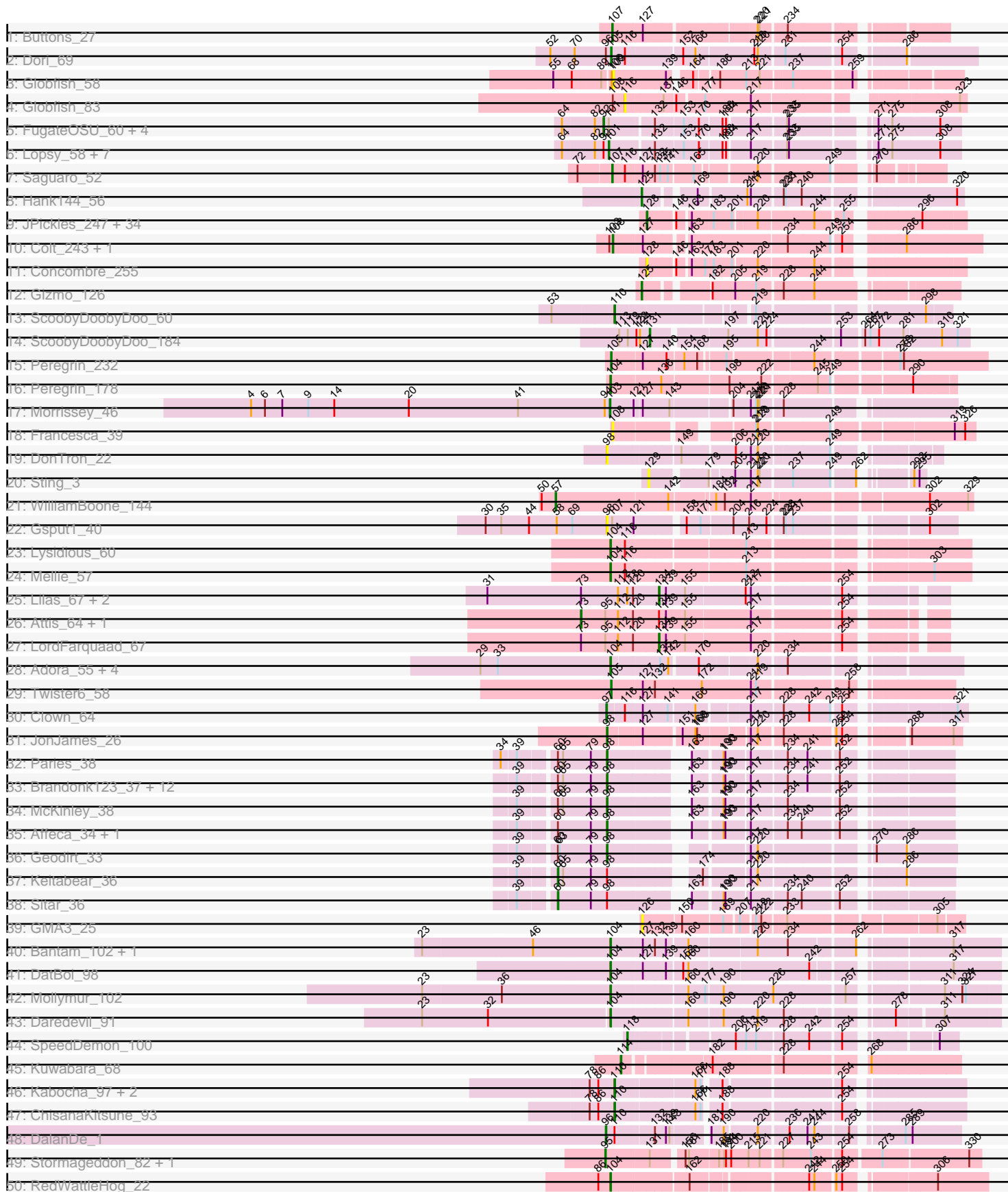
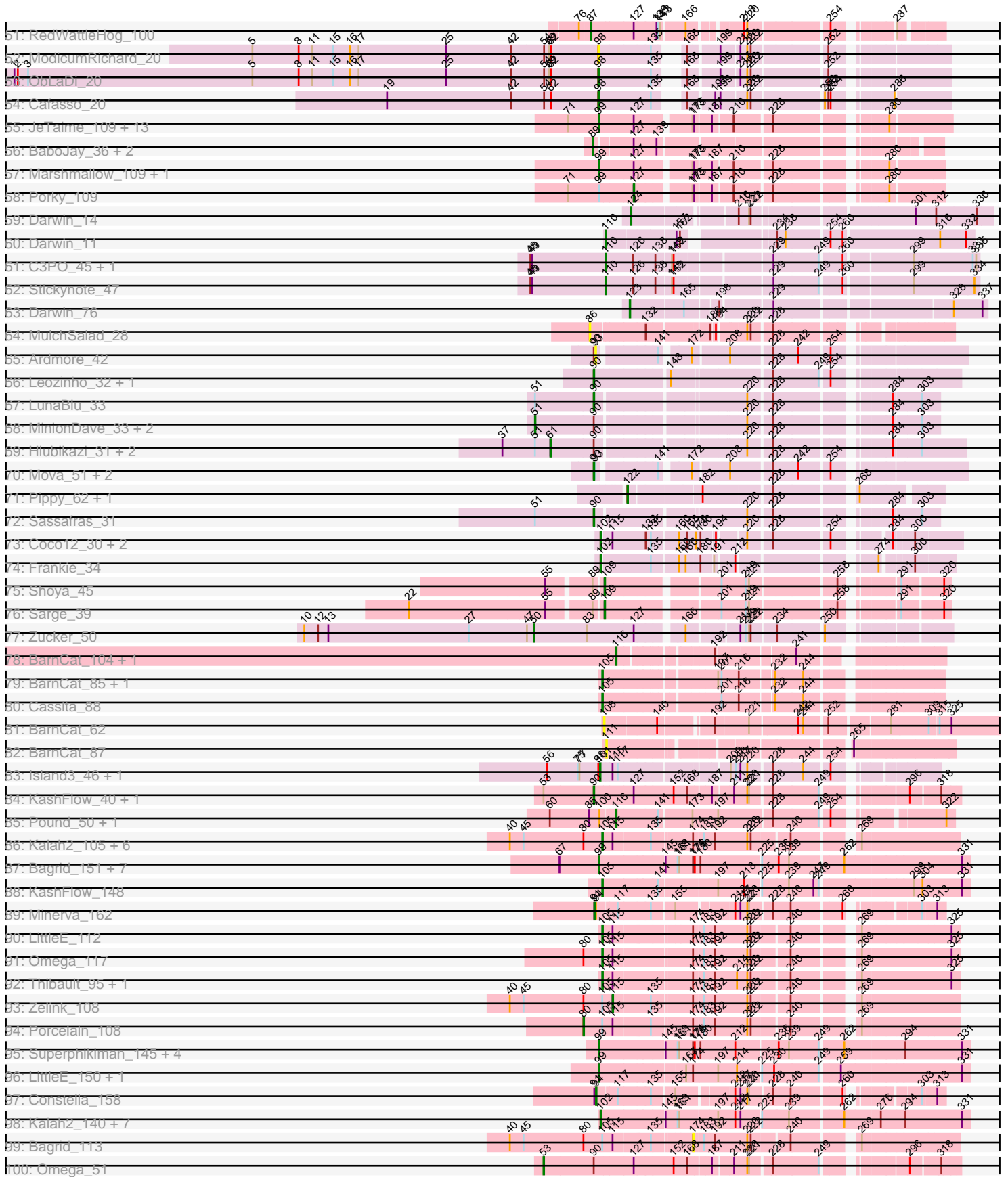


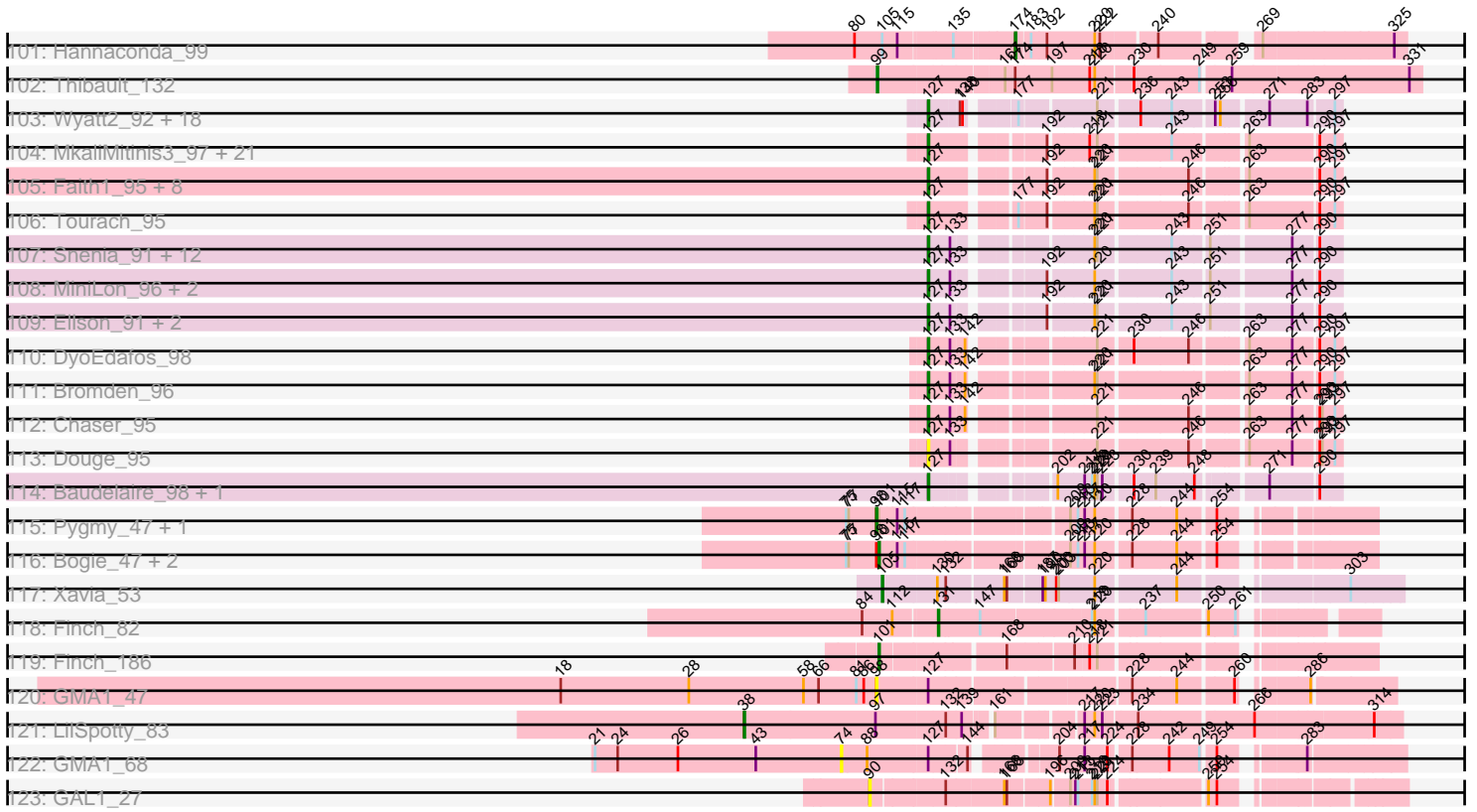
Pham 163293



Pham 163293



Pham 163293



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 163293 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163293 has 318 members, 38 are drafts.

Phages represented in each track:

- Track 1 : Buttons\_27
- Track 2 : Dori\_69
- Track 3 : Globfish\_58
- Track 4 : Globfish\_83
- Track 5 : FugateOSU\_60, Orfeu\_59, Placalicious\_60, LostAndPhound\_60, Toni\_59
- Track 6 : Lopsy\_58, Buckeye\_60, LeiMonet\_62, Coletti\_62, Podrick\_58, Adriana\_61, Matalotodo\_59, KingTut\_52
- Track 7 : Saguaro\_52
- Track 8 : Hank144\_56
- Track 9 : JPickles\_247, EmToTheThree\_250, Trinitium\_246, McGee\_251, Basquiat\_247, Darko\_249, Blackbrain\_248, Maby2021\_250, Issimir\_245, TinyTim\_248, Ading\_252, Shrimp\_252, SrishMeg2525\_247, Gizmo\_255, Chargie21\_247, ZygoTaiga\_246, Bread\_246, Morizzled23\_247, Yucca\_250, Specks\_254, Astraea\_245, Lee7\_249, Erdmann\_251, Janiyra\_253, Bonray\_252, ErnieJ\_243, Salacia\_251, FoxtrotP1\_248, StubbySaigey\_256, PurduePete\_250, FudgeTart\_245, BananaFence\_247, Asterius\_245, Cactojaque\_244, Teardrop\_248
- Track 10 : Colt\_243, Cane17\_242
- Track 11 : Concombre\_255
- Track 12 : Gizmo\_126
- Track 13 : ScoobyDoobyDoo\_60
- Track 14 : ScoobyDoobyDoo\_184
- Track 15 : Peregrin\_232
- Track 16 : Peregrin\_178
- Track 17 : Morrissey\_46
- Track 18 : Francesca\_39
- Track 19 : DonTron\_22
- Track 20 : Sting\_3
- Track 21 : WilliamBoone\_144
- Track 22 : Gspu1\_40
- Track 23 : Lysidious\_60
- Track 24 : Mellie\_57
- Track 25 : Lilas\_67, EnalisNailo\_66, Bradissa\_67
- Track 26 : Attis\_64, SoilAssassin\_64
- Track 27 : LordFarquaad\_67
- Track 28 : Adora\_55, Shlim410\_56, Hortense\_58, Howe\_58, Twinkle\_57
- Track 29 : Twister6\_58
- Track 30 : Clown\_64

- Track 31 : JonJames\_26
- Track 32 : Paries\_38
- Track 33 : Brandonk123\_37, BobBob\_33, Love\_39, Fosterous\_34, Nordenberg\_30, Charming\_36, Galadriel\_36, Sedona\_36, Rofo\_36, Angelicage\_34, Vivi2\_38, Tangent\_36, Bibwit\_35
- Track 34 : McKinley\_38
- Track 35 : Affeca\_34, Lennon\_36
- Track 36 : Geodirt\_33
- Track 37 : Keitabear\_36
- Track 38 : Sitar\_36
- Track 39 : GMA3\_25
- Track 40 : Bantam\_102, SpeedDemon\_1040
- Track 41 : DatBoi\_98
- Track 42 : Mollymur\_102
- Track 43 : Daredevil\_91
- Track 44 : SpeedDemon\_100
- Track 45 : Kuwabara\_68
- Track 46 : Kabocha\_97, Chidiebere\_96, Schomber\_94
- Track 47 : ChisanaKitsune\_93
- Track 48 : DalanDe\_1
- Track 49 : Stormageddon\_82, RedWattleHog\_85
- Track 50 : RedWattleHog\_22
- Track 51 : RedWattleHog\_100
- Track 52 : ModicumRichard\_20
- Track 53 : ObLaDi\_20
- Track 54 : Cafasso\_20
- Track 55 : JeTaime\_109, Kimchi\_115, Goku\_110, Nimrod\_111, 244\_112, BaboJay\_110, Xandras\_110, BigBubba\_112, Icee\_112, Filch\_113, Stank\_113, TBrady12\_114, Goldilocks\_114, Holt\_116
- Track 56 : BaboJay\_36, Eureka\_37, Goku\_37
- Track 57 : Marshmallow\_109, Wiggin\_113
- Track 58 : Porky\_109
- Track 59 : Darwin\_14
- Track 60 : Darwin\_11
- Track 61 : C3PO\_45, Cruella\_45
- Track 62 : Stickynote\_47
- Track 63 : Darwin\_76
- Track 64 : MulchSalad\_28
- Track 65 : Ardmore\_42
- Track 66 : Leozinho\_32, KingMidas\_32
- Track 67 : LunaBlu\_33
- Track 68 : MinionDave\_33, Galactic\_32, Ramsey\_33
- Track 69 : Hlubikazi\_31, Mandlovu\_31, Strokeseat\_31
- Track 70 : Mova\_51, Bobi\_53, Mutaforma13\_54
- Track 71 : Pippy\_62, Maravista\_65
- Track 72 : Sassafras\_31
- Track 73 : Coco12\_30, Starcevich\_34, JalFarm20\_33
- Track 74 : Frankie\_34
- Track 75 : Shoya\_45
- Track 76 : Sarge\_39
- Track 77 : Zucker\_50
- Track 78 : BarnCat\_104, LeeroyJenkins\_114
- Track 79 : BarnCat\_85, LeeroyJenkins\_94

- Track 80 : Cassita\_88
- Track 81 : BarnCat\_62
- Track 82 : BarnCat\_87
- Track 83 : Island3\_46, Brujita\_46
- Track 84 : KashFlow\_40, Hannaconda\_43
- Track 85 : Pound\_50, Bombitas\_45
- Track 86 : Kalah2\_105, Phoebus\_113, Dallas\_113, EricMillard\_105, Hughesyang\_111, ThreeRngTarjay\_109, DmpstrDiver\_113
- Track 87 : Bagrid\_151, Optimus\_141, Duke13\_146, EricMillard\_142, HokkenD\_142, BAKA\_150, Gonephishing\_141, Klein\_147
- Track 88 : KashFlow\_148
- Track 89 : Minerva\_162
- Track 90 : LittleE\_112
- Track 91 : Omega\_117
- Track 92 : Thibault\_95, Constella\_97
- Track 93 : Zelink\_108
- Track 94 : Porcelain\_108
- Track 95 : Superphikiman\_145, Ariel\_147, Courthouse\_143, Beem\_151, Hannaconda\_141
- Track 96 : LittleE\_150, Omega\_154
- Track 97 : Constella\_158
- Track 98 : Kalah2\_140, Zelink\_143, Wanda\_148, Minerva\_148, Hughesyang\_148, ThreeRngTarjay\_144, Bobby\_139, Phoebus\_149
- Track 99 : Bagrid\_113
- Track 100 : Omega\_51
- Track 101 : Hannaconda\_99
- Track 102 : Thibault\_132
- Track 103 : Wyatt2\_92, AvadaKedavra\_91, Appletree2\_90, LeBron\_90, Rose5\_92, Silverleaf\_90, Tyson\_92, DirkDirk\_88, Enceladus\_88, CicholasNage\_88, JoeDirt\_92, Zaria\_91, Halena\_88, MACKerman\_87, Acquire49\_91, UPIE\_90, OhShagHennessy\_87, Wamburggrxpress\_90, Calm\_92
- Track 104 : MkaliMitinis3\_97, Loadrie\_94, LilDestine\_93, Crossroads\_95, Bazzle\_92, BigCheese\_95, Archie\_92, GuuelaD\_92, Kahlid\_94, Baoshan\_92, Finemlucis\_96, Wilder\_96, Claus\_94, Lewan\_96, Zakai\_96, Hafay\_96, Nicholasp3\_95, Vatrix\_93, ZhongYanYuan\_92, BobsGarage\_94, Gardann\_95, Rumpelstiltskin\_91
- Track 105 : Faith1\_95, DrSeegs\_94, Miley16\_95, Breezona\_95, Wigglewiggles\_95, Itos\_95, Winky\_95, Netyap\_94, Gabriela\_95
- Track 106 : Tourach\_95
- Track 107 : Snenia\_91, Moostard\_89, Jubie\_91, MsGreen\_92, Finnry\_92, Jobypre\_93, Nicholas\_90, Lumos\_92, Bellis\_90, Kingsolomon\_90, Samty\_91, Clautastrophe\_90, Whirlwind\_93
- Track 108 : MiniLon\_96, MiniMac\_96, Lolly9\_91
- Track 109 : Ellson\_91, Krypton555\_94, DuncansLeg\_92
- Track 110 : DyoEdafos\_98
- Track 111 : Bromden\_96
- Track 112 : Chaser\_95
- Track 113 : Douge\_95
- Track 114 : Baudelaire\_98, Aegeus\_98
- Track 115 : Pygmy\_47, Phineas\_45
- Track 116 : Bogie\_47, Shipwreck\_47, HUHilltop\_45
- Track 117 : Xavia\_53
- Track 118 : Finch\_82

