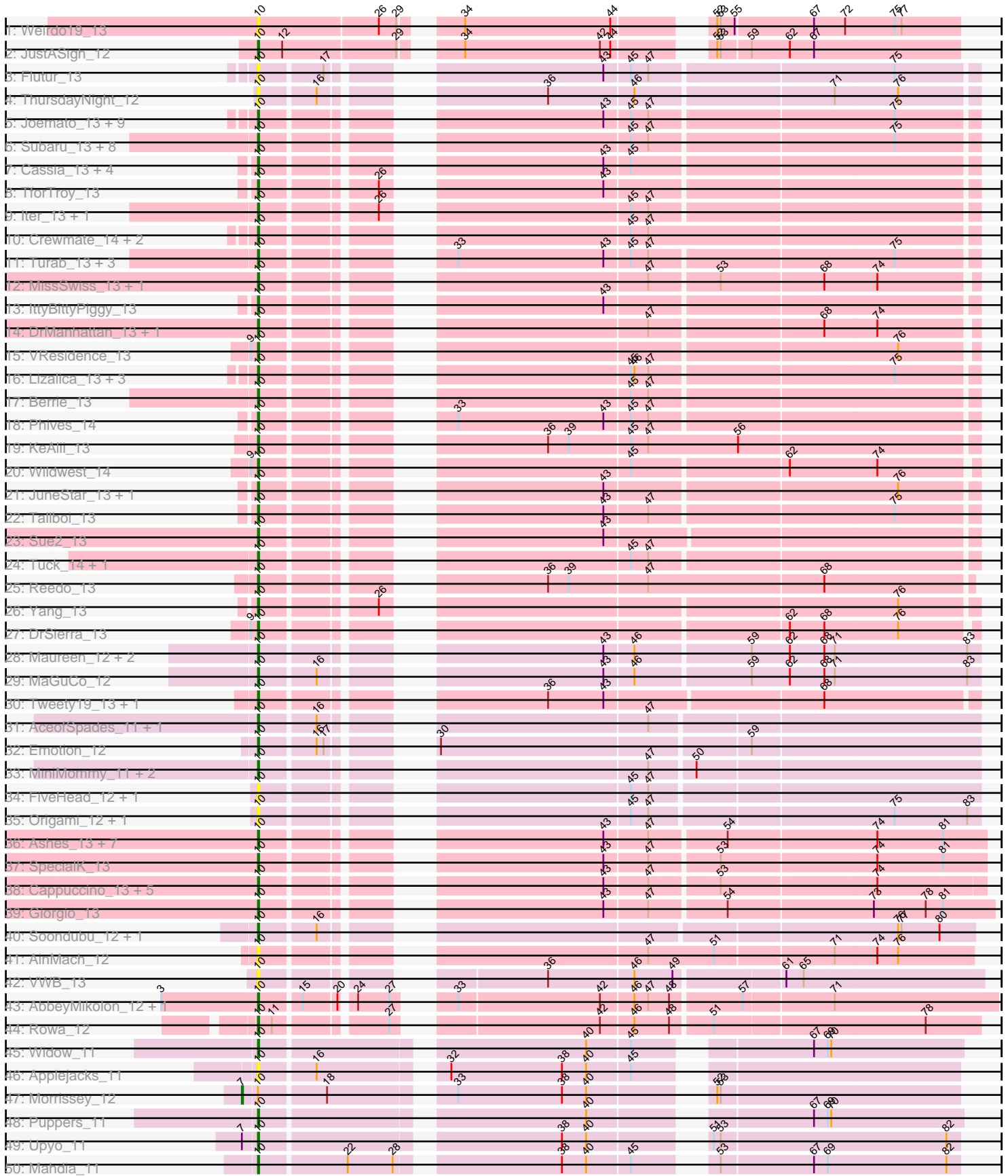
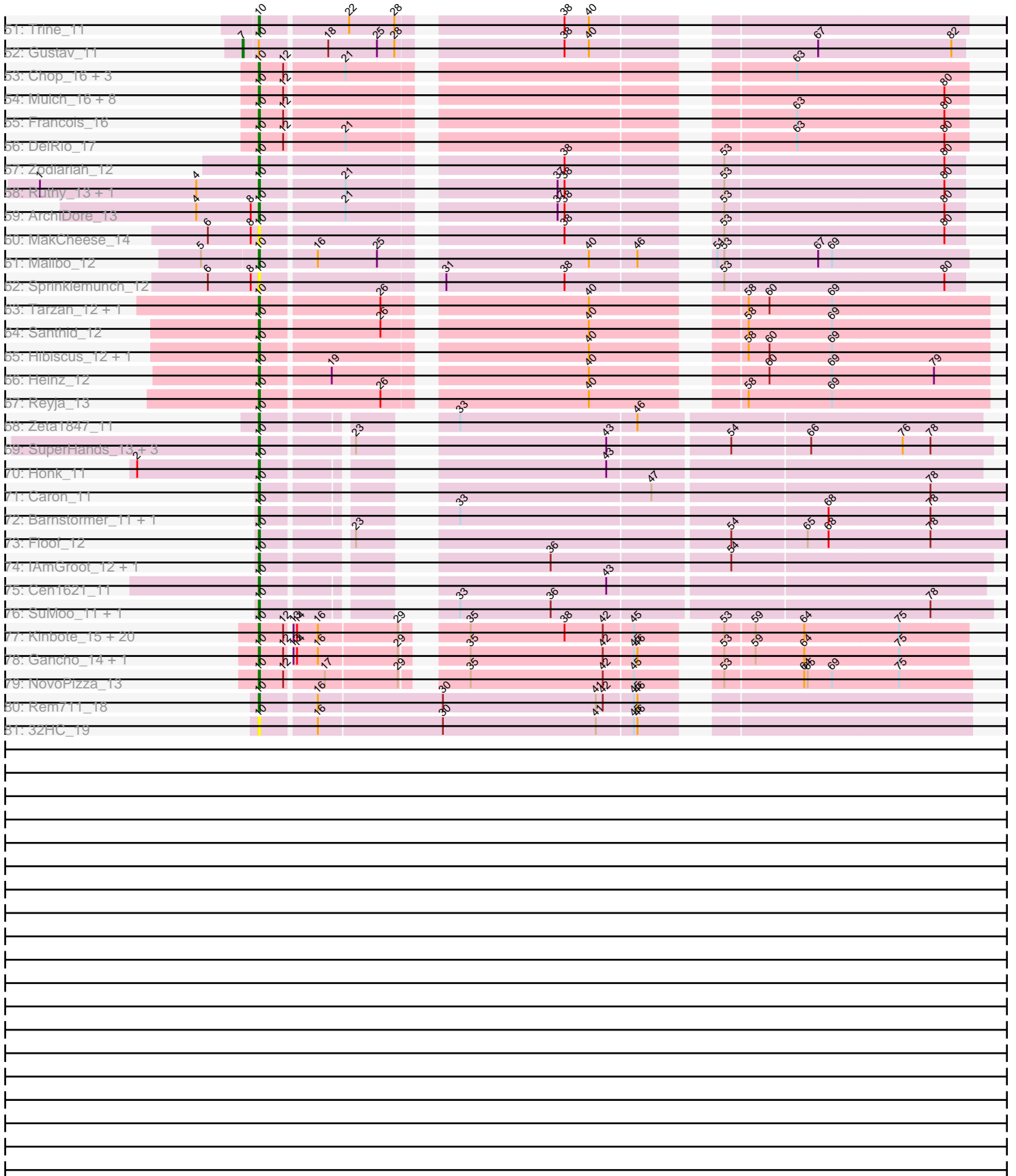


Pham 292542



Pham 292542



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 292542 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292542 has 178 members, 30 are drafts.

