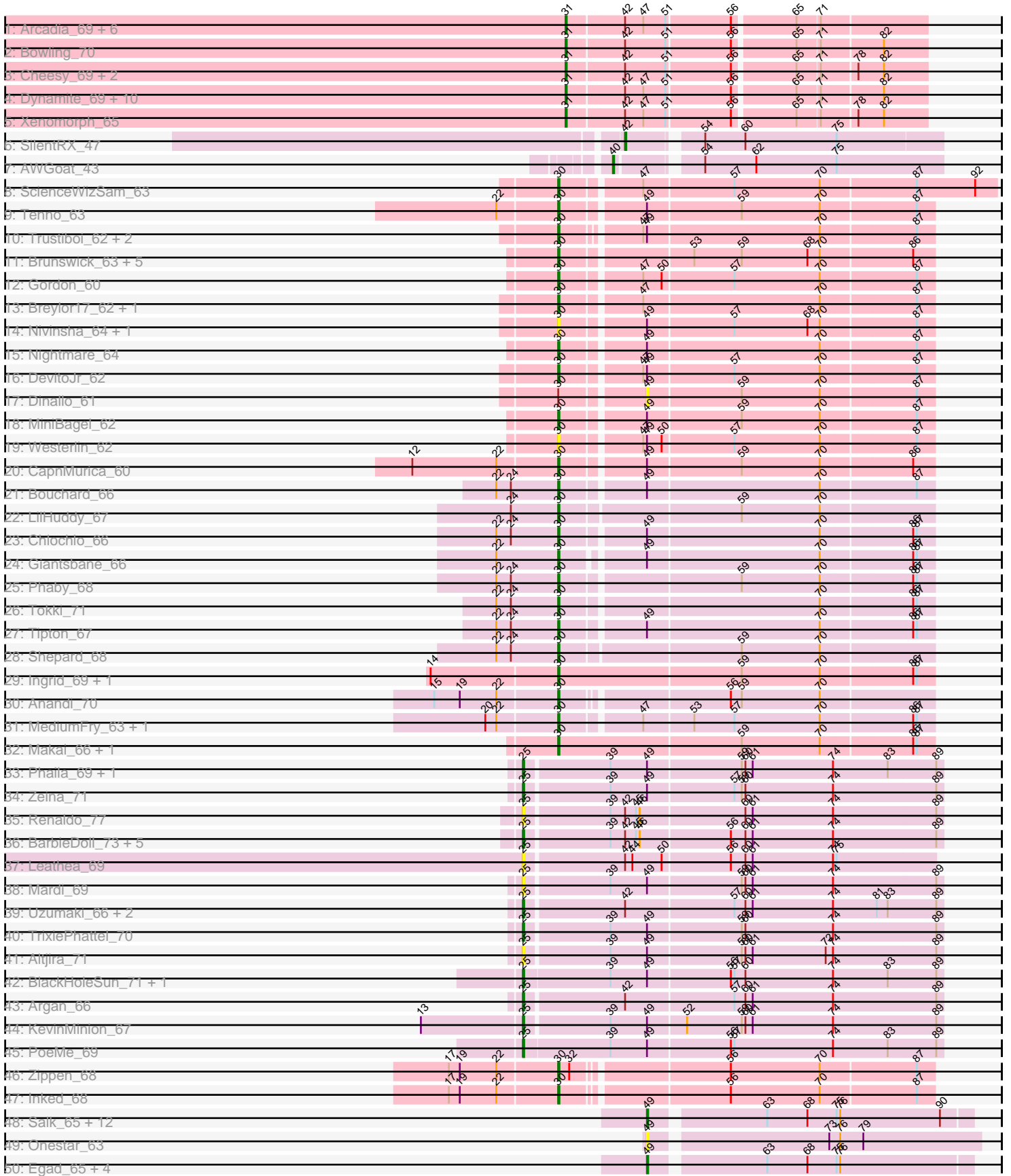
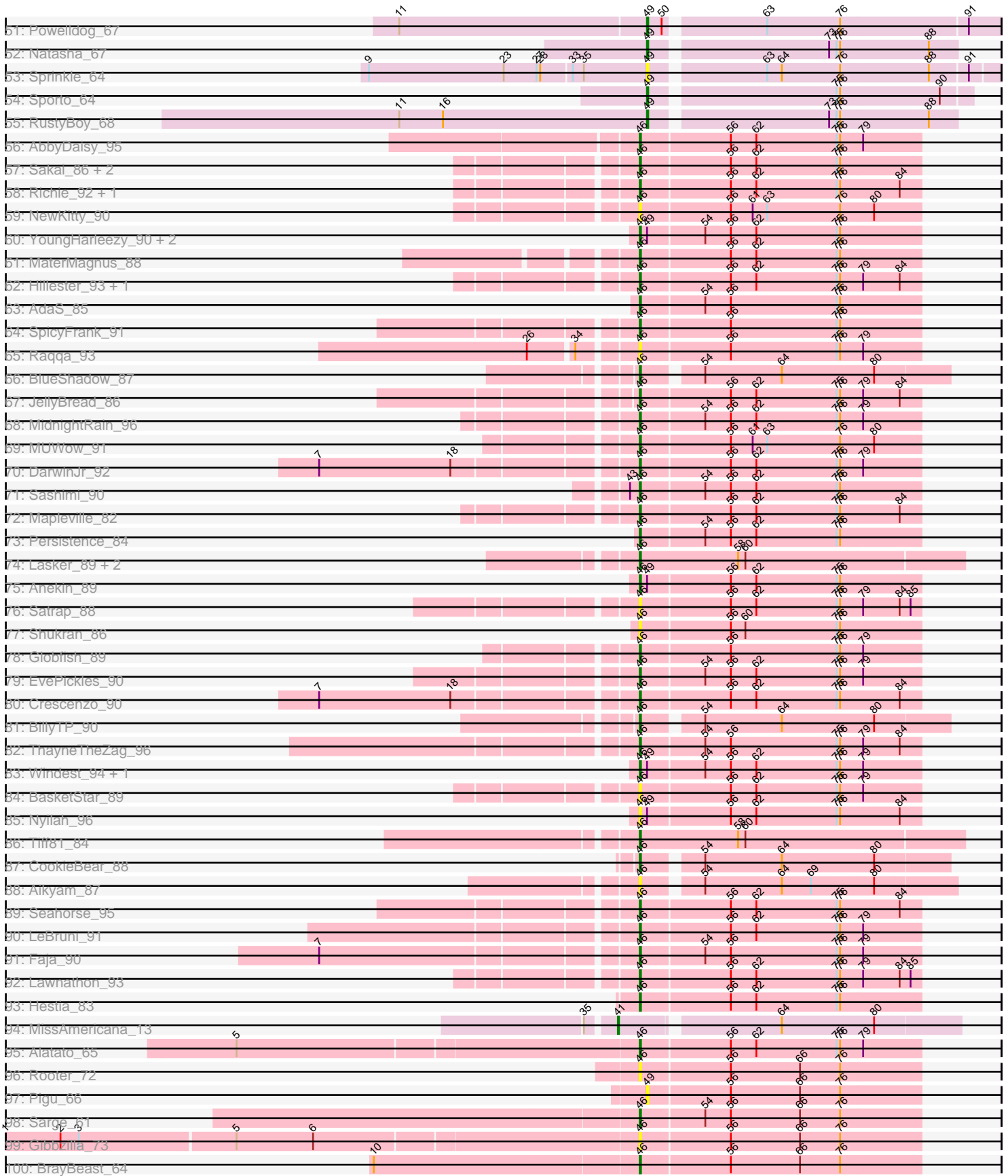


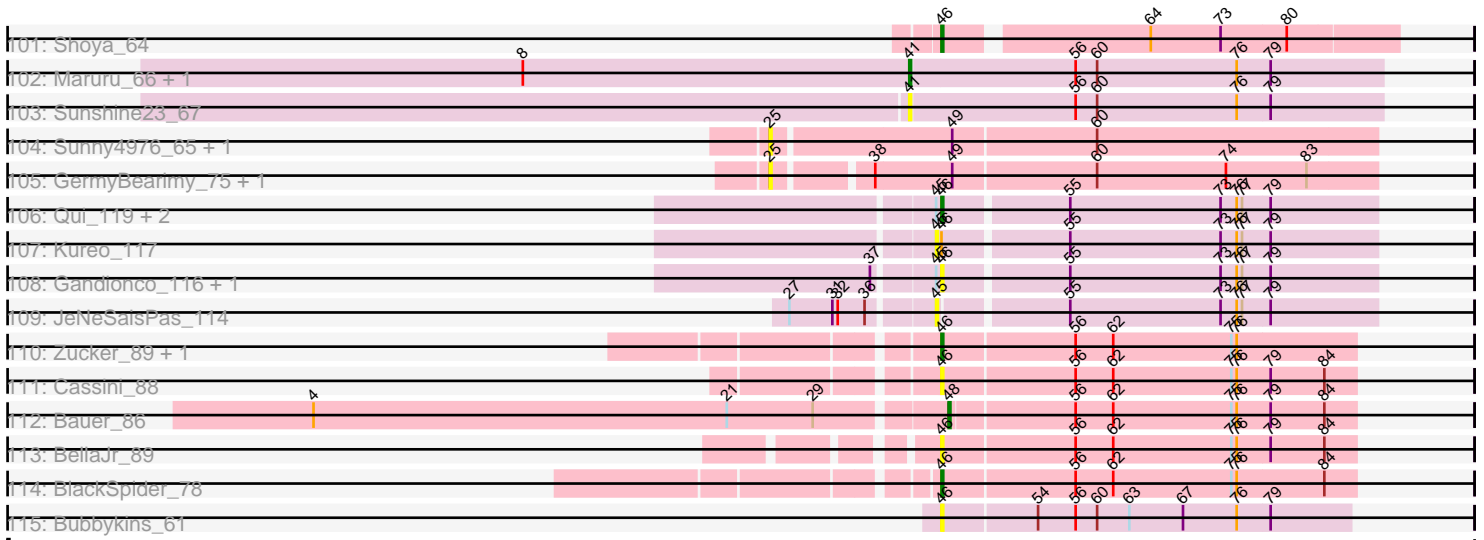
Pham 311262



Pham 311262



Pham 311262



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 311262 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311262 has 186 members, 44 are drafts.

