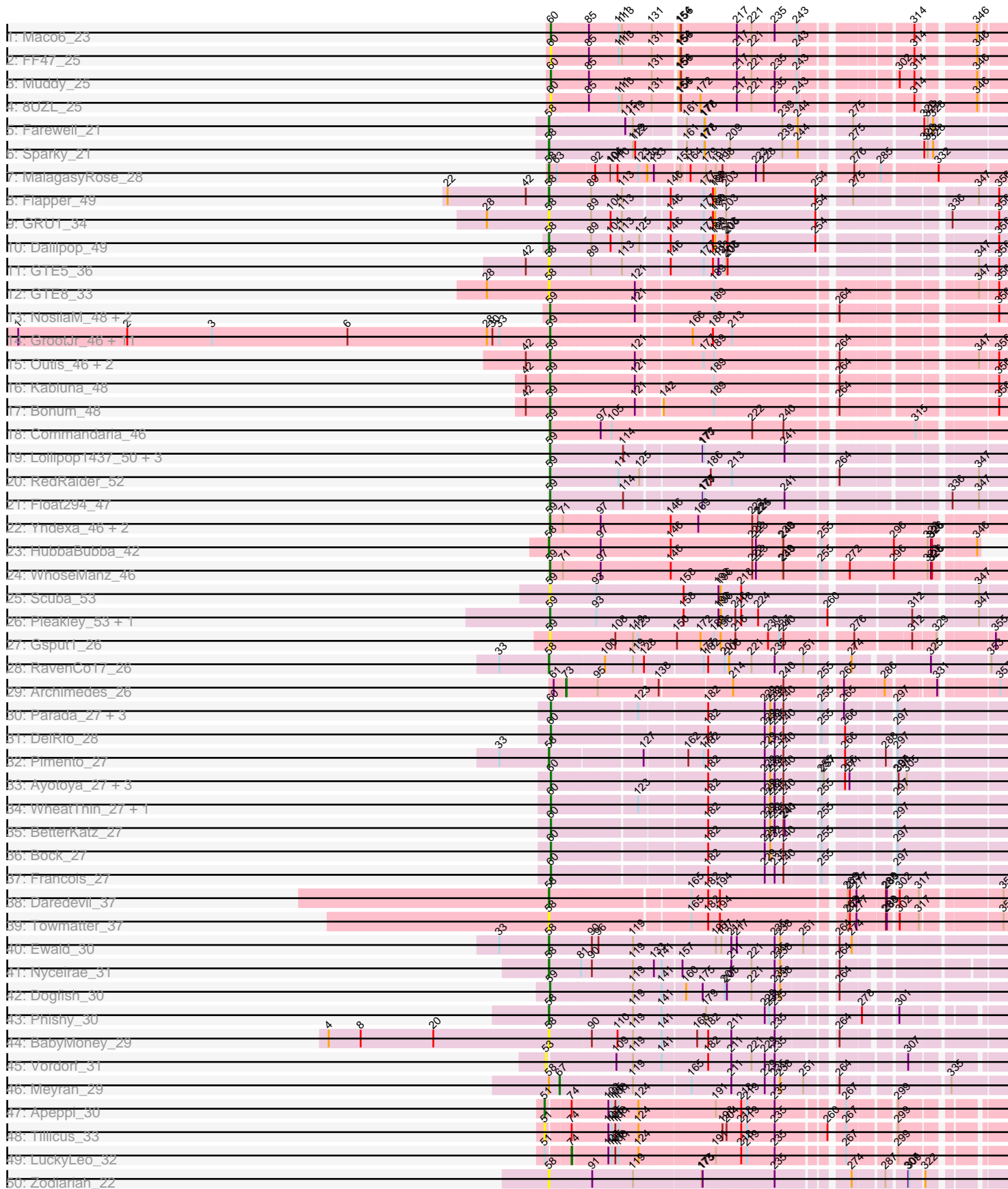
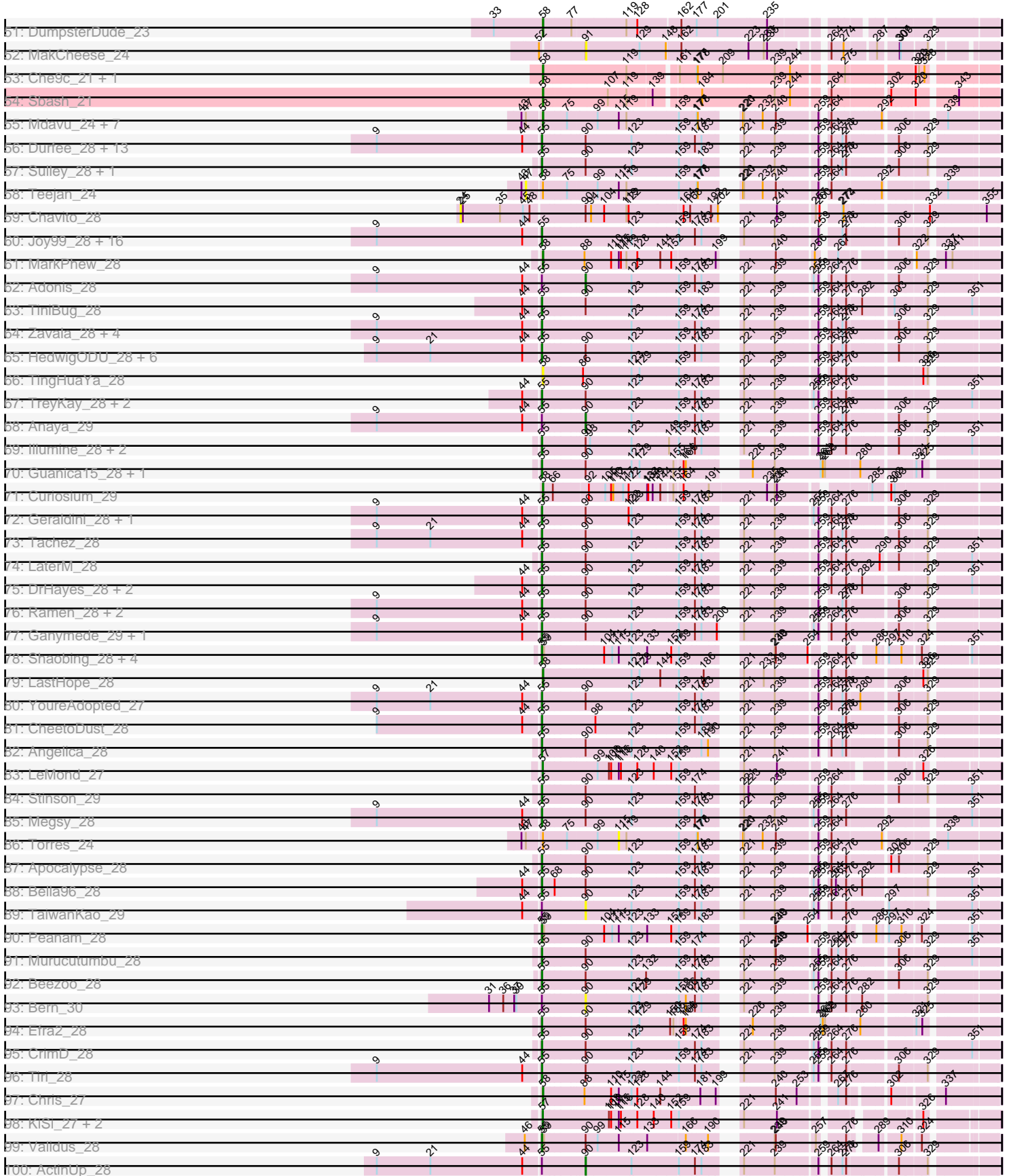


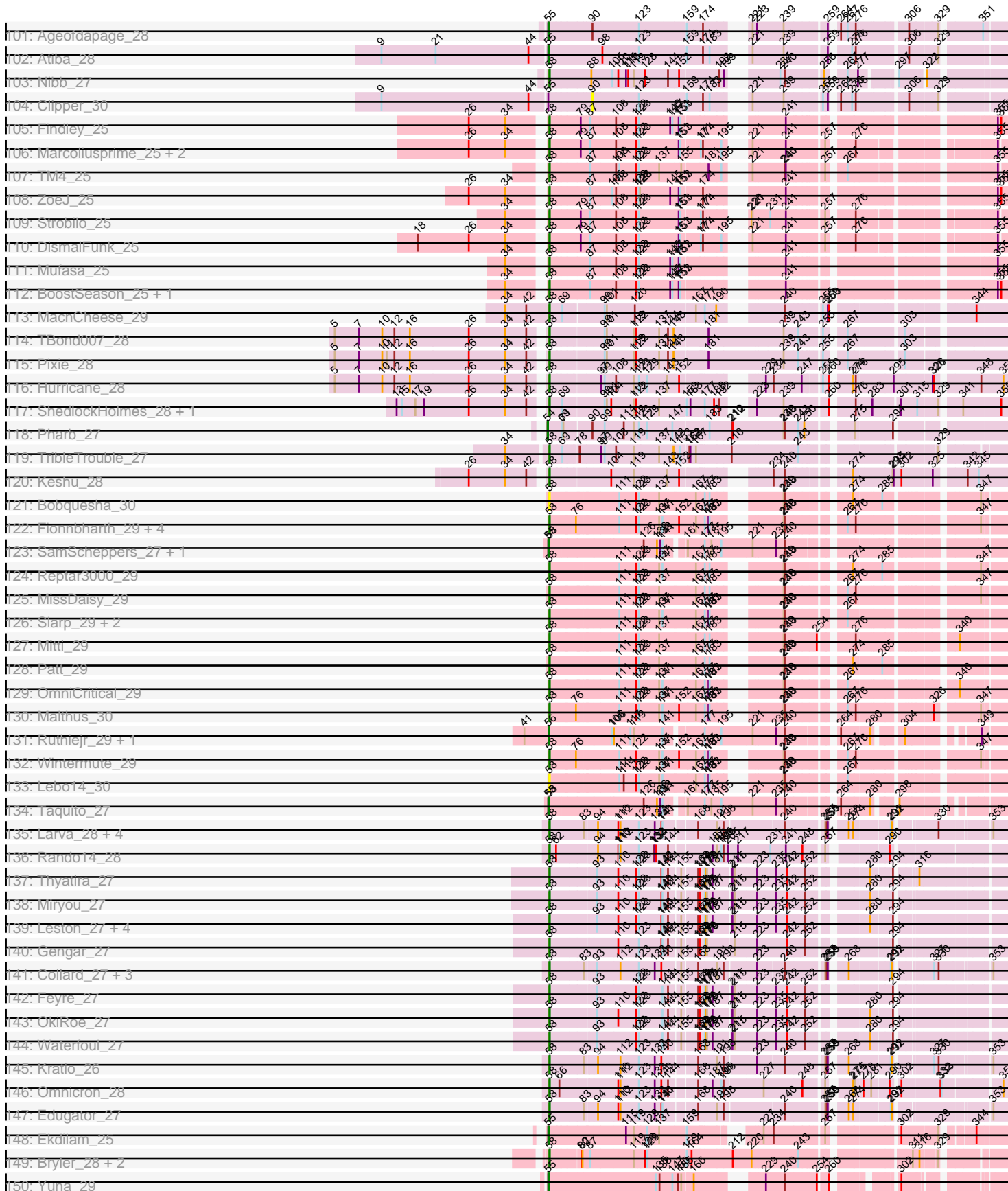
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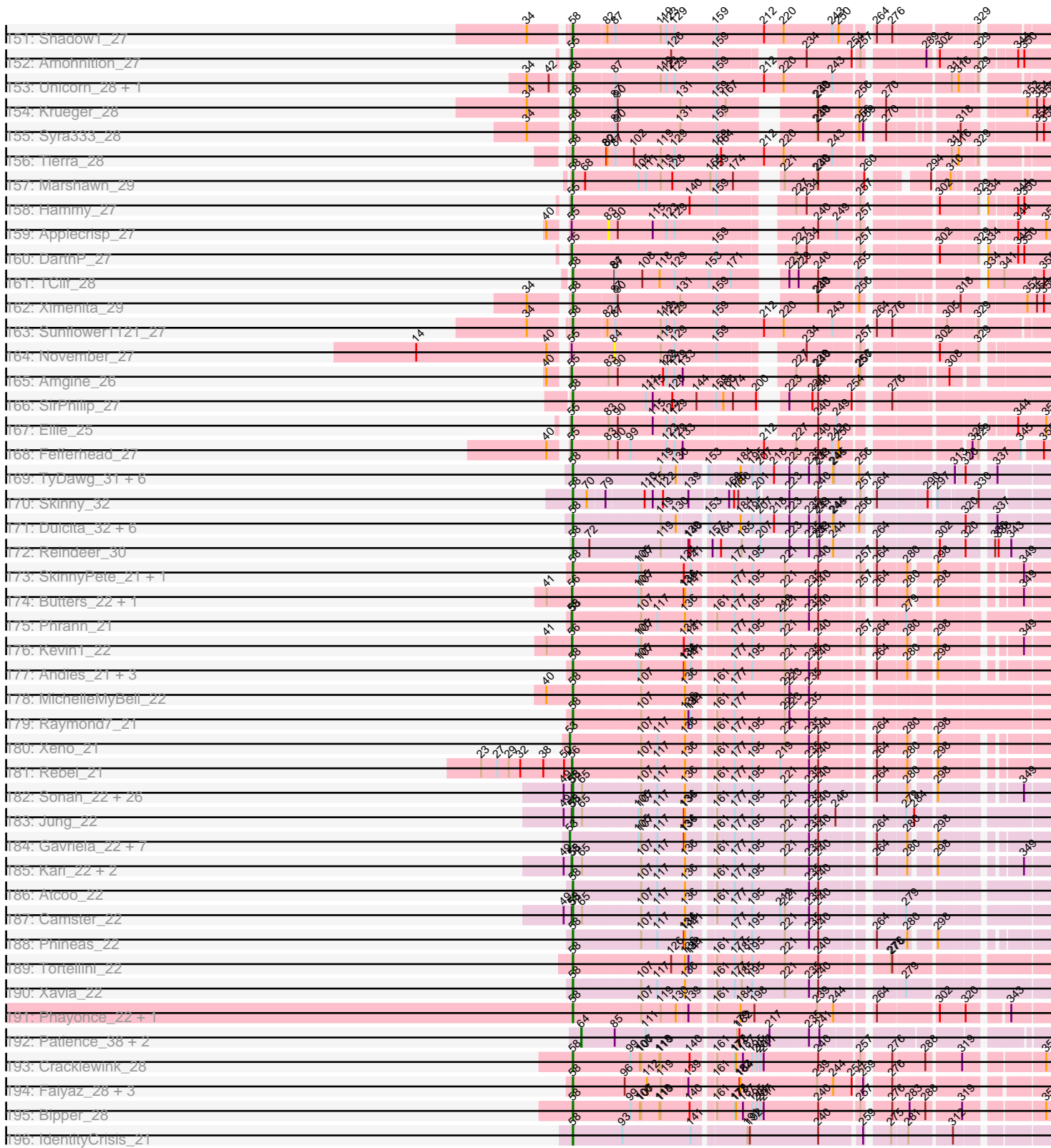
Pham 224184



Pham 224184



Pham 224184



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 224184 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224184 has 373 members, 45 are drafts.

Phages represented in each track:

- Track 1 : Maco6\_23
- Track 2 : FF47\_25
- Track 3 : Muddy\_25
- Track 4 : 8UZL\_25
- Track 5 : Farewell\_21
- Track 6 : Sparky\_21
- Track 7 : MalagasyRose\_28
- Track 8 : Flapper\_49
- Track 9 : GRU1\_34
- Track 10 : Dalilpop\_49
- Track 11 : GTE5\_36
- Track 12 : GTE8\_33
- Track 13 : NosilaM\_48, Buggaboo\_46, SuperSulley\_46
- Track 14 : GrootJr\_46, Emianna\_44, Kurt\_44, NovumRegina\_44, Tracker\_44, Arti\_44, NatB6\_44, KidneyBean\_44, Phomeo\_43, Foxboro\_45, Wheezy\_44, Jifall16\_43
- Track 15 : Outis\_46, MerCougar\_46, StarStruck\_46
- Track 16 : Kabluna\_48
- Track 17 : Bonum\_48
- Track 18 : Commandaria\_46
- Track 19 : Lollipop1437\_50, Patio\_48, Skysand\_47, Ennea\_51
- Track 20 : RedRaider\_52
- Track 21 : Float294\_47
- Track 22 : Yndexa\_46, BiPauneto\_47, Sukkupi\_46
- Track 23 : HubbaBubba\_42
- Track 24 : WhoseManz\_46
- Track 25 : Scuba\_53
- Track 26 : Pleakley\_53, Fury\_53
- Track 27 : Gsput1\_26
- Track 28 : RavenCo17\_26
- Track 29 : Archimedes\_26
- Track 30 : Parada\_27, Brylie\_27, Mulch\_27, NancyRae\_27
- Track 31 : DelRio\_28
- Track 32 : Pimento\_27
- Track 33 : Ayotoya\_27, Hamood\_27, Chop\_27, GrandSlam\_27
- Track 34 : WheatThin\_27, Nadeem\_27
- Track 35 : BetterKatz\_27

- Track 36 : Bock\_27
- Track 37 : Francois\_27
- Track 38 : Daredevil\_37
- Track 39 : Towmatter\_37
- Track 40 : Ewald\_30
- Track 41 : Nyceirae\_31
- Track 42 : Dogfish\_30
- Track 43 : Phishy\_30
- Track 44 : BabyMoney\_29
- Track 45 : Vordorf\_31
- Track 46 : Meyran\_29
- Track 47 : Apeppi\_30
- Track 48 : Tillicus\_33
- Track 49 : LuckyLeo\_32
- Track 50 : Zodiariah\_22
- Track 51 : DumpsterDude\_23
- Track 52 : MakCheese\_24
- Track 53 : Che9c\_21, Purky\_22
- Track 54 : Sbash\_21
- Track 55 : Mdavu\_24, Enkosi\_24, Amelie\_24, Nikao\_24, LilPharaoh\_24, Binglebops\_24, SgtBeansprout\_24, Nutello\_24
- Track 56 : Durfee\_28, Pokerus\_27, Boiiii\_28, Padfoot\_28, Asayake\_28, AlishaPH\_28, CaseJules\_28, BaghaKamala\_28, Piatt\_28, BEEST\_28, Hyperbowlee\_28, Blizzard\_28, Homura\_28, ShiaSurprise\_28
- Track 57 : Sulley\_28, Deby\_28
- Track 58 : Teejan\_24
- Track 59 : Chavito\_28
- Track 60 : Joy99\_28, Dalmuri\_28, Inky\_28, Jeckyll\_28, BGlluviae\_28, CallaLilly\_29, Belladonna\_28, Peel\_28, Twitch\_28, Llorens\_28, Capricorn\_28, Jarvi\_28, Spock\_28, Topper\_28, CREW\_28, Rosmarinus\_28, Lunahalos\_28
- Track 61 : MarkPhew\_28
- Track 62 : Adonis\_28
- Track 63 : TiniBug\_28
- Track 64 : Zavala\_28, Mynx\_28, Emerson\_28, TruffulaTree\_28, Padpat\_28
- Track 65 : HedwigODU\_28, Veliki\_28, Zabiza\_28, Rapunzel97\_28, Jayhawk\_28, Adephagia\_28, Slimphazie\_28
- Track 66 : TingHuaYa\_28
- Track 67 : TreyKay\_28, Prithvi\_28, LindNT\_28
- Track 68 : Anaya\_29
- Track 69 : Illumine\_28, Devera\_28, Dole\_28
- Track 70 : Guanica15\_28, Yunkel11\_28
- Track 71 : Curiosium\_29
- Track 72 : Geraldini\_28, MeaningOfLife\_28
- Track 73 : Tachez\_28
- Track 74 : LaterM\_28
- Track 75 : DrHayes\_28, Urkel\_28, SamuelLPlaqson\_28
- Track 76 : Ramen\_28, BarrelRoll\_28, JAWS\_28
- Track 77 : Ganymede\_29, QuincyRose\_27
- Track 78 : Shaobing\_28, Dartin\_28, McMater\_28, Richo\_28, Niklas\_28
- Track 79 : LastHope\_28
- Track 80 : YoureAdopted\_27
- Track 81 : CheetoDust\_28
- Track 82 : Angelica\_28

- Track 83 : LeMond\_27
- Track 84 : Stinson\_29
- Track 85 : Megsy\_28
- Track 86 : Torres\_24
- Track 87 : Apocalypse\_28
- Track 88 : Bella96\_28
- Track 89 : TaiwanKao\_29
- Track 90 : Peanam\_28
- Track 91 : Murucutumbu\_28
- Track 92 : Beezoo\_28
- Track 93 : Bern\_30
- Track 94 : Efra2\_28
- Track 95 : CrimD\_28
- Track 96 : Tiri\_28
- Track 97 : Chris\_27
- Track 98 : KiSi\_27, Oscar\_27, Scarlett\_27
- Track 99 : Validus\_28
- Track 100 : ActinUp\_28
- Track 101 : Ageofdapage\_28
- Track 102 : Atiba\_28
- Track 103 : Nibb\_27
- Track 104 : Clipper\_30
- Track 105 : Findley\_25
- Track 106 : Marcoliusprime\_25, Milly\_25, DismalStressor\_25
- Track 107 : TM4\_25
- Track 108 : ZoeJ\_25
- Track 109 : Strobilo\_25
- Track 110 : DismalFunk\_25
- Track 111 : Mufasa\_25
- Track 112 : BoostSeason\_25, Doughnut\_25
- Track 113 : MacnCheese\_29
- Track 114 : TBond007\_28
- Track 115 : Pixie\_28
- Track 116 : Hurricane\_28
- Track 117 : ShedlockHolmes\_28, Lea83\_29
- Track 118 : Pharb\_27
- Track 119 : TribbleTrouble\_27
- Track 120 : Keshu\_28
- Track 121 : Bobquesha\_30
- Track 122 : Fionnbharth\_29, Y10\_29, Kraw\_30, JF1\_29, Y2\_29
- Track 123 : SamScheppers\_27, Eponine\_29
- Track 124 : Reptar3000\_29
- Track 125 : MissDaisy\_29
- Track 126 : Slarp\_29, Cheetobro\_29, Chancellor\_29
- Track 127 : Mitti\_29
- Track 128 : Patt\_29
- Track 129 : OmniCritical\_29
- Track 130 : Malthus\_30
- Track 131 : Ruthiejr\_29, Juliette\_30
- Track 132 : Wintermute\_29
- Track 133 : Lebo14\_30
- Track 134 : Taquito\_27
- Track 135 : Larva\_28, Psycho\_28, Dadosky\_28, Neighly\_28, AlleyCat\_28