- Track 119 : Finch\_186
- Track 120 : GMA1\_47
- Track 121 : LilSpotty\_83
- Track 122 : GMA1\_68
- Track 123 : GAL1\_27

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

The start number called the most often in the published annotations is 127, it was called in 68 of the 280 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_91, Aegeus\_98, Appletree2\_90, Archie\_92, AvadaKedavra\_91, Baoshan\_92, Baudelaire\_98, Bazzle\_92, Bellis\_90, BigCheese\_95, BobsGarage\_94, Breezona\_95, Bromden\_96, Calm\_92, Chaser\_95, CicholasNage\_88, Claus\_94, Clautastrophe\_90, Crossroads\_95, DirkDirk\_88, Douge\_95, DrSeegs\_94, DuncansLeg\_92, DyoEdafos\_98, Ellson\_91, Enceladus\_88, Faith1\_95, Finemlucis\_96, Finnry\_92, Gabriela\_95, Gardann\_95, GuuelaD\_92, Hafay\_96, Halena\_88, Itos\_95, Jobypre\_93, JoeDirt\_92, Jubie\_91, Kahlid\_94, Kingsolomon\_90, Krypton555\_94, LeBron\_90, Lewan\_96, LilDestine\_93, Loadrie\_94, Lolly9\_91, Lumos\_92, MAckerman\_87, Miley16\_95, MiniLon\_96, MiniMac\_96, MkaliMitinis3\_97, Moostard\_89, MsGreen\_92, Netyap\_94, Nicholas\_90, Nicholasp3\_95, OhShagHennessy\_87, Porky\_109, Rose5\_92, Rumpelstiltskin\_91, Samty\_91, Silverleaf\_90, Snenia\_91, Tourach\_95, Tyson\_92, UPIE\_90, Vetrix\_93, Wamburgxpress\_90, Whirlwind\_93, Wigglewiggle\_95, Wilder\_96, Winky\_95, Wyatt2\_92, Zakai\_96, Zaria\_91, ZhongYanYuan\_92,

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

- 244\_112, BaboJay\_110, BaboJay\_36, Bantam\_102, BigBubba\_112, Buttons\_27, Cane17\_242, Clown\_64, Colt\_243, DatBoi\_98, Eureka\_37, Filch\_113, GMA1\_47, GMA1\_68, Goku\_110, Goku\_37, Goldilocks\_114, Hannaconda\_43, Holt\_116, Icee\_112, JeTaime\_109, JonJames\_26, KashFlow\_40, Kimchi\_115, Marshmallow\_109, Morrissey\_46, Nimrod\_111, Omega\_51, Peregrin\_232, RedWattleHog\_100, Saguaro\_52, SpeedDemon\_1040, Stank\_113, TBrady12\_114, Twister6\_58, Wiggin\_113, Xandras\_110, Zucker\_50,

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

- Ading\_252, Adora\_55, Adriana\_61, Affeca\_34, Angelicage\_34, Ardmore\_42, Ariel\_147, Asterius\_245, Astraea\_245, Attis\_64, BAKA\_150, Bagrid\_113, Bagrid\_151, BananaFence\_247, BarnCat\_104, BarnCat\_62, BarnCat\_85, BarnCat\_87, Basquiat\_247, Beem\_151, Bibwit\_35, Blackbrain\_248, BobBob\_33, Bobby\_139, Bobi\_53, Bogie\_47, Bombitas\_45, Bonray\_252, Bradissa\_67, Brandonk123\_37, Bread\_246, Brujita\_46, Buckeye\_60, C3PO\_45, Cactojaque\_244, Cafasso\_20, Cassita\_88, Chargie21\_247, Charming\_36, Chidiebere\_96, ChisanaKitsune\_93, Coco12\_30, Coletti\_62, Concombre\_255, Constella\_158, Constella\_97, Courthouse\_143, Cruella\_45, DalanDe\_1, Dallas\_113, Daredevil\_91, Darko\_249, Darwin\_11, Darwin\_14, Darwin\_76, DmpstrDiver\_113, DonTron\_22, Dori\_69, Duke13\_146, EmToTheThree\_250, EnalisNailo\_66, Erdmann\_251, EricMillard\_105, EricMillard\_142, ErnieJ\_243, Finch\_186, Finch\_82, Fosterous\_34, FoxtrotP1\_248, Francesca\_39, Frankie\_34, FudgeTart\_245, FugateOSU\_60,

GAL1\_27, GMA3\_25, Galactic\_32, Galadriel\_36, Geodirt\_33, Gizmo\_126, Gizmo\_255, Globfish\_58, Globfish\_83, Gonephishing\_141, Gsput1\_40, HUHilltop\_45, Hank144\_56, Hannaconda\_141, Hannaconda\_99, Hlubikazi\_31, HokkenD\_142, Hortense\_58, Howe\_58, Hughesyang\_111, Hughesyang\_148, Island3\_46, Issimir\_245, JPickles\_247, JalFarm20\_33, Janiyra\_253, Kabocha\_97, Kalah2\_105, Kalah2\_140, KashFlow\_148, Keitabear\_36, KingMidas\_32, KingTut\_52, Klein\_147, Kuwabara\_68, Lee7\_249, LeeroyJenkins\_114, LeeroyJenkins\_94, LeiMonet\_62, Lennon\_36, Leozinho\_32, LilSpotty\_83, Lilas\_67, LittleE\_112, LittleE\_150, Lopsy\_58, LordFarquaad\_67, LostAndPhound\_60, Love\_39, LunaBlu\_33, Lysidious\_60, Maby2021\_250, Mandlovu\_31, Maravista\_65, Matalotodo\_59, McGee\_251, McKinley\_38, Mellie\_57, Minerva\_148, Minerva\_162, MinionDave\_33, ModicumRichard\_20, Mollymur\_102, Morizzled23\_247, Mova\_51, MulchSalad\_28, Mutaforma13\_54, Nordenberg\_30, ObLaDi\_20, Omega\_117, Omega\_154, Optimus\_141, Orfeu\_59, Paries\_38, Peregrin\_178, Phineas\_45, Phoebus\_113, Phoebus\_149, Pippy\_62, Placalicious\_60, Podrick\_58, Porcelain\_108, Pound\_50, PurduePete\_250, Pygmy\_47, Ramsey\_33, RedWattleHog\_22, RedWattleHog\_85, Rofo\_36, Salacia\_251, Sarge\_39, Sassafras\_31, Schomber\_94, ScoobyDoobyDoo\_184, ScoobyDoobyDoo\_60, Sedona\_36, Shipwreck\_47, Shlim410\_56, Shoya\_45, Shrimp\_252, Sitar\_36, SoilAssassin\_64, Specks\_254, SpeedDemon\_100, SrishMeg2525\_247, Starcevich\_34, Stickynote\_47, Sting\_3, Stormageddon\_82, Strokeseat\_31, StubbySaigey\_256, Superphikiman\_145, Tangent\_36, Teardrop\_248, Thibault\_132, Thibault\_95, ThreeRngTarjay\_109, ThreeRngTarjay\_144, TinyTim\_248, Toni\_59, Trinitium\_246, Twinkle\_57, Vivi2\_38, Wanda\_148, WilliamBoone\_144, Xavia\_53, Yucca\_250, Zelink\_108, Zelink\_143, ZygoTaiga\_246,

### Summary by start number:

#### Start 38:

- Found in 1 of 318 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilSpotty\_83 (singleton),

#### Start 50:

- Found in 2 of 318 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Zucker\_50 (FN),

#### Start 51:

- Found in 8 of 318 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 3 of 280
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Galactic\_32 (F1), MinionDave\_33 (F1), Ramsey\_33 (F1),

#### Start 53:

- Found in 4 of 318 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Omega\_51 (J),



Start 57:

- Found in 1 of 318 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: WilliamBoone\_144 (CQ1),

Start 60:

- Found in 22 of 318 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Keitabear\_36 (DE1), Sitar\_36 (DE1),

Start 61:

- Found in 3 of 318 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hlubikazi\_31 (F1), Mandlovu\_31 (F1), Strokeseat\_31 (F1),

Start 73:

- Found in 6 of 318 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Attis\_64 (CZ2), SoilAssassin\_64 (CZ2),

Start 74:

- Found in 1 of 318 ( 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: GMA1\_68 (singleton),

Start 80:

- Found in 12 of 318 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Porcelain\_108 (J),

Start 86:

- Found in 7 of 318 ( 2.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: MulchSalad\_28 (F),

Start 87:

- Found in 1 of 318 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog\_100 (DX),

Start 89:

- Found in 6 of 318 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 3 of 280
- Called 50.0% of time when present

- Phage (with cluster) where this start called: BaboJay\_36 (E), Eureka\_37 (E), Goku\_37 (E),

Start 90:

- Found in 18 of 318 ( 5.7% ) of genes in pham
- Manual Annotations of this start: 9 of 280
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Bobi\_53 (F1), GAL1\_27 (singleton), Hannaconda\_43 (J), KashFlow\_40 (J), KingMidas\_32 (F1), Leozinho\_32 (F1), LunaBlu\_33 (F1), Mova\_51 (F1), Mutaforma13\_54 (F1), Sassafras\_31 (F1),

Start 91:

- Found in 2 of 318 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Minerva\_162 (J),

Start 92:

- Found in 13 of 318 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 4 of 280
- Called 38.5% of time when present
- Phage (with cluster) where this start called: FugateOSU\_60 (B1), LostAndPhound\_60 (B1), Orfeu\_59 (B1), Placalicious\_60 (B1), Toni\_59 (B1),

Start 93:

- Found in 4 of 318 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ardmore\_42 (F1),

Start 94:

- Found in 3 of 318 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Constella\_158 (J),

Start 95:

- Found in 5 of 318 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 40.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog\_85 (DX), Stormageddon\_82 (DX),

Start 96:

- Found in 2 of 318 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DalanDe\_1 (DQ),

Start 97:

- Found in 2 of 318 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 50.0% of time when present

- Phage (with cluster) where this start called: Clown\_64 (DC2),

#### Start 98:

- Found in 34 of 318 ( 10.7% ) of genes in pham
- Manual Annotations of this start: 22 of 280
- Called 79.4% of time when present
- Phage (with cluster) where this start called: Affeca\_34 (DE1), Angelicage\_34 (DE1), Bibwit\_35 (DE1), BobBob\_33 (DE1), Brandonk123\_37 (DE1), Cafasso\_20 (DZ), Charming\_36 (DE1), DonTron\_22 (CP), Fosterous\_34 (DE1), GMA1\_47 (singleton), Galadriel\_36 (DE1), Geodirt\_33 (DE1), Gsput1\_40 (CU2), JonJames\_26 (DD), Lennon\_36 (DE1), Love\_39 (DE1), McKinley\_38 (DE1), ModicumRichard\_20 (DZ), Nordenberg\_30 (DE1), ObLaDi\_20 (DZ), Paries\_38 (DE1), Phineas\_45 (P1), Pygmy\_47 (P1), Rofo\_36 (DE1), Sedona\_36 (DE1), Tangent\_36 (DE1), Vivi2\_38 (DE1),

#### Start 99:

- Found in 33 of 318 ( 10.4% ) of genes in pham
- Manual Annotations of this start: 30 of 280
- Called 97.0% of time when present
- Phage (with cluster) where this start called: 244\_112 (E), Ariel\_147 (J), BAKA\_150 (J), BaboJay\_110 (E), Bagrid\_151 (J), Beem\_151 (J), BigBubba\_112 (E), Courthouse\_143 (J), Duke13\_146 (J), EricMillard\_142 (J), Filch\_113 (E), Goku\_110 (E), Goldilocks\_114 (E), Gonephishing\_141 (J), Hannaconda\_141 (J), HokkenD\_142 (J), Holt\_116 (E), Icee\_112 (E), JeTaime\_109 (E), Kimchi\_115 (E), Klein\_147 (J), LittleE\_150 (J), Marshmallow\_109 (E), Nimrod\_111 (E), Omega\_154 (J), Optimus\_141 (J), Stank\_113 (E), Superphikiman\_145 (J), TBrady12\_114 (E), Thibault\_132 (J), Wiggin\_113 (E), Xandras\_110 (E),

#### Start 101:

- Found in 21 of 318 ( 6.6% ) of genes in pham
- Manual Annotations of this start: 11 of 280
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Adriana\_61 (B1), Bogie\_47 (P1), Brujita\_46 (I1), Buckeye\_60 (B1), Coletti\_62 (B1), Finch\_186 (singleton), HUHilltop\_45 (P1), Island3\_46 (I1), KingTut\_52 (B1), LeiMonet\_62 (B1), Lopsy\_58 (B1), Matalotodo\_59 (B1), Podrick\_58 (B1), Shipwreck\_47 (P1),

#### Start 102:

- Found in 14 of 318 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 12 of 280
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Bobby\_139 (J), Coco12\_30 (F1), Frankie\_34 (F1), Hughesyang\_148 (J), JalFarm20\_33 (F1), Kalah2\_140 (J), Minerva\_148 (J), Phoebus\_149 (J), Starceвич\_34 (F1), ThreeRngTarjay\_144 (J), Wanda\_148 (J), Zelink\_143 (J),

#### Start 103:

- Found in 1 of 318 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Morrissey\_46 (CD),

#### Start 104:

- Found in 14 of 318 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 14 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adora\_55 (CZ4), Bantam\_102 (DL), Daredevil\_91 (DL), DatBoi\_98 (DL), Hortense\_58 (CZ4), Howe\_58 (CZ4), Lysidious\_60 (CV), Mellie\_57 (CV), Mollymur\_102 (DL), Peregrin\_178 (CB), RedWattleHog\_22 (DX), Shlim410\_56 (CZ4), SpeedDemon\_1040 (DL), Twinkle\_57 (CZ4),

#### Start 105:

- Found in 23 of 318 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 18 of 280
- Called 82.6% of time when present
- Phage (with cluster) where this start called: BarnCat\_85 (GB), Cassita\_88 (GB), Constella\_97 (J), Dallas\_113 (J), DmpstrDiver\_113 (J), Dori\_69 (AD), EricMillard\_105 (J), Hughesyang\_111 (J), Kalah2\_105 (J), KashFlow\_148 (J), LeeroyJenkins\_94 (GB), LittleE\_112 (J), Omega\_117 (J), Peregrin\_232 (CB), Phoebus\_113 (J), Thibault\_95 (J), ThreeRngTarjay\_109 (J), Twister6\_58 (DC1), Xavia\_53 (P3),

#### Start 107:

- Found in 3 of 318 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Buttons\_27 (A1), Saguaro\_52 (B7),

#### Start 108:

- Found in 5 of 318 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 80.0% of time when present
- Phage (with cluster) where this start called: BarnCat\_62 (GB), Cane17\_242 (C1), Colt\_243 (C1), Francesca\_39 (CG),

#### Start 109:

- Found in 3 of 318 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Globfish\_58 (AY), Sarge\_39 (FB), Shoya\_45 (FB),

#### Start 110:

- Found in 10 of 318 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 9 of 280
- Called 90.0% of time when present
- Phage (with cluster) where this start called: C3PO\_45 (EN), Chidiebere\_96 (DQ), ChisanaKitsune\_93 (DQ), Cruella\_45 (EN), Darwin\_11 (EN), Kabocha\_97 (DQ), Schomber\_94 (DQ), ScoobyDoobyDoo\_60 (C2), Stickynote\_47 (EN),

#### Start 111:

- Found in 1 of 318 ( 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: BarnCat\_87 (GB),

Start 114:

- Found in 1 of 318 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kuwabara\_68 (DN4),

Start 115:

- Found in 25 of 318 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Zelink\_108 (J),

Start 116:

- Found in 10 of 318 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 3 of 280
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BarnCat\_104 (GB), Bombitas\_45 (J), Globfish\_83 (AY), LeeroyJenkins\_114 (GB), Pound\_50 (J),

Start 118:

- Found in 4 of 318 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 25.0% of time when present
- Phage (with cluster) where this start called: SpeedDemon\_100 (DL),

Start 122:

- Found in 3 of 318 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Maravista\_65 (F1), Pippy\_62 (F1),

Start 123:

- Found in 1 of 318 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Darwin\_76 (EN),

Start 124:

- Found in 2 of 318 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Darwin\_14 (EN),

Start 125:

- Found in 2 of 318 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gizmo\_126 (C1), Hank144\_56 (BD2),

Start 126:

- Found in 4 of 318 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present

- Phage (with cluster) where this start called: GMA3\_25 (DF2),

#### Start 127:

- Found in 115 of 318 ( 36.2% ) of genes in pham
- Manual Annotations of this start: 68 of 280
- Called 67.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_91 (L1), Aegeus\_98 (L5), Appletree2\_90 (L1), Archie\_92 (L2), AvadaKedavra\_91 (L1), Baoshan\_92 (L2), Baudelaire\_98 (L5), Bazzle\_92 (L2), Bellis\_90 (L3), BigCheese\_95 (L2), BobsGarage\_94 (L2), Breezona\_95 (L2), Bromden\_96 (L4), Calm\_92 (L1), Chaser\_95 (L4), CicholasNage\_88 (L1), Claus\_94 (L2), Clautastrophe\_90 (L3), Crossroads\_95 (L2), DirkDirk\_88 (L1), Douge\_95 (L4), DrSeegs\_94 (L2), DuncansLeg\_92 (L3), DyoEdafos\_98 (L4), Ellson\_91 (L3), Enceladus\_88 (L1), Faith1\_95 (L2), Finemlucis\_96 (L2), Finnry\_92 (L3), Gabriela\_95 (L2), Gardann\_95 (L2), GuuelaD\_92 (L2), Hafay\_96 (L2), Halena\_88 (L1), Itos\_95 (L2), Jobypre\_93 (L3), JoeDirt\_92 (L1), Jubie\_91 (L3), Kahlid\_94 (L2), Kingsolomon\_90 (L3), Krypton555\_94 (L3), LeBron\_90 (L1), Lewan\_96 (L2), LilDestine\_93 (L2), Loadrie\_94 (L2), Lolly9\_91 (L3), Lumos\_92 (L3), MAckerman\_87 (L1), Miley16\_95 (L2), MiniLon\_96 (L3), MiniMac\_96 (L3), MkaliMitinis3\_97 (L2), Moostard\_89 (L3), MsGreen\_92 (L3), Netyap\_94 (L2), Nicholas\_90 (L3), Nicholasp3\_95 (L2), OhShagHennessy\_87 (L1), Porky\_109 (E), Rose5\_92 (L1), Rumpelstiltskin\_91 (L2), Samty\_91 (L3), Silverleaf\_90 (L1), Snenia\_91 (L3), Tourach\_95 (L2), Tyson\_92 (L1), UPIE\_90 (L1), Vetrix\_93 (L2), Wamburggrxpress\_90 (L1), Whirlwind\_93 (L3), Wigglewiggles\_95 (L2), Wilder\_96 (L2), Winky\_95 (L2), Wyatt2\_92 (L1), Zakai\_96 (L2), Zaria\_91 (L1), ZhongYanYuan\_92 (L2),

#### Start 128:

- Found in 36 of 318 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 32 of 280
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ading\_252 (C1), Asterius\_245 (C1), Astraea\_245 (C1), BananaFence\_247 (C1), Basquiat\_247 (C1), Blackbrain\_248 (C1), Bonray\_252 (C1), Bread\_246 (C1), Cactojaque\_244 (C1), Chargie21\_247 (C1), Concombre\_255 (C1), Darko\_249 (C1), EmToTheThree\_250 (C1), Erdmann\_251 (C1), ErnieJ\_243 (C1), FoxtrotP1\_248 (C1), FudgeTart\_245 (C1), Gizmo\_255 (C1), Issimir\_245 (C1), JPickles\_247 (C1), Janiyr\_253 (C1), Lee7\_249 (C1), Maby2021\_250 (C1), McGee\_251 (C1), Morizzled23\_247 (C1), PurduePete\_250 (C1), Salacia\_251 (C1), Shrimp\_252 (C1), Specks\_254 (C1), SrishMeg2525\_247 (C1), StubbySaigey\_256 (C1), Teardrop\_248 (C1), TinyTim\_248 (C1), Trinitium\_246 (C1), Yucca\_250 (C1), ZygoTaiga\_246 (C1),

#### Start 129:

- Found in 1 of 318 ( 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: Sting\_3 (CP),

#### Start 131:

- Found in 4 of 318 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 280
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Finch\_82 (singleton), ScoobyDoobyDoo\_184 (C2),

Start 134:

- Found in 6 of 318 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 4 of 280
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Bradissa\_67 (CY1), EnalisNailo\_66 (CY1), Lilas\_67 (CY1), LordFarquaad\_67 (CZ2),

Start 174:

- Found in 32 of 318 ( 10.1% ) of genes in pham
- Manual Annotations of this start: 1 of 280
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Bagrid\_113 (J), Hannaconda\_99 (J),

**Summary by clusters:**

There are 45 clusters represented in this pham: singleton, CQ1, CZ2, DD, DL, CZ4, FB, EN, DZ, DX, FN, DQ, CU2, I1, DF2, A1, DN4, BD2, C2, C1, P3, CY1, P1, E, AD, F, CB, J, CG, CD, L4, L5, L2, GB, L1, AY, CP, DC2, CV, DC1, F1, DE1, B7, B1, L3,

Info for manual annotations of cluster A1:

- Start number 107 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster AD:

- Start number 105 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster B1:

- Start number 92 was manually annotated 4 times for cluster B1.
- Start number 101 was manually annotated 5 times for cluster B1.