Phages represented in each track:

- Track 1 : Arcadia\_69, Kardesai\_69, Elsa\_69, Nason\_69, Mooshroom\_70, GoCrazy\_66, KeaneyLin\_65
- Track 2 : Bowling\_70
- Track 3 : Cheesy\_69, Tribby\_72, Correa\_67
- Track 4 : Dynamite\_69, YoshiYama\_70, JEGGS\_68, NapoleonB\_70, BenitoAntonio\_67, Heisenberger\_68, Circum\_70, Stardom\_68, Mudcat\_65, Benllo\_66, Hankly\_68
- Track 5 : Xenomorph\_65
- Track 6 : SilentRX\_47
- Track 7 : AWGoat\_43
- Track 8 : ScienceWizSam\_63
- Track 9 : Tenno\_63
- Track 10 : Trustiboi\_62, Darby\_61, Synopsis\_61
- Track 11 : Brunswick\_63, LucySwiss\_62, Niktson\_62, ElephantMan\_62, Acai\_62, Teacup\_63
- Track 12 : Gordon\_60
- Track 13 : Breylor17\_62, CastorTray\_66
- Track 14 : Nivinsha\_64, AreFloNak\_65
- Track 15 : Nightmare\_64
- Track 16 : DevitoJr\_62
- Track 17 : Dinallo\_61
- Track 18 : MiniBagel\_62
- Track 19 : Westerlin\_62
- Track 20 : CapnMurica\_60
- Track 21 : Bouchard\_66
- Track 22 : LilHuddy\_67
- Track 23 : Chlochlo\_66
- Track 24 : Giantsbane\_66
- Track 25 : Phaby\_68
- Track 26 : Tokki\_71
- Track 27 : Tipton\_67
- Track 28 : Shepard\_68
- Track 29 : Ingrid\_69, Loretta\_66
- Track 30 : Anandi\_70
- Track 31 : MediumFry\_63, Caterpillar\_62
- Track 32 : Makai\_66, Truckee\_64
- Track 33 : Phaila\_69, Navi1117\_71

- Track 34 : Zeina\_71
- Track 35 : Renaldo\_77
- Track 36 : BarbieDoll\_73, Muglass\_71, Kinny\_72, Barbonzobean\_75, Biscute\_69, Lewando\_72
- Track 37 : Leathea\_69
- Track 38 : Mardi\_69
- Track 39 : Uzumaki\_66, GantcherGoblin\_67, Tenney120\_70
- Track 40 : TrixiePhattel\_70
- Track 41 : Altjira\_71
- Track 42 : BlackHoleSun\_71, Stardrop\_69
- Track 43 : Argan\_66
- Track 44 : KevinMinion\_67
- Track 45 : PoeMe\_69
- Track 46 : Zippen\_68
- Track 47 : Inked\_68
- Track 48 : Salk\_65, MrAaronian\_65, BronxBay\_65, Shiba\_64, Linda\_65, Michelle\_65, Jeremy4pt0\_64, DoctorPepper\_64, Djungelskog\_64, Spain\_65, Sloopyjoe\_65, Stayer\_65, StarLord\_65
- Track 49 : Onestar\_63
- Track 50 : Egad\_65, Raunak\_66, Boog\_64, HerbBucket\_63, ProfFrink\_65
- Track 51 : Powelldog\_67
- Track 52 : Natasha\_67
- Track 53 : Sprinkle\_64
- Track 54 : Sporto\_64
- Track 55 : RustyBoy\_68
- Track 56 : AbbyDaisy\_95
- Track 57 : Sakai\_86, Auxilium\_87, Gorpy\_87
- Track 58 : Richie\_92, BenchScraper\_89
- Track 59 : NewKitty\_90
- Track 60 : YoungHarleezy\_90, Bhageatrice\_93, JakeTheSnake\_94
- Track 61 : MaterMagnus\_88
- Track 62 : Hillester\_93, RadFad\_94
- Track 63 : AdaS\_85
- Track 64 : SpicyFrank\_91
- Track 65 : Raqqa\_93
- Track 66 : BlueShadow\_87
- Track 67 : JellyBread\_86
- Track 68 : MidnightRain\_96
- Track 69 : MUWow\_91
- Track 70 : DarwinJr\_92
- Track 71 : Sashimi\_90
- Track 72 : Mapleville\_82
- Track 73 : Persistence\_84
- Track 74 : Lasker\_89, Raphaella\_89, Vopal\_90
- Track 75 : Anekin\_89
- Track 76 : Satrap\_88
- Track 77 : Shukran\_86
- Track 78 : Globfish\_89
- Track 79 : EvePickles\_90
- Track 80 : Crescenzo\_90
- Track 81 : BillyTP\_90
- Track 82 : ThayneTheZag\_96
- Track 83 : Windest\_94, Isolde\_90

- Track 84 : BasketStar\_89
- Track 85 : Nyilah\_96
- Track 86 : Tiff81\_84
- Track 87 : CookieBear\_88
- Track 88 : Aikyam\_87
- Track 89 : Seahorse\_95
- Track 90 : LeBruni\_91
- Track 91 : Faja\_90
- Track 92 : Lawnathon\_93
- Track 93 : Hestia\_83
- Track 94 : MissAmericana\_13
- Track 95 : Alatato\_65
- Track 96 : Rooter\_72
- Track 97 : Pigu\_66
- Track 98 : Sarge\_61
- Track 99 : Gibbzilla\_73
- Track 100 : BrayBeast\_64
- Track 101 : Shoya\_64
- Track 102 : Maruru\_66, Sonali\_66
- Track 103 : Sunshine23\_67
- Track 104 : Sunny4976\_65, Jazzy4900\_66
- Track 105 : GermyBearimy\_75, Arzan\_67
- Track 106 : Qui\_119, Paella\_119, Elver\_119
- Track 107 : Kureo\_117
- Track 108 : Gandionco\_116, Marianna39\_117
- Track 109 : JeNeSaisPas\_114
- Track 110 : Zucker\_89, Phrank15\_95
- Track 111 : Cassini\_88
- Track 112 : Bauer\_86
- Track 113 : BellaJr\_89
- Track 114 : BlackSpider\_78
- Track 115 : Bubbykins\_61

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

The start number called the most often in the published annotations is 46, it was called in 48 of the 142 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AbbyDaisy\_95, AdaS\_85, Aikyam\_87, Alatato\_65, Anekin\_89, Auxilium\_87, BasketStar\_89, BellaJr\_89, BenchScraper\_89, Bhageatrice\_93, BillyTP\_90, BlackSpider\_78, BlueShadow\_87, BrayBeast\_64, Bubbykins\_61, Cassini\_88, CookieBear\_88, Crescenzo\_90, DarwinJr\_92, Elver\_119, EvePickles\_90, Faja\_90, Gandionco\_116, Gibbzilla\_73, Globfish\_89, Gorpy\_87, Hestia\_83, Hillester\_93, Isolde\_90, JakeTheSnake\_94, JellyBread\_86, Lasker\_89, Lawnathon\_93, LeBruni\_91, MUWow\_91, Mapleville\_82, Marianna39\_117, MaterMagnus\_88, MidnightRain\_96, NewKitty\_90, Nyilah\_96, Paella\_119, Persistence\_84, Phrank15\_95, Qui\_119, RadFad\_94, Raphaella\_89, Raqqa\_93, Richie\_92, Rooter\_72, Sakai\_86, Sarge\_61, Sashimi\_90, Satrap\_88, Seahorse\_95, Shoya\_64, Shukran\_86, SpicyFrank\_91, ThayneTheZag\_96, Tiff81\_84, Vopal\_90, Windest\_94,

YoungHarleezy\_90, Zucker\_89,

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

• BarbieDoll\_73, Barbonzobean\_75, Biscute\_69, Kinny\_72, Kureo\_117, Lewando\_72, Muglass\_71, Renaldo\_77,

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

• AWGoat\_43, Acai\_62, Altjira\_71, Anandi\_70, Arcadia\_69, AreFloNak\_65, Argan\_66, Arzan\_67, Bauer\_86, BenitoAntonio\_67, Benllo\_66, BlackHoleSun\_71, Boog\_64, Bouchard\_66, Bowling\_70, Breylor17\_62, BronxBay\_65, Brunswick\_63, CapnMurica\_60, CastorTray\_66, Caterpillar\_62, Cheesy\_69, Chlochlo\_66, Circum\_70, Correa\_67, Darby\_61, DevitoJr\_62, Dinallo\_61, Djungelskog\_64, DoctorPepper\_64, Dynamite\_69, Egad\_65, ElephantMan\_62, Elsa\_69, GantcherGoblin\_67, GermyBearimy\_75, Giantsbane\_66, GoCrazy\_66, Gordon\_60, Hankly\_68, Heisenberger\_68, HerbBucket\_63, Ingrid\_69, Inked\_68, JEGGS\_68, Jazzy4900\_66, JeNeSaisPas\_114, Jeremy4pt0\_64, Kardesai\_69, KeaneyLin\_65, KevinMinion\_67, Leathea\_69, LilHuddy\_67, Linda\_65, Loretta\_66, LucySwiss\_62, Makai\_66, Mardi\_69, Maruru\_66, MediumFry\_63, Michelle\_65, MiniBagel\_62, MissAmericana\_13, Mooshroom\_70, MrAaronian\_65, Mudcat\_65, NapoleonB\_70, Nason\_69, Natasha\_67, Navi1117\_71, Nightmare\_64, Niktson\_62, Nivinsha\_64, Onestar\_63, Phaby\_68, Phaila\_69, Pigu\_66, PoeMe\_69, PowellDog\_67, ProfFrink\_65, Raunak\_66, RustyBoy\_68, Salk\_65, ScienceWizSam\_63, Shepard\_68, Shiba\_64, SilentRX\_47, Sloopyjoe\_65, Sonali\_66, Spain\_65, Sporto\_64, Sprinkle\_64, StarLord\_65, Stardom\_68, Stardrop\_69, Stayer\_65, Sunny4976\_65, Sunshine23\_67, Synopsis\_61, Teacup\_63, Tenney120\_70, Tenno\_63, Tipton\_67, Tokki\_71, Tribby\_72, TrixiePhattel\_70, Truckee\_64, Trustiboi\_62, Uzumaki\_66, Westerlin\_62, Xenomorph\_65, YoshiYama\_70, Zeina\_71, Zippen\_68,

### Summary by start number:

Start 25:

• Found in 26 of 186 ( 14.0% ) of genes in pham  
• Manual Annotations of this start: 14 of 142  
• Called 100.0% of time when present  
• Phage (with cluster) where this start called: Altjira\_71 (AU6), Argan\_66 (AU6), Arzan\_67 (FI), BarbieDoll\_73 (AU6), Barbonzobean\_75 (AU6), Biscute\_69 (AU6), BlackHoleSun\_71 (AU6), GantcherGoblin\_67 (AU6), GermyBearimy\_75 (FI), Jazzy4900\_66 (FI), KevinMinion\_67 (AU6), Kinny\_72 (AU6), Leathea\_69 (AU6), Lewando\_72 (AU6), Mardi\_69 (AU6), Muglass\_71 (AU6), Navi1117\_71 (AU6), Phaila\_69 (AU6), PoeMe\_69 (AU6), Renaldo\_77 (AU6), Stardrop\_69 (AU6), Sunny4976\_65 (FI), Tenney120\_70 (AU6), TrixiePhattel\_70 (AU6), Uzumaki\_66 (AU6), Zeina\_71 (AU6),

Start 30:

• Found in 39 of 186 ( 21.0% ) of genes in pham  
• Manual Annotations of this start: 34 of 142  
• Called 97.4% of time when present  
• Phage (with cluster) where this start called: Acai\_62 (AU1), Anandi\_70 (AU4), AreFloNak\_65 (AU1), Bouchard\_66 (AU2), Breylor17\_62 (AU1), Brunswick\_63 (AU1), CapnMurica\_60 (AU1), CastorTray\_66 (AU1), Caterpillar\_62 (AU4), Chlochlo\_66 (AU2), Darby\_61 (AU1), DevitoJr\_62 (AU1), ElephantMan\_62 (AU1), Giantsbane\_66 (AU2), Gordon\_60 (AU1), Ingrid\_69 (AU3), Inked\_68 (AU7), LilHuddy\_67 (AU2), Loretta\_66 (AU3), LucySwiss\_62 (AU1), Makai\_66 (AU5), MediumFry\_63 (AU4),

MiniBagel\_62 (AU1), Nightmare\_64 (AU1), Niktson\_62 (AU1), Nivinsha\_64 (AU1), Phaby\_68 (AU2), ScienceWizSam\_63 (AU1), Shepard\_68 (AU2), Synopsis\_61 (AU1), Teacup\_63 (AU1), Tenno\_63 (AU1), Tipton\_67 (AU2), Tokki\_71 (AU2), Truckee\_64 (AU5), Trustiboi\_62 (AU1), Westerlin\_62 (AU1), Zippen\_68 (AU7),

Start 31:

- Found in 24 of 186 ( 12.9% ) of genes in pham
- Manual Annotations of this start: 21 of 142
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Arcadia\_69 (AM), BenitoAntonio\_67 (AM), Benllo\_66 (AM), Bowling\_70 (AM), Cheesy\_69 (AM), Circum\_70 (AM), Correa\_67 (AM), Dynamite\_69 (AM), Elsa\_69 (AM), GoCrazy\_66 (AM), Hankly\_68 (AM), Heisenberger\_68 (AM), JEGGS\_68 (AM), Kardesai\_69 (AM), KeaneyLin\_65 (AM), Mooshroom\_70 (AM), Mudcat\_65 (AM), NapoleonB\_70 (AM), Nason\_69 (AM), Stardom\_68 (AM), Tribby\_72 (AM), Xenomorph\_65 (AM), YoshiYama\_70 (AM),

Start 40:

- Found in 1 of 186 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 142
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_43 (AP4),

Start 41:

- Found in 4 of 186 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 142
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Maruru\_66 (FG), MissAmericana\_13 (EM2), Sonali\_66 (FG), Sunshine23\_67 (FG),

Start 42:

- Found in 36 of 186 ( 19.4% ) of genes in pham
- Manual Annotations of this start: 1 of 142
- Called 2.8% of time when present
- Phage (with cluster) where this start called: SilentRX\_47 (AP4),

Start 45:

- Found in 14 of 186 ( 7.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: JeNeSaisPas\_114 (FK), Kureo\_117 (FK),

Start 46:

- Found in 72 of 186 ( 38.7% ) of genes in pham
- Manual Annotations of this start: 48 of 142
- Called 88.9% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_95 (AY), AdaS\_85 (AY), Aikyam\_87 (AY), Alatato\_65 (FB), Aekin\_89 (AY), Auxilium\_87 (AY), BasketStar\_89 (AY), BellaJr\_89 (FN), BenchScraper\_89 (AY), Bhageatrice\_93 (AY), BillyTP\_90 (AY), BlackSpider\_78 (FN), BlueShadow\_87 (AY), BrayBeast\_64 (FB), Bubbykins\_61 (UNK), Cassini\_88 (FN), CookieBear\_88 (AY), Crescenzo\_90 (AY), DarwinJr\_92 (AY), Elver\_119 (FK), EvePickles\_90 (AY), Faja\_90 (AY), Gandionco\_116 (FK), Gibbzilla\_73 (FB), Globfish\_89 (AY), Gorpy\_87 (AY), Hestia\_83 (AY), Hillester\_93

(AY), Isolde\_90 (AY), JakeTheSnake\_94 (AY), JellyBread\_86 (AY), Lasker\_89 (AY), Lawnathon\_93 (AY), LeBruni\_91 (AY), MUWow\_91 (AY), Mapleville\_82 (AY), Marianna39\_117 (FK), MaterMagnus\_88 (AY), MidnightRain\_96 (AY), NewKitty\_90 (AY), Nyilah\_96 (AY), Paella\_119 (FK), Persistence\_84 (AY), Phrank15\_95 (AY), Qui\_119 (FK), RadFad\_94 (AY), Raphaella\_89 (AY), Raqqa\_93 (AY), Richie\_92 (AY), Rooter\_72 (FB), Sakai\_86 (AY), Sarge\_61 (FB), Sashimi\_90 (AY), Satrap\_88 (AY), Seahorse\_95 (AY), Shoya\_64 (FB), Shukran\_86 (AY), SpicyFrank\_91 (AY), ThayneTheZag\_96 (AY), Tiff81\_84 (AY), Vopal\_90 (AY), Windest\_94 (AY), YoungHarleezy\_90 (AY), Zucker\_89 (FN),

Start 48:

- Found in 1 of 186 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 142
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bauer\_86 (FN),

Start 49:

- Found in 62 of 186 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 19 of 142
- Called 41.9% of time when present
- Phage (with cluster) where this start called: Boog\_64 (AW), BronxBay\_65 (AW), Dinallo\_61 (AU1), Djungelskog\_64 (AW), DoctorPepper\_64 (AW), Egad\_65 (AW), HerbBucket\_63 (AW), Jeremy4pt0\_64 (AW), Linda\_65 (AW), Michelle\_65 (AW), MrAaronian\_65 (AW), Natasha\_67 (AW), Onestar\_63 (AW), Pigu\_66 (FB), Powellldog\_67 (AW), ProfFrink\_65 (AW), Raunak\_66 (AW), RustyBoy\_68 (AW), Salk\_65 (AW), Shiba\_64 (AW), Sloopyjoe\_65 (AW), Spain\_65 (AW), Sporto\_64 (AW), Sprinkle\_64 (AW), StarLord\_65 (AW), Stayer\_65 (AW),

### Summary by clusters:

There are 18 clusters represented in this pham: FK, AU7, FG, AM, AU3, AP4, AU1, FB, AU2, AU5, AU4, AW, AU6, AY, FI, UNK, FN, EM2,

Info for manual annotations of cluster AM:

- Start number 31 was manually annotated 21 times for cluster AM.

Info for manual annotations of cluster AP4:

- Start number 40 was manually annotated 1 time for cluster AP4.
- Start number 42 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster AU1:

- Start number 30 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 30 was manually annotated 8 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 30 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 30 was manually annotated 3 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 30 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 25 was manually annotated 14 times for cluster AU6.

Info for manual annotations of cluster AU7:

- Start number 30 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster AW:

- Start number 49 was manually annotated 19 times for cluster AW.

Info for manual annotations of cluster AY:

- Start number 46 was manually annotated 39 times for cluster AY.

Info for manual annotations of cluster EM2:

- Start number 41 was manually annotated 1 time for cluster EM2.

Info for manual annotations of cluster FB:

- Start number 46 was manually annotated 4 times for cluster FB.

Info for manual annotations of cluster FG:

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

Info for manual annotations of cluster FK:

- Start number 46 was manually annotated 3 times for cluster FK.

Info for manual annotations of cluster FN:

- Start number 46 was manually annotated 2 times for cluster FN.
- Start number 48 was manually annotated 1 time for cluster FN.

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

Gene: AWGoat\_43 Start: 36435, Stop: 36184, Start Num: 40

Candidate Starts for AWGoat\_43:

(Start: 40 @36435 has 1 MA's), (54, 36378), (62, 36336), (75, 36270),

Gene: AbbyDaisy\_95 Start: 52716, Stop: 52943, Start Num: 46

Candidate Starts for AbbyDaisy\_95:

(Start: 46 @52716 has 48 MA's), (56, 52788), (62, 52809), (75, 52875), (76, 52878), (79, 52896),

Gene: Acai\_62 Start: 44324, Stop: 44614, Start Num: 30

Candidate Starts for Acai\_62:

(Start: 30 @44324 has 34 MA's), (53, 44423), (59, 44462), (68, 44516), (70, 44525), (86, 44597),

Gene: AdaS\_85 Start: 47194, Stop: 47421, Start Num: 46

Candidate Starts for AdaS\_85:

(Start: 46 @47194 has 48 MA's), (54, 47245), (56, 47266), (75, 47353), (76, 47356),

Gene: Aikyam\_87 Start: 47697, Stop: 47942, Start Num: 46

Candidate Starts for Aikyam\_87:

(Start: 46 @47697 has 48 MA's), (54, 47739), (64, 47802), (69, 47826), (80, 47877),

Gene: Alatato\_65 Start: 36428, Stop: 36655, Start Num: 46

Candidate Starts for Alatato\_65:

(5, 36107), (Start: 46 @36428 has 48 MA's), (56, 36500), (62, 36521), (75, 36587), (76, 36590), (79, 36608),

Gene: Altjira\_71 Start: 44527, Stop: 44862, Start Num: 25

Candidate Starts for Altjira\_71:

(Start: 25 @44527 has 14 MA's), (39, 44593), (Start: 49 @44623 has 19 MA's), (59, 44698), (60, 44701), (61, 44707), (72, 44767), (74, 44773), (89, 44857),

