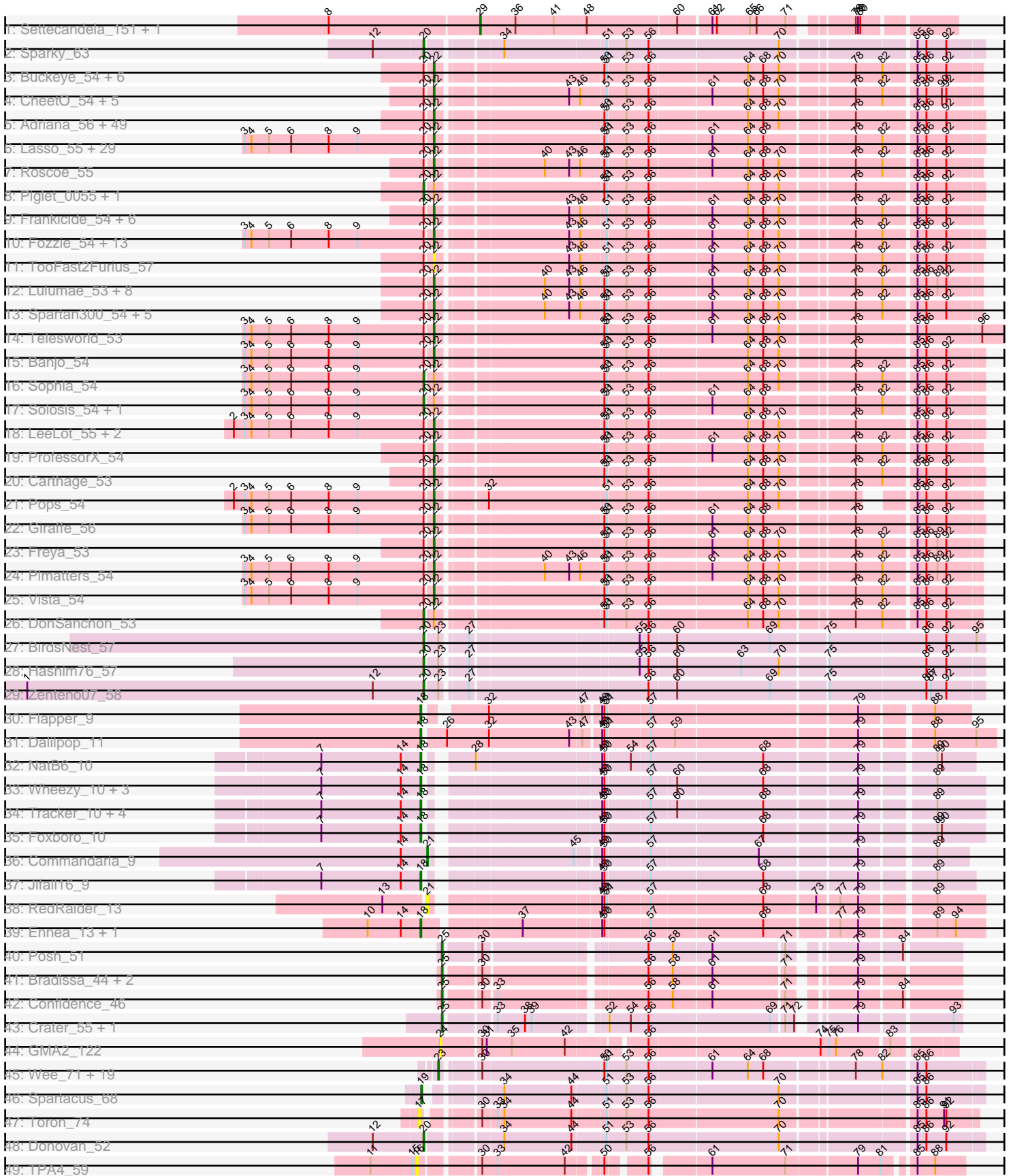


Pham 215854



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 215854 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215854 has 205 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Settecandela\_151, Phrappuccino\_151
- Track 2 : Sparky\_63
- Track 3 : Buckeye\_54, SilverBell\_54, UncleHowie\_54, Murdoc\_54, PinheadLarry\_56, Matalotodo\_54, Pipsqueak\_54
- Track 4 : CheetO\_54, Schadenfreude\_54, KlimbOn\_54, Crownjwl\_55, AbsoluteMadLad\_54, Riverton\_53
- Track 5 : Adriana\_56, Thora\_55, Morty\_56, Samaymay\_55, CamL\_55, ABU\_56, Serpentine\_0055, Soile\_56, Hamish\_54, Chaelin\_56, Mulan\_55, Cher\_55, Nacho\_0056, Bishoperium\_55, ThreeOh3D2\_56, Brilliant\_57, Windsor\_55, Mecca\_55, Megatron\_56, Kahve\_55, QueenBeane\_55, Usavi\_55, Weher20\_55, Omniscient\_56, Dati\_55, Jesabah\_55, Eugenia\_55, IsaacEli\_56, Vaticameos\_52, PhatCats2014\_56, Lego3393\_54, Placalicious\_55, Kimbrough\_56, Badfish\_56, HenryJackson\_55, FugateOSU\_55, Gareth\_55, Oosterbaan\_55, Jillium\_55, Gwilliam\_56, PG1\_56, Hertubise\_55, Etaye\_55, Haimas\_54, Waterdiva\_55, Bluephacebaby\_55, Melc17\_55, KingTut\_47, Kikipoo\_56, Tomlarah\_56
- Track 6 : Lasso\_55, Squid\_55, Daffy\_55, Haleema\_54, MrPhizzler\_56, DaddyDaniels\_57, Held\_55, Mosaic\_54, Craff\_58, Grand2040\_55, MRabcd\_54, Potter\_54, SassyCat97\_54, Vortex\_55, Mana\_54, MitKao\_55, Timmi\_54, Chorkpop\_55, Serendipity\_55, Childish\_55, Puhltonio\_55, Cosmolli16\_56, TomBombadil\_55, TallGrassMM\_55, Maru\_55, Khan1\_56, Morgushi\_55, Surely\_55, Cannibal\_55, Kwadwo\_54
- Track 7 : Roscoe\_55
- Track 8 : Piglet\_0055, SirBeauregard\_56
- Track 9 : Frankicide\_54, Eremos\_54, Basato\_55, Horchata\_54, Aelin\_54, HSavage\_54, OliverWalter\_54
- Track 10 : Fozzie\_54, Inverness\_54, Mesh1\_56, UAch1\_54, Vaishali24\_53, Antonia\_54, Harvey\_54, ElvisPhasley\_59, OSmaximus\_56, Manad\_54, Hetaeria\_54, Cornobble\_54, Newman\_54, Robyn\_54
- Track 11 : TooFast2Furius\_57
- Track 12 : Lulumae\_53, Altwerkus\_53, Phunky\_54, DoesntMatter\_53, Roy17\_54, LuckyMarjie\_53, Dione\_53, Phareon\_54, Numberten\_54
- Track 13 : Spartan300\_54, Valjean\_54, Boehler\_54, Zaider\_55, Olive\_54, EmpTee\_54
- Track 14 : Telesworld\_53
- Track 15 : Banjo\_54
- Track 16 : Sophia\_54
- Track 17 : Solosis\_54, Xavier\_54

- Track 18 : LeeLot\_55, JDog\_54, Zelda\_55
- Track 19 : ProfessorX\_54
- Track 20 : Carthage\_53
- Track 21 : Pops\_54
- Track 22 : Giraffe\_56
- Track 23 : Freya\_53
- Track 24 : Plmatters\_54
- Track 25 : Vista\_54
- Track 26 : DonSanchon\_53
- Track 27 : BirdsNest\_57
- Track 28 : Hashim76\_57
- Track 29 : Zenteno07\_58
- Track 30 : Flapper\_9
- Track 31 : Dalilpop\_11
- Track 32 : NatB6\_10
- Track 33 : Wheezy\_10, Arti\_10, GrootJr\_12, NovumRegina\_10
- Track 34 : Tracker\_10, Phomeo\_9, Emianna\_10, Kurt\_10, KidneyBean\_10
- Track 35 : Foxboro\_10
- Track 36 : Commandaria\_9
- Track 37 : Jifall16\_9
- Track 38 : RedRaider\_13
- Track 39 : Ennea\_13, Lollipop1437\_12
- Track 40 : Posh\_51
- Track 41 : Bradissa\_44, EnalisNailo\_43, Lilas\_46
- Track 42 : Confidence\_46
- Track 43 : Crater\_55, Apricot\_55
- Track 44 : GMA2\_122
- Track 45 : Wee\_71, WillSterrel\_67, SilverChicken\_76, Ogopogo\_73, TDanisky\_73, UncleRicky\_65, Doomphist\_66, Poenanya\_66, Enby\_67, Oksu\_71, Llij\_62, Lorde\_66, Fruitloop\_61, Tootsieroll\_66, DirtMcgirt\_65, Phatniss\_64, Drago\_63, Sparkdehlily\_73, IrishSherpFalk\_67, Taj\_71
- Track 46 : Spartacus\_68
- Track 47 : Toron\_74
- Track 48 : Donovan\_52
- Track 49 : TPA4\_59

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

The start number called the most often in the published annotations is 22, it was called in 136 of the 190 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_56, AbsoluteMadLad\_54, Adriana\_56, Aelin\_54, Altwerkus\_53, Antonia\_54, Badfish\_56, Banjo\_54, Basato\_55, Bishoperium\_55, Bluephacebaby\_55, Boehler\_54, Brilliant\_57, Buckeye\_54, CamL\_55, Cannibal\_55, Carthage\_53, Chaelin\_56, CheetO\_54, Cher\_55, Childish\_55, Chorkpop\_55, Cornobble\_54, Cosmolli16\_56, Craff\_58, Crownjwl\_55, DaddyDaniels\_57, Daffy\_55, Dati\_55, Dione\_53, DoesntMatter\_53, ElvisPhasley\_59, EmpTee\_54, Eremos\_54, Etaye\_55, Eugenia\_55, Fozzie\_54, Frankicide\_54, Freya\_53, FugateOSU\_55, Gareth\_55, Giraffe\_56, Grand2040\_55, Gwilliam\_56, HSavage\_54, Haimas\_54, Haleema\_54,

Hamish\_54, Harvey\_54, Held\_55, HenryJackson\_55, Hertubise\_55, Hetaeria\_54, Horchata\_54, Inverness\_54, IsaacEli\_56, JDog\_54, Jesabah\_55, Jillium\_55, Kahve\_55, Khan1\_56, Kikipoo\_56, Kimbrough\_56, KingTut\_47, KlimbOn\_54, Kwadwo\_54, Lasso\_55, LeeLot\_55, Lego3393\_54, LuckyMarjie\_53, Lulumae\_53, MRabcd\_54, Mana\_54, Manad\_54, Maru\_55, Matalotodo\_54, Mecca\_55, Megatron\_56, Melc17\_55, Mesh1\_56, MitKao\_55, Morgushi\_55, Morty\_56, Mosaic\_54, MrPhizzler\_56, Mulan\_55, Murdoc\_54, Nacho\_0056, Newman\_54, Numberten\_54, OSmaximus\_56, Olive\_54, OliverWalter\_54, Omniscient\_56, Oosterbaan\_55, PG1\_56, Phareon\_54, PhatCats2014\_56, Phunky\_54, PinheadLarry\_56, Pipsqueak\_54, Placalicious\_55, Plmatters\_54, Pops\_54, Potter\_54, ProfessorX\_54, Puhltonio\_55, QueenBeane\_55, Riverton\_53, Robyn\_54, Roscoe\_55, Roy17\_54, Samaymay\_55, SassyCat97\_54, Schadenfreude\_54, Serendipity\_55, Serpentine\_0055, SilverBell\_54, Soile\_56, Spartan300\_54, Squid\_55, Surely\_55, TallGrassMM\_55, Telesworld\_53, Thora\_55, ThreeOh3D2\_56, Timmi\_54, TomBombadil\_55, Tomlarah\_56, TooFast2Furius\_57, UAch1\_54, UncleHowie\_54, Usavi\_55, Vaishali24\_53, Valjean\_54, Vaticameos\_52, Vista\_54, Vortex\_55, Waterdiva\_55, Weher20\_55, Windsor\_55, Zaider\_55, Zelda\_55,

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

- DonSanchon\_53, Piglet\_0055, SirBeauregard\_56, Solosis\_54, Sophia\_54, Xavier\_54,

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

- Apricot\_55, Arti\_10, BirdsNest\_57, Bradissa\_44, Commandaria\_9, Confidence\_46, Crater\_55, Dalilpop\_11, DirtMcgirt\_65, Donovan\_52, Doomphist\_66, Drago\_63, Emianna\_10, EnalisNailo\_43, Enby\_67, Ennea\_13, Flapper\_9, Foxboro\_10, Fruitloop\_61, GMA2\_122, GrootJr\_12, Hashim76\_57, IrishSherpFalk\_67, Jifall16\_9, KidneyBean\_10, Kurt\_10, Lilas\_46, Llij\_62, Lollipop1437\_12, Lorde\_66, NatB6\_10, NovumRegina\_10, Ogopogo\_73, Oksu\_71, Phatniss\_64, Phomeo\_9, Phrappuccino\_151, Poenanya\_66, Posh\_51, RedRaider\_13, Settecandela\_151, SilverChicken\_76, Sparkdehlily\_73, Sparky\_63, Spartacus\_68, TDanisky\_73, TPA4\_59, Taj\_71, Tootsieroll\_66, Toron\_74, Tracker\_10, UncleRicky\_65, Wee\_71, Wheezy\_10, WillSterrel\_67, Zenteno07\_58,

### Summary by start number:

Start 16:

- Found in 1 of 205 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TPA4\_59 (singleton),

Start 17:

- Found in 1 of 205 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Toron\_74 (F6),

Start 18:

- Found in 16 of 205 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 15 of 190
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Arti\_10 (CR2), Dalilpop\_11 (CR1), Emianna\_10 (CR2), Ennea\_13 (CR3), Flapper\_9 (CR1), Foxboro\_10 (CR2), GrootJr\_12 (CR2), Jifall16\_9 (CR2), KidneyBean\_10 (CR2), Kurt\_10 (CR2), Lollipop1437\_12 (CR3), NatB6\_10 (CR2), NovumRegina\_10 (CR2), Phomeo\_9 (CR2), Tracker\_10 (CR2), Wheezy\_10 (CR2),

