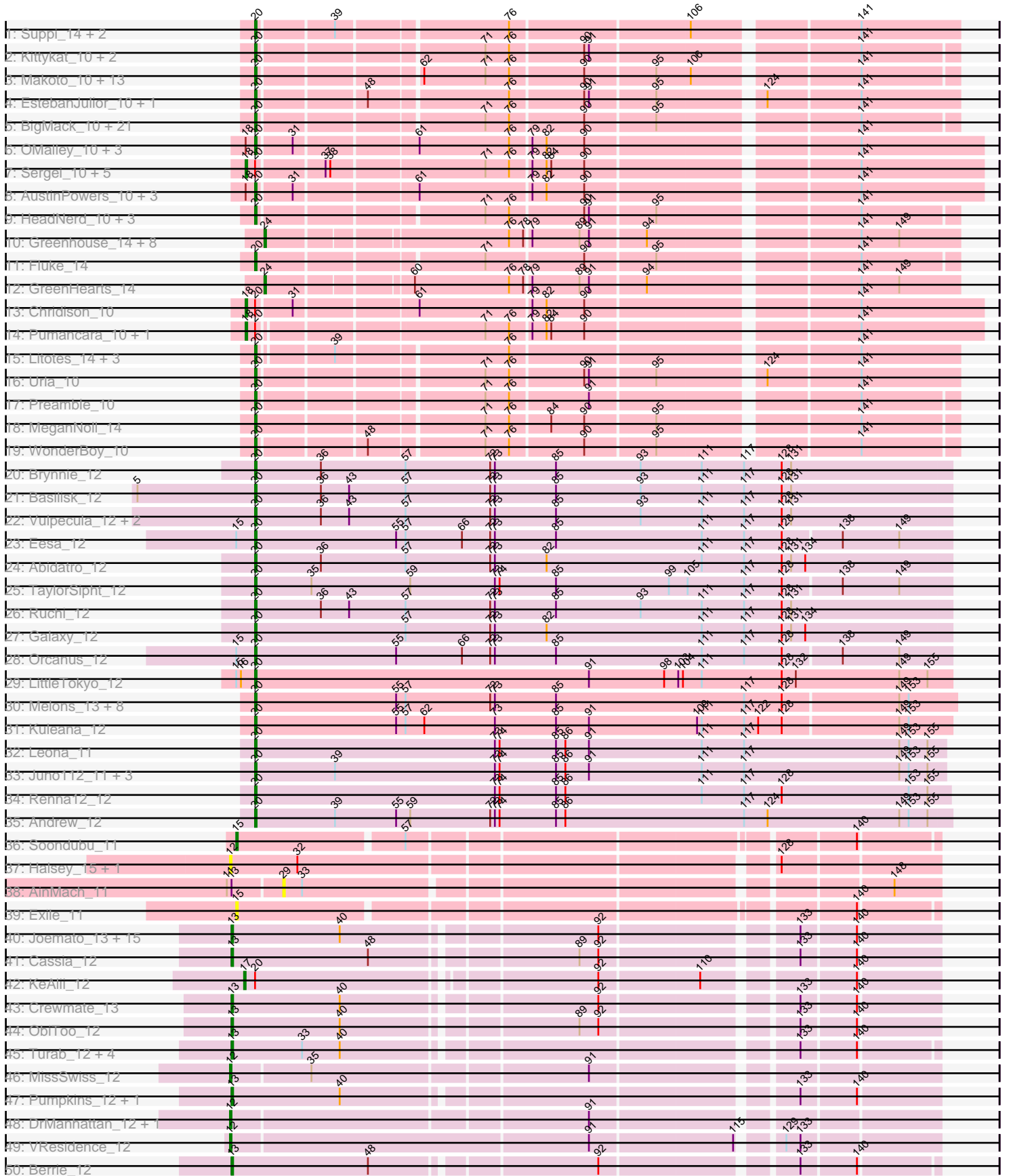
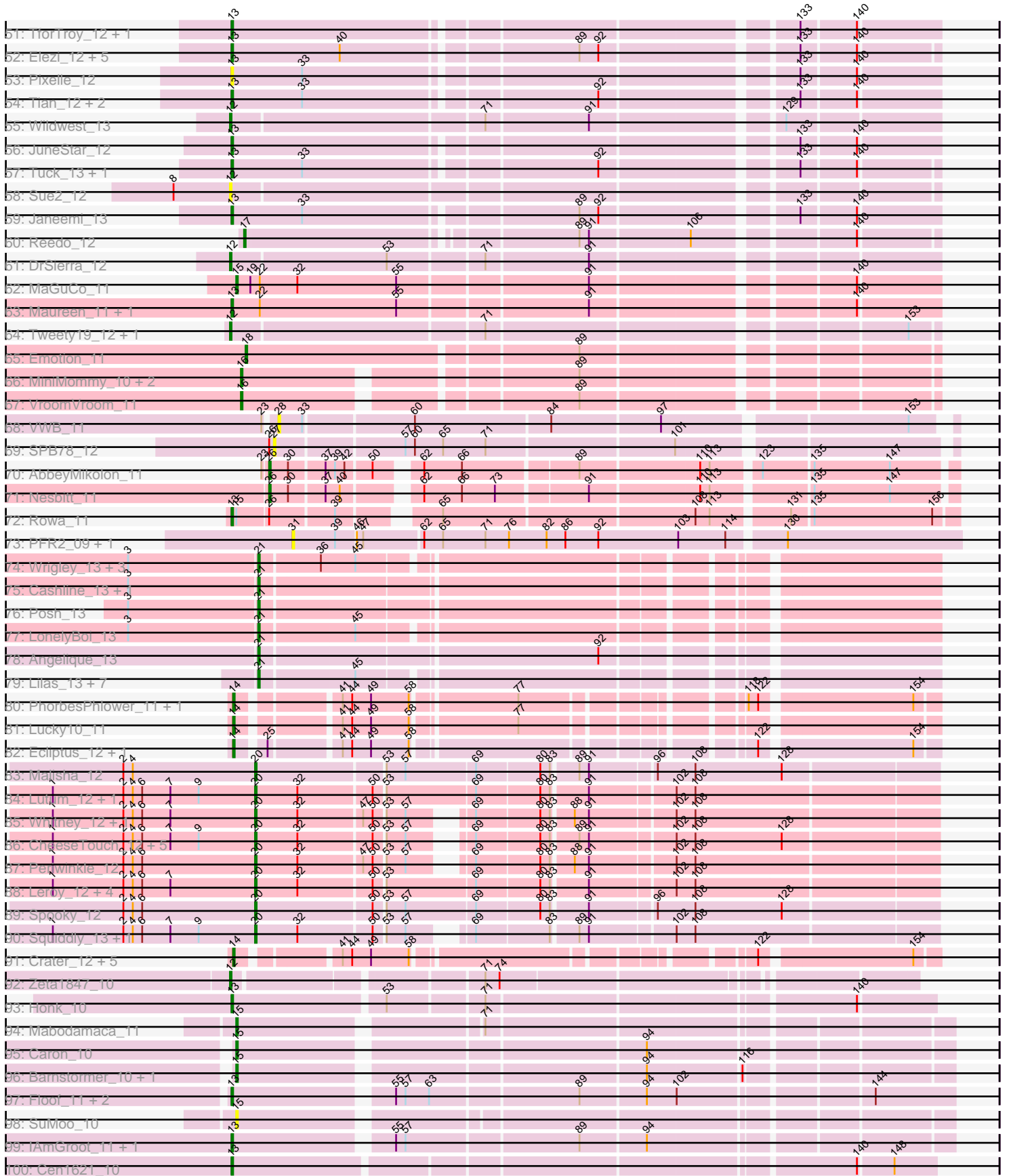


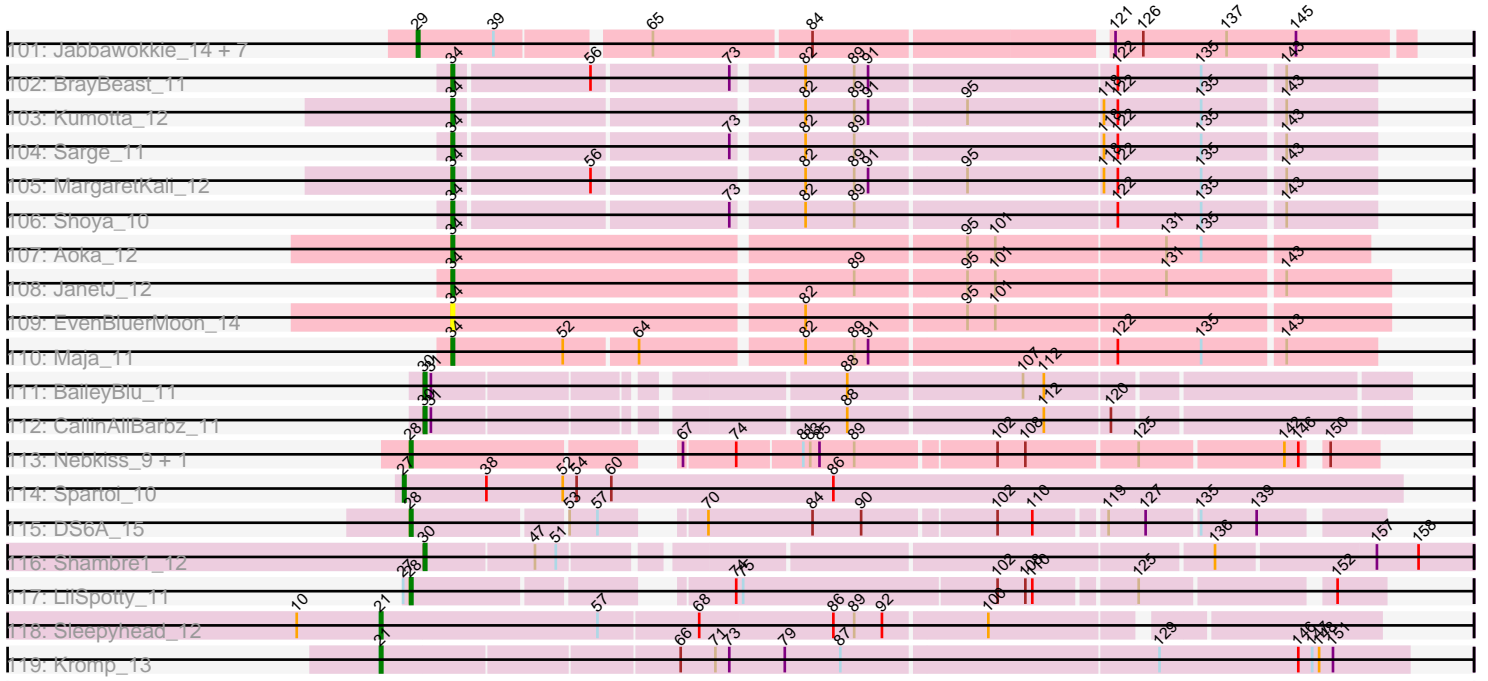
Pham 171161



Pham 171161



Pham 171161



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 171161 Report

This analysis was run 07/10/24 on database version 566.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 171161 has 275 members, 35 are drafts.

Phages represented in each track:

- Track 1 : Suppi\_14, Canowicakte\_14, Wayne\_14
- Track 2 : Kittykat\_10, DreamTeam\_10, Gisselle\_10
- Track 3 : Makoto\_10, CristinaYang\_10, PitaDog\_10, Lasagna\_10, Nancia\_10, OurGirlNessie\_10, LilStuart\_10, DrRobert\_10, Bodacious\_10, Christian\_10, Lucy\_10, Lennox\_10, ChewChew\_10, Pterodactyl\_10
- Track 4 : EstebanJulior\_10, MamaPearl\_10
- Track 5 : BigMack\_10, Carpal\_14, Rozby\_14, RAP15\_14, Wawa\_14, Immaculata\_14, Potatoes\_14, Korra\_14, Dino\_14, Glenn\_14, Vallejo\_14, Scuttle\_14, TattModd\_14, Jumboset\_14, Cholula\_14, MrGloopy\_14, Riverdale\_14, Savage2526\_14, BrotherBLo\_14, Beethoven\_14, Kalizoi\_14, Zorro\_14
- Track 6 : OMalley\_10, Eunoia\_10, Aledel\_10, Riovina\_10
- Track 7 : Sergei\_10, Maria1952\_10, KingBob\_10, Daiboju\_10, Herb\_10, Temper16\_10
- Track 8 : AustinPowers\_10, HunterDalle\_10, Vulture\_10, Supakev\_10
- Track 9 : HeadNerd\_10, Huckleberry\_10, Bennie\_10, Moki\_10
- Track 10 : Greenhouse\_14, Lakshmi\_14, Albanese\_14, Oxyfnrius\_14, Joann\_14, RcigaStruga\_14, Huntingdon\_14, Nubia\_14, Misaeng\_14
- Track 11 : Fluke\_14
- Track 12 : GreenHearts\_14
- Track 13 : Chridison\_10
- Track 14 : Pumancara\_10, PinkFriday\_10
- Track 15 : Litotes\_14, PartyCup\_14, CallieOMalley\_14, AppleCider\_14
- Track 16 : Urla\_10
- Track 17 : Preamble\_10
- Track 18 : MeganNoll\_14
- Track 19 : WonderBoy\_10
- Track 20 : Brynnie\_12
- Track 21 : Basilisk\_12
- Track 22 : Vulpecula\_12, Jamun\_12, Chickaboom\_11
- Track 23 : Eesa\_12
- Track 24 : Abidatro\_12
- Track 25 : TaylorSipht\_12
- Track 26 : Ruchi\_12