Phages represented in each track:

- Track 1 : Weirdo19\_13
- Track 2 : JustASigh\_12
- Track 3 : Flutur\_13
- Track 4 : ThursdayNight\_12
- Track 5 : Joemato\_13, AGrandiflora\_13, JohnDoe\_13, Lego\_13, YesChef\_13, Simpson\_14, Kaylissa\_13, Tutumahutu\_13, Powerpuff\_13, Cyan\_13
- Track 6 : Subaru\_13, Jstan\_13, Nitro\_13, Elezi\_13, Eraser\_13, London\_13, Asa16\_13, Niobe\_13, Skelbel\_13
- Track 7 : Cassia\_13, Pixelle\_13, Pumpkins\_13, Tian\_13, Amyev\_13
- Track 8 : TforTroy\_13
- Track 9 : lter\_13, Ascela\_13
- Track 10 : Crewmate\_14, ObiToo\_13, Janeemi\_14
- Track 11 : Turab\_13, Adumb2043\_13, Amploria\_13, AEgle\_13
- Track 12 : MissSwiss\_13, PandaPo\_13
- Track 13 : IttyBittyPiggy\_13
- Track 14 : DrManhattan\_13, Adolin\_13
- Track 15 : VResidence\_13
- Track 16 : Lizalica\_13, Tbone\_13, Warda\_13, Mudpuppy\_13
- Track 17 : Berrie\_13
- Track 18 : Phives\_14
- Track 19 : KeAlii\_13
- Track 20 : Wildwest\_14
- Track 21 : JuneStar\_13, Schaffner\_13
- Track 22 : Tallboi\_13
- Track 23 : Sue2\_13
- Track 24 : Tuck\_14, Community\_14
- Track 25 : Reedo\_13
- Track 26 : Yang\_13
- Track 27 : DrSierra\_13
- Track 28 : Maureen\_12, IUFootball\_12, Liebe\_12
- Track 29 : MaGuCo\_12
- Track 30 : Tweety19\_13, Snek\_13
- Track 31 : AceofSpades\_11, VroomVroom\_12
- Track 32 : Emotion\_12
- Track 33 : MiniMommy\_11, JasmineDragon\_12, ShakeltOph\_12
- Track 34 : FiveHead\_12, JohnThicc\_12
- Track 35 : Origami\_12, LadyAstra\_12

- Track 36 : Ashes\_13, RockScotty\_13, Mysterium\_13, Halsey\_13, Beaupre\_13, Stuu\_13, Gumpizza\_13, Moss\_13
- Track 37 : SpecialK\_13
- Track 38 : Cappuccino\_13, Donkey\_13, Sabourin\_13, Gambol\_13, Kalimba\_13, Sooty\_13
- Track 39 : Giorgio\_13
- Track 40 : Soondubu\_12, Exile\_12
- Track 41 : AinMach\_12
- Track 42 : VWB\_13
- Track 43 : AbbeyMikolon\_12, Nesbitt\_12
- Track 44 : Rowa\_12
- Track 45 : Widow\_11
- Track 46 : Applejacks\_11
- Track 47 : Morrissey\_12
- Track 48 : Puppies\_11
- Track 49 : Upyo\_11
- Track 50 : Mahdia\_11
- Track 51 : Trine\_11
- Track 52 : Gustav\_11
- Track 53 : Chop\_16, Ayotoya\_16, GrandSlam\_16, Hamood\_16
- Track 54 : Mulch\_16, Nadeem\_16, BetterKatz\_16, Brylie\_16, Bock\_16, Pimento\_17, WheatThin\_16, Parada\_16, NancyRae\_16
- Track 55 : Francois\_16
- Track 56 : DelRio\_17
- Track 57 : Zodiariah\_12
- Track 58 : Ruthy\_13, DumpsterDude\_13
- Track 59 : ArchiDore\_13
- Track 60 : MakCheese\_14
- Track 61 : Malibo\_12
- Track 62 : Sprinklemunch\_12
- Track 63 : Tarzan\_12, DonkeyMan\_12
- Track 64 : Santhid\_12
- Track 65 : Hibiscus\_12, Jojo24\_12
- Track 66 : Heinz\_12
- Track 67 : Reyja\_13
- Track 68 : Zeta1847\_11
- Track 69 : SuperHands\_13, Percival\_12, Forester\_21, Gretchen\_12
- Track 70 : Honk\_11
- Track 71 : Caron\_11
- Track 72 : Barnstormer\_11, UtzChips\_11
- Track 73 : Floof\_12
- Track 74 : IAmGroot\_12, GardenState\_12
- Track 75 : Cen1621\_11
- Track 76 : SuMoo\_11, Mabodamaca\_12
- Track 77 : Kinbote\_15, BloominB\_15, Ein37\_15, Daegal\_16, Amochick\_15, Ubuntu\_15, Evanesce\_15, DeepSoil15\_15, Amymech\_15, Luna22\_15, Dewey\_15, HH92\_15, Webster2\_15, Giles\_15, Luke\_15, Hail\_15, LilHazelNut\_15, Hadrien\_15, OBUpride\_15, Forge\_15, Wishmaker\_15
- Track 78 : Gancho\_14, Gravaillia\_15
- Track 79 : NovoPizza\_13
- Track 80 : Rem711\_18
- Track 81 : 32HC\_19

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

The start number called the most often in the published annotations is 10, it was called in 146 of the 148 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 32HC\_19, AEgle\_13, AGrandiflora\_13, AbbeyMikolon\_12, AceofSpades\_11, Adolin\_13, Adumb2043\_13, AinMach\_12, Amochick\_15, Amploria\_13, Amyev\_13, Amymech\_15, Applejacks\_11, ArchiDore\_13, Asa16\_13, Ascela\_13, Ashes\_13, Ayotoya\_16, Barnstormer\_11, Beaupre\_13, Berrie\_13, BetterKatz\_16, BloominB\_15, Bock\_16, Brylie\_16, Cappuccino\_13, Caron\_11, Cassia\_13, Cen1621\_11, Chop\_16, Community\_14, Crewmate\_14, Cyan\_13, Daegal\_16, DeepSoil15\_15, DelRio\_17, Dewey\_15, DonkeyMan\_12, Donkey\_13, DrManhattan\_13, DrSierra\_13, DumpsterDude\_13, Ein37\_15, Elezi\_13, Emotion\_12, Eraser\_13, Evanesce\_15, Exile\_12, FiveHead\_12, Floof\_12, Flutur\_13, Forester\_21, Forge\_15, Francois\_16, Gambol\_13, Gancho\_14, GardenState\_12, Giles\_15, Giorgio\_13, GrandSlam\_16, Gravaillia\_15, Gretchen\_12, Gumpizza\_13, HH92\_15, Hadrien\_15, Hail\_15, Halsey\_13, Hamood\_16, Heinz\_12, Hibiscus\_12, Honk\_11, IAmGroot\_12, IUFootball\_12, Iter\_13, IttyBittyPiggy\_13, Janeemi\_14, JasmineDragon\_12, Joemato\_13, JohnDoe\_13, JohnThicc\_12, Jojo24\_12, Jstan\_13, JuneStar\_13, JustASigh\_12, Kalimba\_13, Kaylissa\_13, KeAlii\_13, Kinbote\_15, LadyAstra\_12, Lego\_13, Liebe\_12, LilHazelNut\_15, Lizalica\_13, London\_13, Luke\_15, Luna22\_15, MaGuCo\_12, Mabodamaca\_12, Mahdia\_11, MakCheese\_14, Malibo\_12, Maureen\_12, MiniMommy\_11, MissSwiss\_13, Moss\_13, Mudpuppy\_13, Mulch\_16, Mysterium\_13, Nadeem\_16, NancyRae\_16, Nesbitt\_12, Niobe\_13, Nitro\_13, NovoPizza\_13, OBUpride\_15, ObiToo\_13, Origami\_12, PandaPo\_13, Parada\_16, Percival\_12, Phives\_14, Pimento\_17, Pixelle\_13, Powerpuff\_13, Pumpkins\_13, Puppies\_11, Reedo\_13, Rem711\_18, Reyja\_13, RockScotty\_13, Rowa\_12, Ruthy\_13, Sabourin\_13, Santhid\_12, Schaffner\_13, ShakeltOph\_12, Simpson\_14, Skelbel\_13, Snek\_13, Soondubu\_12, Sooty\_13, SpecialK\_13, Sprinklemunch\_12, Stuu\_13, SuMoo\_11, Subaru\_13, Sue2\_13, SuperHands\_13, Tallboi\_13, Tarzan\_12, Tbone\_13, TforTroy\_13, ThursdayNight\_12, Tian\_13, Trine\_11, Tuck\_14, Turab\_13, Tutumahutu\_13, Tweety19\_13, Ubuntu\_15, Upyo\_11, UtzChips\_11, VResidence\_13, VWB\_13, VroomVroom\_12, Warda\_13, Webster2\_15, Weirdo19\_13, WheatThin\_16, Widow\_11, Wildwest\_14, Wishmaker\_15, Yang\_13, YesChef\_13, Zeta1847\_11, Zodiariah\_12,