#### Start 19:

- Found in 1 of 205 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spartacus\_68 (F1),

#### Start 20:

- Found in 154 of 205 ( 75.1% ) of genes in pham
- Manual Annotations of this start: 10 of 190
- Called 7.1% of time when present
- Phage (with cluster) where this start called: BirdsNest\_57 (B13), DonSanchon\_53 (B1), Donovan\_52 (P1), Hashim76\_57 (B13), Piglet\_0055 (B1), SirBeauregard\_56 (B1), Solosis\_54 (B1), Sophia\_54 (B1), Sparky\_63 (AF), Xavier\_54 (B1), Zenteno07\_58 (B13),

#### Start 21:

- Found in 2 of 205 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Commandaria\_9 (CR2), RedRaider\_13 (CR3),

#### Start 22:

- Found in 149 of 205 ( 72.7% ) of genes in pham
- Manual Annotations of this start: 136 of 190
- Called 96.0% of time when present
- Phage (with cluster) where this start called: ABU\_56 (B1), AbsoluteMadLad\_54 (B1), Adriana\_56 (B1), Aelin\_54 (B1), Altwerkus\_53 (B1), Antonia\_54 (B1), Badfish\_56 (B1), Banjo\_54 (B1), Basato\_55 (B1), Bishoperium\_55 (B1), Bluephacebaby\_55 (B1), Boehler\_54 (B1), Brilliant\_57 (B1), Buckeye\_54 (B1), CamL\_55 (B1), Cannibal\_55 (B1), Carthage\_53 (B1), Chaelin\_56 (B1), CheetO\_54 (B1), Cher\_55 (B1), Childish\_55 (B1), Chorkpop\_55 (B1), Cornobble\_54 (B1), Cosmoli16\_56 (B1), Craff\_58 (B1), Crownjwl\_55 (B1), DaddyDaniels\_57 (B1), Daffy\_55 (B1), Dati\_55 (B1), Dione\_53 (B1), DoesntMatter\_53 (B1), ElvisPhasley\_59 (B1), EmpTee\_54 (B1), Eremos\_54 (B1), Etaye\_55 (B1), Eugenia\_55 (B1), Fozzie\_54 (B1), Frankicide\_54 (B1), Freya\_53 (B1), FugateOSU\_55 (B1), Gareth\_55 (B1), Giraffe\_56 (B1), Grand2040\_55 (B1), Gwilliam\_56 (B1), HSavage\_54 (B1), Haimas\_54 (B1), Haleema\_54 (B1), Hamish\_54 (B1), Harvey\_54 (B1), Held\_55 (B1), HenryJackson\_55 (B1), Hertubise\_55 (B1), Hetaeria\_54 (B1), Horchata\_54 (B1), Inverness\_54 (B1), IsaacEli\_56 (B1), JDog\_54 (B1), Jesabah\_55 (B1), Jillium\_55 (B1), Kahve\_55 (B1), Khan1\_56 (B1), Kikipoo\_56 (B1), Kimbrough\_56 (B1), KingTut\_47 (B1), KlimbOn\_54 (B1), Kwadwo\_54 (B1), Lasso\_55 (B1), LeeLot\_55 (B1), Lego3393\_54 (B1), LuckyMarjie\_53 (B1), Lulumae\_53 (B1), MRabcd\_54 (B1), Mana\_54 (B1), Manad\_54 (B1), Maru\_55 (B1), Matalotodo\_54 (B1), Mecca\_55 (B1), Megatron\_56 (B1), Melc17\_55 (B1), Mesh1\_56 (B1), MitKao\_55 (B1), Morgushi\_55 (B1), Morty\_56 (B1), Mosaic\_54 (B1), MrPhizzler\_56 (B1), Mulan\_55 (B1), Murdoc\_54 (B1), Nacho\_0056 (B1), Newman\_54 (B1), Numberten\_54 (B1),

OSmaximus\_56 (B1), Olive\_54 (B1), OliverWalter\_54 (B1), Omniscient\_56 (B1), Oosterbaan\_55 (B1), PG1\_56 (B1), Phareon\_54 (B1), PhatCats2014\_56 (B1), Phunky\_54 (B1), PinheadLarry\_56 (B1), Pipsqueak\_54 (B1), Placalicious\_55 (B1), Plmatters\_54 (B1), Pops\_54 (B1), Potter\_54 (B1), ProfessorX\_54 (B1), Puhltonio\_55 (B1), QueenBeane\_55 (B1), Riverton\_53 (B1), Robyn\_54 (B1), Roscoe\_55 (B1), Roy17\_54 (B1), Samaymay\_55 (B1), SassyCat97\_54 (B1), Schadenfreude\_54 (B1), Serendipity\_55 (B1), Serpentine\_0055 (B1), SilverBell\_54 (B1), Soile\_56 (B1), Spartan300\_54 (B1), Squid\_55 (B1), Surely\_55 (B1), TallGrassMM\_55 (B1), Telesworld\_53 (B1), Thora\_55 (B1), ThreeOh3D2\_56 (B1), Timmi\_54 (B1), TomBombadil\_55 (B1), Tomlarah\_56 (B1), TooFast2Furius\_57 (B1), UAch1\_54 (B1), UncleHowie\_54 (B1), Usavi\_55 (B1), Vaishali24\_53 (B1), Valjean\_54 (B1), Vaticameos\_52 (B1), Vista\_54 (B1), Vortex\_55 (B1), Waterdiva\_55 (B1), Weher20\_55 (B1), Windsor\_55 (B1), Zaider\_55 (B1), Zelda\_55 (B1),

#### Start 23:

- Found in 23 of 205 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 18 of 190
- Called 87.0% of time when present
- Phage (with cluster) where this start called: DirtMcgirt\_65 (F1), Doomphist\_66 (F1), Drago\_63 (F1), Enby\_67 (F1), Fruitloop\_61 (F1), IrishSherpFalk\_67 (F1), Llij\_62 (F1), Lorde\_66 (F1), Ogotogo\_73 (F1), Oksu\_71 (F1), Phatniss\_64 (F1), Poenanya\_66 (F1), SilverChicken\_76 (F2), Sparkdehlily\_73 (F1), TDanisky\_73 (F1), Taj\_71 (F1), Tootsieroll\_66 (F1), UncleRicky\_65 (F1), Wee\_71 (F1), WillSterrel\_67 (F1),

#### Start 24:

- Found in 1 of 205 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA2\_122 (DS),

#### Start 25:

- Found in 7 of 205 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 7 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot\_55 (DN3), Bradissa\_44 (CY1), Confidence\_46 (CY1), Crater\_55 (DN3), EnalisNailo\_43 (CY1), Lilas\_46 (CY1), Posh\_51 (CY),

#### Start 29:

- Found in 2 of 205 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_151 (AA), Settecandela\_151 (AA),

### Summary by clusters:

There are 16 clusters represented in this pham: CR2, F1, F2, CR1, AA, F6, AF, CR3, CY1, CY, P1, B13, DN3, singleton, DS, B1,

Info for manual annotations of cluster AA:

- Start number 29 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AF:

- Start number 20 was manually annotated 1 time for cluster AF.

Info for manual annotations of cluster B1:

- Start number 20 was manually annotated 5 times for cluster B1.
- Start number 22 was manually annotated 136 times for cluster B1.

Info for manual annotations of cluster B13:

- Start number 20 was manually annotated 3 times for cluster B13.

Info for manual annotations of cluster CR1:

- Start number 18 was manually annotated 2 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 18 was manually annotated 11 times for cluster CR2.
- Start number 21 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 18 was manually annotated 2 times for cluster CR3.

Info for manual annotations of cluster CY:

- Start number 25 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 25 was manually annotated 4 times for cluster CY1.

Info for manual annotations of cluster DN3:

- Start number 25 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster F1:

- Start number 19 was manually annotated 1 time for cluster F1.
- Start number 23 was manually annotated 18 times for cluster F1.

Info for manual annotations of cluster P1:

- Start number 20 was manually annotated 1 time for cluster P1.

### **Gene Information:**

Gene: ABU\_56 Start: 48493, Stop: 47813, Start Num: 22

Candidate Starts for ABU\_56:

(Start: 20 @48502 has 10 MA's), (Start: 22 @48493 has 136 MA's), (50, 48286), (51, 48283), (53, 48259), (56, 48229), (64, 48103), (68, 48082), (70, 48061), (78, 47971), (85, 47896), (86, 47884), (92, 47857),

Gene: AbsoluteMadLad\_54 Start: 48205, Stop: 47528, Start Num: 22

Candidate Starts for AbsoluteMadLad\_54:

(Start: 20 @48214 has 10 MA's), (Start: 22 @48205 has 136 MA's), (43, 48043), (46, 48028), (51, 47995), (53, 47971), (56, 47941), (61, 47863), (64, 47815), (68, 47794), (70, 47773), (78, 47683), (82,

47647), (85, 47608), (86, 47596), (90, 47575), (92, 47569),

Gene: Adriana\_56 Start: 48490, Stop: 47810, Start Num: 22

Candidate Starts for Adriana\_56:

(Start: 20 @48499 has 10 MA's), (Start: 22 @48490 has 136 MA's), (50, 48283), (51, 48280), (53, 48256), (56, 48226), (64, 48100), (68, 48079), (70, 48058), (78, 47968), (85, 47893), (86, 47881), (92, 47854),

Gene: Aelin\_54 Start: 47769, Stop: 47092, Start Num: 22

Candidate Starts for Aelin\_54:

(Start: 20 @47778 has 10 MA's), (Start: 22 @47769 has 136 MA's), (43, 47607), (46, 47592), (51, 47559), (53, 47535), (56, 47505), (61, 47427), (64, 47379), (68, 47358), (70, 47337), (78, 47247), (82, 47211), (85, 47172), (86, 47160), (92, 47133),

Gene: Altwerkus\_53 Start: 47657, Stop: 46980, Start Num: 22

Candidate Starts for Altwerkus\_53:

(Start: 20 @47666 has 10 MA's), (Start: 22 @47657 has 136 MA's), (40, 47528), (43, 47495), (46, 47480), (50, 47450), (51, 47447), (53, 47423), (56, 47393), (61, 47315), (64, 47267), (68, 47246), (70, 47225), (78, 47135), (82, 47099), (85, 47060), (86, 47048), (89, 47033), (92, 47021),

Gene: Antonia\_54 Start: 47769, Stop: 47092, Start Num: 22

Candidate Starts for Antonia\_54:

(3, 48021), (4, 48012), (5, 47988), (6, 47958), (8, 47907), (9, 47868), (Start: 20 @47778 has 10 MA's), (Start: 22 @47769 has 136 MA's), (43, 47607), (46, 47592), (51, 47559), (53, 47535), (56, 47505), (61, 47427), (64, 47379), (68, 47358), (70, 47337), (78, 47247), (82, 47211), (85, 47172), (86, 47160), (92, 47133),

Gene: Apricot\_55 Start: 35565, Stop: 36167, Start Num: 25

Candidate Starts for Apricot\_55:

(Start: 25 @35565 has 7 MA's), (33, 35622), (38, 35658), (39, 35667), (52, 35751), (54, 35778), (56, 35802), (69, 35958), (71, 35973), (72, 35985), (79, 36042), (93, 36156),

Gene: Arti\_10 Start: 5991, Stop: 6665, Start Num: 18

Candidate Starts for Arti\_10:

(7, 5856), (14, 5964), (Start: 18 @5991 has 15 MA's), (49, 6192), (50, 6195), (57, 6252), (60, 6285), (68, 6396), (79, 6513), (89, 6603),

Gene: Badfish\_56 Start: 48515, Stop: 47835, Start Num: 22

Candidate Starts for Badfish\_56:

(Start: 20 @48524 has 10 MA's), (Start: 22 @48515 has 136 MA's), (50, 48308), (51, 48305), (53, 48281), (56, 48251), (64, 48125), (68, 48104), (70, 48083), (78, 47993), (85, 47918), (86, 47906), (92, 47879),

Gene: Banjo\_54 Start: 47962, Stop: 47282, Start Num: 22

Candidate Starts for Banjo\_54:

(3, 48214), (4, 48205), (5, 48181), (6, 48151), (8, 48100), (9, 48061), (Start: 20 @47971 has 10 MA's), (Start: 22 @47962 has 136 MA's), (50, 47755), (51, 47752), (53, 47728), (56, 47698), (64, 47572), (68, 47551), (70, 47530), (78, 47440), (85, 47365), (86, 47353), (92, 47326),

Gene: Basato\_55 Start: 48237, Stop: 47560, Start Num: 22

Candidate Starts for Basato\_55:

(Start: 20 @48246 has 10 MA's), (Start: 22 @48237 has 136 MA's), (43, 48075), (46, 48060), (51, 48027), (53, 48003), (56, 47973), (61, 47895), (64, 47847), (68, 47826), (70, 47805), (78, 47715), (82,



47679), (85, 47640), (86, 47628), (92, 47601),

Gene: BirdsNest\_57 Start: 47703, Stop: 46999, Start Num: 20

Candidate Starts for BirdsNest\_57:

(Start: 20 @47703 has 10 MA's), (Start: 23 @47688 has 18 MA's), (27, 47658), (55, 47448), (56, 47436), (60, 47400), (69, 47274), (75, 47205), (86, 47076), (92, 47049), (95, 47010),

Gene: Bishoperium\_55 Start: 48501, Stop: 47821, Start Num: 22

Candidate Starts for Bishoperium\_55:

(Start: 20 @48510 has 10 MA's), (Start: 22 @48501 has 136 MA's), (50, 48294), (51, 48291), (53, 48267), (56, 48237), (64, 48111), (68, 48090), (70, 48069), (78, 47979), (85, 47904), (86, 47892), (92, 47865),

Gene: Bluephacebaby\_55 Start: 48504, Stop: 47824, Start Num: 22

Candidate Starts for Bluephacebaby\_55:

(Start: 20 @48513 has 10 MA's), (Start: 22 @48504 has 136 MA's), (50, 48297), (51, 48294), (53, 48270), (56, 48240), (64, 48114), (68, 48093), (70, 48072), (78, 47982), (85, 47907), (86, 47895), (92, 47868),