- Track 27 : Galaxy\_12
- Track 28 : Orcanus\_12
- Track 29 : LittleTokyo\_12
- Track 30 : Melons\_13, Cote\_13, Amelia\_13, Polka\_12, Daob\_13, Lunar\_13, Coral\_12, Kepler\_12, HannahPhantana\_13
- Track 31 : Kuleana\_12
- Track 32 : Leona\_11
- Track 33 : Juno112\_11, PhluffyCoco\_11, RedFox\_11, KHumphrey\_11
- Track 34 : Renna12\_12
- Track 35 : Andrew\_12
- Track 36 : Soondubu\_11
- Track 37 : Halsey\_15, Moss\_14
- Track 38 : AinMach\_11
- Track 39 : Exile\_11
- Track 40 : Joemato\_13, Iter\_12, AGrandiflora\_12, Cyan\_12, YesChef\_12, Lizalica\_12, Simpson\_13, Kaylissa\_12, Lego\_12, Warda\_12, JohnDoe\_12, Tutumahutu\_12, Tbone\_12, Powerpuff\_12, Ascela\_12, Mudpuppy\_12
- Track 41 : Cassia\_12
- Track 42 : KeAlii\_12
- Track 43 : Crewmate\_13
- Track 44 : ObiToo\_12
- Track 45 : Turab\_12, Tallboi\_12, Adumb2043\_12, AEgle\_12, Nitro\_12
- Track 46 : MissSwiss\_12
- Track 47 : Pumpkins\_12, IttyBittyPiggy\_12
- Track 48 : DrManhattan\_12, Adolin\_12
- Track 49 : VResidence\_12
- Track 50 : Berrie\_12
- Track 51 : TforTroy\_12, Yang\_12
- Track 52 : Elezi\_12, Eraser\_12, London\_12, Niobe\_12, Asa16\_12, Jstan\_12
- Track 53 : Pixelle\_12
- Track 54 : Tian\_12, Amyev\_12, Phives\_13
- Track 55 : Wildwest\_13
- Track 56 : JuneStar\_12
- Track 57 : Tuck\_13, Community\_13
- Track 58 : Sue2\_12
- Track 59 : Janeemi\_13
- Track 60 : Reedo\_12
- Track 61 : DrSierra\_12
- Track 62 : MaGuCo\_11
- Track 63 : Maureen\_11, Liebe\_11
- Track 64 : Tweety19\_12, Sneek\_12
- Track 65 : Emotion\_11
- Track 66 : MiniMommy\_10, JasmineDragon\_11, ShakeltOph\_11
- Track 67 : VroomVroom\_11
- Track 68 : VWB\_11
- Track 69 : SPB78\_12
- Track 70 : AbbeyMikolon\_11
- Track 71 : Nesbitt\_11
- Track 72 : Rowa\_11
- Track 73 : PFR2\_09, PFR1\_09
- Track 74 : Wrigley\_13, Pytheas\_13, Confidence\_13, Jablanski\_13
- Track 75 : Cashline\_13, BeeGee\_13
- Track 76 : Posh\_13

- Track 77 : LonelyBoi\_13
- Track 78 : Angelique\_13
- Track 79 : Lilas\_13, Bradissa\_13, BritBrat\_13, Floral\_13, EMSquaredA\_13, Pollux\_13, EnalisNailo\_13, Marteena\_13
- Track 80 : PhorbesPhlower\_11, Morkie\_11
- Track 81 : Lucky10\_11
- Track 82 : Ecliptus\_12, ODay\_12
- Track 83 : Malisha\_12
- Track 84 : Lutum\_12, Kenna\_12
- Track 85 : Whitney\_12, Getalong\_12
- Track 86 : CheeseTouch\_12, Budski\_12, Phabuloso\_12, LitninMcQueen\_12, Kamaru\_12, Holliday\_12
- Track 87 : Periwinkle\_12
- Track 88 : Leroy\_12, Horus\_12, BENtherdunthat\_12, Frickyeah\_12, Asapag\_12
- Track 89 : Spooky\_12
- Track 90 : Squiddly\_13, Phistory\_12
- Track 91 : Crater\_12, BearBQ\_12, MortyNRick\_12, Birdsong\_12, Kuwabara\_12, Apricot\_12
- Track 92 : Zeta1847\_10
- Track 93 : Honk\_10
- Track 94 : Mabodamaca\_11
- Track 95 : Caron\_10
- Track 96 : Barnstormer\_10, UtzChips\_10
- Track 97 : Floof\_11, Percival\_11, Gretchen\_11
- Track 98 : SuMoo\_10
- Track 99 : IAmGroot\_11, GardenState\_11
- Track 100 : Cen1621\_10
- Track 101 : Jabbawokkie\_14, Avani\_13, Yoshi\_13, Che9d\_13, Demsculpinboyz\_13, Soul22\_13, Blarby\_14, Zapner\_14
- Track 102 : BrayBeast\_11
- Track 103 : Kumotta\_12
- Track 104 : Sarge\_11
- Track 105 : MargaretKali\_12
- Track 106 : Shoya\_10
- Track 107 : Aoka\_12
- Track 108 : JanetJ\_12
- Track 109 : EvenBluerMoon\_14
- Track 110 : Maja\_11
- Track 111 : BaileyBlu\_11
- Track 112 : CallinAllBarbz\_11
- Track 113 : Nebkiss\_9, Gaia\_9
- Track 114 : Spartoi\_10
- Track 115 : DS6A\_15
- Track 116 : Shambre1\_12
- Track 117 : LilSpotty\_11
- Track 118 : Sleepyhead\_12
- Track 119 : Kromp\_13

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

The start number called the most often in the published annotations is 20, it was called in 106 of the 240 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abidatro\_12, Aledel\_10, Amelia\_13, Andrew\_12, AppleCider\_14, Asapag\_12, AustinPowers\_10, BENtherdunthat\_12, Basilisk\_12, Beethoven\_14, Bennie\_10, BigMack\_10, Bodacious\_10, BrotherBLo\_14, Brynnie\_12, Budski\_12, CallieOMalley\_14, Canowicakte\_14, Carpal\_14, CheeseTouch\_12, ChewChew\_10, Chickaboom\_11, Cholula\_14, Christian\_10, Coral\_12, Cote\_13, CristinaYang\_10, Daob\_13, Dino\_14, DrRobert\_10, DreamTeam\_10, Eesa\_12, EstebanJulior\_10, Eunoia\_10, Fluke\_14, Frickyeah\_12, Galaxy\_12, Getalong\_12, Gisselle\_10, Glenn\_14, HannahPhantana\_13, HeadNerd\_10, Holliday\_12, Horus\_12, Huckleberry\_10, HunterDalle\_10, Immaculata\_14, Jamun\_12, Jumboset\_14, Juno112\_11, KHumphrey\_11, Kalizoi\_14, Kamaru\_12, Kenna\_12, Kepler\_12, Kittykat\_10, Korra\_14, Kuleana\_12, Lasagna\_10, Lennox\_10, Leona\_11, Leroy\_12, LilStuart\_10, LitninMcQueen\_12, Litotes\_14, LittleTokyo\_12, Lucy\_10, Lunar\_13, Lutum\_12, Makoto\_10, Malisha\_12, MamaPearl\_10, MeganNoll\_14, Melons\_13, Moki\_10, MrGloopy\_14, Nancia\_10, OMalley\_10, Orcanus\_12, OurGirlNessie\_10, PartyCup\_14, Periwinkle\_12, Phabuloso\_12, Phistory\_12, PhluffyCoco\_11, PitaDog\_10, Polka\_12, Potatoes\_14, Preamble\_10, Pterodactyl\_10, RAP15\_14, RedFox\_11, Renna12\_12, Rivovina\_10, Riverdale\_14, Rozby\_14, Ruchi\_12, Savage2526\_14, Scuttle\_14, Spooky\_12, Squiddly\_13, Supakev\_10, Suppi\_14, TattModd\_14, TaylorSipht\_12, Urla\_10, Vallejo\_14, Vulpecula\_12, Vulture\_10, Wawa\_14, Wayne\_14, Whitney\_12, WonderBoy\_10, Zorro\_14,

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

- Chrudson\_10, Daiboju\_10, Herb\_10, KeAlii\_12, KingBob\_10, Maria1952\_10, PinkFriday\_10, Pumancara\_10, Sergei\_10, Temper16\_10,

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

- AEgle\_12, AGrandiflora\_12, AbbeyMikolon\_11, Adolin\_12, Adumb2043\_12, AinMach\_11, Albanese\_14, Amyev\_12, Angelique\_13, Aoka\_12, Apricot\_12, Asa16\_12, Ascela\_12, Avani\_13, BaileyBlu\_11, Barnstormer\_10, BearBQ\_12, BeeGee\_13, Berrie\_12, Birdsong\_12, Blarby\_14, Bradissa\_13, BrayBeast\_11, BritBrat\_13, CallinAllBarbz\_11, Caron\_10, Cashline\_13, Cassia\_12, Cen1621\_10, Che9d\_13, Community\_13, Confidence\_13, Crater\_12, Crewmate\_13, Cyan\_12, DS6A\_15, Demsculpinboyz\_13, DrManhattan\_12, DrSierra\_12, EMSquaredA\_13, Ecliptus\_12, Elezi\_12, Emotion\_11, EnalisNailo\_13, Eraser\_12, EvenBluerMoon\_14, Exile\_11, Floof\_11, Floral\_13, Gaia\_9, GardenState\_11, GreenHearts\_14, Greenhouse\_14, Gretchen\_11, Halsey\_15, Honk\_10, Huntingdon\_14, IAmGroot\_11, Iter\_12, IttyBittyPiggy\_12, Jabbawokkie\_14, Jablanski\_13, Janeemi\_13, JanetJ\_12, JasmineDragon\_11, Joann\_14, Joemato\_13, JohnDoe\_12, Jstan\_12, JuneStar\_12, Kaylissa\_12, Kromp\_13, Kumotta\_12, Kuwabara\_12, Lakshmi\_14, Lego\_12, Liebe\_11, LilSpotty\_11, Lilas\_13, Lizalica\_12, London\_12, LonelyBoi\_13, Lucky10\_11, MaGuCo\_11, Mabodamaca\_11, Maja\_11, MargaretKali\_12, Marteena\_13, Maureen\_11, MiniMommy\_10, Misaeng\_14, MissSwiss\_12, Morkie\_11, MortyNRick\_12, Moss\_14, Mudpuppy\_12, Nebkiss\_9, Nesbitt\_11, Niobe\_12, Nitro\_12, Nubia\_14, ODay\_12, ObiToo\_12, Oxyfrius\_14, PFR1\_09, PFR2\_09, Percival\_11, Phives\_13, PhorbesPhlower\_11, Pixelle\_12, Pollux\_13, Posh\_13, Powerpuff\_12, Pumpkins\_12, Pytheas\_13, RcigaStruga\_14, Reedo\_12, Rowa\_11, SPB78\_12, Sarge\_11, ShakeltOph\_11, Shambre1\_12, Shoya\_10, Simpson\_13, Sleepyhead\_12, Snek\_12, Soondubu\_11, Soul22\_13, Spartoi\_10, SuMoo\_10, Sue2\_12, Tallboi\_12, Tbone\_12, TforTroy\_12, Tian\_12, Tuck\_13,

Turab\_12, Tutumahutu\_12, Tweety19\_12, UtzChips\_10, VResidence\_12, VWB\_11, VroomVroom\_11, Warda\_12, Wildwest\_13, Wrigley\_13, Yang\_12, YesChef\_12, Yoshi\_13, Zapner\_14, Zeta1847\_10,

### Summary by start number:

#### Start 12:

- Found in 12 of 275 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 9 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adolin\_12 (AZ1), DrManhattan\_12 (AZ1), DrSierra\_12 (AZ1), Halsey\_15 (AZ), MissSwiss\_12 (AZ1), Moss\_14 (AZ), Snek\_12 (AZ3), Sue2\_12 (AZ1), Tweety19\_12 (AZ3), VResidence\_12 (AZ1), Wildwest\_13 (AZ1), Zeta1847\_10 (EH),

#### Start 13:

- Found in 54 of 275 ( 19.6% ) of genes in pham
- Manual Annotations of this start: 41 of 240
- Called 98.1% of time when present
- Phage (with cluster) where this start called: AEgle\_12 (AZ1), AGrandiflora\_12 (AZ1), Adumb2043\_12 (AZ1), Amyev\_12 (AZ1), Asa16\_12 (AZ1), Ascela\_12 (AZ1), Berrie\_12 (AZ1), Cassia\_12 (AZ1), Cen1621\_10 (EH), Community\_13 (AZ1), Crewmate\_13 (AZ1), Cyan\_12 (AZ1), Elezi\_12 (AZ1), Eraser\_12 (AZ1), Floof\_11 (EH), GardenState\_11 (EH), Gretchen\_11 (EH), Honk\_10 (EH), IAmGroot\_11 (EH), Iter\_12 (AZ1), IttyBittyPiggy\_12 (AZ1), Janeemi\_13 (AZ1), Joemato\_13 (AZ1), JohnDoe\_12 (AZ1), Jstan\_12 (AZ1), JuneStar\_12 (AZ1), Kaylissa\_12 (AZ1), Lego\_12 (AZ1), Liebe\_11 (AZ2), Lizalica\_12 (AZ1), London\_12 (AZ1), Maureen\_11 (AZ2), Mudpuppy\_12 (AZ1), Niobe\_12 (AZ1), Nitro\_12 (AZ1), ObiToo\_12 (AZ1), Percival\_11 (EH), Phives\_13 (AZ1), Pixelle\_12 (AZ1), Powerpuff\_12 (AZ1), Pumpkins\_12 (AZ1), Rowa\_11 (BL), Simpson\_13 (AZ1), Tallboi\_12 (AZ1), Tbone\_12 (AZ1), TforTroy\_12 (AZ1), Tian\_12 (AZ1), Tuck\_13 (AZ1), Turab\_12 (AZ1), Tutumahutu\_12 (AZ1), Warda\_12 (AZ1), Yang\_12 (AZ1), YesChef\_12 (AZ1),

#### Start 14:

- Found in 11 of 275 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 10 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot\_12 (DN3), BearBQ\_12 (DN), Birdsong\_12 (DN), Crater\_12 (DN3), Ecliptus\_12 (DN), Kuwabara\_12 (DN4), Lucky10\_11 (DH), Morkie\_11 (DH), MortyNRick\_12 (DN), ODay\_12 (DN), PhorbesPhlower\_11 (DH),

#### Start 15:

- Found in 12 of 275 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 6 of 240
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Barnstormer\_10 (EH), Caron\_10 (EH), Exile\_11 (AZ), MaGuCo\_11 (AZ2), Mabodamaca\_11 (EH), Soondubu\_11 (AZ), SuMoo\_10 (EH), UtzChips\_10 (EH),

#### Start 16:

- Found in 5 of 275 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 2 of 240



- Called 80.0% of time when present
- Phage (with cluster) where this start called: JasmineDragon\_11 (AZ4), MiniMommy\_10 (AZ4), ShakeltOph\_11 (AZ4), VroomVroom\_11 (AZ4),

Start 17:

- Found in 2 of 275 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KeAlii\_12 (AZ1), Reedo\_12 (AZ1),

Start 18:

- Found in 18 of 275 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 10 of 240
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Chridison\_10 (AK), Daiboju\_10 (AK), Emotion\_11 (AZ4), Herb\_10 (AK), KingBob\_10 (AK), Maria1952\_10 (AK), PinkFriday\_10 (AK), Pumancara\_10 (AK), Sergei\_10 (AK), Temper16\_10 (AK),

Start 20:

- Found in 124 of 275 ( 45.1% ) of genes in pham
- Manual Annotations of this start: 106 of 240
- Called 91.9% of time when present
- Phage (with cluster) where this start called: Abidatro\_12 (AS1), Aledel\_10 (AK), Amelia\_13 (AS2), Andrew\_12 (AS3), AppleCider\_14 (AK), Asapag\_12 (DN1), AustinPowers\_10 (AK), BENtherdunthat\_12 (DN1), Basilisk\_12 (AS1), Beethoven\_14 (AK), Bennie\_10 (AK), BigMack\_10 (AK), Bodacious\_10 (AK), BrotherBLo\_14 (AK), Brynnie\_12 (AS1), Budski\_12 (DN), CallieOMalley\_14 (AK), Canowicakte\_14 (AK), Carpal\_14 (AK), CheeseTouch\_12 (DN1), ChewChew\_10 (AK), Chickaboom\_11 (AS1), Cholula\_14 (AK), Christian\_10 (AK), Coral\_12 (AS2), Cote\_13 (AS2), CristinaYang\_10 (AK), Daob\_13 (AS2), Dino\_14 (AK), DrRobert\_10 (AK), DreamTeam\_10 (AK), Eesa\_12 (AS1), EstebanJulior\_10 (AK), Eunoia\_10 (AK), Fluke\_14 (AK), Frickyeah\_12 (DN1), Galaxy\_12 (AS1), Getalong\_12 (DN1), Gisselle\_10 (AK), Glenn\_14 (AK), HannahPhantana\_13 (AS2), HeadNerd\_10 (AK), Holliday\_12 (DN1), Horus\_12 (DN1), Huckleberry\_10 (AK), HunterDalle\_10 (AK), Immaculata\_14 (AK), Jamun\_12 (AS1), Jumboset\_14 (AK), Juno112\_11 (AS3), KHumphrey\_11 (AS3), Kalizoi\_14 (AK), Kamaru\_12 (DN1), Kenna\_12 (DN1), Kepler\_12 (AS2), Kittykat\_10 (AK), Korra\_14 (AK), Kuleana\_12 (AS2), Lasagna\_10 (AK), Lennox\_10 (AK), Leona\_11 (AS3), Leroy\_12 (DN1), LilStuart\_10 (AK), LitninMcQueen\_12 (DN1), Litotes\_14 (AK), LittleTokyo\_12 (AS2), Lucy\_10 (AK), Lunar\_13 (AS2), Lutum\_12 (DN1), Makoto\_10 (AK), Malisha\_12 (DN), MamaPearl\_10 (AK), MeganNoll\_14 (AK), Melons\_13 (AS2), Moki\_10 (AK), MrGloopy\_14 (AK), Nancia\_10 (AK), OMalley\_10 (AK), Orcanus\_12 (AS1), OurGirlNessie\_10 (AK), PartyCup\_14 (AK), Periwinkle\_12 (DN1), Phabuloso\_12 (DN1), Phistory\_12 (DN1), PhluffyCoco\_11 (AS3), PitaDog\_10 (AK), Polka\_12 (AS2), Potatoes\_14 (AK), Preamble\_10 (AK), Pterodactyl\_10 (AK), RAP15\_14 (AK), RedFox\_11 (AS3), Renna12\_12 (AS3), Riovina\_10 (AK), Riverdale\_14 (AK), Rozby\_14 (AK), Ruchi\_12 (AS1), Savage2526\_14 (AK), Scuttle\_14 (AK), Spooky\_12 (DN2), Squiddly\_13 (DN2), Supakev\_10 (AK), Suppi\_14 (AK), TattModd\_14 (AK), TaylorSipt\_12 (AS1), Urla\_10 (AK), Vallejo\_14 (AK), Vulpecula\_12 (AS1), Vulture\_10 (AK), Wawa\_14 (AK), Wayne\_14 (AK), Whitney\_12 (DN1), WonderBoy\_10 (AK), Zorro\_14 (AK),

Start 21:

- Found in 19 of 275 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 19 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angelique\_13 (CY1), BeeGee\_13 (CY), Bradissa\_13 (CY1), BritBrat\_13 (CY2), Cashline\_13 (CY), Confidence\_13 (CY1), EMSquaredA\_13 (CY1), EnalisNailo\_13 (CY1), Floral\_13 (CY1), Jablanski\_13 (CY), Kromp\_13 (singleton), Lilas\_13 (CY1), LonelyBoi\_13 (CY), Marteena\_13 (CY1), Pollux\_13 (CY1), Posh\_13 (CY), Pytheas\_13 (CY), Sleepyhead\_12 (singleton), Wrigley\_13 (CY),

#### Start 24:

- Found in 10 of 275 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 10 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_14 (AK), GreenHearts\_14 (AK), Greenhouse\_14 (AK), Huntingdon\_14 (AK), Joann\_14 (AK), Lakshmi\_14 (AK), Misaeng\_14 (AK), Nubia\_14 (AK), Oxyfnrius\_14 (AK), RcigaStruga\_14 (AK),

#### Start 26:

- Found in 4 of 275 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 240
- Called 50.0% of time when present
- Phage (with cluster) where this start called: AbbeyMikolon\_11 (BL), Nesbitt\_11 (BL),

#### Start 27:

- Found in 3 of 275 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 240
- Called 66.7% of time when present
- Phage (with cluster) where this start called: SPB78\_12 (BA), Spartoi\_10 (singleton),

#### Start 28:

- Found in 5 of 275 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 4 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A\_15 (singleton), Gaia\_9 (X), LilSpotty\_11 (singleton), Nebkiss\_9 (X), VWB\_11 (BA),

#### Start 29:

- Found in 9 of 275 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 7 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AinMach\_11 (AZ), Avani\_13 (F2), Blarby\_14 (F), Che9d\_13 (F2), Demsculpinboyz\_13 (F2), Jabbawokkie\_14 (F2), Soul22\_13 (F2), Yoshi\_13 (F2), Zapner\_14 (F2),

#### Start 30:

- Found in 5 of 275 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 3 of 240
- Called 60.0% of time when present
- Phage (with cluster) where this start called: BaileyBlu\_11 (FP), CallinAllBarbz\_11 (FP), Shambre1\_12 (singleton),

#### Start 31:

- Found in 13 of 275 ( 4.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 15.4% of time when present
- Phage (with cluster) where this start called: PFR1\_09 (BX), PFR2\_09 (BX),

Start 34:

- Found in 9 of 275 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 8 of 240
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aoka\_12 (FO), BrayBeast\_11 (FB), EvenBluerMoon\_14 (FO), JanetJ\_12 (FO), Kumotta\_12 (FB), Maja\_11 (FO), MargaretKali\_12 (FB), Sarge\_11 (FB), Shoya\_10 (FB),

### **Summary by clusters:**

There are 29 clusters represented in this pham: DN, FP, singleton, BA, DH, CY2, BL, CY1, FB, BX, FO, DN4, DN1, DN3, DN2, AS3, AS2, AS1, EH, F, AK, CY, X, AZ, F2, AZ1, AZ2, AZ3, AZ4,

Info for manual annotations of cluster AK:

- Start number 18 was manually annotated 9 times for cluster AK.
- Start number 20 was manually annotated 63 times for cluster AK.
- Start number 24 was manually annotated 10 times for cluster AK.

Info for manual annotations of cluster AS1:

- Start number 20 was manually annotated 10 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 20 was manually annotated 10 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 20 was manually annotated 4 times for cluster AS3.

Info for manual annotations of cluster AZ:

- Start number 15 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 12 was manually annotated 6 times for cluster AZ1.
- Start number 13 was manually annotated 31 times for cluster AZ1.
- Start number 17 was manually annotated 2 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 13 was manually annotated 2 times for cluster AZ2.
- Start number 15 was manually annotated 1 time for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 12 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 16 was manually annotated 2 times for cluster AZ4.
- Start number 18 was manually annotated 1 time for cluster AZ4.

Info for manual annotations of cluster BL:

- Start number 13 was manually annotated 1 time for cluster BL.
- Start number 26 was manually annotated 2 times for cluster BL.

Info for manual annotations of cluster CY:

- Start number 21 was manually annotated 7 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 21 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 21 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster DH:

- Start number 14 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 14 was manually annotated 4 times for cluster DN.
- Start number 20 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 20 was manually annotated 15 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 20 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 14 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 14 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster EH:

- Start number 12 was manually annotated 1 time for cluster EH.
- Start number 13 was manually annotated 7 times for cluster EH.
- Start number 15 was manually annotated 4 times for cluster EH.

Info for manual annotations of cluster F2:

- Start number 29 was manually annotated 7 times for cluster F2.

Info for manual annotations of cluster FB:

- Start number 34 was manually annotated 5 times for cluster FB.

Info for manual annotations of cluster FO:

- Start number 34 was manually annotated 3 times for cluster FO.

Info for manual annotations of cluster FP:

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

Info for manual annotations of cluster X:

- Start number 28 was manually annotated 2 times for cluster X.

**Gene Information:**

Gene: AEgle\_12 Start: 9049, Stop: 9459, Start Num: 13

Candidate Starts for AEgle\_12:

(Start: 13 @9049 has 41 MA's), (33, 9094), (40, 9118), (133, 9379), (140, 9412),

Gene: AGrandiflora\_12 Start: 9036, Stop: 9449, Start Num: 13

Candidate Starts for AGrandiflora\_12:

(Start: 13 @9036 has 41 MA's), (40, 9105), (92, 9255), (133, 9366), (140, 9399),

Gene: AbbeyMikolon\_11 Start: 7783, Stop: 8178, Start Num: 26

Candidate Starts for AbbeyMikolon\_11:

(23, 7780), (Start: 26 @7783 has 2 MA's), (Start: 30 @7795 has 3 MA's), (37, 7816), (39, 7822), (42, 7828), (50, 7843), (62, 7864), (66, 7888), (89, 7957), (110, 8029), (113, 8035), (123, 8062), (135, 8092), (147, 8140),

Gene: Abidatro\_12 Start: 8321, Stop: 8764, Start Num: 20

Candidate Starts for Abidatro\_12:

(Start: 20 @8321 has 106 MA's), (36, 8363), (57, 8417), (72, 8471), (73, 8474), (82, 8507), (111, 8606), (117, 8633), (128, 8657), (131, 8663), (134, 8672),

Gene: Adolin\_12 Start: 9024, Stop: 9440, Start Num: 12

Candidate Starts for Adolin\_12:

(Start: 12 @9024 has 9 MA's), (91, 9240),

Gene: Adumb2043\_12 Start: 9048, Stop: 9458, Start Num: 13

Candidate Starts for Adumb2043\_12:

(Start: 13 @9048 has 41 MA's), (33, 9093), (40, 9117), (133, 9378), (140, 9411),

Gene: AinMach\_11 Start: 8183, Stop: 8566, Start Num: 29

Candidate Starts for AinMach\_11:

(11, 8150), (Start: 13 @8153 has 41 MA's), (Start: 29 @8183 has 7 MA's), (33, 8195), (148, 8537),

Gene: Albanese\_14 Start: 10476, Stop: 10886, Start Num: 24

Candidate Starts for Albanese\_14:

(Start: 24 @10476 has 10 MA's), (76, 10620), (78, 10629), (79, 10632), (89, 10662), (91, 10668), (94, 10701), (141, 10824), (149, 10848),

Gene: Aledel\_10 Start: 7551, Stop: 7982, Start Num: 20

Candidate Starts for Aledel\_10:

(Start: 18 @7545 has 10 MA's), (Start: 20 @7551 has 106 MA's), (31, 7572), (61, 7644), (76, 7701), (79, 7713), (82, 7722), (90, 7746), (141, 7905),

Gene: Amelia\_13 Start: 8497, Stop: 8940, Start Num: 20

Candidate Starts for Amelia\_13:

(Start: 20 @8497 has 106 MA's), (55, 8587), (57, 8593), (72, 8647), (73, 8650), (85, 8689), (117, 8809), (128, 8833), (149, 8905), (153, 8911),

Gene: Amyev\_12 Start: 9064, Stop: 9477, Start Num: 13

Candidate Starts for Amyev\_12:

(Start: 13 @9064 has 41 MA's), (33, 9109), (92, 9283), (133, 9394), (140, 9427),

Gene: Andrew\_12 Start: 8281, Stop: 8724, Start Num: 20

Candidate Starts for Andrew\_12:

(Start: 20 @8281 has 106 MA's), (39, 8332), (55, 8371), (59, 8380), (72, 8431), (73, 8434), (74, 8437), (85, 8473), (86, 8479), (117, 8593), (124, 8608), (149, 8692), (153, 8698), (155, 8710),

Gene: Angelique\_13 Start: 8261, Stop: 8653, Start Num: 21

Candidate Starts for Angelique\_13:

(Start: 21 @8261 has 19 MA's), (92, 8465),

Gene: Aoka\_12 Start: 8710, Stop: 9090, Start Num: 34

Candidate Starts for Aoka\_12:

(Start: 34 @8710 has 8 MA's), (95, 8923), (101, 8935), (131, 9007), (135, 9022),

Gene: AppleCider\_14 Start: 10411, Stop: 10824, Start Num: 20

Candidate Starts for AppleCider\_14:

(Start: 20 @10411 has 106 MA's), (39, 10456), (76, 10558), (141, 10762),

Gene: Apricot\_12 Start: 7390, Stop: 7773, Start Num: 14

Candidate Starts for Apricot\_12:

(Start: 14 @7390 has 10 MA's), (41, 7444), (44, 7450), (49, 7462), (58, 7486), (122, 7669), (154, 7759),

Gene: Asa16\_12 Start: 9018, Stop: 9428, Start Num: 13

Candidate Starts for Asa16\_12:

(Start: 13 @9018 has 41 MA's), (40, 9087), (89, 9225), (92, 9237), (133, 9348), (140, 9381),

Gene: Asapag\_12 Start: 7041, Stop: 7451, Start Num: 20

Candidate Starts for Asapag\_12:

(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (Start: 20 @7041 has 106 MA's), (32, 7068), (50, 7113), (53, 7119), (69, 7173), (80, 7212), (83, 7218), (91, 7239), (102, 7290), (108, 7302),