Gene: Anandi\_70 Start: 44977, Stop: 45264, Start Num: 30

Candidate Starts for Anandi\_70:

(15, 44878), (19, 44899), (22, 44929), (Start: 30 @44977 has 34 MA's), (56, 45103), (59, 45112), (70, 45175),

Gene: Anekin\_89 Start: 49928, Stop: 50155, Start Num: 46

Candidate Starts for Anekin\_89:

(Start: 46 @49928 has 48 MA's), (Start: 49 @49934 has 19 MA's), (56, 50000), (62, 50021), (75, 50087), (76, 50090),

Gene: Arcadia\_69 Start: 43472, Stop: 43750, Start Num: 31

Candidate Starts for Arcadia\_69:

(Start: 31 @43472 has 21 MA's), (Start: 42 @43517 has 1 MA's), (47, 43532), (51, 43550), (56, 43601), (65, 43649), (71, 43667),

Gene: AreFloNak\_65 Start: 44289, Stop: 44579, Start Num: 30

Candidate Starts for AreFloNak\_65:

(Start: 30 @44289 has 34 MA's), (Start: 49 @44352 has 19 MA's), (57, 44421), (68, 44481), (70, 44490), (87, 44565),

Gene: Argan\_66 Start: 43247, Stop: 43582, Start Num: 25

Candidate Starts for Argan\_66:

(Start: 25 @43247 has 14 MA's), (Start: 42 @43325 has 1 MA's), (57, 43412), (60, 43421), (61, 43427), (74, 43493), (89, 43577),

Gene: Arzan\_67 Start: 44099, Stop: 44422, Start Num: 25

Candidate Starts for Arzan\_67:

(Start: 25 @44099 has 14 MA's), (38, 44147), (Start: 49 @44189 has 19 MA's), (60, 44267), (74, 44339), (83, 44384),

Gene: Auxilium\_87 Start: 46996, Stop: 47223, Start Num: 46

Candidate Starts for Auxilium\_87:

(Start: 46 @46996 has 48 MA's), (56, 47068), (62, 47089), (75, 47155), (76, 47158),

Gene: BarbieDoll\_73 Start: 44960, Stop: 45295, Start Num: 25

Candidate Starts for BarbieDoll\_73:

(Start: 25 @44960 has 14 MA's), (39, 45026), (Start: 42 @45038 has 1 MA's), (45, 45047), (Start: 46 @45050 has 48 MA's), (56, 45122), (60, 45134), (61, 45140), (74, 45206), (89, 45290),

Gene: Barbonzobean\_75 Start: 45208, Stop: 45543, Start Num: 25

Candidate Starts for Barbonzobean\_75:

(Start: 25 @45208 has 14 MA's), (39, 45274), (Start: 42 @45286 has 1 MA's), (45, 45295), (Start: 46 @45298 has 48 MA's), (56, 45370), (60, 45382), (61, 45388), (74, 45454), (89, 45538),

Gene: BasketStar\_89 Start: 49542, Stop: 49769, Start Num: 46

Candidate Starts for BasketStar\_89:

(Start: 46 @49542 has 48 MA's), (56, 49614), (62, 49635), (75, 49701), (76, 49704), (79, 49722),

Gene: Bauer\_86 Start: 46271, Stop: 46492, Start Num: 48

Candidate Starts for Bauer\_86:

(4, 45926), (21, 46157), (29, 46205), (Start: 48 @46271 has 1 MA's), (56, 46337), (62, 46358), (75, 46424), (76, 46427), (79, 46445), (84, 46475),

Gene: BellaJr\_89 Start: 49728, Stop: 49955, Start Num: 46

Candidate Starts for BellaJr\_89:

(Start: 46 @49728 has 48 MA's), (56, 49800), (62, 49821), (75, 49887), (76, 49890), (79, 49908), (84, 49938),

Gene: BenchScraper\_89 Start: 47947, Stop: 48174, Start Num: 46

Candidate Starts for BenchScraper\_89:

(Start: 46 @47947 has 48 MA's), (56, 48019), (62, 48040), (75, 48106), (76, 48109), (84, 48157),

Gene: BenitoAntonio\_67 Start: 42507, Stop: 42785, Start Num: 31

Candidate Starts for BenitoAntonio\_67:

(Start: 31 @42507 has 21 MA's), (Start: 42 @42552 has 1 MA's), (47, 42567), (51, 42585), (56, 42636), (65, 42684), (71, 42702), (82, 42750),

Gene: Benllo\_66 Start: 43185, Stop: 43463, Start Num: 31

Candidate Starts for Benllo\_66:

(Start: 31 @43185 has 21 MA's), (Start: 42 @43230 has 1 MA's), (47, 43245), (51, 43263), (56, 43314), (65, 43362), (71, 43380), (82, 43428),

Gene: Bhageatrice\_93 Start: 52222, Stop: 52449, Start Num: 46

Candidate Starts for Bhageatrice\_93:

(Start: 46 @52222 has 48 MA's), (Start: 49 @52228 has 19 MA's), (54, 52273), (56, 52294), (62, 52315), (75, 52381), (76, 52384),

Gene: BillyTP\_90 Start: 50050, Stop: 50289, Start Num: 46

Candidate Starts for BillyTP\_90:

(Start: 46 @50050 has 48 MA's), (54, 50092), (64, 50155), (80, 50230),

Gene: Biscute\_69 Start: 44612, Stop: 44947, Start Num: 25

Candidate Starts for Biscute\_69:

(Start: 25 @44612 has 14 MA's), (39, 44678), (Start: 42 @44690 has 1 MA's), (45, 44699), (Start: 46 @44702 has 48 MA's), (56, 44774), (60, 44786), (61, 44792), (74, 44858), (89, 44942),

Gene: BlackHoleSun\_71 Start: 43365, Stop: 43703, Start Num: 25

Candidate Starts for BlackHoleSun\_71:

(Start: 25 @43365 has 14 MA's), (39, 43434), (Start: 49 @43464 has 19 MA's), (56, 43530), (57, 43533), (60, 43542), (74, 43614), (83, 43659), (89, 43698),

Gene: BlackSpider\_78 Start: 47304, Stop: 47531, Start Num: 46

Candidate Starts for BlackSpider\_78:

(Start: 46 @47304 has 48 MA's), (56, 47376), (62, 47397), (75, 47463), (76, 47466), (84, 47514),

Gene: BlueShadow\_87 Start: 49643, Stop: 49882, Start Num: 46

Candidate Starts for BlueShadow\_87:

(Start: 46 @49643 has 48 MA's), (54, 49685), (64, 49748), (80, 49823),

Gene: Boog\_64 Start: 42243, Stop: 42494, Start Num: 49

Candidate Starts for Boog\_64:

(Start: 49 @42243 has 19 MA's), (63, 42330), (68, 42363), (75, 42387), (76, 42390),

Gene: Bouchard\_66 Start: 44943, Stop: 45233, Start Num: 30

Candidate Starts for Bouchard\_66:

(22, 44892), (24, 44904), (Start: 30 @44943 has 34 MA's), (Start: 49 @45006 has 19 MA's), (70, 45144), (87, 45219),

Gene: Bowling\_70 Start: 43461, Stop: 43739, Start Num: 31

Candidate Starts for Bowling\_70:

(Start: 31 @43461 has 21 MA's), (Start: 42 @43506 has 1 MA's), (51, 43539), (56, 43590), (65, 43638), (71, 43656), (82, 43704),

Gene: BrayBeast\_64 Start: 36058, Stop: 36285, Start Num: 46

Candidate Starts for BrayBeast\_64:

(10, 35845), (Start: 46 @36058 has 48 MA's), (56, 36130), (66, 36187), (76, 36220),

Gene: Breylor17\_62 Start: 44864, Stop: 45154, Start Num: 30

Candidate Starts for Breylor17\_62:

(Start: 30 @44864 has 34 MA's), (47, 44924), (70, 45065), (87, 45140),

Gene: BronxBay\_65 Start: 42499, Stop: 42750, Start Num: 49

Candidate Starts for BronxBay\_65:

(Start: 49 @42499 has 19 MA's), (63, 42586), (68, 42619), (75, 42643), (76, 42646), (90, 42727),

Gene: Brunswick\_63 Start: 44167, Stop: 44457, Start Num: 30

Candidate Starts for Brunswick\_63:

(Start: 30 @44167 has 34 MA's), (53, 44266), (59, 44305), (68, 44359), (70, 44368), (86, 44440),

Gene: Bubbykins\_61 Start: 45574, Stop: 45798, Start Num: 46

Candidate Starts for Bubbykins\_61:

(Start: 46 @45574 has 48 MA's), (54, 45625), (56, 45646), (60, 45658), (63, 45676), (67, 45706), (76, 45736), (79, 45754),

Gene: CapnMurica\_60 Start: 45050, Stop: 45340, Start Num: 30

Candidate Starts for CapnMurica\_60:

(12, 44933), (22, 45002), (Start: 30 @45050 has 34 MA's), (Start: 49 @45113 has 19 MA's), (59, 45188), (70, 45251), (86, 45323),

Gene: Cassini\_88 Start: 49322, Stop: 49549, Start Num: 46

Candidate Starts for Cassini\_88:

(Start: 46 @49322 has 48 MA's), (56, 49394), (62, 49415), (75, 49481), (76, 49484), (79, 49502), (84, 49532),

Gene: CastorTray\_66 Start: 45053, Stop: 45343, Start Num: 30

Candidate Starts for CastorTray\_66:

(Start: 30 @45053 has 34 MA's), (47, 45113), (70, 45254), (87, 45329),

Gene: Caterpillar\_62 Start: 43978, Stop: 44268, Start Num: 30

Candidate Starts for Caterpillar\_62:

(20, 43921), (22, 43930), (Start: 30 @43978 has 34 MA's), (47, 44038), (53, 44077), (57, 44110), (70, 44179), (86, 44251), (87, 44254),

Gene: Cheesy\_69 Start: 42699, Stop: 42977, Start Num: 31

Candidate Starts for Cheesy\_69:

(Start: 31 @42699 has 21 MA's), (Start: 42 @42744 has 1 MA's), (51, 42777), (56, 42828), (65, 42876), (71, 42894), (78, 42921), (82, 42942),

Gene: Chlochlo\_66 Start: 44469, Stop: 44759, Start Num: 30

Candidate Starts for Chlochlo\_66:

(22, 44418), (24, 44430), (Start: 30 @44469 has 34 MA's), (Start: 49 @44532 has 19 MA's), (70, 44670), (86, 44742), (87, 44745),