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

- Gustav\_11, Morrissey\_12,

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

- 

### **Summary by start number:**

Start 7:

- Found in 3 of 178 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 148
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Gustav\_11 (CD), Morrissey\_12 (CD),

Start 10:

- Found in 178 of 178 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 146 of 148
- Called 98.9% of time when present
- Phage (with cluster) where this start called: 32HC\_19 (Z), AEgle\_13 (AZ1), AGrandiflora\_13 (AZ1), AbbeyMikolon\_12 (BL), AceofSpades\_11 (AZ4), Adolin\_13 (AZ1), Adumb2043\_13 (AZ1), AinMach\_12 (AZ7), Amochick\_15 (Q), Amploria\_13 (AZ1), Amyev\_13 (AZ1), Amymech\_15 (Q), Applejacks\_11 (CD), ArchiDore\_13 (DW), Asa16\_13 (AZ1), Ascela\_13 (AZ1), Ashes\_13 (AZ5), Ayotoya\_16 (DI), Barnstormer\_11 (EH), Beaupre\_13 (AZ5), Berrie\_13 (AZ1), BetterKatz\_16 (DI), BloominB\_15 (Q), Bock\_16 (DI), Brylie\_16 (DI), Cappuccino\_13 (AZ5), Caron\_11 (EH), Cassia\_13 (AZ1), Cen1621\_11 (EH), Chop\_16 (DI), Community\_14 (AZ1), Crewmate\_14 (AZ1), Cyan\_13 (AZ1), Daegal\_16 (Q), DeepSoil15\_15 (Q), DelRio\_17 (DI), Dewey\_15 (Q), DonkeyMan\_12 (DY), Donkey\_13 (AZ5), DrManhattan\_13 (AZ1), DrSierra\_13 (AZ1), DumpsterDude\_13 (DW), Ein37\_15 (Q), Elezi\_13 (AZ1), Emotion\_12 (AZ4), Eraser\_13 (AZ1), Evanesce\_15 (Q), Exile\_12 (AZ6), FiveHead\_12 (AZ4), Floof\_12 (EH), Flutur\_13 (AZ), Forester\_21 (EH), Forge\_15 (Q), Francois\_16 (DI), Gambol\_13 (AZ5), Gancho\_14 (Q), GardenState\_12 (EH), Giles\_15 (Q), Giorgio\_13 (AZ5), GrandSlam\_16 (DI), Gravallia\_15 (Q), Gretchen\_12 (EH), Gumpizza\_13 (AZ5), HH92\_15 (Q), Hadrien\_15 (Q), Hail\_15 (Q), Halsey\_13 (AZ5), Hamood\_16 (DI), Heinz\_12 (DY), Hibiscus\_12 (DY), Honk\_11 (EH), IAmGroot\_12 (EH), IUFootball\_12 (AZ2), Iter\_13 (AZ1), IttyBittyPiggy\_13 (AZ1), Janeemi\_14 (AZ1), JasmineDragon\_12 (AZ4), Joemato\_13 (AZ1), JohnDoe\_13 (AZ1), JohnThicc\_12 (AZ4), Jojo24\_12 (DY), Jstan\_13 (AZ1), JuneStar\_13 (AZ1), JustASigh\_12 (AH), Kalimba\_13 (AZ5), Kaylissa\_13 (AZ1), KeAlii\_13 (AZ1), Kinbote\_15 (Q), LadyAstra\_12 (AZ4), Lego\_13 (AZ1), Liebe\_12 (AZ2), LilHazelnut\_15 (Q), Lizalica\_13 (AZ1), London\_13 (AZ1), Luke\_15 (Q), Luna22\_15 (Q), MaGuCo\_12 (AZ2), Mabodamaca\_12 (EH), Mahdia\_11 (CD), MakCheese\_14 (DW), Malibo\_12 (DW), Maureen\_12 (AZ2), MiniMommy\_11 (AZ4), MissSwiss\_13 (AZ1), Moss\_13 (AZ5), Mudpuppy\_13 (AZ1), Mulch\_16 (DI), Mysterium\_13 (AZ5), Nadeem\_16 (DI), NancyRae\_16 (DI), Nesbitt\_12 (BL), Niobe\_13 (AZ1), Nitro\_13 (AZ1), NovoPizza\_13 (Q), OBUpride\_15 (Q), ObiToo\_13 (AZ1), Origami\_12 (AZ4), PandaPo\_13 (AZ1), Parada\_16 (DI), Percival\_12 (EH), Phives\_14 (AZ1), Pimento\_17 (DI), Pixelle\_13 (AZ1), Powerpuff\_13 (AZ1), Pumpkins\_13 (AZ1), Puppies\_11 (CD), Reedo\_13 (AZ1), Rem711\_18 (Z), Reyja\_13 (DY), RockScotty\_13 (AZ5), Rowa\_12 (BL), Ruthy\_13 (DW), Sabourin\_13 (AZ5), Santhid\_12 (DY), Schaffner\_13 (AZ1), ShakeltOph\_12 (AZ4), Simpson\_14 (AZ1), Skelbel\_13 (AZ1), Snek\_13 (AZ3), Soondubu\_12 (AZ6), Sooty\_13 (AZ5), SpecialK\_13 (AZ5), Sprinklemunch\_12 (DW), Stuu\_13 (AZ5), SuMoo\_11 (EH), Subaru\_13 (AZ1), Sue2\_13 (AZ1), SuperHands\_13 (EH), Tallboi\_13 (AZ1), Tarzan\_12 (DY), Tbone\_13 (AZ1), TforTroy\_13 (AZ1), ThursdayNight\_12 (AZ), Tian\_13 (AZ1), Trine\_11 (CD), Tuck\_14 (AZ1), Turab\_13 (AZ1), Tutumahutu\_13 (AZ1), Tweety19\_13 (AZ3), Ubuntu\_15 (Q), Upyo\_11 (CD), UtzChips\_11 (EH), VResidence\_13 (AZ1), VWB\_13 (BA), VroomVroom\_12 (AZ4), Warda\_13 (AZ1), Webster2\_15 (Q), Weirido19\_13 (AH), WheatThin\_16 (DI), Widow\_11 (CD), Wildwest\_14 (AZ1), Wishmaker\_15 (Q), Yang\_13 (AZ1), YesChef\_13 (AZ1), Zeta1847\_11 (EH), Zodiariah\_12 (DW),

### Summary by clusters:

There are 18 clusters represented in this pham: DW, EH, DI, BL, AH, Z, AZ, CD, Q, DY, AZ7, AZ1, AZ2, AZ3, AZ4, AZ5, AZ6, BA,

Info for manual annotations of cluster AH:

- Start number 10 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster AZ1:

- Start number 10 was manually annotated 46 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 10 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 10 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 10 was manually annotated 5 times for cluster AZ4.

Info for manual annotations of cluster AZ5:

- Start number 10 was manually annotated 16 times for cluster AZ5.

Info for manual annotations of cluster AZ6:

- Start number 10 was manually annotated 1 time for cluster AZ6.

Info for manual annotations of cluster BL:

- Start number 10 was manually annotated 3 times for cluster BL.

Info for manual annotations of cluster CD:

- Start number 7 was manually annotated 2 times for cluster CD.
- Start number 10 was manually annotated 5 times for cluster CD.

Info for manual annotations of cluster DI:

- Start number 10 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DW:

- Start number 10 was manually annotated 5 times for cluster DW.

Info for manual annotations of cluster DY:

- Start number 10 was manually annotated 7 times for cluster DY.

Info for manual annotations of cluster EH:

- Start number 10 was manually annotated 13 times for cluster EH.

Info for manual annotations of cluster Q:

- Start number 10 was manually annotated 23 times for cluster Q.

Info for manual annotations of cluster Z:

- Start number 10 was manually annotated 1 time for cluster Z.

