 has 1 MA's), (41, 46509), (44, 46527), (50, 46563), (57, 46602), (64, 46632), (70, 46659), (81, 46722), (83, 46743), (86, 46770), (89, 46797), (90, 46812), (91, 46815), (93, 46824), (94, 46827), (102, 46875), (105, 46905), (106, 46908), (116, 46995), (119, 47007), (123, 47019), (126, 47046), (130, 47070), (132, 47076), (133, 47082), (139, 47124), (140, 47127), (150, 47190), (166, 47301), (185, 47412), (192, 47454),

Gene: Valary\_57 Start: 42681, Stop: 43619, Start Num: 30

Candidate Starts for Valary\_57:

(Start: 30 @42681 has 105 MA's), (53, 42762), (56, 42780), (66, 42825), (67, 42828), (90, 42966), (99, 43029), (119, 43137), (123, 43149), (126, 43176), (129, 43188), (151, 43320), (169, 43440), (173, 43458), (182, 43509), (184, 43521), (191, 43566),

Gene: VanDeWege\_58 Start: 41973, Stop: 42911, Start Num: 30

Candidate Starts for VanDeWege\_58:

(Start: 30 @41973 has 105 MA's), (53, 42054), (56, 42072), (66, 42117), (67, 42120), (90, 42258), (99, 42321), (119, 42429), (123, 42441), (126, 42468), (129, 42480), (151, 42612), (169, 42732), (173, 42750), (182, 42801), (184, 42813), (191, 42858),

Gene: Vibaki\_35 Start: 31085, Stop: 32152, Start Num: 39

Candidate Starts for Vibaki\_35:

(Start: 39 @31085 has 3 MA's), (54, 31157), (72, 31241), (84, 31331), (89, 31376), (90, 31391), (123, 31574), (128, 31610), (130, 31625), (187, 32000),

Gene: WelcomeAyanna\_60 Start: 42675, Stop: 43811, Start Num: 30

Candidate Starts for WelcomeAyanna\_60:

(4, 41709), (5, 41787), (6, 41799), (10, 42270), (17, 42474), (25, 42609), (Start: 30 @42675 has 105 MA's), (55, 42777), (56, 42786), (62, 42816), (71, 42852), (77, 42891), (85, 42957), (99, 43071), (103, 43080), (122, 43239), (123, 43245), (125, 43266), (126, 43272), (130, 43296), (132, 43302), (148, 43395), (158, 43467), (161, 43494), (168, 43542),

Gene: Whiteclaw\_54 Start: 35911, Stop: 37059, Start Num: 30

Candidate Starts for Whiteclaw\_54:

(Start: 30 @35911 has 105 MA's), (56, 36019), (62, 36049), (99, 36304), (101, 36310), (117, 36460), (123, 36478), (125, 36499), (126, 36505), (130, 36529), (132, 36535), (141, 36598), (148, 36634), (150, 36655), (161, 36736),

Gene: WinkNick\_57 Start: 37603, Stop: 38730, Start Num: 30

Candidate Starts for WinkNick\_57:

(22, 37504), (25, 37549), (Start: 30 @37603 has 105 MA's), (46, 37654), (48, 37672), (53, 37699), (56, 37717), (62, 37747), (77, 37822), (82, 37858), (99, 38002), (123, 38176), (125, 38197), (126, 38203), (132, 38233), (141, 38296), (161, 38410), (194, 38605),

Gene: Wizard\_54 Start: 41879, Stop: 42817, Start Num: 30

Candidate Starts for Wizard\_54:

(Start: 30 @41879 has 105 MA's), (53, 41960), (56, 41978), (66, 42023), (67, 42026), (90, 42164), (99, 42227), (119, 42335), (123, 42347), (126, 42374), (129, 42386), (151, 42518), (169, 42638), (173, 42656), (182, 42707), (184, 42719), (191, 42764),

Gene: Wocket\_59 Start: 38775, Stop: 39740, Start Num: 31

Candidate Starts for Wocket\_59:

(Start: 31 @38775 has 7 MA's), (53, 38862), (56, 38880), (61, 38907), (62, 38910), (85, 39015), (86, 39024), (90, 39066), (123, 39249), (130, 39300), (143, 39366), (147, 39393), (193, 39678),

Gene: Wrigley\_62 Start: 41702, Stop: 42805, Start Num: 30

Candidate Starts for Wrigley\_62:

(Start: 30 @41702 has 105 MA's), (45, 41753), (48, 41774), (53, 41801), (56, 41819), (62, 41849), (85, 41954), (90, 42005), (101, 42074), (103, 42077), (123, 42242), (126, 42269), (130, 42293),

Gene: Yeet412\_52 Start: 36845, Stop: 37999, Start Num: 30

Candidate Starts for Yeet412\_52:

(22, 36746), (25, 36791), (Start: 30 @36845 has 105 MA's), (56, 36956), (62, 36986), (99, 37241), (123, 37415), (125, 37436), (126, 37442), (130, 37466), (132, 37472), (141, 37535), (148, 37571), (150, 37592), (161, 37676),

Gene: Yeezy\_57 Start: 39122, Stop: 40219, Start Num: 30

Candidate Starts for Yeezy\_57:

(Start: 30 @39122 has 105 MA's), (48, 39194), (53, 39221), (56, 39239), (62, 39269), (85, 39374), (90, 39425), (101, 39494), (103, 39497), (123, 39662), (126, 39689), (130, 39713), (161, 39896), (168, 39944), (181, 40022), (194, 40091),

Gene: Zameen\_57 Start: 39712, Stop: 40860, Start Num: 30

Candidate Starts for Zameen\_57:

(22, 39613), (25, 39658), (Start: 30 @39712 has 105 MA's), (56, 39823), (62, 39853), (99, 40108), (123, 40282), (125, 40303), (126, 40309), (130, 40333), (132, 40339), (141, 40402), (148, 40438), (150, 40459), (161, 40543), (168, 40591),

Gene: Zirinka\_54 Start: 40332, Stop: 41480, Start Num: 30

Candidate Starts for Zirinka\_54:

(22, 40233), (25, 40278), (Start: 30 @40332 has 105 MA's), (56, 40443), (62, 40473), (99, 40728), (123, 40902), (125, 40923), (126, 40929), (130, 40953), (132, 40959), (141, 41022), (148, 41058), (150, 41079), (161, 41163), (168, 41211),