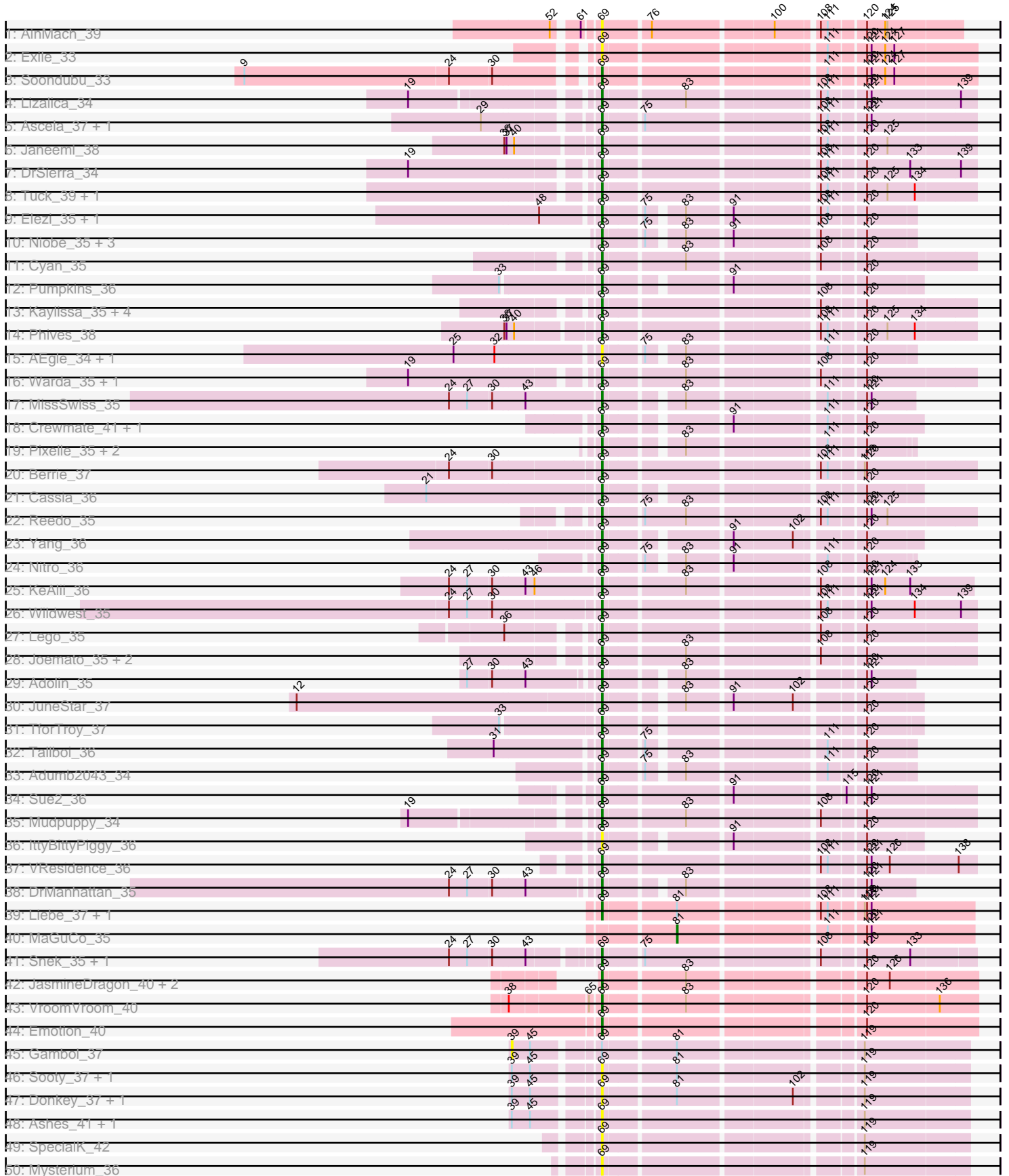
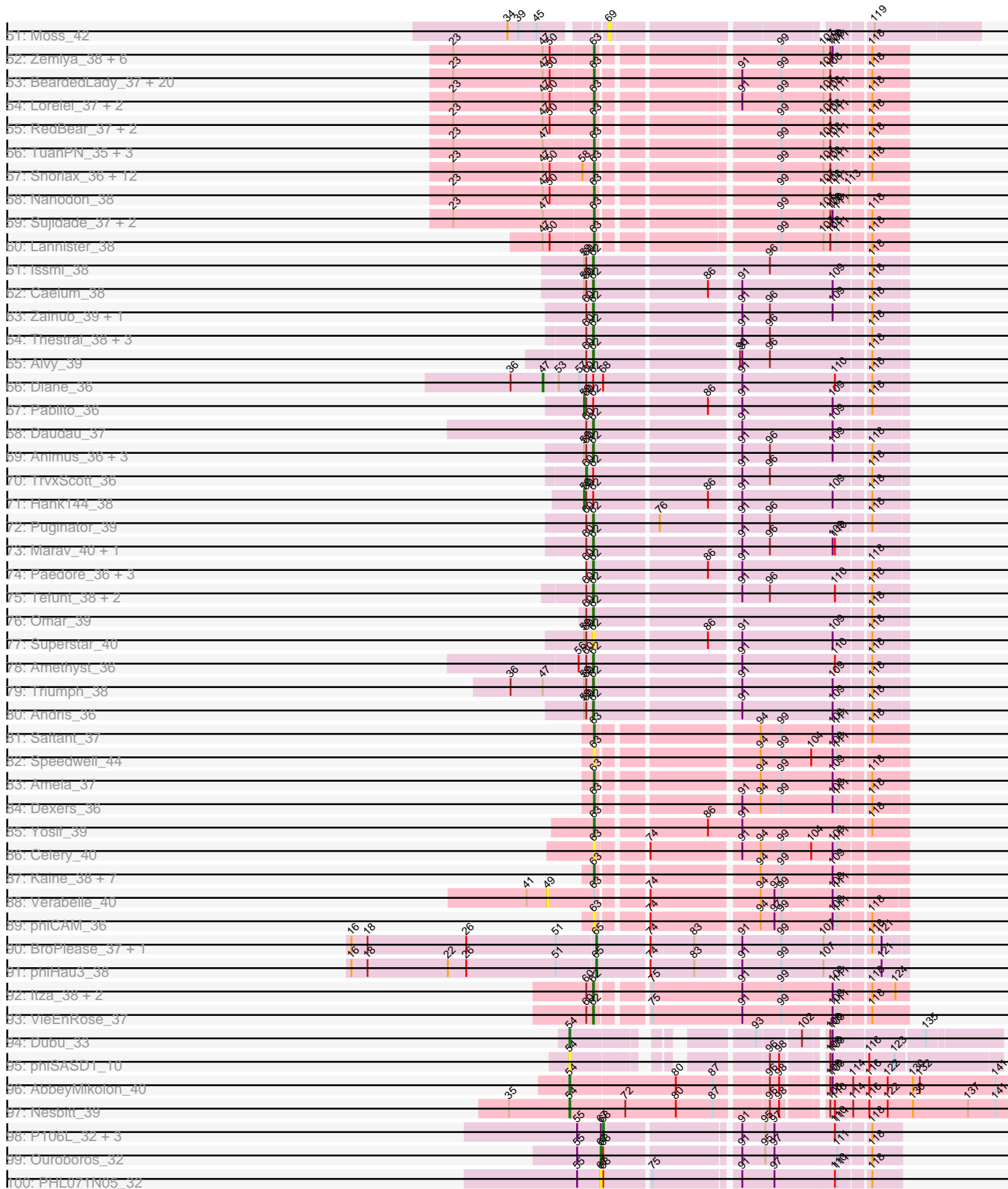


Pham 193665



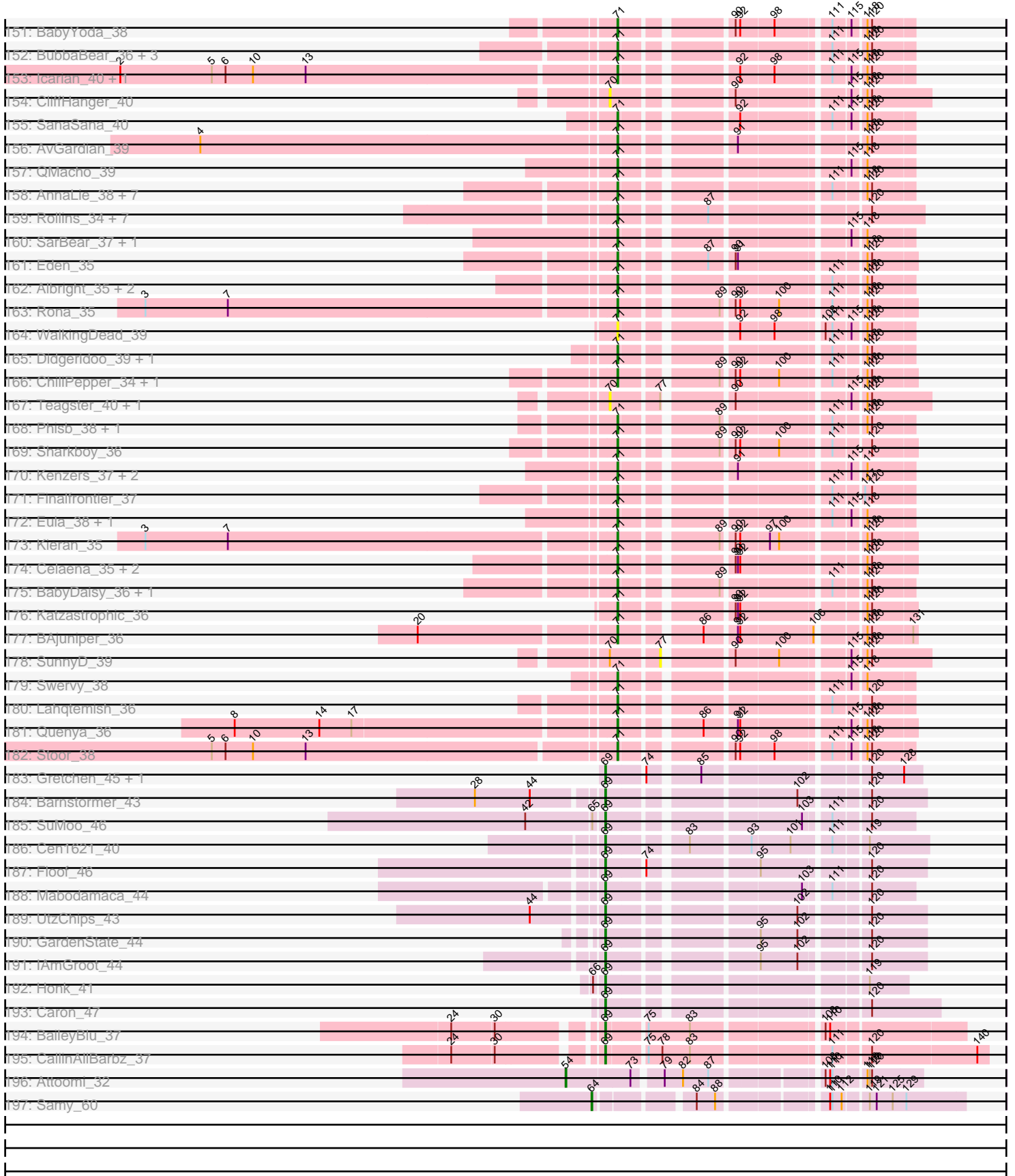
Pham 193665



Pham 193665



Pham 193665



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 193665 Report

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

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

Pham number 193665 has 332 members, 54 are drafts.

Phages represented in each track:

- Track 1 : AinMach\_39
- Track 2 : Exile\_33
- Track 3 : Soondubu\_33
- Track 4 : Lizalica\_34
- Track 5 : Ascela\_37, Iter\_37
- Track 6 : Janeemi\_38
- Track 7 : DrSierra\_34
- Track 8 : Tuck\_39, Community\_38
- Track 9 : Elezi\_35, London\_35
- Track 10 : Niobe\_35, Asa16\_35, Eraser\_35, Jstan\_37
- Track 11 : Cyan\_35
- Track 12 : Pumpkins\_36
- Track 13 : Kaylissa\_35, JohnDoe\_35, AGrandiflora\_36, YesChef\_35, Powerpuff\_37
- Track 14 : Phives\_38
- Track 15 : AEgle\_34, Turab\_34
- Track 16 : Warda\_35, Tbone\_34
- Track 17 : MissSwiss\_35
- Track 18 : Crewmate\_41, ObiToo\_40
- Track 19 : Pixelle\_35, Amyev\_35, Tian\_35
- Track 20 : Berrie\_37
- Track 21 : Cassia\_36
- Track 22 : Reedo\_35
- Track 23 : Yang\_36
- Track 24 : Nitro\_36
- Track 25 : KeAlii\_36
- Track 26 : Wildwest\_35
- Track 27 : Lego\_35
- Track 28 : Joemato\_35, Tutumahutu\_35, Simpson\_37
- Track 29 : Adolin\_35
- Track 30 : JuneStar\_37
- Track 31 : TforTroy\_37
- Track 32 : Tallboi\_36
- Track 33 : Adumb2043\_34

- Track 34 : Sue2\_36
- Track 35 : Mudpuppy\_34
- Track 36 : IttyBittyPiggy\_36
- Track 37 : VResidence\_36
- Track 38 : DrManhattan\_35
- Track 39 : Liebe\_37, Maureen\_37
- Track 40 : MaGuCo\_35
- Track 41 : Snek\_35, Tweety19\_35
- Track 42 : JasmineDragon\_40, ShakeltOph\_42, MiniMommy\_42
- Track 43 : VroomVroom\_40
- Track 44 : Emotion\_40
- Track 45 : Gambol\_37
- Track 46 : Sooty\_37, Cappuccino\_37
- Track 47 : Donkey\_37, Kalimba\_37
- Track 48 : Ashes\_41, Halsey\_45
- Track 49 : SpecialK\_42
- Track 50 : Mysterium\_36
- Track 51 : Moss\_42
- Track 52 : Zemlya\_38, Toma\_36, Danzina\_38, Celeste\_37, Brataylor\_39, Goby\_36, Dattran\_38
- Track 53 : BeardedLady\_37, Legacy\_36, Nerdos\_35, Caliburn\_36, EnochSoames\_39, Unstoppable\_36, SunsetPointe\_36, Leviticus\_36, Rusticus\_37, Bovely\_36, Eddasa\_37, Izzy\_37, Jash\_37, Phettuccine\_36, Aaronocolus\_36, Hydra\_38, Esperer\_36, BryanRecycles\_37, Ozzie\_36, Indigo\_35, Oliynyk\_37
- Track 54 : Lorelei\_37, Nabi\_37, Rana\_37
- Track 55 : RedBear\_37, South40\_36, Katalie\_36
- Track 56 : TuanPN\_35, Maneekul\_36, Yasdnil\_36, Ejemplo\_35
- Track 57 : Snorlax\_36, Werner\_36, Chucky\_36, Hippo\_36, Dwayne\_36, BarryBee\_39, OzzyJ\_37, SarahRose\_36, Triste\_36, Whatever\_36, TagePhighter\_38, Emaanora\_39, Asten\_36
- Track 58 : Nanodon\_38
- Track 59 : Sujidade\_37, Godpower\_37, Lika\_36
- Track 60 : Lannister\_38
- Track 61 : Issmi\_38
- Track 62 : Caelum\_38
- Track 63 : Zainub\_39, Paolo\_39
- Track 64 : Thestral\_38, Bowden\_37, BartholomewSD\_39, TinaBelcher\_37
- Track 65 : Alvy\_39
- Track 66 : Diane\_36
- Track 67 : Pablito\_36
- Track 68 : Daudau\_37
- Track 69 : Animus\_36, GirlDinner\_36, SqueakyClean\_36, Janus\_37
- Track 70 : TrvxScott\_36
- Track 71 : Hank144\_38
- Track 72 : Puginator\_39
- Track 73 : Marav\_40, Jevington\_39
- Track 74 : Paedore\_36, R4\_37, Loofah\_37, ELB20\_35
- Track 75 : Tefunt\_38, Nishikigoi\_38, Haizum\_38
- Track 76 : Omar\_39
- Track 77 : Superstar\_40
- Track 78 : Amethyst\_36
- Track 79 : Triumph\_38
- Track 80 : Andris\_36

- Track 81 : Saftant\_37
- Track 82 : Speedwell\_44
- Track 83 : Amela\_37
- Track 84 : Dexers\_36
- Track 85 : Yosif\_39
- Track 86 : Celery\_40
- Track 87 : Kaine\_38, Conan\_38, Alsaber\_38, ElGato\_38, Vanseggelen\_42, Pavo\_39, Provolone\_38, Verse\_37
- Track 88 : Verabelle\_40
- Track 89 : phiCAM\_36
- Track 90 : BroPlease\_37, GreenWeasel\_38
- Track 91 : phiHau3\_38
- Track 92 : Itza\_38, Celia\_38, Urza\_38
- Track 93 : VieEnRose\_37
- Track 94 : Dubu\_33
- Track 95 : phiSASD1\_10
- Track 96 : AbbeyMikolon\_40
- Track 97 : Nesbitt\_39
- Track 98 : P106L\_32, P106M\_32, P106C\_33, P106I\_32
- Track 99 : Ouroboros\_32
- Track 100 : PHL071N05\_32
- Track 101 : Lauchelly\_32, Rileysaurus\_31
- Track 102 : PHL114L00\_32
- Track 103 : PAS50\_33
- Track 104 : P107C\_32, ATCC29399BT\_32
- Track 105 : PAD20\_33
- Track 106 : Enoki\_32
- Track 107 : PHL060L00\_32
- Track 108 : ATCC29399BC\_32
- Track 109 : BruceLethal\_32
- Track 110 : Enochoraptor\_32
- Track 111 : Supernova\_32
- Track 112 : Attacne\_32, SKKY\_32
- Track 113 : P100.1\_32
- Track 114 : Wizzo\_32
- Track 115 : P9.1\_32
- Track 116 : LilBandit\_32
- Track 117 : Procrass1\_32
- Track 118 : P104A\_32
- Track 119 : Solid\_32
- Track 120 : QueenBey\_32
- Track 121 : P101A\_32
- Track 122 : PHL112N00\_32
- Track 123 : PHL010M04\_32
- Track 124 : P14.4\_32
- Track 125 : MrAK\_32
- Track 126 : Kubed\_32
- Track 127 : P107A\_32
- Track 128 : P100D\_32
- Track 129 : Stormborn\_32, P105\_32
- Track 130 : PHL113M01\_32
- Track 131 : Aquarius\_32
- Track 132 : P100A\_32