Gene: Boehler\_54 Start: 47946, Stop: 47269, Start Num: 22

Candidate Starts for Boehler\_54:

(Start: 20 @47955 has 10 MA's), (Start: 22 @47946 has 136 MA's), (40, 47817), (43, 47784), (46, 47769), (50, 47739), (51, 47736), (53, 47712), (56, 47682), (61, 47604), (64, 47556), (68, 47535), (70, 47514), (78, 47424), (82, 47388), (85, 47349), (86, 47337), (92, 47310),

Gene: Bradissa\_44 Start: 36341, Stop: 36946, Start Num: 25

Candidate Starts for Bradissa\_44:

(Start: 25 @36341 has 7 MA's), (30, 36383), (56, 36578), (58, 36611), (61, 36659), (71, 36752), (79, 36821),

Gene: Brilliant\_57 Start: 48504, Stop: 47824, Start Num: 22

Candidate Starts for Brilliant\_57:

(Start: 20 @48513 has 10 MA's), (Start: 22 @48504 has 136 MA's), (50, 48297), (51, 48294), (53, 48270), (56, 48240), (64, 48114), (68, 48093), (70, 48072), (78, 47982), (85, 47907), (86, 47895), (92, 47868),

Gene: Buckeye\_54 Start: 48015, Stop: 47338, Start Num: 22

Candidate Starts for Buckeye\_54:

(Start: 20 @48024 has 10 MA's), (Start: 22 @48015 has 136 MA's), (50, 47808), (51, 47805), (53, 47781), (56, 47751), (64, 47625), (68, 47604), (70, 47583), (78, 47493), (82, 47457), (85, 47418), (86, 47406), (92, 47379),

Gene: CamL\_55 Start: 48269, Stop: 47589, Start Num: 22

Candidate Starts for CamL\_55:

(Start: 20 @48278 has 10 MA's), (Start: 22 @48269 has 136 MA's), (50, 48062), (51, 48059), (53, 48035), (56, 48005), (64, 47879), (68, 47858), (70, 47837), (78, 47747), (85, 47672), (86, 47660), (92, 47633),

Gene: Cannibal\_55 Start: 48252, Stop: 47572, Start Num: 22

Candidate Starts for Cannibal\_55:

(3, 48504), (4, 48495), (5, 48471), (6, 48441), (8, 48390), (9, 48351), (Start: 20 @48261 has 10 MA's), (Start: 22 @48252 has 136 MA's), (50, 48045), (51, 48042), (53, 48018), (56, 47988), (61, 47910), (64, 47862), (68, 47841), (78, 47730), (82, 47694), (85, 47655), (86, 47643), (92, 47616),

Gene: Carthage\_53 Start: 47247, Stop: 46567, Start Num: 22

Candidate Starts for Carthage\_53:

(Start: 20 @47256 has 10 MA's), (Start: 22 @47247 has 136 MA's), (50, 47040), (51, 47037), (53, 47013), (56, 46983), (64, 46857), (68, 46836), (70, 46815), (78, 46725), (82, 46689), (85, 46650), (86, 46638), (92, 46611),

Gene: Chaelin\_56 Start: 48499, Stop: 47819, Start Num: 22

Candidate Starts for Chaelin\_56:

(Start: 20 @48508 has 10 MA's), (Start: 22 @48499 has 136 MA's), (50, 48292), (51, 48289), (53, 48265), (56, 48235), (64, 48109), (68, 48088), (70, 48067), (78, 47977), (85, 47902), (86, 47890), (92, 47863),

Gene: CheetO\_54 Start: 47985, Stop: 47308, Start Num: 22

Candidate Starts for CheetO\_54:

(Start: 20 @47994 has 10 MA's), (Start: 22 @47985 has 136 MA's), (43, 47823), (46, 47808), (51, 47775), (53, 47751), (56, 47721), (61, 47643), (64, 47595), (68, 47574), (70, 47553), (78, 47463), (82, 47427), (85, 47388), (86, 47376), (90, 47355), (92, 47349),

Gene: Cher\_55 Start: 48521, Stop: 47841, Start Num: 22

Candidate Starts for Cher\_55:

(Start: 20 @48530 has 10 MA's), (Start: 22 @48521 has 136 MA's), (50, 48314), (51, 48311), (53, 48287), (56, 48257), (64, 48131), (68, 48110), (70, 48089), (78, 47999), (85, 47924), (86, 47912), (92, 47885),

Gene: Childish\_55 Start: 48531, Stop: 47851, Start Num: 22

Candidate Starts for Childish\_55:

(3, 48783), (4, 48774), (5, 48750), (6, 48720), (8, 48669), (9, 48630), (Start: 20 @48540 has 10 MA's), (Start: 22 @48531 has 136 MA's), (50, 48324), (51, 48321), (53, 48297), (56, 48267), (61, 48189), (64, 48141), (68, 48120), (78, 48009), (82, 47973), (85, 47934), (86, 47922), (92, 47895),

Gene: Chorkpop\_55 Start: 48008, Stop: 47328, Start Num: 22

Candidate Starts for Chorkpop\_55:

(3, 48260), (4, 48251), (5, 48227), (6, 48197), (8, 48146), (9, 48107), (Start: 20 @48017 has 10 MA's), (Start: 22 @48008 has 136 MA's), (50, 47801), (51, 47798), (53, 47774), (56, 47744), (61, 47666), (64, 47618), (68, 47597), (78, 47486), (82, 47450), (85, 47411), (86, 47399), (92, 47372),

Gene: Commandaria\_9 Start: 5029, Stop: 5676, Start Num: 21

Candidate Starts for Commandaria\_9:

(14, 4993), (Start: 21 @5029 has 1 MA's), (45, 5200), (49, 5227), (50, 5230), (57, 5287), (67, 5425), (79, 5548), (89, 5638),

Gene: Confidence\_46 Start: 34232, Stop: 34837, Start Num: 25

Candidate Starts for Confidence\_46:

(Start: 25 @34232 has 7 MA's), (30, 34274), (33, 34289), (56, 34469), (58, 34502), (61, 34550), (71, 34643), (79, 34712), (84, 34766),

Gene: Cornobble\_54 Start: 47922, Stop: 47242, Start Num: 22

Candidate Starts for Cornobble\_54:

(3, 48174), (4, 48165), (5, 48141), (6, 48111), (8, 48060), (9, 48021), (Start: 20 @47931 has 10 MA's), (Start: 22 @47922 has 136 MA's), (43, 47760), (46, 47745), (51, 47712), (53, 47688), (56, 47658), (61, 47580), (64, 47532), (68, 47511), (70, 47490), (78, 47400), (82, 47364), (85, 47325), (86, 47313), (92, 47286),

Gene: Cosmolli16\_56 Start: 48711, Stop: 48031, Start Num: 22

Candidate Starts for Cosmolli16\_56:

(3, 48963), (4, 48954), (5, 48930), (6, 48900), (8, 48849), (9, 48810), (Start: 20 @48720 has 10 MA's), (Start: 22 @48711 has 136 MA's), (50, 48504), (51, 48501), (53, 48477), (56, 48447), (61, 48369), (64, 48321), (68, 48300), (78, 48189), (82, 48153), (85, 48114), (86, 48102), (92, 48075),

Gene: Craff\_58 Start: 48956, Stop: 48276, Start Num: 22

Candidate Starts for Craff\_58:

(3, 49208), (4, 49199), (5, 49175), (6, 49145), (8, 49094), (9, 49055), (Start: 20 @48965 has 10 MA's), (Start: 22 @48956 has 136 MA's), (50, 48749), (51, 48746), (53, 48722), (56, 48692), (61, 48614), (64, 48566), (68, 48545), (78, 48434), (82, 48398), (85, 48359), (86, 48347), (92, 48320),

Gene: Crater\_55 Start: 35960, Stop: 36562, Start Num: 25

Candidate Starts for Crater\_55:

(Start: 25 @35960 has 7 MA's), (33, 36017), (38, 36053), (39, 36062), (52, 36146), (54, 36173), (56, 36197), (69, 36353), (71, 36368), (72, 36380), (79, 36437), (93, 36551),

Gene: Crownjwl\_55 Start: 47988, Stop: 47311, Start Num: 22

Candidate Starts for Crownjwl\_55:

(Start: 20 @47997 has 10 MA's), (Start: 22 @47988 has 136 MA's), (43, 47826), (46, 47811), (51, 47778), (53, 47754), (56, 47724), (61, 47646), (64, 47598), (68, 47577), (70, 47556), (78, 47466), (82, 47430), (85, 47391), (86, 47379), (90, 47358), (92, 47352),

Gene: DaddyDaniels\_57 Start: 48488, Stop: 47808, Start Num: 22

Candidate Starts for DaddyDaniels\_57:

(3, 48740), (4, 48731), (5, 48707), (6, 48677), (8, 48626), (9, 48587), (Start: 20 @48497 has 10 MA's), (Start: 22 @48488 has 136 MA's), (50, 48281), (51, 48278), (53, 48254), (56, 48224), (61, 48146), (64, 48098), (68, 48077), (78, 47966), (82, 47930), (85, 47891), (86, 47879), (92, 47852),

Gene: Daffy\_55 Start: 47994, Stop: 47314, Start Num: 22

Candidate Starts for Daffy\_55:

(3, 48246), (4, 48237), (5, 48213), (6, 48183), (8, 48132), (9, 48093), (Start: 20 @48003 has 10 MA's), (Start: 22 @47994 has 136 MA's), (50, 47787), (51, 47784), (53, 47760), (56, 47730), (61, 47652), (64, 47604), (68, 47583), (78, 47472), (82, 47436), (85, 47397), (86, 47385), (92, 47358),

Gene: Dalilpop\_11 Start: 6087, Stop: 6800, Start Num: 18

Candidate Starts for Dalilpop\_11:

(Start: 18 @6087 has 15 MA's), (26, 6114), (32, 6171), (43, 6276), (47, 6291), (49, 6309), (50, 6312), (51, 6315), (57, 6369), (59, 6402), (79, 6633), (88, 6720), (95, 6774),

Gene: Dati\_55 Start: 48526, Stop: 47846, Start Num: 22

Candidate Starts for Dati\_55:

(Start: 20 @48535 has 10 MA's), (Start: 22 @48526 has 136 MA's), (50, 48319), (51, 48316), (53, 48292), (56, 48262), (64, 48136), (68, 48115), (70, 48094), (78, 48004), (85, 47929), (86, 47917), (92, 47890),

Gene: Dione\_53 Start: 47666, Stop: 46989, Start Num: 22

Candidate Starts for Dione\_53:

(Start: 20 @47675 has 10 MA's), (Start: 22 @47666 has 136 MA's), (40, 47537), (43, 47504), (46, 47489), (50, 47459), (51, 47456), (53, 47432), (56, 47402), (61, 47324), (64, 47276), (68, 47255), (70, 47234), (78, 47144), (82, 47108), (85, 47069), (86, 47057), (89, 47042), (92, 47030),

Gene: DirtMcgirt\_65 Start: 40913, Stop: 41590, Start Num: 23

Candidate Starts for DirtMcgirt\_65:

(Start: 23 @40913 has 18 MA's), (30, 40955), (50, 41114), (51, 41117), (53, 41141), (56, 41171), (61, 41249), (64, 41297), (68, 41318), (78, 41429), (82, 41465), (85, 41504), (86, 41516),

Gene: DoesntMatter\_53 Start: 47959, Stop: 47282, Start Num: 22

Candidate Starts for DoesntMatter\_53:

(Start: 20 @47968 has 10 MA's), (Start: 22 @47959 has 136 MA's), (40, 47830), (43, 47797), (46, 47782), (50, 47752), (51, 47749), (53, 47725), (56, 47695), (61, 47617), (64, 47569), (68, 47548), (70, 47527), (78, 47437), (82, 47401), (85, 47362), (86, 47350), (89, 47335), (92, 47323),

Gene: DonSanchon\_53 Start: 47700, Stop: 47014, Start Num: 20

Candidate Starts for DonSanchon\_53:

(Start: 20 @47700 has 10 MA's), (Start: 22 @47691 has 136 MA's), (50, 47484), (51, 47481), (53, 47457), (56, 47427), (64, 47301), (68, 47280), (70, 47259), (78, 47169), (82, 47133), (85, 47094), (86, 47082), (92, 47055),

Gene: Donovan\_52 Start: 35711, Stop: 36400, Start Num: 20

Candidate Starts for Donovan\_52:

(12, 35645), (Start: 20 @35711 has 10 MA's), (34, 35795), (44, 35885), (51, 35927), (53, 35951), (56, 35981), (70, 36152), (85, 36314), (86, 36326), (92, 36353),

Gene: Doomphist\_66 Start: 43323, Stop: 44000, Start Num: 23

Candidate Starts for Doomphist\_66:

(Start: 23 @43323 has 18 MA's), (30, 43365), (50, 43524), (51, 43527), (53, 43551), (56, 43581), (61, 43659), (64, 43707), (68, 43728), (78, 43839), (82, 43875), (85, 43914), (86, 43926),

Gene: Drago\_63 Start: 40916, Stop: 41593, Start Num: 23

Candidate Starts for Drago\_63:

(Start: 23 @40916 has 18 MA's), (30, 40958), (50, 41117), (51, 41120), (53, 41144), (56, 41174), (61, 41252), (64, 41300), (68, 41321), (78, 41432), (82, 41468), (85, 41507), (86, 41519),

Gene: ElvisPhasley\_59 Start: 48537, Stop: 47857, Start Num: 22

Candidate Starts for ElvisPhasley\_59:

(3, 48789), (4, 48780), (5, 48756), (6, 48726), (8, 48675), (9, 48636), (Start: 20 @48546 has 10 MA's), (Start: 22 @48537 has 136 MA's), (43, 48375), (46, 48360), (51, 48327), (53, 48303), (56, 48273), (61, 48195), (64, 48147), (68, 48126), (70, 48105), (78, 48015), (82, 47979), (85, 47940), (86, 47928), (92, 47901),

Gene: Emianna\_10 Start: 5953, Stop: 6612, Start Num: 18

Candidate Starts for Emianna\_10:

(7, 5818), (14, 5926), (Start: 18 @5953 has 15 MA's), (49, 6154), (50, 6157), (57, 6214), (60, 6247), (68, 6358), (79, 6475), (89, 6565),