- Track 136 : Rando14\_28
- Track 137 : Thyatira\_27
- Track 138 : Miryou\_27
- Track 139 : Leston\_27, Heftyboy\_27, Paola\_27, Guillsminger\_27, SoSeph\_27
- Track 140 : Gengar\_27
- Track 141 : Collard\_27, ViviJ\_26, Agent47\_27, InvictusManeo\_27
- Track 142 : Feyre\_27
- Track 143 : OkiRoe\_27
- Track 144 : Waterfoul\_27
- Track 145 : Kratio\_26
- Track 146 : Omnicron\_28
- Track 147 : Edugator\_27
- Track 148 : Ekdilam\_25
- Track 149 : Bryler\_28, Phrank\_28, Cain\_28
- Track 150 : Yuna\_29
- Track 151 : Shadow1\_27
- Track 152 : Amohnition\_27
- Track 153 : Unicorn\_28, PhelpsODU\_28
- Track 154 : Krueger\_28
- Track 155 : Syra333\_28
- Track 156 : Tierra\_28
- Track 157 : Marshawn\_29
- Track 158 : Hammy\_27
- Track 159 : Applecrisp\_27
- Track 160 : DarthP\_27
- Track 161 : TClif\_28
- Track 162 : Ximenita\_29
- Track 163 : Sunflower1121\_27
- Track 164 : November\_27
- Track 165 : Amgine\_26
- Track 166 : SirPhilip\_27
- Track 167 : Ellie\_25
- Track 168 : Fefferhead\_27
- Track 169 : TyDawg\_31, FreakyGoo\_31, LilhomieP\_30, Bongo\_31, Bricole\_31, IPhane7\_31, PegLeg\_31
- Track 170 : Skinny\_32
- Track 171 : Dulcita\_32, Auspice\_31, SlimJimmy\_30, Diminimus\_32, Izel\_30, Glaske16\_32, KleverKiS\_31
- Track 172 : Reindeer\_30
- Track 173 : SkinnyPete\_21, Panchino\_21
- Track 174 : Butters\_22, Rubeelu\_22
- Track 175 : Phrann\_21
- Track 176 : Kevin1\_22
- Track 177 : Andies\_21, Willsammy\_22, Dynamo\_22, Scitech\_21
- Track 178 : MichelleMyBell\_22
- Track 179 : Raymond7\_21
- Track 180 : Xeno\_21
- Track 181 : Rebel\_21
- Track 182 : Sonah\_22, Ksquared\_22, Phegasus\_22, Fishburne\_22, Techage\_22, Bhagsy\_22, Brusacoram\_22, Jebeks\_22, Zilizebeth\_22, Juniormint\_22, Etoile\_22, Venti\_22, Polkaroo\_22, Mangethe\_22, Necropolis\_22, Majeke\_22, Bartholomew\_22, HUHilltop\_22, Vidya\_22, FirstPlacePfu\_22, HC\_22, Babsiella\_22, StevieRay\_22, Bunnies\_22, Donovan\_22, Thespis\_22, Arib1\_22



- Track 183 : Jung\_22
- Track 184 : Gavriela\_22, CactusJack\_22, StressBall\_22, Glaske\_22, Shweta\_21, Megiddo\_22, KilKor\_22, Phalm\_22
- Track 185 : Kari\_22, Langerak\_22, Malithi\_22
- Track 186 : Atcoo\_22
- Track 187 : Camster\_22
- Track 188 : Phineas\_22
- Track 189 : Tortellini\_22
- Track 190 : Xavia\_22
- Track 191 : Phayonce\_22, ThulaThula\_22
- Track 192 : Patience\_38, Labelle\_37, Madruga\_36
- Track 193 : Cracklewink\_28
- Track 194 : Faiyaz\_28, Hilltopfarm\_28, AuntGwenStacy\_28, Typha\_28
- Track 195 : Bipper\_28
- Track 196 : IdentityCrisis\_21

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

The start number called the most often in the published annotations is 58, it was called in 152 of the 328 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agent47\_27, AlleyCat\_28, Amelie\_24, Andies\_21, Arib1\_22, Atcoo\_22, AuntGwenStacy\_28, Auspice\_31, Babsiella\_22, BabyMoney\_29, Bartholomew\_22, Bhagsy\_22, Biglebops\_24, Bipper\_28, Bobquesha\_30, Bongo\_31, BoostSeason\_25, Bricole\_31, Brusacoram\_22, Bryler\_28, Bunnies\_22, Cain\_28, Camster\_22, Chancellor\_29, Che9c\_21, Cheetobro\_29, Chris\_27, Collard\_27, Cracklewink\_28, Curiosium\_29, Dadosky\_28, Dalilpop\_49, Daredevil\_37, Diminimus\_32, DismalFunk\_25, DismalStressor\_25, Donovan\_22, Doughnut\_25, Dulcita\_32, DumpsterDude\_23, Dynamo\_22, Edugator\_27, Enkosi\_24, Etoile\_22, Ewald\_30, Faiyaz\_28, Farewell\_21, Feyre\_27, Findley\_25, Fionnbharth\_29, FirstPlacePfu\_22, Fishburne\_22, Flapper\_49, FreakyGoo\_31, GRU1\_34, GTE5\_36, GTE8\_33, Gengar\_27, Glaske16\_32, Guillsminger\_27, HC\_22, HUHilltop\_22, Heftyboy\_27, Hilltopfarm\_28, HubbaBubba\_42, Hurricane\_28, IPhane7\_31, IdentityCrisis\_21, InvictusManeo\_27, Izel\_30, JF1\_29, Jebeks\_22, Jung\_22, Juniormint\_22, Keshu\_28, KleverKiS\_31, Kratio\_26, Kraw\_30, Krueger\_28, Ksquared\_22, Larva\_28, LastHope\_28, Lea83\_29, Lebo14\_30, Leston\_27, LilPharaoh\_24, LilhomieP\_30, MacnCheese\_29, Majeke\_22, MalagasyRose\_28, Malthus\_30, Mangethe\_22, Marcoliusprime\_25, MarkPhew\_28, Marshawn\_29, Mdavu\_24, MichelleMyBell\_22, Milly\_25, Miryou\_27, MissDaisy\_29, Mitti\_29, Mufasa\_25, Necropolis\_22, Neighly\_28, Nibb\_27, Nikao\_24, Nutello\_24, Nyceirae\_31, OkiRoe\_27, OmniCritical\_29, Omnicron\_28, Panchino\_21, Paola\_27, Patt\_29, PegLeg\_31, Phayonce\_22, Phegasus\_22, PhelpsODU\_28, Phineas\_22, Phishy\_30, Phrank\_28, Pimento\_27, Pixie\_28, Polkaroo\_22, Psycho\_28, Purky\_22, Rando14\_28, RavenCo17\_26, Raymond7\_21, Reindeer\_30, Reptar3000\_29, Sbash\_21, Scitech\_21, SgtBeansprout\_24, Shadow1\_27, ShedlockHolmes\_28, SirPhilip\_27, SkinnyPete\_21, Skinny\_32, Slarp\_29, SlimJimmy\_30, SoSeph\_27, Sonah\_22, Sparky\_21, StevieRay\_22, Strobilo\_25, Sunflower1121\_27, Syra333\_28, TBond007\_28, TClif\_28, TM4\_25, Techage\_22, Thespis\_22, ThulaThula\_22, Thyatira\_27, Tierra\_28, TingHuaYa\_28, Tortellini\_22, Towmatter\_37, TribbleTrouble\_27, TyDawg\_31,

Typha\_28, Unicorn\_28, Venti\_22, Vidya\_22, ViviJ\_26, Waterfoul\_27, Willsammy\_22, Wintermute\_29, Xavia\_22, Ximenita\_29, Y10\_29, Y2\_29, Zilizebeth\_22, Zodiariah\_22, ZoeJ\_25,

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

- Eponine\_29, Kari\_22, Langerak\_22, Malithi\_22, Meyran\_29, Phrann\_21, SamScheppers\_27, Taquito\_27, Teejan\_24, Torres\_24,

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

- 8UZL\_25, ActinUp\_28, Adephegia\_28, Adonis\_28, Ageofdapage\_28, AlishaPH\_28, Amgine\_26, Amohnition\_27, Anaya\_29, Angelica\_28, Apeppi\_30, Apocalypse\_28, Applecrisp\_27, Archimedes\_26, Arti\_44, Asayake\_28, Atiba\_28, Ayotoya\_27, BEEST\_28, BGlluviae\_28, BaghaKamala\_28, BarrelRoll\_28, Beezoo\_28, Bella96\_28, Belladonna\_28, Bern\_30, BetterKatz\_27, BiPauneto\_47, Blizzard\_28, Bock\_27, Boiiii\_28, Bonum\_48, Brylie\_27, Buggaboo\_46, Butters\_22, CREW\_28, CactusJack\_22, CallaLilly\_29, Capricorn\_28, CaseJules\_28, Chavito\_28, CheetoDust\_28, Chop\_27, Clipper\_30, Commandaria\_46, CrimD\_28, Dalmuri\_28, DarthP\_27, Dartin\_28, Deby\_28, DelRio\_28, Devera\_28, Dogfish\_30, Dole\_28, DrHayes\_28, Durfee\_28, Efra2\_28, Ekdilam\_25, Ellie\_25, Emerson\_28, Emianna\_44, Ennea\_51, FF47\_25, Fefferhead\_27, Float294\_47, Foxboro\_45, Francois\_27, Fury\_53, Ganymede\_29, Gavriela\_22, Geraldini\_28, Glaske\_22, GrandSlam\_27, GrootJr\_46, Gspu1\_26, Guanica15\_28, Hammy\_27, Hamood\_27, HedwigODU\_28, Homura\_28, Hyperbowlee\_28, Illumine\_28, Inky\_28, JAWS\_28, Jarvi\_28, Jayhawk\_28, Jeckyll\_28, Jifall16\_43, Joy99\_28, Juliette\_30, Kabluna\_48, Kevin1\_22, KiSi\_27, KidneyBean\_44, KilKor\_22, Kurt\_44, Labelle\_37, LaterM\_28, LeMond\_27, LindNT\_28, Llorens\_28, Lollipop1437\_50, LuckyLeo\_32, Lunahalos\_28, Maco6\_23, Madruga\_36, MakCheese\_24, McMater\_28, MeaningOfLife\_28, Megiddo\_22, Megsy\_28, MerCougar\_46, Muddy\_25, Mulch\_27, Murucutumbu\_28, Mynx\_28, Nadeem\_27, NancyRae\_27, NatB6\_44, Niklas\_28, NosilaM\_48, November\_27, NovumRegina\_44, Oscar\_27, Outis\_46, Padfoot\_28, Padpat\_28, Parada\_27, Patience\_38, Patio\_48, Peanam\_28, Peel\_28, Phalm\_22, Pharb\_27, Phomeo\_43, Piatt\_28, Pleakley\_53, Pokerus\_27, Prithvi\_28, QuincyRose\_27, Ramen\_28, Rapunzel97\_28, Rebel\_21, RedRaider\_52, Richo\_28, Rosmarinus\_28, Rubeelu\_22, Ruthiejr\_29, SamuelLPlaqson\_28, Scarlett\_27, Scuba\_53, Shaobing\_28, ShiaSurprise\_28, Shweta\_21, Skysand\_47, Slimphazie\_28, Spock\_28, StarStruck\_46, Stinson\_29, StressBall\_22, Sukkupi\_46, Sulley\_28, SuperSulley\_46, Tachez\_28, TaiwanKao\_29, Tillicus\_33, TiniBug\_28, Tiri\_28, Topper\_28, Tracker\_44, TreyKay\_28, TruffulaTree\_28, Twitch\_28, Urkel\_28, Validus\_28, Veliki\_28, Vordorf\_31, WheatThin\_27, Wheezy\_44, WhoseManz\_46, Xeno\_21, Yndexa\_46, YoureAdopted\_27, Yuna\_29, Yunkel11\_28, Zabiza\_28, Zavala\_28,

### Summary by start number:

Start 24:

- Found in 1 of 373 ( 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: Chavito\_28 (K1),

Start 47:

- Found in 10 of 373 ( 2.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present

- Phage (with cluster) where this start called: Teejan\_24 (K1),

#### Start 51:

- Found in 3 of 373 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 328
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Apeppi\_30 (DV), Tillicus\_33 (DV),

#### Start 53:

- Found in 10 of 373 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 9 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CactusJack\_22 (P1), Gavriela\_22 (P1), Glaske\_22 (P1), KilKor\_22 (P1), Megiddo\_22 (P1), Phalm\_22 (P1), Shweta\_21 (N), StressBall\_22 (P1), Vordorf\_31 (DT), Xeno\_21 (N),

#### Start 54:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pharb\_27 (K3),

#### Start 55:

- Found in 139 of 373 ( 37.3% ) of genes in pham
- Manual Annotations of this start: 97 of 328
- Called 73.4% of time when present
- Phage (with cluster) where this start called: Adephagia\_28 (K1), Ageofdapage\_28 (K1), AlishaPH\_28 (K1), Amgine\_26 (K6), Amohndition\_27 (K6), Angelica\_28 (K1), Apocalypse\_28 (K1), Asayake\_28 (K1), Atiba\_28 (K1), BEEST\_28 (K1), BGIlluviae\_28 (K1), BaghaKamala\_28 (K1), BarrelRoll\_28 (K1), Beezoo\_28 (K1), Bella96\_28 (K1), Belladonna\_28 (K1), Blizzard\_28 (K1), Boiiji\_28 (K1), CREW\_28 (K1), CallaLilly\_29 (K1), Capricorn\_28 (K1), CaseJules\_28 (K1), CheetoDust\_28 (K1), CrimD\_28 (K1), Dalmuri\_28 (K1), DarthP\_27 (K6), Dartin\_28 (K1), Deby\_28 (K1), Devera\_28 (K1), Dole\_28 (K1), DrHayes\_28 (K1), Durfee\_28 (K1), Efra2\_28 (K1), Ekdilam\_25 (K6), Ellie\_25 (K6), Emerson\_28 (K1), Eponine\_29 (K4), Fefferhead\_27 (K6), Ganymede\_29 (K1), Geraldini\_28 (K1), Guanica15\_28 (K1), Hammy\_27 (K6), HedwigODU\_28 (K1), Homura\_28 (K1), Hyperbowlee\_28 (K1), Illumine\_28 (K1), Inky\_28 (K1), JAWS\_28 (K1), Jarvi\_28 (K1), Jayhawk\_28 (K1), Jeckyll\_28 (K1), Joy99\_28 (K1), Kari\_22 (P1), Langerak\_22 (P1), LaterM\_28 (K1), LindNT\_28 (K1), Llorens\_28 (K1), Lunahalos\_28 (K1), Malithi\_22 (P1), McMater\_28 (K1), MeaningOfLife\_28 (K1), Megsy\_28 (K1), Murucutumbu\_28 (K1), Mynx\_28 (K1), Niklas\_28 (K1), Padfoot\_28 (K1), Padpat\_28 (K1), Peanam\_28 (K1), Peel\_28 (K1), Phrann\_21 (N), Piatt\_28 (K1), Pokerus\_27 (K1), Prithvi\_28 (K1), QuincyRose\_27 (K1), Ramen\_28 (K1), Rapunzel97\_28 (K1), Richo\_28 (K1), Rosmarinus\_28 (K1), SamScheppers\_27 (K4), SamuelLPlaqson\_28 (K1), Shaobing\_28 (K1), ShiaSurprise\_28 (K1), Slimphazie\_28 (K1), Spock\_28 (K1), Stinson\_29 (K1), Sulley\_28 (K1), Tachez\_28 (K1), Taquito\_27 (K4), TiniBug\_28 (K1), Tiri\_28 (K1), Topper\_28 (K1), TreyKay\_28 (K1), TruffulaTree\_28 (K1), Twitch\_28 (K1), Urkel\_28 (K1), Validus\_28 (K1), Veliki\_28 (K1), YoureAdopted\_27 (K1), Yuna\_29 (K6), Yunkel11\_28 (K1), Zabiza\_28 (K1), Zavala\_28 (K1),

#### Start 56:

- Found in 6 of 373 ( 1.6% ) of genes in pham

- Manual Annotations of this start: 6 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Butters\_22 (N), Juliette\_30 (K4), Kevin1\_22 (N), Rebel\_21 (N), Rubeelu\_22 (N), Ruthiejr\_29 (K4),

Start 57:

- Found in 4 of 373 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 4 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KiSi\_27 (K1), LeMond\_27 (K1), Oscar\_27 (K1), Scarlett\_27 (K1),

Start 58:

- Found in 186 of 373 ( 49.9% ) of genes in pham
- Manual Annotations of this start: 152 of 328
- Called 94.6% of time when present
- Phage (with cluster) where this start called: Agent47\_27 (K5), AlleyCat\_28 (K5), Amelie\_24 (K1), Andies\_21 (N), Arib1\_22 (P1), Atcoo\_22 (P1), AuntGwenStacy\_28 (Y), Auspice\_31 (M1), Babsiella\_22 (I1), BabyMoney\_29 (DT), Bartholomew\_22 (P1), Bhagsy\_22 (P1), Binglebops\_24 (K1), Bipper\_28 (Y), Bobquesha\_30 (K4), Bongo\_31 (M1), BoostSeason\_25 (K2), Bricole\_31 (M1), Brusacoram\_22 (P1), Bryler\_28 (K6), Bunnies\_22 (P1), Cain\_28 (K6), Camster\_22 (P1), Chancellor\_29 (K4), Che9c\_21 (I2), Cheetobro\_29 (K4), Chris\_27 (K1), Collard\_27 (K5), Cracklewink\_28 (Y), Curiosium\_29 (K1), Dadosky\_28 (K5), Dalilpop\_49 (CR1), Daredevil\_37 (DL), Diminimus\_32 (M1), DismalFunk\_25 (K2), DismalStressor\_25 (K2), Donovan\_22 (P1), Doughnut\_25 (K2), Dulcita\_32 (M1), DumpsterDude\_23 (DW), Dynamo\_22 (P1), Edugator\_27 (K5), Enkosi\_24 (K1), Etoile\_22 (P1), Ewald\_30 (DT), Faiyaz\_28 (Y), Farewell\_21 (AF), Feyre\_27 (K5), Findley\_25 (K2), Fionnbharth\_29 (K4), FirstPlacePfu\_22 (P1), Fishburne\_22 (P1), Flapper\_49 (CR1), FreakyGoo\_31 (M1), GRU1\_34 (CR1), GTE5\_36 (CR1), GTE8\_33 (CR2), Gengar\_27 (K5), Glaske16\_32 (M1), Guillsminger\_27 (K5), HC\_22 (I1), HUHilltop\_22 (P1), Heftyboy\_27 (K5), Hilltopfarm\_28 (Y), HubbaBubba\_42 (CR4), Hurricane\_28 (K3), iPhone7\_31 (M1), IdentityCrisis\_21 (singleton), InvictusManeo\_27 (K5), Izel\_30 (M1), JF1\_29 (K4), Jebeks\_22 (P1), Jung\_22 (P1), Juniormint\_22 (P1), Keshu\_28 (K3), KleverKiS\_31 (M1), Kratio\_26 (K5), Kraw\_30 (K4), Krueger\_28 (K6), Ksquared\_22 (P1), Larva\_28 (K5), LastHope\_28 (K1), Lea83\_29 (K3), Lebo14\_30 (K4), Leston\_27 (K5), LilPharaoh\_24 (K1), LilhomieP\_30 (M1), MacnCheese\_29 (K3), Majeke\_22 (P1), MalagasyRose\_28 (AG), Malthus\_30 (K4), Mangethe\_22 (P1), Marcoliusprime\_25 (K2), MarkPheW\_28 (K1), Marshawn\_29 (K6), Mdavu\_24 (K1), MichelleMyBell\_22 (N), Milly\_25 (K2), Miryou\_27 (K5), MissDaisy\_29 (K4), Mitti\_29 (K4), Mufasa\_25 (K2), Necropolis\_22 (P1), Neighly\_28 (K3), Nibb\_27 (K1), Nikao\_24 (K1), Nutello\_24 (K1), Nyceirae\_31 (DT), OkiRoe\_27 (K5), OmniCritical\_29 (K4), Omnicron\_28 (K5), Panchino\_21 (N), Paola\_27 (K5), Patt\_29 (K4), PegLeg\_31 (M1), Phayonce\_22 (P5), Phegasus\_22 (P1), PhelpsODU\_28 (K6), Phineas\_22 (P1), Phishy\_30 (DT), Phrank\_28 (K6), Pimento\_27 (DI), Pixie\_28 (K3), Polkaroo\_22 (P1), Psycho\_28 (K5), Purky\_22 (P6), Rando14\_28 (K5), RavenCo17\_26 (CZ8), Raymond7\_21 (N), Reindeer\_30 (M1), Reptar3000\_29 (K4), Sbash\_21 (I2), Scitech\_21 (N), SgtBeansprout\_24 (K1), Shadow1\_27 (K6), ShedlockHolmes\_28 (K3), SirPhilip\_27 (K6), SkinnyPete\_21 (N), Skinny\_32 (M1), Slarp\_29 (K4), SlimJimmy\_30 (M1), SoSeph\_27 (K5), Sonah\_22 (P1), Sparky\_21 (AF), StevieRay\_22 (P1), Strobilo\_25 (K2), Sunflower1121\_27 (K6), Syra333\_28 (K6), TBond007\_28 (K3), TClif\_28 (K6), TM4\_25 (K2), Techage\_22 (P1), Thespis\_22 (P1), ThulaThula\_22 (P5), Thyatira\_27 (K5), Tierra\_28 (K6), TingHuaYa\_28 (K1), Tortellini\_22 (P2), Towmatter\_37 (DL),

TribleTrouble\_27 (K3), TyDawg\_31 (M1), Typha\_28 (Y), Unicorn\_28 (K6), Venti\_22 (P1), Vidya\_22 (P1), ViviJ\_26 (K5), Waterfoul\_27 (K5), Willsammy\_22 (P1), Wintermute\_29 (K4), Xavia\_22 (P3), Ximenita\_29 (K6), Y10\_29 (K4), Y2\_29 (K4), Zilizabeth\_22 (P1), Zodiariah\_22 (DW), ZoeJ\_25 (K2),

Start 59:

- Found in 43 of 373 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 33 of 328
- Called 83.7% of time when present
- Phage (with cluster) where this start called: Arti\_44 (CR2), BiPauneto\_47 (CR4), Bonum\_48 (CR2), Buggaboo\_46 (CR2), Commandaria\_46 (CR2), Dogfish\_30 (DT), Emianna\_44 (CR2), Ennea\_51 (CR3), Float294\_47 (CR3), Foxboro\_45 (CR2), Fury\_53 (CR5), GrootJr\_46 (CR2), Gspu1\_26 (CU2), Jifall16\_43 (CR2), Kabluna\_48 (CR2), KidneyBean\_44 (CR2), Kurt\_44 (CR2), Lollipop1437\_50 (CR3), MerCougar\_46 (CR2), NatB6\_44 (CR2), NosilaM\_48 (CR2), NovumRegina\_44 (CR2), Outis\_46 (CR2), Patio\_48 (CR3), Phomeo\_43 (CR2), Pleakley\_53 (CR5), RedRaider\_52 (CR3), Scuba\_53 (CR5), Skysand\_47 (CR3), StarStruck\_46 (CR2), Sukkupi\_46 (CR4), SuperSulley\_46 (CR2), Tracker\_44 (CR2), Wheezy\_44 (CR2), WhoseManz\_46 (CR4), Yndexa\_46 (CR4),

Start 60:

- Found in 18 of 373 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 16 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 8UZL\_25 (AB), Ayotoya\_27 (DI), BetterKatz\_27 (DI), Bock\_27 (DI), Brylie\_27 (DI), Chop\_27 (DI), DelRio\_28 (DI), FF47\_25 (AB), Francois\_27 (DI), GrandSlam\_27 (DI), Hamood\_27 (DI), Maco6\_23 (AB), Muddy\_25 (AB), Mulch\_27 (DI), Nadeem\_27 (DI), NancyRae\_27 (DI), Parada\_27 (DI), WheatThin\_27 (DI),

Start 64:

- Found in 3 of 373 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 3 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Labelle\_37 (U), Madrugua\_36 (U), Patience\_38 (U),

Start 67:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Meyran\_29 (DT),

Start 73:

- Found in 1 of 373 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archimedes\_26 (DA),

Start 74:

- Found in 3 of 373 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 328
- Called 33.3% of time when present

- Phage (with cluster) where this start called: LuckyLeo\_32 (DV),

Start 83:

- Found in 15 of 373 ( 4.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Applecrisp\_27 (K6),

Start 84:

- Found in 2 of 373 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: November\_27 (K6),

Start 90:

- Found in 75 of 373 ( 20.1% ) of genes in pham
- Manual Annotations of this start: 3 of 328
- Called 8.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_28 (K1), Adonis\_28 (K1), Anaya\_29 (K1), Bern\_30 (K1), Clipper\_30 (K1), TaiwanKao\_29 (K1),

Start 91:

- Found in 2 of 373 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MakCheese\_24 (DW),

Start 115:

- Found in 30 of 373 ( 8.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Torres\_24 (K1),

### **Summary by clusters:**

There are 34 clusters represented in this pham: CZ8, DI, singleton, DA, K3, K2, K1, AB, M1, K6, K5, K4, DV, DW, DT, DL, CU2, I1, I2, P2, P3, P1, P6, AG, P5, N, U, Y, AF, CR2, CR3, CR1, CR4, CR5,

Info for manual annotations of cluster AB:

- Start number 60 was manually annotated 2 times for cluster AB.