***Gene Information:***

Gene: 32HC\_19 Start: 11470, Stop: 12039, Start Num: 10  
Candidate Starts for 32HC\_19:  
(Start: 10 @11470 has 146 MA's), (16, 11515), (30, 11620), (41, 11752), (45, 11782), (46, 11785),

Gene: AEgle\_13 Start: 9479, Stop: 10030, Start Num: 10  
Candidate Starts for AEgle\_13:  
(Start: 10 @9479 has 146 MA's), (33, 9596), (43, 9722), (45, 9743), (47, 9758), (75, 9962),

Gene: AGrandiflora\_13 Start: 9464, Stop: 10015, Start Num: 10  
Candidate Starts for AGrandiflora\_13:  
(Start: 10 @9464 has 146 MA's), (43, 9707), (45, 9728), (47, 9743), (75, 9947),

Gene: AbbeyMikolon\_12 Start: 8168, Stop: 8740, Start Num: 10  
Candidate Starts for AbbeyMikolon\_12:  
(3, 8084), (Start: 10 @8168 has 146 MA's), (15, 8201), (20, 8228), (24, 8237), (27, 8264), (33, 8291),  
(42, 8411), (46, 8438), (47, 8450), (48, 8468), (57, 8525), (71, 8600),

Gene: AceofSpades\_11 Start: 7705, Stop: 8259, Start Num: 10  
Candidate Starts for AceofSpades\_11:  
(Start: 10 @7705 has 146 MA's), (16, 7750), (47, 7984),

Gene: Adolin\_13 Start: 9458, Stop: 10006, Start Num: 10  
Candidate Starts for Adolin\_13:  
(Start: 10 @9458 has 146 MA's), (47, 9737), (68, 9881), (74, 9926),

Gene: Adumb2043\_13 Start: 9478, Stop: 10029, Start Num: 10  
Candidate Starts for Adumb2043\_13:  
(Start: 10 @9478 has 146 MA's), (33, 9595), (43, 9721), (45, 9742), (47, 9757), (75, 9961),

Gene: AinMach\_12 Start: 8582, Stop: 9136, Start Num: 10  
Candidate Starts for AinMach\_12:  
(Start: 10 @8582 has 146 MA's), (47, 8861), (51, 8918), (71, 9017), (74, 9053), (76, 9071),

Gene: Amochick\_15 Start: 9932, Stop: 10471, Start Num: 10  
Candidate Starts for Amochick\_15:  
(Start: 10 @9932 has 146 MA's), (12, 9953), (13, 9956), (14, 9959), (16, 9977), (29, 10043), (35,  
10079), (38, 10160), (42, 10193), (45, 10217), (53, 10265), (59, 10289), (64, 10331), (75, 10412),

Gene: Amploria\_13 Start: 9478, Stop: 10029, Start Num: 10  
Candidate Starts for Amploria\_13:  
(Start: 10 @9478 has 146 MA's), (33, 9595), (43, 9721), (45, 9742), (47, 9757), (75, 9961),

Gene: Amyev\_13 Start: 9490, Stop: 10041, Start Num: 10  
Candidate Starts for Amyev\_13:  
(Start: 10 @9490 has 146 MA's), (43, 9733), (45, 9754),

Gene: Amymech\_15 Start: 9938, Stop: 10477, Start Num: 10  
Candidate Starts for Amymech\_15:  
(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35,  
10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Applejacks\_11 Start: 7579, Stop: 8121, Start Num: 10  
Candidate Starts for Applejacks\_11:

(Start: 10 @7579 has 146 MA's), (16, 7624), (32, 7717), (38, 7813), (40, 7834), (45, 7870),

Gene: ArchiDore\_13 Start: 8427, Stop: 8969, Start Num: 10

Candidate Starts for ArchiDore\_13:

(4, 8376), (8, 8421), (Start: 10 @8427 has 146 MA's), (21, 8496), (37, 8655), (38, 8661), (53, 8766), (80, 8952),

Gene: Asa16\_13 Start: 9448, Stop: 9999, Start Num: 10

Candidate Starts for Asa16\_13:

(Start: 10 @9448 has 146 MA's), (45, 9712), (47, 9727), (75, 9931),

Gene: Ascela\_13 Start: 9483, Stop: 10034, Start Num: 10

Candidate Starts for Ascela\_13:

(Start: 10 @9483 has 146 MA's), (26, 9570), (45, 9747), (47, 9762),

Gene: Ashes\_13 Start: 8980, Stop: 9540, Start Num: 10

Candidate Starts for Ashes\_13:

(Start: 10 @8980 has 146 MA's), (43, 9223), (47, 9259), (54, 9322), (74, 9448), (81, 9505),

Gene: Ayotoya\_16 Start: 9985, Stop: 10530, Start Num: 10

Candidate Starts for Ayotoya\_16:

(Start: 10 @9985 has 146 MA's), (12, 10006), (21, 10054), (63, 10384),

Gene: Barnstormer\_11 Start: 8636, Stop: 9199, Start Num: 10

Candidate Starts for Barnstormer\_11:

(Start: 10 @8636 has 146 MA's), (33, 8753), (68, 9059), (78, 9146),

Gene: Beaupre\_13 Start: 8981, Stop: 9541, Start Num: 10

Candidate Starts for Beaupre\_13:

(Start: 10 @8981 has 146 MA's), (43, 9224), (47, 9260), (54, 9323), (74, 9449), (81, 9506),

Gene: Berrie\_13 Start: 9450, Stop: 10001, Start Num: 10

Candidate Starts for Berrie\_13:

(Start: 10 @9450 has 146 MA's), (45, 9714), (47, 9729),

Gene: BetterKatz\_16 Start: 9953, Stop: 10498, Start Num: 10

Candidate Starts for BetterKatz\_16:

(Start: 10 @9953 has 146 MA's), (12, 9974), (80, 10478),

Gene: BloominB\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for BloominB\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Bock\_16 Start: 9703, Stop: 10248, Start Num: 10

Candidate Starts for Bock\_16:

(Start: 10 @9703 has 146 MA's), (12, 9724), (80, 10228),

Gene: Brylie\_16 Start: 9700, Stop: 10245, Start Num: 10

Candidate Starts for Brylie\_16:

(Start: 10 @9700 has 146 MA's), (12, 9721), (80, 10225),

Gene: Cappuccino\_13 Start: 8889, Stop: 9449, Start Num: 10

Candidate Starts for Cappuccino\_13:

(Start: 10 @8889 has 146 MA's), (43, 9132), (47, 9168), (53, 9225), (74, 9357),

Gene: Caron\_11 Start: 8664, Stop: 9239, Start Num: 10

Candidate Starts for Caron\_11:

(Start: 10 @8664 has 146 MA's), (47, 8943), (78, 9174),

Gene: Cassia\_13 Start: 9565, Stop: 10116, Start Num: 10

Candidate Starts for Cassia\_13:

(Start: 10 @9565 has 146 MA's), (43, 9808), (45, 9829),

Gene: Cen1621\_11 Start: 7782, Stop: 8339, Start Num: 10

Candidate Starts for Cen1621\_11:

(Start: 10 @7782 has 146 MA's), (43, 8025),

Gene: Chop\_16 Start: 9733, Stop: 10278, Start Num: 10

Candidate Starts for Chop\_16:

(Start: 10 @9733 has 146 MA's), (12, 9754), (21, 9802), (63, 10132),

Gene: Community\_14 Start: 10530, Stop: 11081, Start Num: 10

Candidate Starts for Community\_14:

(Start: 10 @10530 has 146 MA's), (45, 10794), (47, 10809),

Gene: Crewmate\_14 Start: 9913, Stop: 10470, Start Num: 10

Candidate Starts for Crewmate\_14:

(Start: 10 @9913 has 146 MA's), (45, 10177), (47, 10192),

Gene: Cyan\_13 Start: 9468, Stop: 10019, Start Num: 10

Candidate Starts for Cyan\_13:

(Start: 10 @9468 has 146 MA's), (43, 9711), (45, 9732), (47, 9747), (75, 9951),

Gene: Daegal\_16 Start: 10229, Stop: 10768, Start Num: 10

Candidate Starts for Daegal\_16:

(Start: 10 @10229 has 146 MA's), (12, 10250), (13, 10253), (14, 10256), (16, 10274), (29, 10340), (35, 10376), (38, 10457), (42, 10490), (45, 10514), (53, 10562), (59, 10586), (64, 10628), (75, 10709),

Gene: DeepSoil15\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for DeepSoil15\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: DelRio\_17 Start: 10210, Stop: 10755, Start Num: 10

Candidate Starts for DelRio\_17:

(Start: 10 @10210 has 146 MA's), (12, 10231), (21, 10279), (63, 10609), (80, 10735),

Gene: Dewey\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Dewey\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Donkey\_13 Start: 8889, Stop: 9449, Start Num: 10