Info for manual annotations of cluster B7:

- Start number 107 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster BD2:

- Start number 125 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster C1:

- Start number 108 was manually annotated 2 times for cluster C1.
- Start number 125 was manually annotated 1 time for cluster C1.
- Start number 128 was manually annotated 32 times for cluster C1.

Info for manual annotations of cluster C2:

- Start number 110 was manually annotated 1 time for cluster C2.
- Start number 131 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster CB:

- Start number 104 was manually annotated 1 time for cluster CB.
- Start number 105 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster CD:

- Start number 103 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CQ1:

- Start number 57 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CV:

- Start number 104 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 134 was manually annotated 3 times for cluster CY1.

Info for manual annotations of cluster CZ2:

- Start number 73 was manually annotated 2 times for cluster CZ2.
- Start number 134 was manually annotated 1 time for cluster CZ2.

Info for manual annotations of cluster CZ4:

- Start number 104 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster DC1:

- Start number 105 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 97 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DD:

- Start number 98 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 60 was manually annotated 2 times for cluster DE1.
- Start number 98 was manually annotated 18 times for cluster DE1.

Info for manual annotations of cluster DL:

- Start number 104 was manually annotated 5 times for cluster DL.
- Start number 118 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster DN4:

- Start number 114 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DQ:

- Start number 96 was manually annotated 1 time for cluster DQ.
- Start number 110 was manually annotated 4 times for cluster DQ.

Info for manual annotations of cluster DX:

- Start number 87 was manually annotated 1 time for cluster DX.
- Start number 95 was manually annotated 2 times for cluster DX.
- Start number 104 was manually annotated 1 time for cluster DX.

Info for manual annotations of cluster DZ:

- Start number 98 was manually annotated 2 times for cluster DZ.

Info for manual annotations of cluster E:



- Start number 89 was manually annotated 3 times for cluster E.
- Start number 99 was manually annotated 16 times for cluster E.
- Start number 127 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster EN:

- Start number 110 was manually annotated 4 times for cluster EN.
- Start number 123 was manually annotated 1 time for cluster EN.
- Start number 124 was manually annotated 1 time for cluster EN.

Info for manual annotations of cluster F1:

- Start number 51 was manually annotated 3 times for cluster F1.
- Start number 61 was manually annotated 3 times for cluster F1.
- Start number 90 was manually annotated 7 times for cluster F1.
- Start number 102 was manually annotated 4 times for cluster F1.
- Start number 122 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster FB:

- Start number 109 was manually annotated 2 times for cluster FB.

Info for manual annotations of cluster FN:

- Start number 50 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster GB:

- Start number 105 was manually annotated 2 times for cluster GB.
- Start number 116 was manually annotated 1 time for cluster GB.

Info for manual annotations of cluster I1:

- Start number 101 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 53 was manually annotated 1 time for cluster J.
- Start number 80 was manually annotated 1 time for cluster J.
- Start number 90 was manually annotated 2 times for cluster J.
- Start number 91 was manually annotated 1 time for cluster J.
- Start number 94 was manually annotated 1 time for cluster J.
- Start number 99 was manually annotated 14 times for cluster J.
- Start number 102 was manually annotated 8 times for cluster J.
- Start number 105 was manually annotated 12 times for cluster J.
- Start number 115 was manually annotated 1 time for cluster J.
- Start number 116 was manually annotated 2 times for cluster J.
- Start number 174 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster L1:

- Start number 127 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 127 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 127 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 127 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 127 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster P1:

- Start number 98 was manually annotated 1 time for cluster P1.
- Start number 101 was manually annotated 3 times for cluster P1.

Info for manual annotations of cluster P3:

- Start number 105 was manually annotated 1 time for cluster P3.

### **Gene Information:**

Gene: 244\_112 Start: 62827, Stop: 63327, Start Num: 99

Candidate Starts for 244\_112:

(71, 62773), (Start: 99 @62827 has 30 MA's), (Start: 127 @62881 has 68 MA's), (173, 62962), (175, 62965), (187, 62989), (210, 63022), (228, 63079), (280, 63241),

Gene: Acquire49\_91 Start: 57365, Stop: 57775, Start Num: 127

Candidate Starts for Acquire49\_91:

(Start: 127 @57365 has 68 MA's), (138, 57395), (140, 57398), (177, 57443), (221, 57521), (236, 57563), (243, 57599), (253, 57641), (256, 57647), (271, 57695), (283, 57740), (297, 57767),

Gene: Ading\_252 Start: 144356, Stop: 144805, Start Num: 128

Candidate Starts for Ading\_252:

(Start: 128 @144356 has 32 MA's), (146, 144395), (163, 144413), (183, 144446), (201, 144473), (220, 144506), (244, 144593), (255, 144635), (296, 144734),

Gene: Adora\_55 Start: 40141, Stop: 40647, Start Num: 104

Candidate Starts for Adora\_55:

(29, 39916), (33, 39946), (Start: 104 @40141 has 14 MA's), (135, 40216), (142, 40228), (170, 40270), (220, 40357), (234, 40396),

Gene: Adriana\_61 Start: 53245, Stop: 52730, Start Num: 101

Candidate Starts for Adriana\_61:

(64, 53323), (82, 53269), (Start: 92 @53254 has 4 MA's), (Start: 101 @53245 has 11 MA's), (132, 53179), (153, 53134), (170, 53110), (188, 53074), (194, 53068), (217, 53035), (233, 52981), (235, 52978), (271, 52861), (275, 52840), (308, 52765),

Gene: Aegeus\_98 Start: 59877, Stop: 60281, Start Num: 127

Candidate Starts for Aegeus\_98:

(Start: 127 @59877 has 68 MA's), (202, 59988), (217, 60015), (219, 60024), (220, 60027), (221, 60030), (223, 60036), (230, 60066), (239, 60090), (248, 60132), (271, 60201), (290, 60255),

Gene: Affeca\_34 Start: 32900, Stop: 32427, Start Num: 98

Candidate Starts for Affeca\_34:

(39, 33038), (Start: 60 @32984 has 2 MA's), (79, 32927), (Start: 98 @32900 has 22 MA's), (163, 32801), (190, 32759), (193, 32756), (217, 32720), (234, 32663), (240, 32639), (252, 32582),

Gene: Angelicage\_34 Start: 33318, Stop: 32845, Start Num: 98

Candidate Starts for Angelicage\_34:

(39, 33456), (Start: 60 @33402 has 2 MA's), (65, 33393), (79, 33345), (Start: 98 @33318 has 22 MA's), (163, 33219), (190, 33177), (193, 33174), (217, 33138), (234, 33081), (241, 33048), (252, 33000),

Gene: Appletree2\_90 Start: 57125, Stop: 57535, Start Num: 127

Candidate Starts for Appletree2\_90:

(Start: 127 @57125 has 68 MA's), (138, 57155), (140, 57158), (177, 57203), (221, 57281), (236, 57323), (243, 57359), (253, 57401), (256, 57407), (271, 57455), (283, 57500), (297, 57527),

Gene: Archie\_92 Start: 59049, Stop: 59462, Start Num: 127

Candidate Starts for Archie\_92:

(Start: 127 @59049 has 68 MA's), (192, 59160), (218, 59199), (221, 59208), (243, 59286), (263, 59358), (290, 59436), (297, 59454),

Gene: Ardmore\_42 Start: 34484, Stop: 35032, Start Num: 93

Candidate Starts for Ardmore\_42:

(Start: 90 @34481 has 9 MA's), (93, 34484), (141, 34574), (172, 34616), (208, 34676), (228, 34742), (242, 34784), (254, 34832),

Gene: Ariel\_147 Start: 75437, Stop: 76039, Start Num: 99

Candidate Starts for Ariel\_147:

(Start: 99 @75437 has 30 MA's), (145, 75542), (159, 75563), (161, 75566), (Start: 174 @75590 has 1 MA's), (176, 75593), (180, 75599), (212, 75659), (236, 75728), (239, 75746), (249, 75797), (262, 75833), (294, 75929), (331, 76025),

Gene: Asterius\_245 Start: 142368, Stop: 142817, Start Num: 128

Candidate Starts for Asterius\_245:

(Start: 128 @142368 has 32 MA's), (146, 142407), (163, 142425), (183, 142458), (201, 142485), (220, 142518), (244, 142605), (255, 142647), (296, 142746),

Gene: Astraea\_245 Start: 141563, Stop: 142012, Start Num: 128

Candidate Starts for Astraea\_245:

(Start: 128 @141563 has 32 MA's), (146, 141602), (163, 141620), (183, 141653), (201, 141680), (220, 141713), (244, 141800), (255, 141842), (296, 141941),

Gene: Attis\_64 Start: 43105, Stop: 43650, Start Num: 73

Candidate Starts for Attis\_64:

(Start: 73 @43105 has 2 MA's), (Start: 95 @43147 has 2 MA's), (112, 43168), (120, 43192), (Start: 134 @43231 has 4 MA's), (139, 43243), (155, 43273), (217, 43378), (254, 43516),

Gene: AvadaKedavra\_91 Start: 57477, Stop: 57887, Start Num: 127

Candidate Starts for AvadaKedavra\_91:

(Start: 127 @57477 has 68 MA's), (138, 57507), (140, 57510), (177, 57555), (221, 57633), (236, 57675), (243, 57711), (253, 57753), (256, 57759), (271, 57807), (283, 57852), (297, 57879),

Gene: BAKA\_150 Start: 78761, Stop: 79363, Start Num: 99

Candidate Starts for BAKA\_150:

(67, 78692), (Start: 99 @78761 has 30 MA's), (145, 78866), (159, 78887), (161, 78890), (Start: 174 @78914 has 1 MA's), (176, 78917), (180, 78923), (225, 79025), (236, 79052), (239, 79070), (262, 79157), (331, 79349),

Gene: BaboJay\_36 Start: 33175, Stop: 32675, Start Num: 89

Candidate Starts for BaboJay\_36:

(Start: 89 @33175 has 3 MA's), (Start: 127 @33118 has 68 MA's), (139, 33082),

Gene: BaboJay\_110 Start: 64000, Stop: 64500, Start Num: 99

Candidate Starts for BaboJay\_110:

(71, 63946), (Start: 99 @64000 has 30 MA's), (Start: 127 @64054 has 68 MA's), (173, 64135), (175, 64138), (187, 64162), (210, 64195), (228, 64252), (280, 64414),

Gene: Bagrid\_151 Start: 79456, Stop: 80058, Start Num: 99

Candidate Starts for Bagrid\_151:

(67, 79387), (Start: 99 @79456 has 30 MA's), (145, 79561), (159, 79582), (161, 79585), (Start: 174 @79609 has 1 MA's), (176, 79612), (180, 79618), (225, 79720), (236, 79747), (239, 79765), (262, 79852), (331, 80044),

Gene: Bagrid\_113 Start: 63671, Stop: 64075, Start Num: 174

Candidate Starts for Bagrid\_113:

(40, 63371), (45, 63395), (Start: 80 @63500 has 1 MA's), (Start: 105 @63533 has 18 MA's), (Start: 115 @63551 has 1 MA's), (135, 63608), (Start: 174 @63671 has 1 MA's), (183, 63686), (192, 63704), (220, 63761), (222, 63767), (240, 63827), (269, 63920),

Gene: BananaFence\_247 Start: 142192, Stop: 142641, Start Num: 128

Candidate Starts for BananaFence\_247:

(Start: 128 @142192 has 32 MA's), (146, 142231), (163, 142249), (183, 142282), (201, 142309), (220, 142342), (244, 142429), (255, 142471), (296, 142570),

Gene: Bantam\_102 Start: 67594, Stop: 68172, Start Num: 104

Candidate Starts for Bantam\_102:

(23, 67276), (46, 67462), (Start: 104 @67594 has 14 MA's), (Start: 127 @67642 has 68 MA's), (132, 67660), (139, 67678), (160, 67711), (220, 67813), (234, 67864), (262, 67966), (317, 68092),

Gene: Baoshan\_92 Start: 59704, Stop: 60117, Start Num: 127

Candidate Starts for Baoshan\_92:

(Start: 127 @59704 has 68 MA's), (192, 59815), (218, 59854), (221, 59863), (243, 59941), (263, 60013), (290, 60091), (297, 60109),

Gene: BarnCat\_104 Start: 54966, Stop: 54505, Start Num: 116

Candidate Starts for BarnCat\_104:

(Start: 116 @54966 has 3 MA's), (192, 54837), (241, 54714),

Gene: BarnCat\_85 Start: 47542, Stop: 47033, Start Num: 105

Candidate Starts for BarnCat\_85:

(Start: 105 @47542 has 18 MA's), (197, 47371), (201, 47365), (216, 47335), (232, 47281), (244, 47233),

Gene: BarnCat\_62 Start: 35513, Stop: 34857, Start Num: 108

Candidate Starts for BarnCat\_62:

(Start: 108 @35513 has 2 MA's), (140, 35426), (192, 35345), (221, 35288), (242, 35210), (244, 35201), (252, 35165), (281, 35069), (309, 35006), (315, 34991), (325, 34970),

Gene: BarnCat\_87 Start: 49536, Stop: 49024, Start Num: 111

Candidate Starts for BarnCat\_87:

(111, 49536), (265, 49179),

Gene: Basquiat\_247 Start: 140478, Stop: 140927, Start Num: 128

Candidate Starts for Basquiat\_247:

(Start: 128 @140478 has 32 MA's), (146, 140517), (163, 140535), (183, 140568), (201, 140595), (220, 140628), (244, 140715), (255, 140757), (296, 140856),

Gene: Baudelaire\_98 Start: 59877, Stop: 60281, Start Num: 127

Candidate Starts for Baudelaire\_98:

(Start: 127 @59877 has 68 MA's), (202, 59988), (217, 60015), (219, 60024), (220, 60027), (221, 60030), (223, 60036), (230, 60066), (239, 60090), (248, 60132), (271, 60201), (290, 60255),

Gene: Bazzle\_92 Start: 59605, Stop: 60018, Start Num: 127

Candidate Starts for Bazzle\_92:

(Start: 127 @59605 has 68 MA's), (192, 59716), (218, 59755), (221, 59764), (243, 59842), (263, 59914), (290, 59992), (297, 60010),

Gene: Beem\_151 Start: 80198, Stop: 80800, Start Num: 99

Candidate Starts for Beem\_151:

(Start: 99 @80198 has 30 MA's), (145, 80303), (159, 80324), (161, 80327), (Start: 174 @80351 has 1 MA's), (176, 80354), (180, 80360), (212, 80420), (236, 80489), (239, 80507), (249, 80558), (262, 80594), (294, 80690), (331, 80786),

Gene: Bellis\_90 Start: 59240, Stop: 59647, Start Num: 127

Candidate Starts for Bellis\_90:

(Start: 127 @59240 has 68 MA's), (133, 59261), (220, 59390), (221, 59393), (243, 59471), (251, 59507), (277, 59594), (290, 59621),

Gene: Bibwit\_35 Start: 32719, Stop: 32246, Start Num: 98

Candidate Starts for Bibwit\_35:

(39, 32857), (Start: 60 @32803 has 2 MA's), (65, 32794), (79, 32746), (Start: 98 @32719 has 22 MA's), (163, 32620), (190, 32578), (193, 32575), (217, 32539), (234, 32482), (241, 32449), (252, 32401),

Gene: BigBubba\_112 Start: 62473, Stop: 62973, Start Num: 99

Candidate Starts for BigBubba\_112:

(71, 62419), (Start: 99 @62473 has 30 MA's), (Start: 127 @62527 has 68 MA's), (173, 62608), (175, 62611), (187, 62635), (210, 62668), (228, 62725), (280, 62887),

Gene: BigCheese\_95 Start: 59815, Stop: 60228, Start Num: 127

Candidate Starts for BigCheese\_95:

(Start: 127 @59815 has 68 MA's), (192, 59926), (218, 59965), (221, 59974), (243, 60052), (263, 60124), (290, 60202), (297, 60220),

Gene: Blackbrain\_248 Start: 142255, Stop: 142704, Start Num: 128

Candidate Starts for Blackbrain\_248:

(Start: 128 @142255 has 32 MA's), (146, 142294), (163, 142312), (183, 142345), (201, 142372), (220, 142405), (244, 142492), (255, 142534), (296, 142633),

Gene: BobBob\_33 Start: 31999, Stop: 31526, Start Num: 98

Candidate Starts for BobBob\_33:

(39, 32137), (Start: 60 @32083 has 2 MA's), (65, 32074), (79, 32026), (Start: 98 @31999 has 22 MA's), (163, 31900), (190, 31858), (193, 31855), (217, 31819), (234, 31762), (241, 31729), (252, 31681),

Gene: Bobby\_139 Start: 80254, Stop: 80853, Start Num: 102

Candidate Starts for Bobby\_139:

(Start: 102 @80254 has 12 MA's), (145, 80356), (159, 80377), (161, 80380), (197, 80443), (212, 80473), (217, 80482), (225, 80515), (239, 80560), (262, 80647), (276, 80707), (294, 80743), (331, 80839),

Gene: Bobi\_53 Start: 37484, Stop: 38035, Start Num: 90

Candidate Starts for Bobi\_53:

(Start: 90 @37484 has 9 MA's), (93, 37487), (141, 37577), (172, 37619), (208, 37679), (228, 37745), (242, 37787), (254, 37835),