Info for manual annotations of cluster AF:

- Start number 58 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster AG:

- Start number 58 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster CR1:

- Start number 58 was manually annotated 2 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 59 was manually annotated 20 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 59 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 58 was manually annotated 1 time for cluster CR4.
- Start number 59 was manually annotated 4 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 59 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CZ8:

- Start number 58 was manually annotated 1 time for cluster CZ8.

Info for manual annotations of cluster DA:

- Start number 73 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DI:

- Start number 58 was manually annotated 1 time for cluster DI.
- Start number 60 was manually annotated 14 times for cluster DI.

Info for manual annotations of cluster DL:

- Start number 58 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster DT:

- Start number 58 was manually annotated 3 times for cluster DT.
- Start number 59 was manually annotated 1 time for cluster DT.
- Start number 67 was manually annotated 1 time for cluster DT.

Info for manual annotations of cluster DV:

- Start number 51 was manually annotated 1 time for cluster DV.
- Start number 74 was manually annotated 1 time for cluster DV.

Info for manual annotations of cluster DW:

- Start number 58 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster I1:

- Start number 58 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 58 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster K1:

- Start number 55 was manually annotated 83 times for cluster K1.
- Start number 57 was manually annotated 4 times for cluster K1.
- Start number 58 was manually annotated 13 times for cluster K1.
- Start number 90 was manually annotated 3 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 58 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 54 was manually annotated 1 time for cluster K3.
- Start number 58 was manually annotated 7 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 55 was manually annotated 3 times for cluster K4.
- Start number 56 was manually annotated 2 times for cluster K4.
- Start number 58 was manually annotated 14 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 58 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 55 was manually annotated 8 times for cluster K6.
- Start number 58 was manually annotated 14 times for cluster K6.

Info for manual annotations of cluster M1:

- Start number 58 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster N:

- Start number 53 was manually annotated 2 times for cluster N.
- Start number 55 was manually annotated 1 time for cluster N.
- Start number 56 was manually annotated 4 times for cluster N.
- Start number 58 was manually annotated 5 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 53 was manually annotated 7 times for cluster P1.
- Start number 55 was manually annotated 2 times for cluster P1.
- Start number 58 was manually annotated 27 times for cluster P1.

Info for manual annotations of cluster P2:

- Start number 58 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 58 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P5:

- Start number 58 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:

- Start number 58 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster U:

- Start number 64 was manually annotated 3 times for cluster U.

Info for manual annotations of cluster Y:

- Start number 58 was manually annotated 4 times for cluster Y.

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

Gene: 8UZL\_25 Start: 21727, Stop: 22752, Start Num: 60

Candidate Starts for 8UZL\_25:



(Start: 60 @21727 has 16 MA's), (85, 21817), (111, 21886), (113, 21895), (131, 21973), (154, 22036), (156, 22039), (172, 22087), (217, 22183), (221, 22219), (235, 22270), (243, 22327), (314, 22564), (346, 22690),

Gene: ActinUp\_28 Start: 23436, Stop: 24338, Start Num: 90

Candidate Starts for ActinUp\_28:

(9, 22881), (21, 23028), (44, 23280), (Start: 55 @23325 has 97 MA's), (Start: 90 @23436 has 3 MA's), (123, 23550), (159, 23667), (174, 23709), (183, 23721), (221, 23775), (239, 23853), (259, 23949), (264, 23961), (273, 23991), (276, 24000), (306, 24114), (329, 24183),

Gene: Adephagia\_28 Start: 23322, Stop: 24335, Start Num: 55

Candidate Starts for Adephagia\_28:

(9, 22878), (21, 23025), (44, 23277), (Start: 55 @23322 has 97 MA's), (Start: 90 @23433 has 3 MA's), (123, 23547), (159, 23664), (174, 23706), (183, 23718), (221, 23772), (239, 23850), (259, 23946), (264, 23958), (273, 23988), (276, 23997), (306, 24111), (329, 24180),

Gene: Adonis\_28 Start: 23439, Stop: 24341, Start Num: 90

Candidate Starts for Adonis\_28:

(9, 22884), (44, 23283), (Start: 55 @23328 has 97 MA's), (Start: 90 @23439 has 3 MA's), (123, 23553), (159, 23670), (174, 23712), (183, 23724), (221, 23778), (239, 23856), (255, 23940), (259, 23952), (264, 23964), (276, 24003), (306, 24117), (329, 24186),

Gene: Agent47\_27 Start: 24079, Stop: 25143, Start Num: 58

Candidate Starts for Agent47\_27:

(Start: 58 @24079 has 152 MA's), (83, 24169), (93, 24196), (112, 24259), (123, 24307), (133, 24346), (140, 24364), (155, 24409), (168, 24448), (191, 24496), (198, 24514), (223, 24589), (240, 24655), (257, 24745), (258, 24748), (259, 24751), (268, 24784), (291, 24883), (292, 24886), (327, 24970), (330, 24982), (353, 25099),

Gene: Ageofdapage\_28 Start: 23272, Stop: 24285, Start Num: 55

Candidate Starts for Ageofdapage\_28:

(Start: 55 @23272 has 97 MA's), (Start: 90 @23383 has 3 MA's), (123, 23497), (159, 23614), (174, 23656), (221, 23722), (223, 23731), (239, 23800), (259, 23896), (264, 23908), (267, 23926), (276, 23947), (306, 24061), (329, 24130), (351, 24226),

Gene: AlishaPH\_28 Start: 23315, Stop: 24328, Start Num: 55

Candidate Starts for AlishaPH\_28:

(9, 22871), (44, 23270), (Start: 55 @23315 has 97 MA's), (Start: 90 @23426 has 3 MA's), (123, 23540), (159, 23657), (174, 23699), (183, 23711), (221, 23765), (239, 23843), (259, 23939), (264, 23951), (273, 23981), (276, 23990), (306, 24104), (329, 24173),

Gene: AlleyCat\_28 Start: 24010, Stop: 25074, Start Num: 58

Candidate Starts for AlleyCat\_28:

(Start: 58 @24010 has 152 MA's), (83, 24100), (94, 24130), (110, 24184), (112, 24190), (123, 24238), (133, 24277), (140, 24295), (141, 24298), (168, 24379), (191, 24427), (198, 24445), (240, 24586), (257, 24676), (258, 24679), (259, 24682), (268, 24715), (274, 24727), (291, 24814), (292, 24817), (330, 24913), (353, 25030),

Gene: Amelie\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for Amelie\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Amgine\_26 Start: 23356, Stop: 24351, Start Num: 55

Candidate Starts for Amgine\_26:

(40, 23320), (Start: 55 @23356 has 97 MA's), (83, 23446), (Start: 90 @23467 has 3 MA's), (122, 23575), (123, 23581), (129, 23602), (133, 23623), (227, 23830), (239, 23884), (240, 23887), (256, 23971), (257, 23974), (308, 24139),

Gene: Amohnition\_27 Start: 23778, Stop: 24782, Start Num: 55

Candidate Starts for Amohnition\_27:

(Start: 55 @23778 has 97 MA's), (126, 24015), (159, 24120), (234, 24279), (254, 24381), (257, 24393), (289, 24528), (302, 24546), (329, 24639), (344, 24705), (350, 24717),

Gene: Anaya\_29 Start: 23452, Stop: 24354, Start Num: 90

Candidate Starts for Anaya\_29:

(9, 22897), (44, 23296), (Start: 55 @23341 has 97 MA's), (Start: 90 @23452 has 3 MA's), (123, 23566), (159, 23683), (174, 23725), (183, 23737), (221, 23791), (239, 23869), (259, 23965), (264, 23977), (273, 24007), (276, 24016), (306, 24130), (329, 24199),

Gene: Andies\_21 Start: 20194, Stop: 21228, Start Num: 58

Candidate Starts for Andies\_21:

(Start: 58 @20194 has 152 MA's), (105, 20350), (107, 20356), (134, 20464), (136, 20467), (141, 20482), (177, 20569), (195, 20614), (221, 20695), (235, 20752), (240, 20776), (264, 20881), (280, 20953), (298, 20998),

Gene: Angelica\_28 Start: 23290, Stop: 24303, Start Num: 55

Candidate Starts for Angelica\_28:

(Start: 55 @23290 has 97 MA's), (Start: 90 @23401 has 3 MA's), (123, 23515), (159, 23632), (183, 23686), (190, 23704), (221, 23740), (239, 23818), (259, 23914), (264, 23926), (273, 23956), (276, 23965), (306, 24079), (329, 24148),

Gene: Apeppi\_30 Start: 28862, Stop: 29908, Start Num: 51

Candidate Starts for Apeppi\_30:

(Start: 51 @28862 has 1 MA's), (Start: 74 @28919 has 1 MA's), (103, 29009), (105, 29018), (108, 29024), (111, 29033), (124, 29087), (191, 29285), (218, 29351), (219, 29363), (235, 29432), (267, 29573), (299, 29681),

Gene: Apocalypse\_28 Start: 23293, Stop: 24306, Start Num: 55

Candidate Starts for Apocalypse\_28:

(Start: 55 @23293 has 97 MA's), (Start: 90 @23404 has 3 MA's), (123, 23518), (159, 23635), (174, 23677), (183, 23689), (221, 23743), (239, 23821), (259, 23917), (264, 23929), (276, 23968), (302, 24064), (306, 24082), (329, 24151),

Gene: Applecrisp\_27 Start: 23857, Stop: 24774, Start Num: 83

Candidate Starts for Applecrisp\_27:

(40, 23731), (Start: 55 @23767 has 97 MA's), (83, 23857), (Start: 90 @23878 has 3 MA's), (115, 23959), (123, 23992), (129, 24013), (240, 24298), (249, 24337), (257, 24382), (344, 24697), (358, 24757),

Gene: Archimedes\_26 Start: 23367, Stop: 24368, Start Num: 73

Candidate Starts for Archimedes\_26:

(61, 23343), (Start: 73 @23367 has 1 MA's), (95, 23445), (138, 23595), (214, 23766), (240, 23898), (255, 23982), (265, 24018), (286, 24114), (331, 24213), (357, 24348),

Gene: Arib1\_22 Start: 21305, Stop: 22342, Start Num: 58

Candidate Starts for Arib1\_22:

(49, 21281), (Start: 55 @21302 has 97 MA's), (Start: 58 @21305 has 152 MA's), (65, 21329), (107, 21467), (117, 21509), (136, 21578), (161, 21638), (177, 21683), (195, 21728), (221, 21809), (235, 21866), (240, 21890), (264, 21995), (280, 22067), (298, 22112), (349, 22277),

Gene: Arti\_44 Start: 34961, Stop: 36019, Start Num: 59

Candidate Starts for Arti\_44:

(1, 33521), (2, 33818), (3, 34049), (6, 34418), (28, 34796), (30, 34811), (33, 34829), (Start: 59 @34961 has 33 MA's), (166, 35306), (188, 35357), (213, 35405),

Gene: Asayake\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Asayake\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Atcoo\_22 Start: 21759, Stop: 22826, Start Num: 58

Candidate Starts for Atcoo\_22:

(Start: 58 @21759 has 152 MA's), (107, 21921), (117, 21963), (136, 22032), (161, 22092), (177, 22137), (195, 22182), (235, 22320), (240, 22344),

Gene: Atiba\_28 Start: 23285, Stop: 24298, Start Num: 55

Candidate Starts for Atiba\_28:

(9, 22841), (21, 22988), (44, 23240), (Start: 55 @23285 has 97 MA's), (98, 23417), (123, 23510), (159, 23627), (174, 23669), (183, 23681), (221, 23735), (239, 23813), (259, 23909), (273, 23951), (276, 23960), (306, 24074), (329, 24143),

Gene: AuntGwenStacy\_28 Start: 26025, Stop: 27062, Start Num: 58

Candidate Starts for AuntGwenStacy\_28:

(Start: 58 @26025 has 152 MA's), (96, 26148), (112, 26202), (119, 26238), (139, 26301), (161, 26349), (182, 26403), (184, 26406), (239, 26592), (244, 26628), (254, 26670), (259, 26688), (276, 26739),

Gene: Auspice\_31 Start: 26992, Stop: 28047, Start Num: 58

Candidate Starts for Auspice\_31:

(Start: 58 @26992 has 152 MA's), (119, 27205), (130, 27241), (153, 27304), (184, 27376), (195, 27406), (207, 27427), (218, 27463), (223, 27499), (235, 27547), (239, 27568), (241, 27574), (244, 27604), (245, 27607), (256, 27655), (320, 27865), (337, 27919),

Gene: Ayotoya\_27 Start: 24101, Stop: 25168, Start Num: 60

Candidate Starts for Ayotoya\_27:

(Start: 60 @24101 has 16 MA's), (182, 24479), (229, 24620), (232, 24635), (235, 24647), (240, 24671), (255, 24755), (257, 24761), (266, 24794), (271, 24806), (297, 24902), (300, 24905), (305, 24926),

Gene: BEEST\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for BEEST\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: BGlluviae\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for BGlluviae\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Babsiella\_22 Start: 21313, Stop: 22350, Start Num: 58

Candidate Starts for Babsiella\_22:

(49, 21289), (Start: 55 @21310 has 97 MA's), (Start: 58 @21313 has 152 MA's), (65, 21337), (107, 21475), (117, 21517), (136, 21586), (161, 21646), (177, 21691), (195, 21736), (221, 21817), (235, 21874), (240, 21898), (264, 22003), (280, 22075), (298, 22120), (349, 22285),

Gene: BabyMoney\_29 Start: 25948, Stop: 27033, Start Num: 58

Candidate Starts for BabyMoney\_29:

(4, 25351), (8, 25438), (20, 25636), (Start: 58 @25948 has 152 MA's), (Start: 90 @26053 has 3 MA's), (110, 26116), (119, 26158), (141, 26236), (168, 26320), (182, 26350), (211, 26413), (235, 26521), (264, 26653),

Gene: BaghaKamala\_28 Start: 23285, Stop: 24298, Start Num: 55

Candidate Starts for BaghaKamala\_28:

(9, 22841), (44, 23240), (Start: 55 @23285 has 97 MA's), (Start: 90 @23396 has 3 MA's), (123, 23510), (159, 23627), (174, 23669), (183, 23681), (221, 23735), (239, 23813), (259, 23909), (264, 23921), (273, 23951), (276, 23960), (306, 24074), (329, 24143),

Gene: BarrelRoll\_28 Start: 23308, Stop: 24321, Start Num: 55

Candidate Starts for BarrelRoll\_28:

(9, 22864), (44, 23263), (Start: 55 @23308 has 97 MA's), (Start: 90 @23419 has 3 MA's), (123, 23533), (159, 23650), (174, 23692), (183, 23704), (221, 23758), (239, 23836), (259, 23932), (273, 23974), (276, 23983), (306, 24097), (329, 24166),

Gene: Bartholomew\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Bartholomew\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Beezoo\_28 Start: 23333, Stop: 24346, Start Num: 55

Candidate Starts for Beezoo\_28:

(Start: 55 @23333 has 97 MA's), (Start: 90 @23444 has 3 MA's), (123, 23558), (132, 23597), (159, 23675), (174, 23717), (183, 23729), (221, 23783), (239, 23861), (255, 23945), (259, 23957), (264, 23969), (276, 24008), (306, 24122), (329, 24191),

Gene: Bella96\_28 Start: 23266, Stop: 24279, Start Num: 55

Candidate Starts for Bella96\_28:

(44, 23221), (Start: 55 @23266 has 97 MA's), (68, 23299), (Start: 90 @23377 has 3 MA's), (123, 23491), (159, 23608), (174, 23650), (183, 23662), (221, 23716), (239, 23794), (255, 23878), (259, 23890), (264, 23902), (265, 23914), (276, 23941), (282, 23977), (329, 24124), (351, 24220),

Gene: Belladonna\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Belladonna\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Bern\_30 Start: 23389, Stop: 24291, Start Num: 90

Candidate Starts for Bern\_30:

(31, 23140), (36, 23179), (37, 23209), (39, 23215), (Start: 55 @23278 has 97 MA's), (Start: 90 @23389 has 3 MA's), (123, 23503), (129, 23524), (159, 23620), (166, 23638), (174, 23662), (183, 23674), (221, 23728), (239, 23806), (259, 23902), (264, 23914), (276, 23953), (282, 23989), (329, 24136),

Gene: BetterKatz\_27 Start: 23574, Stop: 24641, Start Num: 60

Candidate Starts for BetterKatz\_27:

(Start: 60 @23574 has 16 MA's), (182, 23952), (229, 24093), (232, 24108), (235, 24120), (240, 24144), (241, 24147), (255, 24228), (297, 24375),

Gene: Bhagsy\_22 Start: 21306, Stop: 22343, Start Num: 58

Candidate Starts for Bhagsy\_22:

(49, 21282), (Start: 55 @21303 has 97 MA's), (Start: 58 @21306 has 152 MA's), (65, 21330), (107, 21468), (117, 21510), (136, 21579), (161, 21639), (177, 21684), (195, 21729), (221, 21810), (235, 21867), (240, 21891), (264, 21996), (280, 22068), (298, 22113), (349, 22278),

Gene: BiPauneto\_47 Start: 34721, Stop: 35812, Start Num: 59

Candidate Starts for BiPauneto\_47:

(Start: 59 @34721 has 33 MA's), (71, 34754), (97, 34850), (146, 35033), (169, 35102), (222, 35240), (224, 35252), (225, 35255),

Gene: Biglebops\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for Biglebops\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Bipper\_28 Start: 26155, Stop: 27216, Start Num: 58

Candidate Starts for Bipper\_28:

(Start: 58 @26155 has 152 MA's), (99, 26293), (106, 26314), (107, 26317), (118, 26365), (119, 26368), (140, 26443), (161, 26488), (177, 26530), (178, 26533), (187, 26551), (195, 26575), (201, 26587), (207, 26596), (211, 26602), (240, 26734), (257, 26824), (276, 26881), (283, 26917), (288, 26956), (319, 27037), (358, 27199),

Gene: Blizzard\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Blizzard\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Bobquesha\_30 Start: 24333, Stop: 25337, Start Num: 58

Candidate Starts for Bobquesha\_30:

(Start: 58 @24333 has 152 MA's), (111, 24501), (122, 24546), (123, 24552), (137, 24606), (167, 24696), (177, 24717), (183, 24726), (239, 24858), (240, 24861), (274, 24999), (285, 25068), (347, 25272),

Gene: Bock\_27 Start: 23324, Stop: 24391, Start Num: 60

Candidate Starts for Bock\_27:

(Start: 60 @23324 has 16 MA's), (182, 23702), (229, 23843), (232, 23858), (240, 23894), (255, 23978), (297, 24125),

Gene: Boiiii\_28 Start: 23358, Stop: 24371, Start Num: 55

Candidate Starts for Boiiii\_28:

(9, 22914), (44, 23313), (Start: 55 @23358 has 97 MA's), (Start: 90 @23469 has 3 MA's), (123, 23583), (159, 23700), (174, 23742), (183, 23754), (221, 23808), (239, 23886), (259, 23982), (264, 23994), (273, 24024), (276, 24033), (306, 24147), (329, 24216),

Gene: Bongo\_31 Start: 26992, Stop: 28047, Start Num: 58

Candidate Starts for Bongo\_31:

(Start: 58 @26992 has 152 MA's), (119, 27205), (130, 27241), (153, 27304), (184, 27376), (195, 27406), (207, 27427), (218, 27463), (223, 27499), (235, 27547), (239, 27568), (241, 27574), (244, 27604), (245, 27607), (256, 27655), (313, 27844), (320, 27865), (337, 27919),

Gene: Bonum\_48 Start: 35639, Stop: 36694, Start Num: 59

Candidate Starts for Bonum\_48:

(42, 35576), (Start: 59 @35639 has 33 MA's), (121, 35852), (142, 35909), (189, 36035), (264, 36323), (356, 36668),

Gene: BoostSeason\_25 Start: 21308, Stop: 22333, Start Num: 58

Candidate Starts for BoostSeason\_25:

(34, 21224), (Start: 58 @21308 has 152 MA's), (87, 21413), (108, 21473), (122, 21527), (123, 21533), (145, 21614), (147, 21620), (151, 21635), (153, 21638), (241, 21842), (355, 22301), (356, 22310),

Gene: Bricole\_31 Start: 26978, Stop: 28033, Start Num: 58

Candidate Starts for Bricole\_31:

(Start: 58 @26978 has 152 MA's), (119, 27191), (130, 27227), (153, 27290), (184, 27362), (195, 27392), (207, 27413), (218, 27449), (223, 27485), (235, 27533), (239, 27554), (241, 27560), (244, 27590), (245, 27593), (256, 27641), (313, 27830), (320, 27851), (337, 27905),

Gene: Brusacoram\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Brusacoram\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Bryler\_28 Start: 22694, Stop: 23755, Start Num: 58

Candidate Starts for Bryler\_28:

(Start: 58 @22694 has 152 MA's), (80, 22772), (82, 22775), (87, 22793), (119, 22901), (128, 22928), (129, 22934), (159, 23030), (164, 23042), (212, 23144), (220, 23195), (243, 23312), (311, 23555), (316, 23573), (329, 23612),

Gene: Brylie\_27 Start: 23315, Stop: 24382, Start Num: 60

Candidate Starts for Brylie\_27:

(Start: 60 @23315 has 16 MA's), (123, 23525), (182, 23693), (229, 23834), (232, 23849), (235, 23861), (240, 23885), (255, 23969), (265, 24005), (297, 24116),

Gene: Buggaboo\_46 Start: 36118, Stop: 37173, Start Num: 59

Candidate Starts for Buggaboo\_46:

(Start: 59 @36118 has 33 MA's), (121, 36331), (189, 36514), (264, 36802), (356, 37147),

Gene: Bunnies\_22 Start: 21321, Stop: 22358, Start Num: 58

Candidate Starts for Bunnies\_22:

(49, 21297), (Start: 55 @21318 has 97 MA's), (Start: 58 @21321 has 152 MA's), (65, 21345), (107, 21483), (117, 21525), (136, 21594), (161, 21654), (177, 21699), (195, 21744), (221, 21825), (235, 21882), (240, 21906), (264, 22011), (280, 22083), (298, 22128), (349, 22293),

Gene: Butters\_22 Start: 19998, Stop: 21038, Start Num: 56

Candidate Starts for Butters\_22:

(41, 19932), (Start: 56 @19998 has 6 MA's), (105, 20157), (107, 20163), (134, 20271), (136, 20274), (141, 20289), (177, 20379), (195, 20424), (221, 20505), (235, 20562), (240, 20586), (257, 20673), (264, 20691), (280, 20763), (298, 20808), (349, 20973),

Gene: CREW\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for CREW\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: CactusJack\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for CactusJack\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: Cain\_28 Start: 22682, Stop: 23743, Start Num: 58

Candidate Starts for Cain\_28:

(Start: 58 @22682 has 152 MA's), (80, 22760), (82, 22763), (87, 22781), (119, 22889), (128, 22916), (129, 22922), (159, 23018), (164, 23030), (212, 23132), (220, 23183), (243, 23300), (311, 23543), (316, 23561), (329, 23600),

Gene: CallaLilly\_29 Start: 23279, Stop: 24292, Start Num: 55

Candidate Starts for CallaLilly\_29:

(9, 22835), (44, 23234), (Start: 55 @23279 has 97 MA's), (123, 23504), (159, 23621), (174, 23663), (183, 23675), (221, 23729), (239, 23807), (259, 23903), (273, 23945), (276, 23954), (306, 24068), (329, 24137),

Gene: Camster\_22 Start: 21300, Stop: 22367, Start Num: 58

Candidate Starts for Camster\_22:

(49, 21276), (Start: 55 @21297 has 97 MA's), (Start: 58 @21300 has 152 MA's), (65, 21324), (107, 21462), (117, 21504), (136, 21573), (161, 21633), (177, 21678), (195, 21723), (219, 21792), (221, 21804), (235, 21861), (240, 21885), (279, 22056),

Gene: Capricorn\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Capricorn\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: CaseJules\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for CaseJules\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Chancellor\_29 Start: 24596, Stop: 25600, Start Num: 58

Candidate Starts for Chancellor\_29:

(Start: 58 @24596 has 152 MA's), (111, 24764), (122, 24809), (123, 24815), (137, 24869), (141, 24878), (167, 24959), (177, 24980), (181, 24986), (183, 24989), (239, 25121), (240, 25124), (267, 25247),

Gene: Chavito\_28 Start: 22750, Stop: 24003, Start Num: 24

Candidate Starts for Chavito\_28:

(24, 22750), (25, 22756), (35, 22858), (45, 22921), (48, 22939), (Start: 90 @23074 has 3 MA's), (94, 23089), (104, 23125), (119, 23182), (122, 23188), (164, 23323), (168, 23341), (192, 23389), (202, 23407), (241, 23503), (257, 23584), (260, 23593), (273, 23632), (274, 23635), (332, 23833), (355, 23968),

Gene: Che9c\_21 Start: 21007, Stop: 22053, Start Num: 58

Candidate Starts for Che9c\_21:

(Start: 58 @21007 has 152 MA's), (119, 21220), (161, 21331), (177, 21373), (178, 21376), (209, 21445), (239, 21577), (244, 21613), (275, 21721), (320, 21874), (323, 21883), (328, 21895),

Gene: CheetoDust\_28 Start: 23333, Stop: 24346, Start Num: 55

Candidate Starts for CheetoDust\_28:

(9, 22889), (44, 23288), (Start: 55 @23333 has 97 MA's), (98, 23465), (123, 23558), (159, 23675), (174, 23717), (183, 23729), (221, 23783), (239, 23861), (259, 23957), (273, 23999), (276, 24008), (306, 24122), (329, 24191),

Gene: Cheetobro\_29 Start: 24593, Stop: 25597, Start Num: 58

Candidate Starts for Cheetobro\_29:

(Start: 58 @24593 has 152 MA's), (111, 24761), (122, 24806), (123, 24812), (137, 24866), (141, 24875), (167, 24956), (177, 24977), (181, 24983), (183, 24986), (239, 25118), (240, 25121), (267, 25244),

Gene: Chop\_27 Start: 23849, Stop: 24916, Start Num: 60

Candidate Starts for Chop\_27:

(Start: 60 @23849 has 16 MA's), (182, 24227), (229, 24368), (232, 24383), (235, 24395), (240, 24419), (255, 24503), (257, 24509), (266, 24542), (271, 24554), (297, 24650), (300, 24653), (305, 24674),

Gene: Chris\_27 Start: 22610, Stop: 23596, Start Num: 58

Candidate Starts for Chris\_27:

(Start: 58 @22610 has 152 MA's), (88, 22715), (110, 22778), (115, 22799), (123, 22832), (128, 22847), (144, 22907), (181, 23000), (199, 23039), (240, 23138), (253, 23189), (267, 23261), (276, 23282), (302, 23363), (337, 23465),

Gene: Clipper\_30 Start: 23444, Stop: 24346, Start Num: 90

Candidate Starts for Clipper\_30:

(9, 22889), (44, 23288), (Start: 55 @23333 has 97 MA's), (Start: 90 @23444 has 3 MA's), (123, 23558), (159, 23675), (174, 23717), (183, 23729), (221, 23783), (239, 23861), (255, 23945), (259, 23957), (264, 23969), (273, 23999), (276, 24008), (306, 24122), (329, 24191),

Gene: Collard\_27 Start: 24040, Stop: 25104, Start Num: 58

Candidate Starts for Collard\_27:

(Start: 58 @24040 has 152 MA's), (83, 24130), (93, 24157), (112, 24220), (123, 24268), (133, 24307), (140, 24325), (155, 24370), (168, 24409), (191, 24457), (198, 24475), (223, 24550), (240, 24616), (257, 24706), (258, 24709), (259, 24712), (268, 24745), (291, 24844), (292, 24847), (327, 24931), (330, 24943), (353, 25060),

Gene: Commandaria\_46 Start: 36317, Stop: 37420, Start Num: 59

Candidate Starts for Commandaria\_46:

(Start: 59 @36317 has 33 MA's), (97, 36446), (105, 36476), (222, 36836), (240, 36917), (315, 37220),



Gene: Cracklewink\_28 Start: 26155, Stop: 27216, Start Num: 58

Candidate Starts for Cracklewink\_28:

(Start: 58 @26155 has 152 MA's), (99, 26293), (106, 26314), (107, 26317), (118, 26365), (119, 26368), (140, 26443), (161, 26488), (177, 26530), (178, 26533), (187, 26551), (195, 26575), (201, 26587), (207, 26596), (211, 26602), (240, 26734), (257, 26824), (276, 26881), (288, 26956), (319, 27037), (358, 27199),

Gene: CrimD\_28 Start: 23294, Stop: 24307, Start Num: 55

Candidate Starts for CrimD\_28:

(Start: 55 @23294 has 97 MA's), (Start: 90 @23405 has 3 MA's), (123, 23519), (159, 23636), (174, 23678), (183, 23690), (221, 23744), (239, 23822), (255, 23906), (259, 23918), (264, 23930), (276, 23969), (351, 24248),

Gene: Curiosium\_29 Start: 23069, Stop: 24148, Start Num: 58

Candidate Starts for Curiosium\_29:

(Start: 58 @23069 has 152 MA's), (66, 23096), (92, 23183), (105, 23228), (110, 23243), (112, 23249), (117, 23276), (122, 23291), (133, 23336), (134, 23339), (139, 23351), (144, 23372), (155, 23399), (164, 23420), (191, 23486), (235, 23630), (239, 23651), (241, 23657), (285, 23855), (302, 23888), (303, 23897),

Gene: Dadosky\_28 Start: 24011, Stop: 25075, Start Num: 58

Candidate Starts for Dadosky\_28:

(Start: 58 @24011 has 152 MA's), (83, 24101), (94, 24131), (110, 24185), (112, 24191), (123, 24239), (133, 24278), (140, 24296), (141, 24299), (168, 24380), (191, 24428), (198, 24446), (240, 24587), (257, 24677), (258, 24680), (259, 24683), (268, 24716), (274, 24728), (291, 24815), (292, 24818), (330, 24914), (353, 25031),

Gene: Dalilpop\_49 Start: 37250, Stop: 38311, Start Num: 58

Candidate Starts for Dalilpop\_49:

(Start: 58 @37250 has 152 MA's), (89, 37358), (104, 37409), (113, 37436), (125, 37481), (146, 37544), (177, 37628), (188, 37649), (190, 37655), (203, 37682), (206, 37685), (254, 37910), (356, 38285),

Gene: Dalmuri\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Dalmuri\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Daredevil\_37 Start: 34603, Stop: 35670, Start Num: 58

Candidate Starts for Daredevil\_37:

(Start: 58 @34603 has 152 MA's), (165, 34948), (182, 34993), (194, 35023), (269, 35314), (272, 35320), (277, 35338), (288, 35404), (289, 35407), (302, 35425), (317, 35473), (359, 35659),

Gene: DarthP\_27 Start: 23700, Stop: 24704, Start Num: 55

Candidate Starts for DarthP\_27:

(Start: 55 @23700 has 97 MA's), (159, 24042), (227, 24174), (234, 24201), (257, 24315), (302, 24468), (329, 24561), (334, 24564), (344, 24627), (350, 24639),

Gene: Dartin\_28 Start: 22728, Stop: 23693, Start Num: 55

Candidate Starts for Dartin\_28:

(Start: 55 @22728 has 97 MA's), (Start: 59 @22734 has 33 MA's), (104, 22887), (111, 22905), (115, 22923), (123, 22956), (133, 22998), (152, 23058), (159, 23073), (239, 23259), (240, 23262), (254, 23334), (276, 23403), (286, 23451), (297, 23466), (310, 23499), (324, 23538), (351, 23637),

Gene: Deby\_28 Start: 23290, Stop: 24303, Start Num: 55

Candidate Starts for Deby\_28:

(Start: 55 @23290 has 97 MA's), (Start: 90 @23401 has 3 MA's), (123, 23515), (159, 23632), (183, 23686), (221, 23740), (239, 23818), (259, 23914), (264, 23926), (273, 23956), (276, 23965), (306, 24079), (329, 24148),

Gene: DelRio\_28 Start: 24323, Stop: 25387, Start Num: 60

Candidate Starts for DelRio\_28:

(Start: 60 @24323 has 16 MA's), (182, 24701), (229, 24842), (232, 24854), (235, 24866), (240, 24890), (255, 24974), (266, 25013), (297, 25121),

Gene: Devera\_28 Start: 23337, Stop: 24350, Start Num: 55

Candidate Starts for Devera\_28:

(Start: 55 @23337 has 97 MA's), (Start: 90 @23448 has 3 MA's), (93, 23457), (123, 23562), (149, 23658), (159, 23679), (174, 23721), (183, 23733), (221, 23787), (239, 23865), (259, 23961), (264, 23973), (276, 24012), (306, 24126), (329, 24195), (351, 24291),

Gene: Diminimus\_32 Start: 26991, Stop: 28046, Start Num: 58

Candidate Starts for Diminimus\_32:

(Start: 58 @26991 has 152 MA's), (119, 27204), (130, 27240), (153, 27303), (184, 27375), (195, 27405), (207, 27426), (218, 27462), (223, 27498), (235, 27546), (239, 27567), (241, 27573), (244, 27603), (245, 27606), (256, 27654), (320, 27864), (337, 27918),

Gene: DismalFunk\_25 Start: 21282, Stop: 22277, Start Num: 58

Candidate Starts for DismalFunk\_25:

(18, 20961), (26, 21099), (34, 21198), (Start: 58 @21282 has 152 MA's), (79, 21363), (87, 21387), (108, 21447), (122, 21501), (123, 21507), (151, 21609), (153, 21612), (171, 21660), (174, 21666), (195, 21708), (221, 21732), (241, 21816), (257, 21900), (276, 21957), (355, 22254),

Gene: DismalStressor\_25 Start: 21282, Stop: 22277, Start Num: 58

Candidate Starts for DismalStressor\_25:

(26, 21099), (34, 21198), (Start: 58 @21282 has 152 MA's), (79, 21363), (87, 21387), (108, 21447), (122, 21501), (123, 21507), (151, 21609), (153, 21612), (171, 21660), (174, 21666), (195, 21708), (221, 21732), (241, 21816), (257, 21900), (276, 21957), (355, 22254),

Gene: Dogfish\_30 Start: 26617, Stop: 27699, Start Num: 59

Candidate Starts for Dogfish\_30:

(Start: 59 @26617 has 33 MA's), (119, 26827), (141, 26905), (160, 26959), (175, 27004), (201, 27061), (205, 27067), (221, 27130), (235, 27187), (238, 27202), (264, 27319),

Gene: Dole\_28 Start: 23339, Stop: 24352, Start Num: 55

Candidate Starts for Dole\_28:

(Start: 55 @23339 has 97 MA's), (Start: 90 @23450 has 3 MA's), (93, 23459), (123, 23564), (149, 23660), (159, 23681), (174, 23723), (183, 23735), (221, 23789), (239, 23867), (259, 23963), (264, 23975), (276, 24014), (306, 24128), (329, 24197), (351, 24293),

Gene: Donovan\_22 Start: 21288, Stop: 22325, Start Num: 58

Candidate Starts for Donovan\_22:

(49, 21264), (Start: 55 @21285 has 97 MA's), (Start: 58 @21288 has 152 MA's), (65, 21312), (107, 21450), (117, 21492), (136, 21561), (161, 21621), (177, 21666), (195, 21711), (221, 21792), (235, 21849), (240, 21873), (264, 21978), (280, 22050), (298, 22095), (349, 22260),

Gene: Doughnut\_25 Start: 21302, Stop: 22327, Start Num: 58

Candidate Starts for Doughnut\_25:

(34, 21218), (Start: 58 @21302 has 152 MA's), (87, 21407), (108, 21467), (122, 21521), (123, 21527), (145, 21608), (147, 21614), (151, 21629), (153, 21632), (241, 21836), (355, 22295), (356, 22304),

Gene: DrHayes\_28 Start: 23284, Stop: 24297, Start Num: 55

Candidate Starts for DrHayes\_28:

(44, 23239), (Start: 55 @23284 has 97 MA's), (Start: 90 @23395 has 3 MA's), (123, 23509), (159, 23626), (174, 23668), (183, 23680), (221, 23734), (239, 23812), (259, 23908), (264, 23920), (276, 23959), (282, 23995), (329, 24142), (351, 24238),

Gene: Dulcita\_32 Start: 26991, Stop: 28046, Start Num: 58

Candidate Starts for Dulcita\_32:

(Start: 58 @26991 has 152 MA's), (119, 27204), (130, 27240), (153, 27303), (184, 27375), (195, 27405), (207, 27426), (218, 27462), (223, 27498), (235, 27546), (239, 27567), (241, 27573), (244, 27603), (245, 27606), (256, 27654), (320, 27864), (337, 27918),

Gene: DumpsterDude\_23 Start: 21990, Stop: 23072, Start Num: 58

Candidate Starts for DumpsterDude\_23:

(33, 21855), (Start: 58 @21990 has 152 MA's), (77, 22062), (119, 22200), (128, 22230), (162, 22338), (177, 22380), (201, 22434), (235, 22560),

Gene: Durfee\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Durfee\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Dynamo\_22 Start: 21688, Stop: 22722, Start Num: 58

Candidate Starts for Dynamo\_22:

(Start: 58 @21688 has 152 MA's), (105, 21844), (107, 21850), (134, 21958), (136, 21961), (141, 21976), (177, 22063), (195, 22108), (221, 22189), (235, 22246), (240, 22270), (264, 22375), (280, 22447), (298, 22492),

Gene: Edugator\_27 Start: 24010, Stop: 25074, Start Num: 58

Candidate Starts for Edugator\_27:

(Start: 58 @24010 has 152 MA's), (83, 24100), (94, 24130), (110, 24184), (112, 24190), (123, 24238), (133, 24277), (140, 24295), (141, 24298), (168, 24379), (191, 24427), (198, 24445), (240, 24586), (257, 24676), (258, 24679), (259, 24682), (268, 24715), (274, 24727), (291, 24814), (292, 24817), (353, 25030),

Gene: Efra2\_28 Start: 22526, Stop: 23587, Start Num: 55

Candidate Starts for Efra2\_28:

(Start: 55 @22526 has 97 MA's), (Start: 90 @22640 has 3 MA's), (123, 22754), (129, 22775), (150, 22853), (155, 22862), (164, 22883), (166, 22889), (226, 22997), (239, 23057), (261, 23177), (262, 23183), (263, 23189), (280, 23279), (321, 23405), (325, 23420),

Gene: Ekdilam\_25 Start: 23459, Stop: 24463, Start Num: 55

Candidate Starts for Ekdilam\_25:

(Start: 55 @23459 has 97 MA's), (115, 23651), (119, 23672), (129, 23705), (137, 23738), (159, 23801), (227, 23933), (234, 23960), (257, 24074), (302, 24227), (329, 24320), (344, 24386),

Gene: Ellie\_25 Start: 23458, Stop: 24465, Start Num: 55

Candidate Starts for Ellie\_25:

(Start: 55 @23458 has 97 MA's), (83, 23548), (Start: 90 @23569 has 3 MA's), (115, 23650), (123, 23683), (129, 23704), (240, 23989), (249, 24028), (344, 24388), (358, 24448),

Gene: Emerson\_28 Start: 23316, Stop: 24329, Start Num: 55

Candidate Starts for Emerson\_28:

(9, 22872), (44, 23271), (Start: 55 @23316 has 97 MA's), (123, 23541), (159, 23658), (174, 23700), (183, 23712), (221, 23766), (239, 23844), (259, 23940), (264, 23952), (273, 23982), (276, 23991), (306, 24105), (329, 24174),

Gene: Emianna\_44 Start: 35974, Stop: 37032, Start Num: 59

Candidate Starts for Emianna\_44:

(1, 34534), (2, 34831), (3, 35062), (6, 35431), (28, 35809), (30, 35824), (33, 35842), (Start: 59 @35974 has 33 MA's), (166, 36319), (188, 36370), (213, 36418),

Gene: Enkosi\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for Enkosi\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Ennea\_51 Start: 36974, Stop: 38035, Start Num: 59

Candidate Starts for Ennea\_51:

(Start: 59 @36974 has 33 MA's), (114, 37160), (175, 37346), (177, 37349), (241, 37559),

Gene: Eponine\_29 Start: 24914, Stop: 25987, Start Num: 55

Candidate Starts for Eponine\_29:

(Start: 55 @24914 has 97 MA's), (Start: 58 @24917 has 152 MA's), (126, 25157), (136, 25193), (139, 25202), (141, 25208), (161, 25253), (177, 25298), (185, 25316), (195, 25343), (221, 25424), (235, 25481), (240, 25505),

Gene: Etoile\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Etoile\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Ewald\_30 Start: 26639, Stop: 27724, Start Num: 58

Candidate Starts for Ewald\_30:

(33, 26504), (Start: 58 @26639 has 152 MA's), (Start: 90 @26744 has 3 MA's), (96, 26762), (119, 26849), (191, 27062), (197, 27077), (211, 27104), (217, 27119), (235, 27212), (238, 27227), (251, 27284), (264, 27344), (274, 27377),

Gene: FF47\_25 Start: 21654, Stop: 22679, Start Num: 60

Candidate Starts for FF47\_25:

(Start: 60 @21654 has 16 MA's), (85, 21744), (111, 21813), (113, 21822), (131, 21900), (154, 21963), (156, 21966), (217, 22110), (221, 22146), (243, 22254), (314, 22491), (346, 22617),

Gene: Faiyaz\_28 Start: 26025, Stop: 27062, Start Num: 58

Candidate Starts for Faiyaz\_28:

(Start: 58 @26025 has 152 MA's), (96, 26148), (112, 26202), (119, 26238), (139, 26301), (161, 26349), (182, 26403), (184, 26406), (239, 26592), (244, 26628), (254, 26670), (259, 26688), (276, 26739),

Gene: Farewell\_21 Start: 21884, Stop: 22930, Start Num: 58

Candidate Starts for Farewell\_21:

(Start: 58 @21884 has 152 MA's), (115, 22076), (119, 22097), (161, 22208), (177, 22250), (178, 22253), (239, 22454), (244, 22490), (275, 22598), (320, 22751), (323, 22760), (328, 22772),

Gene: Fefferhead\_27 Start: 23613, Stop: 24665, Start Num: 55

Candidate Starts for Fefferhead\_27:

(40, 23577), (Start: 55 @23613 has 97 MA's), (83, 23703), (Start: 90 @23724 has 3 MA's), (99, 23751), (123, 23838), (129, 23859), (133, 23880), (212, 24069), (227, 24147), (240, 24204), (243, 24237), (250, 24252), (325, 24507), (329, 24522), (345, 24603), (356, 24642),

Gene: Feyre\_27 Start: 23851, Stop: 24918, Start Num: 58

Candidate Starts for Feyre\_27:

(Start: 58 @23851 has 152 MA's), (93, 23968), (122, 24073), (123, 24079), (141, 24139), (144, 24154), (155, 24181), (168, 24220), (170, 24223), (177, 24235), (178, 24238), (179, 24241), (187, 24256), (211, 24301), (215, 24307), (223, 24361), (235, 24409), (242, 24439), (252, 24484), (294, 24667),

Gene: Findley\_25 Start: 21282, Stop: 22307, Start Num: 58

Candidate Starts for Findley\_25:

(26, 21099), (34, 21198), (Start: 58 @21282 has 152 MA's), (79, 21363), (87, 21387), (108, 21447), (122, 21501), (123, 21507), (145, 21588), (147, 21594), (151, 21609), (153, 21612), (241, 21816), (355, 22275), (356, 22284),

Gene: Fionnbharth\_29 Start: 24586, Stop: 25590, Start Num: 58

Candidate Starts for Fionnbharth\_29:

(Start: 58 @24586 has 152 MA's), (76, 24655), (111, 24754), (122, 24799), (123, 24805), (137, 24859), (141, 24868), (152, 24904), (167, 24949), (177, 24970), (181, 24976), (183, 24979), (239, 25111), (240, 25114), (267, 25237), (276, 25258), (347, 25525),

Gene: FirstPlacePfu\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for FirstPlacePfu\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Fishburne\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Fishburne\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Flapper\_49 Start: 36682, Stop: 37743, Start Num: 58

Candidate Starts for Flapper\_49:

(22, 36406), (42, 36619), (Start: 58 @36682 has 152 MA's), (89, 36790), (113, 36868), (146, 36976), (177, 37060), (188, 37081), (190, 37087), (203, 37114), (254, 37342), (275, 37408), (347, 37672), (356, 37717),

Gene: Float294\_47 Start: 36416, Stop: 37477, Start Num: 59

Candidate Starts for Float294\_47:

(Start: 59 @36416 has 33 MA's), (114, 36602), (175, 36788), (177, 36791), (241, 37001), (336, 37340), (347, 37406),

Gene: Foxboro\_45 Start: 36480, Stop: 37538, Start Num: 59

Candidate Starts for Foxboro\_45:

(1, 35040), (2, 35337), (3, 35568), (6, 35937), (28, 36315), (30, 36330), (33, 36348), (Start: 59 @36480 has 33 MA's), (166, 36825), (188, 36876), (213, 36924),

Gene: Francois\_27 Start: 23338, Stop: 24405, Start Num: 60

Candidate Starts for Francois\_27:

(Start: 60 @23338 has 16 MA's), (182, 23716), (229, 23857), (235, 23884), (240, 23908), (255, 23992), (297, 24139),

Gene: FreakyGoo\_31 Start: 26992, Stop: 28047, Start Num: 58

Candidate Starts for FreakyGoo\_31:

(Start: 58 @26992 has 152 MA's), (119, 27205), (130, 27241), (153, 27304), (184, 27376), (195, 27406), (207, 27427), (218, 27463), (223, 27499), (235, 27547), (239, 27568), (241, 27574), (244, 27604), (245, 27607), (256, 27655), (313, 27844), (320, 27865), (337, 27919),

Gene: Fury\_53 Start: 35397, Stop: 36479, Start Num: 59

Candidate Starts for Fury\_53:

(Start: 59 @35397 has 33 MA's), (93, 35514), (158, 35742), (193, 35826), (196, 35832), (216, 35871), (218, 35886), (224, 35928), (260, 36093), (312, 36273), (347, 36411),

Gene: GRU1\_34 Start: 28214, Stop: 29290, Start Num: 58

Candidate Starts for GRU1\_34:

(28, 28052), (Start: 58 @28214 has 152 MA's), (89, 28322), (104, 28373), (113, 28400), (146, 28508), (177, 28592), (188, 28613), (190, 28619), (203, 28646), (254, 28874), (336, 29153), (356, 29264),

Gene: GTE5\_36 Start: 29539, Stop: 30600, Start Num: 58

Candidate Starts for GTE5\_36:

(42, 29476), (Start: 58 @29539 has 152 MA's), (89, 29647), (113, 29725), (146, 29833), (177, 29917), (188, 29938), (193, 29950), (203, 29971), (206, 29974), (347, 30529), (356, 30574),

Gene: GTE8\_33 Start: 29229, Stop: 30287, Start Num: 58

Candidate Starts for GTE8\_33:

(28, 29067), (Start: 58 @29229 has 152 MA's), (121, 29445), (189, 29628), (347, 30216), (356, 30261),

Gene: Ganymede\_29 Start: 23336, Stop: 24349, Start Num: 55

Candidate Starts for Ganymede\_29:

(9, 22892), (44, 23291), (Start: 55 @23336 has 97 MA's), (Start: 90 @23447 has 3 MA's), (123, 23561), (159, 23678), (174, 23720), (183, 23732), (200, 23771), (221, 23786), (239, 23864), (255, 23948), (259, 23960), (264, 23972), (276, 24011), (306, 24125), (329, 24194),

Gene: Gavriela\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for Gavriela\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: Gengar\_27 Start: 23958, Stop: 25028, Start Num: 58

Candidate Starts for Gengar\_27:

(Start: 58 @23958 has 152 MA's), (110, 24132), (123, 24186), (140, 24243), (141, 24246), (144, 24261), (155, 24288), (168, 24327), (170, 24330), (177, 24342), (178, 24345), (179, 24348), (215, 24417), (223, 24471), (242, 24549), (252, 24594), (294, 24777),

Gene: Geraldini\_28 Start: 23332, Stop: 24345, Start Num: 55

Candidate Starts for Geraldini\_28:

(9, 22888), (44, 23287), (Start: 55 @23332 has 97 MA's), (Start: 90 @23443 has 3 MA's), (122, 23551), (123, 23557), (159, 23674), (174, 23716), (183, 23728), (221, 23782), (239, 23860), (255, 23944), (259, 23956), (264, 23968), (276, 24007), (306, 24121), (329, 24190),

Gene: Glaske\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for Glaske\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: Glaske16\_32 Start: 26991, Stop: 28046, Start Num: 58

Candidate Starts for Glaske16\_32:

(Start: 58 @26991 has 152 MA's), (119, 27204), (130, 27240), (153, 27303), (184, 27375), (195, 27405), (207, 27426), (218, 27462), (223, 27498), (235, 27546), (239, 27567), (241, 27573), (244, 27603), (245, 27606), (256, 27654), (320, 27864), (337, 27918),

Gene: GrandSlam\_27 Start: 23849, Stop: 24916, Start Num: 60

Candidate Starts for GrandSlam\_27:

(Start: 60 @23849 has 16 MA's), (182, 24227), (229, 24368), (232, 24383), (235, 24395), (240, 24419), (255, 24503), (257, 24509), (266, 24542), (271, 24554), (297, 24650), (300, 24653), (305, 24674),

Gene: GrootJr\_46 Start: 35356, Stop: 36414, Start Num: 59

Candidate Starts for GrootJr\_46:

(1, 33916), (2, 34213), (3, 34444), (6, 34813), (28, 35191), (30, 35206), (33, 35224), (Start: 59 @35356 has 33 MA's), (166, 35701), (188, 35752), (213, 35800),

Gene: Gspu1\_26 Start: 21693, Stop: 22775, Start Num: 59

Candidate Starts for Gspu1\_26:

(Start: 59 @21693 has 33 MA's), (108, 21855), (119, 21903), (123, 21915), (150, 22017), (172, 22077), (189, 22110), (196, 22125), (216, 22164), (230, 22248), (237, 22278), (240, 22290), (276, 22437), (312, 22563), (329, 22620), (355, 22743),

Gene: Guanica15\_28 Start: 22542, Stop: 23603, Start Num: 55

Candidate Starts for Guanica15\_28:

(Start: 55 @22542 has 97 MA's), (Start: 90 @22656 has 3 MA's), (123, 22770), (129, 22791), (155, 22878), (164, 22899), (166, 22905), (226, 23013), (239, 23073), (261, 23193), (262, 23199), (263, 23205), (280, 23295), (321, 23421), (325, 23436),

Gene: Guillsminger\_27 Start: 23933, Stop: 25000, Start Num: 58

Candidate Starts for Guillsminger\_27:

(Start: 58 @23933 has 152 MA's), (93, 24050), (110, 24107), (122, 24155), (123, 24161), (140, 24218), (141, 24221), (144, 24236), (155, 24263), (168, 24302), (170, 24305), (177, 24317), (178, 24320), (179, 24323), (187, 24338), (211, 24383), (215, 24389), (223, 24443), (235, 24491), (242, 24521), (252, 24566), (280, 24695), (294, 24749),

Gene: HC\_22 Start: 21369, Stop: 22406, Start Num: 58

Candidate Starts for HC\_22:

(49, 21345), (Start: 55 @21366 has 97 MA's), (Start: 58 @21369 has 152 MA's), (65, 21393), (107, 21531), (117, 21573), (136, 21642), (161, 21702), (177, 21747), (195, 21792), (221, 21873), (235, 21930), (240, 21954), (264, 22059), (280, 22131), (298, 22176), (349, 22341),

Gene: HUHilltop\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for HUHilltop\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Hammy\_27 Start: 23691, Stop: 24695, Start Num: 55

Candidate Starts for Hammy\_27:

(Start: 55 @23691 has 97 MA's), (140, 23976), (159, 24033), (227, 24165), (234, 24192), (257, 24306), (302, 24459), (329, 24552), (334, 24555), (344, 24618), (350, 24630),

Gene: Hamood\_27 Start: 23849, Stop: 24916, Start Num: 60

Candidate Starts for Hamood\_27:

(Start: 60 @23849 has 16 MA's), (182, 24227), (229, 24368), (232, 24383), (235, 24395), (240, 24419), (255, 24503), (257, 24509), (266, 24542), (271, 24554), (297, 24650), (300, 24653), (305, 24674),

Gene: HedwigODU\_28 Start: 23325, Stop: 24338, Start Num: 55

Candidate Starts for HedwigODU\_28:

(9, 22881), (21, 23028), (44, 23280), (Start: 55 @23325 has 97 MA's), (Start: 90 @23436 has 3 MA's), (123, 23550), (159, 23667), (174, 23709), (183, 23721), (221, 23775), (239, 23853), (259, 23949), (264, 23961), (273, 23991), (276, 24000), (306, 24114), (329, 24183),

Gene: Heftyboy\_27 Start: 24081, Stop: 25148, Start Num: 58

Candidate Starts for Heftyboy\_27:

(Start: 58 @24081 has 152 MA's), (93, 24198), (110, 24255), (122, 24303), (123, 24309), (140, 24366), (141, 24369), (144, 24384), (155, 24411), (168, 24450), (170, 24453), (177, 24465), (178, 24468), (179, 24471), (187, 24486), (211, 24531), (215, 24537), (223, 24591), (235, 24639), (242, 24669), (252, 24714), (280, 24843), (294, 24897),

Gene: Hilltopfarm\_28 Start: 26055, Stop: 27092, Start Num: 58

Candidate Starts for Hilltopfarm\_28:

(Start: 58 @26055 has 152 MA's), (96, 26178), (112, 26232), (119, 26268), (139, 26331), (161, 26379), (182, 26433), (184, 26436), (239, 26622), (244, 26658), (254, 26700), (259, 26718), (276, 26769),

Gene: Homura\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Homura\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: HubbaBubba\_42 Start: 31720, Stop: 32760, Start Num: 58

Candidate Starts for HubbaBubba\_42:

(Start: 58 @31720 has 152 MA's), (97, 31852), (146, 32035), (222, 32242), (223, 32251), (239, 32320), (240, 32323), (255, 32407), (296, 32560), (323, 32644), (325, 32653), (326, 32656), (346, 32752),

Gene: Hurricane\_28 Start: 23950, Stop: 24975, Start Num: 58

Candidate Starts for Hurricane\_28:

(5, 23398), (7, 23464), (10, 23527), (12, 23560), (16, 23602), (26, 23761), (34, 23860), (42, 23917), (Start: 58 @23950 has 152 MA's), (97, 24073), (99, 24082), (108, 24109), (119, 24157), (123, 24169), (129, 24190), (143, 24241), (152, 24271), (229, 24424), (234, 24445), (247, 24517), (255, 24553), (260, 24568), (274, 24610), (276, 24616), (295, 24706), (325, 24805), (326, 24808), (348, 24907), (358, 24958),

Gene: Hyperbowlee\_28 Start: 23356, Stop: 24369, Start Num: 55



Candidate Starts for Hyperbowlee\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: IPhone7\_31 Start: 26992, Stop: 28047, Start Num: 58

Candidate Starts for IPhone7\_31:

(Start: 58 @26992 has 152 MA's), (119, 27205), (130, 27241), (153, 27304), (184, 27376), (195, 27406), (207, 27427), (218, 27463), (223, 27499), (235, 27547), (239, 27568), (241, 27574), (244, 27604), (245, 27607), (256, 27655), (313, 27844), (320, 27865), (337, 27919),

Gene: IdentityCrisis\_21 Start: 19031, Stop: 20086, Start Num: 58

Candidate Starts for IdentityCrisis\_21:

(Start: 58 @19031 has 152 MA's), (93, 19148), (141, 19322), (191, 19439), (192, 19445), (240, 19610), (259, 19703), (275, 19751), (281, 19787), (312, 19880),

Gene: Illumine\_28 Start: 23339, Stop: 24352, Start Num: 55

Candidate Starts for Illumine\_28:

(Start: 55 @23339 has 97 MA's), (Start: 90 @23450 has 3 MA's), (93, 23459), (123, 23564), (149, 23660), (159, 23681), (174, 23723), (183, 23735), (221, 23789), (239, 23867), (259, 23963), (264, 23975), (276, 24014), (306, 24128), (329, 24197), (351, 24293),

Gene: Inky\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Inky\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: InvictusManeo\_27 Start: 24083, Stop: 25147, Start Num: 58

Candidate Starts for InvictusManeo\_27:

(Start: 58 @24083 has 152 MA's), (83, 24173), (93, 24200), (112, 24263), (123, 24311), (133, 24350), (140, 24368), (155, 24413), (168, 24452), (191, 24500), (198, 24518), (223, 24593), (240, 24659), (257, 24749), (258, 24752), (259, 24755), (268, 24788), (291, 24887), (292, 24890), (327, 24974), (330, 24986), (353, 25103),

Gene: Izel\_30 Start: 26991, Stop: 28046, Start Num: 58

Candidate Starts for Izel\_30:

(Start: 58 @26991 has 152 MA's), (119, 27204), (130, 27240), (153, 27303), (184, 27375), (195, 27405), (207, 27426), (218, 27462), (223, 27498), (235, 27546), (239, 27567), (241, 27573), (244, 27603), (245, 27606), (256, 27654), (320, 27864), (337, 27918),

Gene: JAWS\_28 Start: 23310, Stop: 24323, Start Num: 55

Candidate Starts for JAWS\_28:

(9, 22866), (44, 23265), (Start: 55 @23310 has 97 MA's), (Start: 90 @23421 has 3 MA's), (123, 23535), (159, 23652), (174, 23694), (183, 23706), (221, 23760), (239, 23838), (259, 23934), (273, 23976), (276, 23985), (306, 24099), (329, 24168),

Gene: JF1\_29 Start: 24585, Stop: 25589, Start Num: 58

Candidate Starts for JF1\_29:

(Start: 58 @24585 has 152 MA's), (76, 24654), (111, 24753), (122, 24798), (123, 24804), (137, 24858), (141, 24867), (152, 24903), (167, 24948), (177, 24969), (181, 24975), (183, 24978), (239, 25110), (240, 25113), (267, 25236), (276, 25257), (347, 25524),

Gene: Jarvi\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Jarvi\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Jayhawk\_28 Start: 23323, Stop: 24336, Start Num: 55

Candidate Starts for Jayhawk\_28:

(9, 22879), (21, 23026), (44, 23278), (Start: 55 @23323 has 97 MA's), (Start: 90 @23434 has 3 MA's), (123, 23548), (159, 23665), (174, 23707), (183, 23719), (221, 23773), (239, 23851), (259, 23947), (264, 23959), (273, 23989), (276, 23998), (306, 24112), (329, 24181),

Gene: Jebeks\_22 Start: 21284, Stop: 22321, Start Num: 58

Candidate Starts for Jebeks\_22:

(49, 21260), (Start: 55 @21281 has 97 MA's), (Start: 58 @21284 has 152 MA's), (65, 21308), (107, 21446), (117, 21488), (136, 21557), (161, 21617), (177, 21662), (195, 21707), (221, 21788), (235, 21845), (240, 21869), (264, 21974), (280, 22046), (298, 22091), (349, 22256),

Gene: Jeckyll\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Jeckyll\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Jifall16\_43 Start: 35628, Stop: 36686, Start Num: 59

Candidate Starts for Jifall16\_43:

(1, 34188), (2, 34485), (3, 34716), (6, 35085), (28, 35463), (30, 35478), (33, 35496), (Start: 59 @35628 has 33 MA's), (166, 35973), (188, 36024), (213, 36072),

Gene: Joy99\_28 Start: 23285, Stop: 24298, Start Num: 55

Candidate Starts for Joy99\_28:

(9, 22841), (44, 23240), (Start: 55 @23285 has 97 MA's), (123, 23510), (159, 23627), (174, 23669), (183, 23681), (221, 23735), (239, 23813), (259, 23909), (273, 23951), (276, 23960), (306, 24074), (329, 24143),

Gene: Juliette\_30 Start: 24531, Stop: 25565, Start Num: 56

Candidate Starts for Juliette\_30:

(41, 24465), (Start: 56 @24531 has 6 MA's), (105, 24687), (106, 24690), (117, 24735), (119, 24744), (141, 24819), (177, 24906), (195, 24951), (221, 25032), (235, 25089), (240, 25113), (264, 25218), (280, 25290), (304, 25350), (349, 25500),

Gene: Jung\_22 Start: 21225, Stop: 22292, Start Num: 58

Candidate Starts for Jung\_22:

(49, 21201), (Start: 55 @21222 has 97 MA's), (Start: 58 @21225 has 152 MA's), (65, 21249), (105, 21381), (107, 21387), (117, 21429), (134, 21495), (136, 21498), (161, 21558), (177, 21603), (195, 21648), (221, 21729), (235, 21786), (240, 21810), (246, 21852), (279, 21981), (284, 22002),

Gene: Juniormint\_22 Start: 21325, Stop: 22380, Start Num: 58

Candidate Starts for Juniormint\_22:

(49, 21301), (Start: 55 @21322 has 97 MA's), (Start: 58 @21325 has 152 MA's), (65, 21349), (107, 21487), (117, 21529), (136, 21598), (161, 21676), (177, 21721), (195, 21766), (221, 21847), (235, 21904), (240, 21928), (264, 22033), (280, 22105), (298, 22150), (349, 22315),

Gene: Kabluna\_48 Start: 35054, Stop: 36109, Start Num: 59

Candidate Starts for Kabluna\_48:

(42, 34991), (Start: 59 @35054 has 33 MA's), (121, 35267), (189, 35450), (264, 35738), (356, 36083),

Gene: Kari\_22 Start: 21296, Stop: 22336, Start Num: 55

Candidate Starts for Kari\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Keshu\_28 Start: 23942, Stop: 24964, Start Num: 58

Candidate Starts for Keshu\_28:

(26, 23753), (34, 23852), (42, 23909), (Start: 58 @23942 has 152 MA's), (104, 24092), (119, 24149), (143, 24233), (152, 24263), (234, 24434), (240, 24464), (274, 24599), (293, 24692), (295, 24695), (302, 24716), (325, 24794), (342, 24863), (345, 24893),

Gene: Kevin1\_22 Start: 19999, Stop: 21036, Start Num: 56

Candidate Starts for Kevin1\_22:

(41, 19933), (Start: 56 @19999 has 6 MA's), (105, 20155), (107, 20161), (134, 20269), (141, 20287), (177, 20377), (195, 20422), (221, 20503), (240, 20584), (257, 20671), (264, 20689), (280, 20761), (298, 20806), (349, 20971),

Gene: KiSi\_27 Start: 22512, Stop: 23480, Start Num: 57

Candidate Starts for KiSi\_27:

(Start: 57 @22512 has 4 MA's), (108, 22674), (110, 22680), (115, 22701), (116, 22707), (128, 22749), (140, 22794), (152, 22836), (159, 22851), (221, 22959), (241, 23043), (326, 23319),

Gene: KidneyBean\_44 Start: 35752, Stop: 36810, Start Num: 59

Candidate Starts for KidneyBean\_44:

(1, 34312), (2, 34609), (3, 34840), (6, 35209), (28, 35587), (30, 35602), (33, 35620), (Start: 59 @35752 has 33 MA's), (166, 36097), (188, 36148), (213, 36196),

Gene: KilKor\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for KilKor\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: KleverKiS\_31 Start: 26972, Stop: 28027, Start Num: 58

Candidate Starts for KleverKiS\_31:

(Start: 58 @26972 has 152 MA's), (119, 27185), (130, 27221), (153, 27284), (184, 27356), (195, 27386), (207, 27407), (218, 27443), (223, 27479), (235, 27527), (239, 27548), (241, 27554), (244, 27584), (245, 27587), (256, 27635), (320, 27845), (337, 27899),

Gene: Kratio\_26 Start: 23714, Stop: 24778, Start Num: 58

Candidate Starts for Kratio\_26:

(Start: 58 @23714 has 152 MA's), (83, 23804), (94, 23834), (112, 23894), (123, 23942), (133, 23981), (140, 23999), (168, 24083), (191, 24131), (198, 24149), (223, 24224), (240, 24290), (257, 24380), (258, 24383), (259, 24386), (268, 24419), (291, 24518), (292, 24521), (327, 24605), (330, 24617), (353, 24734),

Gene: Kraw\_30 Start: 24509, Stop: 25513, Start Num: 58

Candidate Starts for Kraw\_30:

(Start: 58 @24509 has 152 MA's), (76, 24578), (111, 24677), (122, 24722), (123, 24728), (137, 24782), (141, 24791), (152, 24827), (167, 24872), (177, 24893), (181, 24899), (183, 24902), (239, 25034), (240, 25037), (267, 25160), (276, 25181), (347, 25448),

Gene: Krueger\_28 Start: 22638, Stop: 23633, Start Num: 58

Candidate Starts for Krueger\_28:

(34, 22548), (Start: 58 @22638 has 152 MA's), (87, 22737), (Start: 90 @22743 has 3 MA's), (131, 22893), (159, 22974), (167, 22998), (239, 23160), (240, 23163), (256, 23247), (270, 23292), (352, 23571), (354, 23592), (356, 23610),

Gene: Ksquared\_22 Start: 21321, Stop: 22358, Start Num: 58

Candidate Starts for Ksquared\_22:

(49, 21297), (Start: 55 @21318 has 97 MA's), (Start: 58 @21321 has 152 MA's), (65, 21345), (107, 21483), (117, 21525), (136, 21594), (161, 21654), (177, 21699), (195, 21744), (221, 21825), (235, 21882), (240, 21906), (264, 22011), (280, 22083), (298, 22128), (349, 22293),

Gene: Kurt\_44 Start: 35989, Stop: 37047, Start Num: 59

Candidate Starts for Kurt\_44:

(1, 34549), (2, 34846), (3, 35077), (6, 35446), (28, 35824), (30, 35839), (33, 35857), (Start: 59 @35989 has 33 MA's), (166, 36334), (188, 36385), (213, 36433),

Gene: Labelle\_37 Start: 32043, Stop: 33083, Start Num: 64

Candidate Starts for Labelle\_37:

(Start: 64 @32043 has 3 MA's), (85, 32121), (111, 32199), (179, 32412), (182, 32418), (217, 32496), (235, 32589), (241, 32616),

Gene: Langerak\_22 Start: 21280, Stop: 22320, Start Num: 55

Candidate Starts for Langerak\_22:

(49, 21259), (Start: 55 @21280 has 97 MA's), (Start: 58 @21283 has 152 MA's), (65, 21307), (107, 21445), (117, 21487), (136, 21556), (161, 21616), (177, 21661), (195, 21706), (221, 21787), (235, 21844), (240, 21868), (264, 21973), (280, 22045), (298, 22090), (349, 22255),

Gene: Larva\_28 Start: 23878, Stop: 24942, Start Num: 58

Candidate Starts for Larva\_28:

(Start: 58 @23878 has 152 MA's), (83, 23968), (94, 23998), (110, 24052), (112, 24058), (123, 24106), (133, 24145), (140, 24163), (141, 24166), (168, 24247), (191, 24295), (198, 24313), (240, 24454), (257, 24544), (258, 24547), (259, 24550), (268, 24583), (274, 24595), (291, 24682), (292, 24685), (330, 24781), (353, 24898),

Gene: LastHope\_28 Start: 22491, Stop: 23498, Start Num: 58

Candidate Starts for LastHope\_28:

(Start: 58 @22491 has 152 MA's), (123, 22710), (129, 22731), (144, 22785), (159, 22827), (186, 22887), (221, 22935), (233, 22983), (239, 23013), (259, 23109), (264, 23121), (276, 23160), (326, 23331), (329, 23343),

Gene: LaterM\_28 Start: 23256, Stop: 24269, Start Num: 55

Candidate Starts for LaterM\_28:

(Start: 55 @23256 has 97 MA's), (Start: 90 @23367 has 3 MA's), (123, 23481), (159, 23598), (174, 23640), (183, 23652), (221, 23706), (239, 23784), (259, 23880), (264, 23892), (276, 23931), (290, 24012), (306, 24045), (329, 24114), (351, 24210),

Gene: LeMond\_27 Start: 22583, Stop: 23551, Start Num: 57

Candidate Starts for LeMond\_27:

(Start: 57 @22583 has 4 MA's), (99, 22718), (108, 22745), (110, 22751), (115, 22772), (116, 22778), (128, 22820), (140, 22865), (152, 22907), (159, 22922), (221, 23030), (241, 23114), (326, 23390),

Gene: Lea83\_29 Start: 23930, Stop: 24949, Start Num: 58

Candidate Starts for Lea83\_29:

(13, 23549), (15, 23561), (17, 23597), (19, 23621), (26, 23741), (34, 23840), (42, 23897), (Start: 58 @23930 has 152 MA's), (69, 23963), (99, 24062), (101, 24068), (104, 24080), (119, 24137), (122, 24143), (137, 24203), (159, 24266), (163, 24275), (177, 24311), (188, 24332), (192, 24344), (223, 24383), (239, 24452), (260, 24551), (276, 24599), (283, 24635), (301, 24698), (315, 24740), (329, 24788), (341, 24830), (356, 24926),

Gene: Lebo14\_30 Start: 24599, Stop: 25603, Start Num: 58

Candidate Starts for Lebo14\_30:

(Start: 58 @24599 has 152 MA's), (111, 24767), (114, 24779), (122, 24812), (123, 24818), (137, 24872), (141, 24881), (167, 24962), (177, 24983), (181, 24989), (183, 24992), (239, 25124), (240, 25127), (267, 25250),

Gene: Leston\_27 Start: 24063, Stop: 25130, Start Num: 58

Candidate Starts for Leston\_27:

(Start: 58 @24063 has 152 MA's), (93, 24180), (110, 24237), (122, 24285), (123, 24291), (140, 24348), (141, 24351), (144, 24366), (155, 24393), (168, 24432), (170, 24435), (177, 24447), (178, 24450), (179, 24453), (187, 24468), (211, 24513), (215, 24519), (223, 24573), (235, 24621), (242, 24651), (252, 24696), (280, 24825), (294, 24879),