- Track 133 : PHL037M02\_32
- Track 134 : Leviosa\_32
- Track 135 : Cota\_32
- Track 136 : P104B\_32
- Track 137 : Keiki\_32, Pirate\_32
- Track 138 : PHL111M01\_32
- Track 139 : Moyashi\_32
- Track 140 : PA6\_33
- Track 141 : P108C\_32
- Track 142 : MEAK\_32
- Track 143 : PHL067M10\_32
- Track 144 : DrParker\_32
- Track 145 : P106A\_32
- Track 146 : Nicky22\_38
- Track 147 : Franklin22\_36
- Track 148 : DirtyBubble\_37, Stromboli\_38
- Track 149 : Elva\_39
- Track 150 : Gack\_34
- Track 151 : BabyYoda\_38
- Track 152 : BubbaBear\_36, Abigail\_36, SansAfet\_38, LimaBean\_36
- Track 153 : Icarian\_40, Loviatar\_67
- Track 154 : CliffHanger\_40
- Track 155 : SanaSana\_40
- Track 156 : AvGardian\_39
- Track 157 : QMacho\_39
- Track 158 : AnnaLie\_38, CroZenni\_37, BelmontSKP\_38, DickRichards\_36, Arroyo\_38, Johnathan\_36, Burritobowl\_37, IndyLu\_36
- Track 159 : Rollins\_34, Coltrane\_34, Clayda5\_35, Skylord\_34, Brahms\_34, Bernstein\_34, Armstrong\_34, Vitas\_34
- Track 160 : SarBear\_37, Slay\_38
- Track 161 : Eden\_35
- Track 162 : Albright\_35, Avocadoman\_36, Doobus\_36
- Track 163 : Rona\_35
- Track 164 : WalkingDead\_39
- Track 165 : Didgeridoo\_39, Kate33\_36
- Track 166 : ChiliPepper\_34, Dismas\_35
- Track 167 : Teagster\_40, Shayna\_37
- Track 168 : Phisb\_38, TukTuk\_38
- Track 169 : Sharkboy\_36
- Track 170 : Kenzers\_37, Lynlen\_37, Albedo\_37
- Track 171 : Finalfrontier\_37
- Track 172 : Eula\_38, Jovita\_38
- Track 173 : Kieran\_35
- Track 174 : Celaena\_35, FlameThrower\_35, Bachaco\_35
- Track 175 : BabyDaisy\_36, Cashington\_35
- Track 176 : Katzastrophic\_36
- Track 177 : BAjuniper\_36
- Track 178 : SunnyD\_39
- Track 179 : Swervy\_38
- Track 180 : Lahqtemish\_36
- Track 181 : Quenya\_36
- Track 182 : Stoor\_38
- Track 183 : Gretchen\_45, Percival\_46



- Track 184 : Barnstormer\_43
- Track 185 : SuMoo\_46
- Track 186 : Cen1621\_40
- Track 187 : Floof\_46
- Track 188 : Mabodamaca\_44
- Track 189 : UtzChips\_43
- Track 190 : GardenState\_44
- Track 191 : IAmGroot\_44
- Track 192 : Honk\_41
- Track 193 : Caron\_47
- Track 194 : BaileyBlu\_37
- Track 195 : CallinAllBarbz\_37
- Track 196 : Attoomi\_32
- Track 197 : Samy\_60

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

The start number called the most often in the published annotations is 69, it was called in 66 of the 278 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle\_34, AGrandiflora\_36, Adolin\_35, Adumb2043\_34, AinMach\_39, Amyev\_35, Asa16\_35, Ascela\_37, Ashes\_41, BaileyBlu\_37, Barnstormer\_43, Berrie\_37, CallinAllBarbz\_37, Cappuccino\_37, Caron\_47, Cassia\_36, Cen1621\_40, Community\_38, Crewmate\_41, Cyan\_35, Donkey\_37, DrManhattan\_35, DrSierra\_34, Elezi\_35, Emotion\_40, Eraser\_35, Exile\_33, Floof\_46, GardenState\_44, Gretchen\_45, Halsey\_45, Honk\_41, IAmGroot\_44, Iter\_37, IttyBittyPiggy\_36, Janeemi\_38, JasmineDragon\_40, Joemato\_35, JohnDoe\_35, Jstan\_37, JuneStar\_37, Kalimba\_37, Kaylissa\_35, KeAlii\_36, Lego\_35, Liebe\_37, Lizalica\_34, London\_35, Mabodamaca\_44, Maureen\_37, MiniMommy\_42, MissSwiss\_35, Moss\_42, Mudpuppy\_34, Mysterium\_36, Niobe\_35, Nitro\_36, ObiToo\_40, Percival\_46, Phives\_38, Pixelle\_35, Powerpuff\_37, Pumpkins\_36, Reedo\_35, ShakeltOph\_42, Simpson\_37, Snek\_35, Soondubu\_33, Sooty\_37, SpecialK\_42, SuMoo\_46, Sue2\_36, Tallboi\_36, Tbone\_34, TforTroy\_37, Tian\_35, Tuck\_39, Turab\_34, Tutumahutu\_35, Tweety19\_35, UtzChips\_43, VResidence\_36, VroomVroom\_40, Warda\_35, Wildwest\_35, Yang\_36, YesChef\_35,

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

- Gambol\_37,

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

- ATCC29399BC\_32, ATCC29399BT\_32, Aaronocolus\_36, AbbeyMikolon\_40, Abigail\_36, Albedo\_37, Albright\_35, Alsaber\_38, Alvy\_39, Amela\_37, Amethyst\_36, Andris\_36, Animus\_36, AnnaLie\_38, Aquarius\_32, Armstrong\_34, Arroyo\_38, Asten\_36, Attacne\_32, Attoomi\_32, AvGardian\_39, Avocadoman\_36, BAjuniper\_36, BabyDaisy\_36, BabyYoda\_38, Bachaco\_35, BarryBee\_39, BartholomewSD\_39, BeardedLady\_37, BelmontSKP\_38, Bernstein\_34, Bovely\_36, Bowden\_37, Brahms\_34, Brataylor\_39, BroPlease\_37, BruceLethal\_32, BryanRecycles\_37, BubbaBear\_36, Burritobowl\_37, Caelum\_38, Caliburn\_36, Cashington\_35, Celaena\_35, Celery\_40, Celeste\_37, Celia\_38, ChiliPepper\_34, Chucky\_36,

Clayda5\_35, CliffHanger\_40, Coltrane\_34, Conan\_38, Cota\_32, CroZenni\_37, Danzina\_38, Dattran\_38, Daudau\_37, Dexers\_36, Diane\_36, DickRichards\_36, Didgeridoo\_39, DirtyBubble\_37, Dismas\_35, Doobus\_36, DrParker\_32, Dubu\_33, Dwayne\_36, ELB20\_35, Eddasa\_37, Eden\_35, Ejemplo\_35, ElGato\_38, Elva\_39, Emaanora\_39, EnochSoames\_39, Enochoraptor\_32, Enoki\_32, Esperer\_36, Eula\_38, Finalfrontier\_37, FlameThrower\_35, Franklin22\_36, Gack\_34, GirlDinner\_36, Goby\_36, Godpower\_37, GreenWeasel\_38, Haizum\_38, Hank144\_38, Hippo\_36, Hydra\_38, Icarian\_40, Indigo\_35, IndyLu\_36, Issmi\_38, Itza\_38, Izzy\_37, Janus\_37, Jash\_37, Jevington\_39, Johnathan\_36, Jovita\_38, Kaine\_38, Katalie\_36, Kate33\_36, Katzastrophic\_36, Keiki\_32, Kenzers\_37, Kieran\_35, Kubed\_32, Lahqtemish\_36, Lannister\_38, Lauchelly\_32, Legacy\_36, Leviosa\_32, Leviticus\_36, Lika\_36, LilBandit\_32, LimaBean\_36, Loofah\_37, Lorelei\_37, Loviatar\_67, Lynlen\_37, MEAK\_32, MaGuCo\_35, Maneekul\_36, Marav\_40, Moyashi\_32, MrAK\_32, Nabi\_37, Nanodon\_38, Nerdos\_35, Nesbitt\_39, Nicky22\_38, Nishikigoi\_38, Oliynyk\_37, Omar\_39, Ouroboros\_32, Ozzie\_36, OzzyJ\_37, P100.1\_32, P100A\_32, P100D\_32, P101A\_32, P104A\_32, P104B\_32, P105\_32, P106A\_32, P106C\_33, P106I\_32, P106L\_32, P106M\_32, P107A\_32, P107C\_32, P108C\_32, P14.4\_32, P9.1\_32, PA6\_33, PAD20\_33, PAS50\_33, PHL010M04\_32, PHL037M02\_32, PHL060L00\_32, PHL067M10\_32, PHL071N05\_32, PHL111M01\_32, PHL112N00\_32, PHL113M01\_32, PHL114L00\_32, Pablito\_36, Paedore\_36, Paolo\_39, Pavo\_39, Phettuccine\_36, Phisb\_38, Pirate\_32, Procrass1\_32, Provolone\_38, Puginator\_39, QMacho\_39, QueenBey\_32, Quenya\_36, R4\_37, Rana\_37, RedBear\_37, Rileysaurus\_31, Rollins\_34, Rona\_35, Rusticus\_37, SKKY\_32, Saftant\_37, Samy\_60, SanaSana\_40, SansAfet\_38, SarBear\_37, SarahRose\_36, Sharkboy\_36, Shayna\_37, Skylord\_34, Slay\_38, Snorlax\_36, Solid\_32, South40\_36, Speedwell\_44, SqueakyClean\_36, Stoor\_38, Stormborn\_32, Stromboli\_38, Sujidade\_37, SunnyD\_39, SunsetPointe\_36, Supernova\_32, Superstar\_40, Swervy\_38, TagePhighter\_38, Teagster\_40, Tefunt\_38, Thestral\_38, TinaBelcher\_37, Toma\_36, Triste\_36, Triumph\_38, TrvxScott\_36, TuanPN\_35, TukTuk\_38, Unstoppable\_36, Urza\_38, Vanseggelen\_42, Verabelle\_40, Verse\_37, VieEnRose\_37, Vitas\_34, WalkingDead\_39, Werner\_36, Whatever\_36, Wizzo\_32, Yasdnil\_36, Yosif\_39, Zainub\_39, Zemlya\_38, phiCAM\_36, phiHau3\_38, phiSASD1\_10,

### Summary by start number:

#### Start 39:

- Found in 8 of 332 ( 2.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Gambol\_37 (AZ5),

#### Start 47:

- Found in 58 of 332 ( 17.5% ) of genes in pham
- Manual Annotations of this start: 1 of 278
- Called 1.7% of time when present
- Phage (with cluster) where this start called: Diane\_36 (BD2),

#### Start 49:

- Found in 1 of 332 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Verabelle\_40 (BD3),

Start 54:

- Found in 5 of 332 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 4 of 278
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbeyMikolon\_40 (BL), Attoomi\_32 (singleton), Dubu\_33 (BJ), Nesbitt\_39 (BL), phiSASD1\_10 (BJ),

Start 59:

- Found in 11 of 332 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 2 of 278
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Hank144\_38 (BD2), Pablito\_36 (BD2),

Start 60:

- Found in 37 of 332 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 1 of 278
- Called 2.7% of time when present
- Phage (with cluster) where this start called: TrvxScott\_36 (BD2),

Start 62:

- Found in 37 of 332 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 32 of 278
- Called 89.2% of time when present
- Phage (with cluster) where this start called: Alvy\_39 (BD2), Amethyst\_36 (BD2), Andris\_36 (BD2), Animus\_36 (BD2), BartholomewSD\_39 (BD2), Bowden\_37 (BD2), Caelum\_38 (BD2), Celia\_38 (BD6), Daudau\_37 (BD2), ELB20\_35 (BD2), GirlDinner\_36 (BD2), Haizum\_38 (BD2), Issmi\_38 (BD2), Itza\_38 (BD6), Janus\_37 (BD2), Jevington\_39 (BD2), Loofah\_37 (BD2), Marav\_40 (BD2), Nishikigoi\_38 (BD2), Omar\_39 (BD2), Paedore\_36 (BD2), Paolo\_39 (BD2), Puginator\_39 (BD2), R4\_37 (BD2), SqueakyClean\_36 (BD2), Superstar\_40 (BD2), Tefunt\_38 (BD2), Thestral\_38 (BD2), TinaBelcher\_37 (BD2), Triumph\_38 (BD2), Urza\_38 (BD6), VieEnRose\_37 (BD6), Zainub\_39 (BD2),

Start 63:

- Found in 72 of 332 ( 21.7% ) of genes in pham
- Manual Annotations of this start: 64 of 278
- Called 98.6% of time when present
- Phage (with cluster) where this start called: Aaronocolus\_36 (BD1), Alsaber\_38 (BD3), Amela\_37 (BD3), Asten\_36 (BD1), BarryBee\_39 (BD1), BeardedLady\_37 (BD1), Bovely\_36 (BD1), Brataylor\_39 (BD1), BryanRecycles\_37 (BD1), Caliburn\_36 (BD1), Celery\_40 (BD3), Celeste\_37 (BD1), Chucky\_36 (BD1), Conan\_38 (BD3), Danzina\_38 (BD1), Dattran\_38 (BD1), Dexers\_36 (BD3), Dwayne\_36 (BD1), Eddasa\_37 (BD1), Ejemplo\_35 (BD1), ElGato\_38 (BD3), Emaanora\_39 (BD1), EnochSoames\_39 (BD1), Esperer\_36 (BD1), Goby\_36 (BD1), Godpower\_37 (BD1), Hippo\_36 (BD1), Hydra\_38 (BD1), Indigo\_35 (BD1), Izzy\_37 (BD1), Jash\_37 (BD1), Kaine\_38 (BD3), Katalie\_36 (BD1), Lannister\_38 (BD1), Legacy\_36 (BD1), Leviticus\_36 (BD1), Lika\_36 (BD1), Lorelei\_37 (BD1), Maneekul\_36 (BD1), Nabi\_37 (BD1), Nanodon\_38 (BD1), Nerdos\_35 (BD1), Oliynyk\_37 (BD1), Ozzie\_36 (BD1), OzzyJ\_37 (BD1), Pavo\_39 (BD3), Phettuccine\_36 (BD1), Provolone\_38 (BD3), Rana\_37 (BD1), RedBear\_37 (BD1), Rusticus\_37 (BD1), Saftant\_37 (BD3), SarahRose\_36 (BD1), Snorlax\_36 (BD1), South40\_36 (BD1), Speedwell\_44 (BD3), Sujidade\_37 (BD1), SunsetPointe\_36 (BD1), TagePighter\_38 (BD1), Toma\_36

(BD1), Triste\_36 (BD1), TuanPN\_35 (BD1), Unstoppable\_36 (BD1), Vanseggelen\_42 (BD3), Verse\_37 (BD3), Werner\_36 (BD1), Whatever\_36 (BD1), Yasdnii\_36 (BD1), Yosif\_39 (BD3), Zemlya\_38 (BD1), phiCAM\_36 (BD3),

Start 64:

- Found in 1 of 332 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 278
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy\_60 (singleton),

Start 65:

- Found in 5 of 332 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 3 of 278
- Called 60.0% of time when present
- Phage (with cluster) where this start called: BroPlease\_37 (BD4), GreenWeasel\_38 (BD4), phiHau3\_38 (BD4),

Start 67:

- Found in 33 of 332 ( 9.9% ) of genes in pham
- Manual Annotations of this start: 7 of 278
- Called 30.3% of time when present
- Phage (with cluster) where this start called: ATCC29399BC\_32 (BU), LilBandit\_32 (BU), Ouroboros\_32 (BU), P104B\_32 (BU), P106A\_32 (BU), P108C\_32 (BU), PHL010M04\_32 (BU), PHL037M02\_32 (BU), PHL071N05\_32 (BU), Solid\_32 (BU),

Start 68:

- Found in 57 of 332 ( 17.2% ) of genes in pham
- Manual Annotations of this start: 34 of 278
- Called 77.2% of time when present
- Phage (with cluster) where this start called: ATCC29399BT\_32 (BU), Aquarius\_32 (BU), Attacne\_32 (BU), BruceLethal\_32 (BU), Cota\_32 (BU), DrParker\_32 (BU), Enoki\_32 (BU), Keiki\_32 (BU), Kubed\_32 (BU), Lauchelly\_32 (BU), Leviosa\_32 (BU), MEAK\_32 (BU), Moyashi\_32 (BU), MrAK\_32 (BU), P100.1\_32 (BU), P100A\_32 (BU), P100D\_32 (BU), P101A\_32 (BU), P104A\_32 (BU), P105\_32 (BU), P106C\_33 (BU), P106I\_32 (BU), P106L\_32 (BU), P106M\_32 (BU), P107A\_32 (BU), P107C\_32 (BU), P14.4\_32 (BU), PA6\_33 (BU), PAD20\_33 (BU), PAS50\_33 (BU), PHL060L00\_32 (BU), PHL067M10\_32 (BU), PHL111M01\_32 (BU), PHL112N00\_32 (BU), PHL113M01\_32 (BU), PHL114L00\_32 (BU), Pirate\_32 (BU), Procrass1\_32 (BU), QueenBey\_32 (BU), Rileysaurus\_31 (BU), SKKY\_32 (BU), Stormborn\_32 (BU), Supernova\_32 (BU), Wizzo\_32 (BU),

Start 69:

- Found in 88 of 332 ( 26.5% ) of genes in pham
- Manual Annotations of this start: 66 of 278
- Called 98.9% of time when present
- Phage (with cluster) where this start called: AEgle\_34 (AZ1), AGrandiflora\_36 (AZ1), Adolin\_35 (AZ1), Adumb2043\_34 (AZ1), AinMach\_39 (AZ), Amyev\_35 (AZ1), Asa16\_35 (AZ1), Ascela\_37 (AZ1), Ashes\_41 (AZ5), BaileyBlu\_37 (FP), Barnstormer\_43 (EH), Berrie\_37 (AZ1), CallinAllBarbz\_37 (FP), Cappuccino\_37 (AZ5), Caron\_47 (EH), Cassia\_36 (AZ1), Cen1621\_40 (EH), Community\_38 (AZ1), Crewmate\_41 (AZ1), Cyan\_35 (AZ1), Donkey\_37 (AZ5), DrManhattan\_35 (AZ1), DrSierra\_34 (AZ1), Elezi\_35 (AZ1), Emotion\_40 (AZ4), Eraser\_35 (AZ1), Exile\_33 (AZ), Floop\_46 (EH), GardenState\_44 (EH), Gretchen\_45 (EH), Halsey\_45 (AZ5),

Honk\_41 (EH), IAmGroot\_44 (EH), Iter\_37 (AZ1), IttyBittyPiggy\_36 (AZ1), Janeemi\_38 (AZ1), JasmineDragon\_40 (AZ4), Joemato\_35 (AZ1), JohnDoe\_35 (AZ1), Jstan\_37 (AZ1), JuneStar\_37 (AZ1), Kalimba\_37 (AZ5), Kaylissa\_35 (AZ1), KeAalii\_36 (AZ1), Lego\_35 (AZ1), Liebe\_37 (AZ2), Lizalica\_34 (AZ1), London\_35 (AZ1), Mabodamaca\_44 (EH), Maureen\_37 (AZ2), MiniMommy\_42 (AZ4), MissSwiss\_35 (AZ1), Moss\_42 (AZ5), Mudpuppy\_34 (AZ1), Mysterium\_36 (AZ5), Niobe\_35 (AZ1), Nitro\_36 (AZ1), ObiToo\_40 (AZ1), Percival\_46 (EH), Phives\_38 (AZ1), Pixelle\_35 (AZ1), Powerpuff\_37 (AZ1), Pumpkins\_36 (AZ1), Reedo\_35 (AZ1), ShakeltOph\_42 (AZ4), Simpson\_37 (AZ1), Snek\_35 (AZ3), Soondubu\_33 (AZ), Sooty\_37 (AZ5), SpecialK\_42 (AZ5), SuMoo\_46 (EH), Sue2\_36 (AZ1), Tallboi\_36 (AZ1), Tbone\_34 (AZ1), TforTroy\_37 (AZ1), Tian\_35 (AZ1), Tuck\_39 (AZ1), Turab\_34 (AZ1), Tutumahutu\_35 (AZ1), Tweety19\_35 (AZ3), UtzChips\_43 (EH), VResidence\_36 (AZ1), VroomVroom\_40 (AZ4), Warda\_35 (AZ1), Wildwest\_35 (AZ1), Yang\_36 (AZ1), YesChef\_35 (AZ1),

#### Start 70:

- Found in 4 of 332 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 75.0% of time when present
- Phage (with cluster) where this start called: CliffHanger\_40 (EB), Shayna\_37 (EB), Teagster\_40 (EB),

#### Start 71:

- Found in 65 of 332 ( 19.6% ) of genes in pham
- Manual Annotations of this start: 61 of 278
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail\_36 (EB), Albedo\_37 (EB), Albright\_35 (EB), AnnaLie\_38 (EB), Armstrong\_34 (EB), Arroyo\_38 (EB), AvGardian\_39 (EB), Avocadoman\_36 (EB), BAjuniper\_36 (EB), BabyDaisy\_36 (EB), BabyYoda\_38 (EB), Bachaco\_35 (EB), BelmontSKP\_38 (EB), Bernstein\_34 (EB), Brahms\_34 (EB), BubbaBear\_36 (EB), Burritobowl\_37 (EB), Cashington\_35 (EB), Celaena\_35 (EB), ChiliPepper\_34 (EB), Clayda5\_35 (EB), Coltrane\_34 (EB), CroZenni\_37 (EB), DickRichards\_36 (EB), Didgeridoo\_39 (EB), DirtyBubble\_37 (EB), Dismas\_35 (EB), Doobus\_36 (EB), Eden\_35 (EB), Elva\_39 (EB), Eula\_38 (EB), Finalfrontier\_37 (EB), FlameThrower\_35 (EB), Franklin22\_36 (EB), Gack\_34 (EB), Icarian\_40 (EB), IndyLu\_36 (EB), Johnathan\_36 (EB), Jovita\_38 (EB), Kate33\_36 (EB), Katzastrophic\_36 (EB), Kenzers\_37 (EB), Kieran\_35 (EB), Lahqtemish\_36 (EB), LimaBean\_36 (EB), Loviatar\_67 (EB), Lynlen\_37 (EB), Nicky22\_38 (EB), Phisb\_38 (EB), QMacho\_39 (EB), Quenya\_36 (EB), Rollins\_34 (EB), Rona\_35 (EB), SanaSana\_40 (EB), SansAfet\_38 (EB), SarBear\_37 (EB), Sharkboy\_36 (EB), Skylord\_34 (EB), Slay\_38 (EB), Stoor\_38 (EB), Stromboli\_38 (EB), Swervy\_38 (EB), TukTuk\_38 (EB), Vitas\_34 (EB), WalkingDead\_39 (EB),

#### Start 75:

- Found in 39 of 332 ( 11.7% ) of genes in pham
- Manual Annotations of this start: 1 of 278
- Called 5.1% of time when present
- Phage (with cluster) where this start called: Enochoraptor\_32 (BU), P9.1\_32 (BU),

#### Start 77:

- Found in 3 of 332 ( 0.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present

- Phage (with cluster) where this start called: SunnyD\_39 (EB),

Start 81:

- Found in 8 of 332 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 1 of 278
- Called 12.5% of time when present
- Phage (with cluster) where this start called: MaGuCo\_35 (AZ2),

### **Summary by clusters:**

There are 18 clusters represented in this pham: FP, singleton, AZ3, EH, BD4, BL, BJ, EB, BU, BD6, BD1, BD3, BD2, AZ1, AZ2, AZ, AZ4, AZ5,

Info for manual annotations of cluster AZ:

- Start number 69 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 69 was manually annotated 44 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 69 was manually annotated 2 times for cluster AZ2.
- Start number 81 was manually annotated 1 time for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 69 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 69 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster BD1:

- Start number 63 was manually annotated 55 times for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 47 was manually annotated 1 time for cluster BD2.
- Start number 59 was manually annotated 2 times for cluster BD2.
- Start number 60 was manually annotated 1 time for cluster BD2.
- Start number 62 was manually annotated 28 times for cluster BD2.

Info for manual annotations of cluster BD3:

- Start number 63 was manually annotated 9 times for cluster BD3.

Info for manual annotations of cluster BD4:

- Start number 65 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster BD6:

- Start number 62 was manually annotated 4 times for cluster BD6.

Info for manual annotations of cluster BJ:

- Start number 54 was manually annotated 1 time for cluster BJ.

Info for manual annotations of cluster BL:

- Start number 54 was manually annotated 2 times for cluster BL.

Info for manual annotations of cluster BU:

- Start number 67 was manually annotated 7 times for cluster BU.
- Start number 68 was manually annotated 34 times for cluster BU.
- Start number 75 was manually annotated 1 time for cluster BU.

Info for manual annotations of cluster EB:

- Start number 71 was manually annotated 61 times for cluster EB.

Info for manual annotations of cluster EH:

- Start number 69 was manually annotated 12 times for cluster EH.

Info for manual annotations of cluster FP:

- Start number 69 was manually annotated 2 times for cluster FP.

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

Gene: AEgle\_34 Start: 25272, Stop: 25622, Start Num: 69

Candidate Starts for AEgle\_34:

(25, 25092), (32, 25146), (Start: 69 @25272 has 66 MA's), (Start: 75 @25317 has 1 MA's), (83, 25356), (111, 25518), (120, 25560),

Gene: AGrandiflora\_36 Start: 25133, Stop: 25576, Start Num: 69

Candidate Starts for AGrandiflora\_36:

(Start: 69 @25133 has 66 MA's), (108, 25385), (120, 25436),

Gene: ATCC29399BC\_32 Start: 21881, Stop: 21522, Start Num: 67

Candidate Starts for ATCC29399BC\_32:

(Start: 67 @21881 has 7 MA's), (Start: 68 @21878 has 34 MA's), (97, 21677), (110, 21599), (111, 21596), (118, 21560),

Gene: ATCC29399BT\_32 Start: 21878, Stop: 21522, Start Num: 68

Candidate Starts for ATCC29399BT\_32:

(Start: 67 @21881 has 7 MA's), (Start: 68 @21878 has 34 MA's), (97, 21677), (110, 21599), (111, 21596), (118, 21560),

Gene: Aaronocolus\_36 Start: 27054, Stop: 27416, Start Num: 63

Candidate Starts for Aaronocolus\_36:

(23, 26874), (Start: 47 @26991 has 1 MA's), (50, 27000), (Start: 63 @27054 has 64 MA's), (91, 27210), (99, 27261), (107, 27315), (108, 27324), (118, 27369),

Gene: AbbeyMikolon\_40 Start: 26256, Stop: 26795, Start Num: 54

Candidate Starts for AbbeyMikolon\_40:

(Start: 54 @26256 has 4 MA's), (80, 26391), (87, 26439), (96, 26499), (98, 26511), (108, 26559), (109, 26562), (114, 26589), (116, 26610), (122, 26634), (130, 26667), (132, 26676), (141, 26775),

Gene: Abigail\_36 Start: 25222, Stop: 25548, Start Num: 71

Candidate Starts for Abigail\_36:

(Start: 71 @25222 has 61 MA's), (111, 25453), (118, 25489), (120, 25495),

Gene: Adolin\_35 Start: 24126, Stop: 24476, Start Num: 69

Candidate Starts for Adolin\_35:

(27, 23973), (30, 24003), (43, 24045), (Start: 69 @24126 has 66 MA's), (83, 24210), (120, 24414), (121, 24420),

Gene: Adumb2043\_34 Start: 25291, Stop: 25641, Start Num: 69

Candidate Starts for Adumb2043\_34:

(Start: 69 @25291 has 66 MA's), (Start: 75 @25336 has 1 MA's), (83, 25375), (111, 25537), (120, 25579),

Gene: AinMach\_39 Start: 26488, Stop: 26916, Start Num: 69

Candidate Starts for AinMach\_39:

(52, 26443), (61, 26470), (Start: 69 @26488 has 66 MA's), (76, 26545), (100, 26695), (108, 26743), (111, 26752), (120, 26794), (124, 26818), (125, 26821),

Gene: Albedo\_37 Start: 25772, Stop: 26098, Start Num: 71

Candidate Starts for Albedo\_37:

(Start: 71 @25772 has 61 MA's), (91, 25895), (115, 26024), (118, 26039),

Gene: Albright\_35 Start: 24924, Stop: 25250, Start Num: 71

Candidate Starts for Albright\_35:

(Start: 71 @24924 has 61 MA's), (111, 25155), (118, 25191), (120, 25197),

Gene: Alsaber\_38 Start: 28924, Stop: 29289, Start Num: 63

Candidate Starts for Alsaber\_38:

(Start: 63 @28924 has 64 MA's), (94, 29107), (99, 29134), (109, 29200),

Gene: Alvy\_39 Start: 28390, Stop: 28767, Start Num: 62

Candidate Starts for Alvy\_39:

(Start: 60 @28381 has 1 MA's), (Start: 62 @28390 has 32 MA's), (90, 28561), (91, 28564), (96, 28600), (118, 28723),

Gene: Amela\_37 Start: 29758, Stop: 30123, Start Num: 63

Candidate Starts for Amela\_37:

(Start: 63 @29758 has 64 MA's), (94, 29941), (99, 29968), (109, 30034), (118, 30076),

Gene: Amethyst\_36 Start: 27761, Stop: 28138, Start Num: 62

Candidate Starts for Amethyst\_36:

(56, 27743), (Start: 60 @27752 has 1 MA's), (Start: 62 @27761 has 32 MA's), (91, 27935), (110, 28055), (118, 28094),

Gene: Amyev\_35 Start: 26817, Stop: 27164, Start Num: 69

Candidate Starts for Amyev\_35:

(Start: 69 @26817 has 66 MA's), (83, 26901), (111, 27063), (120, 27105),

Gene: Andris\_36 Start: 27819, Stop: 28196, Start Num: 62

Candidate Starts for Andris\_36:

(Start: 59 @27807 has 2 MA's), (Start: 60 @27810 has 1 MA's), (Start: 62 @27819 has 32 MA's), (91, 27993), (109, 28110), (118, 28152),

Gene: Animus\_36 Start: 28249, Stop: 28626, Start Num: 62

Candidate Starts for Animus\_36:

(Start: 59 @28237 has 2 MA's), (Start: 60 @28240 has 1 MA's), (Start: 62 @28249 has 32 MA's), (91, 28423), (96, 28459), (109, 28540), (118, 28582),



Gene: AnnaLie\_38 Start: 26045, Stop: 26371, Start Num: 71  
Candidate Starts for AnnaLie\_38:  
(Start: 71 @26045 has 61 MA's), (111, 26276), (118, 26312), (120, 26318),

Gene: Aquarius\_32 Start: 21351, Stop: 20995, Start Num: 68  
Candidate Starts for Aquarius\_32:  
(55, 21384), (Start: 68 @21351 has 34 MA's), (97, 21150), (111, 21069), (118, 21033),

Gene: Armstrong\_34 Start: 23647, Stop: 23988, Start Num: 71  
Candidate Starts for Armstrong\_34:  
(Start: 71 @23647 has 61 MA's), (87, 23740), (120, 23920),

Gene: Arroyo\_38 Start: 26083, Stop: 26409, Start Num: 71  
Candidate Starts for Arroyo\_38:  
(Start: 71 @26083 has 61 MA's), (111, 26314), (118, 26350), (120, 26356),

Gene: Asa16\_35 Start: 26861, Stop: 27211, Start Num: 69  
Candidate Starts for Asa16\_35:  
(Start: 69 @26861 has 66 MA's), (Start: 75 @26906 has 1 MA's), (83, 26945), (91, 26999), (108, 27098), (120, 27149),

Gene: Ascela\_37 Start: 25854, Stop: 26297, Start Num: 69  
Candidate Starts for Ascela\_37:  
(29, 25725), (Start: 69 @25854 has 66 MA's), (Start: 75 @25899 has 1 MA's), (108, 26106), (111, 26115), (120, 26157), (121, 26163),

Gene: Ashes\_41 Start: 24212, Stop: 24646, Start Num: 69  
Candidate Starts for Ashes\_41:  
(39, 24116), (45, 24140), (Start: 69 @24212 has 66 MA's), (119, 24512),

Gene: Asten\_36 Start: 27412, Stop: 27774, Start Num: 63  
Candidate Starts for Asten\_36:  
(23, 27235), (Start: 47 @27349 has 1 MA's), (50, 27358), (58, 27397), (Start: 63 @27412 has 64 MA's), (99, 27619), (107, 27673), (108, 27682), (111, 27691), (118, 27727),

Gene: Attacne\_32 Start: 21366, Stop: 21010, Start Num: 68  
Candidate Starts for Attacne\_32:  
(55, 21399), (Start: 68 @21366 has 34 MA's), (91, 21207), (97, 21165), (111, 21084), (118, 21048),

Gene: Attoomi\_32 Start: 23857, Stop: 24264, Start Num: 54  
Candidate Starts for Attoomi\_32:  
(Start: 54 @23857 has 4 MA's), (73, 23938), (79, 23971), (82, 23995), (87, 24028), (108, 24148), (110, 24154), (111, 24157), (118, 24193), (119, 24196), (120, 24199),

Gene: AvGardian\_39 Start: 26215, Stop: 26541, Start Num: 71  
Candidate Starts for AvGardian\_39:  
(4, 25681), (Start: 71 @26215 has 61 MA's), (91, 26338), (118, 26482), (120, 26488),

Gene: Avocadoman\_36 Start: 25161, Stop: 25487, Start Num: 71  
Candidate Starts for Avocadoman\_36:  
(Start: 71 @25161 has 61 MA's), (111, 25392), (118, 25428), (120, 25434),