Gene: BobsGarage\_94 Start: 59815, Stop: 60228, Start Num: 127

Candidate Starts for BobsGarage\_94:

(Start: 127 @59815 has 68 MA's), (192, 59926), (218, 59965), (221, 59974), (243, 60052), (263, 60124), (290, 60202), (297, 60220),

Gene: Bogie\_47 Start: 33238, Stop: 33729, Start Num: 101

Candidate Starts for Bogie\_47:

(75, 33199), (77, 33202), (Start: 98 @33235 has 22 MA's), (Start: 101 @33238 has 11 MA's), (Start: 115 @33256 has 1 MA's), (117, 33265), (209, 33430), (213, 33439), (217, 33445), (220, 33457), (228, 33493), (244, 33544), (254, 33583),

Gene: Bombitas\_45 Start: 41655, Stop: 42164, Start Num: 116

Candidate Starts for Bombitas\_45:

(Start: 60 @41544 has 2 MA's), (85, 41613), (100, 41631), (Start: 116 @41655 has 3 MA's), (141, 41721), (173, 41775), (197, 41820), (228, 41907), (249, 41985), (254, 41997), (322, 42150),

Gene: Bonray\_252 Start: 144055, Stop: 144504, Start Num: 128

Candidate Starts for Bonray\_252:

(Start: 128 @144055 has 32 MA's), (146, 144094), (163, 144112), (183, 144145), (201, 144172), (220, 144205), (244, 144292), (255, 144334), (296, 144433),

Gene: Bradissa\_67 Start: 46915, Stop: 47334, Start Num: 134

Candidate Starts for Bradissa\_67:

(31, 46627), (Start: 73 @46789 has 2 MA's), (112, 46852), (Start: 118 @46867 has 1 MA's), (120, 46876), (Start: 134 @46915 has 4 MA's), (139, 46927), (155, 46957), (212, 47056), (217, 47062), (254, 47200),

Gene: Brandonk123\_37 Start: 33065, Stop: 32592, Start Num: 98

Candidate Starts for Brandonk123\_37:

(39, 33203), (Start: 60 @33149 has 2 MA's), (65, 33140), (79, 33092), (Start: 98 @33065 has 22 MA's), (163, 32966), (190, 32924), (193, 32921), (217, 32885), (234, 32828), (241, 32795), (252, 32747),

Gene: Bread\_246 Start: 142022, Stop: 142471, Start Num: 128

Candidate Starts for Bread\_246:

(Start: 128 @142022 has 32 MA's), (146, 142061), (163, 142079), (183, 142112), (201, 142139), (220, 142172), (244, 142259), (255, 142301), (296, 142400),

Gene: Breezona\_95 Start: 59815, Stop: 60228, Start Num: 127

Candidate Starts for Breezona\_95:

(Start: 127 @59815 has 68 MA's), (192, 59926), (220, 59971), (221, 59974), (246, 60070), (263, 60124), (290, 60202), (297, 60220),

Gene: Bromden\_96 Start: 60413, Stop: 60820, Start Num: 127

Candidate Starts for Bromden\_96:

(Start: 127 @60413 has 68 MA's), (133, 60434), (142, 60449), (220, 60563), (221, 60566), (263, 60716), (277, 60767), (290, 60794), (297, 60812),

Gene: Brujita\_46 Start: 33137, Stop: 33628, Start Num: 101

Candidate Starts for Brujita\_46:

(56, 33044), (75, 33098), (77, 33101), (Start: 98 @33134 has 22 MA's), (Start: 101 @33137 has 11 MA's), (Start: 115 @33155 has 1 MA's), (117, 33164), (209, 33329), (213, 33338), (217, 33344), (220, 33356), (228, 33392), (244, 33443), (254, 33482),

Gene: Buckeye\_60 Start: 52975, Stop: 52460, Start Num: 101

Candidate Starts for Buckeye\_60:

(64, 53053), (82, 52999), (Start: 92 @52984 has 4 MA's), (Start: 101 @52975 has 11 MA's), (132, 52909), (153, 52864), (170, 52840), (188, 52804), (194, 52798), (217, 52765), (233, 52711), (235, 52708), (271, 52591), (275, 52570), (308, 52495),

Gene: Buttons\_27 Start: 21411, Stop: 21896, Start Num: 107

Candidate Starts for Buttons\_27:

(Start: 107 @21411 has 2 MA's), (Start: 127 @21459 has 68 MA's), (220, 21630), (221, 21633), (234, 21672),

Gene: C3PO\_45 Start: 42754, Stop: 42164, Start Num: 110

Candidate Starts for C3PO\_45:

(48, 42886), (49, 42883), (Start: 110 @42754 has 9 MA's), (126, 42706), (138, 42667), (149, 42643), (152, 42640), (229, 42496), (249, 42418), (260, 42385), (299, 42277), (333, 42175), (335, 42169),

Gene: Cactojaque\_244 Start: 141201, Stop: 141650, Start Num: 128

Candidate Starts for Cactojaque\_244:

(Start: 128 @141201 has 32 MA's), (146, 141240), (163, 141258), (183, 141291), (201, 141318), (220, 141351), (244, 141438), (255, 141480), (296, 141579),

Gene: Cafasso\_20 Start: 18713, Stop: 18225, Start Num: 98

Candidate Starts for Cafasso\_20:

(19, 19079), (42, 18863), (54, 18806), (62, 18794), (Start: 98 @18713 has 22 MA's), (135, 18629), (168, 18605), (193, 18569), (199, 18560), (220, 18521), (222, 18515), (250, 18401), (252, 18395), (254, 18392), (286, 18314),

Gene: Calm\_92 Start: 57376, Stop: 57786, Start Num: 127

Candidate Starts for Calm\_92:

(Start: 127 @57376 has 68 MA's), (138, 57406), (140, 57409), (177, 57454), (221, 57532), (236, 57574), (243, 57610), (253, 57652), (256, 57658), (271, 57706), (283, 57751), (297, 57778),

Gene: Cane17\_242 Start: 148701, Stop: 149255, Start Num: 108

Candidate Starts for Cane17\_242:

(Start: 102 @148695 has 12 MA's), (Start: 108 @148701 has 2 MA's), (Start: 127 @148749 has 68 MA's), (163, 148812), (234, 148968), (249, 149040), (254, 149052), (286, 149130),

Gene: Cassita\_88 Start: 48685, Stop: 48176, Start Num: 105

Candidate Starts for Cassita\_88:

(Start: 105 @48685 has 18 MA's), (201, 48508), (216, 48478), (232, 48424), (244, 48376),

Gene: Chargie21\_247 Start: 140478, Stop: 140927, Start Num: 128

Candidate Starts for Chargie21\_247:

(Start: 128 @140478 has 32 MA's), (146, 140517), (163, 140535), (183, 140568), (201, 140595), (220, 140628), (244, 140715), (255, 140757), (296, 140856),

Gene: Charming\_36 Start: 32566, Stop: 32093, Start Num: 98

Candidate Starts for Charming\_36:

(39, 32704), (Start: 60 @32650 has 2 MA's), (65, 32641), (79, 32593), (Start: 98 @32566 has 22 MA's), (163, 32467), (190, 32425), (193, 32422), (217, 32386), (234, 32329), (241, 32296), (252, 32248),

Gene: Chaser\_95 Start: 58821, Stop: 59228, Start Num: 127

Candidate Starts for Chaser\_95:

(Start: 127 @58821 has 68 MA's), (133, 58842), (142, 58857), (221, 58974), (246, 59070), (263, 59124), (277, 59175), (290, 59202), (293, 59205), (297, 59220),

Gene: Chidiebere\_96 Start: 69963, Stop: 70481, Start Num: 110

Candidate Starts for Chidiebere\_96:

(78, 69921), (86, 69936), (Start: 110 @69963 has 9 MA's), (166, 70086), (171, 70095), (188, 70119), (254, 70299),

Gene: ChisanaKitsune\_93 Start: 68907, Stop: 69425, Start Num: 110

Candidate Starts for ChisanaKitsune\_93:

(78, 68865), (86, 68880), (Start: 110 @68907 has 9 MA's), (166, 69030), (171, 69039), (188, 69063), (254, 69243),

Gene: CicholasNage\_88 Start: 57029, Stop: 57439, Start Num: 127

Candidate Starts for CicholasNage\_88:

(Start: 127 @57029 has 68 MA's), (138, 57059), (140, 57062), (177, 57107), (221, 57185), (236, 57227), (243, 57263), (253, 57305), (256, 57311), (271, 57359), (283, 57404), (297, 57431),

Gene: Claus\_94 Start: 59528, Stop: 59941, Start Num: 127

Candidate Starts for Claus\_94:

(Start: 127 @59528 has 68 MA's), (192, 59639), (218, 59678), (221, 59687), (243, 59765), (263, 59837), (290, 59915), (297, 59933),

Gene: Clautastrophe\_90 Start: 59235, Stop: 59642, Start Num: 127

Candidate Starts for Clautastrophe\_90:

(Start: 127 @59235 has 68 MA's), (133, 59256), (220, 59385), (221, 59388), (243, 59466), (251, 59502), (277, 59589), (290, 59616),

Gene: Clown\_64 Start: 45007, Stop: 45525, Start Num: 97

Candidate Starts for Clown\_64:

(Start: 97 @45007 has 1 MA's), (Start: 116 @45031 has 3 MA's), (Start: 127 @45058 has 68 MA's), (141, 45097), (166, 45136), (217, 45214), (228, 45262), (242, 45304), (249, 45340), (254, 45352), (321, 45511),

Gene: Coco12\_30 Start: 26826, Stop: 26320, Start Num: 102

Candidate Starts for Coco12\_30:

(Start: 102 @26826 has 12 MA's), (Start: 115 @26811 has 1 MA's), (132, 26760), (135, 26751), (160, 26709), (168, 26694), (178, 26682), (180, 26679), (194, 26658), (220, 26619), (228, 26583), (254, 26493), (284, 26427), (300, 26397),



Gene: Coletti\_62 Start: 53240, Stop: 52725, Start Num: 101

Candidate Starts for Coletti\_62:

(64, 53318), (82, 53264), (Start: 92 @53249 has 4 MA's), (Start: 101 @53240 has 11 MA's), (132, 53174), (153, 53129), (170, 53105), (188, 53069), (194, 53063), (217, 53030), (233, 52976), (235, 52973), (271, 52856), (275, 52835), (308, 52760),

Gene: Colt\_243 Start: 147893, Stop: 148447, Start Num: 108

Candidate Starts for Colt\_243:

(Start: 102 @147887 has 12 MA's), (Start: 108 @147893 has 2 MA's), (Start: 127 @147941 has 68 MA's), (163, 148004), (234, 148160), (249, 148232), (254, 148244), (286, 148322),

Gene: Concombres\_255 Start: 144217, Stop: 144666, Start Num: 128

Candidate Starts for Concombres\_255:

(Start: 128 @144217 has 32 MA's), (146, 144256), (163, 144274), (177, 144295), (183, 144307), (201, 144334), (220, 144367), (244, 144454),

Gene: Constella\_158 Start: 86054, Stop: 86563, Start Num: 94

Candidate Starts for Constella\_158:

(Start: 91 @86051 has 1 MA's), (Start: 94 @86054 has 1 MA's), (117, 86087), (135, 86138), (155, 86174), (212, 86264), (217, 86273), (220, 86285), (221, 86288), (228, 86321), (240, 86351), (260, 86432), (303, 86525), (313, 86549),

Gene: Constella\_97 Start: 58172, Stop: 58714, Start Num: 105

Candidate Starts for Constella\_97:

(Start: 105 @58172 has 18 MA's), (Start: 115 @58190 has 1 MA's), (Start: 174 @58310 has 1 MA's), (183, 58325), (192, 58343), (214, 58382), (220, 58400), (222, 58406), (240, 58466), (269, 58559), (325, 58700),

Gene: Courthouse\_143 Start: 75295, Stop: 75897, Start Num: 99

Candidate Starts for Courthouse\_143:

(Start: 99 @75295 has 30 MA's), (145, 75400), (159, 75421), (161, 75424), (Start: 174 @75448 has 1 MA's), (176, 75451), (180, 75457), (212, 75517), (236, 75586), (239, 75604), (249, 75655), (262, 75691), (294, 75787), (331, 75883),

Gene: Crossroads\_95 Start: 59527, Stop: 59940, Start Num: 127

Candidate Starts for Crossroads\_95:

(Start: 127 @59527 has 68 MA's), (192, 59638), (218, 59677), (221, 59686), (243, 59764), (263, 59836), (290, 59914), (297, 59932),

Gene: Cruella\_45 Start: 42754, Stop: 42164, Start Num: 110

Candidate Starts for Cruella\_45:

(48, 42886), (49, 42883), (Start: 110 @42754 has 9 MA's), (126, 42706), (138, 42667), (149, 42643), (152, 42640), (229, 42496), (249, 42418), (260, 42385), (299, 42277), (333, 42175), (335, 42169),

Gene: DalanDe\_1 Start: 1, Stop: 522, Start Num: 96

Candidate Starts for DalanDe\_1:

(Start: 96 @1 has 1 MA's), (Start: 110 @16 has 9 MA's), (132, 76), (139, 94), (143, 100), (181, 154), (190, 175), (220, 226), (236, 271), (241, 301), (244, 313), (258, 364), (285, 430), (289, 442),

Gene: Dallas\_113 Start: 64402, Stop: 64944, Start Num: 105

Candidate Starts for Dallas\_113:

(40, 64240), (45, 64264), (Start: 80 @64369 has 1 MA's), (Start: 105 @64402 has 18 MA's), (Start: 115 @64420 has 1 MA's), (135, 64477), (Start: 174 @64540 has 1 MA's), (183, 64555), (192, 64573),

(220, 64630), (222, 64636), (240, 64696), (269, 64789),

Gene: Daredevil\_91 Start: 63069, Stop: 63638, Start Num: 104

Candidate Starts for Daredevil\_91:

(23, 62760), (32, 62871), (Start: 104 @63069 has 14 MA's), (160, 63186), (190, 63237), (220, 63291), (228, 63336), (278, 63480), (311, 63546),

Gene: Darko\_249 Start: 142196, Stop: 142645, Start Num: 128

Candidate Starts for Darko\_249:

(Start: 128 @142196 has 32 MA's), (146, 142235), (163, 142253), (183, 142286), (201, 142313), (220, 142346), (244, 142433), (255, 142475), (296, 142574),

Gene: Darwin\_14 Start: 7286, Stop: 7858, Start Num: 124

Candidate Starts for Darwin\_14:

(Start: 124 @7286 has 1 MA's), (216, 7448), (221, 7466), (222, 7469), (301, 7727), (312, 7763), (336, 7832),

Gene: Darwin\_11 Start: 6015, Stop: 6593, Start Num: 110

Candidate Starts for Darwin\_11:

(Start: 110 @6015 has 9 MA's), (157, 6126), (162, 6132), (234, 6267), (238, 6282), (254, 6351), (260, 6372), (316, 6534), (332, 6579),

Gene: Darwin\_76 Start: 54919, Stop: 54362, Start Num: 123

Candidate Starts for Darwin\_76:

(Start: 123 @54919 has 1 MA's), (165, 54829), (198, 54778), (229, 54700), (328, 54418), (337, 54370),

Gene: DatBoi\_98 Start: 66730, Stop: 67308, Start Num: 104

Candidate Starts for DatBoi\_98:

(Start: 104 @66730 has 14 MA's), (Start: 127 @66778 has 68 MA's), (139, 66814), (152, 66838), (160, 66847), (242, 67036), (317, 67228),

Gene: DirkDirk\_88 Start: 56705, Stop: 57115, Start Num: 127

Candidate Starts for DirkDirk\_88:

(Start: 127 @56705 has 68 MA's), (138, 56735), (140, 56738), (177, 56783), (221, 56861), (236, 56903), (243, 56939), (253, 56981), (256, 56987), (271, 57035), (283, 57080), (297, 57107),

Gene: DmpstrDiver\_113 Start: 63822, Stop: 64364, Start Num: 105

Candidate Starts for DmpstrDiver\_113:

(40, 63660), (45, 63684), (Start: 80 @63789 has 1 MA's), (Start: 105 @63822 has 18 MA's), (Start: 115 @63840 has 1 MA's), (135, 63897), (Start: 174 @63960 has 1 MA's), (183, 63975), (192, 63993), (220, 64050), (222, 64056), (240, 64116), (269, 64209),

Gene: DonTron\_22 Start: 10785, Stop: 11264, Start Num: 98

Candidate Starts for DonTron\_22:

(Start: 98 @10785 has 22 MA's), (149, 10896), (206, 10980), (217, 10998), (220, 11010), (249, 11124),

Gene: Dori\_69 Start: 53193, Stop: 53732, Start Num: 105

Candidate Starts for Dori\_69:

(52, 53091), (70, 53133), (Start: 96 @53184 has 1 MA's), (Start: 105 @53193 has 18 MA's), (Start: 116 @53214 has 3 MA's), (152, 53301), (166, 53322), (218, 53409), (220, 53415), (231, 53454), (254, 53541), (286, 53619),

Gene: Douge\_95 Start: 58940, Stop: 59347, Start Num: 127

Candidate Starts for Douge\_95:

(Start: 127 @58940 has 68 MA's), (133, 58961), (221, 59093), (246, 59189), (263, 59243), (277, 59294), (290, 59321), (293, 59324), (297, 59339),

Gene: DrSeegs\_94 Start: 59815, Stop: 60228, Start Num: 127

Candidate Starts for DrSeegs\_94:

(Start: 127 @59815 has 68 MA's), (192, 59926), (220, 59971), (221, 59974), (246, 60070), (263, 60124), (290, 60202), (297, 60220),

Gene: Duke13\_146 Start: 77046, Stop: 77648, Start Num: 99

Candidate Starts for Duke13\_146:

(67, 76977), (Start: 99 @77046 has 30 MA's), (145, 77151), (159, 77172), (161, 77175), (Start: 174 @77199 has 1 MA's), (176, 77202), (180, 77208), (225, 77310), (236, 77337), (239, 77355), (262, 77442), (331, 77634),

Gene: DuncansLeg\_92 Start: 59254, Stop: 59661, Start Num: 127

Candidate Starts for DuncansLeg\_92:

(Start: 127 @59254 has 68 MA's), (133, 59275), (192, 59359), (220, 59404), (221, 59407), (243, 59485), (251, 59521), (277, 59608), (290, 59635),

Gene: DyoEdafos\_98 Start: 59531, Stop: 59938, Start Num: 127

Candidate Starts for DyoEdafos\_98:

(Start: 127 @59531 has 68 MA's), (133, 59552), (142, 59567), (221, 59684), (230, 59720), (246, 59780), (263, 59834), (277, 59885), (290, 59912), (297, 59930),

Gene: Ellson\_91 Start: 59569, Stop: 59976, Start Num: 127

Candidate Starts for Ellson\_91:

(Start: 127 @59569 has 68 MA's), (133, 59590), (192, 59674), (220, 59719), (221, 59722), (243, 59800), (251, 59836), (277, 59923), (290, 59950),

Gene: EmToTheThree\_250 Start: 143104, Stop: 143553, Start Num: 128

Candidate Starts for EmToTheThree\_250:

(Start: 128 @143104 has 32 MA's), (146, 143143), (163, 143161), (183, 143194), (201, 143221), (220, 143254), (244, 143341), (255, 143383), (296, 143482),

Gene: EnalisNailo\_66 Start: 46449, Stop: 46868, Start Num: 134

Candidate Starts for EnalisNailo\_66:

(31, 46161), (Start: 73 @46323 has 2 MA's), (112, 46386), (Start: 118 @46401 has 1 MA's), (120, 46410), (Start: 134 @46449 has 4 MA's), (139, 46461), (155, 46491), (212, 46590), (217, 46596), (254, 46734),