Candidate Starts for Donkey\_13:

(Start: 10 @8889 has 146 MA's), (43, 9132), (47, 9168), (53, 9225), (74, 9357),

Gene: DonkeyMan\_12 Start: 7926, Stop: 8492, Start Num: 10

Candidate Starts for DonkeyMan\_12:

(Start: 10 @7926 has 146 MA's), (26, 8025), (40, 8181), (58, 8286), (60, 8304), (69, 8358),

Gene: DrManhattan\_13 Start: 9448, Stop: 9996, Start Num: 10

Candidate Starts for DrManhattan\_13:

(Start: 10 @9448 has 146 MA's), (47, 9727), (68, 9871), (74, 9916),

Gene: DrSierra\_13 Start: 9480, Stop: 10028, Start Num: 10

Candidate Starts for DrSierra\_13:

(9, 9474), (Start: 10 @9480 has 146 MA's), (62, 9873), (68, 9903), (76, 9966),

Gene: DumpsterDude\_13 Start: 8440, Stop: 8982, Start Num: 10

Candidate Starts for DumpsterDude\_13:

(1, 8254), (4, 8389), (Start: 10 @8440 has 146 MA's), (21, 8509), (37, 8668), (38, 8674), (53, 8779), (80, 8965),

Gene: Ein37\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Ein37\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Elezi\_13 Start: 9449, Stop: 10000, Start Num: 10

Candidate Starts for Elezi\_13:

(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: Emotion\_12 Start: 7771, Stop: 8325, Start Num: 10

Candidate Starts for Emotion\_12:

(Start: 10 @7771 has 146 MA's), (16, 7816), (17, 7822), (30, 7873), (59, 8131),

Gene: Eraser\_13 Start: 9449, Stop: 10000, Start Num: 10

Candidate Starts for Eraser\_13:

(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: Evanesce\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Evanesce\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Exile\_12 Start: 9368, Stop: 9916, Start Num: 10

Candidate Starts for Exile\_12:

(Start: 10 @9368 has 146 MA's), (16, 9413), (76, 9851), (77, 9854), (80, 9887),

Gene: FiveHead\_12 Start: 7693, Stop: 8247, Start Num: 10

Candidate Starts for FiveHead\_12:

(Start: 10 @7693 has 146 MA's), (45, 7957), (47, 7972),

Gene: Floof\_12 Start: 8217, Stop: 8795, Start Num: 10

Candidate Starts for Floof\_12:

(Start: 10 @8217 has 146 MA's), (23, 8286), (54, 8562), (65, 8625), (68, 8643), (78, 8730),

Gene: Flutur\_13 Start: 9467, Stop: 10018, Start Num: 10

Candidate Starts for Flutur\_13:

(Start: 10 @9467 has 146 MA's), (17, 9518), (43, 9710), (45, 9731), (47, 9746), (75, 9950),

Gene: Forester\_21 Start: 9770, Stop: 10336, Start Num: 10

Candidate Starts for Forester\_21:

(Start: 10 @9770 has 146 MA's), (23, 9839), (43, 10016), (54, 10115), (66, 10181), (76, 10259), (78, 10283),

Gene: Forge\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Forge\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Francois\_16 Start: 9714, Stop: 10259, Start Num: 10

Candidate Starts for Francois\_16:

(Start: 10 @9714 has 146 MA's), (12, 9735), (63, 10113), (80, 10239),

Gene: Gambol\_13 Start: 8889, Stop: 9449, Start Num: 10

Candidate Starts for Gambol\_13:

(Start: 10 @8889 has 146 MA's), (43, 9132), (47, 9168), (53, 9225), (74, 9357),

Gene: Gancho\_14 Start: 9638, Stop: 10177, Start Num: 10

Candidate Starts for Gancho\_14:

(Start: 10 @9638 has 146 MA's), (12, 9659), (13, 9662), (14, 9665), (16, 9683), (29, 9749), (35, 9785), (42, 9899), (45, 9923), (46, 9926), (53, 9971), (59, 9995), (64, 10037), (75, 10118),

Gene: GardenState\_12 Start: 8881, Stop: 9447, Start Num: 10

Candidate Starts for GardenState\_12:

(Start: 10 @8881 has 146 MA's), (36, 9079), (54, 9226),

Gene: Giles\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Giles\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Giorgio\_13 Start: 8982, Stop: 9551, Start Num: 10

Candidate Starts for Giorgio\_13:

(Start: 10 @8982 has 146 MA's), (43, 9225), (47, 9261), (54, 9324), (73, 9447), (78, 9492), (81, 9507),

Gene: GrandSlam\_16 Start: 9733, Stop: 10278, Start Num: 10

Candidate Starts for GrandSlam\_16:

(Start: 10 @9733 has 146 MA's), (12, 9754), (21, 9802), (63, 10132),

Gene: Gravaillia\_15 Start: 9671, Stop: 10210, Start Num: 10

Candidate Starts for Gravaillia\_15:

(Start: 10 @9671 has 146 MA's), (12, 9692), (13, 9695), (14, 9698), (16, 9716), (29, 9782), (35, 9818), (42, 9932), (45, 9956), (46, 9959), (53, 10004), (59, 10028), (64, 10070), (75, 10151),

Gene: Gretchen\_12 Start: 9764, Stop: 10330, Start Num: 10

Candidate Starts for Gretchen\_12:

(Start: 10 @9764 has 146 MA's), (23, 9833), (43, 10010), (54, 10109), (66, 10175), (76, 10253), (78, 10277),

Gene: Gumpizza\_13 Start: 8981, Stop: 9541, Start Num: 10

Candidate Starts for Gumpizza\_13:

(Start: 10 @8981 has 146 MA's), (43, 9224), (47, 9260), (54, 9323), (74, 9449), (81, 9506),

Gene: Gustav\_11 Start: 7634, Stop: 8188, Start Num: 7

Candidate Starts for Gustav\_11:

(Start: 7 @7634 has 2 MA's), (Start: 10 @7646 has 146 MA's), (18, 7700), (25, 7742), (28, 7757), (38, 7880), (40, 7901), (67, 8063), (82, 8177),

Gene: HH92\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for HH92\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Hadrien\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Hadrien\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Hail\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Hail\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Halsey\_13 Start: 8980, Stop: 9540, Start Num: 10

Candidate Starts for Halsey\_13:

(Start: 10 @8980 has 146 MA's), (43, 9223), (47, 9259), (54, 9322), (74, 9448), (81, 9505),

Gene: Hamood\_16 Start: 9733, Stop: 10278, Start Num: 10

Candidate Starts for Hamood\_16:

(Start: 10 @9733 has 146 MA's), (12, 9754), (21, 9802), (63, 10132),

Gene: Heinz\_12 Start: 7958, Stop: 8524, Start Num: 10

Candidate Starts for Heinz\_12:

(Start: 10 @7958 has 146 MA's), (19, 8015), (40, 8213), (60, 8336), (69, 8390), (79, 8477),

Gene: Hibiscus\_12 Start: 7938, Stop: 8504, Start Num: 10

Candidate Starts for Hibiscus\_12:

(Start: 10 @7938 has 146 MA's), (40, 8193), (58, 8298), (60, 8316), (69, 8370),

Gene: Honk\_11 Start: 7750, Stop: 8304, Start Num: 10

Candidate Starts for Honk\_11:

(2, 7645), (Start: 10 @7750 has 146 MA's), (43, 7993),

Gene: IAmGroot\_12 Start: 9525, Stop: 10091, Start Num: 10

Candidate Starts for IAmGroot\_12:

(Start: 10 @9525 has 146 MA's), (36, 9723), (54, 9870),

Gene: IUFootball\_12 Start: 7927, Stop: 8487, Start Num: 10

Candidate Starts for IUFootball\_12:

(Start: 10 @7927 has 146 MA's), (43, 8170), (46, 8194), (59, 8290), (62, 8323), (68, 8353), (71, 8362), (83, 8476),

Gene: lter\_13 Start: 9483, Stop: 10034, Start Num: 10  
Candidate Starts for lter\_13:  
(Start: 10 @9483 has 146 MA's), (26, 9570), (45, 9747), (47, 9762),

Gene: lttyBittyPiggy\_13 Start: 9467, Stop: 10018, Start Num: 10  
Candidate Starts for lttyBittyPiggy\_13:  
(Start: 10 @9467 has 146 MA's), (43, 9710),