Gene: BAjuniper\_36 Start: 26884, Stop: 27216, Start Num: 71  
Candidate Starts for BAjuniper\_36:  
(20, 26641), (Start: 71 @26884 has 61 MA's), (86, 26974), (91, 27010), (92, 27013), (106, 27103),  
(118, 27154), (120, 27160), (131, 27211),

Gene: BabyDaisy\_36 Start: 25684, Stop: 26010, Start Num: 71  
Candidate Starts for BabyDaisy\_36:  
(Start: 71 @25684 has 61 MA's), (89, 25792), (111, 25915), (118, 25951), (120, 25957),

Gene: BabyYoda\_38 Start: 26829, Stop: 27155, Start Num: 71  
Candidate Starts for BabyYoda\_38:  
(Start: 71 @26829 has 61 MA's), (90, 26949), (92, 26955), (98, 26997), (111, 27060), (115, 27081),  
(118, 27096), (120, 27102),

Gene: Bachaco\_35 Start: 26844, Stop: 27173, Start Num: 71  
Candidate Starts for Bachaco\_35:  
(Start: 71 @26844 has 61 MA's), (90, 26964), (91, 26967), (92, 26970), (118, 27111), (120, 27117),

Gene: BaileyBlu\_37 Start: 25414, Stop: 25836, Start Num: 69  
Candidate Starts for BaileyBlu\_37:  
(24, 25246), (30, 25300), (Start: 69 @25414 has 66 MA's), (Start: 75 @25459 has 1 MA's), (83,  
25513), (108, 25666), (110, 25672),

Gene: Barnstormer\_43 Start: 27456, Stop: 27818, Start Num: 69  
Candidate Starts for Barnstormer\_43:  
(28, 27303), (44, 27375), (Start: 69 @27456 has 66 MA's), (102, 27672), (120, 27747),

Gene: BarryBee\_39 Start: 27422, Stop: 27784, Start Num: 63  
Candidate Starts for BarryBee\_39:  
(23, 27245), (Start: 47 @27359 has 1 MA's), (50, 27368), (58, 27407), (Start: 63 @27422 has 64  
MA's), (99, 27629), (107, 27683), (108, 27692), (111, 27701), (118, 27737),

Gene: BartholomewSD\_39 Start: 28389, Stop: 28766, Start Num: 62  
Candidate Starts for BartholomewSD\_39:  
(Start: 60 @28380 has 1 MA's), (Start: 62 @28389 has 32 MA's), (91, 28563), (96, 28599), (118,  
28722),

Gene: BeardedLady\_37 Start: 27307, Stop: 27669, Start Num: 63  
Candidate Starts for BeardedLady\_37:  
(23, 27127), (Start: 47 @27244 has 1 MA's), (50, 27253), (Start: 63 @27307 has 64 MA's), (91,  
27463), (99, 27514), (107, 27568), (108, 27577), (118, 27622),

Gene: BelmontSKP\_38 Start: 26045, Stop: 26371, Start Num: 71  
Candidate Starts for BelmontSKP\_38:  
(Start: 71 @26045 has 61 MA's), (111, 26276), (118, 26312), (120, 26318),

Gene: Bernstein\_34 Start: 23702, Stop: 24043, Start Num: 71  
Candidate Starts for Bernstein\_34:  
(Start: 71 @23702 has 61 MA's), (87, 23795), (120, 23975),

Gene: Berrie\_37 Start: 26747, Stop: 27190, Start Num: 69  
Candidate Starts for Berrie\_37:

(24, 26564), (30, 26618), (Start: 69 @26747 has 66 MA's), (108, 26999), (111, 27008), (119, 27047), (120, 27050),

Gene: Bovely\_36 Start: 27060, Stop: 27422, Start Num: 63

Candidate Starts for Bovely\_36:

(23, 26880), (Start: 47 @26997 has 1 MA's), (50, 27006), (Start: 63 @27060 has 64 MA's), (91, 27216), (99, 27267), (107, 27321), (108, 27330), (118, 27375),

Gene: Bowden\_37 Start: 28305, Stop: 28682, Start Num: 62

Candidate Starts for Bowden\_37:

(Start: 60 @28296 has 1 MA's), (Start: 62 @28305 has 32 MA's), (91, 28479), (96, 28515), (118, 28638),

Gene: Brahms\_34 Start: 23649, Stop: 23990, Start Num: 71

Candidate Starts for Brahms\_34:

(Start: 71 @23649 has 61 MA's), (87, 23742), (120, 23922),

Gene: Brataylor\_39 Start: 28396, Stop: 28758, Start Num: 63

Candidate Starts for Brataylor\_39:

(23, 28216), (Start: 47 @28333 has 1 MA's), (50, 28342), (Start: 63 @28396 has 64 MA's), (99, 28603), (107, 28657), (108, 28666), (109, 28669), (111, 28675), (118, 28711),

Gene: BroPlease\_37 Start: 27534, Stop: 27908, Start Num: 65

Candidate Starts for BroPlease\_37:

(16, 27219), (18, 27240), (26, 27369), (51, 27486), (Start: 65 @27534 has 3 MA's), (74, 27597), (83, 27654), (91, 27705), (99, 27756), (107, 27810), (118, 27864), (121, 27876),

Gene: BruceLethal\_32 Start: 21887, Stop: 21531, Start Num: 68

Candidate Starts for BruceLethal\_32:

(6, 22376), (11, 22334), (15, 22241), (55, 21920), (Start: 67 @21890 has 7 MA's), (Start: 68 @21887 has 34 MA's), (97, 21686), (109, 21611), (111, 21605), (118, 21569),

Gene: BryanRecycles\_37 Start: 27411, Stop: 27773, Start Num: 63

Candidate Starts for BryanRecycles\_37:

(23, 27231), (Start: 47 @27348 has 1 MA's), (50, 27357), (Start: 63 @27411 has 64 MA's), (91, 27567), (99, 27618), (107, 27672), (108, 27681), (118, 27726),

Gene: BubbaBear\_36 Start: 25617, Stop: 25943, Start Num: 71

Candidate Starts for BubbaBear\_36:

(Start: 71 @25617 has 61 MA's), (111, 25848), (118, 25884), (120, 25890),

Gene: Burritobowl\_37 Start: 25618, Stop: 25944, Start Num: 71

Candidate Starts for Burritobowl\_37:

(Start: 71 @25618 has 61 MA's), (111, 25849), (118, 25885), (120, 25891),

Gene: Caelum\_38 Start: 28011, Stop: 28388, Start Num: 62

Candidate Starts for Caelum\_38:

(Start: 59 @27999 has 2 MA's), (Start: 60 @28002 has 1 MA's), (Start: 62 @28011 has 32 MA's), (86, 28152), (91, 28185), (109, 28302), (118, 28344),

Gene: Caliburn\_36 Start: 27037, Stop: 27399, Start Num: 63

Candidate Starts for Caliburn\_36:

(23, 26857), (Start: 47 @26974 has 1 MA's), (50, 26983), (Start: 63 @27037 has 64 MA's), (91, 27193), (99, 27244), (107, 27298), (108, 27307), (118, 27352),

Gene: CallinAllBarbz\_37 Start: 25811, Stop: 26263, Start Num: 69  
Candidate Starts for CallinAllBarbz\_37:

(24, 25643), (30, 25697), (Start: 69 @25811 has 66 MA's), (Start: 75 @25856 has 1 MA's), (78, 25874), (83, 25910), (111, 26072), (120, 26114), (140, 26249),

Gene: Cappuccino\_37 Start: 24079, Stop: 24513, Start Num: 69  
Candidate Starts for Cappuccino\_37:

(39, 23983), (45, 24007), (Start: 69 @24079 has 66 MA's), (Start: 81 @24166 has 1 MA's), (119, 24379),

Gene: Caron\_47 Start: 28859, Stop: 29239, Start Num: 69  
Candidate Starts for Caron\_47:

(Start: 69 @28859 has 66 MA's), (120, 29150),

Gene: Cashington\_35 Start: 24964, Stop: 25290, Start Num: 71  
Candidate Starts for Cashington\_35:

(Start: 71 @24964 has 61 MA's), (89, 25072), (111, 25195), (118, 25231), (120, 25237),

Gene: Cassia\_36 Start: 25737, Stop: 26096, Start Num: 69  
Candidate Starts for Cassia\_36:

(21, 25515), (Start: 69 @25737 has 66 MA's), (120, 26025),

Gene: Celaena\_35 Start: 26594, Stop: 26923, Start Num: 71  
Candidate Starts for Celaena\_35:

(Start: 71 @26594 has 61 MA's), (90, 26714), (91, 26717), (92, 26720), (118, 26861), (120, 26867),

Gene: Celery\_40 Start: 28854, Stop: 29222, Start Num: 63  
Candidate Starts for Celery\_40:

(Start: 63 @28854 has 64 MA's), (74, 28908), (91, 29016), (94, 29040), (99, 29067), (104, 29106), (109, 29133), (111, 29139),

Gene: Celeste\_37 Start: 27865, Stop: 28227, Start Num: 63  
Candidate Starts for Celeste\_37:

(23, 27685), (Start: 47 @27802 has 1 MA's), (50, 27811), (Start: 63 @27865 has 64 MA's), (99, 28072), (107, 28126), (108, 28135), (109, 28138), (111, 28144), (118, 28180),

Gene: Celia\_38 Start: 27923, Stop: 28297, Start Num: 62  
Candidate Starts for Celia\_38:

(Start: 60 @27914 has 1 MA's), (Start: 62 @27923 has 32 MA's), (Start: 75 @27977 has 1 MA's), (91, 28091), (99, 28142), (109, 28208), (111, 28214), (118, 28250), (124, 28280),

Gene: Cen1621\_40 Start: 25799, Stop: 26167, Start Num: 69  
Candidate Starts for Cen1621\_40:

(Start: 69 @25799 has 66 MA's), (83, 25886), (93, 25958), (101, 26006), (111, 26051), (119, 26090),

Gene: ChiliPepper\_34 Start: 26048, Stop: 26380, Start Num: 71  
Candidate Starts for ChiliPepper\_34:

(Start: 71 @26048 has 61 MA's), (89, 26159), (90, 26171), (92, 26177), (100, 26225), (111, 26282), (118, 26318), (120, 26324),

Gene: Chucky\_36 Start: 27426, Stop: 27788, Start Num: 63  
Candidate Starts for Chucky\_36:  
(23, 27249), (Start: 47 @27363 has 1 MA's), (50, 27372), (58, 27411), (Start: 63 @27426 has 64 MA's), (99, 27633), (107, 27687), (108, 27696), (111, 27705), (118, 27741),

Gene: Clayda5\_35 Start: 23636, Stop: 23977, Start Num: 71  
Candidate Starts for Clayda5\_35:  
(Start: 71 @23636 has 61 MA's), (87, 23729), (120, 23909),

Gene: CliffHanger\_40 Start: 24541, Stop: 24900, Start Num: 70  
Candidate Starts for CliffHanger\_40:  
(70, 24541), (90, 24670), (115, 24802), (118, 24817), (120, 24823),

Gene: Coltrane\_34 Start: 23649, Stop: 23990, Start Num: 71  
Candidate Starts for Coltrane\_34:  
(Start: 71 @23649 has 61 MA's), (87, 23742), (120, 23922),

Gene: Community\_38 Start: 27474, Stop: 27917, Start Num: 69  
Candidate Starts for Community\_38:  
(Start: 69 @27474 has 66 MA's), (108, 27726), (111, 27735), (120, 27777), (125, 27804), (134, 27840),

Gene: Conan\_38 Start: 28818, Stop: 29183, Start Num: 63  
Candidate Starts for Conan\_38:  
(Start: 63 @28818 has 64 MA's), (94, 29001), (99, 29028), (109, 29094),

Gene: Cota\_32 Start: 21927, Stop: 21571, Start Num: 68  
Candidate Starts for Cota\_32:  
(Start: 67 @21930 has 7 MA's), (Start: 68 @21927 has 34 MA's), (97, 21726), (110, 21648), (111, 21645), (118, 21609),

Gene: Crewmate\_41 Start: 26389, Stop: 26751, Start Num: 69  
Candidate Starts for Crewmate\_41:  
(Start: 69 @26389 has 66 MA's), (91, 26527), (111, 26635), (120, 26677),

Gene: CroZenni\_37 Start: 25508, Stop: 25834, Start Num: 71  
Candidate Starts for CroZenni\_37:  
(Start: 71 @25508 has 61 MA's), (111, 25739), (118, 25775), (120, 25781),

Gene: Cyan\_35 Start: 25187, Stop: 25630, Start Num: 69  
Candidate Starts for Cyan\_35:  
(Start: 69 @25187 has 66 MA's), (83, 25286), (108, 25439), (120, 25490),

Gene: Danzina\_38 Start: 28166, Stop: 28528, Start Num: 63  
Candidate Starts for Danzina\_38:  
(23, 27986), (Start: 47 @28103 has 1 MA's), (50, 28112), (Start: 63 @28166 has 64 MA's), (99, 28373), (107, 28427), (108, 28436), (109, 28439), (111, 28445), (118, 28481),

Gene: Dattran\_38 Start: 27972, Stop: 28334, Start Num: 63  
Candidate Starts for Dattran\_38:  
(23, 27792), (Start: 47 @27909 has 1 MA's), (50, 27918), (Start: 63 @27972 has 64 MA's), (99, 28179), (107, 28233), (108, 28242), (109, 28245), (111, 28251), (118, 28287),

Gene: Daudau\_37 Start: 28123, Stop: 28500, Start Num: 62

Candidate Starts for Daudau\_37:

(Start: 60 @28114 has 1 MA's), (Start: 62 @28123 has 32 MA's), (91, 28297), (109, 28414),

Gene: Dexers\_36 Start: 28846, Stop: 29208, Start Num: 63

Candidate Starts for Dexers\_36:

(Start: 63 @28846 has 64 MA's), (91, 29005), (94, 29029), (99, 29056), (109, 29122), (111, 29128), (118, 29164),

Gene: Diane\_36 Start: 27972, Stop: 28412, Start Num: 47

Candidate Starts for Diane\_36:

(36, 27930), (Start: 47 @27972 has 1 MA's), (53, 27990), (57, 28017), (Start: 60 @28026 has 1 MA's), (Start: 62 @28035 has 32 MA's), (Start: 68 @28047 has 34 MA's), (91, 28209), (110, 28329), (118, 28368),

Gene: DickRichards\_36 Start: 25947, Stop: 26273, Start Num: 71

Candidate Starts for DickRichards\_36:

(Start: 71 @25947 has 61 MA's), (111, 26178), (118, 26214), (120, 26220),

Gene: Didgeridoo\_39 Start: 26093, Stop: 26419, Start Num: 71

Candidate Starts for Didgeridoo\_39:

(Start: 71 @26093 has 61 MA's), (111, 26324), (118, 26360), (120, 26366),

Gene: DirtyBubble\_37 Start: 26477, Stop: 26803, Start Num: 71

Candidate Starts for DirtyBubble\_37:

(1, 25724), (5, 25964), (6, 25982), (10, 26018), (13, 26087), (Start: 71 @26477 has 61 MA's), (90, 26597), (92, 26603), (111, 26708), (115, 26729), (118, 26744), (120, 26750),

Gene: Dismas\_35 Start: 26219, Stop: 26551, Start Num: 71

Candidate Starts for Dismas\_35:

(Start: 71 @26219 has 61 MA's), (89, 26330), (90, 26342), (92, 26348), (100, 26396), (111, 26453), (118, 26489), (120, 26495),

Gene: Donkey\_37 Start: 24069, Stop: 24503, Start Num: 69

Candidate Starts for Donkey\_37:

(39, 23973), (45, 23997), (Start: 69 @24069 has 66 MA's), (Start: 81 @24156 has 1 MA's), (102, 24297), (119, 24369),

Gene: Doobus\_36 Start: 25328, Stop: 25654, Start Num: 71

Candidate Starts for Doobus\_36:

(Start: 71 @25328 has 61 MA's), (111, 25559), (118, 25595), (120, 25601),

Gene: DrManhattan\_35 Start: 24117, Stop: 24467, Start Num: 69

Candidate Starts for DrManhattan\_35:

(24, 23940), (27, 23964), (30, 23994), (43, 24036), (Start: 69 @24117 has 66 MA's), (83, 24201), (120, 24405), (121, 24411),

Gene: DrParker\_32 Start: 21981, Stop: 21625, Start Num: 68

Candidate Starts for DrParker\_32:

(55, 22014), (Start: 68 @21981 has 34 MA's), (91, 21822), (97, 21780), (111, 21699), (118, 21663),

Gene: DrSierra\_34 Start: 24046, Stop: 24489, Start Num: 69

Candidate Starts for DrSierra\_34:

(19, 23824), (Start: 69 @24046 has 66 MA's), (108, 24298), (111, 24307), (120, 24349), (133, 24406), (139, 24469),

Gene: Dubu\_33 Start: 24220, Stop: 24681, Start Num: 54

Candidate Starts for Dubu\_33:

(Start: 54 @24220 has 4 MA's), (93, 24400), (102, 24451), (108, 24475), (109, 24478), (135, 24589),

Gene: Dwayne\_36 Start: 27413, Stop: 27775, Start Num: 63

Candidate Starts for Dwayne\_36:

(23, 27236), (Start: 47 @27350 has 1 MA's), (50, 27359), (58, 27398), (Start: 63 @27413 has 64 MA's), (99, 27620), (107, 27674), (108, 27683), (111, 27692), (118, 27728),

Gene: ELB20\_35 Start: 28408, Stop: 28785, Start Num: 62

Candidate Starts for ELB20\_35:

(Start: 60 @28399 has 1 MA's), (Start: 62 @28408 has 32 MA's), (86, 28549), (91, 28582), (118, 28741),