Gene: Enceladus\_88 Start: 57406, Stop: 57816, Start Num: 127

Candidate Starts for Enceladus\_88:

(Start: 127 @57406 has 68 MA's), (138, 57436), (140, 57439), (177, 57484), (221, 57562), (236, 57604), (243, 57640), (253, 57682), (256, 57688), (271, 57736), (283, 57781), (297, 57808),

Gene: Erdmann\_251 Start: 143072, Stop: 143521, Start Num: 128

Candidate Starts for Erdmann\_251:

(Start: 128 @143072 has 32 MA's), (146, 143111), (163, 143129), (183, 143162), (201, 143189), (220, 143222), (244, 143309), (255, 143351), (296, 143450),

Gene: EricMillard\_142 Start: 78398, Stop: 79000, Start Num: 99

Candidate Starts for EricMillard\_142:

(67, 78329), (Start: 99 @78398 has 30 MA's), (145, 78503), (159, 78524), (161, 78527), (Start: 174 @78551 has 1 MA's), (176, 78554), (180, 78560), (225, 78662), (236, 78689), (239, 78707), (262, 78794), (331, 78986),

Gene: EricMillard\_105 Start: 63462, Stop: 64004, Start Num: 105

Candidate Starts for EricMillard\_105:

(40, 63300), (45, 63324), (Start: 80 @63429 has 1 MA's), (Start: 105 @63462 has 18 MA's), (Start: 115 @63480 has 1 MA's), (135, 63537), (Start: 174 @63600 has 1 MA's), (183, 63615), (192, 63633), (220, 63690), (222, 63696), (240, 63756), (269, 63849),

Gene: ErnieJ\_243 Start: 139900, Stop: 140349, Start Num: 128

Candidate Starts for ErnieJ\_243:

(Start: 128 @139900 has 32 MA's), (146, 139939), (163, 139957), (183, 139990), (201, 140017), (220, 140050), (244, 140137), (255, 140179), (296, 140278),

Gene: Eureka\_37 Start: 33608, Stop: 33108, Start Num: 89

Candidate Starts for Eureka\_37:

(Start: 89 @33608 has 3 MA's), (Start: 127 @33551 has 68 MA's), (139, 33515),

Gene: Faith1\_95 Start: 59452, Stop: 59865, Start Num: 127

Candidate Starts for Faith1\_95:

(Start: 127 @59452 has 68 MA's), (192, 59563), (220, 59608), (221, 59611), (246, 59707), (263, 59761), (290, 59839), (297, 59857),

Gene: Filch\_113 Start: 63036, Stop: 63536, Start Num: 99

Candidate Starts for Filch\_113:

(71, 62982), (Start: 99 @63036 has 30 MA's), (Start: 127 @63090 has 68 MA's), (173, 63171), (175, 63174), (187, 63198), (210, 63231), (228, 63288), (280, 63450),

Gene: Finch\_82 Start: 71334, Stop: 71777, Start Num: 131

Candidate Starts for Finch\_82:

(84, 71253), (112, 71289), (Start: 131 @71334 has 2 MA's), (147, 71382), (219, 71505), (220, 71508), (237, 71559), (250, 71625), (261, 71655),

Gene: Finch\_186 Start: 111122, Stop: 111628, Start Num: 101

Candidate Starts for Finch\_186:

(Start: 101 @111122 has 11 MA's), (168, 111254), (210, 111326), (218, 111341), (221, 111350),

Gene: Finemlucis\_96 Start: 60566, Stop: 60979, Start Num: 127

Candidate Starts for Finemlucis\_96:

(Start: 127 @60566 has 68 MA's), (192, 60677), (218, 60716), (221, 60725), (243, 60803), (263, 60875), (290, 60953), (297, 60971),

Gene: Finnry\_92 Start: 59588, Stop: 59995, Start Num: 127

Candidate Starts for Finnry\_92:

(Start: 127 @59588 has 68 MA's), (133, 59609), (220, 59738), (221, 59741), (243, 59819), (251, 59855), (277, 59942), (290, 59969),

Gene: Fosterous\_34 Start: 32991, Stop: 32518, Start Num: 98

Candidate Starts for Fosterous\_34:

(39, 33129), (Start: 60 @33075 has 2 MA's), (65, 33066), (79, 33018), (Start: 98 @32991 has 22 MA's), (163, 32892), (190, 32850), (193, 32847), (217, 32811), (234, 32754), (241, 32721), (252, 32673),

Gene: FoxtrotP1\_248 Start: 143658, Stop: 144107, Start Num: 128

Candidate Starts for FoxtrotP1\_248:

(Start: 128 @143658 has 32 MA's), (146, 143697), (163, 143715), (183, 143748), (201, 143775), (220, 143808), (244, 143895), (255, 143937), (296, 144036),

Gene: Francesca\_39 Start: 21303, Stop: 21839, Start Num: 108

Candidate Starts for Francesca\_39:

(Start: 108 @21303 has 2 MA's), (219, 21498), (220, 21501), (249, 21618), (319, 21804), (326, 21822),

Gene: Frankie\_34 Start: 27904, Stop: 27416, Start Num: 102

Candidate Starts for Frankie\_34:

(Start: 102 @27904 has 12 MA's), (135, 27829), (160, 27787), (166, 27775), (180, 27757), (191, 27739), (212, 27712), (274, 27517), (300, 27478),

Gene: FudgeTart\_245 Start: 142162, Stop: 142611, Start Num: 128

Candidate Starts for FudgeTart\_245:

(Start: 128 @142162 has 32 MA's), (146, 142201), (163, 142219), (183, 142252), (201, 142279), (220, 142312), (244, 142399), (255, 142441), (296, 142540),

Gene: FugateOSU\_60 Start: 53224, Stop: 52700, Start Num: 92

Candidate Starts for FugateOSU\_60:

(64, 53293), (82, 53239), (Start: 92 @53224 has 4 MA's), (Start: 101 @53215 has 11 MA's), (132, 53149), (153, 53104), (170, 53080), (188, 53044), (194, 53038), (217, 53005), (233, 52951), (235, 52948), (271, 52831), (275, 52810), (308, 52735),

Gene: GAL1\_27 Start: 22156, Stop: 22695, Start Num: 90

Candidate Starts for GAL1\_27:

(Start: 90 @22156 has 9 MA's), (132, 22234), (166, 22300), (168, 22303), (196, 22348), (209, 22366), (211, 22372), (213, 22375), (219, 22390), (220, 22393), (221, 22396), (224, 22408), (250, 22510), (254, 22519),

Gene: GMA1\_47 Start: 30722, Stop: 31246, Start Num: 98

Candidate Starts for GMA1\_47:

(18, 30347), (28, 30500), (58, 30635), (66, 30653), (81, 30698), (86, 30707), (Start: 98 @30722 has 22 MA's), (Start: 127 @30779 has 68 MA's), (228, 30986), (244, 31037), (260, 31097), (286, 31154),

Gene: GMA1\_68 Start: 40382, Stop: 40945, Start Num: 74

Candidate Starts for GMA1\_68:

(21, 40088), (24, 40115), (26, 40187), (43, 40280), (74, 40382), (88, 40412), (Start: 127 @40481 has 68 MA's), (144, 40520), (204, 40598), (217, 40628), (224, 40655), (228, 40676), (242, 40718), (249, 40754), (254, 40766), (283, 40838),

Gene: GMA3\_25 Start: 35593, Stop: 36075, Start Num: 126

Candidate Starts for GMA3\_25:

(126, 35593), (150, 35656), (189, 35722), (207, 35743), (219, 35764), (222, 35773), (233, 35809), (305, 36034),

Gene: Gabriela\_95 Start: 58798, Stop: 59211, Start Num: 127

Candidate Starts for Gabriela\_95:

(Start: 127 @58798 has 68 MA's), (192, 58909), (220, 58954), (221, 58957), (246, 59053), (263, 59107), (290, 59185), (297, 59203),

Gene: Galactic\_32 Start: 27751, Stop: 28350, Start Num: 51

Candidate Starts for Galactic\_32:

(Start: 51 @27751 has 3 MA's), (Start: 90 @27853 has 9 MA's), (220, 28075), (228, 28111), (284, 28276), (303, 28321),

Gene: Galadriel\_36 Start: 33480, Stop: 33007, Start Num: 98

Candidate Starts for Galadriel\_36:

(39, 33618), (Start: 60 @33564 has 2 MA's), (65, 33555), (79, 33507), (Start: 98 @33480 has 22 MA's), (163, 33381), (190, 33339), (193, 33336), (217, 33300), (234, 33243), (241, 33210), (252, 33162),

Gene: Gardann\_95 Start: 59299, Stop: 59712, Start Num: 127

Candidate Starts for Gardann\_95:

(Start: 127 @59299 has 68 MA's), (192, 59410), (218, 59449), (221, 59458), (243, 59536), (263, 59608), (290, 59686), (297, 59704),

Gene: Geodirt\_33 Start: 32468, Stop: 31986, Start Num: 98

Candidate Starts for Geodirt\_33:

(39, 32606), (Start: 60 @32552 has 2 MA's), (63, 32549), (79, 32495), (Start: 98 @32468 has 22 MA's), (217, 32285), (220, 32273), (270, 32111), (286, 32066),

Gene: Gizmo\_255 Start: 144989, Stop: 145438, Start Num: 128

Candidate Starts for Gizmo\_255:

(Start: 128 @144989 has 32 MA's), (146, 145028), (163, 145046), (183, 145079), (201, 145106), (220, 145139), (244, 145226), (255, 145268), (296, 145367),

Gene: Gizmo\_126 Start: 66298, Stop: 65843, Start Num: 125

Candidate Starts for Gizmo\_126:

(Start: 125 @66298 has 2 MA's), (182, 66211), (205, 66175), (219, 66139), (228, 66100), (244, 66049),

Gene: Globfish\_58 Start: 33707, Stop: 34201, Start Num: 109

Candidate Starts for Globfish\_58:

(55, 33614), (68, 33644), (Start: 89 @33692 has 3 MA's), (106, 33704), (Start: 109 @33707 has 2 MA's), (139, 33788), (164, 33818), (186, 33851), (213, 33896), (221, 33917), (237, 33965), (259, 34058),

Gene: Globfish\_83 Start: 46529, Stop: 47017, Start Num: 116

Candidate Starts for Globfish\_83:

(Start: 108 @46508 has 2 MA's), (Start: 116 @46529 has 3 MA's), (137, 46586), (146, 46604), (177, 46646), (217, 46721), (323, 47006),

Gene: Goku\_110 Start: 63579, Stop: 64079, Start Num: 99

Candidate Starts for Goku\_110:

(71, 63525), (Start: 99 @63579 has 30 MA's), (Start: 127 @63633 has 68 MA's), (173, 63714), (175, 63717), (187, 63741), (210, 63774), (228, 63831), (280, 63993),

Gene: Goku\_37 Start: 33337, Stop: 32837, Start Num: 89

Candidate Starts for Goku\_37:

(Start: 89 @33337 has 3 MA's), (Start: 127 @33280 has 68 MA's), (139, 33244),

Gene: Goldilocks\_114 Start: 63260, Stop: 63760, Start Num: 99

Candidate Starts for Goldilocks\_114:

(71, 63206), (Start: 99 @63260 has 30 MA's), (Start: 127 @63314 has 68 MA's), (173, 63395), (175, 63398), (187, 63422), (210, 63455), (228, 63512), (280, 63674),

Gene: Gonephishing\_141 Start: 75522, Stop: 76124, Start Num: 99

Candidate Starts for Gonephishing\_141:

(67, 75453), (Start: 99 @75522 has 30 MA's), (145, 75627), (159, 75648), (161, 75651), (Start: 174 @75675 has 1 MA's), (176, 75678), (180, 75684), (225, 75786), (236, 75813), (239, 75831), (262, 75918), (331, 76110),

Gene: Gspu1\_40 Start: 30337, Stop: 30849, Start Num: 98

Candidate Starts for Gspu1\_40:

(30, 30127), (35, 30154), (44, 30202), (58, 30250), (69, 30277), (Start: 98 @30337 has 22 MA's), (Start: 107 @30346 has 2 MA's), (121, 30382), (158, 30451), (171, 30475), (204, 30523), (216, 30550), (224, 30580), (228, 30601), (231, 30604), (237, 30616), (302, 30802),

Gene: GuuelaD\_92 Start: 59411, Stop: 59824, Start Num: 127

Candidate Starts for GuuelaD\_92:

(Start: 127 @59411 has 68 MA's), (192, 59522), (218, 59561), (221, 59570), (243, 59648), (263, 59720), (290, 59798), (297, 59816),

Gene: HUHilltop\_45 Start: 31495, Stop: 31986, Start Num: 101

Candidate Starts for HUHilltop\_45:

(75, 31456), (77, 31459), (Start: 98 @31492 has 22 MA's), (Start: 101 @31495 has 11 MA's), (Start: 115 @31513 has 1 MA's), (117, 31522), (209, 31687), (213, 31696), (217, 31702), (220, 31714), (228, 31750), (244, 31801), (254, 31840),

Gene: Hafay\_96 Start: 59523, Stop: 59936, Start Num: 127

Candidate Starts for Hafay\_96:

(Start: 127 @59523 has 68 MA's), (192, 59634), (218, 59673), (221, 59682), (243, 59760), (263, 59832), (290, 59910), (297, 59928),

Gene: Halena\_88 Start: 56292, Stop: 56702, Start Num: 127

Candidate Starts for Halena\_88:

(Start: 127 @56292 has 68 MA's), (138, 56322), (140, 56325), (177, 56370), (221, 56448), (236, 56490), (243, 56526), (253, 56568), (256, 56574), (271, 56622), (283, 56667), (297, 56694),

Gene: Hank144\_56 Start: 39762, Stop: 39295, Start Num: 125

Candidate Starts for Hank144\_56:

(Start: 125 @39762 has 2 MA's), (169, 39693), (214, 39615), (217, 39609), (228, 39561), (231, 39558), (240, 39531), (320, 39306),

Gene: Hannaconda\_43 Start: 36122, Stop: 36664, Start Num: 90

Candidate Starts for Hannaconda\_43:

(Start: 53 @36035 has 1 MA's), (Start: 90 @36122 has 9 MA's), (Start: 127 @36185 has 68 MA's), (152, 36251), (168, 36275), (187, 36308), (211, 36341), (220, 36362), (221, 36365), (228, 36398), (249, 36476), (296, 36587), (318, 36635),

Gene: Hannaconda\_99 Start: 57411, Stop: 57815, Start Num: 174

Candidate Starts for Hannaconda\_99:

(Start: 80 @57240 has 1 MA's), (Start: 105 @57273 has 18 MA's), (Start: 115 @57291 has 1 MA's), (135, 57348), (Start: 174 @57411 has 1 MA's), (183, 57426), (192, 57444), (220, 57501), (222, 57507), (240, 57567), (269, 57660), (325, 57801),

Gene: Hannaconda\_141 Start: 76044, Stop: 76646, Start Num: 99

Candidate Starts for Hannaconda\_141:

(Start: 99 @76044 has 30 MA's), (145, 76149), (159, 76170), (161, 76173), (Start: 174 @76197 has 1 MA's), (176, 76200), (180, 76206), (212, 76266), (236, 76335), (239, 76353), (249, 76404), (262, 76440), (294, 76536), (331, 76632),

Gene: Hlubikazi\_31 Start: 27761, Stop: 28381, Start Num: 61

Candidate Starts for Hlubikazi\_31:

(37, 27677), (Start: 51 @27734 has 3 MA's), (Start: 61 @27761 has 3 MA's), (Start: 90 @27836 has 9 MA's), (220, 28058), (228, 28094), (284, 28259), (303, 28304),

Gene: HokkenD\_142 Start: 79202, Stop: 79804, Start Num: 99

Candidate Starts for HokkenD\_142:

(67, 79133), (Start: 99 @79202 has 30 MA's), (145, 79307), (159, 79328), (161, 79331), (Start: 174 @79355 has 1 MA's), (176, 79358), (180, 79364), (225, 79466), (236, 79493), (239, 79511), (262, 79598), (331, 79790),

Gene: Holt\_116 Start: 63658, Stop: 64158, Start Num: 99

Candidate Starts for Holt\_116:

(71, 63604), (Start: 99 @63658 has 30 MA's), (Start: 127 @63712 has 68 MA's), (173, 63793), (175, 63796), (187, 63820), (210, 63853), (228, 63910), (280, 64072),

Gene: Hortense\_58 Start: 41496, Stop: 42002, Start Num: 104

Candidate Starts for Hortense\_58:

(29, 41271), (33, 41301), (Start: 104 @41496 has 14 MA's), (135, 41571), (142, 41583), (170, 41625), (220, 41712), (234, 41751),

Gene: Howe\_58 Start: 41496, Stop: 42002, Start Num: 104

Candidate Starts for Howe\_58:

(29, 41271), (33, 41301), (Start: 104 @41496 has 14 MA's), (135, 41571), (142, 41583), (170, 41625), (220, 41712), (234, 41751),

Gene: Hughesyang\_111 Start: 64353, Stop: 64895, Start Num: 105

Candidate Starts for Hughesyang\_111:

(40, 64191), (45, 64215), (Start: 80 @64320 has 1 MA's), (Start: 105 @64353 has 18 MA's), (Start: 115 @64371 has 1 MA's), (135, 64428), (Start: 174 @64491 has 1 MA's), (183, 64506), (192, 64524), (220, 64581), (222, 64587), (240, 64647), (269, 64740),

Gene: Hughesyang\_148 Start: 79867, Stop: 80466, Start Num: 102

Candidate Starts for Hughesyang\_148:

(Start: 102 @79867 has 12 MA's), (145, 79969), (159, 79990), (161, 79993), (197, 80056), (212, 80086), (217, 80095), (225, 80128), (239, 80173), (262, 80260), (276, 80320), (294, 80356), (331, 80452),

Gene: Icee\_112 Start: 62768, Stop: 63268, Start Num: 99

Candidate Starts for Icee\_112:

(71, 62714), (Start: 99 @62768 has 30 MA's), (Start: 127 @62822 has 68 MA's), (173, 62903), (175, 62906), (187, 62930), (210, 62963), (228, 63020), (280, 63182),



Gene: Island3\_46 Start: 33137, Stop: 33628, Start Num: 101

Candidate Starts for Island3\_46:

(56, 33044), (75, 33098), (77, 33101), (Start: 98 @33134 has 22 MA's), (Start: 101 @33137 has 11 MA's), (Start: 115 @33155 has 1 MA's), (117, 33164), (209, 33329), (213, 33338), (217, 33344), (220, 33356), (228, 33392), (244, 33443), (254, 33482),

Gene: Issimir\_245 Start: 142261, Stop: 142710, Start Num: 128

Candidate Starts for Issimir\_245:

(Start: 128 @142261 has 32 MA's), (146, 142300), (163, 142318), (183, 142351), (201, 142378), (220, 142411), (244, 142498), (255, 142540), (296, 142639),

Gene: Itos\_95 Start: 58358, Stop: 58771, Start Num: 127

Candidate Starts for Itos\_95:

(Start: 127 @58358 has 68 MA's), (192, 58469), (220, 58514), (221, 58517), (246, 58613), (263, 58667), (290, 58745), (297, 58763),

Gene: JPickles\_247 Start: 141311, Stop: 141760, Start Num: 128

Candidate Starts for JPickles\_247:

(Start: 128 @141311 has 32 MA's), (146, 141350), (163, 141368), (183, 141401), (201, 141428), (220, 141461), (244, 141548), (255, 141590), (296, 141689),