Gene: Circum\_70 Start: 43275, Stop: 43553, Start Num: 31

Candidate Starts for Circum\_70:

(Start: 31 @43275 has 21 MA's), (Start: 42 @43320 has 1 MA's), (47, 43335), (51, 43353), (56, 43404), (65, 43452), (71, 43470), (82, 43518),

Gene: CookieBear\_88 Start: 49258, Stop: 49497, Start Num: 46

Candidate Starts for CookieBear\_88:

(Start: 46 @49258 has 48 MA's), (54, 49300), (64, 49363), (80, 49438),

Gene: Correa\_67 Start: 42273, Stop: 42551, Start Num: 31

Candidate Starts for Correa\_67:

(Start: 31 @42273 has 21 MA's), (Start: 42 @42318 has 1 MA's), (51, 42351), (56, 42402), (65, 42450), (71, 42468), (78, 42495), (82, 42516),

Gene: Crescenzo\_90 Start: 50951, Stop: 51178, Start Num: 46

Candidate Starts for Crescenzo\_90:

(7, 50708), (18, 50816), (Start: 46 @50951 has 48 MA's), (56, 51023), (62, 51044), (75, 51110), (76, 51113), (84, 51161),

Gene: Darby\_61 Start: 44099, Stop: 44389, Start Num: 30

Candidate Starts for Darby\_61:

(Start: 30 @44099 has 34 MA's), (47, 44159), (Start: 49 @44162 has 19 MA's), (70, 44300), (87, 44375),

Gene: DarwinJr\_92 Start: 51065, Stop: 51292, Start Num: 46

Candidate Starts for DarwinJr\_92:

(7, 50822), (18, 50930), (Start: 46 @51065 has 48 MA's), (56, 51137), (62, 51158), (75, 51224), (76, 51227), (79, 51245),

Gene: DevitoJr\_62 Start: 44485, Stop: 44775, Start Num: 30

Candidate Starts for DevitoJr\_62:

(Start: 30 @44485 has 34 MA's), (47, 44545), (Start: 49 @44548 has 19 MA's), (57, 44617), (70, 44686), (87, 44761),

Gene: Dinallo\_61 Start: 45423, Stop: 45650, Start Num: 49

Candidate Starts for Dinallo\_61:

(Start: 30 @45360 has 34 MA's), (Start: 49 @45423 has 19 MA's), (59, 45498), (70, 45561), (87, 45636),

Gene: Djungelskog\_64 Start: 42498, Stop: 42749, Start Num: 49

Candidate Starts for Djungelskog\_64:

(Start: 49 @42498 has 19 MA's), (63, 42585), (68, 42618), (75, 42642), (76, 42645), (90, 42726),

Gene: DoctorPepper\_64 Start: 42203, Stop: 42454, Start Num: 49

Candidate Starts for DoctorPepper\_64:

(Start: 49 @42203 has 19 MA's), (63, 42290), (68, 42323), (75, 42347), (76, 42350), (90, 42431),

Gene: Dynamite\_69 Start: 43288, Stop: 43566, Start Num: 31

Candidate Starts for Dynamite\_69:

(Start: 31 @43288 has 21 MA's), (Start: 42 @43333 has 1 MA's), (47, 43348), (51, 43366), (56, 43417), (65, 43465), (71, 43483), (82, 43531),

Gene: Egad\_65 Start: 42494, Stop: 42745, Start Num: 49

Candidate Starts for Egad\_65:

(Start: 49 @42494 has 19 MA's), (63, 42581), (68, 42614), (75, 42638), (76, 42641),

Gene: ElephantMan\_62 Start: 44797, Stop: 45087, Start Num: 30

Candidate Starts for ElephantMan\_62:

(Start: 30 @44797 has 34 MA's), (53, 44896), (59, 44935), (68, 44989), (70, 44998), (86, 45070),

Gene: Elsa\_69 Start: 43472, Stop: 43750, Start Num: 31

Candidate Starts for Elsa\_69:

(Start: 31 @43472 has 21 MA's), (Start: 42 @43517 has 1 MA's), (47, 43532), (51, 43550), (56, 43601), (65, 43649), (71, 43667),

Gene: Elver\_119 Start: 65771, Stop: 66007, Start Num: 46

Candidate Starts for Elver\_119:

(45, 65768), (Start: 46 @65771 has 48 MA's), (55, 65837), (73, 65921), (76, 65930), (77, 65933), (79, 65948),

Gene: EvePickles\_90 Start: 50663, Stop: 50890, Start Num: 46

Candidate Starts for EvePickles\_90:

(Start: 46 @50663 has 48 MA's), (54, 50714), (56, 50735), (62, 50756), (75, 50822), (76, 50825), (79, 50843),

Gene: Faja\_90 Start: 49924, Stop: 50151, Start Num: 46

Candidate Starts for Faja\_90:

(7, 49681), (Start: 46 @49924 has 48 MA's), (54, 49975), (56, 49996), (75, 50083), (76, 50086), (79, 50104),

Gene: Gandionco\_116 Start: 64583, Stop: 64819, Start Num: 46

Candidate Starts for Gandionco\_116:

(37, 64550), (45, 64580), (Start: 46 @64583 has 48 MA's), (55, 64649), (73, 64733), (76, 64742), (77, 64745), (79, 64760),

Gene: GantcherGoblin\_67 Start: 43303, Stop: 43638, Start Num: 25

Candidate Starts for GantcherGoblin\_67:

(Start: 25 @43303 has 14 MA's), (Start: 42 @43381 has 1 MA's), (57, 43468), (60, 43477), (61, 43483), (74, 43549), (81, 43585), (83, 43594), (89, 43633),

Gene: GermyBearimy\_75 Start: 45669, Stop: 45992, Start Num: 25  
Candidate Starts for GermyBearimy\_75:  
(Start: 25 @45669 has 14 MA's), (38, 45717), (Start: 49 @45759 has 19 MA's), (60, 45837), (74, 45909), (83, 45954),

Gene: Giantsbane\_66 Start: 43674, Stop: 43961, Start Num: 30  
Candidate Starts for Giantsbane\_66:  
(22, 43623), (Start: 30 @43674 has 34 MA's), (Start: 49 @43734 has 19 MA's), (70, 43872), (86, 43944), (87, 43947),

Gene: Gibbzilla\_73 Start: 36826, Stop: 37053, Start Num: 46  
Candidate Starts for Gibbzilla\_73:  
(1, 36319), (2, 36364), (3, 36379), (5, 36505), (6, 36568), (Start: 46 @36826 has 48 MA's), (56, 36898), (66, 36955), (76, 36988),

Gene: Globfish\_89 Start: 48667, Stop: 48894, Start Num: 46  
Candidate Starts for Globfish\_89:  
(Start: 46 @48667 has 48 MA's), (56, 48739), (75, 48826), (76, 48829), (79, 48847),

Gene: GoCrazy\_66 Start: 42732, Stop: 43010, Start Num: 31  
Candidate Starts for GoCrazy\_66:  
(Start: 31 @42732 has 21 MA's), (Start: 42 @42777 has 1 MA's), (47, 42792), (51, 42810), (56, 42861), (65, 42909), (71, 42927),

Gene: Gordon\_60 Start: 44977, Stop: 45267, Start Num: 30  
Candidate Starts for Gordon\_60:  
(Start: 30 @44977 has 34 MA's), (47, 45037), (50, 45052), (57, 45109), (70, 45178), (87, 45253),

Gene: Gorpy\_87 Start: 50675, Stop: 50902, Start Num: 46  
Candidate Starts for Gorpy\_87:  
(Start: 46 @50675 has 48 MA's), (56, 50747), (62, 50768), (75, 50834), (76, 50837),

Gene: Hankly\_68 Start: 42356, Stop: 42634, Start Num: 31  
Candidate Starts for Hankly\_68:  
(Start: 31 @42356 has 21 MA's), (Start: 42 @42401 has 1 MA's), (47, 42416), (51, 42434), (56, 42485), (65, 42533), (71, 42551), (82, 42599),

Gene: Heisenberger\_68 Start: 42694, Stop: 42972, Start Num: 31  
Candidate Starts for Heisenberger\_68:  
(Start: 31 @42694 has 21 MA's), (Start: 42 @42739 has 1 MA's), (47, 42754), (51, 42772), (56, 42823), (65, 42871), (71, 42889), (82, 42937),

Gene: HerbBucket\_63 Start: 42225, Stop: 42476, Start Num: 49  
Candidate Starts for HerbBucket\_63:  
(Start: 49 @42225 has 19 MA's), (63, 42312), (68, 42345), (75, 42369), (76, 42372),

Gene: Hestia\_83 Start: 47282, Stop: 47509, Start Num: 46  
Candidate Starts for Hestia\_83:  
(Start: 46 @47282 has 48 MA's), (56, 47354), (62, 47375), (75, 47441), (76, 47444),

Gene: Hillester\_93 Start: 49669, Stop: 49896, Start Num: 46  
Candidate Starts for Hillester\_93:

(Start: 46 @49669 has 48 MA's), (56, 49741), (62, 49762), (75, 49828), (76, 49831), (79, 49849), (84, 49879),

Gene: Ingrid\_69 Start: 44855, Stop: 45154, Start Num: 30

Candidate Starts for Ingrid\_69:

(14, 44753), (Start: 30 @44855 has 34 MA's), (59, 45002), (70, 45065), (86, 45137), (87, 45140),

Gene: Inked\_68 Start: 45528, Stop: 45815, Start Num: 30

Candidate Starts for Inked\_68:

(17, 45441), (19, 45450), (22, 45480), (Start: 30 @45528 has 34 MA's), (56, 45654), (70, 45726), (87, 45801),

Gene: Isolde\_90 Start: 50517, Stop: 50744, Start Num: 46

Candidate Starts for Isolde\_90:

(Start: 46 @50517 has 48 MA's), (Start: 49 @50523 has 19 MA's), (54, 50568), (56, 50589), (62, 50610), (75, 50676), (76, 50679), (79, 50697),

Gene: JEGGS\_68 Start: 42773, Stop: 43051, Start Num: 31

Candidate Starts for JEGGS\_68:

(Start: 31 @42773 has 21 MA's), (Start: 42 @42818 has 1 MA's), (47, 42833), (51, 42851), (56, 42902), (65, 42950), (71, 42968), (82, 43016),