Gene: Ascela\_12 Start: 9053, Stop: 9463, Start Num: 13

Candidate Starts for Ascela\_12:

(Start: 13 @9053 has 41 MA's), (40, 9122), (92, 9272), (133, 9383), (140, 9416),

Gene: AustinPowers\_10 Start: 7552, Stop: 7983, Start Num: 20

Candidate Starts for AustinPowers\_10:

(Start: 18 @7546 has 10 MA's), (Start: 20 @7552 has 106 MA's), (31, 7573), (61, 7645), (79, 7714), (82, 7723), (90, 7747), (141, 7906),

Gene: Avani\_13 Start: 7213, Stop: 7617, Start Num: 29

Candidate Starts for Avani\_13:

(Start: 29 @7213 has 7 MA's), (39, 7246), (65, 7306), (84, 7372), (121, 7492), (126, 7504), (137, 7540), (145, 7570),

Gene: BENtherdunthat\_12 Start: 7041, Stop: 7451, Start Num: 20

Candidate Starts for BENtherdunthat\_12:

(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (Start: 20 @7041 has 106 MA's), (32, 7068), (50, 7113), (53, 7119), (69, 7173), (80, 7212), (83, 7218), (91, 7239), (102, 7290), (108, 7302),

Gene: BaileyBlu\_11 Start: 6789, Stop: 7178, Start Num: 30

Candidate Starts for BaileyBlu\_11:

(Start: 30 @6789 has 3 MA's), (31, 6792), (88, 6951), (107, 7023), (112, 7032),

Gene: Barnstormer\_10 Start: 8216, Stop: 8632, Start Num: 15

Candidate Starts for Barnstormer\_10:

(Start: 15 @8216 has 6 MA's), (94, 8456), (116, 8513),

Gene: Basilisk\_12 Start: 8645, Stop: 9088, Start Num: 20

Candidate Starts for Basilisk\_12:

(5, 8570), (Start: 20 @8645 has 106 MA's), (36, 8687), (43, 8705), (57, 8741), (72, 8795), (73, 8798), (85, 8837), (93, 8891), (111, 8930), (117, 8957), (128, 8981), (131, 8987),

Gene: BearBQ\_12 Start: 7390, Stop: 7773, Start Num: 14

Candidate Starts for BearBQ\_12:

(Start: 14 @7390 has 10 MA's), (41, 7444), (44, 7450), (49, 7462), (58, 7486), (122, 7669), (154, 7759),

Gene: BeeGee\_13 Start: 8263, Stop: 8649, Start Num: 21

Candidate Starts for BeeGee\_13:

(3, 8182), (Start: 21 @8263 has 19 MA's),

Gene: Beethoven\_14 Start: 10371, Stop: 10784, Start Num: 20

Candidate Starts for Beethoven\_14:

(Start: 20 @10371 has 106 MA's), (71, 10506), (76, 10521), (90, 10566), (95, 10608), (141, 10725),

Gene: Bennie\_10 Start: 7516, Stop: 7926, Start Num: 20

Candidate Starts for Bennie\_10:

(Start: 20 @7516 has 106 MA's), (71, 7648), (76, 7663), (90, 7708), (91, 7711), (95, 7750), (141, 7867),

Gene: Berrie\_12 Start: 9020, Stop: 9430, Start Num: 13

Candidate Starts for Berrie\_12:

(Start: 13 @9020 has 41 MA's), (48, 9107), (92, 9239), (133, 9350), (140, 9383),

Gene: BigMack\_10 Start: 7516, Stop: 7926, Start Num: 20

Candidate Starts for BigMack\_10:

(Start: 20 @7516 has 106 MA's), (71, 7648), (76, 7663), (90, 7708), (95, 7750), (141, 7867),

Gene: Birdsong\_12 Start: 7390, Stop: 7773, Start Num: 14

Candidate Starts for Birdsong\_12:

(Start: 14 @7390 has 10 MA's), (41, 7444), (44, 7450), (49, 7462), (58, 7486), (122, 7669), (154, 7759),

Gene: Blarby\_14 Start: 7737, Stop: 8141, Start Num: 29

Candidate Starts for Blarby\_14:

(Start: 29 @7737 has 7 MA's), (39, 7770), (65, 7830), (84, 7896), (121, 8016), (126, 8028), (137, 8064), (145, 8094),

Gene: Bodacious\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for Bodacious\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Bradissa\_13 Start: 8267, Stop: 8653, Start Num: 21

Candidate Starts for Bradissa\_13:

(Start: 21 @8267 has 19 MA's), (45, 8324),

Gene: BrayBeast\_11 Start: 7602, Stop: 7979, Start Num: 34

Candidate Starts for BrayBeast\_11:

(Start: 34 @7602 has 8 MA's), (56, 7659), (73, 7716), (82, 7743), (89, 7764), (91, 7770), (122, 7872), (135, 7908), (143, 7941),

Gene: BritBrat\_13 Start: 8269, Stop: 8655, Start Num: 21

Candidate Starts for BritBrat\_13:

(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: BrotherBLo\_14 Start: 10378, Stop: 10791, Start Num: 20

Candidate Starts for BrotherBLo\_14:

(Start: 20 @10378 has 106 MA's), (71, 10513), (76, 10528), (90, 10573), (95, 10615), (141, 10732),

Gene: Brynnie\_12 Start: 8457, Stop: 8900, Start Num: 20

Candidate Starts for Brynnie\_12:

(Start: 20 @8457 has 106 MA's), (36, 8499), (57, 8553), (72, 8607), (73, 8610), (85, 8649), (93, 8703), (111, 8742), (117, 8769), (128, 8793), (131, 8799),

Gene: Budski\_12 Start: 7046, Stop: 7438, Start Num: 20

Candidate Starts for Budski\_12:

(1, 6917), (2, 6962), (4, 6968), (6, 6974), (7, 6992), (9, 7010), (Start: 20 @7046 has 106 MA's), (32, 7073), (50, 7118), (53, 7124), (57, 7136), (69, 7160), (80, 7199), (83, 7205), (89, 7220), (91, 7226), (102, 7277), (108, 7289), (128, 7343),

Gene: CallieOMalley\_14 Start: 10411, Stop: 10824, Start Num: 20

Candidate Starts for CallieOMalley\_14:

(Start: 20 @10411 has 106 MA's), (39, 10456), (76, 10558), (141, 10762),

Gene: CallinAllBarbz\_11 Start: 6799, Stop: 7188, Start Num: 30

Candidate Starts for CallinAllBarbz\_11:

(Start: 30 @6799 has 3 MA's), (31, 6802), (88, 6961), (112, 7042), (120, 7069),

Gene: Canowicakte\_14 Start: 10446, Stop: 10859, Start Num: 20

Candidate Starts for Canowicakte\_14:

(Start: 20 @10446 has 106 MA's), (39, 10491), (76, 10593), (106, 10701), (141, 10797),

Gene: Caron\_10 Start: 8244, Stop: 8660, Start Num: 15

Candidate Starts for Caron\_10:

(Start: 15 @8244 has 6 MA's), (94, 8484),

Gene: Carpal\_14 Start: 10378, Stop: 10791, Start Num: 20

Candidate Starts for Carpal\_14:

(Start: 20 @10378 has 106 MA's), (71, 10513), (76, 10528), (90, 10573), (95, 10615), (141, 10732),

Gene: Cashline\_13 Start: 8116, Stop: 8508, Start Num: 21

Candidate Starts for Cashline\_13:

(3, 8035), (Start: 21 @8116 has 19 MA's),

Gene: Cassia\_12 Start: 9139, Stop: 9552, Start Num: 13



Candidate Starts for Cassia\_12:

(Start: 13 @9139 has 41 MA's), (48, 9226), (89, 9346), (92, 9358), (133, 9469), (140, 9502),

Gene: Cen1621\_10 Start: 7355, Stop: 7771, Start Num: 13

Candidate Starts for Cen1621\_10:

(Start: 13 @7355 has 41 MA's), (140, 7724), (148, 7745),

Gene: Che9d\_13 Start: 7222, Stop: 7626, Start Num: 29

Candidate Starts for Che9d\_13:

(Start: 29 @7222 has 7 MA's), (39, 7255), (65, 7315), (84, 7381), (121, 7501), (126, 7513), (137, 7549), (145, 7579),

Gene: CheeseTouch\_12 Start: 7046, Stop: 7438, Start Num: 20

Candidate Starts for CheeseTouch\_12:

(1, 6917), (2, 6962), (4, 6968), (6, 6974), (7, 6992), (9, 7010), (Start: 20 @7046 has 106 MA's), (32, 7073), (50, 7118), (53, 7124), (57, 7136), (69, 7160), (80, 7199), (83, 7205), (89, 7220), (91, 7226), (102, 7277), (108, 7289), (128, 7343),

Gene: ChewChew\_10 Start: 7513, Stop: 7923, Start Num: 20

Candidate Starts for ChewChew\_10:

(Start: 20 @7513 has 106 MA's), (62, 7606), (71, 7645), (76, 7660), (90, 7705), (95, 7747), (106, 7768), (141, 7864),

Gene: Chickaboom\_11 Start: 8002, Stop: 8445, Start Num: 20

Candidate Starts for Chickaboom\_11:

(Start: 20 @8002 has 106 MA's), (36, 8044), (43, 8062), (57, 8098), (72, 8152), (73, 8155), (85, 8194), (93, 8248), (111, 8287), (117, 8314), (128, 8338), (131, 8344),

Gene: Cholula\_14 Start: 10423, Stop: 10836, Start Num: 20

Candidate Starts for Cholula\_14:

(Start: 20 @10423 has 106 MA's), (71, 10558), (76, 10573), (90, 10618), (95, 10660), (141, 10777),

Gene: Chridison\_10 Start: 7546, Stop: 7983, Start Num: 18

Candidate Starts for Chridison\_10:

(Start: 18 @7546 has 10 MA's), (Start: 20 @7552 has 106 MA's), (31, 7573), (61, 7645), (79, 7714), (82, 7723), (90, 7747), (141, 7906),

Gene: Christian\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for Christian\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Community\_13 Start: 10099, Stop: 10509, Start Num: 13

Candidate Starts for Community\_13:

(Start: 13 @10099 has 41 MA's), (33, 10144), (92, 10318), (133, 10429), (140, 10462),

Gene: Confidence\_13 Start: 8263, Stop: 8649, Start Num: 21

Candidate Starts for Confidence\_13:

(3, 8182), (Start: 21 @8263 has 19 MA's), (36, 8299), (45, 8320),

Gene: Coral\_12 Start: 8336, Stop: 8779, Start Num: 20

Candidate Starts for Coral\_12:

(Start: 20 @8336 has 106 MA's), (55, 8426), (57, 8432), (72, 8486), (73, 8489), (85, 8528), (117, 8648), (128, 8672), (149, 8744), (153, 8750),

Gene: Cote\_13 Start: 8497, Stop: 8940, Start Num: 20

Candidate Starts for Cote\_13:

(Start: 20 @8497 has 106 MA's), (55, 8587), (57, 8593), (72, 8647), (73, 8650), (85, 8689), (117, 8809), (128, 8833), (149, 8905), (153, 8911),

Gene: Crater\_12 Start: 7390, Stop: 7773, Start Num: 14

Candidate Starts for Crater\_12:

(Start: 14 @7390 has 10 MA's), (41, 7444), (44, 7450), (49, 7462), (58, 7486), (122, 7669), (154, 7759),

Gene: Crewmate\_13 Start: 9485, Stop: 9898, Start Num: 13

Candidate Starts for Crewmate\_13:

(Start: 13 @9485 has 41 MA's), (40, 9554), (92, 9704), (133, 9815), (140, 9848),

Gene: CristinaYang\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for CristinaYang\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Cyan\_12 Start: 9040, Stop: 9453, Start Num: 13

Candidate Starts for Cyan\_12:

(Start: 13 @9040 has 41 MA's), (40, 9109), (92, 9259), (133, 9370), (140, 9403),

Gene: DS6A\_15 Start: 10364, Stop: 10735, Start Num: 28

Candidate Starts for DS6A\_15:

(Start: 28 @10364 has 4 MA's), (53, 10427), (57, 10439), (70, 10466), (84, 10511), (90, 10532), (102, 10586), (110, 10601), (119, 10628), (127, 10643), (135, 10664), (139, 10688),

Gene: Daiboju\_10 Start: 7547, Stop: 7984, Start Num: 18

Candidate Starts for Daiboju\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (37, 7592), (38, 7595), (71, 7688), (76, 7703), (79, 7715), (82, 7724), (84, 7727), (90, 7748), (141, 7907),

Gene: Daob\_13 Start: 8500, Stop: 8943, Start Num: 20

Candidate Starts for Daob\_13:

(Start: 20 @8500 has 106 MA's), (55, 8590), (57, 8596), (72, 8650), (73, 8653), (85, 8692), (117, 8812), (128, 8836), (149, 8908), (153, 8914),

Gene: Demsculpinboyz\_13 Start: 7213, Stop: 7617, Start Num: 29

Candidate Starts for Demsculpinboyz\_13:

(Start: 29 @7213 has 7 MA's), (39, 7246), (65, 7306), (84, 7372), (121, 7492), (126, 7504), (137, 7540), (145, 7570),

Gene: Dino\_14 Start: 10377, Stop: 10790, Start Num: 20

Candidate Starts for Dino\_14:

(Start: 20 @10377 has 106 MA's), (71, 10512), (76, 10527), (90, 10572), (95, 10614), (141, 10731),

Gene: DrManhattan\_12 Start: 9014, Stop: 9430, Start Num: 12

Candidate Starts for DrManhattan\_12:

(Start: 12 @9014 has 9 MA's), (91, 9230),

Gene: DrRobert\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for DrRobert\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: DrSierra\_12 Start: 9047, Stop: 9463, Start Num: 12

Candidate Starts for DrSierra\_12:

(Start: 12 @9047 has 9 MA's), (53, 9143), (71, 9200), (91, 9263),

Gene: DreamTeam\_10 Start: 7581, Stop: 7991, Start Num: 20

Candidate Starts for DreamTeam\_10:

(Start: 20 @7581 has 106 MA's), (71, 7713), (76, 7728), (90, 7773), (91, 7776), (141, 7932),

Gene: EMSquaredA\_13 Start: 8269, Stop: 8655, Start Num: 21

Candidate Starts for EMSquaredA\_13:

(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: Ecliptus\_12 Start: 7118, Stop: 7501, Start Num: 14

Candidate Starts for Ecliptus\_12:

(Start: 14 @7118 has 10 MA's), (25, 7133), (41, 7172), (44, 7178), (49, 7190), (58, 7214), (122, 7397), (154, 7487),

Gene: Eesa\_12 Start: 8495, Stop: 8935, Start Num: 20

Candidate Starts for Eesa\_12:

(Start: 15 @8483 has 6 MA's), (Start: 20 @8495 has 106 MA's), (55, 8585), (57, 8591), (66, 8627), (72, 8645), (73, 8648), (85, 8687), (111, 8780), (117, 8807), (128, 8831), (138, 8867), (149, 8903),

Gene: Elezi\_12 Start: 9019, Stop: 9429, Start Num: 13

Candidate Starts for Elezi\_12:

(Start: 13 @9019 has 41 MA's), (40, 9088), (89, 9226), (92, 9238), (133, 9349), (140, 9382),

Gene: Emotion\_11 Start: 7354, Stop: 7758, Start Num: 18

Candidate Starts for Emotion\_11:

(Start: 18 @7354 has 10 MA's), (89, 7555),

Gene: EnalisNailo\_13 Start: 8269, Stop: 8655, Start Num: 21

Candidate Starts for EnalisNailo\_13:

(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: Eraser\_12 Start: 9019, Stop: 9429, Start Num: 13

Candidate Starts for Eraser\_12:

(Start: 13 @9019 has 41 MA's), (40, 9088), (89, 9226), (92, 9238), (133, 9349), (140, 9382),

Gene: EstebanJulior\_10 Start: 7558, Stop: 7971, Start Num: 20

Candidate Starts for EstebanJulior\_10:

(Start: 20 @7558 has 106 MA's), (48, 7621), (76, 7705), (90, 7750), (91, 7753), (95, 7792), (124, 7852), (141, 7909),

Gene: Eunoia\_10 Start: 7551, Stop: 7982, Start Num: 20

Candidate Starts for Eunoia\_10:

(Start: 18 @7545 has 10 MA's), (Start: 20 @7551 has 106 MA's), (31, 7572), (61, 7644), (76, 7701), (79, 7713), (82, 7722), (90, 7746), (141, 7905),

Gene: EvenBluerMoon\_14 Start: 8744, Stop: 9133, Start Num: 34  
Candidate Starts for EvenBluerMoon\_14:  
(Start: 34 @8744 has 8 MA's), (82, 8891), (95, 8957), (101, 8969),

Gene: Exile\_11 Start: 8927, Stop: 9337, Start Num: 15  
Candidate Starts for Exile\_11:  
(Start: 15 @8927 has 6 MA's), (140, 9290),

Gene: Floof\_11 Start: 7791, Stop: 8213, Start Num: 13  
Candidate Starts for Floof\_11:  
(Start: 13 @7791 has 41 MA's), (55, 7884), (57, 7890), (63, 7905), (89, 7995), (94, 8034), (102, 8052),  
(144, 8163),

Gene: Floral\_13 Start: 8269, Stop: 8655, Start Num: 21  
Candidate Starts for Floral\_13:  
(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: Fluke\_14 Start: 10419, Stop: 10832, Start Num: 20  
Candidate Starts for Fluke\_14:  
(Start: 20 @10419 has 106 MA's), (71, 10554), (90, 10614), (95, 10656), (141, 10773),

Gene: Frickyeah\_12 Start: 7041, Stop: 7451, Start Num: 20  
Candidate Starts for Frickyeah\_12:  
(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (Start: 20 @7041 has 106 MA's), (32, 7068), (50,  
7113), (53, 7119), (69, 7173), (80, 7212), (83, 7218), (91, 7239), (102, 7290), (108, 7302),

Gene: Gaia\_9 Start: 7642, Stop: 8013, Start Num: 28  
Candidate Starts for Gaia\_9:  
(Start: 28 @7642 has 4 MA's), (67, 7738), (74, 7759), (81, 7786), (83, 7789), (85, 7792), (89, 7807),  
(102, 7864), (108, 7876), (125, 7921), (142, 7981), (146, 7987), (150, 7993),

Gene: Galaxy\_12 Start: 8328, Stop: 8771, Start Num: 20  
Candidate Starts for Galaxy\_12:  
(Start: 20 @8328 has 106 MA's), (57, 8424), (72, 8478), (73, 8481), (82, 8514), (111, 8613), (117,  
8640), (128, 8664), (131, 8670), (134, 8679),

Gene: GardenState\_11 Start: 8458, Stop: 8877, Start Num: 13  
Candidate Starts for GardenState\_11:  
(Start: 13 @8458 has 41 MA's), (55, 8551), (57, 8557), (89, 8662), (94, 8701),

Gene: Getalong\_12 Start: 7041, Stop: 7433, Start Num: 20  
Candidate Starts for Getalong\_12:  
(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (Start: 20 @7041 has 106 MA's), (32, 7068), (47,  
7107), (50, 7113), (53, 7119), (57, 7131), (69, 7155), (80, 7194), (83, 7200), (88, 7212), (91, 7221),  
(102, 7272), (108, 7284),

Gene: Gisselle\_10 Start: 7581, Stop: 7991, Start Num: 20  
Candidate Starts for Gisselle\_10:  
(Start: 20 @7581 has 106 MA's), (71, 7713), (76, 7728), (90, 7773), (91, 7776), (141, 7932),

Gene: Glenn\_14 Start: 10429, Stop: 10842, Start Num: 20  
Candidate Starts for Glenn\_14:

(Start: 20 @10429 has 106 MA's), (71, 10564), (76, 10579), (90, 10624), (95, 10666), (141, 10783),

Gene: GreenHearts\_14 Start: 10522, Stop: 10932, Start Num: 24

Candidate Starts for GreenHearts\_14:

(Start: 24 @10522 has 10 MA's), (60, 10606), (76, 10666), (78, 10675), (79, 10678), (89, 10708), (91, 10714), (94, 10747), (141, 10870), (149, 10894),

Gene: Greenhouse\_14 Start: 10447, Stop: 10857, Start Num: 24

Candidate Starts for Greenhouse\_14:

(Start: 24 @10447 has 10 MA's), (76, 10591), (78, 10600), (79, 10603), (89, 10633), (91, 10639), (94, 10672), (141, 10795), (149, 10819),

Gene: Gretchen\_11 Start: 9337, Stop: 9759, Start Num: 13

Candidate Starts for Gretchen\_11:

(Start: 13 @9337 has 41 MA's), (55, 9430), (57, 9436), (63, 9451), (89, 9541), (94, 9580), (102, 9598), (144, 9709),

Gene: Halsey\_15 Start: 8547, Stop: 8966, Start Num: 12

Candidate Starts for Halsey\_15:

(Start: 12 @8547 has 9 MA's), (32, 8589), (128, 8871),

Gene: HannahPhantana\_13 Start: 8500, Stop: 8943, Start Num: 20

Candidate Starts for HannahPhantana\_13:

(Start: 20 @8500 has 106 MA's), (55, 8590), (57, 8596), (72, 8650), (73, 8653), (85, 8692), (117, 8812), (128, 8836), (149, 8908), (153, 8914),

Gene: HeadNerd\_10 Start: 7516, Stop: 7926, Start Num: 20

Candidate Starts for HeadNerd\_10:

(Start: 20 @7516 has 106 MA's), (71, 7648), (76, 7663), (90, 7708), (91, 7711), (95, 7750), (141, 7867),

Gene: Herb\_10 Start: 7547, Stop: 7984, Start Num: 18

Candidate Starts for Herb\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (37, 7592), (38, 7595), (71, 7688), (76, 7703), (79, 7715), (82, 7724), (84, 7727), (90, 7748), (141, 7907),

Gene: Holliday\_12 Start: 7046, Stop: 7438, Start Num: 20

Candidate Starts for Holliday\_12:

(1, 6917), (2, 6962), (4, 6968), (6, 6974), (7, 6992), (9, 7010), (Start: 20 @7046 has 106 MA's), (32, 7073), (50, 7118), (53, 7124), (57, 7136), (69, 7160), (80, 7199), (83, 7205), (89, 7220), (91, 7226), (102, 7277), (108, 7289), (128, 7343),

Gene: Honk\_10 Start: 7323, Stop: 7739, Start Num: 13

Candidate Starts for Honk\_10:

(Start: 13 @7323 has 41 MA's), (53, 7416), (71, 7473), (140, 7692),

Gene: Horus\_12 Start: 7041, Stop: 7451, Start Num: 20

Candidate Starts for Horus\_12:

(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (Start: 20 @7041 has 106 MA's), (32, 7068), (50, 7113), (53, 7119), (69, 7173), (80, 7212), (83, 7218), (91, 7239), (102, 7290), (108, 7302),

Gene: Huckleberry\_10 Start: 7516, Stop: 7926, Start Num: 20

Candidate Starts for Huckleberry\_10:

(Start: 20 @7516 has 106 MA's), (71, 7648), (76, 7663), (90, 7708), (91, 7711), (95, 7750), (141, 7867),

Gene: HunterDalle\_10 Start: 7551, Stop: 7982, Start Num: 20

Candidate Starts for HunterDalle\_10:

(Start: 18 @7545 has 10 MA's), (Start: 20 @7551 has 106 MA's), (31, 7572), (61, 7644), (79, 7713), (82, 7722), (90, 7746), (141, 7905),

Gene: Huntingdon\_14 Start: 10433, Stop: 10843, Start Num: 24

Candidate Starts for Huntingdon\_14:

(Start: 24 @10433 has 10 MA's), (76, 10577), (78, 10586), (79, 10589), (89, 10619), (91, 10625), (94, 10658), (141, 10781), (149, 10805),

Gene: IAmGroot\_11 Start: 9102, Stop: 9521, Start Num: 13

Candidate Starts for IAmGroot\_11:

(Start: 13 @9102 has 41 MA's), (55, 9195), (57, 9201), (89, 9306), (94, 9345),

Gene: Immaculata\_14 Start: 10423, Stop: 10836, Start Num: 20

Candidate Starts for Immaculata\_14:

(Start: 20 @10423 has 106 MA's), (71, 10558), (76, 10573), (90, 10618), (95, 10660), (141, 10777),

Gene: Iter\_12 Start: 9053, Stop: 9463, Start Num: 13

Candidate Starts for Iter\_12:

(Start: 13 @9053 has 41 MA's), (40, 9122), (92, 9272), (133, 9383), (140, 9416),

Gene: IttyBittyPiggy\_12 Start: 9041, Stop: 9454, Start Num: 13

Candidate Starts for IttyBittyPiggy\_12:

(Start: 13 @9041 has 41 MA's), (40, 9110), (133, 9371), (140, 9404),

Gene: Jabbawokkie\_14 Start: 7736, Stop: 8140, Start Num: 29

Candidate Starts for Jabbawokkie\_14:

(Start: 29 @7736 has 7 MA's), (39, 7769), (65, 7829), (84, 7895), (121, 8015), (126, 8027), (137, 8063), (145, 8093),

Gene: Jablanski\_13 Start: 8116, Stop: 8502, Start Num: 21

Candidate Starts for Jablanski\_13:

(3, 8035), (Start: 21 @8116 has 19 MA's), (36, 8152), (45, 8173),

Gene: Jamun\_12 Start: 8669, Stop: 9112, Start Num: 20

Candidate Starts for Jamun\_12:

(Start: 20 @8669 has 106 MA's), (36, 8711), (43, 8729), (57, 8765), (72, 8819), (73, 8822), (85, 8861), (93, 8915), (111, 8954), (117, 8981), (128, 9005), (131, 9011),

Gene: Janeemi\_13 Start: 10130, Stop: 10543, Start Num: 13

Candidate Starts for Janeemi\_13:

(Start: 13 @10130 has 41 MA's), (33, 10175), (89, 10337), (92, 10349), (133, 10460), (140, 10493),

Gene: JanetJ\_12 Start: 8526, Stop: 8915, Start Num: 34

Candidate Starts for JanetJ\_12:

(Start: 34 @8526 has 8 MA's), (89, 8694), (95, 8739), (101, 8751), (131, 8823), (143, 8871),

Gene: JasmineDragon\_11 Start: 7286, Stop: 7681, Start Num: 16

Candidate Starts for JasmineDragon\_11:

(Start: 16 @7286 has 2 MA's), (89, 7478),

Gene: Joann\_14 Start: 10425, Stop: 10835, Start Num: 24

Candidate Starts for Joann\_14:

(Start: 24 @10425 has 10 MA's), (76, 10569), (78, 10578), (79, 10581), (89, 10611), (91, 10617), (94, 10650), (141, 10773), (149, 10797),

Gene: Joemato\_13 Start: 9040, Stop: 9453, Start Num: 13

Candidate Starts for Joemato\_13:

(Start: 13 @9040 has 41 MA's), (40, 9109), (92, 9259), (133, 9370), (140, 9403),

Gene: JohnDoe\_12 Start: 9038, Stop: 9451, Start Num: 13

Candidate Starts for JohnDoe\_12:

(Start: 13 @9038 has 41 MA's), (40, 9107), (92, 9257), (133, 9368), (140, 9401),

Gene: Jstan\_12 Start: 9019, Stop: 9429, Start Num: 13

Candidate Starts for Jstan\_12:

(Start: 13 @9019 has 41 MA's), (40, 9088), (89, 9226), (92, 9238), (133, 9349), (140, 9382),

Gene: Jumboset\_14 Start: 10372, Stop: 10785, Start Num: 20

Candidate Starts for Jumboset\_14:

(Start: 20 @10372 has 106 MA's), (71, 10507), (76, 10522), (90, 10567), (95, 10609), (141, 10726),

Gene: JuneStar\_12 Start: 9135, Stop: 9548, Start Num: 13

Candidate Starts for JuneStar\_12:

(Start: 13 @9135 has 41 MA's), (133, 9465), (140, 9498),

Gene: Juno112\_11 Start: 7903, Stop: 8343, Start Num: 20

Candidate Starts for Juno112\_11:

(Start: 20 @7903 has 106 MA's), (39, 7954), (73, 8056), (74, 8059), (85, 8095), (86, 8101), (91, 8116), (111, 8188), (117, 8215), (149, 8314), (153, 8320), (155, 8332),

Gene: KHumphrey\_11 Start: 7902, Stop: 8342, Start Num: 20

Candidate Starts for KHumphrey\_11:

(Start: 20 @7902 has 106 MA's), (39, 7953), (73, 8055), (74, 8058), (85, 8094), (86, 8100), (91, 8115), (111, 8187), (117, 8214), (149, 8313), (153, 8319), (155, 8331),

Gene: Kalizoi\_14 Start: 10371, Stop: 10784, Start Num: 20

Candidate Starts for Kalizoi\_14:

(Start: 20 @10371 has 106 MA's), (71, 10506), (76, 10521), (90, 10566), (95, 10608), (141, 10725),

Gene: Kamaru\_12 Start: 7046, Stop: 7438, Start Num: 20

Candidate Starts for Kamaru\_12:

(1, 6917), (2, 6962), (4, 6968), (6, 6974), (7, 6992), (9, 7010), (Start: 20 @7046 has 106 MA's), (32, 7073), (50, 7118), (53, 7124), (57, 7136), (69, 7160), (80, 7199), (83, 7205), (89, 7220), (91, 7226), (102, 7277), (108, 7289), (128, 7343),

Gene: Kaylissa\_12 Start: 9041, Stop: 9454, Start Num: 13

Candidate Starts for Kaylissa\_12:

(Start: 13 @9041 has 41 MA's), (40, 9110), (92, 9260), (133, 9371), (140, 9404),

Gene: KeAlii\_12 Start: 9073, Stop: 9474, Start Num: 17

Candidate Starts for KeAlii\_12:

(Start: 17 @9073 has 2 MA's), (Start: 20 @9079 has 106 MA's), (92, 9280), (110, 9340), (140, 9424),

Gene: Kenna\_12 Start: 7041, Stop: 7451, Start Num: 20

Candidate Starts for Kenna\_12:

(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (9, 7005), (Start: 20 @7041 has 106 MA's), (32, 7068), (50, 7113), (53, 7119), (69, 7173), (80, 7212), (83, 7218), (91, 7239), (102, 7290), (108, 7302),

Gene: Kepler\_12 Start: 8335, Stop: 8778, Start Num: 20

Candidate Starts for Kepler\_12:

(Start: 20 @8335 has 106 MA's), (55, 8425), (57, 8431), (72, 8485), (73, 8488), (85, 8527), (117, 8647), (128, 8671), (149, 8743), (153, 8749),

Gene: KingBob\_10 Start: 7547, Stop: 7984, Start Num: 18

Candidate Starts for KingBob\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (37, 7592), (38, 7595), (71, 7688), (76, 7703), (79, 7715), (82, 7724), (84, 7727), (90, 7748), (141, 7907),

Gene: Kittykat\_10 Start: 7557, Stop: 7967, Start Num: 20

Candidate Starts for Kittykat\_10:

(Start: 20 @7557 has 106 MA's), (71, 7689), (76, 7704), (90, 7749), (91, 7752), (141, 7908),

Gene: Korra\_14 Start: 10377, Stop: 10790, Start Num: 20

Candidate Starts for Korra\_14:

(Start: 20 @10377 has 106 MA's), (71, 10512), (76, 10527), (90, 10572), (95, 10614), (141, 10731),

Gene: Kromp\_13 Start: 9303, Stop: 9734, Start Num: 21

Candidate Starts for Kromp\_13:

(Start: 21 @9303 has 19 MA's), (66, 9426), (71, 9441), (73, 9447), (79, 9471), (87, 9495), (129, 9627), (146, 9687), (147, 9693), (148, 9696), (151, 9702),

Gene: Kuleana\_12 Start: 8295, Stop: 8735, Start Num: 20

Candidate Starts for Kuleana\_12:

(Start: 20 @8295 has 106 MA's), (55, 8385), (57, 8391), (62, 8403), (73, 8448), (85, 8487), (91, 8508), (109, 8577), (111, 8580), (117, 8607), (122, 8616), (128, 8631), (149, 8703), (153, 8709),

Gene: Kumotta\_12 Start: 8443, Stop: 8820, Start Num: 34

Candidate Starts for Kumotta\_12:

(Start: 34 @8443 has 8 MA's), (82, 8584), (89, 8605), (91, 8611), (95, 8650), (118, 8707), (122, 8713), (135, 8749), (143, 8782),

Gene: Kuwabara\_12 Start: 7390, Stop: 7773, Start Num: 14

Candidate Starts for Kuwabara\_12:

(Start: 14 @7390 has 10 MA's), (41, 7444), (44, 7450), (49, 7462), (58, 7486), (122, 7669), (154, 7759),

Gene: Lakshmi\_14 Start: 10452, Stop: 10862, Start Num: 24

Candidate Starts for Lakshmi\_14:

(Start: 24 @10452 has 10 MA's), (76, 10596), (78, 10605), (79, 10608), (89, 10638), (91, 10644), (94, 10677), (141, 10800), (149, 10824),

Gene: Lasagna\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for Lasagna\_10:



(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Lego\_12 Start: 9039, Stop: 9452, Start Num: 13

Candidate Starts for Lego\_12:

(Start: 13 @9039 has 41 MA's), (40, 9108), (92, 9258), (133, 9369), (140, 9402),

Gene: Lennox\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for Lennox\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Leona\_11 Start: 7953, Stop: 8393, Start Num: 20

Candidate Starts for Leona\_11:

(Start: 20 @7953 has 106 MA's), (73, 8106), (74, 8109), (85, 8145), (86, 8151), (91, 8166), (111, 8238), (117, 8265), (149, 8364), (153, 8370), (155, 8382),

Gene: Leroy\_12 Start: 7042, Stop: 7452, Start Num: 20

Candidate Starts for Leroy\_12:

(1, 6913), (2, 6958), (4, 6964), (6, 6970), (7, 6988), (Start: 20 @7042 has 106 MA's), (32, 7069), (50, 7114), (53, 7120), (69, 7174), (80, 7213), (83, 7219), (91, 7240), (102, 7291), (108, 7303),

Gene: Liebe\_11 Start: 7496, Stop: 7915, Start Num: 13

Candidate Starts for Liebe\_11:

(Start: 13 @7496 has 41 MA's), (22, 7514), (55, 7601), (91, 7715), (140, 7865),

Gene: LilSpotty\_11 Start: 7105, Stop: 7479, Start Num: 28

Candidate Starts for LilSpotty\_11:

(Start: 27 @7102 has 1 MA's), (Start: 28 @7105 has 4 MA's), (74, 7219), (75, 7222), (102, 7330), (108, 7342), (110, 7345), (125, 7384), (152, 7459),

Gene: LilStuart\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for LilStuart\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Lilas\_13 Start: 8269, Stop: 8655, Start Num: 21

Candidate Starts for Lilas\_13:

(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: LitninMcQueen\_12 Start: 7046, Stop: 7438, Start Num: 20

Candidate Starts for LitninMcQueen\_12:

(1, 6917), (2, 6962), (4, 6968), (6, 6974), (7, 6992), (9, 7010), (Start: 20 @7046 has 106 MA's), (32, 7073), (50, 7118), (53, 7124), (57, 7136), (69, 7160), (80, 7199), (83, 7205), (89, 7220), (91, 7226), (102, 7277), (108, 7289), (128, 7343),

Gene: Litotes\_14 Start: 10399, Stop: 10809, Start Num: 20

Candidate Starts for Litotes\_14:

(Start: 20 @10399 has 106 MA's), (39, 10441), (76, 10543), (141, 10747),

Gene: LittleTokyo\_12 Start: 8235, Stop: 8678, Start Num: 20

Candidate Starts for LittleTokyo\_12:

(Start: 15 @8223 has 6 MA's), (Start: 16 @8226 has 2 MA's), (Start: 20 @8235 has 106 MA's), (91, 8448), (98, 8496), (103, 8505), (104, 8508), (111, 8520), (128, 8571), (132, 8580), (149, 8646), (155, 8664),

Gene: Lizalica\_12 Start: 9025, Stop: 9438, Start Num: 13

Candidate Starts for Lizalica\_12:

(Start: 13 @9025 has 41 MA's), (40, 9094), (92, 9244), (133, 9355), (140, 9388),

Gene: London\_12 Start: 9019, Stop: 9429, Start Num: 13

Candidate Starts for London\_12:

(Start: 13 @9019 has 41 MA's), (40, 9088), (89, 9226), (92, 9238), (133, 9349), (140, 9382),

Gene: LonelyBoi\_13 Start: 8116, Stop: 8502, Start Num: 21

Candidate Starts for LonelyBoi\_13:

(3, 8035), (Start: 21 @8116 has 19 MA's), (45, 8173),

Gene: Lucky10\_11 Start: 6599, Stop: 6982, Start Num: 14

Candidate Starts for Lucky10\_11:

(Start: 14 @6599 has 10 MA's), (41, 6653), (44, 6659), (49, 6671), (58, 6695), (77, 6755),

Gene: Lucy\_10 Start: 7505, Stop: 7915, Start Num: 20

Candidate Starts for Lucy\_10:

(Start: 20 @7505 has 106 MA's), (62, 7598), (71, 7637), (76, 7652), (90, 7697), (95, 7739), (106, 7760), (141, 7856),

Gene: Lunar\_13 Start: 8497, Stop: 8940, Start Num: 20

Candidate Starts for Lunar\_13:

(Start: 20 @8497 has 106 MA's), (55, 8587), (57, 8593), (72, 8647), (73, 8650), (85, 8689), (117, 8809), (128, 8833), (149, 8905), (153, 8911),

Gene: Lutum\_12 Start: 7041, Stop: 7451, Start Num: 20

Candidate Starts for Lutum\_12:

(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (9, 7005), (Start: 20 @7041 has 106 MA's), (32, 7068), (50, 7113), (53, 7119), (69, 7173), (80, 7212), (83, 7218), (91, 7239), (102, 7290), (108, 7302),

Gene: MaGuCo\_11 Start: 7435, Stop: 7851, Start Num: 15

Candidate Starts for MaGuCo\_11:

(Start: 15 @7435 has 6 MA's), (19, 7444), (22, 7450), (32, 7474), (55, 7537), (91, 7651), (140, 7801),

Gene: Mabodamaca\_11 Start: 8555, Stop: 8968, Start Num: 15

Candidate Starts for Mabodamaca\_11:

(Start: 15 @8555 has 6 MA's), (71, 8696),

Gene: Maja\_11 Start: 8064, Stop: 8444, Start Num: 34

Candidate Starts for Maja\_11:

(Start: 34 @8064 has 8 MA's), (52, 8112), (64, 8142), (82, 8208), (89, 8229), (91, 8235), (122, 8337), (135, 8373), (143, 8406),

Gene: Makoto\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for Makoto\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Malisha\_12 Start: 8091, Stop: 8501, Start Num: 20

Candidate Starts for Malisha\_12:

(2, 8007), (4, 8013), (Start: 20 @8091 has 106 MA's), (53, 8169), (57, 8181), (69, 8223), (80, 8262), (83, 8268), (89, 8283), (91, 8289), (96, 8328), (108, 8352), (128, 8406),

Gene: MamaPearl\_10 Start: 7558, Stop: 7971, Start Num: 20

Candidate Starts for MamaPearl\_10:

(Start: 20 @7558 has 106 MA's), (48, 7621), (76, 7705), (90, 7750), (91, 7753), (95, 7792), (124, 7852), (141, 7909),

Gene: MargaretKali\_12 Start: 8078, Stop: 8455, Start Num: 34

Candidate Starts for MargaretKali\_12:

(Start: 34 @8078 has 8 MA's), (56, 8135), (82, 8219), (89, 8240), (91, 8246), (95, 8285), (118, 8342), (122, 8348), (135, 8384), (143, 8417),

Gene: Maria1952\_10 Start: 7547, Stop: 7984, Start Num: 18

Candidate Starts for Maria1952\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (37, 7592), (38, 7595), (71, 7688), (76, 7703), (79, 7715), (82, 7724), (84, 7727), (90, 7748), (141, 7907),

Gene: Marteena\_13 Start: 8269, Stop: 8655, Start Num: 21

Candidate Starts for Marteena\_13:

(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: Maureen\_11 Start: 7496, Stop: 7915, Start Num: 13

Candidate Starts for Maureen\_11:

(Start: 13 @7496 has 41 MA's), (22, 7514), (55, 7601), (91, 7715), (140, 7865),

Gene: MeganNoll\_14 Start: 10429, Stop: 10842, Start Num: 20

Candidate Starts for MeganNoll\_14:

(Start: 20 @10429 has 106 MA's), (71, 10564), (76, 10579), (84, 10603), (90, 10624), (95, 10666), (141, 10783),

Gene: Melons\_13 Start: 8497, Stop: 8940, Start Num: 20

Candidate Starts for Melons\_13:

(Start: 20 @8497 has 106 MA's), (55, 8587), (57, 8593), (72, 8647), (73, 8650), (85, 8689), (117, 8809), (128, 8833), (149, 8905), (153, 8911),

Gene: MiniMommy\_10 Start: 7286, Stop: 7681, Start Num: 16

Candidate Starts for MiniMommy\_10:

(Start: 16 @7286 has 2 MA's), (89, 7478),

Gene: Misaeng\_14 Start: 10498, Stop: 10908, Start Num: 24

Candidate Starts for Misaeng\_14:

(Start: 24 @10498 has 10 MA's), (76, 10642), (78, 10651), (79, 10654), (89, 10684), (91, 10690), (94, 10723), (141, 10846), (149, 10870),

Gene: MissSwiss\_12 Start: 9018, Stop: 9434, Start Num: 12

Candidate Starts for MissSwiss\_12:

(Start: 12 @9018 has 9 MA's), (35, 9066), (91, 9234),

Gene: Moki\_10 Start: 7516, Stop: 7926, Start Num: 20

Candidate Starts for Moki\_10:

(Start: 20 @7516 has 106 MA's), (71, 7648), (76, 7663), (90, 7708), (91, 7711), (95, 7750), (141, 7867),

Gene: Morkie\_11 Start: 6561, Stop: 6944, Start Num: 14

Candidate Starts for Morkie\_11:

(Start: 14 @6561 has 10 MA's), (41, 6615), (44, 6621), (49, 6633), (58, 6657), (77, 6717), (118, 6834), (122, 6840), (154, 6930),

Gene: MortyNRick\_12 Start: 7390, Stop: 7773, Start Num: 14

Candidate Starts for MortyNRick\_12:

(Start: 14 @7390 has 10 MA's), (41, 7444), (44, 7450), (49, 7462), (58, 7486), (122, 7669), (154, 7759),