Gene: JalFarm20\_33 Start: 27847, Stop: 27341, Start Num: 102

Candidate Starts for JalFarm20\_33:

(Start: 102 @27847 has 12 MA's), (Start: 115 @27832 has 1 MA's), (132, 27781), (135, 27772), (160, 27730), (168, 27715), (178, 27703), (180, 27700), (194, 27679), (220, 27640), (228, 27604), (254, 27514), (284, 27448), (300, 27418),

Gene: Janiyra\_253 Start: 142848, Stop: 143297, Start Num: 128

Candidate Starts for Janiyra\_253:

(Start: 128 @142848 has 32 MA's), (146, 142887), (163, 142905), (183, 142938), (201, 142965), (220, 142998), (244, 143085), (255, 143127), (296, 143226),

Gene: JeTaime\_109 Start: 62868, Stop: 63383, Start Num: 99

Candidate Starts for JeTaime\_109:

(71, 62814), (Start: 99 @62868 has 30 MA's), (Start: 127 @62922 has 68 MA's), (173, 63003), (175, 63006), (187, 63030), (210, 63063), (228, 63120), (280, 63282),

Gene: Jobypre\_93 Start: 59235, Stop: 59642, Start Num: 127

Candidate Starts for Jobypre\_93:

(Start: 127 @59235 has 68 MA's), (133, 59256), (220, 59385), (221, 59388), (243, 59466), (251, 59502), (277, 59589), (290, 59616),

Gene: JoeDirt\_92 Start: 57967, Stop: 58377, Start Num: 127

Candidate Starts for JoeDirt\_92:

(Start: 127 @57967 has 68 MA's), (138, 57997), (140, 58000), (177, 58045), (221, 58123), (236, 58165), (243, 58201), (253, 58243), (256, 58249), (271, 58297), (283, 58342), (297, 58369),

Gene: JonJames\_26 Start: 9049, Stop: 9558, Start Num: 98

Candidate Starts for JonJames\_26:

(Start: 98 @9049 has 22 MA's), (Start: 127 @9103 has 68 MA's), (151, 9160), (166, 9181), (168, 9184), (217, 9256), (220, 9268), (228, 9304), (250, 9385), (254, 9394), (288, 9472), (317, 9544),

Gene: Jubie\_91 Start: 59370, Stop: 59777, Start Num: 127

Candidate Starts for Jubie\_91:

(Start: 127 @59370 has 68 MA's), (133, 59391), (220, 59520), (221, 59523), (243, 59601), (251, 59637), (277, 59724), (290, 59751),

Gene: Kabocha\_97 Start: 70776, Stop: 71294, Start Num: 110

Candidate Starts for Kabocha\_97:

(78, 70734), (86, 70749), (Start: 110 @70776 has 9 MA's), (166, 70899), (171, 70908), (188, 70932), (254, 71112),

Gene: Kahlid\_94 Start: 59217, Stop: 59630, Start Num: 127

Candidate Starts for Kahlid\_94:

(Start: 127 @59217 has 68 MA's), (192, 59328), (218, 59367), (221, 59376), (243, 59454), (263, 59526), (290, 59604), (297, 59622),

Gene: Kalah2\_105 Start: 63688, Stop: 64230, Start Num: 105

Candidate Starts for Kalah2\_105:

(40, 63526), (45, 63550), (Start: 80 @63655 has 1 MA's), (Start: 105 @63688 has 18 MA's), (Start: 115 @63706 has 1 MA's), (135, 63763), (Start: 174 @63826 has 1 MA's), (183, 63841), (192, 63859), (220, 63916), (222, 63922), (240, 63982), (269, 64075),

Gene: Kalah2\_140 Start: 78988, Stop: 79587, Start Num: 102

Candidate Starts for Kalah2\_140:

(Start: 102 @78988 has 12 MA's), (145, 79090), (159, 79111), (161, 79114), (197, 79177), (212, 79207), (217, 79216), (225, 79249), (239, 79294), (262, 79381), (276, 79441), (294, 79477), (331, 79573),

Gene: KashFlow\_40 Start: 35743, Stop: 36285, Start Num: 90

Candidate Starts for KashFlow\_40:

(Start: 53 @35656 has 1 MA's), (Start: 90 @35743 has 9 MA's), (Start: 127 @35806 has 68 MA's), (152, 35872), (168, 35896), (187, 35929), (211, 35962), (220, 35983), (221, 35986), (228, 36019), (249, 36097), (296, 36208), (318, 36256),

Gene: KashFlow\_148 Start: 78305, Stop: 78904, Start Num: 105

Candidate Starts for KashFlow\_148:

(Start: 105 @78305 has 18 MA's), (141, 78395), (197, 78491), (218, 78536), (225, 78563), (239, 78608), (247, 78650), (249, 78659), (299, 78806), (304, 78821), (331, 78890),

Gene: Keitabear\_36 Start: 34510, Stop: 33947, Start Num: 60

Candidate Starts for Keitabear\_36:

(39, 34564), (Start: 60 @34510 has 2 MA's), (65, 34501), (79, 34453), (Start: 98 @34426 has 22 MA's), (Start: 174 @34306 has 1 MA's), (217, 34243), (220, 34231), (286, 34024),

Gene: Kimchi\_115 Start: 63385, Stop: 63885, Start Num: 99

Candidate Starts for Kimchi\_115:

(71, 63331), (Start: 99 @63385 has 30 MA's), (Start: 127 @63439 has 68 MA's), (173, 63520), (175, 63523), (187, 63547), (210, 63580), (228, 63637), (280, 63799),

Gene: KingMidas\_32 Start: 28828, Stop: 29370, Start Num: 90

Candidate Starts for KingMidas\_32:

(Start: 90 @28828 has 9 MA's), (148, 28942), (228, 29095), (249, 29173), (254, 29185),

Gene: KingTut\_52 Start: 48894, Stop: 48379, Start Num: 101

Candidate Starts for KingTut\_52:

(64, 48972), (82, 48918), (Start: 92 @48903 has 4 MA's), (Start: 101 @48894 has 11 MA's), (132, 48828), (153, 48783), (170, 48759), (188, 48723), (194, 48717), (217, 48684), (233, 48630), (235, 48627), (271, 48510), (275, 48489), (308, 48414),

Gene: Kingsolomon\_90 Start: 59344, Stop: 59751, Start Num: 127

Candidate Starts for Kingsolomon\_90:

(Start: 127 @59344 has 68 MA's), (133, 59365), (220, 59494), (221, 59497), (243, 59575), (251, 59611), (277, 59698), (290, 59725),

Gene: Klein\_147 Start: 77536, Stop: 78138, Start Num: 99

Candidate Starts for Klein\_147:

(67, 77467), (Start: 99 @77536 has 30 MA's), (145, 77641), (159, 77662), (161, 77665), (Start: 174 @77689 has 1 MA's), (176, 77692), (180, 77698), (225, 77800), (236, 77827), (239, 77845), (262, 77932), (331, 78124),

Gene: Krypton555\_94 Start: 59747, Stop: 60154, Start Num: 127

Candidate Starts for Krypton555\_94:

(Start: 127 @59747 has 68 MA's), (133, 59768), (192, 59852), (220, 59897), (221, 59900), (243, 59978), (251, 60014), (277, 60101), (290, 60128),

Gene: Kuwabara\_68 Start: 41993, Stop: 42493, Start Num: 114

Candidate Starts for Kuwabara\_68:

(Start: 114 @41993 has 1 MA's), (182, 42122), (228, 42230), (268, 42350),

Gene: LeBron\_90 Start: 56599, Stop: 57009, Start Num: 127

Candidate Starts for LeBron\_90:

(Start: 127 @56599 has 68 MA's), (138, 56629), (140, 56632), (177, 56677), (221, 56755), (236, 56797), (243, 56833), (253, 56875), (256, 56881), (271, 56929), (283, 56974), (297, 57001),

Gene: Lee7\_249 Start: 144611, Stop: 145060, Start Num: 128

Candidate Starts for Lee7\_249:

(Start: 128 @144611 has 32 MA's), (146, 144650), (163, 144668), (183, 144701), (201, 144728), (220, 144761), (244, 144848), (255, 144890), (296, 144989),

Gene: LeeroyJenkins\_114 Start: 56842, Stop: 56381, Start Num: 116

Candidate Starts for LeeroyJenkins\_114:

(Start: 116 @56842 has 3 MA's), (192, 56713), (241, 56590),

Gene: LeeroyJenkins\_94 Start: 49860, Stop: 49351, Start Num: 105

Candidate Starts for LeeroyJenkins\_94:

(Start: 105 @49860 has 18 MA's), (197, 49689), (201, 49683), (216, 49653), (232, 49599), (244, 49551),

Gene: LeiMonet\_62 Start: 52626, Stop: 52111, Start Num: 101

Candidate Starts for LeiMonet\_62:

(64, 52704), (82, 52650), (Start: 92 @52635 has 4 MA's), (Start: 101 @52626 has 11 MA's), (132, 52560), (153, 52515), (170, 52491), (188, 52455), (194, 52449), (217, 52416), (233, 52362), (235, 52359), (271, 52242), (275, 52221), (308, 52146),

Gene: Lennon\_36 Start: 34213, Stop: 33740, Start Num: 98

Candidate Starts for Lennon\_36:

(39, 34351), (Start: 60 @34297 has 2 MA's), (79, 34240), (Start: 98 @34213 has 22 MA's), (163, 34114), (190, 34072), (193, 34069), (217, 34033), (234, 33976), (240, 33952), (252, 33895),

Gene: Leozinho\_32 Start: 27392, Stop: 27934, Start Num: 90

Candidate Starts for Leozinho\_32:

(Start: 90 @27392 has 9 MA's), (148, 27506), (228, 27659), (249, 27737), (254, 27749),

Gene: Lewan\_96 Start: 59451, Stop: 59864, Start Num: 127

Candidate Starts for Lewan\_96:

(Start: 127 @59451 has 68 MA's), (192, 59562), (218, 59601), (221, 59610), (243, 59688), (263, 59760), (290, 59838), (297, 59856),

Gene: LilDestine\_93 Start: 59128, Stop: 59541, Start Num: 127

Candidate Starts for LilDestine\_93:

(Start: 127 @59128 has 68 MA's), (192, 59239), (218, 59278), (221, 59287), (243, 59365), (263, 59437), (290, 59515), (297, 59533),

Gene: LilSpotty\_83 Start: 48505, Stop: 49212, Start Num: 38

Candidate Starts for LilSpotty\_83:

(Start: 38 @48505 has 1 MA's), (Start: 97 @48661 has 1 MA's), (132, 48739), (139, 48757), (161, 48781), (217, 48865), (220, 48877), (223, 48886), (234, 48922), (266, 49051), (314, 49180),

Gene: Lilas\_67 Start: 47987, Stop: 48406, Start Num: 134

Candidate Starts for Lilas\_67:

(31, 47699), (Start: 73 @47861 has 2 MA's), (112, 47924), (Start: 118 @47939 has 1 MA's), (120, 47948), (Start: 134 @47987 has 4 MA's), (139, 47999), (155, 48029), (212, 48128), (217, 48134), (254, 48272),

Gene: LittleE\_112 Start: 62894, Stop: 63436, Start Num: 105

Candidate Starts for LittleE\_112:

(Start: 105 @62894 has 18 MA's), (Start: 115 @62912 has 1 MA's), (Start: 174 @63032 has 1 MA's), (183, 63047), (192, 63065), (220, 63122), (222, 63128), (240, 63188), (269, 63281), (325, 63422),

Gene: LittleE\_150 Start: 78544, Stop: 79146, Start Num: 99

Candidate Starts for LittleE\_150:

(Start: 99 @78544 has 30 MA's), (167, 78682), (Start: 174 @78694 has 1 MA's), (197, 78736), (214, 78769), (225, 78808), (230, 78829), (249, 78904), (259, 78934), (331, 79132),

Gene: Loadrie\_94 Start: 59619, Stop: 60032, Start Num: 127

Candidate Starts for Loadrie\_94:

(Start: 127 @59619 has 68 MA's), (192, 59730), (218, 59769), (221, 59778), (243, 59856), (263, 59928), (290, 60006), (297, 60024),

Gene: Lolly9\_91 Start: 59420, Stop: 59827, Start Num: 127

Candidate Starts for Lolly9\_91:

(Start: 127 @59420 has 68 MA's), (133, 59441), (192, 59525), (220, 59570), (243, 59651), (251, 59687), (277, 59774), (290, 59801),

Gene: Lopsy\_58 Start: 51828, Stop: 51313, Start Num: 101

Candidate Starts for Lopsy\_58:

(64, 51906), (82, 51852), (Start: 92 @51837 has 4 MA's), (Start: 101 @51828 has 11 MA's), (132, 51762), (153, 51717), (170, 51693), (188, 51657), (194, 51651), (217, 51618), (233, 51564), (235, 51561), (271, 51444), (275, 51423), (308, 51348),

Gene: LordFarquaad\_67 Start: 43212, Stop: 43631, Start Num: 134

Candidate Starts for LordFarquaad\_67:

(Start: 73 @43086 has 2 MA's), (Start: 95 @43128 has 2 MA's), (112, 43149), (120, 43173), (Start: 134 @43212 has 4 MA's), (139, 43224), (155, 43254), (217, 43359), (254, 43497),

Gene: LostAndPhound\_60 Start: 52723, Stop: 52199, Start Num: 92

Candidate Starts for LostAndPhound\_60:

(64, 52792), (82, 52738), (Start: 92 @52723 has 4 MA's), (Start: 101 @52714 has 11 MA's), (132, 52648), (153, 52603), (170, 52579), (188, 52543), (194, 52537), (217, 52504), (233, 52450), (235, 52447), (271, 52330), (275, 52309), (308, 52234),

Gene: Love\_39 Start: 33996, Stop: 33523, Start Num: 98

Candidate Starts for Love\_39:

(39, 34134), (Start: 60 @34080 has 2 MA's), (65, 34071), (79, 34023), (Start: 98 @33996 has 22 MA's), (163, 33897), (190, 33855), (193, 33852), (217, 33816), (234, 33759), (241, 33726), (252, 33678),

Gene: Lumos\_92 Start: 59232, Stop: 59639, Start Num: 127

Candidate Starts for Lumos\_92:

(Start: 127 @59232 has 68 MA's), (133, 59253), (220, 59382), (221, 59385), (243, 59463), (251, 59499), (277, 59586), (290, 59613),

Gene: LunaBlu\_33 Start: 28027, Stop: 28524, Start Num: 90

Candidate Starts for LunaBlu\_33:

(Start: 51 @27925 has 3 MA's), (Start: 90 @28027 has 9 MA's), (220, 28249), (228, 28285), (284, 28450), (303, 28495),

Gene: Lysidious\_60 Start: 40309, Stop: 40836, Start Num: 104

Candidate Starts for Lysidious\_60:

(Start: 104 @40309 has 14 MA's), (Start: 116 @40330 has 3 MA's), (213, 40510),

Gene: MAckerman\_87 Start: 56285, Stop: 56695, Start Num: 127

Candidate Starts for MAckerman\_87:

(Start: 127 @56285 has 68 MA's), (138, 56315), (140, 56318), (177, 56363), (221, 56441), (236, 56483), (243, 56519), (253, 56561), (256, 56567), (271, 56615), (283, 56660), (297, 56687),

Gene: Maby2021\_250 Start: 143650, Stop: 144099, Start Num: 128

Candidate Starts for Maby2021\_250:

(Start: 128 @143650 has 32 MA's), (146, 143689), (163, 143707), (183, 143740), (201, 143767), (220, 143800), (244, 143887), (255, 143929), (296, 144028),

Gene: Mandlovu\_31 Start: 27703, Stop: 28323, Start Num: 61

Candidate Starts for Mandlovu\_31:

(37, 27619), (Start: 51 @27676 has 3 MA's), (Start: 61 @27703 has 3 MA's), (Start: 90 @27778 has 9 MA's), (220, 28000), (228, 28036), (284, 28201), (303, 28246),

Gene: Maravista\_65 Start: 42918, Stop: 43388, Start Num: 122

Candidate Starts for Maravista\_65:

(Start: 122 @42918 has 2 MA's), (182, 43035), (228, 43143), (268, 43263),

Gene: Marshmallow\_109 Start: 63582, Stop: 64082, Start Num: 99

Candidate Starts for Marshmallow\_109:

(Start: 99 @63582 has 30 MA's), (Start: 127 @63636 has 68 MA's), (173, 63717), (175, 63720), (187, 63744), (210, 63777), (228, 63834), (280, 63996),

Gene: Matalotodo\_59 Start: 52707, Stop: 52192, Start Num: 101

Candidate Starts for Matalotodo\_59:

(64, 52785), (82, 52731), (Start: 92 @52716 has 4 MA's), (Start: 101 @52707 has 11 MA's), (132, 52641), (153, 52596), (170, 52572), (188, 52536), (194, 52530), (217, 52497), (233, 52443), (235, 52440), (271, 52323), (275, 52302), (308, 52227),

Gene: McGee\_251 Start: 142298, Stop: 142747, Start Num: 128

Candidate Starts for McGee\_251:

(Start: 128 @142298 has 32 MA's), (146, 142337), (163, 142355), (183, 142388), (201, 142415), (220, 142448), (244, 142535), (255, 142577), (296, 142676),

Gene: McKinley\_38 Start: 34022, Stop: 33549, Start Num: 98

Candidate Starts for McKinley\_38:

(39, 34160), (Start: 60 @34106 has 2 MA's), (65, 34097), (79, 34049), (Start: 98 @34022 has 22 MA's), (163, 33923), (190, 33881), (193, 33878), (217, 33842), (234, 33785), (252, 33704),

Gene: Mellie\_57 Start: 38319, Stop: 38846, Start Num: 104

Candidate Starts for Mellie\_57:

(Start: 104 @38319 has 14 MA's), (Start: 116 @38340 has 3 MA's), (213, 38520), (303, 38784),

Gene: Miley16\_95 Start: 59815, Stop: 60228, Start Num: 127

Candidate Starts for Miley16\_95:

(Start: 127 @59815 has 68 MA's), (192, 59926), (220, 59971), (221, 59974), (246, 60070), (263, 60124), (290, 60202), (297, 60220),

Gene: Minerva\_162 Start: 85665, Stop: 86177, Start Num: 91

Candidate Starts for Minerva\_162:

(Start: 91 @85665 has 1 MA's), (Start: 94 @85668 has 1 MA's), (117, 85701), (135, 85752), (155, 85788), (212, 85878), (217, 85887), (220, 85899), (221, 85902), (228, 85935), (240, 85965), (260, 86046), (303, 86139), (313, 86163),

Gene: Minerva\_148 Start: 78849, Stop: 79448, Start Num: 102

Candidate Starts for Minerva\_148:

(Start: 102 @78849 has 12 MA's), (145, 78951), (159, 78972), (161, 78975), (197, 79038), (212, 79068), (217, 79077), (225, 79110), (239, 79155), (262, 79242), (276, 79302), (294, 79338), (331, 79434),

Gene: MiniLon\_96 Start: 59421, Stop: 59828, Start Num: 127

Candidate Starts for MiniLon\_96:

(Start: 127 @59421 has 68 MA's), (133, 59442), (192, 59526), (220, 59571), (243, 59652), (251, 59688), (277, 59775), (290, 59802),

Gene: MiniMac\_96 Start: 59416, Stop: 59823, Start Num: 127

Candidate Starts for MiniMac\_96:

(Start: 127 @59416 has 68 MA's), (133, 59437), (192, 59521), (220, 59566), (243, 59647), (251, 59683), (277, 59770), (290, 59797),

Gene: MinionDave\_33 Start: 28083, Stop: 28682, Start Num: 51

Candidate Starts for MinionDave\_33:

(Start: 51 @28083 has 3 MA's), (Start: 90 @28185 has 9 MA's), (220, 28407), (228, 28443), (284, 28608), (303, 28653),

Gene: MkaliMitinis3\_97 Start: 59582, Stop: 59995, Start Num: 127

Candidate Starts for MkaliMitinis3\_97:

(Start: 127 @59582 has 68 MA's), (192, 59693), (218, 59732), (221, 59741), (243, 59819), (263, 59891), (290, 59969), (297, 59987),

Gene: ModicumRichard\_20 Start: 18713, Stop: 18225, Start Num: 98

Candidate Starts for ModicumRichard\_20:

(5, 19316), (8, 19235), (11, 19211), (15, 19175), (16, 19145), (17, 19130), (25, 18977), (42, 18863), (54, 18806), (59, 18797), (62, 18794), (Start: 98 @18713 has 22 MA's), (135, 18629), (168, 18605), (199, 18560), (217, 18533), (220, 18521), (222, 18515), (252, 18395),

Gene: Mollymur\_102 Start: 68397, Stop: 68978, Start Num: 104

Candidate Starts for Mollymur\_102:

(23, 68076), (36, 68211), (Start: 104 @68397 has 14 MA's), (160, 68514), (177, 68541), (190, 68565), (226, 68646), (257, 68757), (311, 68886), (324, 68916), (327, 68922),

Gene: Moostard\_89 Start: 59339, Stop: 59746, Start Num: 127

Candidate Starts for Moostard\_89:

(Start: 127 @59339 has 68 MA's), (133, 59360), (220, 59489), (221, 59492), (243, 59570), (251, 59606), (277, 59693), (290, 59720),

Gene: Morizzled23\_247 Start: 141326, Stop: 141775, Start Num: 128

Candidate Starts for Morizzled23\_247:

(Start: 128 @141326 has 32 MA's), (146, 141365), (163, 141383), (183, 141416), (201, 141443), (220, 141476), (244, 141563), (255, 141605), (296, 141704),

Gene: Morrissey\_46 Start: 35134, Stop: 34631, Start Num: 103

Candidate Starts for Morrissey\_46:

(4, 35755), (6, 35731), (7, 35701), (9, 35656), (14, 35611), (20, 35482), (41, 35293), (Start: 94 @35143 has 1 MA's), (Start: 103 @35134 has 1 MA's), (121, 35095), (Start: 127 @35086 has 68 MA's), (143, 35047), (204, 34954), (217, 34927), (219, 34918), (220, 34915), (221, 34912), (228, 34879),

Gene: Mova\_51 Start: 35948, Stop: 36499, Start Num: 90

Candidate Starts for Mova\_51:

(Start: 90 @35948 has 9 MA's), (93, 35951), (141, 36041), (172, 36083), (208, 36143), (228, 36209), (242, 36251), (254, 36299),

Gene: MsGreen\_92 Start: 59234, Stop: 59641, Start Num: 127

Candidate Starts for MsGreen\_92:

(Start: 127 @59234 has 68 MA's), (133, 59255), (220, 59384), (221, 59387), (243, 59465), (251, 59501), (277, 59588), (290, 59615),

Gene: MulchSalad\_28 Start: 23891, Stop: 24409, Start Num: 86

Candidate Starts for MulchSalad\_28:

(86, 23891), (132, 23975), (186, 24071), (194, 24077), (220, 24119), (222, 24125), (228, 24155),

Gene: Mutaforma13\_54 Start: 38739, Stop: 39290, Start Num: 90

Candidate Starts for Mutaforma13\_54:

(Start: 90 @38739 has 9 MA's), (93, 38742), (141, 38832), (172, 38874), (208, 38934), (228, 39000), (242, 39042), (254, 39090),

Gene: Netyap\_94 Start: 59453, Stop: 59866, Start Num: 127

Candidate Starts for Netyap\_94:

(Start: 127 @59453 has 68 MA's), (192, 59564), (220, 59609), (221, 59612), (246, 59708), (263, 59762), (290, 59840), (297, 59858),

Gene: Nicholas\_90 Start: 59344, Stop: 59751, Start Num: 127

Candidate Starts for Nicholas\_90:

(Start: 127 @59344 has 68 MA's), (133, 59365), (220, 59494), (221, 59497), (243, 59575), (251, 59611), (277, 59698), (290, 59725),

Gene: Nicholasp3\_95 Start: 59299, Stop: 59712, Start Num: 127

Candidate Starts for Nicholasp3\_95:

(Start: 127 @59299 has 68 MA's), (192, 59410), (218, 59449), (221, 59458), (243, 59536), (263, 59608), (290, 59686), (297, 59704),

Gene: Nimrod\_111 Start: 63730, Stop: 64230, Start Num: 99

Candidate Starts for Nimrod\_111:

(71, 63676), (Start: 99 @63730 has 30 MA's), (Start: 127 @63784 has 68 MA's), (173, 63865), (175, 63868), (187, 63892), (210, 63925), (228, 63982), (280, 64144),

Gene: Nordenberg\_30 Start: 32192, Stop: 31719, Start Num: 98

Candidate Starts for Nordenberg\_30:

(39, 32330), (Start: 60 @32276 has 2 MA's), (65, 32267), (79, 32219), (Start: 98 @32192 has 22 MA's), (163, 32093), (190, 32051), (193, 32048), (217, 32012), (234, 31955), (241, 31922), (252, 31874),

Gene: ObLaDi\_20 Start: 18692, Stop: 18204, Start Num: 98

Candidate Starts for ObLaDi\_20:

(1, 19712), (2, 19706), (3, 19688), (5, 19295), (8, 19214), (11, 19190), (15, 19154), (16, 19124), (17, 19109), (25, 18956), (42, 18842), (54, 18785), (59, 18776), (62, 18773), (Start: 98 @18692 has 22 MA's), (135, 18608), (168, 18584), (199, 18539), (217, 18512), (220, 18500), (222, 18494), (252, 18374),

Gene: OhShagHennessy\_87 Start: 56542, Stop: 56952, Start Num: 127

Candidate Starts for OhShagHennessy\_87:

(Start: 127 @56542 has 68 MA's), (138, 56572), (140, 56575), (177, 56620), (221, 56698), (236, 56740), (243, 56776), (253, 56818), (256, 56824), (271, 56872), (283, 56917), (297, 56944),

Gene: Omega\_117 Start: 63909, Stop: 64451, Start Num: 105

Candidate Starts for Omega\_117:

(Start: 80 @63876 has 1 MA's), (Start: 105 @63909 has 18 MA's), (Start: 115 @63927 has 1 MA's), (Start: 174 @64047 has 1 MA's), (183, 64062), (192, 64080), (220, 64137), (222, 64143), (240, 64203), (269, 64296), (325, 64437),

Gene: Omega\_51 Start: 42659, Stop: 43288, Start Num: 53

Candidate Starts for Omega\_51:

(Start: 53 @42659 has 1 MA's), (Start: 90 @42746 has 9 MA's), (Start: 127 @42809 has 68 MA's), (152, 42875), (168, 42899), (187, 42932), (211, 42965), (220, 42986), (221, 42989), (228, 43022), (249, 43100), (296, 43211), (318, 43259),

Gene: Omega\_154 Start: 79628, Stop: 80230, Start Num: 99

Candidate Starts for Omega\_154:

(Start: 99 @79628 has 30 MA's), (167, 79766), (Start: 174 @79778 has 1 MA's), (197, 79820), (214, 79853), (225, 79892), (230, 79913), (249, 79988), (259, 80018), (331, 80216),



Gene: Optimus\_141 Start: 76720, Stop: 77322, Start Num: 99

Candidate Starts for Optimus\_141:

(67, 76651), (Start: 99 @76720 has 30 MA's), (145, 76825), (159, 76846), (161, 76849), (Start: 174 @76873 has 1 MA's), (176, 76876), (180, 76882), (225, 76984), (236, 77011), (239, 77029), (262, 77116), (331, 77308),

Gene: Orfeu\_59 Start: 52711, Stop: 52187, Start Num: 92

Candidate Starts for Orfeu\_59:

(64, 52780), (82, 52726), (Start: 92 @52711 has 4 MA's), (Start: 101 @52702 has 11 MA's), (132, 52636), (153, 52591), (170, 52567), (188, 52531), (194, 52525), (217, 52492), (233, 52438), (235, 52435), (271, 52318), (275, 52297), (308, 52222),

Gene: Paries\_38 Start: 33658, Stop: 33185, Start Num: 98

Candidate Starts for Paries\_38:

(34, 33820), (39, 33796), (Start: 60 @33742 has 2 MA's), (65, 33733), (79, 33685), (Start: 98 @33658 has 22 MA's), (163, 33559), (190, 33517), (193, 33514), (217, 33478), (234, 33421), (241, 33388), (252, 33340),

Gene: Peregrin\_232 Start: 114891, Stop: 115472, Start Num: 105

Candidate Starts for Peregrin\_232:

(Start: 105 @114891 has 18 MA's), (Start: 127 @114942 has 68 MA's), (140, 114978), (154, 115002), (168, 115023), (195, 115062), (244, 115197), (279, 115323), (282, 115329),

Gene: Peregrin\_178 Start: 94313, Stop: 94846, Start Num: 104

Candidate Starts for Peregrin\_178:

(Start: 104 @94313 has 14 MA's), (136, 94391), (198, 94499), (222, 94553), (245, 94640), (249, 94661), (290, 94781),

Gene: Phineas\_45 Start: 31827, Stop: 32321, Start Num: 98

Candidate Starts for Phineas\_45:

(75, 31791), (77, 31794), (Start: 98 @31827 has 22 MA's), (Start: 101 @31830 has 11 MA's), (Start: 115 @31848 has 1 MA's), (117, 31857), (209, 32022), (213, 32031), (217, 32037), (220, 32049), (228, 32085), (244, 32136), (254, 32175),

Gene: Phoebus\_113 Start: 65664, Stop: 66206, Start Num: 105

Candidate Starts for Phoebus\_113:

(40, 65502), (45, 65526), (Start: 80 @65631 has 1 MA's), (Start: 105 @65664 has 18 MA's), (Start: 115 @65682 has 1 MA's), (135, 65739), (Start: 174 @65802 has 1 MA's), (183, 65817), (192, 65835), (220, 65892), (222, 65898), (240, 65958), (269, 66051),

Gene: Phoebus\_149 Start: 81221, Stop: 81820, Start Num: 102

Candidate Starts for Phoebus\_149:

(Start: 102 @81221 has 12 MA's), (145, 81323), (159, 81344), (161, 81347), (197, 81410), (212, 81440), (217, 81449), (225, 81482), (239, 81527), (262, 81614), (276, 81674), (294, 81710), (331, 81806),

Gene: Pippy\_62 Start: 40280, Stop: 40750, Start Num: 122

Candidate Starts for Pippy\_62:

(Start: 122 @40280 has 2 MA's), (182, 40397), (228, 40505), (268, 40625),

Gene: Placalicious\_60 Start: 53221, Stop: 52697, Start Num: 92

Candidate Starts for Placalicious\_60:

(64, 53290), (82, 53236), (Start: 92 @53221 has 4 MA's), (Start: 101 @53212 has 11 MA's), (132, 53146), (153, 53101), (170, 53077), (188, 53041), (194, 53035), (217, 53002), (233, 52948), (235, 52945), (271, 52828), (275, 52807), (308, 52732),

Gene: Podrick\_58 Start: 51964, Stop: 51449, Start Num: 101

Candidate Starts for Podrick\_58:

(64, 52042), (82, 51988), (Start: 92 @51973 has 4 MA's), (Start: 101 @51964 has 11 MA's), (132, 51898), (153, 51853), (170, 51829), (188, 51793), (194, 51787), (217, 51754), (233, 51700), (235, 51697), (271, 51580), (275, 51559), (308, 51484),

Gene: Porcelain\_108 Start: 60257, Stop: 60832, Start Num: 80

Candidate Starts for Porcelain\_108:

(Start: 80 @60257 has 1 MA's), (Start: 105 @60290 has 18 MA's), (Start: 115 @60308 has 1 MA's), (135, 60365), (Start: 174 @60428 has 1 MA's), (183, 60443), (192, 60461), (220, 60518), (222, 60524), (240, 60584), (269, 60677),

Gene: Porky\_109 Start: 62562, Stop: 63008, Start Num: 127

Candidate Starts for Porky\_109:

(71, 62454), (Start: 99 @62508 has 30 MA's), (Start: 127 @62562 has 68 MA's), (173, 62643), (175, 62646), (187, 62670), (210, 62703), (228, 62760), (280, 62922),

Gene: Pound\_50 Start: 43906, Stop: 44415, Start Num: 116

Candidate Starts for Pound\_50:

(Start: 60 @43795 has 2 MA's), (85, 43864), (100, 43882), (Start: 116 @43906 has 3 MA's), (141, 43972), (173, 44026), (197, 44071), (228, 44158), (249, 44236), (254, 44248), (322, 44401),

Gene: PurduePete\_250 Start: 143690, Stop: 144139, Start Num: 128

Candidate Starts for PurduePete\_250:

(Start: 128 @143690 has 32 MA's), (146, 143729), (163, 143747), (183, 143780), (201, 143807), (220, 143840), (244, 143927), (255, 143969), (296, 144068),

Gene: Pygmy\_47 Start: 33291, Stop: 33785, Start Num: 98

Candidate Starts for Pygmy\_47:

(75, 33255), (77, 33258), (Start: 98 @33291 has 22 MA's), (Start: 101 @33294 has 11 MA's), (Start: 115 @33312 has 1 MA's), (117, 33321), (209, 33486), (213, 33495), (217, 33501), (220, 33513), (228, 33549), (244, 33600), (254, 33639),

Gene: Ramsey\_33 Start: 27746, Stop: 28345, Start Num: 51

Candidate Starts for Ramsey\_33:

(Start: 51 @27746 has 3 MA's), (Start: 90 @27848 has 9 MA's), (220, 28070), (228, 28106), (284, 28271), (303, 28316),

Gene: RedWattleHog\_22 Start: 25760, Stop: 26308, Start Num: 104

Candidate Starts for RedWattleHog\_22:

(86, 25739), (Start: 104 @25760 has 14 MA's), (162, 25880), (242, 26048), (244, 26057), (250, 26087), (254, 26096), (306, 26222),

Gene: RedWattleHog\_85 Start: 77917, Stop: 78504, Start Num: 95

Candidate Starts for RedWattleHog\_85:

(Start: 95 @77917 has 2 MA's), (Start: 131 @77989 has 2 MA's), (156, 78037), (161, 78043), (185, 78091), (191, 78100), (194, 78103), (200, 78112), (215, 78142), (221, 78160), (227, 78193), (243, 78238), (254, 78280), (273, 78340), (330, 78484),

Gene: RedWattleHog\_100 Start: 85618, Stop: 86124, Start Num: 87

Candidate Starts for RedWattleHog\_100:

(76, 85600), (Start: 87 @85618 has 1 MA's), (Start: 127 @85687 has 68 MA's), (139, 85723), (141, 85726), (143, 85729), (166, 85768), (218, 85846), (220, 85852), (254, 85981), (287, 86056),

Gene: Rofo\_36 Start: 33056, Stop: 32583, Start Num: 98

Candidate Starts for Rofo\_36:

(39, 33194), (Start: 60 @33140 has 2 MA's), (65, 33131), (79, 33083), (Start: 98 @33056 has 22 MA's), (163, 32957), (190, 32915), (193, 32912), (217, 32876), (234, 32819), (241, 32786), (252, 32738),

Gene: Rose5\_92 Start: 57809, Stop: 58219, Start Num: 127

Candidate Starts for Rose5\_92:

(Start: 127 @57809 has 68 MA's), (138, 57839), (140, 57842), (177, 57887), (221, 57965), (236, 58007), (243, 58043), (253, 58085), (256, 58091), (271, 58139), (283, 58184), (297, 58211),

Gene: Rumpelstiltskin\_91 Start: 59092, Stop: 59505, Start Num: 127

Candidate Starts for Rumpelstiltskin\_91:

(Start: 127 @59092 has 68 MA's), (192, 59203), (218, 59242), (221, 59251), (243, 59329), (263, 59401), (290, 59479), (297, 59497),

Gene: Saguaro\_52 Start: 46118, Stop: 45648, Start Num: 107

Candidate Starts for Saguaro\_52:

(72, 46169), (Start: 107 @46118 has 2 MA's), (Start: 116 @46097 has 3 MA's), (Start: 127 @46070 has 68 MA's), (132, 46052), (135, 46043), (141, 46031), (165, 45992), (220, 45905), (249, 45791), (270, 45746),

Gene: Salacia\_251 Start: 144116, Stop: 144565, Start Num: 128

Candidate Starts for Salacia\_251:

(Start: 128 @144116 has 32 MA's), (146, 144155), (163, 144173), (183, 144206), (201, 144233), (220, 144266), (244, 144353), (255, 144395), (296, 144494),

Gene: Samty\_91 Start: 59332, Stop: 59739, Start Num: 127

Candidate Starts for Samty\_91:

(Start: 127 @59332 has 68 MA's), (133, 59353), (220, 59482), (221, 59485), (243, 59563), (251, 59599), (277, 59686), (290, 59713),

Gene: Sarge\_39 Start: 25703, Stop: 26194, Start Num: 109

Candidate Starts for Sarge\_39:

(22, 25388), (55, 25622), (Start: 89 @25688 has 3 MA's), (Start: 109 @25703 has 2 MA's), (201, 25868), (219, 25904), (221, 25910), (258, 26045), (291, 26117), (320, 26183),

Gene: Sassafras\_31 Start: 27690, Stop: 28187, Start Num: 90

Candidate Starts for Sassafras\_31:

(Start: 51 @27588 has 3 MA's), (Start: 90 @27690 has 9 MA's), (220, 27912), (228, 27948), (284, 28113), (303, 28158),

Gene: Schomber\_94 Start: 69164, Stop: 69682, Start Num: 110

Candidate Starts for Schomber\_94:

(78, 69122), (86, 69137), (Start: 110 @69164 has 9 MA's), (166, 69287), (171, 69296), (188, 69320), (254, 69500),

Gene: ScoobyDoobyDoo\_60 Start: 22027, Stop: 22503, Start Num: 110

Candidate Starts for ScoobyDoobyDoo\_60:

(Start: 53 @21928 has 1 MA's), (Start: 110 @22027 has 9 MA's), (219, 22225), (298, 22462),

Gene: ScoobyDoobyDoo\_184 Start: 103006, Stop: 103509, Start Num: 131

Candidate Starts for ScoobyDoobyDoo\_184:

(113, 102958), (119, 102973), (Start: 122 @102985 has 2 MA's), (Start: 124 @102991 has 1 MA's), (Start: 131 @103006 has 2 MA's), (197, 103123), (220, 103174), (224, 103189), (253, 103300), (264, 103333), (267, 103342), (272, 103357), (281, 103399), (310, 103462), (321, 103489),

Gene: Sedona\_36 Start: 34162, Stop: 33689, Start Num: 98

Candidate Starts for Sedona\_36:

(39, 34300), (Start: 60 @34246 has 2 MA's), (65, 34237), (79, 34189), (Start: 98 @34162 has 22 MA's), (163, 34063), (190, 34021), (193, 34018), (217, 33982), (234, 33925), (241, 33892), (252, 33844),

Gene: Shipwreck\_47 Start: 33269, Stop: 33760, Start Num: 101

Candidate Starts for Shipwreck\_47:

(75, 33230), (77, 33233), (Start: 98 @33266 has 22 MA's), (Start: 101 @33269 has 11 MA's), (Start: 115 @33287 has 1 MA's), (117, 33296), (209, 33461), (213, 33470), (217, 33476), (220, 33488), (228, 33524), (244, 33575), (254, 33614),