Gene: Eddasa\_37 Start: 27411, Stop: 27773, Start Num: 63

Candidate Starts for Eddasa\_37:

(23, 27231), (Start: 47 @27348 has 1 MA's), (50, 27357), (Start: 63 @27411 has 64 MA's), (91, 27567), (99, 27618), (107, 27672), (108, 27681), (118, 27726),

Gene: Eden\_35 Start: 24432, Stop: 24761, Start Num: 71

Candidate Starts for Eden\_35:

(Start: 71 @24432 has 61 MA's), (87, 24525), (90, 24552), (91, 24555), (118, 24699), (120, 24705),

Gene: Ejemplo\_35 Start: 27357, Stop: 27719, Start Num: 63

Candidate Starts for Ejemplo\_35:

(23, 27177), (Start: 47 @27294 has 1 MA's), (Start: 63 @27357 has 64 MA's), (99, 27564), (107, 27618), (108, 27627), (111, 27636), (118, 27672),

Gene: ElGato\_38 Start: 28482, Stop: 28847, Start Num: 63

Candidate Starts for ElGato\_38:

(Start: 63 @28482 has 64 MA's), (94, 28665), (99, 28692), (109, 28758),

Gene: Elezi\_35 Start: 26877, Stop: 27227, Start Num: 69

Candidate Starts for Elezi\_35:

(48, 26808), (Start: 69 @26877 has 66 MA's), (Start: 75 @26922 has 1 MA's), (83, 26961), (91, 27015), (108, 27114), (111, 27123), (120, 27165),

Gene: Elva\_39 Start: 26539, Stop: 26865, Start Num: 71

Candidate Starts for Elva\_39:

(Start: 71 @26539 has 61 MA's), (87, 26632), (91, 26662), (115, 26791), (118, 26806), (120, 26812),

Gene: Emaanora\_39 Start: 27371, Stop: 27733, Start Num: 63

Candidate Starts for Emaanora\_39:

(23, 27194), (Start: 47 @27308 has 1 MA's), (50, 27317), (58, 27356), (Start: 63 @27371 has 64 MA's), (99, 27578), (107, 27632), (108, 27641), (111, 27650), (118, 27686),

Gene: Emotion\_40 Start: 26793, Stop: 27239, Start Num: 69

Candidate Starts for Emotion\_40:

(Start: 69 @26793 has 66 MA's), (120, 27096),

Gene: EnochSoames\_39 Start: 27406, Stop: 27768, Start Num: 63  
Candidate Starts for EnochSoames\_39:  
(23, 27226), (Start: 47 @27343 has 1 MA's), (50, 27352), (Start: 63 @27406 has 64 MA's), (91, 27562), (99, 27613), (107, 27667), (108, 27676), (118, 27721),

Gene: Enochoraptor\_32 Start: 21843, Stop: 21544, Start Num: 75  
Candidate Starts for Enochoraptor\_32:  
(Start: 67 @21903 has 7 MA's), (Start: 68 @21900 has 34 MA's), (Start: 75 @21843 has 1 MA's), (97, 21699), (110, 21621), (111, 21618), (118, 21582),

Gene: Enoki\_32 Start: 21911, Stop: 21555, Start Num: 68  
Candidate Starts for Enoki\_32:  
(55, 21944), (Start: 68 @21911 has 34 MA's), (97, 21710), (111, 21629), (118, 21593),

Gene: Eraser\_35 Start: 26868, Stop: 27218, Start Num: 69  
Candidate Starts for Eraser\_35:  
(Start: 69 @26868 has 66 MA's), (Start: 75 @26913 has 1 MA's), (83, 26952), (91, 27006), (108, 27105), (120, 27156),

Gene: Esperer\_36 Start: 26873, Stop: 27235, Start Num: 63  
Candidate Starts for Esperer\_36:  
(23, 26693), (Start: 47 @26810 has 1 MA's), (50, 26819), (Start: 63 @26873 has 64 MA's), (91, 27029), (99, 27080), (107, 27134), (108, 27143), (118, 27188),

Gene: Eula\_38 Start: 25719, Stop: 26045, Start Num: 71  
Candidate Starts for Eula\_38:  
(Start: 71 @25719 has 61 MA's), (111, 25950), (115, 25971), (118, 25986),

Gene: Exile\_33 Start: 27350, Stop: 27793, Start Num: 69  
Candidate Starts for Exile\_33:  
(Start: 69 @27350 has 66 MA's), (111, 27611), (120, 27653), (121, 27659), (124, 27677), (127, 27689),

Gene: Finalfrontier\_37 Start: 26331, Stop: 26657, Start Num: 71  
Candidate Starts for Finalfrontier\_37:  
(Start: 71 @26331 has 61 MA's), (111, 26562), (117, 26595), (120, 26604),

Gene: FlameThrower\_35 Start: 26044, Stop: 26373, Start Num: 71  
Candidate Starts for FlameThrower\_35:  
(Start: 71 @26044 has 61 MA's), (90, 26164), (91, 26167), (92, 26170), (118, 26311), (120, 26317),

Gene: Floof\_46 Start: 28537, Stop: 28899, Start Num: 69  
Candidate Starts for Floof\_46:  
(Start: 69 @28537 has 66 MA's), (74, 28582), (95, 28705), (120, 28828),

Gene: Franklin22\_36 Start: 24418, Stop: 24747, Start Num: 71  
Candidate Starts for Franklin22\_36:  
(Start: 71 @24418 has 61 MA's), (86, 24505), (91, 24541), (92, 24544), (117, 24682), (118, 24685), (120, 24691),

Gene: Gack\_34 Start: 24169, Stop: 24498, Start Num: 71  
Candidate Starts for Gack\_34:  
(Start: 71 @24169 has 61 MA's), (91, 24292), (117, 24433), (120, 24442),



Gene: Gambol\_37 Start: 23992, Stop: 24522, Start Num: 39

Candidate Starts for Gambol\_37:

(39, 23992), (45, 24016), (Start: 69 @24088 has 66 MA's), (Start: 81 @24175 has 1 MA's), (119, 24388),

Gene: GardenState\_44 Start: 27681, Stop: 28043, Start Num: 69

Candidate Starts for GardenState\_44:

(Start: 69 @27681 has 66 MA's), (95, 27849), (102, 27897), (120, 27972),

Gene: GirlDinner\_36 Start: 27750, Stop: 28127, Start Num: 62

Candidate Starts for GirlDinner\_36:

(Start: 59 @27738 has 2 MA's), (Start: 60 @27741 has 1 MA's), (Start: 62 @27750 has 32 MA's), (91, 27924), (96, 27960), (109, 28041), (118, 28083),

Gene: Goby\_36 Start: 27871, Stop: 28233, Start Num: 63

Candidate Starts for Goby\_36:

(23, 27691), (Start: 47 @27808 has 1 MA's), (50, 27817), (Start: 63 @27871 has 64 MA's), (99, 28078), (107, 28132), (108, 28141), (109, 28144), (111, 28150), (118, 28186),

Gene: Godpower\_37 Start: 27866, Stop: 28228, Start Num: 63

Candidate Starts for Godpower\_37:

(23, 27686), (Start: 47 @27803 has 1 MA's), (Start: 63 @27866 has 64 MA's), (99, 28073), (107, 28127), (108, 28136), (109, 28139), (111, 28145), (118, 28181),

Gene: GreenWeasel\_38 Start: 27541, Stop: 27915, Start Num: 65

Candidate Starts for GreenWeasel\_38:

(16, 27226), (18, 27247), (26, 27376), (51, 27493), (Start: 65 @27541 has 3 MA's), (74, 27604), (83, 27661), (91, 27712), (99, 27763), (107, 27817), (118, 27871), (121, 27883),

Gene: Gretchen\_45 Start: 29159, Stop: 29515, Start Num: 69

Candidate Starts for Gretchen\_45:

(Start: 69 @29159 has 66 MA's), (74, 29204), (85, 29261), (120, 29450), (128, 29492),

Gene: Haizum\_38 Start: 28102, Stop: 28479, Start Num: 62

Candidate Starts for Haizum\_38:

(Start: 60 @28093 has 1 MA's), (Start: 62 @28102 has 32 MA's), (91, 28276), (96, 28312), (110, 28396), (118, 28435),

Gene: Halsey\_45 Start: 24217, Stop: 24651, Start Num: 69

Candidate Starts for Halsey\_45:

(39, 24121), (45, 24145), (Start: 69 @24217 has 66 MA's), (119, 24517),

Gene: Hank144\_38 Start: 28134, Stop: 28523, Start Num: 59

Candidate Starts for Hank144\_38:

(Start: 59 @28134 has 2 MA's), (Start: 60 @28137 has 1 MA's), (Start: 62 @28146 has 32 MA's), (86, 28287), (91, 28320), (109, 28437), (118, 28479),

Gene: Hippo\_36 Start: 27422, Stop: 27784, Start Num: 63

Candidate Starts for Hippo\_36:

(23, 27245), (Start: 47 @27359 has 1 MA's), (50, 27368), (58, 27407), (Start: 63 @27422 has 64 MA's), (99, 27629), (107, 27683), (108, 27692), (111, 27701), (118, 27737),

Gene: Honk\_41 Start: 24866, Stop: 25207, Start Num: 69  
Candidate Starts for Honk\_41:  
(66, 24857), (Start: 69 @24866 has 66 MA's), (119, 25157),

Gene: Hydra\_38 Start: 27585, Stop: 27947, Start Num: 63  
Candidate Starts for Hydra\_38:  
(23, 27405), (Start: 47 @27522 has 1 MA's), (50, 27531), (Start: 63 @27585 has 64 MA's), (91, 27741), (99, 27792), (107, 27846), (108, 27855), (118, 27900),

Gene: IAmGroot\_44 Start: 28148, Stop: 28510, Start Num: 69  
Candidate Starts for IAmGroot\_44:  
(Start: 69 @28148 has 66 MA's), (95, 28316), (102, 28364), (120, 28439),

Gene: Icarian\_40 Start: 27112, Stop: 27438, Start Num: 71  
Candidate Starts for Icarian\_40:  
(2, 26479), (5, 26599), (6, 26617), (10, 26653), (13, 26722), (Start: 71 @27112 has 61 MA's), (92, 27238), (98, 27280), (111, 27343), (115, 27364), (118, 27379), (120, 27385),

Gene: Indigo\_35 Start: 27053, Stop: 27415, Start Num: 63  
Candidate Starts for Indigo\_35:  
(23, 26873), (Start: 47 @26990 has 1 MA's), (50, 26999), (Start: 63 @27053 has 64 MA's), (91, 27209), (99, 27260), (107, 27314), (108, 27323), (118, 27368),

Gene: IndyLu\_36 Start: 25645, Stop: 25971, Start Num: 71  
Candidate Starts for IndyLu\_36:  
(Start: 71 @25645 has 61 MA's), (111, 25876), (118, 25912), (120, 25918),

Gene: Issmi\_38 Start: 28702, Stop: 29079, Start Num: 62  
Candidate Starts for Issmi\_38:  
(Start: 59 @28690 has 2 MA's), (Start: 60 @28693 has 1 MA's), (Start: 62 @28702 has 32 MA's), (96, 28912), (118, 29035),

Gene: Iter\_37 Start: 25853, Stop: 26296, Start Num: 69  
Candidate Starts for Iter\_37:  
(29, 25724), (Start: 69 @25853 has 66 MA's), (Start: 75 @25898 has 1 MA's), (108, 26105), (111, 26114), (120, 26156), (121, 26162),

Gene: IttyBittyPiggy\_36 Start: 25503, Stop: 25862, Start Num: 69  
Candidate Starts for IttyBittyPiggy\_36:  
(Start: 69 @25503 has 66 MA's), (91, 25641), (120, 25791),

Gene: Itza\_38 Start: 27837, Stop: 28211, Start Num: 62  
Candidate Starts for Itza\_38:  
(Start: 60 @27828 has 1 MA's), (Start: 62 @27837 has 32 MA's), (Start: 75 @27891 has 1 MA's), (91, 28005), (99, 28056), (109, 28122), (111, 28128), (118, 28164), (124, 28194),

Gene: Izzy\_37 Start: 27458, Stop: 27820, Start Num: 63  
Candidate Starts for Izzy\_37:  
(23, 27278), (Start: 47 @27395 has 1 MA's), (50, 27404), (Start: 63 @27458 has 64 MA's), (91, 27614), (99, 27665), (107, 27719), (108, 27728), (118, 27773),

Gene: Janeemi\_38 Start: 27485, Stop: 27928, Start Num: 69  
Candidate Starts for Janeemi\_38:

(36, 27377), (37, 27380), (40, 27389), (Start: 69 @27485 has 66 MA's), (108, 27737), (111, 27746), (120, 27788), (125, 27815),

Gene: Janus\_37 Start: 28090, Stop: 28467, Start Num: 62

Candidate Starts for Janus\_37:

(Start: 59 @28078 has 2 MA's), (Start: 60 @28081 has 1 MA's), (Start: 62 @28090 has 32 MA's), (91, 28264), (96, 28300), (109, 28381), (118, 28423),

Gene: Jash\_37 Start: 27411, Stop: 27773, Start Num: 63

Candidate Starts for Jash\_37:

(23, 27231), (Start: 47 @27348 has 1 MA's), (50, 27357), (Start: 63 @27411 has 64 MA's), (91, 27567), (99, 27618), (107, 27672), (108, 27681), (118, 27726),

Gene: JasmineDragon\_40 Start: 26737, Stop: 27180, Start Num: 69

Candidate Starts for JasmineDragon\_40:

(Start: 69 @26737 has 66 MA's), (83, 26836), (120, 27040), (126, 27070),

Gene: Jevington\_39 Start: 28493, Stop: 28870, Start Num: 62

Candidate Starts for Jevington\_39:

(Start: 60 @28484 has 1 MA's), (Start: 62 @28493 has 32 MA's), (91, 28667), (96, 28703), (109, 28784), (110, 28787),

Gene: Joemato\_35 Start: 25218, Stop: 25661, Start Num: 69

Candidate Starts for Joemato\_35:

(Start: 69 @25218 has 66 MA's), (83, 25317), (108, 25470), (120, 25521),

Gene: JohnDoe\_35 Start: 25209, Stop: 25652, Start Num: 69

Candidate Starts for JohnDoe\_35:

(Start: 69 @25209 has 66 MA's), (108, 25461), (120, 25512),

Gene: Johnathan\_36 Start: 25051, Stop: 25377, Start Num: 71

Candidate Starts for Johnathan\_36:

(Start: 71 @25051 has 61 MA's), (111, 25282), (118, 25318), (120, 25324),

Gene: Jovita\_38 Start: 25821, Stop: 26147, Start Num: 71

Candidate Starts for Jovita\_38:

(Start: 71 @25821 has 61 MA's), (111, 26052), (115, 26073), (118, 26088),

Gene: Jstan\_37 Start: 26862, Stop: 27212, Start Num: 69

Candidate Starts for Jstan\_37:

(Start: 69 @26862 has 66 MA's), (Start: 75 @26907 has 1 MA's), (83, 26946), (91, 27000), (108, 27099), (120, 27150),

Gene: JuneStar\_37 Start: 27633, Stop: 27992, Start Num: 69

Candidate Starts for JuneStar\_37:

(12, 27243), (Start: 69 @27633 has 66 MA's), (83, 27717), (91, 27771), (102, 27846), (120, 27921),

Gene: Kaine\_38 Start: 28633, Stop: 28998, Start Num: 63

Candidate Starts for Kaine\_38:

(Start: 63 @28633 has 64 MA's), (94, 28816), (99, 28843), (109, 28909),

Gene: Kalimba\_37 Start: 24066, Stop: 24500, Start Num: 69

Candidate Starts for Kalimba\_37:

(39, 23970), (45, 23994), (Start: 69 @24066 has 66 MA's), (Start: 81 @24153 has 1 MA's), (102, 24294), (119, 24366),

Gene: Katalie\_36 Start: 27596, Stop: 27958, Start Num: 63

Candidate Starts for Katalie\_36:

(23, 27413), (Start: 47 @27530 has 1 MA's), (50, 27539), (Start: 63 @27596 has 64 MA's), (99, 27803), (107, 27857), (108, 27866), (111, 27875), (118, 27911),

Gene: Kate33\_36 Start: 25417, Stop: 25743, Start Num: 71

Candidate Starts for Kate33\_36:

(Start: 71 @25417 has 61 MA's), (111, 25648), (118, 25684), (120, 25690),

Gene: Katzastrophic\_36 Start: 26173, Stop: 26502, Start Num: 71

Candidate Starts for Katzastrophic\_36:

(Start: 71 @26173 has 61 MA's), (90, 26293), (91, 26296), (92, 26299), (118, 26440), (120, 26446),

Gene: Kaylissa\_35 Start: 25154, Stop: 25597, Start Num: 69

Candidate Starts for Kaylissa\_35:

(Start: 69 @25154 has 66 MA's), (108, 25406), (120, 25457),

Gene: KeAlii\_36 Start: 25807, Stop: 26250, Start Num: 69

Candidate Starts for KeAlii\_36:

(24, 25615), (27, 25639), (30, 25669), (43, 25711), (46, 25723), (Start: 69 @25807 has 66 MA's), (83, 25906), (108, 26059), (120, 26110), (121, 26116), (124, 26134), (133, 26167),

Gene: Keiki\_32 Start: 21826, Stop: 21470, Start Num: 68

Candidate Starts for Keiki\_32:

(Start: 67 @21829 has 7 MA's), (Start: 68 @21826 has 34 MA's), (Start: 75 @21769 has 1 MA's), (97, 21625), (110, 21547), (111, 21544), (118, 21508),