Gene: EmpTee\_54 Start: 47972, Stop: 47295, Start Num: 22

Candidate Starts for EmpTee\_54:

(Start: 20 @47981 has 10 MA's), (Start: 22 @47972 has 136 MA's), (40, 47843), (43, 47810), (46, 47795), (50, 47765), (51, 47762), (53, 47738), (56, 47708), (61, 47630), (64, 47582), (68, 47561), (70, 47540), (78, 47450), (82, 47414), (85, 47375), (86, 47363), (92, 47336),

Gene: EnalisNailo\_43 Start: 35875, Stop: 36480, Start Num: 25

Candidate Starts for EnalisNailo\_43:

(Start: 25 @35875 has 7 MA's), (30, 35917), (56, 36112), (58, 36145), (61, 36193), (71, 36286), (79, 36355),

Gene: Enby\_67 Start: 41192, Stop: 41869, Start Num: 23

Candidate Starts for Enby\_67:

(Start: 23 @41192 has 18 MA's), (30, 41234), (50, 41393), (51, 41396), (53, 41420), (56, 41450), (61, 41528), (64, 41576), (68, 41597), (78, 41708), (82, 41744), (85, 41783), (86, 41795),

Gene: Ennea\_13 Start: 6764, Stop: 7453, Start Num: 18

Candidate Starts for Ennea\_13:

(10, 6692), (14, 6737), (Start: 18 @6764 has 15 MA's), (37, 6881), (49, 6980), (50, 6983), (57, 7040), (68, 7184), (77, 7277), (79, 7301), (89, 7391), (94, 7415),

Gene: Eremos\_54 Start: 47965, Stop: 47288, Start Num: 22

Candidate Starts for Eremos\_54:

(Start: 20 @47974 has 10 MA's), (Start: 22 @47965 has 136 MA's), (43, 47803), (46, 47788), (51, 47755), (53, 47731), (56, 47701), (61, 47623), (64, 47575), (68, 47554), (70, 47533), (78, 47443), (82, 47407), (85, 47368), (86, 47356), (92, 47329),

Gene: Etaye\_55 Start: 48795, Stop: 48115, Start Num: 22

Candidate Starts for Etaye\_55:

(Start: 20 @48804 has 10 MA's), (Start: 22 @48795 has 136 MA's), (50, 48588), (51, 48585), (53, 48561), (56, 48531), (64, 48405), (68, 48384), (70, 48363), (78, 48273), (85, 48198), (86, 48186), (92, 48159),

Gene: Eugenia\_55 Start: 48360, Stop: 47680, Start Num: 22

Candidate Starts for Eugenia\_55:

(Start: 20 @48369 has 10 MA's), (Start: 22 @48360 has 136 MA's), (50, 48153), (51, 48150), (53, 48126), (56, 48096), (64, 47970), (68, 47949), (70, 47928), (78, 47838), (85, 47763), (86, 47751), (92, 47724),

Gene: Flapper\_9 Start: 4974, Stop: 5633, Start Num: 18

Candidate Starts for Flapper\_9:

(Start: 18 @4974 has 15 MA's), (32, 5037), (47, 5157), (49, 5175), (50, 5178), (51, 5181), (57, 5235), (79, 5499), (88, 5586),

Gene: Foxboro\_10 Start: 5964, Stop: 6641, Start Num: 18

Candidate Starts for Foxboro\_10:

(7, 5829), (14, 5937), (Start: 18 @5964 has 15 MA's), (49, 6165), (50, 6168), (57, 6225), (68, 6372), (79, 6489), (89, 6579), (90, 6585),

Gene: Fozzie\_54 Start: 48298, Stop: 47618, Start Num: 22

Candidate Starts for Fozzie\_54:

(3, 48550), (4, 48541), (5, 48517), (6, 48487), (8, 48436), (9, 48397), (Start: 20 @48307 has 10 MA's), (Start: 22 @48298 has 136 MA's), (43, 48136), (46, 48121), (51, 48088), (53, 48064), (56, 48034), (61, 47956), (64, 47908), (68, 47887), (70, 47866), (78, 47776), (82, 47740), (85, 47701), (86, 47689), (92, 47662),

Gene: Frankicide\_54 Start: 47996, Stop: 47319, Start Num: 22

Candidate Starts for Frankicide\_54:

(Start: 20 @48005 has 10 MA's), (Start: 22 @47996 has 136 MA's), (43, 47834), (46, 47819), (51, 47786), (53, 47762), (56, 47732), (61, 47654), (64, 47606), (68, 47585), (70, 47564), (78, 47474), (82, 47438), (85, 47399), (86, 47387), (92, 47360),

Gene: Freya\_53 Start: 47657, Stop: 46980, Start Num: 22

Candidate Starts for Freya\_53:

(Start: 20 @47666 has 10 MA's), (Start: 22 @47657 has 136 MA's), (50, 47450), (51, 47447), (53, 47423), (56, 47393), (61, 47315), (64, 47267), (68, 47246), (70, 47225), (78, 47135), (82, 47099), (85, 47060), (86, 47048), (89, 47033), (92, 47021),

Gene: Fruitloop\_61 Start: 42550, Stop: 43227, Start Num: 23

Candidate Starts for Fruitloop\_61:

(Start: 23 @42550 has 18 MA's), (30, 42592), (50, 42751), (51, 42754), (53, 42778), (56, 42808), (61, 42886), (64, 42934), (68, 42955), (78, 43066), (82, 43102), (85, 43141), (86, 43153),

Gene: FugateOSU\_55 Start: 48502, Stop: 47822, Start Num: 22

Candidate Starts for FugateOSU\_55:

(Start: 20 @48511 has 10 MA's), (Start: 22 @48502 has 136 MA's), (50, 48295), (51, 48292), (53, 48268), (56, 48238), (64, 48112), (68, 48091), (70, 48070), (78, 47980), (85, 47905), (86, 47893), (92, 47866),

Gene: GMA2\_122 Start: 101578, Stop: 100931, Start Num: 24

Candidate Starts for GMA2\_122:

(24, 101578), (30, 101527), (31, 101521), (35, 101488), (42, 101416), (56, 101323), (74, 101098), (75, 101086), (76, 101077), (83, 101011),

Gene: Gareth\_55 Start: 48496, Stop: 47816, Start Num: 22

Candidate Starts for Gareth\_55:

(Start: 20 @48505 has 10 MA's), (Start: 22 @48496 has 136 MA's), (50, 48289), (51, 48286), (53, 48262), (56, 48232), (64, 48106), (68, 48085), (70, 48064), (78, 47974), (85, 47899), (86, 47887), (92, 47860),

Gene: Giraffe\_56 Start: 48492, Stop: 47812, Start Num: 22

Candidate Starts for Giraffe\_56:

(3, 48744), (4, 48735), (5, 48711), (6, 48681), (8, 48630), (9, 48591), (Start: 20 @48501 has 10 MA's), (Start: 22 @48492 has 136 MA's), (50, 48285), (51, 48282), (53, 48258), (56, 48228), (61, 48150), (64, 48102), (68, 48081), (78, 47970), (85, 47895), (86, 47883), (92, 47856),

Gene: Grand2040\_55 Start: 48486, Stop: 47806, Start Num: 22

Candidate Starts for Grand2040\_55:

(3, 48738), (4, 48729), (5, 48705), (6, 48675), (8, 48624), (9, 48585), (Start: 20 @48495 has 10 MA's), (Start: 22 @48486 has 136 MA's), (50, 48279), (51, 48276), (53, 48252), (56, 48222), (61, 48144), (64, 48096), (68, 48075), (78, 47964), (82, 47928), (85, 47889), (86, 47877), (92, 47850),

Gene: GrootJr\_12 Start: 6386, Stop: 7060, Start Num: 18

Candidate Starts for GrootJr\_12:

(7, 6251), (14, 6359), (Start: 18 @6386 has 15 MA's), (49, 6587), (50, 6590), (57, 6647), (60, 6680), (68, 6791), (79, 6908), (89, 6998),

Gene: Gwilliam\_56 Start: 48849, Stop: 48169, Start Num: 22

Candidate Starts for Gwilliam\_56:

(Start: 20 @48858 has 10 MA's), (Start: 22 @48849 has 136 MA's), (50, 48642), (51, 48639), (53, 48615), (56, 48585), (64, 48459), (68, 48438), (70, 48417), (78, 48327), (85, 48252), (86, 48240), (92, 48213),

Gene: HSavage\_54 Start: 47975, Stop: 47298, Start Num: 22

Candidate Starts for HSavage\_54:

(Start: 20 @47984 has 10 MA's), (Start: 22 @47975 has 136 MA's), (43, 47813), (46, 47798), (51, 47765), (53, 47741), (56, 47711), (61, 47633), (64, 47585), (68, 47564), (70, 47543), (78, 47453), (82, 47417), (85, 47378), (86, 47366), (92, 47339),

Gene: Haimas\_54 Start: 47991, Stop: 47314, Start Num: 22

Candidate Starts for Haimas\_54:

(Start: 20 @48000 has 10 MA's), (Start: 22 @47991 has 136 MA's), (50, 47784), (51, 47781), (53, 47757), (56, 47727), (64, 47601), (68, 47580), (70, 47559), (78, 47469), (85, 47394), (86, 47382), (92, 47355),

Gene: Haleema\_54 Start: 47990, Stop: 47310, Start Num: 22

Candidate Starts for Haleema\_54:

(3, 48242), (4, 48233), (5, 48209), (6, 48179), (8, 48128), (9, 48089), (Start: 20 @47999 has 10 MA's), (Start: 22 @47990 has 136 MA's), (50, 47783), (51, 47780), (53, 47756), (56, 47726), (61, 47648), (64, 47600), (68, 47579), (78, 47468), (82, 47432), (85, 47393), (86, 47381), (92, 47354),

Gene: Hamish\_54 Start: 47984, Stop: 47307, Start Num: 22

Candidate Starts for Hamish\_54:

(Start: 20 @47993 has 10 MA's), (Start: 22 @47984 has 136 MA's), (50, 47777), (51, 47774), (53, 47750), (56, 47720), (64, 47594), (68, 47573), (70, 47552), (78, 47462), (85, 47387), (86, 47375), (92, 47348),

Gene: Harvey\_54 Start: 48021, Stop: 47344, Start Num: 22

Candidate Starts for Harvey\_54:

(3, 48273), (4, 48264), (5, 48240), (6, 48210), (8, 48159), (9, 48120), (Start: 20 @48030 has 10 MA's), (Start: 22 @48021 has 136 MA's), (43, 47859), (46, 47844), (51, 47811), (53, 47787), (56, 47757), (61, 47679), (64, 47631), (68, 47610), (70, 47589), (78, 47499), (82, 47463), (85, 47424), (86, 47412), (92, 47385),

Gene: Hashim76\_57 Start: 48273, Stop: 47572, Start Num: 20

Candidate Starts for Hashim76\_57:

(Start: 20 @48273 has 10 MA's), (Start: 23 @48258 has 18 MA's), (27, 48228), (55, 48018), (56, 48006), (60, 47970), (63, 47883), (70, 47832), (75, 47775), (86, 47646), (92, 47619),

Gene: Held\_55 Start: 47995, Stop: 47315, Start Num: 22

Candidate Starts for Held\_55:

(3, 48247), (4, 48238), (5, 48214), (6, 48184), (8, 48133), (9, 48094), (Start: 20 @48004 has 10 MA's), (Start: 22 @47995 has 136 MA's), (50, 47788), (51, 47785), (53, 47761), (56, 47731), (61, 47653), (64, 47605), (68, 47584), (78, 47473), (82, 47437), (85, 47398), (86, 47386), (92, 47359),

Gene: HenryJackson\_55 Start: 48520, Stop: 47840, Start Num: 22

Candidate Starts for HenryJackson\_55:

(Start: 20 @48529 has 10 MA's), (Start: 22 @48520 has 136 MA's), (50, 48313), (51, 48310), (53, 48286), (56, 48256), (64, 48130), (68, 48109), (70, 48088), (78, 47998), (85, 47923), (86, 47911), (92, 47884),

Gene: Hertubise\_55 Start: 48287, Stop: 47607, Start Num: 22

Candidate Starts for Hertubise\_55:

(Start: 20 @48296 has 10 MA's), (Start: 22 @48287 has 136 MA's), (50, 48080), (51, 48077), (53, 48053), (56, 48023), (64, 47897), (68, 47876), (70, 47855), (78, 47765), (85, 47690), (86, 47678), (92, 47651),

Gene: Hetaeria\_54 Start: 48022, Stop: 47345, Start Num: 22

Candidate Starts for Hetaeria\_54:

(3, 48274), (4, 48265), (5, 48241), (6, 48211), (8, 48160), (9, 48121), (Start: 20 @48031 has 10 MA's), (Start: 22 @48022 has 136 MA's), (43, 47860), (46, 47845), (51, 47812), (53, 47788), (56, 47758), (61, 47680), (64, 47632), (68, 47611), (70, 47590), (78, 47500), (82, 47464), (85, 47425), (86, 47413), (92, 47386),

Gene: Horchata\_54 Start: 47975, Stop: 47298, Start Num: 22

Candidate Starts for Horchata\_54:

(Start: 20 @47984 has 10 MA's), (Start: 22 @47975 has 136 MA's), (43, 47813), (46, 47798), (51, 47765), (53, 47741), (56, 47711), (61, 47633), (64, 47585), (68, 47564), (70, 47543), (78, 47453), (82, 47417), (85, 47378), (86, 47366), (92, 47339),

Gene: Inverness\_54 Start: 47984, Stop: 47307, Start Num: 22

Candidate Starts for Inverness\_54:

(3, 48236), (4, 48227), (5, 48203), (6, 48173), (8, 48122), (9, 48083), (Start: 20 @47993 has 10 MA's), (Start: 22 @47984 has 136 MA's), (43, 47822), (46, 47807), (51, 47774), (53, 47750), (56, 47720), (61, 47642), (64, 47594), (68, 47573), (70, 47552), (78, 47462), (82, 47426), (85, 47387), (86, 47375), (92, 47348),

Gene: IrishSherpFalk\_67 Start: 43906, Stop: 44583, Start Num: 23

Candidate Starts for IrishSherpFalk\_67:

(Start: 23 @43906 has 18 MA's), (30, 43948), (50, 44107), (51, 44110), (53, 44134), (56, 44164), (61, 44242), (64, 44290), (68, 44311), (78, 44422), (82, 44458), (85, 44497), (86, 44509),

Gene: IsaacEli\_56 Start: 48508, Stop: 47828, Start Num: 22

Candidate Starts for IsaacEli\_56:

(Start: 20 @48517 has 10 MA's), (Start: 22 @48508 has 136 MA's), (50, 48301), (51, 48298), (53, 48274), (56, 48244), (64, 48118), (68, 48097), (70, 48076), (78, 47986), (85, 47911), (86, 47899), (92, 47872),

Gene: JDog\_54 Start: 48524, Stop: 47844, Start Num: 22

Candidate Starts for JDog\_54:

(2, 48791), (3, 48776), (4, 48767), (5, 48743), (6, 48713), (8, 48662), (9, 48623), (Start: 20 @48533 has 10 MA's), (Start: 22 @48524 has 136 MA's), (50, 48317), (51, 48314), (53, 48290), (56, 48260), (64, 48134), (68, 48113), (70, 48092), (78, 48002), (85, 47927), (86, 47915), (92, 47888),

Gene: Jesabah\_55 Start: 48525, Stop: 47845, Start Num: 22

Candidate Starts for Jesabah\_55:

(Start: 20 @48534 has 10 MA's), (Start: 22 @48525 has 136 MA's), (50, 48318), (51, 48315), (53, 48291), (56, 48261), (64, 48135), (68, 48114), (70, 48093), (78, 48003), (85, 47928), (86, 47916), (92, 47889),

Gene: Jifall16\_9 Start: 5425, Stop: 6087, Start Num: 18

Candidate Starts for Jifall16\_9:

(7, 5290), (14, 5398), (Start: 18 @5425 has 15 MA's), (49, 5626), (50, 5629), (57, 5686), (68, 5833), (79, 5950), (89, 6040),

Gene: Jillium\_55 Start: 48516, Stop: 47836, Start Num: 22

Candidate Starts for Jillium\_55:

(Start: 20 @48525 has 10 MA's), (Start: 22 @48516 has 136 MA's), (50, 48309), (51, 48306), (53, 48282), (56, 48252), (64, 48126), (68, 48105), (70, 48084), (78, 47994), (85, 47919), (86, 47907), (92, 47880),



Gene: Kahve\_55 Start: 48517, Stop: 47837, Start Num: 22

Candidate Starts for Kahve\_55:

(Start: 20 @48526 has 10 MA's), (Start: 22 @48517 has 136 MA's), (50, 48310), (51, 48307), (53, 48283), (56, 48253), (64, 48127), (68, 48106), (70, 48085), (78, 47995), (85, 47920), (86, 47908), (92, 47881),

Gene: Khan1\_56 Start: 48473, Stop: 47793, Start Num: 22

Candidate Starts for Khan1\_56:

(3, 48725), (4, 48716), (5, 48692), (6, 48662), (8, 48611), (9, 48572), (Start: 20 @48482 has 10 MA's), (Start: 22 @48473 has 136 MA's), (50, 48266), (51, 48263), (53, 48239), (56, 48209), (61, 48131), (64, 48083), (68, 48062), (78, 47951), (82, 47915), (85, 47876), (86, 47864), (92, 47837),

Gene: KidneyBean\_10 Start: 5770, Stop: 6429, Start Num: 18

Candidate Starts for KidneyBean\_10:

(7, 5635), (14, 5743), (Start: 18 @5770 has 15 MA's), (49, 5971), (50, 5974), (57, 6031), (60, 6064), (68, 6175), (79, 6292), (89, 6382),

Gene: Kikipoo\_56 Start: 48508, Stop: 47828, Start Num: 22

Candidate Starts for Kikipoo\_56:

(Start: 20 @48517 has 10 MA's), (Start: 22 @48508 has 136 MA's), (50, 48301), (51, 48298), (53, 48274), (56, 48244), (64, 48118), (68, 48097), (70, 48076), (78, 47986), (85, 47911), (86, 47899), (92, 47872),

Gene: Kimbrough\_56 Start: 48517, Stop: 47837, Start Num: 22

Candidate Starts for Kimbrough\_56:

(Start: 20 @48526 has 10 MA's), (Start: 22 @48517 has 136 MA's), (50, 48310), (51, 48307), (53, 48283), (56, 48253), (64, 48127), (68, 48106), (70, 48085), (78, 47995), (85, 47920), (86, 47908), (92, 47881),

Gene: KingTut\_47 Start: 44181, Stop: 43501, Start Num: 22

Candidate Starts for KingTut\_47:

(Start: 20 @44190 has 10 MA's), (Start: 22 @44181 has 136 MA's), (50, 43974), (51, 43971), (53, 43947), (56, 43917), (64, 43791), (68, 43770), (70, 43749), (78, 43659), (85, 43584), (86, 43572), (92, 43545),

Gene: KlimbOn\_54 Start: 47976, Stop: 47299, Start Num: 22

Candidate Starts for KlimbOn\_54:

(Start: 20 @47985 has 10 MA's), (Start: 22 @47976 has 136 MA's), (43, 47814), (46, 47799), (51, 47766), (53, 47742), (56, 47712), (61, 47634), (64, 47586), (68, 47565), (70, 47544), (78, 47454), (82, 47418), (85, 47379), (86, 47367), (90, 47346), (92, 47340),

Gene: Kurt\_10 Start: 5953, Stop: 6612, Start Num: 18

Candidate Starts for Kurt\_10:

(7, 5818), (14, 5926), (Start: 18 @5953 has 15 MA's), (49, 6154), (50, 6157), (57, 6214), (60, 6247), (68, 6358), (79, 6475), (89, 6565),

Gene: Kwadwo\_54 Start: 47969, Stop: 47289, Start Num: 22

Candidate Starts for Kwadwo\_54:

(3, 48221), (4, 48212), (5, 48188), (6, 48158), (8, 48107), (9, 48068), (Start: 20 @47978 has 10 MA's), (Start: 22 @47969 has 136 MA's), (50, 47762), (51, 47759), (53, 47735), (56, 47705), (61, 47627), (64, 47579), (68, 47558), (78, 47447), (82, 47411), (85, 47372), (86, 47360), (92, 47333),

Gene: Lasso\_55 Start: 48244, Stop: 47564, Start Num: 22

Candidate Starts for Lasso\_55:

(3, 48496), (4, 48487), (5, 48463), (6, 48433), (8, 48382), (9, 48343), (Start: 20 @48253 has 10 MA's), (Start: 22 @48244 has 136 MA's), (50, 48037), (51, 48034), (53, 48010), (56, 47980), (61, 47902), (64, 47854), (68, 47833), (78, 47722), (82, 47686), (85, 47647), (86, 47635), (92, 47608),

Gene: LeeLot\_55 Start: 48296, Stop: 47616, Start Num: 22

Candidate Starts for LeeLot\_55:

(2, 48563), (3, 48548), (4, 48539), (5, 48515), (6, 48485), (8, 48434), (9, 48395), (Start: 20 @48305 has 10 MA's), (Start: 22 @48296 has 136 MA's), (50, 48089), (51, 48086), (53, 48062), (56, 48032), (64, 47906), (68, 47885), (70, 47864), (78, 47774), (85, 47699), (86, 47687), (92, 47660),

Gene: Lego3393\_54 Start: 48508, Stop: 47828, Start Num: 22

Candidate Starts for Lego3393\_54:

(Start: 20 @48517 has 10 MA's), (Start: 22 @48508 has 136 MA's), (50, 48301), (51, 48298), (53, 48274), (56, 48244), (64, 48118), (68, 48097), (70, 48076), (78, 47986), (85, 47911), (86, 47899), (92, 47872),

Gene: Lilas\_46 Start: 37586, Stop: 38191, Start Num: 25

Candidate Starts for Lilas\_46:

(Start: 25 @37586 has 7 MA's), (30, 37628), (56, 37823), (58, 37856), (61, 37904), (71, 37997), (79, 38066),

Gene: Llij\_62 Start: 41070, Stop: 41747, Start Num: 23

Candidate Starts for Llij\_62:

(Start: 23 @41070 has 18 MA's), (30, 41112), (50, 41271), (51, 41274), (53, 41298), (56, 41328), (61, 41406), (64, 41454), (68, 41475), (78, 41586), (82, 41622), (85, 41661), (86, 41673),

Gene: Lollipop1437\_12 Start: 6752, Stop: 7441, Start Num: 18

Candidate Starts for Lollipop1437\_12:

(10, 6680), (14, 6725), (Start: 18 @6752 has 15 MA's), (37, 6869), (49, 6968), (50, 6971), (57, 7028), (68, 7172), (77, 7265), (79, 7289), (89, 7379), (94, 7403),

Gene: Lorde\_66 Start: 40357, Stop: 41034, Start Num: 23

Candidate Starts for Lorde\_66:

(Start: 23 @40357 has 18 MA's), (30, 40399), (50, 40558), (51, 40561), (53, 40585), (56, 40615), (61, 40693), (64, 40741), (68, 40762), (78, 40873), (82, 40909), (85, 40948), (86, 40960),

Gene: LuckyMarjie\_53 Start: 47677, Stop: 47000, Start Num: 22

Candidate Starts for LuckyMarjie\_53:

(Start: 20 @47686 has 10 MA's), (Start: 22 @47677 has 136 MA's), (40, 47548), (43, 47515), (46, 47500), (50, 47470), (51, 47467), (53, 47443), (56, 47413), (61, 47335), (64, 47287), (68, 47266), (70, 47245), (78, 47155), (82, 47119), (85, 47080), (86, 47068), (89, 47053), (92, 47041),

Gene: Lulumae\_53 Start: 47662, Stop: 46985, Start Num: 22

Candidate Starts for Lulumae\_53:

(Start: 20 @47671 has 10 MA's), (Start: 22 @47662 has 136 MA's), (40, 47533), (43, 47500), (46, 47485), (50, 47455), (51, 47452), (53, 47428), (56, 47398), (61, 47320), (64, 47272), (68, 47251), (70, 47230), (78, 47140), (82, 47104), (85, 47065), (86, 47053), (89, 47038), (92, 47026),

Gene: MRabcd\_54 Start: 48059, Stop: 47379, Start Num: 22

Candidate Starts for MRabcd\_54:

(3, 48311), (4, 48302), (5, 48278), (6, 48248), (8, 48197), (9, 48158), (Start: 20 @48068 has 10 MA's), (Start: 22 @48059 has 136 MA's), (50, 47852), (51, 47849), (53, 47825), (56, 47795), (61, 47717), (64, 47669), (68, 47648), (78, 47537), (82, 47501), (85, 47462), (86, 47450), (92, 47423),

Gene: Mana\_54 Start: 47984, Stop: 47304, Start Num: 22

Candidate Starts for Mana\_54:

(3, 48236), (4, 48227), (5, 48203), (6, 48173), (8, 48122), (9, 48083), (Start: 20 @47993 has 10 MA's), (Start: 22 @47984 has 136 MA's), (50, 47777), (51, 47774), (53, 47750), (56, 47720), (61, 47642), (64, 47594), (68, 47573), (78, 47462), (82, 47426), (85, 47387), (86, 47375), (92, 47348),

Gene: Manad\_54 Start: 47959, Stop: 47282, Start Num: 22

Candidate Starts for Manad\_54:

(3, 48211), (4, 48202), (5, 48178), (6, 48148), (8, 48097), (9, 48058), (Start: 20 @47968 has 10 MA's), (Start: 22 @47959 has 136 MA's), (43, 47797), (46, 47782), (51, 47749), (53, 47725), (56, 47695), (61, 47617), (64, 47569), (68, 47548), (70, 47527), (78, 47437), (82, 47401), (85, 47362), (86, 47350), (92, 47323),

Gene: Maru\_55 Start: 48423, Stop: 47743, Start Num: 22

Candidate Starts for Maru\_55:

(3, 48675), (4, 48666), (5, 48642), (6, 48612), (8, 48561), (9, 48522), (Start: 20 @48432 has 10 MA's), (Start: 22 @48423 has 136 MA's), (50, 48216), (51, 48213), (53, 48189), (56, 48159), (61, 48081), (64, 48033), (68, 48012), (78, 47901), (82, 47865), (85, 47826), (86, 47814), (92, 47787),

Gene: Matalotodo\_54 Start: 47994, Stop: 47317, Start Num: 22

Candidate Starts for Matalotodo\_54:

(Start: 20 @48003 has 10 MA's), (Start: 22 @47994 has 136 MA's), (50, 47787), (51, 47784), (53, 47760), (56, 47730), (64, 47604), (68, 47583), (70, 47562), (78, 47472), (82, 47436), (85, 47397), (86, 47385), (92, 47358),

Gene: Mecca\_55 Start: 48505, Stop: 47825, Start Num: 22

Candidate Starts for Mecca\_55:

(Start: 20 @48514 has 10 MA's), (Start: 22 @48505 has 136 MA's), (50, 48298), (51, 48295), (53, 48271), (56, 48241), (64, 48115), (68, 48094), (70, 48073), (78, 47983), (85, 47908), (86, 47896), (92, 47869),

Gene: Megatron\_56 Start: 48496, Stop: 47816, Start Num: 22

Candidate Starts for Megatron\_56:

(Start: 20 @48505 has 10 MA's), (Start: 22 @48496 has 136 MA's), (50, 48289), (51, 48286), (53, 48262), (56, 48232), (64, 48106), (68, 48085), (70, 48064), (78, 47974), (85, 47899), (86, 47887), (92, 47860),

Gene: Melc17\_55 Start: 48814, Stop: 48134, Start Num: 22

Candidate Starts for Melc17\_55:

(Start: 20 @48823 has 10 MA's), (Start: 22 @48814 has 136 MA's), (50, 48607), (51, 48604), (53, 48580), (56, 48550), (64, 48424), (68, 48403), (70, 48382), (78, 48292), (85, 48217), (86, 48205), (92, 48178),

Gene: Mesh1\_56 Start: 48516, Stop: 47836, Start Num: 22

Candidate Starts for Mesh1\_56:

(3, 48768), (4, 48759), (5, 48735), (6, 48705), (8, 48654), (9, 48615), (Start: 20 @48525 has 10 MA's), (Start: 22 @48516 has 136 MA's), (43, 48354), (46, 48339), (51, 48306), (53, 48282), (56, 48252), (61, 48174), (64, 48126), (68, 48105), (70, 48084), (78, 47994), (82, 47958), (85, 47919), (86, 47907), (92, 47880),

Gene: MitKao\_55 Start: 47994, Stop: 47314, Start Num: 22

Candidate Starts for MitKao\_55:

(3, 48246), (4, 48237), (5, 48213), (6, 48183), (8, 48132), (9, 48093), (Start: 20 @48003 has 10 MA's), (Start: 22 @47994 has 136 MA's), (50, 47787), (51, 47784), (53, 47760), (56, 47730), (61, 47652), (64, 47604), (68, 47583), (78, 47472), (82, 47436), (85, 47397), (86, 47385), (92, 47358),

Gene: Morgushi\_55 Start: 47983, Stop: 47303, Start Num: 22

Candidate Starts for Morgushi\_55:

(3, 48235), (4, 48226), (5, 48202), (6, 48172), (8, 48121), (9, 48082), (Start: 20 @47992 has 10 MA's), (Start: 22 @47983 has 136 MA's), (50, 47776), (51, 47773), (53, 47749), (56, 47719), (61, 47641), (64, 47593), (68, 47572), (78, 47461), (82, 47425), (85, 47386), (86, 47374), (92, 47347),

Gene: Morty\_56 Start: 48505, Stop: 47825, Start Num: 22

Candidate Starts for Morty\_56:

(Start: 20 @48514 has 10 MA's), (Start: 22 @48505 has 136 MA's), (50, 48298), (51, 48295), (53, 48271), (56, 48241), (64, 48115), (68, 48094), (70, 48073), (78, 47983), (85, 47908), (86, 47896), (92, 47869),

Gene: Mosaic\_54 Start: 47988, Stop: 47308, Start Num: 22

Candidate Starts for Mosaic\_54:

(3, 48240), (4, 48231), (5, 48207), (6, 48177), (8, 48126), (9, 48087), (Start: 20 @47997 has 10 MA's), (Start: 22 @47988 has 136 MA's), (50, 47781), (51, 47778), (53, 47754), (56, 47724), (61, 47646), (64, 47598), (68, 47577), (78, 47466), (82, 47430), (85, 47391), (86, 47379), (92, 47352),

Gene: MrPhizzler\_56 Start: 48450, Stop: 47770, Start Num: 22

Candidate Starts for MrPhizzler\_56:

(3, 48702), (4, 48693), (5, 48669), (6, 48639), (8, 48588), (9, 48549), (Start: 20 @48459 has 10 MA's), (Start: 22 @48450 has 136 MA's), (50, 48243), (51, 48240), (53, 48216), (56, 48186), (61, 48108), (64, 48060), (68, 48039), (78, 47928), (82, 47892), (85, 47853), (86, 47841), (92, 47814),

Gene: Mulan\_55 Start: 48222, Stop: 47542, Start Num: 22

Candidate Starts for Mulan\_55:

(Start: 20 @48231 has 10 MA's), (Start: 22 @48222 has 136 MA's), (50, 48015), (51, 48012), (53, 47988), (56, 47958), (64, 47832), (68, 47811), (70, 47790), (78, 47700), (85, 47625), (86, 47613), (92, 47586),

Gene: Murdoc\_54 Start: 47984, Stop: 47307, Start Num: 22

Candidate Starts for Murdoc\_54:

(Start: 20 @47993 has 10 MA's), (Start: 22 @47984 has 136 MA's), (50, 47777), (51, 47774), (53, 47750), (56, 47720), (64, 47594), (68, 47573), (70, 47552), (78, 47462), (82, 47426), (85, 47387), (86, 47375), (92, 47348),

Gene: Nacho\_0056 Start: 48499, Stop: 47819, Start Num: 22

Candidate Starts for Nacho\_0056:

(Start: 20 @48508 has 10 MA's), (Start: 22 @48499 has 136 MA's), (50, 48292), (51, 48289), (53, 48265), (56, 48235), (64, 48109), (68, 48088), (70, 48067), (78, 47977), (85, 47902), (86, 47890), (92, 47863),

Gene: NatB6\_10 Start: 6032, Stop: 6694, Start Num: 18

Candidate Starts for NatB6\_10:

(7, 5897), (14, 6005), (Start: 18 @6032 has 15 MA's), (28, 6074), (49, 6233), (50, 6236), (54, 6269), (57, 6293), (68, 6440), (79, 6557), (89, 6647), (90, 6653),

Gene: Newman\_54 Start: 47979, Stop: 47302, Start Num: 22

Candidate Starts for Newman\_54:

(3, 48231), (4, 48222), (5, 48198), (6, 48168), (8, 48117), (9, 48078), (Start: 20 @47988 has 10 MA's), (Start: 22 @47979 has 136 MA's), (43, 47817), (46, 47802), (51, 47769), (53, 47745), (56, 47715), (61, 47637), (64, 47589), (68, 47568), (70, 47547), (78, 47457), (82, 47421), (85, 47382), (86, 47370), (92, 47343),

Gene: NovumRegina\_10 Start: 6385, Stop: 7059, Start Num: 18

Candidate Starts for NovumRegina\_10:

(7, 6250), (14, 6358), (Start: 18 @6385 has 15 MA's), (49, 6586), (50, 6589), (57, 6646), (60, 6679), (68, 6790), (79, 6907), (89, 6997),

Gene: Numberten\_54 Start: 47974, Stop: 47297, Start Num: 22

Candidate Starts for Numberten\_54:

(Start: 20 @47983 has 10 MA's), (Start: 22 @47974 has 136 MA's), (40, 47845), (43, 47812), (46, 47797), (50, 47767), (51, 47764), (53, 47740), (56, 47710), (61, 47632), (64, 47584), (68, 47563), (70, 47542), (78, 47452), (82, 47416), (85, 47377), (86, 47365), (89, 47350), (92, 47338),

Gene: OSmaximus\_56 Start: 48538, Stop: 47858, Start Num: 22

Candidate Starts for OSmaximus\_56:

(3, 48790), (4, 48781), (5, 48757), (6, 48727), (8, 48676), (9, 48637), (Start: 20 @48547 has 10 MA's), (Start: 22 @48538 has 136 MA's), (43, 48376), (46, 48361), (51, 48328), (53, 48304), (56, 48274), (61, 48196), (64, 48148), (68, 48127), (70, 48106), (78, 48016), (82, 47980), (85, 47941), (86, 47929), (92, 47902),

Gene: Ogotogo\_73 Start: 43850, Stop: 44527, Start Num: 23

Candidate Starts for Ogotogo\_73:

(Start: 23 @43850 has 18 MA's), (30, 43892), (50, 44051), (51, 44054), (53, 44078), (56, 44108), (61, 44186), (64, 44234), (68, 44255), (78, 44366), (82, 44402), (85, 44441), (86, 44453),

Gene: Oksu\_71 Start: 46299, Stop: 46976, Start Num: 23

Candidate Starts for Oksu\_71:

(Start: 23 @46299 has 18 MA's), (30, 46341), (50, 46500), (51, 46503), (53, 46527), (56, 46557), (61, 46635), (64, 46683), (68, 46704), (78, 46815), (82, 46851), (85, 46890), (86, 46902),

Gene: Olive\_54 Start: 47964, Stop: 47287, Start Num: 22

Candidate Starts for Olive\_54:

(Start: 20 @47973 has 10 MA's), (Start: 22 @47964 has 136 MA's), (40, 47835), (43, 47802), (46, 47787), (50, 47757), (51, 47754), (53, 47730), (56, 47700), (61, 47622), (64, 47574), (68, 47553), (70, 47532), (78, 47442), (82, 47406), (85, 47367), (86, 47355), (92, 47328),

Gene: OliverWalter\_54 Start: 47985, Stop: 47308, Start Num: 22

Candidate Starts for OliverWalter\_54:

(Start: 20 @47994 has 10 MA's), (Start: 22 @47985 has 136 MA's), (43, 47823), (46, 47808), (51, 47775), (53, 47751), (56, 47721), (61, 47643), (64, 47595), (68, 47574), (70, 47553), (78, 47463), (82, 47427), (85, 47388), (86, 47376), (92, 47349),

Gene: Omniscient\_56 Start: 48812, Stop: 48132, Start Num: 22

Candidate Starts for Omniscient\_56:

(Start: 20 @48821 has 10 MA's), (Start: 22 @48812 has 136 MA's), (50, 48605), (51, 48602), (53, 48578), (56, 48548), (64, 48422), (68, 48401), (70, 48380), (78, 48290), (85, 48215), (86, 48203), (92, 48176),

Gene: Oosterbaan\_55 Start: 48274, Stop: 47594, Start Num: 22

Candidate Starts for Oosterbaan\_55:

(Start: 20 @48283 has 10 MA's), (Start: 22 @48274 has 136 MA's), (50, 48067), (51, 48064), (53, 48040), (56, 48010), (64, 47884), (68, 47863), (70, 47842), (78, 47752), (85, 47677), (86, 47665), (92, 47638),

Gene: PG1\_56 Start: 48507, Stop: 47827, Start Num: 22

Candidate Starts for PG1\_56:

(Start: 20 @48516 has 10 MA's), (Start: 22 @48507 has 136 MA's), (50, 48300), (51, 48297), (53, 48273), (56, 48243), (64, 48117), (68, 48096), (70, 48075), (78, 47985), (85, 47910), (86, 47898), (92, 47871),

Gene: Phareon\_54 Start: 47671, Stop: 46994, Start Num: 22

Candidate Starts for Phareon\_54:

(Start: 20 @47680 has 10 MA's), (Start: 22 @47671 has 136 MA's), (40, 47542), (43, 47509), (46, 47494), (50, 47464), (51, 47461), (53, 47437), (56, 47407), (61, 47329), (64, 47281), (68, 47260), (70, 47239), (78, 47149), (82, 47113), (85, 47074), (86, 47062), (89, 47047), (92, 47035),

Gene: PhatCats2014\_56 Start: 48511, Stop: 47831, Start Num: 22

Candidate Starts for PhatCats2014\_56:

(Start: 20 @48520 has 10 MA's), (Start: 22 @48511 has 136 MA's), (50, 48304), (51, 48301), (53, 48277), (56, 48247), (64, 48121), (68, 48100), (70, 48079), (78, 47989), (85, 47914), (86, 47902), (92, 47875),

Gene: Phatniss\_64 Start: 42165, Stop: 42842, Start Num: 23

Candidate Starts for Phatniss\_64:

(Start: 23 @42165 has 18 MA's), (30, 42207), (50, 42366), (51, 42369), (53, 42393), (56, 42423), (61, 42501), (64, 42549), (68, 42570), (78, 42681), (82, 42717), (85, 42756), (86, 42768),

Gene: Phomeo\_9 Start: 5606, Stop: 6265, Start Num: 18

Candidate Starts for Phomeo\_9:

(7, 5471), (14, 5579), (Start: 18 @5606 has 15 MA's), (49, 5807), (50, 5810), (57, 5867), (60, 5900), (68, 6011), (79, 6128), (89, 6218),

Gene: Phrappuccino\_151 Start: 104613, Stop: 105200, Start Num: 29

Candidate Starts for Phrappuccino\_151:

(8, 104412), (Start: 29 @104613 has 2 MA's), (36, 104661), (41, 104712), (48, 104757), (60, 104874), (61, 104913), (62, 104919), (65, 104964), (66, 104973), (71, 105012), (78, 105081), (79, 105084), (80, 105087),

Gene: Phunky\_54 Start: 47968, Stop: 47291, Start Num: 22

Candidate Starts for Phunky\_54:

(Start: 20 @47977 has 10 MA's), (Start: 22 @47968 has 136 MA's), (40, 47839), (43, 47806), (46, 47791), (50, 47761), (51, 47758), (53, 47734), (56, 47704), (61, 47626), (64, 47578), (68, 47557), (70, 47536), (78, 47446), (82, 47410), (85, 47371), (86, 47359), (89, 47344), (92, 47332),

Gene: Piglet\_0055 Start: 48493, Stop: 47804, Start Num: 20

Candidate Starts for Piglet\_0055:

(Start: 20 @48493 has 10 MA's), (Start: 22 @48484 has 136 MA's), (50, 48277), (51, 48274), (53, 48250), (56, 48220), (64, 48094), (68, 48073), (70, 48052), (78, 47962), (85, 47887), (86, 47875), (92, 47848),

Gene: PinheadLarry\_56 Start: 48509, Stop: 47829, Start Num: 22

Candidate Starts for PinheadLarry\_56:

(Start: 20 @48518 has 10 MA's), (Start: 22 @48509 has 136 MA's), (50, 48302), (51, 48299), (53, 48275), (56, 48245), (64, 48119), (68, 48098), (70, 48077), (78, 47987), (82, 47951), (85, 47912), (86, 47900), (92, 47873),

Gene: Pipsqueak\_54 Start: 47997, Stop: 47320, Start Num: 22

Candidate Starts for Pipsqueak\_54:

(Start: 20 @48006 has 10 MA's), (Start: 22 @47997 has 136 MA's), (50, 47790), (51, 47787), (53, 47763), (56, 47733), (64, 47607), (68, 47586), (70, 47565), (78, 47475), (82, 47439), (85, 47400), (86, 47388), (92, 47361),

Gene: Placalicious\_55 Start: 48499, Stop: 47819, Start Num: 22

Candidate Starts for Placalicious\_55:

(Start: 20 @48508 has 10 MA's), (Start: 22 @48499 has 136 MA's), (50, 48292), (51, 48289), (53, 48265), (56, 48235), (64, 48109), (68, 48088), (70, 48067), (78, 47977), (85, 47902), (86, 47890), (92, 47863),

Gene: Plmatters\_54 Start: 47971, Stop: 47294, Start Num: 22

Candidate Starts for Plmatters\_54:

(3, 48223), (4, 48214), (5, 48190), (6, 48160), (8, 48109), (9, 48070), (Start: 20 @47980 has 10 MA's), (Start: 22 @47971 has 136 MA's), (40, 47842), (43, 47809), (46, 47794), (50, 47764), (51, 47761), (53, 47737), (56, 47707), (61, 47629), (64, 47581), (68, 47560), (70, 47539), (78, 47449), (82, 47413), (85, 47374), (86, 47362), (89, 47347), (92, 47335),