Gene: JakeTheSnake\_94 Start: 51814, Stop: 52041, Start Num: 46

Candidate Starts for JakeTheSnake\_94:

(Start: 46 @51814 has 48 MA's), (Start: 49 @51820 has 19 MA's), (54, 51865), (56, 51886), (62, 51907), (75, 51973), (76, 51976),

Gene: Jazzy4900\_66 Start: 44859, Stop: 45188, Start Num: 25

Candidate Starts for Jazzy4900\_66:

(Start: 25 @44859 has 14 MA's), (Start: 49 @44955 has 19 MA's), (60, 45033),

Gene: JeNeSaisPas\_114 Start: 65186, Stop: 65422, Start Num: 45

Candidate Starts for JeNeSaisPas\_114:

(27, 65111), (Start: 31 @65135 has 21 MA's), (32, 65138), (36, 65153), (45, 65186), (55, 65252), (73, 65336), (76, 65345), (77, 65348), (79, 65363),

Gene: JellyBread\_86 Start: 49663, Stop: 49890, Start Num: 46

Candidate Starts for JellyBread\_86:

(Start: 46 @49663 has 48 MA's), (56, 49735), (62, 49756), (75, 49822), (76, 49825), (79, 49843), (84, 49873),

Gene: Jeremy4pt0\_64 Start: 42198, Stop: 42449, Start Num: 49

Candidate Starts for Jeremy4pt0\_64:

(Start: 49 @42198 has 19 MA's), (63, 42285), (68, 42318), (75, 42342), (76, 42345), (90, 42426),

Gene: Kardesai\_69 Start: 43082, Stop: 43360, Start Num: 31

Candidate Starts for Kardesai\_69:

(Start: 31 @43082 has 21 MA's), (Start: 42 @43127 has 1 MA's), (47, 43142), (51, 43160), (56, 43211), (65, 43259), (71, 43277),

Gene: KeaneyLin\_65 Start: 42732, Stop: 43010, Start Num: 31

Candidate Starts for KeaneyLin\_65:

(Start: 31 @42732 has 21 MA's), (Start: 42 @42777 has 1 MA's), (47, 42792), (51, 42810), (56, 42861), (65, 42909), (71, 42927),

Gene: KevinMinion\_67 Start: 44198, Stop: 44533, Start Num: 25

Candidate Starts for KevinMinion\_67:

(13, 44117), (Start: 25 @44198 has 14 MA's), (39, 44264), (Start: 49 @44294 has 19 MA's), (52, 44324), (59, 44369), (60, 44372), (61, 44378), (74, 44444), (89, 44528),

Gene: Kinny\_72 Start: 45440, Stop: 45775, Start Num: 25

Candidate Starts for Kinny\_72:

(Start: 25 @45440 has 14 MA's), (39, 45506), (Start: 42 @45518 has 1 MA's), (45, 45527), (Start: 46 @45530 has 48 MA's), (56, 45602), (60, 45614), (61, 45620), (74, 45686), (89, 45770),

Gene: Kureo\_117 Start: 64776, Stop: 65015, Start Num: 45

Candidate Starts for Kureo\_117:

(45, 64776), (Start: 46 @64779 has 48 MA's), (55, 64845), (73, 64929), (76, 64938), (77, 64941), (79, 64956),

Gene: Lasker\_89 Start: 50385, Stop: 50648, Start Num: 46

Candidate Starts for Lasker\_89:

(Start: 46 @50385 has 48 MA's), (58, 50466), (60, 50472),

Gene: Lawnathon\_93 Start: 50019, Stop: 50246, Start Num: 46

Candidate Starts for Lawnathon\_93:

(Start: 46 @50019 has 48 MA's), (56, 50091), (62, 50112), (75, 50178), (76, 50181), (79, 50199), (84, 50229), (85, 50238),

Gene: LeBruni\_91 Start: 49787, Stop: 50014, Start Num: 46

Candidate Starts for LeBruni\_91:

(Start: 46 @49787 has 48 MA's), (56, 49859), (62, 49880), (75, 49946), (76, 49949), (79, 49967),

Gene: Leathea\_69 Start: 43211, Stop: 43540, Start Num: 25

Candidate Starts for Leathea\_69:

(Start: 25 @43211 has 14 MA's), (Start: 42 @43289 has 1 MA's), (44, 43295), (50, 43319), (56, 43373), (60, 43385), (61, 43391), (74, 43457), (75, 43460),

Gene: Lewando\_72 Start: 45032, Stop: 45367, Start Num: 25

Candidate Starts for Lewando\_72:

(Start: 25 @45032 has 14 MA's), (39, 45098), (Start: 42 @45110 has 1 MA's), (45, 45119), (Start: 46 @45122 has 48 MA's), (56, 45194), (60, 45206), (61, 45212), (74, 45278), (89, 45362),

Gene: LilHuddy\_67 Start: 44781, Stop: 45074, Start Num: 30

Candidate Starts for LilHuddy\_67:

(24, 44742), (Start: 30 @44781 has 34 MA's), (59, 44922), (70, 44985),

Gene: Linda\_65 Start: 42496, Stop: 42747, Start Num: 49

Candidate Starts for Linda\_65:

(Start: 49 @42496 has 19 MA's), (63, 42583), (68, 42616), (75, 42640), (76, 42643), (90, 42724),

Gene: Loretta\_66 Start: 44855, Stop: 45154, Start Num: 30

Candidate Starts for Loretta\_66:

(14, 44753), (Start: 30 @44855 has 34 MA's), (59, 45002), (70, 45065), (86, 45137), (87, 45140),

Gene: LucySwiss\_62 Start: 43948, Stop: 44238, Start Num: 30

Candidate Starts for LucySwiss\_62:

(Start: 30 @43948 has 34 MA's), (53, 44047), (59, 44086), (68, 44140), (70, 44149), (86, 44221),

Gene: MUWow\_91 Start: 50713, Stop: 50940, Start Num: 46

Candidate Starts for MUWow\_91:

(Start: 46 @50713 has 48 MA's), (56, 50785), (61, 50803), (63, 50815), (76, 50875), (80, 50902),

Gene: Makai\_66 Start: 44929, Stop: 45228, Start Num: 30

Candidate Starts for Makai\_66:

(Start: 30 @44929 has 34 MA's), (59, 45076), (70, 45139), (86, 45211), (87, 45214),

Gene: Mapleville\_82 Start: 48161, Stop: 48388, Start Num: 46

Candidate Starts for Mapleville\_82:

(Start: 46 @48161 has 48 MA's), (56, 48233), (62, 48254), (75, 48320), (76, 48323), (84, 48371),

Gene: Mardi\_69 Start: 43768, Stop: 44103, Start Num: 25

Candidate Starts for Mardi\_69:

(Start: 25 @43768 has 14 MA's), (39, 43834), (Start: 49 @43864 has 19 MA's), (59, 43939), (60, 43942), (61, 43948), (74, 44014), (89, 44098),

Gene: Marianna39\_117 Start: 65194, Stop: 65430, Start Num: 46

Candidate Starts for Marianna39\_117:

(37, 65161), (45, 65191), (Start: 46 @65194 has 48 MA's), (55, 65260), (73, 65344), (76, 65353), (77, 65356), (79, 65371),

Gene: Maruru\_66 Start: 45050, Stop: 45310, Start Num: 41

Candidate Starts for Maruru\_66:

(8, 44834), (Start: 41 @45050 has 3 MA's), (56, 45140), (60, 45152), (76, 45230), (79, 45248),

Gene: MaterMagnus\_88 Start: 49961, Stop: 50188, Start Num: 46

Candidate Starts for MaterMagnus\_88:

(Start: 46 @49961 has 48 MA's), (56, 50033), (62, 50054), (75, 50120), (76, 50123),

Gene: MediumFry\_63 Start: 44274, Stop: 44564, Start Num: 30

Candidate Starts for MediumFry\_63:

(20, 44217), (22, 44226), (Start: 30 @44274 has 34 MA's), (47, 44334), (53, 44373), (57, 44406), (70, 44475), (86, 44547), (87, 44550),

Gene: Michelle\_65 Start: 42498, Stop: 42749, Start Num: 49

Candidate Starts for Michelle\_65:

(Start: 49 @42498 has 19 MA's), (63, 42585), (68, 42618), (75, 42642), (76, 42645), (90, 42726),

Gene: MidnightRain\_96 Start: 51168, Stop: 51395, Start Num: 46

Candidate Starts for MidnightRain\_96:

(Start: 46 @51168 has 48 MA's), (54, 51219), (56, 51240), (62, 51261), (75, 51327), (76, 51330), (79, 51348),

Gene: MiniBagel\_62 Start: 45041, Stop: 45331, Start Num: 30

Candidate Starts for MiniBagel\_62:

(Start: 30 @45041 has 34 MA's), (Start: 49 @45104 has 19 MA's), (59, 45179), (70, 45242), (87, 45317),

Gene: MissAmericana\_13 Start: 9042, Stop: 8782, Start Num: 41

Candidate Starts for MissAmericana\_13:

(35, 9063), (Start: 41 @9042 has 3 MA's), (64, 8925), (80, 8850),

Gene: Mooshroom\_70 Start: 43082, Stop: 43360, Start Num: 31

Candidate Starts for Mooshroom\_70:

(Start: 31 @43082 has 21 MA's), (Start: 42 @43127 has 1 MA's), (47, 43142), (51, 43160), (56, 43211), (65, 43259), (71, 43277),

Gene: MrAaronian\_65 Start: 42498, Stop: 42749, Start Num: 49

Candidate Starts for MrAaronian\_65:

(Start: 49 @42498 has 19 MA's), (63, 42585), (68, 42618), (75, 42642), (76, 42645), (90, 42726),

Gene: Mudcat\_65 Start: 44131, Stop: 44409, Start Num: 31

Candidate Starts for Mudcat\_65:

(Start: 31 @44131 has 21 MA's), (Start: 42 @44176 has 1 MA's), (47, 44191), (51, 44209), (56, 44260), (65, 44308), (71, 44326), (82, 44374),

Gene: Muglass\_71 Start: 44516, Stop: 44851, Start Num: 25

Candidate Starts for Muglass\_71:

(Start: 25 @44516 has 14 MA's), (39, 44582), (Start: 42 @44594 has 1 MA's), (45, 44603), (Start: 46 @44606 has 48 MA's), (56, 44678), (60, 44690), (61, 44696), (74, 44762), (89, 44846),

Gene: NapoleonB\_70 Start: 43288, Stop: 43566, Start Num: 31

Candidate Starts for NapoleonB\_70:

(Start: 31 @43288 has 21 MA's), (Start: 42 @43333 has 1 MA's), (47, 43348), (51, 43366), (56, 43417), (65, 43465), (71, 43483), (82, 43531),

Gene: Nason\_69 Start: 43472, Stop: 43750, Start Num: 31

Candidate Starts for Nason\_69:

(Start: 31 @43472 has 21 MA's), (Start: 42 @43517 has 1 MA's), (47, 43532), (51, 43550), (56, 43601), (65, 43649), (71, 43667),

Gene: Natasha\_67 Start: 42448, Stop: 42690, Start Num: 49

Candidate Starts for Natasha\_67:

(Start: 49 @42448 has 19 MA's), (73, 42586), (75, 42592), (76, 42595), (88, 42667),

Gene: Navi1117\_71 Start: 44207, Stop: 44542, Start Num: 25

Candidate Starts for Navi1117\_71:

(Start: 25 @44207 has 14 MA's), (39, 44273), (Start: 49 @44303 has 19 MA's), (59, 44378), (60, 44381), (61, 44387), (74, 44453), (83, 44498), (89, 44537),

Gene: NewKitty\_90 Start: 50156, Stop: 50383, Start Num: 46

Candidate Starts for NewKitty\_90:

(Start: 46 @50156 has 48 MA's), (56, 50228), (61, 50246), (63, 50258), (76, 50318), (80, 50345),

Gene: Nightmare\_64 Start: 45339, Stop: 45629, Start Num: 30

Candidate Starts for Nightmare\_64:

(Start: 30 @45339 has 34 MA's), (Start: 49 @45402 has 19 MA's), (70, 45540), (87, 45615),

Gene: Niktson\_62 Start: 44797, Stop: 45087, Start Num: 30

Candidate Starts for Niktson\_62:

(Start: 30 @44797 has 34 MA's), (53, 44896), (59, 44935), (68, 44989), (70, 44998), (86, 45070),

Gene: Nivinsha\_64 Start: 44289, Stop: 44579, Start Num: 30

Candidate Starts for Nivinsha\_64:

(Start: 30 @44289 has 34 MA's), (Start: 49 @44352 has 19 MA's), (57, 44421), (68, 44481), (70, 44490), (87, 44565),

Gene: Nyilah\_96 Start: 49629, Stop: 49856, Start Num: 46

Candidate Starts for Nyilah\_96:

(Start: 46 @49629 has 48 MA's), (Start: 49 @49635 has 19 MA's), (56, 49701), (62, 49722), (75, 49788), (76, 49791), (84, 49839),

Gene: Onestar\_63 Start: 42253, Stop: 42513, Start Num: 49

Candidate Starts for Onestar\_63:

(Start: 49 @42253 has 19 MA's), (73, 42391), (76, 42400), (79, 42418),

Gene: Paella\_119 Start: 66359, Stop: 66595, Start Num: 46

Candidate Starts for Paella\_119:

(45, 66356), (Start: 46 @66359 has 48 MA's), (55, 66425), (73, 66509), (76, 66518), (77, 66521), (79, 66536),

Gene: Persistence\_84 Start: 47327, Stop: 47554, Start Num: 46

Candidate Starts for Persistence\_84:

(Start: 46 @47327 has 48 MA's), (54, 47378), (56, 47399), (62, 47420), (75, 47486), (76, 47489),

Gene: Phaby\_68 Start: 45345, Stop: 45635, Start Num: 30

Candidate Starts for Phaby\_68:

(22, 45294), (24, 45306), (Start: 30 @45345 has 34 MA's), (59, 45483), (70, 45546), (86, 45618), (87, 45621),

Gene: Phaila\_69 Start: 43433, Stop: 43768, Start Num: 25

Candidate Starts for Phaila\_69:

(Start: 25 @43433 has 14 MA's), (39, 43499), (Start: 49 @43529 has 19 MA's), (59, 43604), (60, 43607), (61, 43613), (74, 43679), (83, 43724), (89, 43763),

Gene: Phrank15\_95 Start: 50347, Stop: 50574, Start Num: 46

Candidate Starts for Phrank15\_95:

(Start: 46 @50347 has 48 MA's), (56, 50419), (62, 50440), (75, 50506), (76, 50509),

Gene: Pigu\_66 Start: 34831, Stop: 35052, Start Num: 49

Candidate Starts for Pigu\_66:

(Start: 49 @34831 has 19 MA's), (56, 34897), (66, 34954), (76, 34987),

Gene: PoeMe\_69 Start: 43918, Stop: 44256, Start Num: 25

Candidate Starts for PoeMe\_69:

(Start: 25 @43918 has 14 MA's), (39, 43987), (Start: 49 @44017 has 19 MA's), (56, 44083), (57, 44086), (74, 44167), (83, 44212), (89, 44251),

Gene: Powelldog\_67 Start: 42912, Stop: 43187, Start Num: 49

Candidate Starts for Powelldog\_67:

(11, 42711), (Start: 49 @42912 has 19 MA's), (50, 42924), (63, 42999), (76, 43059), (91, 43161),

Gene: ProfFrink\_65 Start: 42493, Stop: 42744, Start Num: 49

Candidate Starts for ProfFrink\_65:

(Start: 49 @42493 has 19 MA's), (63, 42580), (68, 42613), (75, 42637), (76, 42640),

Gene: Qui\_119 Start: 66359, Stop: 66595, Start Num: 46

Candidate Starts for Qui\_119:

(45, 66356), (Start: 46 @66359 has 48 MA's), (55, 66425), (73, 66509), (76, 66518), (77, 66521), (79, 66536),

Gene: RadFad\_94 Start: 49669, Stop: 49896, Start Num: 46

Candidate Starts for RadFad\_94:

(Start: 46 @49669 has 48 MA's), (56, 49741), (62, 49762), (75, 49828), (76, 49831), (79, 49849), (84, 49879),

Gene: Raphaella\_89 Start: 48624, Stop: 48887, Start Num: 46

Candidate Starts for Raphaella\_89:

(Start: 46 @48624 has 48 MA's), (58, 48705), (60, 48711),

Gene: Raqqa\_93 Start: 50720, Stop: 50947, Start Num: 46

Candidate Starts for Raqqa\_93:

(26, 50645), (34, 50678), (Start: 46 @50720 has 48 MA's), (56, 50792), (75, 50879), (76, 50882), (79, 50900),

Gene: Raunak\_66 Start: 42154, Stop: 42405, Start Num: 49

Candidate Starts for Raunak\_66:

(Start: 49 @42154 has 19 MA's), (63, 42241), (68, 42274), (75, 42298), (76, 42301),

Gene: Renaldo\_77 Start: 45398, Stop: 45733, Start Num: 25

Candidate Starts for Renaldo\_77:

(Start: 25 @45398 has 14 MA's), (39, 45464), (Start: 42 @45476 has 1 MA's), (45, 45485), (Start: 46 @45488 has 48 MA's), (60, 45572), (61, 45578), (74, 45644), (89, 45728),

Gene: Richie\_92 Start: 50519, Stop: 50746, Start Num: 46

Candidate Starts for Richie\_92:

(Start: 46 @50519 has 48 MA's), (56, 50591), (62, 50612), (75, 50678), (76, 50681), (84, 50729),

Gene: Rooter\_72 Start: 36880, Stop: 37107, Start Num: 46

Candidate Starts for Rooter\_72:

(Start: 46 @36880 has 48 MA's), (56, 36952), (66, 37009), (76, 37042),

Gene: RustyBoy\_68 Start: 42647, Stop: 42889, Start Num: 49

Candidate Starts for RustyBoy\_68:

(11, 42443), (16, 42479), (Start: 49 @42647 has 19 MA's), (73, 42785), (75, 42791), (76, 42794), (88, 42866),

Gene: Sakai\_86 Start: 49386, Stop: 49613, Start Num: 46

Candidate Starts for Sakai\_86:

(Start: 46 @49386 has 48 MA's), (56, 49458), (62, 49479), (75, 49545), (76, 49548),

Gene: Salk\_65 Start: 42496, Stop: 42747, Start Num: 49

Candidate Starts for Salk\_65:

(Start: 49 @42496 has 19 MA's), (63, 42583), (68, 42616), (75, 42640), (76, 42643), (90, 42724),

Gene: Sarge\_61 Start: 33816, Stop: 34043, Start Num: 46

Candidate Starts for Sarge\_61:

(Start: 46 @33816 has 48 MA's), (54, 33867), (56, 33888), (66, 33945), (76, 33978),

Gene: Sashimi\_90 Start: 49657, Stop: 49884, Start Num: 46

Candidate Starts for Sashimi\_90:

(43, 49651), (Start: 46 @49657 has 48 MA's), (54, 49708), (56, 49729), (62, 49750), (75, 49816), (76, 49819),

Gene: Satrap\_88 Start: 49096, Stop: 49323, Start Num: 46

Candidate Starts for Satrap\_88:

(Start: 46 @49096 has 48 MA's), (56, 49168), (62, 49189), (75, 49255), (76, 49258), (79, 49276), (84, 49306), (85, 49315),

Gene: ScienceWizSam\_63 Start: 44451, Stop: 44792, Start Num: 30

Candidate Starts for ScienceWizSam\_63:

(Start: 30 @44451 has 34 MA's), (47, 44511), (57, 44583), (70, 44652), (87, 44727), (92, 44775),

Gene: Seahorse\_95 Start: 54032, Stop: 54259, Start Num: 46

Candidate Starts for Seahorse\_95:

(Start: 46 @54032 has 48 MA's), (56, 54104), (62, 54125), (75, 54191), (76, 54194), (84, 54242),

Gene: Shepard\_68 Start: 44640, Stop: 44933, Start Num: 30

Candidate Starts for Shepard\_68:

(22, 44589), (24, 44601), (Start: 30 @44640 has 34 MA's), (59, 44781), (70, 44844),

Gene: Shiba\_64 Start: 42154, Stop: 42405, Start Num: 49

Candidate Starts for Shiba\_64:

(Start: 49 @42154 has 19 MA's), (63, 42241), (68, 42274), (75, 42298), (76, 42301), (90, 42382),

Gene: Shoya\_64 Start: 35887, Stop: 36126, Start Num: 46

Candidate Starts for Shoya\_64:

(Start: 46 @35887 has 48 MA's), (64, 35992), (73, 36031), (80, 36067),

Gene: Shukran\_86 Start: 47862, Stop: 48089, Start Num: 46

Candidate Starts for Shukran\_86:

(Start: 46 @47862 has 48 MA's), (56, 47934), (60, 47946), (75, 48021), (76, 48024),

Gene: SilentRX\_47 Start: 38442, Stop: 38200, Start Num: 42

Candidate Starts for SilentRX\_47:

(Start: 42 @38442 has 1 MA's), (54, 38391), (60, 38358), (75, 38283),

Gene: Sloopyjoe\_65 Start: 42500, Stop: 42751, Start Num: 49

Candidate Starts for Sloopyjoe\_65:

(Start: 49 @42500 has 19 MA's), (63, 42587), (68, 42620), (75, 42644), (76, 42647), (90, 42728),

Gene: Sonali\_66 Start: 45518, Stop: 45778, Start Num: 41

Candidate Starts for Sonali\_66:

(8, 45302), (Start: 41 @45518 has 3 MA's), (56, 45608), (60, 45620), (76, 45698), (79, 45716),

Gene: Spain\_65 Start: 42498, Stop: 42749, Start Num: 49

Candidate Starts for Spain\_65:

(Start: 49 @42498 has 19 MA's), (63, 42585), (68, 42618), (75, 42642), (76, 42645), (90, 42726),

Gene: SpicyFrank\_91 Start: 49438, Stop: 49665, Start Num: 46

Candidate Starts for SpicyFrank\_91:  
(Start: 46 @49438 has 48 MA's), (56, 49510), (75, 49597), (76, 49600),

Gene: Sporto\_64 Start: 43615, Stop: 43866, Start Num: 49  
Candidate Starts for Sporto\_64:  
(Start: 49 @43615 has 19 MA's), (75, 43759), (76, 43762), (90, 43843),

Gene: Sprinkle\_64 Start: 42655, Stop: 42927, Start Num: 49  
Candidate Starts for Sprinkle\_64:  
(9, 42430), (23, 42541), (27, 42568), (28, 42571), (33, 42595), (35, 42604), (Start: 49 @42655 has 19 MA's), (63, 42742), (64, 42754), (76, 42802), (88, 42874), (91, 42904),

Gene: StarLord\_65 Start: 42493, Stop: 42744, Start Num: 49  
Candidate Starts for StarLord\_65:  
(Start: 49 @42493 has 19 MA's), (63, 42580), (68, 42613), (75, 42637), (76, 42640), (90, 42721),

Gene: Stardom\_68 Start: 42069, Stop: 42347, Start Num: 31  
Candidate Starts for Stardom\_68:  
(Start: 31 @42069 has 21 MA's), (Start: 42 @42114 has 1 MA's), (47, 42129), (51, 42147), (56, 42198), (65, 42246), (71, 42264), (82, 42312),

Gene: Stardrop\_69 Start: 44020, Stop: 44358, Start Num: 25  
Candidate Starts for Stardrop\_69:  
(Start: 25 @44020 has 14 MA's), (39, 44089), (Start: 49 @44119 has 19 MA's), (56, 44185), (57, 44188), (60, 44197), (74, 44269), (83, 44314), (89, 44353),

Gene: Stayer\_65 Start: 42496, Stop: 42747, Start Num: 49  
Candidate Starts for Stayer\_65:  
(Start: 49 @42496 has 19 MA's), (63, 42583), (68, 42616), (75, 42640), (76, 42643), (90, 42724),

Gene: Sunny4976\_65 Start: 44859, Stop: 45188, Start Num: 25  
Candidate Starts for Sunny4976\_65:  
(Start: 25 @44859 has 14 MA's), (Start: 49 @44955 has 19 MA's), (60, 45033),

Gene: Sunshine23\_67 Start: 45169, Stop: 45429, Start Num: 41  
Candidate Starts for Sunshine23\_67:  
(Start: 41 @45169 has 3 MA's), (56, 45259), (60, 45271), (76, 45349), (79, 45367),

Gene: Synopsis\_61 Start: 44455, Stop: 44742, Start Num: 30  
Candidate Starts for Synopsis\_61:  
(Start: 30 @44455 has 34 MA's), (47, 44512), (Start: 49 @44515 has 19 MA's), (70, 44653), (87, 44728),

Gene: Teacup\_63 Start: 44876, Stop: 45166, Start Num: 30  
Candidate Starts for Teacup\_63:  
(Start: 30 @44876 has 34 MA's), (53, 44975), (59, 45014), (68, 45068), (70, 45077), (86, 45149),

Gene: Tenney120\_70 Start: 43963, Stop: 44298, Start Num: 25  
Candidate Starts for Tenney120\_70:  
(Start: 25 @43963 has 14 MA's), (Start: 42 @44041 has 1 MA's), (57, 44128), (60, 44137), (61, 44143), (74, 44209), (81, 44245), (83, 44254), (89, 44293),

Gene: Tenno\_63 Start: 45105, Stop: 45395, Start Num: 30

Candidate Starts for Tenno\_63:

(22, 45057), (Start: 30 @45105 has 34 MA's), (Start: 49 @45168 has 19 MA's), (59, 45243), (70, 45306), (87, 45381),

Gene: ThayneTheZag\_96 Start: 51075, Stop: 51302, Start Num: 46

Candidate Starts for ThayneTheZag\_96:

(Start: 46 @51075 has 48 MA's), (54, 51126), (56, 51147), (75, 51234), (76, 51237), (79, 51255), (84, 51285),

Gene: Tiff81\_84 Start: 47744, Stop: 48007, Start Num: 46

Candidate Starts for Tiff81\_84:

(Start: 46 @47744 has 48 MA's), (58, 47825), (60, 47831),

Gene: Tipton\_67 Start: 44963, Stop: 45253, Start Num: 30

Candidate Starts for Tipton\_67:

(22, 44912), (24, 44924), (Start: 30 @44963 has 34 MA's), (Start: 49 @45026 has 19 MA's), (70, 45164), (86, 45236), (87, 45239),

Gene: Tokki\_71 Start: 44994, Stop: 45284, Start Num: 30

Candidate Starts for Tokki\_71:

(22, 44943), (24, 44955), (Start: 30 @44994 has 34 MA's), (70, 45195), (86, 45267), (87, 45270),

Gene: Tribby\_72 Start: 43659, Stop: 43937, Start Num: 31

Candidate Starts for Tribby\_72:

(Start: 31 @43659 has 21 MA's), (Start: 42 @43704 has 1 MA's), (51, 43737), (56, 43788), (65, 43836), (71, 43854), (78, 43881), (82, 43902),

Gene: TrixiePhattel\_70 Start: 43595, Stop: 43930, Start Num: 25

Candidate Starts for TrixiePhattel\_70:

(Start: 25 @43595 has 14 MA's), (39, 43661), (Start: 49 @43691 has 19 MA's), (59, 43766), (60, 43769), (74, 43841), (89, 43925),

Gene: Truckee\_64 Start: 44713, Stop: 45012, Start Num: 30

Candidate Starts for Truckee\_64:

(Start: 30 @44713 has 34 MA's), (59, 44860), (70, 44923), (86, 44995), (87, 44998),

Gene: Trustiboi\_62 Start: 44710, Stop: 44997, Start Num: 30

Candidate Starts for Trustiboi\_62:

(Start: 30 @44710 has 34 MA's), (47, 44767), (Start: 49 @44770 has 19 MA's), (70, 44908), (87, 44983),

Gene: Uzumaki\_66 Start: 43404, Stop: 43739, Start Num: 25

Candidate Starts for Uzumaki\_66:

(Start: 25 @43404 has 14 MA's), (Start: 42 @43482 has 1 MA's), (57, 43569), (60, 43578), (61, 43584), (74, 43650), (81, 43686), (83, 43695), (89, 43734),

Gene: Vopal\_90 Start: 50690, Stop: 50953, Start Num: 46

Candidate Starts for Vopal\_90:

(Start: 46 @50690 has 48 MA's), (58, 50771), (60, 50777),

Gene: Westerlin\_62 Start: 45796, Stop: 46086, Start Num: 30

Candidate Starts for Westerlin\_62:

(Start: 30 @45796 has 34 MA's), (47, 45856), (Start: 49 @45859 has 19 MA's), (50, 45871), (57, 45928), (70, 45997), (87, 46072),

Gene: Windest\_94 Start: 48912, Stop: 49139, Start Num: 46

Candidate Starts for Windest\_94:

(Start: 46 @48912 has 48 MA's), (Start: 49 @48918 has 19 MA's), (54, 48963), (56, 48984), (62, 49005), (75, 49071), (76, 49074), (79, 49092),

Gene: Xenomorph\_65 Start: 43143, Stop: 43421, Start Num: 31

Candidate Starts for Xenomorph\_65:

(Start: 31 @43143 has 21 MA's), (Start: 42 @43188 has 1 MA's), (47, 43203), (51, 43221), (56, 43272), (65, 43320), (71, 43338), (78, 43365), (82, 43386),

Gene: YoshiYama\_70 Start: 43715, Stop: 43993, Start Num: 31

Candidate Starts for YoshiYama\_70:

(Start: 31 @43715 has 21 MA's), (Start: 42 @43760 has 1 MA's), (47, 43775), (51, 43793), (56, 43844), (65, 43892), (71, 43910), (82, 43958),

Gene: YoungHarleezy\_90 Start: 50145, Stop: 50372, Start Num: 46

Candidate Starts for YoungHarleezy\_90:

(Start: 46 @50145 has 48 MA's), (Start: 49 @50151 has 19 MA's), (54, 50196), (56, 50217), (62, 50238), (75, 50304), (76, 50307),

Gene: Zeina\_71 Start: 44101, Stop: 44436, Start Num: 25

Candidate Starts for Zeina\_71:

(Start: 25 @44101 has 14 MA's), (39, 44167), (Start: 49 @44197 has 19 MA's), (57, 44266), (59, 44272), (60, 44275), (74, 44347), (89, 44431),

Gene: Zippen\_68 Start: 45396, Stop: 45683, Start Num: 30

Candidate Starts for Zippen\_68:

(17, 45309), (19, 45318), (22, 45348), (Start: 30 @45396 has 34 MA's), (32, 45405), (56, 45522), (70, 45594), (87, 45669),

Gene: Zucker\_89 Start: 50629, Stop: 50856, Start Num: 46

Candidate Starts for Zucker\_89:

(Start: 46 @50629 has 48 MA's), (56, 50701), (62, 50722), (75, 50788), (76, 50791),