Gene: Kenzers\_37 Start: 25644, Stop: 25970, Start Num: 71

Candidate Starts for Kenzers\_37:

(Start: 71 @25644 has 61 MA's), (91, 25767), (115, 25896), (118, 25911),

Gene: Kieran\_35 Start: 26228, Stop: 26560, Start Num: 71

Candidate Starts for Kieran\_35:

(3, 25631), (7, 25739), (Start: 71 @26228 has 61 MA's), (89, 26339), (90, 26351), (92, 26357), (97, 26393), (100, 26405), (118, 26498), (120, 26504),

Gene: Kubed\_32 Start: 21882, Stop: 21526, Start Num: 68

Candidate Starts for Kubed\_32:

(Start: 68 @21882 has 34 MA's), (97, 21681), (109, 21606), (111, 21600), (118, 21564),

Gene: Lahqtemish\_36 Start: 25690, Stop: 26016, Start Num: 71

Candidate Starts for Lahqtemish\_36:

(Start: 71 @25690 has 61 MA's), (111, 25921), (120, 25963),

Gene: Lannister\_38 Start: 28076, Stop: 28438, Start Num: 63

Candidate Starts for Lannister\_38:

(Start: 47 @28013 has 1 MA's), (50, 28022), (Start: 63 @28076 has 64 MA's), (99, 28283), (107, 28337), (108, 28346), (111, 28355), (118, 28391),

Gene: Lauchelly\_32 Start: 21931, Stop: 21575, Start Num: 68

Candidate Starts for Lauchelly\_32:

(Start: 67 @21934 has 7 MA's), (Start: 68 @21931 has 34 MA's), (Start: 75 @21874 has 1 MA's), (91, 21772), (97, 21730), (110, 21652), (111, 21649), (118, 21613),

Gene: Legacy\_36 Start: 27028, Stop: 27390, Start Num: 63

Candidate Starts for Legacy\_36:

(23, 26848), (Start: 47 @26965 has 1 MA's), (50, 26974), (Start: 63 @27028 has 64 MA's), (91, 27184), (99, 27235), (107, 27289), (108, 27298), (118, 27343),

Gene: Lego\_35 Start: 25100, Stop: 25543, Start Num: 69

Candidate Starts for Lego\_35:

(36, 25007), (Start: 69 @25100 has 66 MA's), (108, 25352), (120, 25403),

Gene: Leviosa\_32 Start: 21927, Stop: 21571, Start Num: 68

Candidate Starts for Leviosa\_32:

(Start: 68 @21927 has 34 MA's), (Start: 75 @21870 has 1 MA's), (109, 21651), (111, 21645), (118, 21609),

Gene: Leviticus\_36 Start: 27057, Stop: 27419, Start Num: 63

Candidate Starts for Leviticus\_36:

(23, 26877), (Start: 47 @26994 has 1 MA's), (50, 27003), (Start: 63 @27057 has 64 MA's), (91, 27213), (99, 27264), (107, 27318), (108, 27327), (118, 27372),

Gene: Liebe\_37 Start: 26991, Stop: 27434, Start Num: 69

Candidate Starts for Liebe\_37:

(Start: 69 @26991 has 66 MA's), (Start: 81 @27078 has 1 MA's), (108, 27243), (111, 27252), (119, 27291), (120, 27294), (121, 27300),

Gene: Lika\_36 Start: 27869, Stop: 28231, Start Num: 63

Candidate Starts for Lika\_36:

(23, 27689), (Start: 47 @27806 has 1 MA's), (Start: 63 @27869 has 64 MA's), (99, 28076), (107, 28130), (108, 28139), (109, 28142), (111, 28148), (118, 28184),

Gene: LilBandit\_32 Start: 21724, Stop: 21365, Start Num: 67

Candidate Starts for LilBandit\_32:

(Start: 67 @21724 has 7 MA's), (Start: 68 @21721 has 34 MA's), (Start: 75 @21664 has 1 MA's), (97, 21520), (110, 21442), (111, 21439), (118, 21403),

Gene: LimaBean\_36 Start: 25100, Stop: 25426, Start Num: 71

Candidate Starts for LimaBean\_36:

(Start: 71 @25100 has 61 MA's), (111, 25331), (118, 25367), (120, 25373),

Gene: Lizalica\_34 Start: 25001, Stop: 25444, Start Num: 69

Candidate Starts for Lizalica\_34:

(19, 24788), (Start: 69 @25001 has 66 MA's), (83, 25100), (108, 25253), (111, 25262), (120, 25304), (121, 25310), (139, 25424),

Gene: London\_35 Start: 26877, Stop: 27227, Start Num: 69

Candidate Starts for London\_35:

(48, 26808), (Start: 69 @26877 has 66 MA's), (Start: 75 @26922 has 1 MA's), (83, 26961), (91, 27015), (108, 27114), (111, 27123), (120, 27165),

Gene: Loofah\_37 Start: 28278, Stop: 28655, Start Num: 62

Candidate Starts for Loofah\_37:

(Start: 60 @28269 has 1 MA's), (Start: 62 @28278 has 32 MA's), (86, 28419), (91, 28452), (118, 28611),

Gene: Lorelei\_37 Start: 27928, Stop: 28290, Start Num: 63

Candidate Starts for Lorelei\_37:

(23, 27748), (Start: 47 @27865 has 1 MA's), (50, 27874), (Start: 63 @27928 has 64 MA's), (91, 28084), (99, 28135), (107, 28189), (108, 28198), (111, 28207), (118, 28243),

Gene: Loviatar\_67 Start: 27664, Stop: 27990, Start Num: 71

Candidate Starts for Loviatar\_67:

(2, 27031), (5, 27151), (6, 27169), (10, 27205), (13, 27274), (Start: 71 @27664 has 61 MA's), (92, 27790), (98, 27832), (111, 27895), (115, 27916), (118, 27931), (120, 27937),

Gene: Lynlen\_37 Start: 25644, Stop: 25970, Start Num: 71

Candidate Starts for Lynlen\_37:

(Start: 71 @25644 has 61 MA's), (91, 25767), (115, 25896), (118, 25911),

Gene: MEAK\_32 Start: 21588, Stop: 21232, Start Num: 68

Candidate Starts for MEAK\_32:

(55, 21621), (Start: 68 @21588 has 34 MA's), (97, 21387), (111, 21306), (118, 21270),

Gene: MaGuCo\_35 Start: 25925, Stop: 26281, Start Num: 81

Candidate Starts for MaGuCo\_35:

(Start: 81 @25925 has 1 MA's), (111, 26099), (120, 26141), (121, 26147),

Gene: Mabodamaca\_44 Start: 28805, Stop: 29152, Start Num: 69

Candidate Starts for Mabodamaca\_44:

(Start: 69 @28805 has 66 MA's), (103, 29027), (111, 29054), (120, 29096),

Gene: Maneekul\_36 Start: 27447, Stop: 27809, Start Num: 63

Candidate Starts for Maneekul\_36:

(23, 27267), (Start: 47 @27384 has 1 MA's), (Start: 63 @27447 has 64 MA's), (99, 27654), (107, 27708), (108, 27717), (111, 27726), (118, 27762),

Gene: Marav\_40 Start: 28818, Stop: 29195, Start Num: 62

Candidate Starts for Marav\_40:

(Start: 60 @28809 has 1 MA's), (Start: 62 @28818 has 32 MA's), (91, 28992), (96, 29028), (109, 29109), (110, 29112),

Gene: Maureen\_37 Start: 26991, Stop: 27434, Start Num: 69

Candidate Starts for Maureen\_37:

(Start: 69 @26991 has 66 MA's), (Start: 81 @27078 has 1 MA's), (108, 27243), (111, 27252), (119, 27291), (120, 27294), (121, 27300),

Gene: MiniMommy\_42 Start: 26738, Stop: 27181, Start Num: 69

Candidate Starts for MiniMommy\_42:

(Start: 69 @26738 has 66 MA's), (83, 26837), (120, 27041), (126, 27071),

Gene: MissSwiss\_35 Start: 24190, Stop: 24540, Start Num: 69

Candidate Starts for MissSwiss\_35:

(24, 23998), (27, 24022), (30, 24052), (43, 24094), (Start: 69 @24190 has 66 MA's), (83, 24274), (111, 24436), (120, 24478), (121, 24484),

Gene: Moss\_42 Start: 24158, Stop: 24592, Start Num: 69

Candidate Starts for Moss\_42:

(34, 24050), (39, 24062), (45, 24086), (Start: 69 @24158 has 66 MA's), (119, 24458),

Gene: Moyashi\_32 Start: 21693, Stop: 21337, Start Num: 68

Candidate Starts for Moyashi\_32:

(55, 21726), (Start: 68 @21693 has 34 MA's), (97, 21492), (110, 21414), (111, 21411), (118, 21375),

Gene: MrAK\_32 Start: 21698, Stop: 21342, Start Num: 68

Candidate Starts for MrAK\_32:

(55, 21731), (Start: 68 @21698 has 34 MA's), (91, 21539), (97, 21497), (110, 21419), (111, 21416), (118, 21380),

Gene: Mudpuppy\_34 Start: 24965, Stop: 25408, Start Num: 69

Candidate Starts for Mudpuppy\_34:

(19, 24752), (Start: 69 @24965 has 66 MA's), (83, 25064), (108, 25217), (120, 25268),

Gene: Mysterium\_36 Start: 24178, Stop: 24612, Start Num: 69

Candidate Starts for Mysterium\_36:

(Start: 69 @24178 has 66 MA's), (119, 24478),

Gene: Nabi\_37 Start: 27928, Stop: 28290, Start Num: 63

Candidate Starts for Nabi\_37:

(23, 27748), (Start: 47 @27865 has 1 MA's), (50, 27874), (Start: 63 @27928 has 64 MA's), (91, 28084), (99, 28135), (107, 28189), (108, 28198), (111, 28207), (118, 28243),

Gene: Nanodon\_38 Start: 27697, Stop: 28059, Start Num: 63

Candidate Starts for Nanodon\_38:

(23, 27514), (Start: 47 @27631 has 1 MA's), (50, 27640), (Start: 63 @27697 has 64 MA's), (99, 27904), (107, 27958), (108, 27967), (111, 27976), (113, 27991),

Gene: Nerdos\_35 Start: 27052, Stop: 27414, Start Num: 63

Candidate Starts for Nerdos\_35:

(23, 26872), (Start: 47 @26989 has 1 MA's), (50, 26998), (Start: 63 @27052 has 64 MA's), (91, 27208), (99, 27259), (107, 27313), (108, 27322), (118, 27367),

Gene: Nesbitt\_39 Start: 26358, Stop: 26897, Start Num: 54

Candidate Starts for Nesbitt\_39:

(35, 26283), (Start: 54 @26358 has 4 MA's), (72, 26427), (80, 26493), (87, 26541), (96, 26601), (98, 26613), (108, 26661), (110, 26667), (114, 26691), (116, 26712), (122, 26736), (130, 26769), (137, 26841), (141, 26877),

Gene: Nicky22\_38 Start: 26183, Stop: 26509, Start Num: 71

Candidate Starts for Nicky22\_38:

(Start: 71 @26183 has 61 MA's), (115, 26435), (118, 26450),

Gene: Niobe\_35 Start: 26862, Stop: 27212, Start Num: 69

Candidate Starts for Niobe\_35:

(Start: 69 @26862 has 66 MA's), (Start: 75 @26907 has 1 MA's), (83, 26946), (91, 27000), (108, 27099), (120, 27150),

Gene: Nishikigoi\_38 Start: 28102, Stop: 28479, Start Num: 62

Candidate Starts for Nishikigoi\_38:

(Start: 60 @28093 has 1 MA's), (Start: 62 @28102 has 32 MA's), (91, 28276), (96, 28312), (110, 28396), (118, 28435),

Gene: Nitro\_36 Start: 26582, Stop: 26929, Start Num: 69

Candidate Starts for Nitro\_36:

(Start: 69 @26582 has 66 MA's), (Start: 75 @26627 has 1 MA's), (83, 26666), (91, 26720), (111, 26828), (120, 26870),

Gene: ObiToo\_40 Start: 26129, Stop: 26491, Start Num: 69

Candidate Starts for ObiToo\_40:

(Start: 69 @26129 has 66 MA's), (91, 26267), (111, 26375), (120, 26417),

Gene: Oliynyk\_37 Start: 27411, Stop: 27773, Start Num: 63

Candidate Starts for Oliynyk\_37:

(23, 27231), (Start: 47 @27348 has 1 MA's), (50, 27357), (Start: 63 @27411 has 64 MA's), (91, 27567), (99, 27618), (107, 27672), (108, 27681), (118, 27726),

Gene: Omar\_39 Start: 28330, Stop: 28707, Start Num: 62

Candidate Starts for Omar\_39:

(Start: 60 @28321 has 1 MA's), (Start: 62 @28330 has 32 MA's), (118, 28663),

Gene: Ouroboros\_32 Start: 21911, Stop: 21552, Start Num: 67

Candidate Starts for Ouroboros\_32:

(55, 21941), (Start: 67 @21911 has 7 MA's), (Start: 68 @21908 has 34 MA's), (91, 21749), (95, 21719), (97, 21707), (111, 21626), (118, 21590),

Gene: Ozzie\_36 Start: 27037, Stop: 27399, Start Num: 63

Candidate Starts for Ozzie\_36:

(23, 26857), (Start: 47 @26974 has 1 MA's), (50, 26983), (Start: 63 @27037 has 64 MA's), (91, 27193), (99, 27244), (107, 27298), (108, 27307), (118, 27352),

Gene: OzzyJ\_37 Start: 27413, Stop: 27775, Start Num: 63

Candidate Starts for OzzyJ\_37:

(23, 27236), (Start: 47 @27350 has 1 MA's), (50, 27359), (58, 27398), (Start: 63 @27413 has 64 MA's), (99, 27620), (107, 27674), (108, 27683), (111, 27692), (118, 27728),

Gene: P100.1\_32 Start: 21963, Stop: 21607, Start Num: 68

Candidate Starts for P100.1\_32:

(Start: 68 @21963 has 34 MA's), (Start: 75 @21906 has 1 MA's), (97, 21762), (111, 21681), (118, 21645),

Gene: P100A\_32 Start: 21913, Stop: 21557, Start Num: 68

Candidate Starts for P100A\_32:

(Start: 67 @21916 has 7 MA's), (Start: 68 @21913 has 34 MA's), (Start: 75 @21856 has 1 MA's), (91, 21754), (95, 21724), (97, 21712), (111, 21631), (118, 21595),

Gene: P100D\_32 Start: 21906, Stop: 21550, Start Num: 68

Candidate Starts for P100D\_32:

(Start: 68 @21906 has 34 MA's), (91, 21747), (97, 21705), (110, 21627), (111, 21624), (118, 21588),

Gene: P101A\_32 Start: 21932, Stop: 21576, Start Num: 68

Candidate Starts for P101A\_32:



(15, 22286), (55, 21965), (Start: 68 @21932 has 34 MA's), (97, 21731), (111, 21650), (118, 21614),

Gene: P104A\_32 Start: 21701, Stop: 21345, Start Num: 68

Candidate Starts for P104A\_32:

(Start: 67 @21704 has 7 MA's), (Start: 68 @21701 has 34 MA's), (Start: 75 @21644 has 1 MA's), (97, 21500), (111, 21419), (118, 21383),

Gene: P104B\_32 Start: 21899, Stop: 21540, Start Num: 67

Candidate Starts for P104B\_32:

(Start: 67 @21899 has 7 MA's), (Start: 68 @21896 has 34 MA's), (Start: 75 @21839 has 1 MA's), (97, 21695), (110, 21617), (111, 21614), (118, 21578),

Gene: P105\_32 Start: 21561, Stop: 21205, Start Num: 68

Candidate Starts for P105\_32:

(55, 21594), (Start: 68 @21561 has 34 MA's), (97, 21360), (110, 21282), (111, 21279), (118, 21243),

Gene: P106A\_32 Start: 21990, Stop: 21631, Start Num: 67

Candidate Starts for P106A\_32:

(55, 22020), (Start: 67 @21990 has 7 MA's), (Start: 68 @21987 has 34 MA's), (91, 21828), (95, 21798), (97, 21786), (110, 21708), (111, 21705), (118, 21669),

Gene: P106C\_33 Start: 21925, Stop: 21569, Start Num: 68

Candidate Starts for P106C\_33:

(55, 21958), (Start: 67 @21928 has 7 MA's), (Start: 68 @21925 has 34 MA's), (91, 21766), (95, 21736), (97, 21724), (110, 21646), (111, 21643), (118, 21607),

Gene: P106I\_32 Start: 21754, Stop: 21398, Start Num: 68

Candidate Starts for P106I\_32:

(55, 21787), (Start: 67 @21757 has 7 MA's), (Start: 68 @21754 has 34 MA's), (91, 21595), (95, 21565), (97, 21553), (110, 21475), (111, 21472), (118, 21436),

Gene: P106L\_32 Start: 21925, Stop: 21569, Start Num: 68

Candidate Starts for P106L\_32:

(55, 21958), (Start: 67 @21928 has 7 MA's), (Start: 68 @21925 has 34 MA's), (91, 21766), (95, 21736), (97, 21724), (110, 21646), (111, 21643), (118, 21607),

Gene: P106M\_32 Start: 21925, Stop: 21569, Start Num: 68

Candidate Starts for P106M\_32:

(55, 21958), (Start: 67 @21928 has 7 MA's), (Start: 68 @21925 has 34 MA's), (91, 21766), (95, 21736), (97, 21724), (110, 21646), (111, 21643), (118, 21607),