Gene: Poenanya\_66 Start: 43323, Stop: 44000, Start Num: 23

Candidate Starts for Poenanya\_66:

(Start: 23 @43323 has 18 MA's), (30, 43365), (50, 43524), (51, 43527), (53, 43551), (56, 43581), (61, 43659), (64, 43707), (68, 43728), (78, 43839), (82, 43875), (85, 43914), (86, 43926),

Gene: Pops\_54 Start: 47956, Stop: 47309, Start Num: 22

Candidate Starts for Pops\_54:

(2, 48223), (3, 48208), (4, 48199), (5, 48175), (6, 48145), (8, 48094), (9, 48055), (Start: 20 @47965 has 10 MA's), (Start: 22 @47956 has 136 MA's), (32, 47899), (51, 47746), (53, 47722), (56, 47692), (64, 47566), (68, 47545), (70, 47524), (78, 47434), (85, 47389), (86, 47377), (92, 47350),

Gene: Posh\_51 Start: 37991, Stop: 38596, Start Num: 25

Candidate Starts for Posh\_51:

(Start: 25 @37991 has 7 MA's), (30, 38033), (56, 38228), (58, 38261), (61, 38309), (71, 38402), (79, 38471), (84, 38525),

Gene: Potter\_54 Start: 48005, Stop: 47325, Start Num: 22

Candidate Starts for Potter\_54:

(3, 48257), (4, 48248), (5, 48224), (6, 48194), (8, 48143), (9, 48104), (Start: 20 @48014 has 10 MA's), (Start: 22 @48005 has 136 MA's), (50, 47798), (51, 47795), (53, 47771), (56, 47741), (61, 47663), (64, 47615), (68, 47594), (78, 47483), (82, 47447), (85, 47408), (86, 47396), (92, 47369),

Gene: ProfessorX\_54 Start: 47963, Stop: 47286, Start Num: 22

Candidate Starts for ProfessorX\_54:

(Start: 20 @47972 has 10 MA's), (Start: 22 @47963 has 136 MA's), (50, 47756), (51, 47753), (53, 47729), (56, 47699), (61, 47621), (64, 47573), (68, 47552), (70, 47531), (78, 47441), (82, 47405), (85, 47366), (86, 47354), (92, 47327),

Gene: Puhltonio\_55 Start: 48279, Stop: 47599, Start Num: 22

Candidate Starts for Puhltonio\_55:

(3, 48531), (4, 48522), (5, 48498), (6, 48468), (8, 48417), (9, 48378), (Start: 20 @48288 has 10 MA's), (Start: 22 @48279 has 136 MA's), (50, 48072), (51, 48069), (53, 48045), (56, 48015), (61, 47937), (64, 47889), (68, 47868), (78, 47757), (82, 47721), (85, 47682), (86, 47670), (92, 47643),

Gene: QueenBeane\_55 Start: 48269, Stop: 47589, Start Num: 22

Candidate Starts for QueenBeane\_55:

(Start: 20 @48278 has 10 MA's), (Start: 22 @48269 has 136 MA's), (50, 48062), (51, 48059), (53, 48035), (56, 48005), (64, 47879), (68, 47858), (70, 47837), (78, 47747), (85, 47672), (86, 47660), (92, 47633),

Gene: RedRaider\_13 Start: 6700, Stop: 7374, Start Num: 21

Candidate Starts for RedRaider\_13:

(13, 6646), (Start: 21 @6700 has 1 MA's), (49, 6901), (50, 6904), (51, 6907), (57, 6961), (68, 7105), (73, 7171), (77, 7198), (79, 7222), (89, 7312),

Gene: Riverton\_53 Start: 47990, Stop: 47313, Start Num: 22

Candidate Starts for Riverton\_53:

(Start: 20 @47999 has 10 MA's), (Start: 22 @47990 has 136 MA's), (43, 47828), (46, 47813), (51, 47780), (53, 47756), (56, 47726), (61, 47648), (64, 47600), (68, 47579), (70, 47558), (78, 47468), (82, 47432), (85, 47393), (86, 47381), (90, 47360), (92, 47354),

Gene: Robyn\_54 Start: 47908, Stop: 47228, Start Num: 22

Candidate Starts for Robyn\_54:

(3, 48160), (4, 48151), (5, 48127), (6, 48097), (8, 48046), (9, 48007), (Start: 20 @47917 has 10 MA's), (Start: 22 @47908 has 136 MA's), (43, 47746), (46, 47731), (51, 47698), (53, 47674), (56, 47644), (61, 47566), (64, 47518), (68, 47497), (70, 47476), (78, 47386), (82, 47350), (85, 47311), (86, 47299), (92, 47272),

Gene: Roscoe\_55 Start: 48208, Stop: 47531, Start Num: 22

Candidate Starts for Roscoe\_55:

(Start: 20 @48217 has 10 MA's), (Start: 22 @48208 has 136 MA's), (40, 48079), (43, 48046), (46, 48031), (50, 48001), (51, 47998), (53, 47974), (56, 47944), (61, 47866), (64, 47818), (68, 47797), (70, 47776), (78, 47686), (82, 47650), (85, 47611), (86, 47599), (92, 47572),

Gene: Roy17\_54 Start: 47662, Stop: 46985, Start Num: 22

Candidate Starts for Roy17\_54:

(Start: 20 @47671 has 10 MA's), (Start: 22 @47662 has 136 MA's), (40, 47533), (43, 47500), (46, 47485), (50, 47455), (51, 47452), (53, 47428), (56, 47398), (61, 47320), (64, 47272), (68, 47251), (70, 47230), (78, 47140), (82, 47104), (85, 47065), (86, 47053), (89, 47038), (92, 47026),

Gene: Samaymay\_55 Start: 48269, Stop: 47589, Start Num: 22

Candidate Starts for Samaymay\_55:

(Start: 20 @48278 has 10 MA's), (Start: 22 @48269 has 136 MA's), (50, 48062), (51, 48059), (53, 48035), (56, 48005), (64, 47879), (68, 47858), (70, 47837), (78, 47747), (85, 47672), (86, 47660), (92, 47633),

Gene: SassyCat97\_54 Start: 47996, Stop: 47316, Start Num: 22

Candidate Starts for SassyCat97\_54:

(3, 48248), (4, 48239), (5, 48215), (6, 48185), (8, 48134), (9, 48095), (Start: 20 @48005 has 10 MA's), (Start: 22 @47996 has 136 MA's), (50, 47789), (51, 47786), (53, 47762), (56, 47732), (61, 47654), (64, 47606), (68, 47585), (78, 47474), (82, 47438), (85, 47399), (86, 47387), (92, 47360),



Gene: Schadenfreude\_54 Start: 47755, Stop: 47078, Start Num: 22

Candidate Starts for Schadenfreude\_54:

(Start: 20 @47764 has 10 MA's), (Start: 22 @47755 has 136 MA's), (43, 47593), (46, 47578), (51, 47545), (53, 47521), (56, 47491), (61, 47413), (64, 47365), (68, 47344), (70, 47323), (78, 47233), (82, 47197), (85, 47158), (86, 47146), (90, 47125), (92, 47119),

Gene: Serendipity\_55 Start: 48293, Stop: 47613, Start Num: 22

Candidate Starts for Serendipity\_55:

(3, 48545), (4, 48536), (5, 48512), (6, 48482), (8, 48431), (9, 48392), (Start: 20 @48302 has 10 MA's), (Start: 22 @48293 has 136 MA's), (50, 48086), (51, 48083), (53, 48059), (56, 48029), (61, 47951), (64, 47903), (68, 47882), (78, 47771), (82, 47735), (85, 47696), (86, 47684), (92, 47657),

Gene: Serpentine\_0055 Start: 48376, Stop: 47696, Start Num: 22

Candidate Starts for Serpentine\_0055:

(Start: 20 @48385 has 10 MA's), (Start: 22 @48376 has 136 MA's), (50, 48169), (51, 48166), (53, 48142), (56, 48112), (64, 47986), (68, 47965), (70, 47944), (78, 47854), (85, 47779), (86, 47767), (92, 47740),

Gene: Settecandela\_151 Start: 104613, Stop: 105200, Start Num: 29

Candidate Starts for Settecandela\_151:

(8, 104412), (Start: 29 @104613 has 2 MA's), (36, 104661), (41, 104712), (48, 104757), (60, 104874), (61, 104913), (62, 104919), (65, 104964), (66, 104973), (71, 105012), (78, 105081), (79, 105084), (80, 105087),

Gene: SilverBell\_54 Start: 48014, Stop: 47337, Start Num: 22

Candidate Starts for SilverBell\_54:

(Start: 20 @48023 has 10 MA's), (Start: 22 @48014 has 136 MA's), (50, 47807), (51, 47804), (53, 47780), (56, 47750), (64, 47624), (68, 47603), (70, 47582), (78, 47492), (82, 47456), (85, 47417), (86, 47405), (92, 47378),

Gene: SilverChicken\_76 Start: 42471, Stop: 43148, Start Num: 23

Candidate Starts for SilverChicken\_76:

(Start: 23 @42471 has 18 MA's), (30, 42513), (50, 42672), (51, 42675), (53, 42699), (56, 42729), (61, 42807), (64, 42855), (68, 42876), (78, 42987), (82, 43023), (85, 43062), (86, 43074),

Gene: SirBeauregard\_56 Start: 48508, Stop: 47819, Start Num: 20

Candidate Starts for SirBeauregard\_56:

(Start: 20 @48508 has 10 MA's), (Start: 22 @48499 has 136 MA's), (50, 48292), (51, 48289), (53, 48265), (56, 48235), (64, 48109), (68, 48088), (70, 48067), (78, 47977), (85, 47902), (86, 47890), (92, 47863),

Gene: Soile\_56 Start: 48517, Stop: 47837, Start Num: 22

Candidate Starts for Soile\_56:

(Start: 20 @48526 has 10 MA's), (Start: 22 @48517 has 136 MA's), (50, 48310), (51, 48307), (53, 48283), (56, 48253), (64, 48127), (68, 48106), (70, 48085), (78, 47995), (85, 47920), (86, 47908), (92, 47881),

Gene: Solosis\_54 Start: 47999, Stop: 47310, Start Num: 20

Candidate Starts for Solosis\_54:

(3, 48242), (4, 48233), (5, 48209), (6, 48179), (8, 48128), (9, 48089), (Start: 20 @47999 has 10 MA's), (Start: 22 @47990 has 136 MA's), (50, 47783), (51, 47780), (53, 47756), (56, 47726), (61, 47648), (64, 47600), (68, 47579), (78, 47468), (82, 47432), (85, 47393), (86, 47381), (92, 47354),

Gene: Sophia\_54 Start: 47993, Stop: 47304, Start Num: 20

Candidate Starts for Sophia\_54:

(3, 48236), (4, 48227), (5, 48203), (6, 48173), (8, 48122), (9, 48083), (Start: 20 @47993 has 10 MA's), (Start: 22 @47984 has 136 MA's), (50, 47777), (51, 47774), (53, 47750), (56, 47720), (64, 47594), (68, 47573), (70, 47552), (78, 47462), (82, 47426), (85, 47387), (86, 47375), (92, 47348),

Gene: Sparkdehlily\_73 Start: 43625, Stop: 44299, Start Num: 23

Candidate Starts for Sparkdehlily\_73:

(Start: 23 @43625 has 18 MA's), (30, 43667), (50, 43826), (51, 43829), (53, 43853), (56, 43883), (61, 43961), (64, 44009), (68, 44030), (78, 44141), (82, 44177), (85, 44216), (86, 44228),

Gene: Sparky\_63 Start: 43334, Stop: 44023, Start Num: 20

Candidate Starts for Sparky\_63:

(12, 43268), (Start: 20 @43334 has 10 MA's), (34, 43418), (51, 43550), (53, 43574), (56, 43604), (70, 43775), (85, 43937), (86, 43949), (92, 43976),

Gene: Spartacus\_68 Start: 42822, Stop: 43505, Start Num: 19

Candidate Starts for Spartacus\_68:

(Start: 19 @42822 has 1 MA's), (34, 42900), (44, 42990), (51, 43032), (53, 43056), (56, 43086), (70, 43257), (85, 43419), (86, 43431),

Gene: Spartan300\_54 Start: 47968, Stop: 47291, Start Num: 22

Candidate Starts for Spartan300\_54:

(Start: 20 @47977 has 10 MA's), (Start: 22 @47968 has 136 MA's), (40, 47839), (43, 47806), (46, 47791), (50, 47761), (51, 47758), (53, 47734), (56, 47704), (61, 47626), (64, 47578), (68, 47557), (70, 47536), (78, 47446), (82, 47410), (85, 47371), (86, 47359), (92, 47332),

Gene: Squid\_55 Start: 47996, Stop: 47316, Start Num: 22

Candidate Starts for Squid\_55:

(3, 48248), (4, 48239), (5, 48215), (6, 48185), (8, 48134), (9, 48095), (Start: 20 @48005 has 10 MA's), (Start: 22 @47996 has 136 MA's), (50, 47789), (51, 47786), (53, 47762), (56, 47732), (61, 47654), (64, 47606), (68, 47585), (78, 47474), (82, 47438), (85, 47399), (86, 47387), (92, 47360),

Gene: Surely\_55 Start: 48286, Stop: 47606, Start Num: 22

Candidate Starts for Surely\_55:

(3, 48538), (4, 48529), (5, 48505), (6, 48475), (8, 48424), (9, 48385), (Start: 20 @48295 has 10 MA's), (Start: 22 @48286 has 136 MA's), (50, 48079), (51, 48076), (53, 48052), (56, 48022), (61, 47944), (64, 47896), (68, 47875), (78, 47764), (82, 47728), (85, 47689), (86, 47677), (92, 47650),

Gene: TDanisky\_73 Start: 43625, Stop: 44299, Start Num: 23

Candidate Starts for TDanisky\_73:

(Start: 23 @43625 has 18 MA's), (30, 43667), (50, 43826), (51, 43829), (53, 43853), (56, 43883), (61, 43961), (64, 44009), (68, 44030), (78, 44141), (82, 44177), (85, 44216), (86, 44228),

Gene: TPA4\_59 Start: 41974, Stop: 42615, Start Num: 16

Candidate Starts for TPA4\_59:

(11, 41911), (15, 41968), (16, 41974), (30, 42043), (33, 42064), (42, 42154), (50, 42193), (56, 42238), (61, 42301), (71, 42400), (79, 42490), (81, 42520), (85, 42553), (88, 42577),

Gene: Taj\_71 Start: 44380, Stop: 45054, Start Num: 23

Candidate Starts for Taj\_71:

(Start: 23 @44380 has 18 MA's), (30, 44422), (50, 44581), (51, 44584), (53, 44608), (56, 44638), (61, 44716), (64, 44764), (68, 44785), (78, 44896), (82, 44932), (85, 44971), (86, 44983),

Gene: TallGrassMM\_55 Start: 47900, Stop: 47220, Start Num: 22

Candidate Starts for TallGrassMM\_55:

(3, 48152), (4, 48143), (5, 48119), (6, 48089), (8, 48038), (9, 47999), (Start: 20 @47909 has 10 MA's), (Start: 22 @47900 has 136 MA's), (50, 47693), (51, 47690), (53, 47666), (56, 47636), (61, 47558), (64, 47510), (68, 47489), (78, 47378), (82, 47342), (85, 47303), (86, 47291), (92, 47264),

Gene: Telesworld\_53 Start: 48063, Stop: 47170, Start Num: 22

Candidate Starts for Telesworld\_53:

(3, 48315), (4, 48306), (5, 48282), (6, 48252), (8, 48201), (9, 48162), (Start: 20 @48072 has 10 MA's), (Start: 22 @48063 has 136 MA's), (50, 47856), (51, 47853), (53, 47829), (56, 47799), (61, 47721), (64, 47673), (68, 47652), (70, 47631), (78, 47541), (85, 47466), (86, 47454), (96, 47385),

Gene: Thora\_55 Start: 48282, Stop: 47602, Start Num: 22

Candidate Starts for Thora\_55:

(Start: 20 @48291 has 10 MA's), (Start: 22 @48282 has 136 MA's), (50, 48075), (51, 48072), (53, 48048), (56, 48018), (64, 47892), (68, 47871), (70, 47850), (78, 47760), (85, 47685), (86, 47673), (92, 47646),

Gene: ThreeOh3D2\_56 Start: 48502, Stop: 47822, Start Num: 22

Candidate Starts for ThreeOh3D2\_56:

(Start: 20 @48511 has 10 MA's), (Start: 22 @48502 has 136 MA's), (50, 48295), (51, 48292), (53, 48268), (56, 48238), (64, 48112), (68, 48091), (70, 48070), (78, 47980), (85, 47905), (86, 47893), (92, 47866),

Gene: Timmi\_54 Start: 47985, Stop: 47305, Start Num: 22

Candidate Starts for Timmi\_54:

(3, 48237), (4, 48228), (5, 48204), (6, 48174), (8, 48123), (9, 48084), (Start: 20 @47994 has 10 MA's), (Start: 22 @47985 has 136 MA's), (50, 47778), (51, 47775), (53, 47751), (56, 47721), (61, 47643), (64, 47595), (68, 47574), (78, 47463), (82, 47427), (85, 47388), (86, 47376), (92, 47349),

Gene: TomBombadil\_55 Start: 48270, Stop: 47590, Start Num: 22

Candidate Starts for TomBombadil\_55:

(3, 48522), (4, 48513), (5, 48489), (6, 48459), (8, 48408), (9, 48369), (Start: 20 @48279 has 10 MA's), (Start: 22 @48270 has 136 MA's), (50, 48063), (51, 48060), (53, 48036), (56, 48006), (61, 47928), (64, 47880), (68, 47859), (78, 47748), (82, 47712), (85, 47673), (86, 47661), (92, 47634),

Gene: Tomlarah\_56 Start: 48797, Stop: 48117, Start Num: 22

Candidate Starts for Tomlarah\_56:

(Start: 20 @48806 has 10 MA's), (Start: 22 @48797 has 136 MA's), (50, 48590), (51, 48587), (53, 48563), (56, 48533), (64, 48407), (68, 48386), (70, 48365), (78, 48275), (85, 48200), (86, 48188), (92, 48161),

Gene: TooFast2Furius\_57 Start: 48209, Stop: 47532, Start Num: 22

Candidate Starts for TooFast2Furius\_57:

(Start: 20 @48218 has 10 MA's), (Start: 22 @48209 has 136 MA's), (43, 48047), (46, 48032), (51, 47999), (53, 47975), (56, 47945), (61, 47867), (64, 47819), (68, 47798), (70, 47777), (78, 47687), (82, 47651), (85, 47612), (86, 47600), (92, 47573),

Gene: Tootsieroll\_66 Start: 42088, Stop: 42765, Start Num: 23

Candidate Starts for Tootsieroll\_66:

(Start: 23 @42088 has 18 MA's), (30, 42130), (50, 42289), (51, 42292), (53, 42316), (56, 42346), (61, 42424), (64, 42472), (68, 42493), (78, 42604), (82, 42640), (85, 42679), (86, 42691),

Gene: Toron\_74 Start: 45951, Stop: 46631, Start Num: 17

Candidate Starts for Toron\_74:

(17, 45951), (30, 46008), (33, 46026), (34, 46035), (44, 46125), (51, 46167), (53, 46191), (56, 46221), (70, 46392), (85, 46554), (86, 46566), (91, 46590), (92, 46593),

Gene: Tracker\_10 Start: 5745, Stop: 6419, Start Num: 18

Candidate Starts for Tracker\_10:

(7, 5610), (14, 5718), (Start: 18 @5745 has 15 MA's), (49, 5946), (50, 5949), (57, 6006), (60, 6039), (68, 6150), (79, 6267), (89, 6357),

Gene: UAch1\_54 Start: 48022, Stop: 47345, Start Num: 22

Candidate Starts for UAch1\_54:

(3, 48274), (4, 48265), (5, 48241), (6, 48211), (8, 48160), (9, 48121), (Start: 20 @48031 has 10 MA's), (Start: 22 @48022 has 136 MA's), (43, 47860), (46, 47845), (51, 47812), (53, 47788), (56, 47758), (61, 47680), (64, 47632), (68, 47611), (70, 47590), (78, 47500), (82, 47464), (85, 47425), (86, 47413), (92, 47386),

Gene: UncleHowie\_54 Start: 47697, Stop: 47020, Start Num: 22

Candidate Starts for UncleHowie\_54:

(Start: 20 @47706 has 10 MA's), (Start: 22 @47697 has 136 MA's), (50, 47490), (51, 47487), (53, 47463), (56, 47433), (64, 47307), (68, 47286), (70, 47265), (78, 47175), (82, 47139), (85, 47100), (86, 47088), (92, 47061),

Gene: UncleRicky\_65 Start: 42413, Stop: 43090, Start Num: 23

Candidate Starts for UncleRicky\_65:

(Start: 23 @42413 has 18 MA's), (30, 42455), (50, 42614), (51, 42617), (53, 42641), (56, 42671), (61, 42749), (64, 42797), (68, 42818), (78, 42929), (82, 42965), (85, 43004), (86, 43016),

Gene: Usavi\_55 Start: 48365, Stop: 47685, Start Num: 22

Candidate Starts for Usavi\_55:

(Start: 20 @48374 has 10 MA's), (Start: 22 @48365 has 136 MA's), (50, 48158), (51, 48155), (53, 48131), (56, 48101), (64, 47975), (68, 47954), (70, 47933), (78, 47843), (85, 47768), (86, 47756), (92, 47729),

Gene: Vaishali24\_53 Start: 47657, Stop: 46980, Start Num: 22

Candidate Starts for Vaishali24\_53:

(3, 47909), (4, 47900), (5, 47876), (6, 47846), (8, 47795), (9, 47756), (Start: 20 @47666 has 10 MA's), (Start: 22 @47657 has 136 MA's), (43, 47495), (46, 47480), (51, 47447), (53, 47423), (56, 47393), (61, 47315), (64, 47267), (68, 47246), (70, 47225), (78, 47135), (82, 47099), (85, 47060), (86, 47048), (92, 47021),

Gene: Valjean\_54 Start: 47978, Stop: 47301, Start Num: 22

Candidate Starts for Valjean\_54:

(Start: 20 @47987 has 10 MA's), (Start: 22 @47978 has 136 MA's), (40, 47849), (43, 47816), (46, 47801), (50, 47771), (51, 47768), (53, 47744), (56, 47714), (61, 47636), (64, 47588), (68, 47567), (70, 47546), (78, 47456), (82, 47420), (85, 47381), (86, 47369), (92, 47342),

Gene: Vaticameos\_52 Start: 46488, Stop: 45808, Start Num: 22

Candidate Starts for Vaticameos\_52:

(Start: 20 @46497 has 10 MA's), (Start: 22 @46488 has 136 MA's), (50, 46281), (51, 46278), (53, 46254), (56, 46224), (64, 46098), (68, 46077), (70, 46056), (78, 45966), (85, 45891), (86, 45879), (92, 45852),

Gene: Vista\_54 Start: 47998, Stop: 47321, Start Num: 22

Candidate Starts for Vista\_54:

(3, 48250), (4, 48241), (5, 48217), (6, 48187), (8, 48136), (9, 48097), (Start: 20 @48007 has 10 MA's), (Start: 22 @47998 has 136 MA's), (50, 47791), (51, 47788), (53, 47764), (56, 47734), (64, 47608), (68, 47587), (70, 47566), (78, 47476), (82, 47440), (85, 47401), (86, 47389), (92, 47362),

Gene: Vortex\_55 Start: 47980, Stop: 47300, Start Num: 22

Candidate Starts for Vortex\_55:

(3, 48232), (4, 48223), (5, 48199), (6, 48169), (8, 48118), (9, 48079), (Start: 20 @47989 has 10 MA's), (Start: 22 @47980 has 136 MA's), (50, 47773), (51, 47770), (53, 47746), (56, 47716), (61, 47638), (64, 47590), (68, 47569), (78, 47458), (82, 47422), (85, 47383), (86, 47371), (92, 47344),

Gene: Waterdiva\_55 Start: 48359, Stop: 47679, Start Num: 22

Candidate Starts for Waterdiva\_55:

(Start: 20 @48368 has 10 MA's), (Start: 22 @48359 has 136 MA's), (50, 48152), (51, 48149), (53, 48125), (56, 48095), (64, 47969), (68, 47948), (70, 47927), (78, 47837), (85, 47762), (86, 47750), (92, 47723),

Gene: Wee\_71 Start: 44456, Stop: 45130, Start Num: 23

Candidate Starts for Wee\_71:

(Start: 23 @44456 has 18 MA's), (30, 44498), (50, 44657), (51, 44660), (53, 44684), (56, 44714), (61, 44792), (64, 44840), (68, 44861), (78, 44972), (82, 45008), (85, 45047), (86, 45059),

Gene: Weher20\_55 Start: 48803, Stop: 48123, Start Num: 22

Candidate Starts for Weher20\_55:

(Start: 20 @48812 has 10 MA's), (Start: 22 @48803 has 136 MA's), (50, 48596), (51, 48593), (53, 48569), (56, 48539), (64, 48413), (68, 48392), (70, 48371), (78, 48281), (85, 48206), (86, 48194), (92, 48167),

Gene: Wheezy\_10 Start: 6003, Stop: 6677, Start Num: 18

Candidate Starts for Wheezy\_10:

(7, 5868), (14, 5976), (Start: 18 @6003 has 15 MA's), (49, 6204), (50, 6207), (57, 6264), (60, 6297), (68, 6408), (79, 6525), (89, 6615),

Gene: WillSterrel\_67 Start: 43939, Stop: 44616, Start Num: 23

Candidate Starts for WillSterrel\_67:

(Start: 23 @43939 has 18 MA's), (30, 43981), (50, 44140), (51, 44143), (53, 44167), (56, 44197), (61, 44275), (64, 44323), (68, 44344), (78, 44455), (82, 44491), (85, 44530), (86, 44542),

Gene: Windsor\_55 Start: 48503, Stop: 47823, Start Num: 22

Candidate Starts for Windsor\_55:

(Start: 20 @48512 has 10 MA's), (Start: 22 @48503 has 136 MA's), (50, 48296), (51, 48293), (53, 48269), (56, 48239), (64, 48113), (68, 48092), (70, 48071), (78, 47981), (85, 47906), (86, 47894), (92, 47867),

Gene: Xavier\_54 Start: 47996, Stop: 47307, Start Num: 20

Candidate Starts for Xavier\_54:

(3, 48239), (4, 48230), (5, 48206), (6, 48176), (8, 48125), (9, 48086), (Start: 20 @47996 has 10 MA's), (Start: 22 @47987 has 136 MA's), (50, 47780), (51, 47777), (53, 47753), (56, 47723), (61, 47645), (64,

47597), (68, 47576), (78, 47465), (82, 47429), (85, 47390), (86, 47378), (92, 47351),

Gene: Zaider\_55 Start: 48222, Stop: 47545, Start Num: 22

Candidate Starts for Zaider\_55:

(Start: 20 @48231 has 10 MA's), (Start: 22 @48222 has 136 MA's), (40, 48093), (43, 48060), (46, 48045), (50, 48015), (51, 48012), (53, 47988), (56, 47958), (61, 47880), (64, 47832), (68, 47811), (70, 47790), (78, 47700), (82, 47664), (85, 47625), (86, 47613), (92, 47586),

Gene: Zelda\_55 Start: 48324, Stop: 47644, Start Num: 22

Candidate Starts for Zelda\_55:

(2, 48591), (3, 48576), (4, 48567), (5, 48543), (6, 48513), (8, 48462), (9, 48423), (Start: 20 @48333 has 10 MA's), (Start: 22 @48324 has 136 MA's), (50, 48117), (51, 48114), (53, 48090), (56, 48060), (64, 47934), (68, 47913), (70, 47892), (78, 47802), (85, 47727), (86, 47715), (92, 47688),

Gene: Zenteno07\_58 Start: 47935, Stop: 47234, Start Num: 20

Candidate Starts for Zenteno07\_58:

(1, 48472), (12, 48004), (Start: 20 @47935 has 10 MA's), (Start: 23 @47920 has 18 MA's), (27, 47890), (56, 47668), (60, 47632), (69, 47506), (75, 47437), (86, 47308), (87, 47302), (92, 47281),