Gene: Moss\_14 Start: 8547, Stop: 8966, Start Num: 12

Candidate Starts for Moss\_14:

(Start: 12 @8547 has 9 MA's), (32, 8589), (128, 8871),

Gene: MrGloopy\_14 Start: 10362, Stop: 10775, Start Num: 20

Candidate Starts for MrGloopy\_14:

(Start: 20 @10362 has 106 MA's), (71, 10497), (76, 10512), (90, 10557), (95, 10599), (141, 10716),

Gene: Mudpuppy\_12 Start: 9039, Stop: 9452, Start Num: 13

Candidate Starts for Mudpuppy\_12:

(Start: 13 @9039 has 41 MA's), (40, 9108), (92, 9258), (133, 9369), (140, 9402),

Gene: Nancia\_10 Start: 7514, Stop: 7924, Start Num: 20

Candidate Starts for Nancia\_10:

(Start: 20 @7514 has 106 MA's), (62, 7607), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (106, 7769), (141, 7865),

Gene: Nebkiss\_9 Start: 7643, Stop: 8014, Start Num: 28

Candidate Starts for Nebkiss\_9:

(Start: 28 @7643 has 4 MA's), (67, 7739), (74, 7760), (81, 7787), (83, 7790), (85, 7793), (89, 7808), (102, 7865), (108, 7877), (125, 7922), (142, 7982), (146, 7988), (150, 7994),

Gene: Nesbitt\_11 Start: 7855, Stop: 8250, Start Num: 26

Candidate Starts for Nesbitt\_11:

(Start: 26 @7855 has 2 MA's), (Start: 30 @7867 has 3 MA's), (37, 7888), (40, 7897), (62, 7936), (66, 7960), (73, 7981), (91, 8035), (110, 8101), (113, 8107), (135, 8164), (147, 8212),

Gene: Niobe\_12 Start: 9019, Stop: 9429, Start Num: 13

Candidate Starts for Niobe\_12:

(Start: 13 @9019 has 41 MA's), (40, 9088), (89, 9226), (92, 9238), (133, 9349), (140, 9382),

Gene: Nitro\_12 Start: 9042, Stop: 9452, Start Num: 13

Candidate Starts for Nitro\_12:

(Start: 13 @9042 has 41 MA's), (33, 9087), (40, 9111), (133, 9372), (140, 9405),

Gene: Nubia\_14 Start: 10412, Stop: 10822, Start Num: 24

Candidate Starts for Nubia\_14:

(Start: 24 @10412 has 10 MA's), (76, 10556), (78, 10565), (79, 10568), (89, 10598), (91, 10604), (94, 10637), (141, 10760), (149, 10784),

Gene: ODay\_12 Start: 7116, Stop: 7499, Start Num: 14  
Candidate Starts for ODay\_12:  
(Start: 14 @7116 has 10 MA's), (25, 7131), (41, 7170), (44, 7176), (49, 7188), (58, 7212), (122, 7395),  
(154, 7485),

Gene: OMalley\_10 Start: 7551, Stop: 7982, Start Num: 20  
Candidate Starts for OMalley\_10:  
(Start: 18 @7545 has 10 MA's), (Start: 20 @7551 has 106 MA's), (31, 7572), (61, 7644), (76, 7701),  
(79, 7713), (82, 7722), (90, 7746), (141, 7905),

Gene: ObiToo\_12 Start: 9222, Stop: 9635, Start Num: 13  
Candidate Starts for ObiToo\_12:  
(Start: 13 @9222 has 41 MA's), (40, 9291), (89, 9429), (92, 9441), (133, 9552), (140, 9585),

Gene: Orcanus\_12 Start: 8285, Stop: 8725, Start Num: 20  
Candidate Starts for Orcanus\_12:  
(Start: 15 @8273 has 6 MA's), (Start: 20 @8285 has 106 MA's), (55, 8375), (66, 8417), (72, 8435),  
(73, 8438), (85, 8477), (111, 8570), (117, 8597), (128, 8621), (138, 8657), (149, 8693),

Gene: OurGirlNessie\_10 Start: 7505, Stop: 7915, Start Num: 20  
Candidate Starts for OurGirlNessie\_10:  
(Start: 20 @7505 has 106 MA's), (62, 7598), (71, 7637), (76, 7652), (90, 7697), (95, 7739), (106,  
7760), (141, 7856),

Gene: Oxynfrius\_14 Start: 10425, Stop: 10835, Start Num: 24  
Candidate Starts for Oxynfrius\_14:  
(Start: 24 @10425 has 10 MA's), (76, 10569), (78, 10578), (79, 10581), (89, 10611), (91, 10617), (94,  
10650), (141, 10773), (149, 10797),

Gene: PFR1\_09 Start: 7693, Stop: 8106, Start Num: 31  
Candidate Starts for PFR1\_09:  
(31, 7693), (39, 7720), (46, 7732), (47, 7735), (62, 7771), (65, 7783), (71, 7810), (76, 7825), (82,  
7849), (86, 7861), (92, 7882), (103, 7933), (114, 7963), (130, 7996),

Gene: PFR2\_09 Start: 7693, Stop: 8106, Start Num: 31  
Candidate Starts for PFR2\_09:  
(31, 7693), (39, 7720), (46, 7732), (47, 7735), (62, 7771), (65, 7783), (71, 7810), (76, 7825), (82,  
7849), (86, 7861), (92, 7882), (103, 7933), (114, 7963), (130, 7996),

Gene: PartyCup\_14 Start: 10446, Stop: 10856, Start Num: 20  
Candidate Starts for PartyCup\_14:  
(Start: 20 @10446 has 106 MA's), (39, 10488), (76, 10590), (141, 10794),

Gene: Percival\_11 Start: 9171, Stop: 9593, Start Num: 13  
Candidate Starts for Percival\_11:  
(Start: 13 @9171 has 41 MA's), (55, 9264), (57, 9270), (63, 9285), (89, 9375), (94, 9414), (102, 9432),  
(144, 9543),

Gene: Periwinkle\_12 Start: 7041, Stop: 7433, Start Num: 20  
Candidate Starts for Periwinkle\_12:  
(1, 6912), (2, 6957), (4, 6963), (6, 6969), (Start: 20 @7041 has 106 MA's), (32, 7068), (47, 7107), (50,  
7113), (53, 7119), (57, 7131), (69, 7155), (80, 7194), (83, 7200), (88, 7212), (91, 7221), (102, 7272),  
(108, 7284),

Gene: Phabuloso\_12 Start: 7046, Stop: 7438, Start Num: 20

Candidate Starts for Phabuloso\_12:

(1, 6917), (2, 6962), (4, 6968), (6, 6974), (7, 6992), (9, 7010), (Start: 20 @7046 has 106 MA's), (32, 7073), (50, 7118), (53, 7124), (57, 7136), (69, 7160), (80, 7199), (83, 7205), (89, 7220), (91, 7226), (102, 7277), (108, 7289), (128, 7343),

Gene: Phistory\_12 Start: 7030, Stop: 7422, Start Num: 20

Candidate Starts for Phistory\_12:

(1, 6901), (2, 6946), (4, 6952), (6, 6958), (7, 6976), (9, 6994), (Start: 20 @7030 has 106 MA's), (32, 7057), (50, 7102), (53, 7108), (57, 7120), (69, 7144), (83, 7189), (89, 7204), (91, 7210), (102, 7261), (108, 7273),

Gene: Phives\_13 Start: 10124, Stop: 10537, Start Num: 13

Candidate Starts for Phives\_13:

(Start: 13 @10124 has 41 MA's), (33, 10169), (92, 10343), (133, 10454), (140, 10487),

Gene: PhluffyCoco\_11 Start: 7902, Stop: 8342, Start Num: 20

Candidate Starts for PhluffyCoco\_11:

(Start: 20 @7902 has 106 MA's), (39, 7953), (73, 8055), (74, 8058), (85, 8094), (86, 8100), (91, 8115), (111, 8187), (117, 8214), (149, 8313), (153, 8319), (155, 8331),

Gene: PhorbesPhlower\_11 Start: 6561, Stop: 6944, Start Num: 14

Candidate Starts for PhorbesPhlower\_11:

(Start: 14 @6561 has 10 MA's), (41, 6615), (44, 6621), (49, 6633), (58, 6657), (77, 6717), (118, 6834), (122, 6840), (154, 6930),

Gene: PinkFriday\_10 Start: 7548, Stop: 7982, Start Num: 18

Candidate Starts for PinkFriday\_10:

(Start: 18 @7548 has 10 MA's), (Start: 20 @7554 has 106 MA's), (71, 7686), (76, 7701), (79, 7713), (82, 7722), (84, 7725), (90, 7746), (141, 7905),

Gene: PitaDog\_10 Start: 7505, Stop: 7915, Start Num: 20

Candidate Starts for PitaDog\_10:

(Start: 20 @7505 has 106 MA's), (62, 7598), (71, 7637), (76, 7652), (90, 7697), (95, 7739), (106, 7760), (141, 7856),

Gene: Pixelle\_12 Start: 9067, Stop: 9480, Start Num: 13

Candidate Starts for Pixelle\_12:

(Start: 13 @9067 has 41 MA's), (33, 9112), (133, 9397), (140, 9430),

Gene: Polka\_12 Start: 8336, Stop: 8779, Start Num: 20

Candidate Starts for Polka\_12:

(Start: 20 @8336 has 106 MA's), (55, 8426), (57, 8432), (72, 8486), (73, 8489), (85, 8528), (117, 8648), (128, 8672), (149, 8744), (153, 8750),

Gene: Pollux\_13 Start: 8269, Stop: 8655, Start Num: 21

Candidate Starts for Pollux\_13:

(Start: 21 @8269 has 19 MA's), (45, 8326),

Gene: Posh\_13 Start: 8263, Stop: 8655, Start Num: 21

Candidate Starts for Posh\_13:

(3, 8182), (Start: 21 @8263 has 19 MA's),

Gene: Potatoes\_14 Start: 10423, Stop: 10836, Start Num: 20

Candidate Starts for Potatoes\_14:

(Start: 20 @10423 has 106 MA's), (71, 10558), (76, 10573), (90, 10618), (95, 10660), (141, 10777),

Gene: Powerpuff\_12 Start: 9090, Stop: 9503, Start Num: 13

Candidate Starts for Powerpuff\_12:

(Start: 13 @9090 has 41 MA's), (40, 9159), (92, 9309), (133, 9420), (140, 9453),

Gene: Preamble\_10 Start: 7515, Stop: 7925, Start Num: 20

Candidate Starts for Preamble\_10:

(Start: 20 @7515 has 106 MA's), (71, 7647), (76, 7662), (91, 7710), (141, 7866),

Gene: Pterodactyl\_10 Start: 7506, Stop: 7916, Start Num: 20

Candidate Starts for Pterodactyl\_10:

(Start: 20 @7506 has 106 MA's), (62, 7599), (71, 7638), (76, 7653), (90, 7698), (95, 7740), (106, 7761), (141, 7857),

Gene: Pumancara\_10 Start: 7547, Stop: 7981, Start Num: 18

Candidate Starts for Pumancara\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (71, 7685), (76, 7700), (79, 7712), (82, 7721), (84, 7724), (90, 7745), (141, 7904),

Gene: Pumpkins\_12 Start: 9144, Stop: 9557, Start Num: 13

Candidate Starts for Pumpkins\_12:

(Start: 13 @9144 has 41 MA's), (40, 9213), (133, 9474), (140, 9507),

Gene: Pytheas\_13 Start: 8116, Stop: 8502, Start Num: 21

Candidate Starts for Pytheas\_13:

(3, 8035), (Start: 21 @8116 has 19 MA's), (36, 8152), (45, 8173),

Gene: RAP15\_14 Start: 10429, Stop: 10842, Start Num: 20

Candidate Starts for RAP15\_14:

(Start: 20 @10429 has 106 MA's), (71, 10564), (76, 10579), (90, 10624), (95, 10666), (141, 10783),

Gene: RcigaStruga\_14 Start: 10433, Stop: 10843, Start Num: 24

Candidate Starts for RcigaStruga\_14:

(Start: 24 @10433 has 10 MA's), (76, 10577), (78, 10586), (79, 10589), (89, 10619), (91, 10625), (94, 10658), (141, 10781), (149, 10805),

Gene: RedFox\_11 Start: 7902, Stop: 8342, Start Num: 20

Candidate Starts for RedFox\_11:

(Start: 20 @7902 has 106 MA's), (39, 7953), (73, 8055), (74, 8058), (85, 8094), (86, 8100), (91, 8115), (111, 8187), (117, 8214), (149, 8313), (153, 8319), (155, 8331),

Gene: Reedo\_12 Start: 9091, Stop: 9489, Start Num: 17

Candidate Starts for Reedo\_12:

(Start: 17 @9091 has 2 MA's), (89, 9286), (91, 9292), (106, 9352), (140, 9442),

Gene: Renna12\_12 Start: 8102, Stop: 8545, Start Num: 20

Candidate Starts for Renna12\_12:

(Start: 20 @8102 has 106 MA's), (73, 8255), (74, 8258), (85, 8294), (86, 8300), (111, 8387), (117, 8414), (128, 8438), (153, 8519), (155, 8531),

Gene: Riovina\_10 Start: 7551, Stop: 7982, Start Num: 20

Candidate Starts for Riovina\_10:

(Start: 18 @7545 has 10 MA's), (Start: 20 @7551 has 106 MA's), (31, 7572), (61, 7644), (76, 7701), (79, 7713), (82, 7722), (90, 7746), (141, 7905),

Gene: Riverdale\_14 Start: 10360, Stop: 10773, Start Num: 20

Candidate Starts for Riverdale\_14:

(Start: 20 @10360 has 106 MA's), (71, 10495), (76, 10510), (90, 10555), (95, 10597), (141, 10714),

Gene: Rowa\_11 Start: 7599, Stop: 8018, Start Num: 13

Candidate Starts for Rowa\_11:

(Start: 13 @7599 has 41 MA's), (Start: 15 @7602 has 6 MA's), (Start: 26 @7620 has 2 MA's), (39, 7659), (65, 7710), (108, 7863), (113, 7872), (131, 7917), (135, 7929), (156, 8004),

Gene: Rozby\_14 Start: 10360, Stop: 10773, Start Num: 20

Candidate Starts for Rozby\_14:

(Start: 20 @10360 has 106 MA's), (71, 10495), (76, 10510), (90, 10555), (95, 10597), (141, 10714),