Gene: P107A\_32 Start: 21941, Stop: 21585, Start Num: 68

Candidate Starts for P107A\_32:

(55, 21974), (Start: 67 @21944 has 7 MA's), (Start: 68 @21941 has 34 MA's), (91, 21782), (95, 21752), (97, 21740), (105, 21689), (109, 21665), (118, 21623),

Gene: P107C\_32 Start: 21878, Stop: 21522, Start Num: 68

Candidate Starts for P107C\_32:

(Start: 67 @21881 has 7 MA's), (Start: 68 @21878 has 34 MA's), (97, 21677), (110, 21599), (111, 21596), (118, 21560),

Gene: P108C\_32 Start: 21895, Stop: 21536, Start Num: 67

Candidate Starts for P108C\_32:

(Start: 67 @21895 has 7 MA's), (Start: 68 @21892 has 34 MA's), (91, 21733), (97, 21691), (110, 21613), (111, 21610), (118, 21574),

Gene: P14.4\_32 Start: 21894, Stop: 21538, Start Num: 68

Candidate Starts for P14.4\_32:

(15, 22248), (55, 21927), (Start: 68 @21894 has 34 MA's), (91, 21735), (97, 21693), (110, 21615), (111, 21612), (118, 21576),

Gene: P9.1\_32 Start: 21865, Stop: 21566, Start Num: 75

Candidate Starts for P9.1\_32:

(Start: 67 @21925 has 7 MA's), (Start: 68 @21922 has 34 MA's), (Start: 75 @21865 has 1 MA's), (91, 21763), (97, 21721), (111, 21640), (118, 21604),

Gene: PA6\_33 Start: 21886, Stop: 21530, Start Num: 68

Candidate Starts for PA6\_33:

(Start: 68 @21886 has 34 MA's), (91, 21727), (97, 21685), (111, 21604), (118, 21568),

Gene: PAD20\_33 Start: 21666, Stop: 21310, Start Num: 68

Candidate Starts for PAD20\_33:

(15, 22020), (Start: 67 @21669 has 7 MA's), (Start: 68 @21666 has 34 MA's), (Start: 75 @21609 has 1 MA's), (97, 21465), (111, 21384), (118, 21348),

Gene: PAS50\_33 Start: 21831, Stop: 21475, Start Num: 68

Candidate Starts for PAS50\_33:

(11, 22278), (15, 22185), (Start: 67 @21834 has 7 MA's), (Start: 68 @21831 has 34 MA's), (97, 21630), (111, 21549), (118, 21513),

Gene: PHL010M04\_32 Start: 21909, Stop: 21550, Start Num: 67

Candidate Starts for PHL010M04\_32:

(Start: 67 @21909 has 7 MA's), (Start: 68 @21906 has 34 MA's), (91, 21747), (97, 21705), (111, 21624), (118, 21588),

Gene: PHL037M02\_32 Start: 21893, Stop: 21534, Start Num: 67

Candidate Starts for PHL037M02\_32:

(55, 21923), (Start: 67 @21893 has 7 MA's), (Start: 68 @21890 has 34 MA's), (Start: 75 @21833 has 1 MA's), (91, 21731), (97, 21689), (109, 21614), (111, 21608), (118, 21572),

Gene: PHL060L00\_32 Start: 21736, Stop: 21380, Start Num: 68

Candidate Starts for PHL060L00\_32:

(Start: 67 @21739 has 7 MA's), (Start: 68 @21736 has 34 MA's), (97, 21535), (111, 21454), (118, 21418),

Gene: PHL067M10\_32 Start: 21856, Stop: 21500, Start Num: 68

Candidate Starts for PHL067M10\_32:

(Start: 67 @21859 has 7 MA's), (Start: 68 @21856 has 34 MA's), (Start: 75 @21799 has 1 MA's), (91, 21697), (97, 21655), (110, 21577), (111, 21574), (118, 21538),

Gene: PHL071N05\_32 Start: 21918, Stop: 21559, Start Num: 67

Candidate Starts for PHL071N05\_32:

(55, 21948), (Start: 67 @21918 has 7 MA's), (Start: 68 @21915 has 34 MA's), (Start: 75 @21858 has 1 MA's), (91, 21756), (97, 21714), (110, 21636), (111, 21633), (118, 21597),

Gene: PHL111M01\_32 Start: 21613, Stop: 21257, Start Num: 68

Candidate Starts for PHL111M01\_32:

(55, 21646), (Start: 68 @21613 has 34 MA's), (97, 21412), (111, 21331), (118, 21295),

Gene: PHL112N00\_32 Start: 21923, Stop: 21567, Start Num: 68

Candidate Starts for PHL112N00\_32:

(Start: 67 @21926 has 7 MA's), (Start: 68 @21923 has 34 MA's), (91, 21764), (97, 21722), (111, 21641), (118, 21605),

Gene: PHL113M01\_32 Start: 21662, Stop: 21306, Start Num: 68

Candidate Starts for PHL113M01\_32:

(55, 21695), (Start: 68 @21662 has 34 MA's), (97, 21461), (110, 21383), (118, 21344),

Gene: PHL114L00\_32 Start: 21878, Stop: 21522, Start Num: 68

Candidate Starts for PHL114L00\_32:

(55, 21911), (Start: 67 @21881 has 7 MA's), (Start: 68 @21878 has 34 MA's), (97, 21677), (110, 21599), (111, 21596), (118, 21560),

Gene: Pablito\_36 Start: 27641, Stop: 28030, Start Num: 59

Candidate Starts for Pablito\_36:

(Start: 59 @27641 has 2 MA's), (Start: 60 @27644 has 1 MA's), (Start: 62 @27653 has 32 MA's), (86, 27794), (91, 27827), (109, 27944), (118, 27986),

Gene: Paedore\_36 Start: 28263, Stop: 28640, Start Num: 62

Candidate Starts for Paedore\_36:

(Start: 60 @28254 has 1 MA's), (Start: 62 @28263 has 32 MA's), (86, 28404), (91, 28437), (118, 28596),

Gene: Paolo\_39 Start: 28672, Stop: 29049, Start Num: 62

Candidate Starts for Paolo\_39:

(Start: 60 @28663 has 1 MA's), (Start: 62 @28672 has 32 MA's), (91, 28846), (96, 28882), (109, 28963), (118, 29005),

Gene: Pavo\_39 Start: 29091, Stop: 29456, Start Num: 63

Candidate Starts for Pavo\_39:

(Start: 63 @29091 has 64 MA's), (94, 29274), (99, 29301), (109, 29367),

Gene: Percival\_46 Start: 28994, Stop: 29350, Start Num: 69

Candidate Starts for Percival\_46:

(Start: 69 @28994 has 66 MA's), (74, 29039), (85, 29096), (120, 29285), (128, 29327),

Gene: Phettuccine\_36 Start: 27053, Stop: 27415, Start Num: 63

Candidate Starts for Phettuccine\_36:

(23, 26873), (Start: 47 @26990 has 1 MA's), (50, 26999), (Start: 63 @27053 has 64 MA's), (91, 27209), (99, 27260), (107, 27314), (108, 27323), (118, 27368),

Gene: Phisb\_38 Start: 25777, Stop: 26103, Start Num: 71

Candidate Starts for Phisb\_38:

(Start: 71 @25777 has 61 MA's), (89, 25885), (111, 26008), (118, 26044), (120, 26050),

Gene: Phives\_38 Start: 27302, Stop: 27745, Start Num: 69

Candidate Starts for Phives\_38:

(36, 27194), (37, 27197), (40, 27206), (Start: 69 @27302 has 66 MA's), (108, 27554), (111, 27563), (120, 27605), (125, 27632), (134, 27668),

Gene: Pirate\_32 Start: 21811, Stop: 21455, Start Num: 68  
Candidate Starts for Pirate\_32:  
(Start: 67 @21814 has 7 MA's), (Start: 68 @21811 has 34 MA's), (Start: 75 @21754 has 1 MA's), (97, 21610), (110, 21532), (111, 21529), (118, 21493),

Gene: Pixelle\_35 Start: 26837, Stop: 27184, Start Num: 69  
Candidate Starts for Pixelle\_35:  
(Start: 69 @26837 has 66 MA's), (83, 26921), (111, 27083), (120, 27125),

Gene: Powerpuff\_37 Start: 26303, Stop: 26746, Start Num: 69  
Candidate Starts for Powerpuff\_37:  
(Start: 69 @26303 has 66 MA's), (108, 26555), (120, 26606),

Gene: Procrass1\_32 Start: 21885, Stop: 21529, Start Num: 68  
Candidate Starts for Procrass1\_32:  
(Start: 68 @21885 has 34 MA's), (97, 21684), (110, 21606), (111, 21603), (118, 21567),

Gene: Provolone\_38 Start: 28473, Stop: 28838, Start Num: 63  
Candidate Starts for Provolone\_38:  
(Start: 63 @28473 has 64 MA's), (94, 28656), (99, 28683), (109, 28749),

Gene: Puginator\_39 Start: 28693, Stop: 29070, Start Num: 62  
Candidate Starts for Puginator\_39:  
(Start: 60 @28684 has 1 MA's), (Start: 62 @28693 has 32 MA's), (76, 28771), (91, 28867), (96, 28903), (118, 29026),

Gene: Pumpkins\_36 Start: 26180, Stop: 26539, Start Num: 69  
Candidate Starts for Pumpkins\_36:  
(33, 26060), (Start: 69 @26180 has 66 MA's), (91, 26318), (120, 26468),

Gene: QMacho\_39 Start: 26201, Stop: 26527, Start Num: 71  
Candidate Starts for QMacho\_39:  
(Start: 71 @26201 has 61 MA's), (115, 26453), (118, 26468),

Gene: QueenBey\_32 Start: 21868, Stop: 21512, Start Num: 68  
Candidate Starts for QueenBey\_32:  
(Start: 68 @21868 has 34 MA's), (91, 21709), (97, 21667), (110, 21589), (118, 21550),

Gene: Quenya\_36 Start: 25890, Stop: 26219, Start Num: 71  
Candidate Starts for Quenya\_36:  
(8, 25413), (14, 25524), (17, 25566), (Start: 71 @25890 has 61 MA's), (86, 25977), (91, 26013), (92, 26016), (115, 26142), (118, 26157), (120, 26163),

Gene: R4\_37 Start: 28418, Stop: 28795, Start Num: 62  
Candidate Starts for R4\_37:  
(Start: 60 @28409 has 1 MA's), (Start: 62 @28418 has 32 MA's), (86, 28559), (91, 28592), (118, 28751),

Gene: Rana\_37 Start: 27928, Stop: 28290, Start Num: 63  
Candidate Starts for Rana\_37:  
(23, 27748), (Start: 47 @27865 has 1 MA's), (50, 27874), (Start: 63 @27928 has 64 MA's), (91, 28084), (99, 28135), (107, 28189), (108, 28198), (111, 28207), (118, 28243),

Gene: RedBear\_37 Start: 27596, Stop: 27958, Start Num: 63

Candidate Starts for RedBear\_37:

(23, 27413), (Start: 47 @27530 has 1 MA's), (50, 27539), (Start: 63 @27596 has 64 MA's), (99, 27803), (107, 27857), (108, 27866), (111, 27875), (118, 27911),

Gene: Reedo\_35 Start: 24148, Stop: 24591, Start Num: 69

Candidate Starts for Reedo\_35:

(Start: 69 @24148 has 66 MA's), (Start: 75 @24193 has 1 MA's), (83, 24247), (108, 24400), (111, 24409), (120, 24451), (121, 24457), (125, 24478),

Gene: Rileysaurus\_31 Start: 21916, Stop: 21560, Start Num: 68

Candidate Starts for Rileysaurus\_31:

(Start: 67 @21919 has 7 MA's), (Start: 68 @21916 has 34 MA's), (Start: 75 @21859 has 1 MA's), (91, 21757), (97, 21715), (110, 21637), (111, 21634), (118, 21598),

Gene: Rollins\_34 Start: 23702, Stop: 24043, Start Num: 71

Candidate Starts for Rollins\_34:

(Start: 71 @23702 has 61 MA's), (87, 23795), (120, 23975),

Gene: Rona\_35 Start: 26210, Stop: 26542, Start Num: 71

Candidate Starts for Rona\_35:

(3, 25613), (7, 25721), (Start: 71 @26210 has 61 MA's), (89, 26321), (90, 26333), (92, 26339), (100, 26387), (111, 26444), (118, 26480), (120, 26486),

Gene: Rusticus\_37 Start: 27411, Stop: 27773, Start Num: 63

Candidate Starts for Rusticus\_37:

(23, 27231), (Start: 47 @27348 has 1 MA's), (50, 27357), (Start: 63 @27411 has 64 MA's), (91, 27567), (99, 27618), (107, 27672), (108, 27681), (118, 27726),

Gene: SKKY\_32 Start: 21667, Stop: 21311, Start Num: 68

Candidate Starts for SKKY\_32:

(55, 21700), (Start: 68 @21667 has 34 MA's), (91, 21508), (97, 21466), (111, 21385), (118, 21349),

Gene: Saftant\_37 Start: 29043, Stop: 29411, Start Num: 63

Candidate Starts for Saftant\_37:

(Start: 63 @29043 has 64 MA's), (94, 29229), (99, 29256), (109, 29322), (111, 29328), (118, 29364),

Gene: Samy\_60 Start: 37282, Stop: 37698, Start Num: 64

Candidate Starts for Samy\_60:

(Start: 64 @37282 has 1 MA's), (84, 37390), (88, 37414), (110, 37534), (111, 37537), (112, 37549), (119, 37576), (121, 37585), (125, 37606), (129, 37624),

Gene: SanaSana\_40 Start: 27314, Stop: 27640, Start Num: 71

Candidate Starts for SanaSana\_40:

(Start: 71 @27314 has 61 MA's), (92, 27440), (111, 27545), (115, 27566), (118, 27581), (120, 27587),

Gene: SansAfet\_38 Start: 25631, Stop: 25957, Start Num: 71

Candidate Starts for SansAfet\_38:

(Start: 71 @25631 has 61 MA's), (111, 25862), (118, 25898), (120, 25904),

Gene: SarBear\_37 Start: 25498, Stop: 25824, Start Num: 71

Candidate Starts for SarBear\_37:

(Start: 71 @25498 has 61 MA's), (115, 25750), (118, 25765),

Gene: SarahRose\_36 Start: 27421, Stop: 27783, Start Num: 63

Candidate Starts for SarahRose\_36:

(23, 27244), (Start: 47 @27358 has 1 MA's), (50, 27367), (58, 27406), (Start: 63 @27421 has 64 MA's), (99, 27628), (107, 27682), (108, 27691), (111, 27700), (118, 27736),

Gene: ShakeltOph\_42 Start: 26737, Stop: 27180, Start Num: 69

Candidate Starts for ShakeltOph\_42:

(Start: 69 @26737 has 66 MA's), (83, 26836), (120, 27040), (126, 27070),

Gene: Sharkboy\_36 Start: 26309, Stop: 26641, Start Num: 71

Candidate Starts for Sharkboy\_36:

(Start: 71 @26309 has 61 MA's), (89, 26420), (90, 26432), (92, 26438), (100, 26486), (111, 26543), (120, 26585),

Gene: Shayna\_37 Start: 24987, Stop: 25346, Start Num: 70

Candidate Starts for Shayna\_37:

(70, 24987), (77, 25041), (90, 25116), (115, 25248), (118, 25263), (120, 25269),

Gene: Simpson\_37 Start: 25218, Stop: 25661, Start Num: 69

Candidate Starts for Simpson\_37:

(Start: 69 @25218 has 66 MA's), (83, 25317), (108, 25470), (120, 25521),

Gene: Skylord\_34 Start: 23633, Stop: 23974, Start Num: 71

Candidate Starts for Skylord\_34:

(Start: 71 @23633 has 61 MA's), (87, 23726), (120, 23906),

Gene: Slay\_38 Start: 26179, Stop: 26505, Start Num: 71

Candidate Starts for Slay\_38:

(Start: 71 @26179 has 61 MA's), (115, 26431), (118, 26446),

Gene: Snek\_35 Start: 24475, Stop: 24915, Start Num: 69

Candidate Starts for Snek\_35:

(24, 24304), (27, 24328), (30, 24358), (43, 24400), (Start: 69 @24475 has 66 MA's), (Start: 75 @24520 has 1 MA's), (108, 24727), (120, 24778), (133, 24835),

Gene: Snorlax\_36 Start: 27425, Stop: 27787, Start Num: 63

Candidate Starts for Snorlax\_36:

(23, 27248), (Start: 47 @27362 has 1 MA's), (50, 27371), (58, 27410), (Start: 63 @27425 has 64 MA's), (99, 27632), (107, 27686), (108, 27695), (111, 27704), (118, 27740),

Gene: Solid\_32 Start: 21901, Stop: 21542, Start Num: 67

Candidate Starts for Solid\_32:

(55, 21931), (Start: 67 @21901 has 7 MA's), (Start: 68 @21898 has 34 MA's), (Start: 75 @21841 has 1 MA's), (97, 21697), (110, 21619), (111, 21616), (118, 21580),

Gene: Soondubu\_33 Start: 27354, Stop: 27797, Start Num: 69

Candidate Starts for Soondubu\_33:

(9, 26925), (24, 27192), (30, 27246), (Start: 69 @27354 has 66 MA's), (111, 27615), (120, 27657), (121, 27663), (124, 27681), (127, 27693),

Gene: Sooty\_37 Start: 24081, Stop: 24515, Start Num: 69

Candidate Starts for Sooty\_37:

(39, 23985), (45, 24009), (Start: 69 @24081 has 66 MA's), (Start: 81 @24168 has 1 MA's), (119, 24381),

Gene: South40\_36 Start: 27596, Stop: 27958, Start Num: 63

Candidate Starts for South40\_36:

(23, 27413), (Start: 47 @27530 has 1 MA's), (50, 27539), (Start: 63 @27596 has 64 MA's), (99, 27803), (107, 27857), (108, 27866), (111, 27875), (118, 27911),

Gene: SpecialK\_42 Start: 24066, Stop: 24500, Start Num: 69

Candidate Starts for SpecialK\_42:

(Start: 69 @24066 has 66 MA's), (119, 24366),

Gene: Speedwell\_44 Start: 30345, Stop: 30707, Start Num: 63

Candidate Starts for Speedwell\_44:

(Start: 63 @30345 has 64 MA's), (94, 30528), (99, 30555), (104, 30594), (109, 30621), (111, 30627),

Gene: SqueakyClean\_36 Start: 28181, Stop: 28558, Start Num: 62

Candidate Starts for SqueakyClean\_36:

(Start: 59 @28169 has 2 MA's), (Start: 60 @28172 has 1 MA's), (Start: 62 @28181 has 32 MA's), (91, 28355), (96, 28391), (109, 28472), (118, 28514),

Gene: Stoor\_38 Start: 26983, Stop: 27309, Start Num: 71

Candidate Starts for Stoor\_38:

(5, 26470), (6, 26488), (10, 26524), (13, 26593), (Start: 71 @26983 has 61 MA's), (90, 27103), (92, 27109), (98, 27151), (111, 27214), (115, 27235), (118, 27250), (120, 27256),

Gene: Stormborn\_32 Start: 21505, Stop: 21149, Start Num: 68

Candidate Starts for Stormborn\_32:

(55, 21538), (Start: 68 @21505 has 34 MA's), (97, 21304), (110, 21226), (111, 21223), (118, 21187),

Gene: Stromboli\_38 Start: 26847, Stop: 27173, Start Num: 71

Candidate Starts for Stromboli\_38:

(1, 26094), (5, 26334), (6, 26352), (10, 26388), (13, 26457), (Start: 71 @26847 has 61 MA's), (90, 26967), (92, 26973), (111, 27078), (115, 27099), (118, 27114), (120, 27120),

Gene: SuMoo\_46 Start: 28468, Stop: 28815, Start Num: 69

Candidate Starts for SuMoo\_46:

(42, 28372), (Start: 65 @28456 has 3 MA's), (Start: 69 @28468 has 66 MA's), (103, 28690), (111, 28717), (120, 28759),

Gene: Sue2\_36 Start: 26239, Stop: 26682, Start Num: 69

Candidate Starts for Sue2\_36:

(Start: 69 @26239 has 66 MA's), (91, 26392), (115, 26521), (120, 26542), (121, 26548),

Gene: Sujidade\_37 Start: 28154, Stop: 28516, Start Num: 63

Candidate Starts for Sujidade\_37:

(23, 27974), (Start: 47 @28091 has 1 MA's), (Start: 63 @28154 has 64 MA's), (99, 28361), (107, 28415), (108, 28424), (109, 28427), (111, 28433), (118, 28469),

Gene: SunnyD\_39 Start: 25043, Stop: 25348, Start Num: 77

Candidate Starts for SunnyD\_39:

(70, 24989), (77, 25043), (90, 25118), (100, 25172), (115, 25250), (118, 25265), (120, 25271),

Gene: SunsetPointe\_36 Start: 27044, Stop: 27406, Start Num: 63  
Candidate Starts for SunsetPointe\_36:  
(23, 26864), (Start: 47 @26981 has 1 MA's), (50, 26990), (Start: 63 @27044 has 64 MA's), (91, 27200), (99, 27251), (107, 27305), (108, 27314), (118, 27359),

Gene: Supernova\_32 Start: 21669, Stop: 21313, Start Num: 68  
Candidate Starts for Supernova\_32:  
(55, 21702), (Start: 68 @21669 has 34 MA's), (91, 21510), (97, 21468), (110, 21390), (111, 21387), (118, 21351),

Gene: Superstar\_40 Start: 29217, Stop: 29594, Start Num: 62  
Candidate Starts for Superstar\_40:  
(Start: 59 @29205 has 2 MA's), (Start: 60 @29208 has 1 MA's), (Start: 62 @29217 has 32 MA's), (86, 29358), (91, 29391), (109, 29508), (118, 29550),

Gene: Swervy\_38 Start: 25698, Stop: 26024, Start Num: 71  
Candidate Starts for Swervy\_38:  
(Start: 71 @25698 has 61 MA's), (115, 25950), (118, 25965),

Gene: TagePighter\_38 Start: 27425, Stop: 27787, Start Num: 63  
Candidate Starts for TagePighter\_38:  
(23, 27248), (Start: 47 @27362 has 1 MA's), (50, 27371), (58, 27410), (Start: 63 @27425 has 64 MA's), (99, 27632), (107, 27686), (108, 27695), (111, 27704), (118, 27740),

Gene: Tallboi\_36 Start: 27029, Stop: 27379, Start Num: 69  
Candidate Starts for Tallboi\_36:  
(31, 26903), (Start: 69 @27029 has 66 MA's), (Start: 75 @27074 has 1 MA's), (111, 27275), (120, 27317),

Gene: Tbone\_34 Start: 25013, Stop: 25456, Start Num: 69  
Candidate Starts for Tbone\_34:  
(19, 24791), (Start: 69 @25013 has 66 MA's), (83, 25112), (108, 25265), (120, 25316),

Gene: Teagster\_40 Start: 25820, Stop: 26179, Start Num: 70  
Candidate Starts for Teagster\_40:  
(70, 25820), (77, 25874), (90, 25949), (115, 26081), (118, 26096), (120, 26102),

Gene: Tefunt\_38 Start: 28104, Stop: 28481, Start Num: 62  
Candidate Starts for Tefunt\_38:  
(Start: 60 @28095 has 1 MA's), (Start: 62 @28104 has 32 MA's), (91, 28278), (96, 28314), (110, 28398), (118, 28437),

Gene: TforTroy\_37 Start: 26052, Stop: 26408, Start Num: 69  
Candidate Starts for TforTroy\_37:  
(33, 25932), (Start: 69 @26052 has 66 MA's), (120, 26340),

Gene: Thestral\_38 Start: 28297, Stop: 28674, Start Num: 62  
Candidate Starts for Thestral\_38:  
(Start: 60 @28288 has 1 MA's), (Start: 62 @28297 has 32 MA's), (91, 28471), (96, 28507), (118, 28630),

Gene: Tian\_35 Start: 26817, Stop: 27164, Start Num: 69



Candidate Starts for Tian\_35:

(Start: 69 @26817 has 66 MA's), (83, 26901), (111, 27063), (120, 27105),

Gene: TinaBelcher\_37 Start: 28244, Stop: 28621, Start Num: 62

Candidate Starts for TinaBelcher\_37:

(Start: 60 @28235 has 1 MA's), (Start: 62 @28244 has 32 MA's), (91, 28418), (96, 28454), (118, 28577),

Gene: Toma\_36 Start: 27871, Stop: 28233, Start Num: 63

Candidate Starts for Toma\_36:

(23, 27691), (Start: 47 @27808 has 1 MA's), (50, 27817), (Start: 63 @27871 has 64 MA's), (99, 28078), (107, 28132), (108, 28141), (109, 28144), (111, 28150), (118, 28186),

Gene: Triste\_36 Start: 27413, Stop: 27775, Start Num: 63

Candidate Starts for Triste\_36:

(23, 27236), (Start: 47 @27350 has 1 MA's), (50, 27359), (58, 27398), (Start: 63 @27413 has 64 MA's), (99, 27620), (107, 27674), (108, 27683), (111, 27692), (118, 27728),

Gene: Triumph\_38 Start: 27999, Stop: 28376, Start Num: 62

Candidate Starts for Triumph\_38:

(36, 27894), (Start: 47 @27936 has 1 MA's), (Start: 59 @27987 has 2 MA's), (Start: 60 @27990 has 1 MA's), (Start: 62 @27999 has 32 MA's), (91, 28173), (109, 28290), (118, 28332),

Gene: TrvxScott\_36 Start: 28281, Stop: 28667, Start Num: 60

Candidate Starts for TrvxScott\_36:

(Start: 60 @28281 has 1 MA's), (Start: 62 @28290 has 32 MA's), (91, 28464), (96, 28500), (118, 28623),

Gene: TuanPN\_35 Start: 27357, Stop: 27719, Start Num: 63

Candidate Starts for TuanPN\_35:

(23, 27177), (Start: 47 @27294 has 1 MA's), (Start: 63 @27357 has 64 MA's), (99, 27564), (107, 27618), (108, 27627), (111, 27636), (118, 27672),

Gene: Tuck\_39 Start: 27855, Stop: 28298, Start Num: 69

Candidate Starts for Tuck\_39:

(Start: 69 @27855 has 66 MA's), (108, 28107), (111, 28116), (120, 28158), (125, 28185), (134, 28221),

Gene: TukTuk\_38 Start: 25769, Stop: 26095, Start Num: 71

Candidate Starts for TukTuk\_38:

(Start: 71 @25769 has 61 MA's), (89, 25877), (111, 26000), (118, 26036), (120, 26042),

Gene: Turab\_34 Start: 25291, Stop: 25641, Start Num: 69

Candidate Starts for Turab\_34:

(25, 25111), (32, 25165), (Start: 69 @25291 has 66 MA's), (Start: 75 @25336 has 1 MA's), (83, 25375), (111, 25537), (120, 25579),

Gene: Tutumahutu\_35 Start: 25185, Stop: 25628, Start Num: 69

Candidate Starts for Tutumahutu\_35:

(Start: 69 @25185 has 66 MA's), (83, 25284), (108, 25437), (120, 25488),

Gene: Tweety19\_35 Start: 24474, Stop: 24914, Start Num: 69

Candidate Starts for Tweety19\_35:

(24, 24303), (27, 24327), (30, 24357), (43, 24399), (Start: 69 @24474 has 66 MA's), (Start: 75 @24519 has 1 MA's), (108, 24726), (120, 24777), (133, 24834),

Gene: Unstoppable\_36 Start: 27048, Stop: 27410, Start Num: 63

Candidate Starts for Unstoppable\_36:

(23, 26868), (Start: 47 @26985 has 1 MA's), (50, 26994), (Start: 63 @27048 has 64 MA's), (91, 27204), (99, 27255), (107, 27309), (108, 27318), (118, 27363),

Gene: Urza\_38 Start: 27858, Stop: 28232, Start Num: 62

Candidate Starts for Urza\_38:

(Start: 60 @27849 has 1 MA's), (Start: 62 @27858 has 32 MA's), (Start: 75 @27912 has 1 MA's), (91, 28026), (99, 28077), (109, 28143), (111, 28149), (118, 28185), (124, 28215),

Gene: UtzChips\_43 Start: 27442, Stop: 27804, Start Num: 69

Candidate Starts for UtzChips\_43:

(44, 27361), (Start: 69 @27442 has 66 MA's), (102, 27658), (120, 27733),

Gene: VResidence\_36 Start: 25348, Stop: 25791, Start Num: 69

Candidate Starts for VResidence\_36:

(Start: 69 @25348 has 66 MA's), (108, 25600), (111, 25609), (120, 25651), (121, 25657), (126, 25681), (138, 25768),

Gene: Vanseggelen\_42 Start: 28601, Stop: 28966, Start Num: 63

Candidate Starts for Vanseggelen\_42:

(Start: 63 @28601 has 64 MA's), (94, 28784), (99, 28811), (109, 28877),

Gene: Verabelle\_40 Start: 28933, Stop: 29355, Start Num: 49

Candidate Starts for Verabelle\_40:

(41, 28906), (49, 28933), (Start: 63 @28993 has 64 MA's), (74, 29044), (94, 29176), (97, 29194), (99, 29203), (109, 29269), (111, 29275),

Gene: Verse\_37 Start: 29752, Stop: 30117, Start Num: 63

Candidate Starts for Verse\_37:

(Start: 63 @29752 has 64 MA's), (94, 29935), (99, 29962), (109, 30028),

Gene: VieEnRose\_37 Start: 27779, Stop: 28156, Start Num: 62

Candidate Starts for VieEnRose\_37:

(Start: 60 @27770 has 1 MA's), (Start: 62 @27779 has 32 MA's), (Start: 75 @27836 has 1 MA's), (91, 27950), (99, 28001), (109, 28067), (111, 28073), (118, 28109),

Gene: Vitas\_34 Start: 23642, Stop: 23983, Start Num: 71

Candidate Starts for Vitas\_34:

(Start: 71 @23642 has 61 MA's), (87, 23735), (120, 23915),

Gene: VroomVroom\_40 Start: 26879, Stop: 27325, Start Num: 69

Candidate Starts for VroomVroom\_40:

(38, 26771), (Start: 65 @26867 has 3 MA's), (Start: 69 @26879 has 66 MA's), (83, 26978), (120, 27182), (136, 27275),

Gene: WalkingDead\_39 Start: 27238, Stop: 27564, Start Num: 71

Candidate Starts for WalkingDead\_39:

(Start: 71 @27238 has 61 MA's), (92, 27364), (98, 27406), (108, 27460), (111, 27469), (115, 27490), (118, 27505), (120, 27511),

Gene: Warda\_35 Start: 25189, Stop: 25632, Start Num: 69

Candidate Starts for Warda\_35:

(19, 24967), (Start: 69 @25189 has 66 MA's), (83, 25288), (108, 25441), (120, 25492),

Gene: Werner\_36 Start: 27423, Stop: 27785, Start Num: 63

Candidate Starts for Werner\_36:

(23, 27246), (Start: 47 @27360 has 1 MA's), (50, 27369), (58, 27408), (Start: 63 @27423 has 64 MA's), (99, 27630), (107, 27684), (108, 27693), (111, 27702), (118, 27738),

Gene: Whatever\_36 Start: 27423, Stop: 27785, Start Num: 63

Candidate Starts for Whatever\_36:

(23, 27246), (Start: 47 @27360 has 1 MA's), (50, 27369), (58, 27408), (Start: 63 @27423 has 64 MA's), (99, 27630), (107, 27684), (108, 27693), (111, 27702), (118, 27738),

Gene: Wildwest\_35 Start: 25377, Stop: 25820, Start Num: 69

Candidate Starts for Wildwest\_35:

(24, 25194), (27, 25218), (30, 25248), (Start: 69 @25377 has 66 MA's), (108, 25629), (111, 25638), (120, 25680), (121, 25686), (134, 25743), (139, 25800),

Gene: Wizzo\_32 Start: 21394, Stop: 21038, Start Num: 68

Candidate Starts for Wizzo\_32:

(11, 21841), (15, 21748), (55, 21427), (Start: 68 @21394 has 34 MA's), (97, 21193), (110, 21115), (111, 21112), (118, 21076),

Gene: Yang\_36 Start: 25545, Stop: 25904, Start Num: 69

Candidate Starts for Yang\_36:

(Start: 69 @25545 has 66 MA's), (91, 25683), (102, 25758), (120, 25833),

Gene: Yasdnii\_36 Start: 27475, Stop: 27837, Start Num: 63

Candidate Starts for Yasdnii\_36:

(23, 27295), (Start: 47 @27412 has 1 MA's), (Start: 63 @27475 has 64 MA's), (99, 27682), (107, 27736), (108, 27745), (111, 27754), (118, 27790),

Gene: YesChef\_35 Start: 25162, Stop: 25605, Start Num: 69

Candidate Starts for YesChef\_35:

(Start: 69 @25162 has 66 MA's), (108, 25414), (120, 25465),

Gene: Yosif\_39 Start: 29550, Stop: 29933, Start Num: 63

Candidate Starts for Yosif\_39:

(Start: 63 @29550 has 64 MA's), (86, 29682), (91, 29727), (118, 29886),

Gene: Zainub\_39 Start: 28633, Stop: 29010, Start Num: 62

Candidate Starts for Zainub\_39:

(Start: 60 @28624 has 1 MA's), (Start: 62 @28633 has 32 MA's), (91, 28807), (96, 28843), (109, 28924), (118, 28966),

Gene: Zemlya\_38 Start: 27972, Stop: 28334, Start Num: 63

Candidate Starts for Zemlya\_38:

(23, 27792), (Start: 47 @27909 has 1 MA's), (50, 27918), (Start: 63 @27972 has 64 MA's), (99, 28179), (107, 28233), (108, 28242), (109, 28245), (111, 28251), (118, 28287),

Gene: phiCAM\_36 Start: 30877, Stop: 31242, Start Num: 63

Candidate Starts for phiCAM\_36:

(Start: 63 @30877 has 64 MA's), (74, 30928), (94, 31060), (97, 31078), (99, 31087), (109, 31153), (111, 31159), (118, 31195),

Gene: phiHau3\_38 Start: 27506, Stop: 27880, Start Num: 65

Candidate Starts for phiHau3\_38:

(16, 27191), (18, 27212), (22, 27317), (26, 27341), (51, 27458), (Start: 65 @27506 has 3 MA's), (74, 27569), (83, 27626), (91, 27677), (99, 27728), (107, 27782), (121, 27848),

Gene: phiSASD1\_10 Start: 25051, Stop: 25515, Start Num: 54

Candidate Starts for phiSASD1\_10:

(Start: 54 @25051 has 4 MA's), (96, 25246), (98, 25258), (108, 25306), (109, 25309), (116, 25351), (123, 25384),