Gene: LilPharaoh\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for LilPharaoh\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: LilhomieP\_30 Start: 26992, Stop: 28047, Start Num: 58

Candidate Starts for LilhomieP\_30:

(Start: 58 @26992 has 152 MA's), (119, 27205), (130, 27241), (153, 27304), (184, 27376), (195, 27406), (207, 27427), (218, 27463), (223, 27499), (235, 27547), (239, 27568), (241, 27574), (244, 27604), (245, 27607), (256, 27655), (313, 27844), (320, 27865), (337, 27919),

Gene: LindNT\_28 Start: 23290, Stop: 24303, Start Num: 55

Candidate Starts for LindNT\_28:

(44, 23245), (Start: 55 @23290 has 97 MA's), (Start: 90 @23401 has 3 MA's), (123, 23515), (159, 23632), (174, 23674), (183, 23686), (221, 23740), (239, 23818), (255, 23902), (259, 23914), (264, 23926), (276, 23965), (351, 24244),

Gene: Llorens\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Llorens\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Lollipop1437\_50 Start: 36962, Stop: 38023, Start Num: 59

Candidate Starts for Lollipop1437\_50:

(Start: 59 @36962 has 33 MA's), (114, 37148), (175, 37334), (177, 37337), (241, 37547),

Gene: LuckyLeo\_32 Start: 28919, Stop: 29908, Start Num: 74

Candidate Starts for LuckyLeo\_32:

(Start: 51 @28862 has 1 MA's), (Start: 74 @28919 has 1 MA's), (103, 29009), (105, 29018), (108, 29024), (111, 29033), (124, 29087), (191, 29285), (218, 29351), (219, 29363), (235, 29432), (267, 29573), (299, 29681),

Gene: Lunahalos\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Lunahalos\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: MacnCheese\_29 Start: 24319, Stop: 25308, Start Num: 58

Candidate Starts for MacnCheese\_29:

(34, 24199), (42, 24256), (Start: 58 @24319 has 152 MA's), (69, 24352), (99, 24448), (101, 24454), (120, 24526), (167, 24676), (177, 24697), (190, 24724), (240, 24841), (255, 24919), (259, 24931), (260, 24934), (344, 25231),

Gene: Maco6\_23 Start: 20985, Stop: 22013, Start Num: 60

Candidate Starts for Maco6\_23:

(Start: 60 @20985 has 16 MA's), (85, 21075), (111, 21144), (113, 21153), (131, 21231), (154, 21294), (156, 21297), (217, 21441), (221, 21477), (235, 21528), (243, 21585), (314, 21825), (346, 21951),

Gene: Madruga\_36 Start: 31712, Stop: 32752, Start Num: 64

Candidate Starts for Madruga\_36:

(Start: 64 @31712 has 3 MA's), (85, 31790), (111, 31868), (179, 32081), (182, 32087), (217, 32165), (235, 32258), (241, 32285),

Gene: Majeke\_22 Start: 21305, Stop: 22342, Start Num: 58

Candidate Starts for Majeke\_22:

(49, 21281), (Start: 55 @21302 has 97 MA's), (Start: 58 @21305 has 152 MA's), (65, 21329), (107, 21467), (117, 21509), (136, 21578), (161, 21638), (177, 21683), (195, 21728), (221, 21809), (235, 21866), (240, 21890), (264, 21995), (280, 22067), (298, 22112), (349, 22277),

Gene: MakCheese\_24 Start: 21714, Stop: 22658, Start Num: 91

Candidate Starts for MakCheese\_24:

(52, 21606), (91, 21714), (129, 21855), (148, 21927), (162, 21960), (223, 22134), (233, 22173), (235, 22182), (264, 22305), (274, 22338), (287, 22410), (307, 22458), (309, 22461), (329, 22524),

Gene: MalagasyRose\_28 Start: 22698, Stop: 23777, Start Num: 58

Candidate Starts for MalagasyRose\_28:

(Start: 58 @22698 has 152 MA's), (63, 22719), (92, 22812), (104, 22854), (105, 22857), (110, 22872), (123, 22926), (130, 22947), (133, 22965), (155, 23028), (164, 23049), (179, 23088), (191, 23115), (198, 23133), (223, 23211), (228, 23229), (276, 23424), (285, 23484), (332, 23607),

Gene: Malithi\_22 Start: 21221, Stop: 22261, Start Num: 55

Candidate Starts for Malithi\_22:

(49, 21200), (Start: 55 @21221 has 97 MA's), (Start: 58 @21224 has 152 MA's), (65, 21248), (107, 21386), (117, 21428), (136, 21497), (161, 21557), (177, 21602), (195, 21647), (221, 21728), (235, 21785), (240, 21809), (264, 21914), (280, 21986), (298, 22031), (349, 22196),

Gene: Malthus\_30 Start: 24509, Stop: 25513, Start Num: 58

Candidate Starts for Malthus\_30:

(Start: 58 @24509 has 152 MA's), (76, 24578), (111, 24677), (122, 24722), (123, 24728), (137, 24782), (141, 24791), (152, 24827), (167, 24872), (177, 24893), (181, 24899), (183, 24902), (239, 25034), (240, 25037), (267, 25160), (276, 25181), (326, 25352), (347, 25448),

Gene: Mangethe\_22 Start: 21305, Stop: 22342, Start Num: 58

Candidate Starts for Mangethe\_22:

(49, 21281), (Start: 55 @21302 has 97 MA's), (Start: 58 @21305 has 152 MA's), (65, 21329), (107, 21467), (117, 21509), (136, 21578), (161, 21638), (177, 21683), (195, 21728), (221, 21809), (235, 21866), (240, 21890), (264, 21995), (280, 22067), (298, 22112), (349, 22277),

Gene: Marcoliusprime\_25 Start: 21282, Stop: 22277, Start Num: 58

Candidate Starts for Marcoliusprime\_25:

(26, 21099), (34, 21198), (Start: 58 @21282 has 152 MA's), (79, 21363), (87, 21387), (108, 21447), (122, 21501), (123, 21507), (151, 21609), (153, 21612), (171, 21660), (174, 21666), (195, 21708), (221, 21732), (241, 21816), (257, 21900), (276, 21957), (355, 22254),

Gene: MarkPhew\_28 Start: 22462, Stop: 23448, Start Num: 58

Candidate Starts for MarkPhew\_28:

(Start: 58 @22462 has 152 MA's), (88, 22567), (110, 22630), (115, 22651), (116, 22657), (119, 22672), (128, 22699), (144, 22759), (152, 22786), (199, 22891), (240, 22990), (256, 23074), (267, 23113), (322, 23263), (337, 23317), (341, 23332),

Gene: Marshawn\_29 Start: 23145, Stop: 24104, Start Num: 58

Candidate Starts for Marshawn\_29:

(Start: 58 @23145 has 152 MA's), (68, 23175), (105, 23301), (111, 23316), (119, 23355), (128, 23382), (155, 23475), (159, 23484), (174, 23526), (221, 23592), (239, 23670), (240, 23673), (260, 23766), (294, 23874), (310, 23910),

Gene: McMater\_28 Start: 22728, Stop: 23693, Start Num: 55

Candidate Starts for McMater\_28:

(Start: 55 @22728 has 97 MA's), (Start: 59 @22734 has 33 MA's), (104, 22887), (111, 22905), (115, 22923), (123, 22956), (133, 22998), (152, 23058), (159, 23073), (239, 23259), (240, 23262), (254, 23334), (276, 23403), (286, 23451), (297, 23466), (310, 23499), (324, 23538), (351, 23637),

Gene: Mdavu\_24 Start: 22888, Stop: 23895, Start Num: 58

Candidate Starts for Mdavu\_24:

(43, 22837), (47, 22849), (Start: 58 @22888 has 152 MA's), (75, 22948), (99, 23020), (115, 23074), (119, 23095), (159, 23224), (177, 23269), (178, 23272), (220, 23329), (221, 23332), (232, 23377), (240, 23413), (259, 23509), (264, 23521), (292, 23641), (339, 23773),

Gene: MeaningOfLife\_28 Start: 23292, Stop: 24305, Start Num: 55

Candidate Starts for MeaningOfLife\_28:

(9, 22848), (44, 23247), (Start: 55 @23292 has 97 MA's), (Start: 90 @23403 has 3 MA's), (122, 23511), (123, 23517), (159, 23634), (174, 23676), (183, 23688), (221, 23742), (239, 23820), (255, 23904), (259, 23916), (264, 23928), (276, 23967), (306, 24081), (329, 24150),

Gene: Megiddo\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for Megiddo\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: Megsy\_28 Start: 23293, Stop: 24306, Start Num: 55

Candidate Starts for Megsy\_28:

(9, 22849), (44, 23248), (Start: 55 @23293 has 97 MA's), (Start: 90 @23404 has 3 MA's), (123, 23518), (159, 23635), (174, 23677), (183, 23689), (221, 23743), (239, 23821), (255, 23905), (259, 23917), (264, 23929), (276, 23968), (351, 24247),

Gene: MerCougar\_46 Start: 36238, Stop: 37293, Start Num: 59

Candidate Starts for MerCougar\_46:

(42, 36175), (Start: 59 @36238 has 33 MA's), (121, 36451), (177, 36610), (189, 36634), (264, 36922), (347, 37222), (356, 37267),

Gene: Meyran\_29 Start: 27126, Stop: 28187, Start Num: 67

Candidate Starts for Meyran\_29:

(Start: 58 @27099 has 152 MA's), (Start: 67 @27126 has 1 MA's), (119, 27309), (165, 27456), (211, 27561), (229, 27642), (235, 27669), (238, 27684), (251, 27747), (264, 27807), (335, 28044),

Gene: MichelleMyBell\_22 Start: 20029, Stop: 21114, Start Num: 58

Candidate Starts for MichelleMyBell\_22:

(40, 19963), (Start: 58 @20029 has 152 MA's), (107, 20191), (136, 20302), (161, 20362), (177, 20407), (221, 20533), (223, 20542), (235, 20590),

Gene: Milly\_25 Start: 21282, Stop: 22277, Start Num: 58

Candidate Starts for Milly\_25:

(26, 21099), (34, 21198), (Start: 58 @21282 has 152 MA's), (79, 21363), (87, 21387), (108, 21447), (122, 21501), (123, 21507), (151, 21609), (153, 21612), (171, 21660), (174, 21666), (195, 21708), (221, 21732), (241, 21816), (257, 21900), (276, 21957), (355, 22254),

Gene: Miryou\_27 Start: 23918, Stop: 24985, Start Num: 58

Candidate Starts for Miryou\_27:

(Start: 58 @23918 has 152 MA's), (93, 24035), (110, 24092), (122, 24140), (123, 24146), (140, 24203), (141, 24206), (144, 24221), (155, 24248), (168, 24287), (170, 24290), (177, 24302), (178, 24305), (179, 24308), (187, 24323), (211, 24368), (215, 24374), (223, 24428), (235, 24476), (242, 24506), (252, 24551), (280, 24680), (294, 24734),

Gene: MissDaisy\_29 Start: 24351, Stop: 25355, Start Num: 58

Candidate Starts for MissDaisy\_29:

(Start: 58 @24351 has 152 MA's), (111, 24519), (122, 24564), (123, 24570), (137, 24624), (167, 24714), (177, 24735), (183, 24744), (239, 24876), (240, 24879), (267, 25002), (276, 25023), (347, 25290),

Gene: Mitti\_29 Start: 24509, Stop: 25513, Start Num: 58

Candidate Starts for Mitti\_29:

(Start: 58 @24509 has 152 MA's), (111, 24677), (122, 24722), (123, 24728), (137, 24782), (167, 24872), (177, 24893), (183, 24902), (239, 25034), (240, 25037), (254, 25112), (276, 25181), (340, 25391),

Gene: Muddy\_25 Start: 21935, Stop: 22960, Start Num: 60

Candidate Starts for Muddy\_25:

(Start: 60 @21935 has 16 MA's), (85, 22025), (131, 22181), (154, 22244), (156, 22247), (217, 22391), (221, 22427), (235, 22478), (243, 22535), (302, 22733), (314, 22772), (346, 22898),

Gene: Mufasa\_25 Start: 21302, Stop: 22327, Start Num: 58

Candidate Starts for Mufasa\_25:



(34, 21218), (Start: 58 @21302 has 152 MA's), (87, 21407), (108, 21467), (122, 21521), (123, 21527), (145, 21608), (147, 21614), (151, 21629), (153, 21632), (241, 21836), (355, 22295),

Gene: Mulch\_27 Start: 23315, Stop: 24382, Start Num: 60

Candidate Starts for Mulch\_27:

(Start: 60 @23315 has 16 MA's), (123, 23525), (182, 23693), (229, 23834), (232, 23849), (235, 23861), (240, 23885), (255, 23969), (265, 24005), (297, 24116),

Gene: Murucutumbu\_28 Start: 23275, Stop: 24288, Start Num: 55

Candidate Starts for Murucutumbu\_28:

(Start: 55 @23275 has 97 MA's), (Start: 90 @23386 has 3 MA's), (123, 23500), (159, 23617), (174, 23659), (221, 23725), (239, 23803), (240, 23806), (259, 23899), (264, 23911), (267, 23929), (276, 23950), (306, 24064), (329, 24133), (351, 24229),

Gene: Mynx\_28 Start: 23339, Stop: 24352, Start Num: 55

Candidate Starts for Mynx\_28:

(9, 22895), (44, 23294), (Start: 55 @23339 has 97 MA's), (123, 23564), (159, 23681), (174, 23723), (183, 23735), (221, 23789), (239, 23867), (259, 23963), (264, 23975), (273, 24005), (276, 24014), (306, 24128), (329, 24197),

Gene: Nadeem\_27 Start: 23315, Stop: 24382, Start Num: 60

Candidate Starts for Nadeem\_27:

(Start: 60 @23315 has 16 MA's), (123, 23525), (182, 23693), (229, 23834), (232, 23849), (235, 23861), (240, 23885), (255, 23969), (297, 24116),

Gene: NancyRae\_27 Start: 23321, Stop: 24388, Start Num: 60

Candidate Starts for NancyRae\_27:

(Start: 60 @23321 has 16 MA's), (123, 23531), (182, 23699), (229, 23840), (232, 23855), (235, 23867), (240, 23891), (255, 23975), (265, 24011), (297, 24122),

Gene: NatB6\_44 Start: 35025, Stop: 36083, Start Num: 59

Candidate Starts for NatB6\_44:

(1, 33585), (2, 33882), (3, 34113), (6, 34482), (28, 34860), (30, 34875), (33, 34893), (Start: 59 @35025 has 33 MA's), (166, 35370), (188, 35421), (213, 35469),

Gene: Necropolis\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Necropolis\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Neighly\_28 Start: 23877, Stop: 24941, Start Num: 58

Candidate Starts for Neighly\_28:

(Start: 58 @23877 has 152 MA's), (83, 23967), (94, 23997), (110, 24051), (112, 24057), (123, 24105), (133, 24144), (140, 24162), (141, 24165), (168, 24246), (191, 24294), (198, 24312), (240, 24453), (257, 24543), (258, 24546), (259, 24549), (268, 24582), (274, 24594), (291, 24681), (292, 24684), (330, 24780), (353, 24897),

Gene: Nibb\_27 Start: 22603, Stop: 23589, Start Num: 58

Candidate Starts for Nibb\_27:

(Start: 58 @22603 has 152 MA's), (88, 22708), (105, 22759), (110, 22771), (115, 22792), (116, 22798), (119, 22813), (128, 22840), (144, 22900), (152, 22927), (192, 23020), (199, 23032), (237, 23119), (240, 23131), (256, 23215), (267, 23254), (277, 23281), (297, 23350), (322, 23404),

Gene: Nikao\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for Nikao\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Niklas\_28 Start: 22731, Stop: 23696, Start Num: 55

Candidate Starts for Niklas\_28:

(Start: 55 @22731 has 97 MA's), (Start: 59 @22737 has 33 MA's), (104, 22890), (111, 22908), (115, 22926), (123, 22959), (133, 23001), (152, 23061), (159, 23076), (239, 23262), (240, 23265), (254, 23337), (276, 23406), (286, 23454), (297, 23469), (310, 23502), (324, 23541), (351, 23640),

Gene: NosilaM\_48 Start: 35951, Stop: 37006, Start Num: 59

Candidate Starts for NosilaM\_48:

(Start: 59 @35951 has 33 MA's), (121, 36164), (189, 36347), (264, 36635), (356, 36980),

Gene: November\_27 Start: 23730, Stop: 24632, Start Num: 84

Candidate Starts for November\_27:

(14, 23256), (40, 23592), (Start: 55 @23628 has 97 MA's), (84, 23730), (119, 23841), (129, 23874), (159, 23970), (234, 24129), (257, 24243), (302, 24396), (329, 24489),

Gene: NovumRegina\_44 Start: 35355, Stop: 36413, Start Num: 59

Candidate Starts for NovumRegina\_44:

(1, 33915), (2, 34212), (3, 34443), (6, 34812), (28, 35190), (30, 35205), (33, 35223), (Start: 59 @35355 has 33 MA's), (166, 35700), (188, 35751), (213, 35799),

Gene: Nutello\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for Nutello\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Nyceirae\_31 Start: 26839, Stop: 27909, Start Num: 58

Candidate Starts for Nyceirae\_31:

(Start: 58 @26839 has 152 MA's), (81, 26920), (Start: 90 @26944 has 3 MA's), (119, 27049), (133, 27106), (141, 27127), (157, 27175), (211, 27301), (221, 27352), (235, 27409), (238, 27424), (264, 27541),

Gene: OkiRoe\_27 Start: 23934, Stop: 25001, Start Num: 58

Candidate Starts for OkiRoe\_27:

(Start: 58 @23934 has 152 MA's), (93, 24051), (110, 24108), (122, 24156), (123, 24162), (141, 24222), (144, 24237), (155, 24264), (168, 24303), (170, 24306), (177, 24318), (178, 24321), (179, 24324), (187, 24339), (211, 24384), (215, 24390), (223, 24444), (235, 24492), (242, 24522), (252, 24567), (280, 24696), (294, 24750),

Gene: OmniCritical\_29 Start: 24494, Stop: 25498, Start Num: 58

Candidate Starts for OmniCritical\_29:

(Start: 58 @24494 has 152 MA's), (111, 24662), (122, 24707), (123, 24713), (137, 24767), (141, 24776), (167, 24857), (177, 24878), (181, 24884), (183, 24887), (239, 25019), (240, 25022), (267, 25145), (340, 25376),

Gene: Omnicron\_28 Start: 22797, Stop: 23876, Start Num: 58

Candidate Starts for Omnicron\_28:

(Start: 58 @22797 has 152 MA's), (66, 22824), (110, 22971), (112, 22977), (123, 23025), (133, 23064), (140, 23082), (144, 23100), (168, 23166), (187, 23202), (195, 23226), (198, 23232), (227, 23325), (248, 23427), (257, 23472), (274, 23517), (275, 23520), (278, 23538), (281, 23559), (290, 23601), (302, 23619), (332, 23715), (333, 23718), (358, 23859),

Gene: Oscar\_27 Start: 22584, Stop: 23552, Start Num: 57

Candidate Starts for Oscar\_27:

(Start: 57 @22584 has 4 MA's), (108, 22746), (110, 22752), (115, 22773), (116, 22779), (128, 22821), (140, 22866), (152, 22908), (159, 22923), (221, 23031), (241, 23115), (326, 23391),

Gene: Outis\_46 Start: 35932, Stop: 36987, Start Num: 59

Candidate Starts for Outis\_46:

(42, 35869), (Start: 59 @35932 has 33 MA's), (121, 36145), (177, 36304), (189, 36328), (264, 36616), (347, 36916), (356, 36961),

Gene: Padfoot\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Padfoot\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Padpat\_28 Start: 23316, Stop: 24329, Start Num: 55

Candidate Starts for Padpat\_28:

(9, 22872), (44, 23271), (Start: 55 @23316 has 97 MA's), (123, 23541), (159, 23658), (174, 23700), (183, 23712), (221, 23766), (239, 23844), (259, 23940), (264, 23952), (273, 23982), (276, 23991), (306, 24105), (329, 24174),

Gene: Panchino\_21 Start: 20180, Stop: 21217, Start Num: 58

Candidate Starts for Panchino\_21:

(Start: 58 @20180 has 152 MA's), (105, 20336), (107, 20342), (134, 20450), (141, 20468), (177, 20558), (195, 20603), (221, 20684), (240, 20765), (257, 20852), (264, 20870), (280, 20942), (298, 20987), (349, 21152),

Gene: Paola\_27 Start: 23933, Stop: 25000, Start Num: 58

Candidate Starts for Paola\_27:

(Start: 58 @23933 has 152 MA's), (93, 24050), (110, 24107), (122, 24155), (123, 24161), (140, 24218), (141, 24221), (144, 24236), (155, 24263), (168, 24302), (170, 24305), (177, 24317), (178, 24320), (179, 24323), (187, 24338), (211, 24383), (215, 24389), (223, 24443), (235, 24491), (242, 24521), (252, 24566), (280, 24695), (294, 24749),

Gene: Parada\_27 Start: 23315, Stop: 24382, Start Num: 60

Candidate Starts for Parada\_27:

(Start: 60 @23315 has 16 MA's), (123, 23525), (182, 23693), (229, 23834), (232, 23849), (235, 23861), (240, 23885), (255, 23969), (265, 24005), (297, 24116),

Gene: Patience\_38 Start: 32593, Stop: 33633, Start Num: 64

Candidate Starts for Patience\_38:

(Start: 64 @32593 has 3 MA's), (85, 32671), (111, 32749), (179, 32962), (182, 32968), (217, 33046), (235, 33139), (241, 33166),

Gene: Patio\_48 Start: 36198, Stop: 37259, Start Num: 59

Candidate Starts for Patio\_48:

(Start: 59 @36198 has 33 MA's), (114, 36384), (175, 36570), (177, 36573), (241, 36783),

Gene: Patt\_29 Start: 24327, Stop: 25331, Start Num: 58

Candidate Starts for Patt\_29:

(Start: 58 @24327 has 152 MA's), (111, 24495), (122, 24540), (123, 24546), (137, 24600), (167, 24690), (177, 24711), (183, 24720), (239, 24852), (240, 24855), (274, 24993), (285, 25062),

Gene: Peanam\_28 Start: 22728, Stop: 23693, Start Num: 55

Candidate Starts for Peanam\_28:

(Start: 55 @22728 has 97 MA's), (Start: 59 @22734 has 33 MA's), (104, 22887), (111, 22905), (115, 22923), (123, 22956), (133, 22998), (152, 23058), (159, 23073), (183, 23127), (239, 23259), (240, 23262), (254, 23334), (276, 23403), (286, 23451), (297, 23466), (310, 23499), (324, 23538), (351, 23637),

Gene: Peel\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Peel\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: PegLeg\_31 Start: 26991, Stop: 28046, Start Num: 58

Candidate Starts for PegLeg\_31:

(Start: 58 @26991 has 152 MA's), (119, 27204), (130, 27240), (153, 27303), (184, 27375), (195, 27405), (207, 27426), (218, 27462), (223, 27498), (235, 27546), (239, 27567), (241, 27573), (244, 27603), (245, 27606), (256, 27654), (313, 27843), (320, 27864), (337, 27918),

Gene: Phalm\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for Phalm\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: Pharb\_27 Start: 23529, Stop: 24596, Start Num: 54

Candidate Starts for Pharb\_27:

(Start: 54 @23529 has 1 MA's), (69, 23565), (71, 23568), (Start: 90 @23634 has 3 MA's), (99, 23661), (114, 23709), (119, 23736), (123, 23748), (129, 23769), (147, 23835), (183, 23919), (210, 23976), (212, 23979), (239, 24111), (240, 24114), (243, 24147), (250, 24162), (275, 24255), (294, 24345),

Gene: Phayonce\_22 Start: 21448, Stop: 22485, Start Num: 58

Candidate Starts for Phayonce\_22:

(Start: 58 @21448 has 152 MA's), (107, 21610), (119, 21661), (130, 21697), (139, 21724), (161, 21772), (184, 21829), (198, 21865), (239, 22018), (244, 22054), (264, 22126), (302, 22261), (320, 22315), (343, 22393),

Gene: Phegasus\_22 Start: 21305, Stop: 22342, Start Num: 58

Candidate Starts for Phegasus\_22:

(49, 21281), (Start: 55 @21302 has 97 MA's), (Start: 58 @21305 has 152 MA's), (65, 21329), (107, 21467), (117, 21509), (136, 21578), (161, 21638), (177, 21683), (195, 21728), (221, 21809), (235, 21866), (240, 21890), (264, 21995), (280, 22067), (298, 22112), (349, 22277),

Gene: PhelpsODU\_28 Start: 22720, Stop: 23781, Start Num: 58

Candidate Starts for PhelpsODU\_28:

(34, 22630), (42, 22687), (Start: 58 @22720 has 152 MA's), (87, 22819), (119, 22927), (123, 22939), (129, 22960), (159, 23056), (212, 23170), (220, 23221), (243, 23338), (311, 23581), (316, 23599), (329, 23638),

Gene: Phineas\_22 Start: 21670, Stop: 22707, Start Num: 58

Candidate Starts for Phineas\_22:

(Start: 58 @21670 has 152 MA's), (107, 21835), (117, 21877), (134, 21943), (136, 21946), (141, 21961), (177, 22048), (195, 22093), (221, 22174), (235, 22231), (240, 22255), (264, 22360), (280, 22432), (298, 22477),

Gene: Phishy\_30 Start: 26793, Stop: 27842, Start Num: 58

Candidate Starts for Phishy\_30:

(Start: 58 @26793 has 152 MA's), (119, 27003), (141, 27081), (179, 27189), (229, 27339), (231, 27351), (235, 27366), (278, 27543), (301, 27618),

Gene: Phomeo\_43 Start: 35624, Stop: 36682, Start Num: 59

Candidate Starts for Phomeo\_43:

(1, 34184), (2, 34481), (3, 34712), (6, 35081), (28, 35459), (30, 35474), (33, 35492), (Start: 59 @35624 has 33 MA's), (166, 35969), (188, 36020), (213, 36068),

Gene: Phrank\_28 Start: 22670, Stop: 23731, Start Num: 58

Candidate Starts for Phrank\_28:

(Start: 58 @22670 has 152 MA's), (80, 22748), (82, 22751), (87, 22769), (119, 22877), (128, 22904), (129, 22910), (159, 23006), (164, 23018), (212, 23120), (220, 23171), (243, 23288), (311, 23531), (316, 23549), (329, 23588),

Gene: Phrann\_21 Start: 20409, Stop: 21479, Start Num: 55

Candidate Starts for Phrann\_21:

(Start: 55 @20409 has 97 MA's), (Start: 58 @20412 has 152 MA's), (107, 20574), (117, 20616), (136, 20685), (161, 20745), (177, 20790), (195, 20835), (219, 20904), (221, 20916), (235, 20973), (240, 20997), (279, 21168),

Gene: Piatt\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Piatt\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Pimento\_27 Start: 22790, Stop: 23857, Start Num: 58

Candidate Starts for Pimento\_27:

(33, 22655), (Start: 58 @22790 has 152 MA's), (127, 23009), (162, 23111), (177, 23153), (182, 23165), (229, 23309), (235, 23336), (240, 23360), (266, 23483), (288, 23573), (297, 23591),

Gene: Pixie\_28 Start: 23724, Stop: 24788, Start Num: 58

Candidate Starts for Pixie\_28:

(5, 23172), (7, 23238), (10, 23301), (11, 23313), (12, 23334), (16, 23376), (26, 23535), (34, 23634), (42, 23691), (Start: 58 @23724 has 152 MA's), (99, 23856), (101, 23862), (119, 23931), (122, 23937), (137, 23997), (144, 24018), (148, 24033), (181, 24111), (239, 24303), (243, 24339), (255, 24387), (267, 24429), (303, 24555),

Gene: Pleakley\_53 Start: 35398, Stop: 36480, Start Num: 59

Candidate Starts for Pleakley\_53:

(Start: 59 @35398 has 33 MA's), (93, 35515), (158, 35743), (193, 35827), (196, 35833), (216, 35872), (218, 35887), (224, 35929), (260, 36094), (312, 36274), (347, 36412),

Gene: Pokerus\_27 Start: 23273, Stop: 24286, Start Num: 55

Candidate Starts for Pokerus\_27:

(9, 22829), (44, 23228), (Start: 55 @23273 has 97 MA's), (Start: 90 @23384 has 3 MA's), (123, 23498), (159, 23615), (174, 23657), (183, 23669), (221, 23723), (239, 23801), (259, 23897), (264, 23909), (273, 23939), (276, 23948), (306, 24062), (329, 24131),

Gene: Polkaroo\_22 Start: 21315, Stop: 22352, Start Num: 58

Candidate Starts for Polkaroo\_22:

(49, 21291), (Start: 55 @21312 has 97 MA's), (Start: 58 @21315 has 152 MA's), (65, 21339), (107, 21477), (117, 21519), (136, 21588), (161, 21648), (177, 21693), (195, 21738), (221, 21819), (235, 21876), (240, 21900), (264, 22005), (280, 22077), (298, 22122), (349, 22287),

Gene: Prithvi\_28 Start: 23290, Stop: 24303, Start Num: 55

Candidate Starts for Prithvi\_28:

(44, 23245), (Start: 55 @23290 has 97 MA's), (Start: 90 @23401 has 3 MA's), (123, 23515), (159, 23632), (174, 23674), (183, 23686), (221, 23740), (239, 23818), (255, 23902), (259, 23914), (264, 23926), (276, 23965), (351, 24244),

Gene: Psycho\_28 Start: 24008, Stop: 25072, Start Num: 58

Candidate Starts for Psycho\_28:

(Start: 58 @24008 has 152 MA's), (83, 24098), (94, 24128), (110, 24182), (112, 24188), (123, 24236), (133, 24275), (140, 24293), (141, 24296), (168, 24377), (191, 24425), (198, 24443), (240, 24584), (257, 24674), (258, 24677), (259, 24680), (268, 24713), (274, 24725), (291, 24812), (292, 24815), (330, 24911), (353, 25028),

Gene: Purky\_22 Start: 21124, Stop: 22170, Start Num: 58

Candidate Starts for Purky\_22:

(Start: 58 @21124 has 152 MA's), (119, 21337), (161, 21448), (177, 21490), (178, 21493), (209, 21562), (239, 21694), (244, 21730), (275, 21838), (320, 21991), (323, 22000), (328, 22012),

Gene: QuincyRose\_27 Start: 23336, Stop: 24349, Start Num: 55

Candidate Starts for QuincyRose\_27:

(9, 22892), (44, 23291), (Start: 55 @23336 has 97 MA's), (Start: 90 @23447 has 3 MA's), (123, 23561), (159, 23678), (174, 23720), (183, 23732), (200, 23771), (221, 23786), (239, 23864), (255, 23948), (259, 23960), (264, 23972), (276, 24011), (306, 24125), (329, 24194),

Gene: Ramen\_28 Start: 23322, Stop: 24335, Start Num: 55

Candidate Starts for Ramen\_28:

(9, 22878), (44, 23277), (Start: 55 @23322 has 97 MA's), (Start: 90 @23433 has 3 MA's), (123, 23547), (159, 23664), (174, 23706), (183, 23718), (221, 23772), (239, 23850), (259, 23946), (273, 23988), (276, 23997), (306, 24111), (329, 24180),

Gene: Rando14\_28 Start: 22698, Stop: 23777, Start Num: 58

Candidate Starts for Rando14\_28:

(Start: 58 @22698 has 152 MA's), (62, 22716), (94, 22818), (110, 22872), (111, 22875), (112, 22878), (123, 22926), (132, 22962), (133, 22965), (134, 22968), (144, 23001), (187, 23103), (191, 23115), (195, 23127), (198, 23133), (205, 23145), (217, 23166), (231, 23244), (241, 23286), (248, 23328), (257, 23373), (290, 23502),

Gene: Rapunzel97\_28 Start: 23323, Stop: 24336, Start Num: 55

Candidate Starts for Rapunzel97\_28:

(9, 22879), (21, 23026), (44, 23278), (Start: 55 @23323 has 97 MA's), (Start: 90 @23434 has 3 MA's), (123, 23548), (159, 23665), (174, 23707), (183, 23719), (221, 23773), (239, 23851), (259, 23947), (264, 23959), (273, 23989), (276, 23998), (306, 24112), (329, 24181),

Gene: RavenCo17\_26 Start: 23835, Stop: 24911, Start Num: 58

Candidate Starts for RavenCo17\_26:

(33, 23700), (Start: 58 @23835 has 152 MA's), (100, 23973), (119, 24045), (128, 24075), (177, 24225), (182, 24237), (201, 24279), (208, 24291), (221, 24348), (235, 24399), (251, 24471), (274, 24564), (325, 24726), (353, 24867),

Gene: Raymond7\_21 Start: 20415, Stop: 21500, Start Num: 58

Candidate Starts for Raymond7\_21:

(Start: 58 @20415 has 152 MA's), (107, 20577), (136, 20688), (139, 20697), (141, 20703), (161, 20748), (177, 20793), (221, 20919), (223, 20928), (235, 20976),

Gene: Rebel\_21 Start: 19868, Stop: 20905, Start Num: 56

Candidate Starts for Rebel\_21:

(23, 19631), (27, 19673), (29, 19703), (32, 19733), (38, 19793), (50, 19847), (Start: 56 @19868 has 6 MA's), (107, 20030), (117, 20072), (136, 20141), (161, 20201), (177, 20246), (195, 20291), (219, 20360), (235, 20429), (240, 20453), (264, 20558), (280, 20630), (298, 20675),

Gene: RedRaider\_52 Start: 38220, Stop: 39278, Start Num: 59

Candidate Starts for RedRaider\_52:

(Start: 59 @38220 has 33 MA's), (111, 38394), (125, 38448), (186, 38610), (213, 38664), (264, 38907), (347, 39207),

Gene: Reindeer\_30 Start: 26952, Stop: 28001, Start Num: 58

Candidate Starts for Reindeer\_30:

(Start: 58 @26952 has 152 MA's), (72, 26988), (119, 27165), (139, 27228), (140, 27231), (157, 27270), (164, 27285), (185, 27336), (207, 27384), (223, 27453), (235, 27501), (239, 27522), (241, 27528), (244, 27558), (264, 27630), (302, 27765), (320, 27819), (336, 27870), (338, 27876), (343, 27909),

Gene: Reptar3000\_29 Start: 24320, Stop: 25324, Start Num: 58

Candidate Starts for Reptar3000\_29:

(Start: 58 @24320 has 152 MA's), (111, 24488), (122, 24533), (123, 24539), (137, 24593), (141, 24602), (167, 24683), (177, 24704), (183, 24713), (239, 24845), (240, 24848), (274, 24986), (285, 25055), (347, 25259),

Gene: Richo\_28 Start: 22728, Stop: 23693, Start Num: 55

Candidate Starts for Richo\_28:

(Start: 55 @22728 has 97 MA's), (Start: 59 @22734 has 33 MA's), (104, 22887), (111, 22905), (115, 22923), (123, 22956), (133, 22998), (152, 23058), (159, 23073), (239, 23259), (240, 23262), (254, 23334), (276, 23403), (286, 23451), (297, 23466), (310, 23499), (324, 23538), (351, 23637),

Gene: Rosmarinus\_28 Start: 23344, Stop: 24357, Start Num: 55

Candidate Starts for Rosmarinus\_28:

(9, 22900), (44, 23299), (Start: 55 @23344 has 97 MA's), (123, 23569), (159, 23686), (174, 23728), (183, 23740), (221, 23794), (239, 23872), (259, 23968), (273, 24010), (276, 24019), (306, 24133), (329, 24202),

Gene: Rubeelu\_22 Start: 19998, Stop: 21038, Start Num: 56

Candidate Starts for Rubeelu\_22:

(41, 19932), (Start: 56 @19998 has 6 MA's), (105, 20157), (107, 20163), (134, 20271), (136, 20274), (141, 20289), (177, 20379), (195, 20424), (221, 20505), (235, 20562), (240, 20586), (257, 20673), (264, 20691), (280, 20763), (298, 20808), (349, 20973),

Gene: Ruthiejr\_29 Start: 24262, Stop: 25296, Start Num: 56

Candidate Starts for Ruthiejr\_29:

(41, 24196), (Start: 56 @24262 has 6 MA's), (105, 24418), (106, 24421), (117, 24466), (119, 24475), (141, 24550), (177, 24637), (195, 24682), (221, 24763), (235, 24820), (240, 24844), (264, 24949), (280, 25021), (304, 25081), (349, 25231),

Gene: SamScheppers\_27 Start: 24552, Stop: 25625, Start Num: 55

Candidate Starts for SamScheppers\_27:

(Start: 55 @24552 has 97 MA's), (Start: 58 @24555 has 152 MA's), (126, 24795), (136, 24831), (139, 24840), (141, 24846), (161, 24891), (177, 24936), (185, 24954), (195, 24981), (221, 25062), (235, 25119), (240, 25143),

Gene: SamuelLPlaqson\_28 Start: 23284, Stop: 24297, Start Num: 55

Candidate Starts for SamuelLPlaqson\_28:

(44, 23239), (Start: 55 @23284 has 97 MA's), (Start: 90 @23395 has 3 MA's), (123, 23509), (159, 23626), (174, 23668), (183, 23680), (221, 23734), (239, 23812), (259, 23908), (264, 23920), (276, 23959), (282, 23995), (329, 24142), (351, 24238),

Gene: Sbash\_21 Start: 21030, Stop: 22079, Start Num: 58

Candidate Starts for Sbash\_21:

(Start: 58 @21030 has 152 MA's), (107, 21192), (119, 21243), (139, 21306), (184, 21411), (239, 21600), (244, 21636), (264, 21708), (302, 21843), (320, 21897), (343, 21987),

Gene: Scarlett\_27 Start: 22586, Stop: 23545, Start Num: 57

Candidate Starts for Scarlett\_27:

(Start: 57 @22586 has 4 MA's), (108, 22748), (110, 22754), (115, 22775), (116, 22781), (128, 22823), (140, 22868), (152, 22910), (159, 22925), (221, 23033), (241, 23117), (326, 23393),

Gene: Scitech\_21 Start: 20194, Stop: 21228, Start Num: 58

Candidate Starts for Scitech\_21:

(Start: 58 @20194 has 152 MA's), (105, 20350), (107, 20356), (134, 20464), (136, 20467), (141, 20482), (177, 20569), (195, 20614), (221, 20695), (235, 20752), (240, 20776), (264, 20881), (280, 20953), (298, 20998),

Gene: Scuba\_53 Start: 35472, Stop: 36554, Start Num: 59

Candidate Starts for Scuba\_53:

(Start: 59 @35472 has 33 MA's), (93, 35589), (158, 35817), (193, 35901), (196, 35907), (218, 35961), (347, 36486),

Gene: SgtBeansprout\_24 Start: 22900, Stop: 23907, Start Num: 58

Candidate Starts for SgtBeansprout\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Shadow1\_27 Start: 22543, Stop: 23604, Start Num: 58

Candidate Starts for Shadow1\_27:

(34, 22453), (Start: 58 @22543 has 152 MA's), (82, 22624), (87, 22642), (119, 22750), (123, 22762), (129, 22783), (159, 22879), (212, 22993), (220, 23044), (243, 23161), (250, 23176), (264, 23233),



(276, 23272), (329, 23461),

Gene: Shaobing\_28 Start: 22728, Stop: 23693, Start Num: 55

Candidate Starts for Shaobing\_28:

(Start: 55 @22728 has 97 MA's), (Start: 59 @22734 has 33 MA's), (104, 22887), (111, 22905), (115, 22923), (123, 22956), (133, 22998), (152, 23058), (159, 23073), (239, 23259), (240, 23262), (254, 23334), (276, 23403), (286, 23451), (297, 23466), (310, 23499), (324, 23538), (351, 23637),

Gene: ShedlockHolmes\_28 Start: 23930, Stop: 24949, Start Num: 58

Candidate Starts for ShedlockHolmes\_28:

(13, 23549), (15, 23561), (17, 23597), (19, 23621), (26, 23741), (34, 23840), (42, 23897), (Start: 58 @23930 has 152 MA's), (69, 23963), (99, 24062), (101, 24068), (104, 24080), (119, 24137), (122, 24143), (137, 24203), (159, 24266), (163, 24275), (177, 24311), (188, 24332), (192, 24344), (223, 24383), (239, 24452), (260, 24551), (276, 24599), (283, 24635), (301, 24698), (315, 24740), (329, 24788), (341, 24830), (356, 24926),

Gene: ShiaSurprise\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for ShiaSurprise\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (Start: 90 @23467 has 3 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (264, 23992), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Shweta\_21 Start: 20201, Stop: 21238, Start Num: 53

Candidate Starts for Shweta\_21:

(Start: 53 @20201 has 9 MA's), (105, 20357), (107, 20363), (117, 20405), (134, 20471), (136, 20474), (161, 20534), (177, 20579), (195, 20624), (221, 20705), (235, 20762), (240, 20786), (264, 20891), (280, 20963), (298, 21008),

Gene: SirPhilip\_27 Start: 22229, Stop: 23257, Start Num: 58

Candidate Starts for SirPhilip\_27:

(Start: 58 @22229 has 152 MA's), (111, 22400), (115, 22418), (128, 22466), (144, 22526), (159, 22568), (166, 22586), (174, 22610), (200, 22661), (223, 22685), (236, 22742), (240, 22757), (254, 22829), (276, 22898),

Gene: Skinny\_32 Start: 27432, Stop: 28493, Start Num: 58

Candidate Starts for Skinny\_32:

(Start: 58 @27432 has 152 MA's), (70, 27468), (79, 27510), (110, 27600), (115, 27621), (122, 27648), (139, 27711), (169, 27801), (176, 27813), (180, 27822), (201, 27867), (223, 27933), (240, 28005), (257, 28095), (264, 28113), (290, 28230), (297, 28242), (330, 28332),

Gene: SkinnyPete\_21 Start: 20204, Stop: 21241, Start Num: 58

Candidate Starts for SkinnyPete\_21:

(Start: 58 @20204 has 152 MA's), (105, 20360), (107, 20366), (134, 20474), (141, 20492), (177, 20582), (195, 20627), (221, 20708), (240, 20789), (257, 20876), (264, 20894), (280, 20966), (298, 21011), (349, 21176),

Gene: Skysand\_47 Start: 36418, Stop: 37479, Start Num: 59

Candidate Starts for Skysand\_47:

(Start: 59 @36418 has 33 MA's), (114, 36604), (175, 36790), (177, 36793), (241, 37003),

Gene: Slarp\_29 Start: 24596, Stop: 25600, Start Num: 58

Candidate Starts for Slarp\_29:

(Start: 58 @24596 has 152 MA's), (111, 24764), (122, 24809), (123, 24815), (137, 24869), (141, 24878), (167, 24959), (177, 24980), (181, 24986), (183, 24989), (239, 25121), (240, 25124), (267, 25247),

Gene: SlimJimmy\_30 Start: 26975, Stop: 28030, Start Num: 58

Candidate Starts for SlimJimmy\_30:

(Start: 58 @26975 has 152 MA's), (119, 27188), (130, 27224), (153, 27287), (184, 27359), (195, 27389), (207, 27410), (218, 27446), (223, 27482), (235, 27530), (239, 27551), (241, 27557), (244, 27587), (245, 27590), (256, 27638), (320, 27848), (337, 27902),

Gene: Slimphazie\_28 Start: 23323, Stop: 24336, Start Num: 55

Candidate Starts for Slimphazie\_28:

(9, 22879), (21, 23026), (44, 23278), (Start: 55 @23323 has 97 MA's), (Start: 90 @23434 has 3 MA's), (123, 23548), (159, 23665), (174, 23707), (183, 23719), (221, 23773), (239, 23851), (259, 23947), (264, 23959), (273, 23989), (276, 23998), (306, 24112), (329, 24181),

Gene: SoSeph\_27 Start: 24081, Stop: 25148, Start Num: 58

Candidate Starts for SoSeph\_27:

(Start: 58 @24081 has 152 MA's), (93, 24198), (110, 24255), (122, 24303), (123, 24309), (140, 24366), (141, 24369), (144, 24384), (155, 24411), (168, 24450), (170, 24453), (177, 24465), (178, 24468), (179, 24471), (187, 24486), (211, 24531), (215, 24537), (223, 24591), (235, 24639), (242, 24669), (252, 24714), (280, 24843), (294, 24897),

Gene: Sonah\_22 Start: 21289, Stop: 22326, Start Num: 58

Candidate Starts for Sonah\_22:

(49, 21265), (Start: 55 @21286 has 97 MA's), (Start: 58 @21289 has 152 MA's), (65, 21313), (107, 21451), (117, 21493), (136, 21562), (161, 21622), (177, 21667), (195, 21712), (221, 21793), (235, 21850), (240, 21874), (264, 21979), (280, 22051), (298, 22096), (349, 22261),

Gene: Sparky\_21 Start: 21885, Stop: 22931, Start Num: 58

Candidate Starts for Sparky\_21:

(Start: 58 @21885 has 152 MA's), (119, 22098), (122, 22104), (161, 22209), (177, 22251), (178, 22254), (209, 22323), (239, 22455), (244, 22491), (275, 22599), (320, 22752), (323, 22761), (328, 22773),

Gene: Spock\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Spock\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: StarStruck\_46 Start: 35932, Stop: 36987, Start Num: 59

Candidate Starts for StarStruck\_46:

(42, 35869), (Start: 59 @35932 has 33 MA's), (121, 36145), (177, 36304), (189, 36328), (264, 36616), (347, 36916), (356, 36961),

Gene: StevieRay\_22 Start: 21290, Stop: 22327, Start Num: 58

Candidate Starts for StevieRay\_22:

(49, 21266), (Start: 55 @21287 has 97 MA's), (Start: 58 @21290 has 152 MA's), (65, 21314), (107, 21452), (117, 21494), (136, 21563), (161, 21623), (177, 21668), (195, 21713), (221, 21794), (235, 21851), (240, 21875), (264, 21980), (280, 22052), (298, 22097), (349, 22262),

Gene: Stinson\_29 Start: 23565, Stop: 24578, Start Num: 55

Candidate Starts for Stinson\_29:

(Start: 55 @23565 has 97 MA's), (Start: 90 @23676 has 3 MA's), (123, 23790), (159, 23907), (174, 23949), (221, 24015), (223, 24024), (239, 24093), (259, 24189), (264, 24201), (306, 24354), (329, 24423), (351, 24519),

Gene: StressBall\_22 Start: 21561, Stop: 22601, Start Num: 53

Candidate Starts for StressBall\_22:

(Start: 53 @21561 has 9 MA's), (105, 21720), (107, 21726), (117, 21768), (134, 21834), (136, 21837), (161, 21897), (177, 21942), (195, 21987), (221, 22068), (235, 22125), (240, 22149), (264, 22254), (280, 22326), (298, 22371),

Gene: Strobilo\_25 Start: 21282, Stop: 22277, Start Num: 58

Candidate Starts for Strobilo\_25:

(34, 21198), (Start: 58 @21282 has 152 MA's), (79, 21363), (87, 21387), (108, 21447), (122, 21501), (123, 21507), (151, 21609), (153, 21612), (171, 21660), (174, 21666), (220, 21729), (221, 21732), (231, 21774), (241, 21816), (257, 21900), (276, 21957), (355, 22254),

Gene: Sukkupi\_46 Start: 34612, Stop: 35703, Start Num: 59

Candidate Starts for Sukkupi\_46:

(Start: 59 @34612 has 33 MA's), (71, 34645), (97, 34741), (146, 34924), (169, 34993), (222, 35131), (224, 35143), (225, 35146),

Gene: Sulley\_28 Start: 23289, Stop: 24302, Start Num: 55

Candidate Starts for Sulley\_28:

(Start: 55 @23289 has 97 MA's), (Start: 90 @23400 has 3 MA's), (123, 23514), (159, 23631), (183, 23685), (221, 23739), (239, 23817), (259, 23913), (264, 23925), (273, 23955), (276, 23964), (306, 24078), (329, 24147),

Gene: Sunflower1121\_27 Start: 22555, Stop: 23616, Start Num: 58

Candidate Starts for Sunflower1121\_27:

(34, 22465), (Start: 58 @22555 has 152 MA's), (82, 22636), (87, 22654), (119, 22762), (123, 22774), (129, 22795), (159, 22891), (212, 23005), (220, 23056), (243, 23173), (264, 23245), (276, 23284), (305, 23404), (329, 23473),

Gene: SuperSulley\_46 Start: 36118, Stop: 37173, Start Num: 59

Candidate Starts for SuperSulley\_46:

(Start: 59 @36118 has 33 MA's), (121, 36331), (189, 36514), (264, 36802), (356, 37147),

Gene: Syra333\_28 Start: 22645, Stop: 23640, Start Num: 58

Candidate Starts for Syra333\_28:

(34, 22555), (Start: 58 @22645 has 152 MA's), (87, 22744), (Start: 90 @22750 has 3 MA's), (131, 22900), (159, 22981), (239, 23167), (240, 23170), (256, 23254), (259, 23263), (270, 23299), (318, 23449), (354, 23599), (356, 23617),

Gene: TBond007\_28 Start: 23723, Stop: 24787, Start Num: 58

Candidate Starts for TBond007\_28:

(5, 23171), (7, 23237), (10, 23300), (12, 23333), (16, 23375), (26, 23534), (34, 23633), (42, 23690), (Start: 58 @23723 has 152 MA's), (99, 23855), (101, 23861), (119, 23930), (122, 23936), (137, 23996), (144, 24017), (148, 24032), (181, 24110), (239, 24302), (243, 24338), (255, 24386), (267, 24428), (303, 24554),

Gene: TClif\_28 Start: 22714, Stop: 23739, Start Num: 58

Candidate Starts for TClif\_28:

(Start: 58 @22714 has 152 MA's), (84, 22813), (87, 22816), (108, 22876), (118, 22921), (129, 22957), (153, 23041), (171, 23089), (223, 23173), (229, 23197), (240, 23248), (255, 23329), (334, 23581), (341, 23620), (356, 23716),

Gene: TM4\_25 Start: 21422, Stop: 22426, Start Num: 58

Candidate Starts for TM4\_25:

(Start: 58 @21422 has 152 MA's), (87, 21527), (108, 21587), (111, 21596), (122, 21641), (123, 21647), (137, 21701), (155, 21755), (181, 21815), (195, 21848), (221, 21872), (240, 21953), (241, 21956), (257, 22040), (267, 22076), (355, 22403),

Gene: Tachez\_28 Start: 23285, Stop: 24298, Start Num: 55

Candidate Starts for Tachez\_28:

(9, 22841), (21, 22988), (44, 23240), (Start: 55 @23285 has 97 MA's), (Start: 90 @23396 has 3 MA's), (123, 23510), (159, 23627), (174, 23669), (183, 23681), (221, 23735), (239, 23813), (259, 23909), (264, 23921), (273, 23951), (276, 23960), (306, 24074), (329, 24143),

Gene: TaiwanKao\_29 Start: 23407, Stop: 24309, Start Num: 90

Candidate Starts for TaiwanKao\_29:

(44, 23251), (Start: 55 @23296 has 97 MA's), (Start: 90 @23407 has 3 MA's), (123, 23521), (159, 23638), (174, 23680), (183, 23692), (221, 23746), (239, 23824), (255, 23908), (259, 23920), (264, 23932), (276, 23971), (297, 24061), (351, 24250),

Gene: Taquito\_27 Start: 24633, Stop: 25676, Start Num: 55

Candidate Starts for Taquito\_27:

(Start: 55 @24633 has 97 MA's), (Start: 58 @24636 has 152 MA's), (126, 24876), (136, 24912), (139, 24921), (141, 24927), (161, 24972), (177, 25017), (185, 25035), (195, 25062), (221, 25143), (235, 25200), (240, 25224), (264, 25329), (280, 25401), (298, 25446),

Gene: Techage\_22 Start: 21290, Stop: 22327, Start Num: 58

Candidate Starts for Techage\_22:

(49, 21266), (Start: 55 @21287 has 97 MA's), (Start: 58 @21290 has 152 MA's), (65, 21314), (107, 21452), (117, 21494), (136, 21563), (161, 21623), (177, 21668), (195, 21713), (221, 21794), (235, 21851), (240, 21875), (264, 21980), (280, 22052), (298, 22097), (349, 22262),

Gene: Teejan\_24 Start: 22861, Stop: 23907, Start Num: 47

Candidate Starts for Teejan\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Thespis\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Thespis\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: ThulaThula\_22 Start: 21454, Stop: 22491, Start Num: 58

Candidate Starts for ThulaThula\_22:

(Start: 58 @21454 has 152 MA's), (107, 21616), (119, 21667), (130, 21703), (139, 21730), (161, 21778), (184, 21835), (198, 21871), (239, 22024), (244, 22060), (264, 22132), (302, 22267), (320, 22321), (343, 22399),

Gene: Thyatira\_27 Start: 23933, Stop: 25000, Start Num: 58

Candidate Starts for Thyatira\_27:

(Start: 58 @23933 has 152 MA's), (93, 24050), (110, 24107), (122, 24155), (123, 24161), (140, 24218), (141, 24221), (144, 24236), (155, 24263), (168, 24302), (170, 24305), (177, 24317), (178, 24320), (179, 24323), (187, 24338), (211, 24383), (215, 24389), (223, 24443), (235, 24491), (242, 24521), (252, 24566), (280, 24695), (294, 24749), (316, 24794),

Gene: Tierra\_28 Start: 23391, Stop: 24452, Start Num: 58

Candidate Starts for Tierra\_28:

(Start: 58 @23391 has 152 MA's), (80, 23469), (82, 23472), (87, 23490), (102, 23532), (119, 23598), (129, 23631), (159, 23727), (164, 23739), (212, 23841), (220, 23892), (243, 24009), (311, 24252), (316, 24270), (329, 24309),

Gene: Tillicus\_33 Start: 28456, Stop: 29502, Start Num: 51

Candidate Starts for Tillicus\_33:

(Start: 51 @28456 has 1 MA's), (Start: 74 @28513 has 1 MA's), (103, 28603), (105, 28612), (108, 28618), (111, 28627), (124, 28681), (198, 28897), (204, 28906), (218, 28945), (219, 28957), (235, 29026), (260, 29140), (267, 29167), (299, 29275),

Gene: TingHuaYa\_28 Start: 22494, Stop: 23501, Start Num: 58

Candidate Starts for TingHuaYa\_28:

(Start: 58 @22494 has 152 MA's), (86, 22593), (123, 22713), (129, 22734), (159, 22830), (221, 22938), (239, 23016), (259, 23112), (264, 23124), (276, 23163), (326, 23334), (329, 23346),

Gene: TiniBug\_28 Start: 23281, Stop: 24294, Start Num: 55

Candidate Starts for TiniBug\_28:

(44, 23236), (Start: 55 @23281 has 97 MA's), (Start: 90 @23392 has 3 MA's), (123, 23506), (159, 23623), (183, 23677), (221, 23731), (239, 23809), (259, 23905), (264, 23917), (276, 23956), (282, 23992), (303, 24061), (329, 24139), (351, 24235),

Gene: Tiri\_28 Start: 23328, Stop: 24341, Start Num: 55

Candidate Starts for Tiri\_28:

(9, 22884), (44, 23283), (Start: 55 @23328 has 97 MA's), (Start: 90 @23439 has 3 MA's), (123, 23553), (159, 23670), (174, 23712), (183, 23724), (221, 23778), (239, 23856), (255, 23940), (259, 23952), (264, 23964), (276, 24003), (306, 24117), (329, 24186),

Gene: Topper\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Topper\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: Torres\_24 Start: 23086, Stop: 23907, Start Num: 115

Candidate Starts for Torres\_24:

(43, 22849), (47, 22861), (Start: 58 @22900 has 152 MA's), (75, 22960), (99, 23032), (115, 23086), (119, 23107), (159, 23236), (177, 23281), (178, 23284), (220, 23341), (221, 23344), (232, 23389), (240, 23425), (259, 23521), (264, 23533), (292, 23653), (339, 23785),

Gene: Tortellini\_22 Start: 21866, Stop: 22936, Start Num: 58

Candidate Starts for Tortellini\_22:

(Start: 58 @21866 has 152 MA's), (126, 22106), (136, 22142), (139, 22151), (141, 22157), (161, 22202), (177, 22247), (185, 22265), (195, 22292), (221, 22373), (240, 22454), (275, 22592), (276, 22595),

Gene: Towmatter\_37 Start: 34440, Stop: 35507, Start Num: 58

Candidate Starts for Towmatter\_37:

(Start: 58 @34440 has 152 MA's), (165, 34785), (182, 34830), (194, 34860), (269, 35151), (272, 35157), (277, 35175), (288, 35241), (289, 35244), (302, 35262), (317, 35310), (359, 35496),

Gene: Tracker\_44 Start: 34752, Stop: 35810, Start Num: 59

Candidate Starts for Tracker\_44:

(1, 33312), (2, 33609), (3, 33840), (6, 34209), (28, 34587), (30, 34602), (33, 34620), (Start: 59 @34752 has 33 MA's), (166, 35097), (188, 35148), (213, 35196),

Gene: TreyKay\_28 Start: 23290, Stop: 24303, Start Num: 55

Candidate Starts for TreyKay\_28:

(44, 23245), (Start: 55 @23290 has 97 MA's), (Start: 90 @23401 has 3 MA's), (123, 23515), (159, 23632), (174, 23674), (183, 23686), (221, 23740), (239, 23818), (255, 23902), (259, 23914), (264, 23926), (276, 23965), (351, 24244),

Gene: TribbleTrouble\_27 Start: 23874, Stop: 24935, Start Num: 58

Candidate Starts for TribbleTrouble\_27:

(34, 23769), (Start: 58 @23874 has 152 MA's), (69, 23907), (78, 23946), (97, 23997), (99, 24006), (108, 24033), (119, 24081), (137, 24147), (148, 24183), (153, 24198), (162, 24216), (163, 24219), (167, 24234), (210, 24321), (243, 24492), (329, 24792),

Gene: TruffulaTree\_28 Start: 23319, Stop: 24332, Start Num: 55

Candidate Starts for TruffulaTree\_28:

(9, 22875), (44, 23274), (Start: 55 @23319 has 97 MA's), (123, 23544), (159, 23661), (174, 23703), (183, 23715), (221, 23769), (239, 23847), (259, 23943), (264, 23955), (273, 23985), (276, 23994), (306, 24108), (329, 24177),

Gene: Twitch\_28 Start: 23356, Stop: 24369, Start Num: 55

Candidate Starts for Twitch\_28:

(9, 22912), (44, 23311), (Start: 55 @23356 has 97 MA's), (123, 23581), (159, 23698), (174, 23740), (183, 23752), (221, 23806), (239, 23884), (259, 23980), (273, 24022), (276, 24031), (306, 24145), (329, 24214),

Gene: TyDawg\_31 Start: 26992, Stop: 28047, Start Num: 58

Candidate Starts for TyDawg\_31:

(Start: 58 @26992 has 152 MA's), (119, 27205), (130, 27241), (153, 27304), (184, 27376), (195, 27406), (207, 27427), (218, 27463), (223, 27499), (235, 27547), (239, 27568), (241, 27574), (244, 27604), (245, 27607), (256, 27655), (313, 27844), (320, 27865), (337, 27919),

Gene: Typha\_28 Start: 26025, Stop: 27062, Start Num: 58

Candidate Starts for Typha\_28:

(Start: 58 @26025 has 152 MA's), (96, 26148), (112, 26202), (119, 26238), (139, 26301), (161, 26349), (182, 26403), (184, 26406), (239, 26592), (244, 26628), (254, 26670), (259, 26688), (276, 26739),

Gene: Unicorn\_28 Start: 22720, Stop: 23781, Start Num: 58

Candidate Starts for Unicorn\_28:

(34, 22630), (42, 22687), (Start: 58 @22720 has 152 MA's), (87, 22819), (119, 22927), (123, 22939), (129, 22960), (159, 23056), (212, 23170), (220, 23221), (243, 23338), (311, 23581), (316, 23599), (329, 23638),

Gene: Urkel\_28 Start: 23284, Stop: 24297, Start Num: 55

Candidate Starts for Urkel\_28:

(44, 23239), (Start: 55 @23284 has 97 MA's), (Start: 90 @23395 has 3 MA's), (123, 23509), (159, 23626), (174, 23668), (183, 23680), (221, 23734), (239, 23812), (259, 23908), (264, 23920), (276, 23959), (282, 23995), (329, 24142), (351, 24238),

Gene: Validus\_28 Start: 22666, Stop: 23631, Start Num: 55

Candidate Starts for Validus\_28:

(46, 22630), (Start: 55 @22666 has 97 MA's), (Start: 59 @22672 has 33 MA's), (Start: 90 @22780 has 3 MA's), (99, 22807), (115, 22861), (133, 22936), (166, 23029), (190, 23083), (239, 23197), (240, 23200), (257, 23284), (276, 23341), (289, 23395), (310, 23437), (324, 23476),

Gene: Veliki\_28 Start: 23359, Stop: 24372, Start Num: 55

Candidate Starts for Veliki\_28:

(9, 22915), (21, 23062), (44, 23314), (Start: 55 @23359 has 97 MA's), (Start: 90 @23470 has 3 MA's), (123, 23584), (159, 23701), (174, 23743), (183, 23755), (221, 23809), (239, 23887), (259, 23983), (264, 23995), (273, 24025), (276, 24034), (306, 24148), (329, 24217),

Gene: Venti\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Venti\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Vidya\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Vidya\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: ViviJ\_26 Start: 23840, Stop: 24904, Start Num: 58

Candidate Starts for ViviJ\_26:

(Start: 58 @23840 has 152 MA's), (83, 23930), (93, 23957), (112, 24020), (123, 24068), (133, 24107), (140, 24125), (155, 24170), (168, 24209), (191, 24257), (198, 24275), (223, 24350), (240, 24416), (257, 24506), (258, 24509), (259, 24512), (268, 24545), (291, 24644), (292, 24647), (327, 24731), (330, 24743), (353, 24860),

Gene: Vordorf\_31 Start: 26927, Stop: 27976, Start Num: 53

Candidate Starts for Vordorf\_31:

(Start: 53 @26927 has 9 MA's), (109, 27092), (119, 27137), (141, 27215), (182, 27329), (211, 27392), (221, 27443), (229, 27473), (235, 27500), (307, 27776),

Gene: Waterfoul\_27 Start: 23954, Stop: 25021, Start Num: 58

Candidate Starts for Waterfoul\_27:

(Start: 58 @23954 has 152 MA's), (93, 24071), (122, 24176), (123, 24182), (141, 24242), (144, 24257), (155, 24284), (168, 24323), (170, 24326), (177, 24338), (178, 24341), (179, 24344), (187, 24359), (211, 24404), (215, 24410), (223, 24464), (235, 24512), (242, 24542), (252, 24587), (280, 24716), (294, 24770),

Gene: WheatThin\_27 Start: 23315, Stop: 24382, Start Num: 60

Candidate Starts for WheatThin\_27:

(Start: 60 @23315 has 16 MA's), (123, 23525), (182, 23693), (229, 23834), (232, 23849), (235, 23861), (240, 23885), (255, 23969), (297, 24116),

Gene: Wheezy\_44 Start: 34957, Stop: 36015, Start Num: 59

Candidate Starts for Wheezy\_44:

(1, 33517), (2, 33814), (3, 34045), (6, 34414), (28, 34792), (30, 34807), (33, 34825), (Start: 59 @34957 has 33 MA's), (166, 35302), (188, 35353), (213, 35401),

Gene: WhoseManz\_46 Start: 32658, Stop: 33761, Start Num: 59

Candidate Starts for WhoseManz\_46:

(Start: 59 @32658 has 33 MA's), (71, 32691), (97, 32787), (146, 32970), (222, 33177), (223, 33186), (239, 33255), (240, 33258), (255, 33342), (272, 33393), (296, 33495), (323, 33579), (325, 33588), (326, 33591),

Gene: Willsammy\_22 Start: 21571, Stop: 22605, Start Num: 58

Candidate Starts for Willsammy\_22:

(Start: 58 @21571 has 152 MA's), (105, 21727), (107, 21733), (134, 21841), (136, 21844), (141, 21859), (177, 21946), (195, 21991), (221, 22072), (235, 22129), (240, 22153), (264, 22258), (280, 22330), (298, 22375),

Gene: Wintermute\_29 Start: 24585, Stop: 25589, Start Num: 58

Candidate Starts for Wintermute\_29:

(Start: 58 @24585 has 152 MA's), (76, 24654), (111, 24753), (122, 24798), (137, 24858), (141, 24867), (152, 24903), (167, 24948), (177, 24969), (181, 24975), (183, 24978), (239, 25110), (240, 25113), (267, 25236), (276, 25257), (347, 25524),

Gene: Xavia\_22 Start: 21888, Stop: 22955, Start Num: 58

Candidate Starts for Xavia\_22:

(Start: 58 @21888 has 152 MA's), (107, 22050), (117, 22092), (136, 22161), (161, 22221), (177, 22266), (185, 22284), (195, 22311), (221, 22392), (235, 22449), (240, 22473), (279, 22644),

Gene: Xeno\_21 Start: 20200, Stop: 21240, Start Num: 53

Candidate Starts for Xeno\_21:

(Start: 53 @20200 has 9 MA's), (107, 20365), (117, 20407), (136, 20476), (161, 20536), (177, 20581), (195, 20626), (221, 20707), (235, 20764), (240, 20788), (264, 20893), (280, 20965), (298, 21010),

Gene: Ximenita\_29 Start: 22823, Stop: 23818, Start Num: 58

Candidate Starts for Ximenita\_29:

(34, 22733), (Start: 58 @22823 has 152 MA's), (87, 22922), (Start: 90 @22928 has 3 MA's), (131, 23078), (159, 23159), (239, 23345), (240, 23348), (256, 23432), (318, 23627), (352, 23756), (354, 23777), (356, 23795),

Gene: Y10\_29 Start: 24585, Stop: 25589, Start Num: 58

Candidate Starts for Y10\_29:

(Start: 58 @24585 has 152 MA's), (76, 24654), (111, 24753), (122, 24798), (123, 24804), (137, 24858), (141, 24867), (152, 24903), (167, 24948), (177, 24969), (181, 24975), (183, 24978), (239, 25110), (240, 25113), (267, 25236), (276, 25257), (347, 25524),

Gene: Y2\_29 Start: 24585, Stop: 25589, Start Num: 58

Candidate Starts for Y2\_29:

(Start: 58 @24585 has 152 MA's), (76, 24654), (111, 24753), (122, 24798), (123, 24804), (137, 24858), (141, 24867), (152, 24903), (167, 24948), (177, 24969), (181, 24975), (183, 24978), (239, 25110), (240, 25113), (267, 25236), (276, 25257), (347, 25524),

Gene: Yndexa\_46 Start: 34612, Stop: 35703, Start Num: 59

Candidate Starts for Yndexa\_46:



(Start: 59 @34612 has 33 MA's), (71, 34645), (97, 34741), (146, 34924), (169, 34993), (222, 35131), (224, 35143), (225, 35146),

Gene: YoureAdopted\_27 Start: 23292, Stop: 24305, Start Num: 55

Candidate Starts for YoureAdopted\_27:

(9, 22848), (21, 22995), (44, 23247), (Start: 55 @23292 has 97 MA's), (Start: 90 @23403 has 3 MA's), (123, 23517), (159, 23634), (174, 23676), (183, 23688), (221, 23742), (239, 23820), (259, 23916), (264, 23928), (273, 23958), (276, 23967), (280, 24000), (306, 24081), (329, 24150),

Gene: Yuna\_29 Start: 23206, Stop: 24168, Start Num: 55

Candidate Starts for Yuna\_29:

(Start: 55 @23206 has 97 MA's), (135, 23476), (138, 23485), (147, 23518), (150, 23530), (155, 23539), (166, 23566), (229, 23689), (240, 23740), (254, 23809), (260, 23830), (302, 23950),

Gene: Yunkel11\_28 Start: 22542, Stop: 23603, Start Num: 55

Candidate Starts for Yunkel11\_28:

(Start: 55 @22542 has 97 MA's), (Start: 90 @22656 has 3 MA's), (123, 22770), (129, 22791), (155, 22878), (164, 22899), (166, 22905), (226, 23013), (239, 23073), (261, 23193), (262, 23199), (263, 23205), (280, 23295), (321, 23421), (325, 23436),

Gene: Zabiza\_28 Start: 23323, Stop: 24336, Start Num: 55

Candidate Starts for Zabiza\_28:

(9, 22879), (21, 23026), (44, 23278), (Start: 55 @23323 has 97 MA's), (Start: 90 @23434 has 3 MA's), (123, 23548), (159, 23665), (174, 23707), (183, 23719), (221, 23773), (239, 23851), (259, 23947), (264, 23959), (273, 23989), (276, 23998), (306, 24112), (329, 24181),

Gene: Zavala\_28 Start: 23298, Stop: 24311, Start Num: 55

Candidate Starts for Zavala\_28:

(9, 22854), (44, 23253), (Start: 55 @23298 has 97 MA's), (123, 23523), (159, 23640), (174, 23682), (183, 23694), (221, 23748), (239, 23826), (259, 23922), (264, 23934), (273, 23964), (276, 23973), (306, 24087), (329, 24156),

Gene: Zilizebeth\_22 Start: 21299, Stop: 22336, Start Num: 58

Candidate Starts for Zilizebeth\_22:

(49, 21275), (Start: 55 @21296 has 97 MA's), (Start: 58 @21299 has 152 MA's), (65, 21323), (107, 21461), (117, 21503), (136, 21572), (161, 21632), (177, 21677), (195, 21722), (221, 21803), (235, 21860), (240, 21884), (264, 21989), (280, 22061), (298, 22106), (349, 22271),

Gene: Zodiariah\_22 Start: 21904, Stop: 22950, Start Num: 58

Candidate Starts for Zodiariah\_22:

(Start: 58 @21904 has 152 MA's), (91, 22009), (119, 22114), (173, 22288), (175, 22291), (235, 22474), (274, 22630), (287, 22702), (307, 22750), (309, 22753), (322, 22786),

Gene: ZoeJ\_25 Start: 21223, Stop: 22245, Start Num: 58

Candidate Starts for ZoeJ\_25:

(26, 21040), (34, 21139), (Start: 58 @21223 has 152 MA's), (87, 21325), (105, 21379), (108, 21385), (122, 21439), (123, 21445), (125, 21448), (145, 21526), (151, 21547), (153, 21550), (174, 21604), (241, 21754), (355, 22213), (356, 22222),