Gene: Janeemi\_14 Start: 10558, Stop: 11109, Start Num: 10  
Candidate Starts for Janeemi\_14:  
(Start: 10 @10558 has 146 MA's), (45, 10822), (47, 10837),

Gene: JasmineDragon\_12 Start: 7693, Stop: 8247, Start Num: 10  
Candidate Starts for JasmineDragon\_12:  
(Start: 10 @7693 has 146 MA's), (47, 7972), (50, 8008),

Gene: Joemato\_13 Start: 9468, Stop: 10019, Start Num: 10  
Candidate Starts for Joemato\_13:  
(Start: 10 @9468 has 146 MA's), (43, 9711), (45, 9732), (47, 9747), (75, 9951),

Gene: JohnDoe\_13 Start: 9466, Stop: 10014, Start Num: 10  
Candidate Starts for JohnDoe\_13:  
(Start: 10 @9466 has 146 MA's), (43, 9709), (45, 9730), (47, 9745), (75, 9949),

Gene: JohnThicc\_12 Start: 7693, Stop: 8247, Start Num: 10  
Candidate Starts for JohnThicc\_12:  
(Start: 10 @7693 has 146 MA's), (45, 7957), (47, 7972),

Gene: Jojo24\_12 Start: 7933, Stop: 8499, Start Num: 10  
Candidate Starts for Jojo24\_12:  
(Start: 10 @7933 has 146 MA's), (40, 8188), (58, 8293), (60, 8311), (69, 8365),

Gene: Jstan\_13 Start: 9449, Stop: 10000, Start Num: 10  
Candidate Starts for Jstan\_13:  
(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: JuneStar\_13 Start: 9561, Stop: 10112, Start Num: 10  
Candidate Starts for JuneStar\_13:  
(Start: 10 @9561 has 146 MA's), (43, 9804), (76, 10047),

Gene: JustASigh\_12 Start: 8934, Stop: 9476, Start Num: 10  
Candidate Starts for JustASigh\_12:  
(Start: 10 @8934 has 146 MA's), (12, 8955), (29, 9051), (34, 9084), (42, 9201), (44, 9210), (52, 9270),  
(53, 9273), (59, 9297), (62, 9330), (67, 9351),

Gene: Kalimba\_13 Start: 8889, Stop: 9449, Start Num: 10  
Candidate Starts for Kalimba\_13:  
(Start: 10 @8889 has 146 MA's), (43, 9132), (47, 9168), (53, 9225), (74, 9357),

Gene: Kaylissa\_13 Start: 9469, Stop: 10020, Start Num: 10  
Candidate Starts for Kaylissa\_13:  
(Start: 10 @9469 has 146 MA's), (43, 9712), (45, 9733), (47, 9748), (75, 9952),

Gene: KeAlii\_13 Start: 9493, Stop: 10050, Start Num: 10

Candidate Starts for KeAlii\_13:

(Start: 10 @9493 has 146 MA's), (36, 9688), (39, 9706), (45, 9757), (47, 9772), (56, 9850),

Gene: Kinbote\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Kinbote\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: LadyAstra\_12 Start: 7693, Stop: 8247, Start Num: 10

Candidate Starts for LadyAstra\_12:

(Start: 10 @7693 has 146 MA's), (45, 7957), (47, 7972), (75, 8173), (83, 8236),

Gene: Lego\_13 Start: 9467, Stop: 10018, Start Num: 10

Candidate Starts for Lego\_13:

(Start: 10 @9467 has 146 MA's), (43, 9710), (45, 9731), (47, 9746), (75, 9950),

Gene: Liebe\_12 Start: 7927, Stop: 8487, Start Num: 10

Candidate Starts for Liebe\_12:

(Start: 10 @7927 has 146 MA's), (43, 8170), (46, 8194), (59, 8290), (62, 8323), (68, 8353), (71, 8362), (83, 8476),

Gene: LilHazelnut\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for LilHazelnut\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Lizalica\_13 Start: 9453, Stop: 10004, Start Num: 10

Candidate Starts for Lizalica\_13:

(Start: 10 @9453 has 146 MA's), (45, 9717), (46, 9720), (47, 9732), (75, 9936),

Gene: London\_13 Start: 9449, Stop: 10000, Start Num: 10

Candidate Starts for London\_13:

(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: Luke\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Luke\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Luna22\_15 Start: 9938, Stop: 10477, Start Num: 10

Candidate Starts for Luna22\_15:

(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: MaGuCo\_12 Start: 7863, Stop: 8423, Start Num: 10

Candidate Starts for MaGuCo\_12:

(Start: 10 @7863 has 146 MA's), (16, 7908), (43, 8106), (46, 8130), (59, 8226), (62, 8259), (68, 8289), (71, 8298), (83, 8412),

Gene: Mabodamaca\_12 Start: 8972, Stop: 9535, Start Num: 10

Candidate Starts for Mabodamaca\_12:

(Start: 10 @8972 has 146 MA's), (33, 9089), (36, 9167), (78, 9482),

Gene: Mahdia\_11 Start: 7651, Stop: 8193, Start Num: 10

Candidate Starts for Mahdia\_11:

(Start: 10 @7651 has 146 MA's), (22, 7723), (28, 7762), (38, 7885), (40, 7906), (45, 7942), (53, 7990), (67, 8068), (69, 8080), (82, 8182),

Gene: MakCheese\_14 Start: 8246, Stop: 8788, Start Num: 10

Candidate Starts for MakCheese\_14:

(6, 8204), (8, 8240), (Start: 10 @8246 has 146 MA's), (38, 8480), (53, 8585), (80, 8771),

Gene: Malibo\_12 Start: 8220, Stop: 8765, Start Num: 10

Candidate Starts for Malibo\_12:

(5, 8172), (Start: 10 @8220 has 146 MA's), (16, 8265), (25, 8316), (40, 8475), (46, 8514), (51, 8553), (53, 8559), (67, 8637), (69, 8649),

Gene: Maureen\_12 Start: 7927, Stop: 8487, Start Num: 10

Candidate Starts for Maureen\_12:

(Start: 10 @7927 has 146 MA's), (43, 8170), (46, 8194), (59, 8290), (62, 8323), (68, 8353), (71, 8362), (83, 8476),

Gene: MiniMommy\_11 Start: 7693, Stop: 8247, Start Num: 10

Candidate Starts for MiniMommy\_11:

(Start: 10 @7693 has 146 MA's), (47, 7972), (50, 8008),

Gene: MissSwiss\_13 Start: 9452, Stop: 10000, Start Num: 10

Candidate Starts for MissSwiss\_13:

(Start: 10 @9452 has 146 MA's), (47, 9731), (53, 9788), (68, 9875), (74, 9920),

Gene: Morrissey\_12 Start: 8032, Stop: 8586, Start Num: 7

Candidate Starts for Morrissey\_12:

(Start: 7 @8032 has 2 MA's), (Start: 10 @8044 has 146 MA's), (18, 8098), (33, 8188), (38, 8278), (40, 8299), (52, 8380), (53, 8383),

Gene: Moss\_13 Start: 8980, Stop: 9540, Start Num: 10

Candidate Starts for Moss\_13:

(Start: 10 @8980 has 146 MA's), (43, 9223), (47, 9259), (54, 9322), (74, 9448), (81, 9505),

Gene: Mudpuppy\_13 Start: 9467, Stop: 10018, Start Num: 10

Candidate Starts for Mudpuppy\_13:

(Start: 10 @9467 has 146 MA's), (45, 9731), (46, 9734), (47, 9746), (75, 9950),

Gene: Mulch\_16 Start: 9700, Stop: 10245, Start Num: 10

Candidate Starts for Mulch\_16:

(Start: 10 @9700 has 146 MA's), (12, 9721), (80, 10225),

Gene: Mysterium\_13 Start: 8981, Stop: 9541, Start Num: 10

Candidate Starts for Mysterium\_13:

(Start: 10 @8981 has 146 MA's), (43, 9224), (47, 9260), (54, 9323), (74, 9449), (81, 9506),

Gene: Nadeem\_16 Start: 9700, Stop: 10245, Start Num: 10

Candidate Starts for Nadeem\_16:

(Start: 10 @9700 has 146 MA's), (12, 9721), (80, 10225),

Gene: NancyRae\_16 Start: 9700, Stop: 10245, Start Num: 10

Candidate Starts for NancyRae\_16:

(Start: 10 @9700 has 146 MA's), (12, 9721), (80, 10225),

Gene: Nesbitt\_12 Start: 8240, Stop: 8812, Start Num: 10

Candidate Starts for Nesbitt\_12:

(3, 8156), (Start: 10 @8240 has 146 MA's), (15, 8273), (20, 8300), (24, 8309), (27, 8336), (33, 8363), (42, 8483), (46, 8510), (47, 8522), (48, 8540), (57, 8597), (71, 8672),

Gene: Niobe\_13 Start: 9449, Stop: 10000, Start Num: 10

Candidate Starts for Niobe\_13:

(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: Nitro\_13 Start: 9472, Stop: 10023, Start Num: 10

Candidate Starts for Nitro\_13:

(Start: 10 @9472 has 146 MA's), (45, 9736), (47, 9751), (75, 9955),

Gene: NovoPizza\_13 Start: 10041, Stop: 10583, Start Num: 10

Candidate Starts for NovoPizza\_13:

(Start: 10 @10041 has 146 MA's), (12, 10062), (17, 10092), (29, 10152), (35, 10188), (42, 10302), (45, 10326), (53, 10374), (64, 10440), (65, 10443), (69, 10464), (75, 10521),

Gene: OBUpride\_15 Start: 9932, Stop: 10471, Start Num: 10

Candidate Starts for OBUpride\_15:

(Start: 10 @9932 has 146 MA's), (12, 9953), (13, 9956), (14, 9959), (16, 9977), (29, 10043), (35, 10079), (38, 10160), (42, 10193), (45, 10217), (53, 10265), (59, 10289), (64, 10331), (75, 10412),

Gene: ObiToo\_13 Start: 9650, Stop: 10207, Start Num: 10

Candidate Starts for ObiToo\_13:

(Start: 10 @9650 has 146 MA's), (45, 9914), (47, 9929),

Gene: Origami\_12 Start: 7693, Stop: 8247, Start Num: 10

Candidate Starts for Origami\_12:

(Start: 10 @7693 has 146 MA's), (45, 7957), (47, 7972), (75, 8173), (83, 8236),

Gene: PandaPo\_13 Start: 9452, Stop: 10000, Start Num: 10

Candidate Starts for PandaPo\_13:

(Start: 10 @9452 has 146 MA's), (47, 9731), (53, 9788), (68, 9875), (74, 9920),

Gene: Parada\_16 Start: 9700, Stop: 10245, Start Num: 10

Candidate Starts for Parada\_16:

(Start: 10 @9700 has 146 MA's), (12, 9721), (80, 10225),

Gene: Percival\_12 Start: 9598, Stop: 10164, Start Num: 10

Candidate Starts for Percival\_12:

(Start: 10 @9598 has 146 MA's), (23, 9667), (43, 9844), (54, 9943), (66, 10009), (76, 10087), (78, 10111),

Gene: Phives\_14 Start: 10550, Stop: 11101, Start Num: 10

Candidate Starts for Phives\_14:

(Start: 10 @10550 has 146 MA's), (33, 10667), (43, 10793), (45, 10814), (47, 10829),

Gene: Pimento\_17 Start: 9904, Stop: 10449, Start Num: 10

Candidate Starts for Pimento\_17:

(Start: 10 @9904 has 146 MA's), (12, 9925), (80, 10429),

Gene: Pixelle\_13 Start: 9493, Stop: 10044, Start Num: 10

Candidate Starts for Pixelle\_13:

(Start: 10 @9493 has 146 MA's), (43, 9736), (45, 9757),

Gene: Powerpuff\_13 Start: 9518, Stop: 10069, Start Num: 10

Candidate Starts for Powerpuff\_13:

(Start: 10 @9518 has 146 MA's), (43, 9761), (45, 9782), (47, 9797), (75, 10001),

Gene: Pumpkins\_13 Start: 9570, Stop: 10121, Start Num: 10

Candidate Starts for Pumpkins\_13:

(Start: 10 @9570 has 146 MA's), (43, 9813), (45, 9834),

Gene: Puppies\_11 Start: 7567, Stop: 8112, Start Num: 10

Candidate Starts for Puppies\_11:

(Start: 10 @7567 has 146 MA's), (40, 7822), (67, 7984), (69, 7996), (70, 7999),

Gene: Reedo\_13 Start: 9508, Stop: 10059, Start Num: 10

Candidate Starts for Reedo\_13:

(Start: 10 @9508 has 146 MA's), (36, 9703), (39, 9721), (47, 9787), (68, 9937),

Gene: Rem711\_18 Start: 11518, Stop: 12087, Start Num: 10

Candidate Starts for Rem711\_18:

(Start: 10 @11518 has 146 MA's), (16, 11563), (30, 11668), (41, 11800), (42, 11806), (45, 11830), (46, 11833),

Gene: Reyja\_13 Start: 8077, Stop: 8643, Start Num: 10

Candidate Starts for Reyja\_13:

(Start: 10 @8077 has 146 MA's), (26, 8176), (40, 8332), (58, 8437), (69, 8509),

Gene: RockScotty\_13 Start: 8980, Stop: 9540, Start Num: 10

Candidate Starts for RockScotty\_13:

(Start: 10 @8980 has 146 MA's), (43, 9223), (47, 9259), (54, 9322), (74, 9448), (81, 9505),

Gene: Rowa\_12 Start: 8015, Stop: 8572, Start Num: 10

Candidate Starts for Rowa\_12:

(Start: 10 @8015 has 146 MA's), (11, 8027), (27, 8111), (42, 8258), (46, 8285), (48, 8315), (51, 8348), (78, 8525),

Gene: Ruthy\_13 Start: 8511, Stop: 9053, Start Num: 10

Candidate Starts for Ruthy\_13:

(1, 8325), (4, 8460), (Start: 10 @8511 has 146 MA's), (21, 8580), (37, 8739), (38, 8745), (53, 8850), (80, 9036),

Gene: Sabourin\_13 Start: 8889, Stop: 9449, Start Num: 10

Candidate Starts for Sabourin\_13:

(Start: 10 @8889 has 146 MA's), (43, 9132), (47, 9168), (53, 9225), (74, 9357),

Gene: Santhid\_12 Start: 7942, Stop: 8508, Start Num: 10

Candidate Starts for Santhid\_12:

(Start: 10 @7942 has 146 MA's), (26, 8041), (40, 8197), (58, 8302), (69, 8374),

Gene: Schaffner\_13 Start: 9558, Stop: 10109, Start Num: 10

Candidate Starts for Schaffner\_13:

(Start: 10 @9558 has 146 MA's), (43, 9801), (76, 10044),

Gene: ShakeltOph\_12 Start: 7693, Stop: 8247, Start Num: 10

Candidate Starts for ShakeltOph\_12:

(Start: 10 @7693 has 146 MA's), (47, 7972), (50, 8008),

Gene: Simpson\_14 Start: 9468, Stop: 10019, Start Num: 10

Candidate Starts for Simpson\_14:

(Start: 10 @9468 has 146 MA's), (43, 9711), (45, 9732), (47, 9747), (75, 9951),

Gene: Skelbel\_13 Start: 9449, Stop: 10000, Start Num: 10

Candidate Starts for Skelbel\_13:

(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: Snek\_13 Start: 8559, Stop: 9110, Start Num: 10

Candidate Starts for Snek\_13:

(Start: 10 @8559 has 146 MA's), (36, 8754), (43, 8802), (68, 8982),

Gene: Soondubu\_12 Start: 9369, Stop: 9917, Start Num: 10

Candidate Starts for Soondubu\_12:

(Start: 10 @9369 has 146 MA's), (16, 9414), (76, 9852), (77, 9855), (80, 9888),

Gene: Sooty\_13 Start: 8890, Stop: 9450, Start Num: 10

Candidate Starts for Sooty\_13:

(Start: 10 @8890 has 146 MA's), (43, 9133), (47, 9169), (53, 9226), (74, 9358),

Gene: SpecialK\_13 Start: 8887, Stop: 9447, Start Num: 10

Candidate Starts for SpecialK\_13:

(Start: 10 @8887 has 146 MA's), (43, 9130), (47, 9166), (53, 9223), (74, 9355), (81, 9412),

Gene: Sprinklemunch\_12 Start: 8286, Stop: 8828, Start Num: 10

Candidate Starts for Sprinklemunch\_12:

(6, 8244), (8, 8280), (Start: 10 @8286 has 146 MA's), (31, 8418), (38, 8520), (53, 8625), (80, 8811),

Gene: Stuu\_13 Start: 8980, Stop: 9540, Start Num: 10

Candidate Starts for Stuu\_13:

(Start: 10 @8980 has 146 MA's), (43, 9223), (47, 9259), (54, 9322), (74, 9448), (81, 9505),

Gene: SuMoo\_11 Start: 7932, Stop: 8495, Start Num: 10

Candidate Starts for SuMoo\_11:

(Start: 10 @7932 has 146 MA's), (33, 8049), (36, 8127), (78, 8442),

Gene: Subaru\_13 Start: 9449, Stop: 10000, Start Num: 10

Candidate Starts for Subaru\_13:

(Start: 10 @9449 has 146 MA's), (45, 9713), (47, 9728), (75, 9932),

Gene: Sue2\_13 Start: 9472, Stop: 10023, Start Num: 10

Candidate Starts for Sue2\_13:

(Start: 10 @9472 has 146 MA's), (43, 9715),

Gene: SuperHands\_13 Start: 9770, Stop: 10336, Start Num: 10  
Candidate Starts for SuperHands\_13:  
(Start: 10 @9770 has 146 MA's), (23, 9839), (43, 10016), (54, 10115), (66, 10181), (76, 10259), (78, 10283),

Gene: Tallboi\_13 Start: 9476, Stop: 10027, Start Num: 10  
Candidate Starts for Tallboi\_13:  
(Start: 10 @9476 has 146 MA's), (43, 9719), (47, 9755), (75, 9959),

Gene: Tarzan\_12 Start: 7931, Stop: 8497, Start Num: 10  
Candidate Starts for Tarzan\_12:  
(Start: 10 @7931 has 146 MA's), (26, 8030), (40, 8186), (58, 8291), (60, 8309), (69, 8363),

Gene: Tbone\_13 Start: 9461, Stop: 10012, Start Num: 10  
Candidate Starts for Tbone\_13:  
(Start: 10 @9461 has 146 MA's), (45, 9725), (46, 9728), (47, 9740), (75, 9944),

Gene: TforTroy\_13 Start: 9590, Stop: 10141, Start Num: 10  
Candidate Starts for TforTroy\_13:  
(Start: 10 @9590 has 146 MA's), (26, 9677), (43, 9833),

Gene: ThursdayNight\_12 Start: 7964, Stop: 8515, Start Num: 10  
Candidate Starts for ThursdayNight\_12:  
(Start: 10 @7964 has 146 MA's), (16, 8009), (36, 8159), (46, 8231), (71, 8396), (76, 8450),

Gene: Tian\_13 Start: 9490, Stop: 10041, Start Num: 10  
Candidate Starts for Tian\_13:  
(Start: 10 @9490 has 146 MA's), (43, 9733), (45, 9754),

Gene: Trine\_11 Start: 7558, Stop: 8103, Start Num: 10  
Candidate Starts for Trine\_11:  
(Start: 10 @7558 has 146 MA's), (22, 7630), (28, 7669), (38, 7792), (40, 7813),

Gene: Tuck\_14 Start: 10510, Stop: 11061, Start Num: 10  
Candidate Starts for Tuck\_14:  
(Start: 10 @10510 has 146 MA's), (45, 10774), (47, 10789),

Gene: Turab\_13 Start: 9478, Stop: 10029, Start Num: 10  
Candidate Starts for Turab\_13:  
(Start: 10 @9478 has 146 MA's), (33, 9595), (43, 9721), (45, 9742), (47, 9757), (75, 9961),

Gene: Tutumahutu\_13 Start: 9518, Stop: 10069, Start Num: 10  
Candidate Starts for Tutumahutu\_13:  
(Start: 10 @9518 has 146 MA's), (43, 9761), (45, 9782), (47, 9797), (75, 10001),

Gene: Tweety19\_13 Start: 8558, Stop: 9109, Start Num: 10  
Candidate Starts for Tweety19\_13:  
(Start: 10 @8558 has 146 MA's), (36, 8753), (43, 8801), (68, 8981),

Gene: Ubuntu\_15 Start: 9938, Stop: 10477, Start Num: 10  
Candidate Starts for Ubuntu\_15:  
(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Upyo\_11 Start: 7576, Stop: 8118, Start Num: 10  
Candidate Starts for Upyo\_11:  
(Start: 7 @7564 has 2 MA's), (Start: 10 @7576 has 146 MA's), (38, 7810), (40, 7831), (51, 7909), (53, 7915), (82, 8107),

Gene: UtzChips\_11 Start: 8624, Stop: 9187, Start Num: 10  
Candidate Starts for UtzChips\_11:  
(Start: 10 @8624 has 146 MA's), (33, 8741), (68, 9047), (78, 9134),

Gene: VResidence\_13 Start: 9552, Stop: 10100, Start Num: 10  
Candidate Starts for VResidence\_13:  
(9, 9546), (Start: 10 @9552 has 146 MA's), (76, 10038),

Gene: VWB\_13 Start: 8668, Stop: 9222, Start Num: 10  
Candidate Starts for VWB\_13:  
(Start: 10 @8668 has 146 MA's), (36, 8860), (46, 8932), (49, 8965), (61, 9052), (65, 9067),

Gene: VroomVroom\_12 Start: 7705, Stop: 8259, Start Num: 10  
Candidate Starts for VroomVroom\_12:  
(Start: 10 @7705 has 146 MA's), (16, 7750), (47, 7984),

Gene: Warda\_13 Start: 9464, Stop: 10015, Start Num: 10  
Candidate Starts for Warda\_13:  
(Start: 10 @9464 has 146 MA's), (45, 9728), (46, 9731), (47, 9743), (75, 9947),

Gene: Webster2\_15 Start: 9938, Stop: 10477, Start Num: 10  
Candidate Starts for Webster2\_15:  
(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Weirdo19\_13 Start: 8705, Stop: 9247, Start Num: 10  
Candidate Starts for Weirdo19\_13:  
(Start: 10 @8705 has 146 MA's), (26, 8807), (29, 8822), (34, 8855), (44, 8981), (52, 9041), (53, 9044), (55, 9056), (67, 9122), (72, 9149), (75, 9191), (77, 9197),

Gene: WheatThin\_16 Start: 9700, Stop: 10245, Start Num: 10  
Candidate Starts for WheatThin\_16:  
(Start: 10 @9700 has 146 MA's), (12, 9721), (80, 10225),

Gene: Widow\_11 Start: 7558, Stop: 8103, Start Num: 10  
Candidate Starts for Widow\_11:  
(Start: 10 @7558 has 146 MA's), (40, 7813), (45, 7849), (67, 7975), (69, 7987), (70, 7990),

Gene: Wildwest\_14 Start: 10387, Stop: 10935, Start Num: 10  
Candidate Starts for Wildwest\_14:  
(9, 10381), (Start: 10 @10387 has 146 MA's), (45, 10651), (62, 10780), (74, 10855),

Gene: Wishmaker\_15 Start: 9938, Stop: 10477, Start Num: 10  
Candidate Starts for Wishmaker\_15:  
(Start: 10 @9938 has 146 MA's), (12, 9959), (13, 9962), (14, 9965), (16, 9983), (29, 10049), (35, 10085), (38, 10166), (42, 10199), (45, 10223), (53, 10271), (59, 10295), (64, 10337), (75, 10418),

Gene: Yang\_13 Start: 9560, Stop: 10111, Start Num: 10

Candidate Starts for Yang\_13:

(Start: 10 @9560 has 146 MA's), (26, 9647), (76, 10046),

Gene: YesChef\_13 Start: 9518, Stop: 10069, Start Num: 10

Candidate Starts for YesChef\_13:

(Start: 10 @9518 has 146 MA's), (43, 9761), (45, 9782), (47, 9797), (75, 10001),

Gene: Zeta1847\_11 Start: 7708, Stop: 8262, Start Num: 10

Candidate Starts for Zeta1847\_11:

(Start: 10 @7708 has 146 MA's), (33, 7825), (46, 7975),

Gene: Zodiariah\_12 Start: 8235, Stop: 8777, Start Num: 10

Candidate Starts for Zodiariah\_12:

(Start: 10 @8235 has 146 MA's), (38, 8469), (53, 8574), (80, 8760),