Gene: Shlim410\_56 Start: 41496, Stop: 42002, Start Num: 104

Candidate Starts for Shlim410\_56:

(29, 41271), (33, 41301), (Start: 104 @41496 has 14 MA's), (135, 41571), (142, 41583), (170, 41625), (220, 41712), (234, 41751),

Gene: Shoya\_45 Start: 27671, Stop: 28162, Start Num: 109

Candidate Starts for Shoya\_45:

(55, 27590), (Start: 89 @27656 has 3 MA's), (Start: 109 @27671 has 2 MA's), (201, 27836), (219, 27872), (221, 27878), (258, 28013), (291, 28085), (320, 28151),

Gene: Shrimp\_252 Start: 143727, Stop: 144176, Start Num: 128

Candidate Starts for Shrimp\_252:

(Start: 128 @143727 has 32 MA's), (146, 143766), (163, 143784), (183, 143817), (201, 143844), (220, 143877), (244, 143964), (255, 144006), (296, 144105),

Gene: Silverleaf\_90 Start: 57305, Stop: 57715, Start Num: 127

Candidate Starts for Silverleaf\_90:

(Start: 127 @57305 has 68 MA's), (138, 57335), (140, 57338), (177, 57383), (221, 57461), (236, 57503), (243, 57539), (253, 57581), (256, 57587), (271, 57635), (283, 57680), (297, 57707),

Gene: Sitar\_36 Start: 34297, Stop: 33740, Start Num: 60

Candidate Starts for Sitar\_36:

(39, 34351), (Start: 60 @34297 has 2 MA's), (79, 34240), (Start: 98 @34213 has 22 MA's), (163, 34114), (190, 34072), (193, 34069), (217, 34033), (234, 33976), (240, 33952), (252, 33895),

Gene: Snenia\_91 Start: 59236, Stop: 59643, Start Num: 127

Candidate Starts for Snenia\_91:

(Start: 127 @59236 has 68 MA's), (133, 59257), (220, 59386), (221, 59389), (243, 59467), (251, 59503), (277, 59590), (290, 59617),

Gene: SoilAssassin\_64 Start: 43104, Stop: 43649, Start Num: 73

Candidate Starts for SoilAssassin\_64:

(Start: 73 @43104 has 2 MA's), (Start: 95 @43146 has 2 MA's), (112, 43167), (120, 43191), (Start: 134 @43230 has 4 MA's), (139, 43242), (155, 43272), (217, 43377), (254, 43515),

Gene: Specks\_254 Start: 143067, Stop: 143516, Start Num: 128

Candidate Starts for Specks\_254:

(Start: 128 @143067 has 32 MA's), (146, 143106), (163, 143124), (183, 143157), (201, 143184), (220, 143217), (244, 143304), (255, 143346), (296, 143445),

Gene: SpeedDemon\_100 Start: 4893, Stop: 5351, Start Num: 118

Candidate Starts for SpeedDemon\_100:

(Start: 118 @4893 has 1 MA's), (206, 5040), (213, 5055), (219, 5070), (228, 5109), (242, 5151), (254, 5199), (307, 5319),

Gene: SpeedDemon\_1040 Start: 70108, Stop: 70686, Start Num: 104

Candidate Starts for SpeedDemon\_1040:

(23, 69790), (46, 69976), (Start: 104 @70108 has 14 MA's), (Start: 127 @70156 has 68 MA's), (132, 70174), (139, 70192), (160, 70225), (220, 70327), (234, 70378), (262, 70480), (317, 70606),

Gene: SrishMeg2525\_247 Start: 143222, Stop: 143671, Start Num: 128

Candidate Starts for SrishMeg2525\_247:

(Start: 128 @143222 has 32 MA's), (146, 143261), (163, 143279), (183, 143312), (201, 143339), (220, 143372), (244, 143459), (255, 143501), (296, 143600),

Gene: Stank\_113 Start: 63457, Stop: 63957, Start Num: 99

Candidate Starts for Stank\_113:

(71, 63403), (Start: 99 @63457 has 30 MA's), (Start: 127 @63511 has 68 MA's), (173, 63592), (175, 63595), (187, 63619), (210, 63652), (228, 63709), (280, 63871),

Gene: Starcevich\_34 Start: 27605, Stop: 27099, Start Num: 102

Candidate Starts for Starcevich\_34:

(Start: 102 @27605 has 12 MA's), (Start: 115 @27590 has 1 MA's), (132, 27539), (135, 27530), (160, 27488), (168, 27473), (178, 27461), (180, 27458), (194, 27437), (220, 27398), (228, 27362), (254, 27272), (284, 27206), (300, 27176),

Gene: Stickynote\_47 Start: 43021, Stop: 42431, Start Num: 110

Candidate Starts for Stickynote\_47:

(48, 43153), (49, 43150), (Start: 110 @43021 has 9 MA's), (126, 42973), (138, 42934), (149, 42910), (152, 42907), (229, 42763), (249, 42685), (260, 42652), (299, 42544), (334, 42439),

Gene: Sting\_3 Start: 2872, Stop: 3252, Start Num: 129

Candidate Starts for Sting\_3:

(129, 2872), (179, 2956), (205, 2989), (217, 3016), (220, 3028), (221, 3031), (237, 3079), (249, 3142), (262, 3178), (292, 3232), (295, 3241),

Gene: Stormageddon\_82 Start: 77898, Stop: 78485, Start Num: 95

Candidate Starts for Stormageddon\_82:

(Start: 95 @77898 has 2 MA's), (Start: 131 @77970 has 2 MA's), (156, 78018), (161, 78024), (185, 78072), (191, 78081), (194, 78084), (200, 78093), (215, 78123), (221, 78141), (227, 78174), (243, 78219), (254, 78261), (273, 78321), (330, 78465),

Gene: Strokeseat\_31 Start: 27760, Stop: 28380, Start Num: 61

Candidate Starts for Strokeseat\_31:

(37, 27676), (Start: 51 @27733 has 3 MA's), (Start: 61 @27760 has 3 MA's), (Start: 90 @27835 has 9 MA's), (220, 28057), (228, 28093), (284, 28258), (303, 28303),

Gene: StubbySaigey\_256 Start: 142752, Stop: 143201, Start Num: 128

Candidate Starts for StubbySaigey\_256:

(Start: 128 @142752 has 32 MA's), (146, 142791), (163, 142809), (183, 142842), (201, 142869), (220, 142902), (244, 142989), (255, 143031), (296, 143130),

Gene: Superphikiman\_145 Start: 75577, Stop: 76179, Start Num: 99

Candidate Starts for Superphikiman\_145:

(Start: 99 @75577 has 30 MA's), (145, 75682), (159, 75703), (161, 75706), (Start: 174 @75730 has 1 MA's), (176, 75733), (180, 75739), (212, 75799), (236, 75868), (239, 75886), (249, 75937), (262, 75973), (294, 76069), (331, 76165),

Gene: TBrady12\_114 Start: 62894, Stop: 63394, Start Num: 99

Candidate Starts for TBrady12\_114:

(71, 62840), (Start: 99 @62894 has 30 MA's), (Start: 127 @62948 has 68 MA's), (173, 63029), (175, 63032), (187, 63056), (210, 63089), (228, 63146), (280, 63308),

Gene: Tangent\_36 Start: 32578, Stop: 32105, Start Num: 98

Candidate Starts for Tangent\_36:

(39, 32716), (Start: 60 @32662 has 2 MA's), (65, 32653), (79, 32605), (Start: 98 @32578 has 22 MA's), (163, 32479), (190, 32437), (193, 32434), (217, 32398), (234, 32341), (241, 32308), (252, 32260),

Gene: Teardrop\_248 Start: 142079, Stop: 142528, Start Num: 128

Candidate Starts for Teardrop\_248:

(Start: 128 @142079 has 32 MA's), (146, 142118), (163, 142136), (183, 142169), (201, 142196), (220, 142229), (244, 142316), (255, 142358), (296, 142457),

Gene: Thibault\_95 Start: 58448, Stop: 58990, Start Num: 105

Candidate Starts for Thibault\_95:

(Start: 105 @58448 has 18 MA's), (Start: 115 @58466 has 1 MA's), (Start: 174 @58586 has 1 MA's), (183, 58601), (192, 58619), (214, 58658), (220, 58676), (222, 58682), (240, 58742), (269, 58835), (325, 58976),

Gene: Thibault\_132 Start: 76186, Stop: 76788, Start Num: 99

Candidate Starts for Thibault\_132:

(Start: 99 @76186 has 30 MA's), (167, 76324), (Start: 174 @76336 has 1 MA's), (197, 76378), (218, 76423), (220, 76429), (230, 76471), (249, 76546), (259, 76576), (331, 76774),

Gene: ThreeRngTarjay\_109 Start: 64920, Stop: 65462, Start Num: 105

Candidate Starts for ThreeRngTarjay\_109:

(40, 64758), (45, 64782), (Start: 80 @64887 has 1 MA's), (Start: 105 @64920 has 18 MA's), (Start: 115 @64938 has 1 MA's), (135, 64995), (Start: 174 @65058 has 1 MA's), (183, 65073), (192, 65091), (220, 65148), (222, 65154), (240, 65214), (269, 65307),

Gene: ThreeRngTarjay\_144 Start: 79812, Stop: 80411, Start Num: 102

Candidate Starts for ThreeRngTarjay\_144:

(Start: 102 @79812 has 12 MA's), (145, 79914), (159, 79935), (161, 79938), (197, 80001), (212, 80031), (217, 80040), (225, 80073), (239, 80118), (262, 80205), (276, 80265), (294, 80301), (331, 80397),

Gene: TinyTim\_248 Start: 142046, Stop: 142495, Start Num: 128  
Candidate Starts for TinyTim\_248:  
(Start: 128 @142046 has 32 MA's), (146, 142085), (163, 142103), (183, 142136), (201, 142163), (220, 142196), (244, 142283), (255, 142325), (296, 142424),

Gene: Toni\_59 Start: 52612, Stop: 52088, Start Num: 92  
Candidate Starts for Toni\_59:  
(64, 52681), (82, 52627), (Start: 92 @52612 has 4 MA's), (Start: 101 @52603 has 11 MA's), (132, 52537), (153, 52492), (170, 52468), (188, 52432), (194, 52426), (217, 52393), (233, 52339), (235, 52336), (271, 52219), (275, 52198), (308, 52123),

Gene: Tourach\_95 Start: 60189, Stop: 60602, Start Num: 127  
Candidate Starts for Tourach\_95:  
(Start: 127 @60189 has 68 MA's), (177, 60270), (192, 60300), (220, 60345), (221, 60348), (246, 60444), (263, 60498), (290, 60576), (297, 60594),

Gene: Trinitium\_246 Start: 140800, Stop: 141249, Start Num: 128  
Candidate Starts for Trinitium\_246:  
(Start: 128 @140800 has 32 MA's), (146, 140839), (163, 140857), (183, 140890), (201, 140917), (220, 140950), (244, 141037), (255, 141079), (296, 141178),

Gene: Twinkle\_57 Start: 42555, Stop: 43061, Start Num: 104  
Candidate Starts for Twinkle\_57:  
(29, 42330), (33, 42360), (Start: 104 @42555 has 14 MA's), (135, 42630), (142, 42642), (170, 42684), (220, 42771), (234, 42810),

Gene: Twister6\_58 Start: 42736, Stop: 43260, Start Num: 105  
Candidate Starts for Twister6\_58:  
(Start: 105 @42736 has 18 MA's), (Start: 127 @42787 has 68 MA's), (132, 42805), (172, 42883), (217, 42964), (219, 42973), (258, 43114),

Gene: Tyson\_92 Start: 57702, Stop: 58112, Start Num: 127  
Candidate Starts for Tyson\_92:  
(Start: 127 @57702 has 68 MA's), (138, 57732), (140, 57735), (177, 57780), (221, 57858), (236, 57900), (243, 57936), (253, 57978), (256, 57984), (271, 58032), (283, 58077), (297, 58104),

Gene: UPIE\_90 Start: 57298, Stop: 57708, Start Num: 127  
Candidate Starts for UPIE\_90:  
(Start: 127 @57298 has 68 MA's), (138, 57328), (140, 57331), (177, 57376), (221, 57454), (236, 57496), (243, 57532), (253, 57574), (256, 57580), (271, 57628), (283, 57673), (297, 57700),

Gene: Vetrix\_93 Start: 59073, Stop: 59486, Start Num: 127  
Candidate Starts for Vetrix\_93:  
(Start: 127 @59073 has 68 MA's), (192, 59184), (218, 59223), (221, 59232), (243, 59310), (263, 59382), (290, 59460), (297, 59478),

Gene: Vivi2\_38 Start: 33736, Stop: 33263, Start Num: 98  
Candidate Starts for Vivi2\_38:  
(39, 33874), (Start: 60 @33820 has 2 MA's), (65, 33811), (79, 33763), (Start: 98 @33736 has 22 MA's), (163, 33637), (190, 33595), (193, 33592), (217, 33556), (234, 33499), (241, 33466), (252, 33418),

Gene: Wamburgexpress\_90 Start: 57426, Stop: 57836, Start Num: 127

Candidate Starts for Wamburgxpress\_90:

(Start: 127 @57426 has 68 MA's), (138, 57456), (140, 57459), (177, 57504), (221, 57582), (236, 57624), (243, 57660), (253, 57702), (256, 57708), (271, 57756), (283, 57801), (297, 57828),

Gene: Wanda\_148 Start: 77329, Stop: 77928, Start Num: 102

Candidate Starts for Wanda\_148:

(Start: 102 @77329 has 12 MA's), (145, 77431), (159, 77452), (161, 77455), (197, 77518), (212, 77548), (217, 77557), (225, 77590), (239, 77635), (262, 77722), (276, 77782), (294, 77818), (331, 77914),

Gene: Whirlwind\_93 Start: 59575, Stop: 59982, Start Num: 127

Candidate Starts for Whirlwind\_93:

(Start: 127 @59575 has 68 MA's), (133, 59596), (220, 59725), (221, 59728), (243, 59806), (251, 59842), (277, 59929), (290, 59956),

Gene: Wiggin\_113 Start: 62887, Stop: 63387, Start Num: 99

Candidate Starts for Wiggin\_113:

(Start: 99 @62887 has 30 MA's), (Start: 127 @62941 has 68 MA's), (173, 63022), (175, 63025), (187, 63049), (210, 63082), (228, 63139), (280, 63301),

Gene: Wigglewigggle\_95 Start: 59375, Stop: 59788, Start Num: 127

Candidate Starts for Wigglewigggle\_95:

(Start: 127 @59375 has 68 MA's), (192, 59486), (220, 59531), (221, 59534), (246, 59630), (263, 59684), (290, 59762), (297, 59780),

Gene: Wilder\_96 Start: 59217, Stop: 59630, Start Num: 127

Candidate Starts for Wilder\_96:

(Start: 127 @59217 has 68 MA's), (192, 59328), (218, 59367), (221, 59376), (243, 59454), (263, 59526), (290, 59604), (297, 59622),

Gene: WilliamBoone\_144 Start: 75606, Stop: 76268, Start Num: 57

Candidate Starts for WilliamBoone\_144:

(Start: 50 @75582 has 1 MA's), (Start: 57 @75606 has 1 MA's), (142, 75792), (184, 75861), (192, 75876), (217, 75918), (302, 76194), (329, 76260),

Gene: Winky\_95 Start: 59815, Stop: 60228, Start Num: 127

Candidate Starts for Winky\_95:

(Start: 127 @59815 has 68 MA's), (192, 59926), (220, 59971), (221, 59974), (246, 60070), (263, 60124), (290, 60202), (297, 60220),

Gene: Wyatt2\_92 Start: 57733, Stop: 58143, Start Num: 127

Candidate Starts for Wyatt2\_92:

(Start: 127 @57733 has 68 MA's), (138, 57763), (140, 57766), (177, 57811), (221, 57889), (236, 57931), (243, 57967), (253, 58009), (256, 58015), (271, 58063), (283, 58108), (297, 58135),

Gene: Xandras\_110 Start: 62710, Stop: 63210, Start Num: 99

Candidate Starts for Xandras\_110:

(71, 62656), (Start: 99 @62710 has 30 MA's), (Start: 127 @62764 has 68 MA's), (173, 62845), (175, 62848), (187, 62872), (210, 62905), (228, 62962), (280, 63124),

Gene: Xavia\_53 Start: 39307, Stop: 39837, Start Num: 105

Candidate Starts for Xavia\_53:



(Start: 105 @39307 has 18 MA's), (130, 39364), (132, 39373), (166, 39436), (168, 39439), (187, 39475), (190, 39478), (200, 39487), (203, 39490), (220, 39532), (244, 39619), (303, 39781),

Gene: Yucca\_250 Start: 143605, Stop: 144054, Start Num: 128

Candidate Starts for Yucca\_250:

(Start: 128 @143605 has 32 MA's), (146, 143644), (163, 143662), (183, 143695), (201, 143722), (220, 143755), (244, 143842), (255, 143884), (296, 143983),

Gene: Zakai\_96 Start: 59860, Stop: 60273, Start Num: 127

Candidate Starts for Zakai\_96:

(Start: 127 @59860 has 68 MA's), (192, 59971), (218, 60010), (221, 60019), (243, 60097), (263, 60169), (290, 60247), (297, 60265),

Gene: Zaria\_91 Start: 56841, Stop: 57251, Start Num: 127

Candidate Starts for Zaria\_91:

(Start: 127 @56841 has 68 MA's), (138, 56871), (140, 56874), (177, 56919), (221, 56997), (236, 57039), (243, 57075), (253, 57117), (256, 57123), (271, 57171), (283, 57216), (297, 57243),

Gene: Zelink\_108 Start: 64885, Stop: 65409, Start Num: 115

Candidate Starts for Zelink\_108:

(40, 64705), (45, 64729), (Start: 80 @64834 has 1 MA's), (Start: 105 @64867 has 18 MA's), (Start: 115 @64885 has 1 MA's), (135, 64942), (Start: 174 @65005 has 1 MA's), (183, 65020), (192, 65038), (220, 65095), (222, 65101), (240, 65161), (269, 65254),

Gene: Zelink\_143 Start: 80141, Stop: 80740, Start Num: 102

Candidate Starts for Zelink\_143:

(Start: 102 @80141 has 12 MA's), (145, 80243), (159, 80264), (161, 80267), (197, 80330), (212, 80360), (217, 80369), (225, 80402), (239, 80447), (262, 80534), (276, 80594), (294, 80630), (331, 80726),

Gene: ZhongYanYuan\_92 Start: 59271, Stop: 59684, Start Num: 127

Candidate Starts for ZhongYanYuan\_92:

(Start: 127 @59271 has 68 MA's), (192, 59382), (218, 59421), (221, 59430), (243, 59508), (263, 59580), (290, 59658), (297, 59676),

Gene: Zucker\_50 Start: 32261, Stop: 32884, Start Num: 50

Candidate Starts for Zucker\_50:

(10, 31859), (12, 31883), (13, 31901), (27, 32147), (47, 32249), (Start: 50 @32261 has 1 MA's), (83, 32354), (Start: 127 @32432 has 68 MA's), (166, 32501), (217, 32579), (219, 32588), (221, 32594), (222, 32597), (234, 32633), (250, 32708),

Gene: ZygoTaiga\_246 Start: 143902, Stop: 144351, Start Num: 128

Candidate Starts for ZygoTaiga\_246:

(Start: 128 @143902 has 32 MA's), (146, 143941), (163, 143959), (183, 143992), (201, 144019), (220, 144052), (244, 144139), (255, 144181), (296, 144280),