Gene: Ruchi\_12 Start: 8591, Stop: 9034, Start Num: 20

Candidate Starts for Ruchi\_12:

(Start: 20 @8591 has 106 MA's), (36, 8633), (43, 8651), (57, 8687), (72, 8741), (73, 8744), (85, 8783), (93, 8837), (111, 8876), (117, 8903), (128, 8927), (131, 8933),

Gene: SPB78\_12 Start: 8026, Stop: 8427, Start Num: 27

Candidate Starts for SPB78\_12:

(Start: 26 @8023 has 2 MA's), (Start: 27 @8026 has 1 MA's), (57, 8104), (60, 8110), (65, 8128), (71, 8155), (101, 8269),

Gene: Sarge\_11 Start: 7513, Stop: 7890, Start Num: 34

Candidate Starts for Sarge\_11:

(Start: 34 @7513 has 8 MA's), (73, 7627), (82, 7654), (89, 7675), (118, 7777), (122, 7783), (135, 7819), (143, 7852),

Gene: Savage2526\_14 Start: 10423, Stop: 10836, Start Num: 20

Candidate Starts for Savage2526\_14:

(Start: 20 @10423 has 106 MA's), (71, 10558), (76, 10573), (90, 10618), (95, 10660), (141, 10777),

Gene: Scuttle\_14 Start: 10429, Stop: 10842, Start Num: 20

Candidate Starts for Scuttle\_14:

(Start: 20 @10429 has 106 MA's), (71, 10564), (76, 10579), (90, 10624), (95, 10666), (141, 10783),

Gene: Sergei\_10 Start: 7547, Stop: 7984, Start Num: 18

Candidate Starts for Sergei\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (37, 7592), (38, 7595), (71, 7688), (76, 7703), (79, 7715), (82, 7724), (84, 7727), (90, 7748), (141, 7907),

Gene: ShakeltOph\_11 Start: 7286, Stop: 7681, Start Num: 16

Candidate Starts for ShakeltOph\_11:

(Start: 16 @7286 has 2 MA's), (89, 7478),

Gene: Shambre1\_12 Start: 8782, Stop: 9204, Start Num: 30

Candidate Starts for Shambre1\_12:



(Start: 30 @8782 has 3 MA's), (47, 8827), (51, 8836), (136, 9097), (157, 9163), (158, 9181),

Gene: Shoya\_10 Start: 7149, Stop: 7526, Start Num: 34

Candidate Starts for Shoya\_10:

(Start: 34 @7149 has 8 MA's), (73, 7263), (82, 7290), (89, 7311), (122, 7419), (135, 7455), (143, 7488),

Gene: Simpson\_13 Start: 9040, Stop: 9453, Start Num: 13

Candidate Starts for Simpson\_13:

(Start: 13 @9040 has 41 MA's), (40, 9109), (92, 9259), (133, 9370), (140, 9403),

Gene: Sleepyhead\_12 Start: 7869, Stop: 8279, Start Num: 21

Candidate Starts for Sleepyhead\_12:

(10, 7833), (Start: 21 @7869 has 19 MA's), (57, 7962), (68, 8004), (86, 8061), (89, 8070), (92, 8082), (100, 8124),

Gene: Snek\_12 Start: 8127, Stop: 8540, Start Num: 12

Candidate Starts for Snek\_12:

(Start: 12 @8127 has 9 MA's), (71, 8280), (153, 8523),

Gene: Soondubu\_11 Start: 8928, Stop: 9338, Start Num: 15

Candidate Starts for Soondubu\_11:

(Start: 15 @8928 has 6 MA's), (57, 9030), (140, 9291),

Gene: Soul22\_13 Start: 7212, Stop: 7616, Start Num: 29

Candidate Starts for Soul22\_13:

(Start: 29 @7212 has 7 MA's), (39, 7245), (65, 7305), (84, 7371), (121, 7491), (126, 7503), (137, 7539), (145, 7569),

Gene: Spartoi\_10 Start: 6599, Stop: 7030, Start Num: 27

Candidate Starts for Spartoi\_10:

(Start: 27 @6599 has 1 MA's), (38, 6635), (52, 6668), (54, 6674), (60, 6689), (86, 6785),

Gene: Spooky\_12 Start: 7039, Stop: 7449, Start Num: 20

Candidate Starts for Spooky\_12:

(2, 6955), (4, 6961), (6, 6967), (Start: 20 @7039 has 106 MA's), (50, 7111), (53, 7117), (57, 7129), (69, 7171), (80, 7210), (83, 7216), (91, 7237), (96, 7276), (108, 7300), (128, 7354),

Gene: Squiddly\_13 Start: 7726, Stop: 8118, Start Num: 20

Candidate Starts for Squiddly\_13:

(1, 7597), (2, 7642), (4, 7648), (6, 7654), (7, 7672), (9, 7690), (Start: 20 @7726 has 106 MA's), (32, 7753), (50, 7798), (53, 7804), (57, 7816), (69, 7840), (83, 7885), (89, 7900), (91, 7906), (102, 7957), (108, 7969),

Gene: SuMoo\_10 Start: 7515, Stop: 7928, Start Num: 15

Candidate Starts for SuMoo\_10:

(Start: 15 @7515 has 6 MA's),

Gene: Sue2\_12 Start: 9043, Stop: 9456, Start Num: 12

Candidate Starts for Sue2\_12:

(8, 9007), (Start: 12 @9043 has 9 MA's),

Gene: Supakev\_10 Start: 7553, Stop: 7984, Start Num: 20

Candidate Starts for Supakev\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (31, 7574), (61, 7646), (79, 7715), (82, 7724), (90, 7748), (141, 7907),

Gene: Suppi\_14 Start: 10446, Stop: 10859, Start Num: 20

Candidate Starts for Suppi\_14:

(Start: 20 @10446 has 106 MA's), (39, 10491), (76, 10593), (106, 10701), (141, 10797),

Gene: Tallboi\_12 Start: 9050, Stop: 9463, Start Num: 13

Candidate Starts for Tallboi\_12:

(Start: 13 @9050 has 41 MA's), (33, 9095), (40, 9119), (133, 9380), (140, 9413),

Gene: TattModd\_14 Start: 10423, Stop: 10836, Start Num: 20

Candidate Starts for TattModd\_14:

(Start: 20 @10423 has 106 MA's), (71, 10558), (76, 10573), (90, 10618), (95, 10660), (141, 10777),

Gene: TaylorSipht\_12 Start: 8370, Stop: 8810, Start Num: 20

Candidate Starts for TaylorSipht\_12:

(Start: 20 @8370 has 106 MA's), (35, 8406), (59, 8469), (73, 8523), (74, 8526), (85, 8562), (99, 8634), (105, 8646), (117, 8682), (128, 8706), (138, 8742), (149, 8778),

Gene: Tbone\_12 Start: 9033, Stop: 9446, Start Num: 13

Candidate Starts for Tbone\_12:

(Start: 13 @9033 has 41 MA's), (40, 9102), (92, 9252), (133, 9363), (140, 9396),

Gene: Temper16\_10 Start: 7547, Stop: 7984, Start Num: 18

Candidate Starts for Temper16\_10:

(Start: 18 @7547 has 10 MA's), (Start: 20 @7553 has 106 MA's), (37, 7592), (38, 7595), (71, 7688), (76, 7703), (79, 7715), (82, 7724), (84, 7727), (90, 7748), (141, 7907),

Gene: TforTroy\_12 Start: 9164, Stop: 9577, Start Num: 13

Candidate Starts for TforTroy\_12:

(Start: 13 @9164 has 41 MA's), (133, 9494), (140, 9527),

Gene: Tian\_12 Start: 9064, Stop: 9477, Start Num: 13

Candidate Starts for Tian\_12:

(Start: 13 @9064 has 41 MA's), (33, 9109), (92, 9283), (133, 9394), (140, 9427),

Gene: Tuck\_13 Start: 10079, Stop: 10489, Start Num: 13

Candidate Starts for Tuck\_13:

(Start: 13 @10079 has 41 MA's), (33, 10124), (92, 10298), (133, 10409), (140, 10442),

Gene: Turab\_12 Start: 9048, Stop: 9458, Start Num: 13

Candidate Starts for Turab\_12:

(Start: 13 @9048 has 41 MA's), (33, 9093), (40, 9117), (133, 9378), (140, 9411),

Gene: Tutumahutu\_12 Start: 9090, Stop: 9503, Start Num: 13

Candidate Starts for Tutumahutu\_12:

(Start: 13 @9090 has 41 MA's), (40, 9159), (92, 9309), (133, 9420), (140, 9453),

Gene: Tweety19\_12 Start: 8126, Stop: 8539, Start Num: 12

Candidate Starts for Tweety19\_12:

(Start: 12 @8126 has 9 MA's), (71, 8279), (153, 8522),

Gene: Urla\_10 Start: 7561, Stop: 7974, Start Num: 20

Candidate Starts for Urla\_10:

(Start: 20 @7561 has 106 MA's), (71, 7693), (76, 7708), (90, 7753), (91, 7756), (95, 7795), (124, 7855), (141, 7912),

Gene: UtzChips\_10 Start: 8204, Stop: 8620, Start Num: 15

Candidate Starts for UtzChips\_10:

(Start: 15 @8204 has 6 MA's), (94, 8444), (116, 8501),

Gene: VResidence\_12 Start: 9113, Stop: 9535, Start Num: 12

Candidate Starts for VResidence\_12:

(Start: 12 @9113 has 9 MA's), (91, 9335), (115, 9422), (129, 9443), (133, 9452),

Gene: VWB\_11 Start: 8079, Stop: 8474, Start Num: 28

Candidate Starts for VWB\_11:

(23, 8073), (Start: 28 @8079 has 4 MA's), (33, 8094), (60, 8160), (84, 8244), (97, 8310), (153, 8454),

Gene: Vallejo\_14 Start: 10361, Stop: 10774, Start Num: 20

Candidate Starts for Vallejo\_14:

(Start: 20 @10361 has 106 MA's), (71, 10496), (76, 10511), (90, 10556), (95, 10598), (141, 10715),

Gene: VroomVroom\_11 Start: 7298, Stop: 7693, Start Num: 16

Candidate Starts for VroomVroom\_11:

(Start: 16 @7298 has 2 MA's), (89, 7490),

Gene: Vulpecula\_12 Start: 8667, Stop: 9110, Start Num: 20

Candidate Starts for Vulpecula\_12:

(Start: 20 @8667 has 106 MA's), (36, 8709), (43, 8727), (57, 8763), (72, 8817), (73, 8820), (85, 8859), (93, 8913), (111, 8952), (117, 8979), (128, 9003), (131, 9009),

Gene: Vulture\_10 Start: 7551, Stop: 7982, Start Num: 20

Candidate Starts for Vulture\_10:

(Start: 18 @7545 has 10 MA's), (Start: 20 @7551 has 106 MA's), (31, 7572), (61, 7644), (79, 7713), (82, 7722), (90, 7746), (141, 7905),

Gene: Warda\_12 Start: 9036, Stop: 9449, Start Num: 13

Candidate Starts for Warda\_12:

(Start: 13 @9036 has 41 MA's), (40, 9105), (92, 9255), (133, 9366), (140, 9399),

Gene: Wawa\_14 Start: 10398, Stop: 10811, Start Num: 20

Candidate Starts for Wawa\_14:

(Start: 20 @10398 has 106 MA's), (71, 10533), (76, 10548), (90, 10593), (95, 10635), (141, 10752),

Gene: Wayne\_14 Start: 10492, Stop: 10905, Start Num: 20

Candidate Starts for Wayne\_14:

(Start: 20 @10492 has 106 MA's), (39, 10537), (76, 10639), (106, 10747), (141, 10843),

Gene: Whitney\_12 Start: 7041, Stop: 7433, Start Num: 20

Candidate Starts for Whitney\_12:

(1, 6912), (2, 6957), (4, 6963), (6, 6969), (7, 6987), (Start: 20 @7041 has 106 MA's), (32, 7068), (47, 7107), (50, 7113), (53, 7119), (57, 7131), (69, 7155), (80, 7194), (83, 7200), (88, 7212), (91, 7221), (102, 7272), (108, 7284),

Gene: Wildwest\_13 Start: 9954, Stop: 10370, Start Num: 12  
Candidate Starts for Wildwest\_13:  
(Start: 12 @9954 has 9 MA's), (71, 10107), (91, 10170), (129, 10278),

Gene: WonderBoy\_10 Start: 7514, Stop: 7924, Start Num: 20  
Candidate Starts for WonderBoy\_10:  
(Start: 20 @7514 has 106 MA's), (48, 7577), (71, 7646), (76, 7661), (90, 7706), (95, 7748), (141, 7865),

Gene: Wrigley\_13 Start: 8113, Stop: 8499, Start Num: 21  
Candidate Starts for Wrigley\_13:  
(3, 8032), (Start: 21 @8113 has 19 MA's), (36, 8149), (45, 8170),

Gene: Yang\_12 Start: 9134, Stop: 9547, Start Num: 13  
Candidate Starts for Yang\_12:  
(Start: 13 @9134 has 41 MA's), (133, 9464), (140, 9497),

Gene: YesChef\_12 Start: 9090, Stop: 9503, Start Num: 13  
Candidate Starts for YesChef\_12:  
(Start: 13 @9090 has 41 MA's), (40, 9159), (92, 9309), (133, 9420), (140, 9453),

Gene: Yoshi\_13 Start: 7212, Stop: 7616, Start Num: 29  
Candidate Starts for Yoshi\_13:  
(Start: 29 @7212 has 7 MA's), (39, 7245), (65, 7305), (84, 7371), (121, 7491), (126, 7503), (137, 7539), (145, 7569),

Gene: Zapner\_14 Start: 7737, Stop: 8141, Start Num: 29  
Candidate Starts for Zapner\_14:  
(Start: 29 @7737 has 7 MA's), (39, 7770), (65, 7830), (84, 7896), (121, 8016), (126, 8028), (137, 8064), (145, 8094),

Gene: Zeta1847\_10 Start: 7300, Stop: 7692, Start Num: 12  
Candidate Starts for Zeta1847\_10:  
(Start: 12 @7300 has 9 MA's), (71, 7444), (74, 7453),

Gene: Zorro\_14 Start: 10377, Stop: 10790, Start Num: 20  
Candidate Starts for Zorro\_14:  
(Start: 20 @10377 has 106 MA's), (71, 10512), (76, 10527), (90, 10572), (95, 10614), (141, 10731),