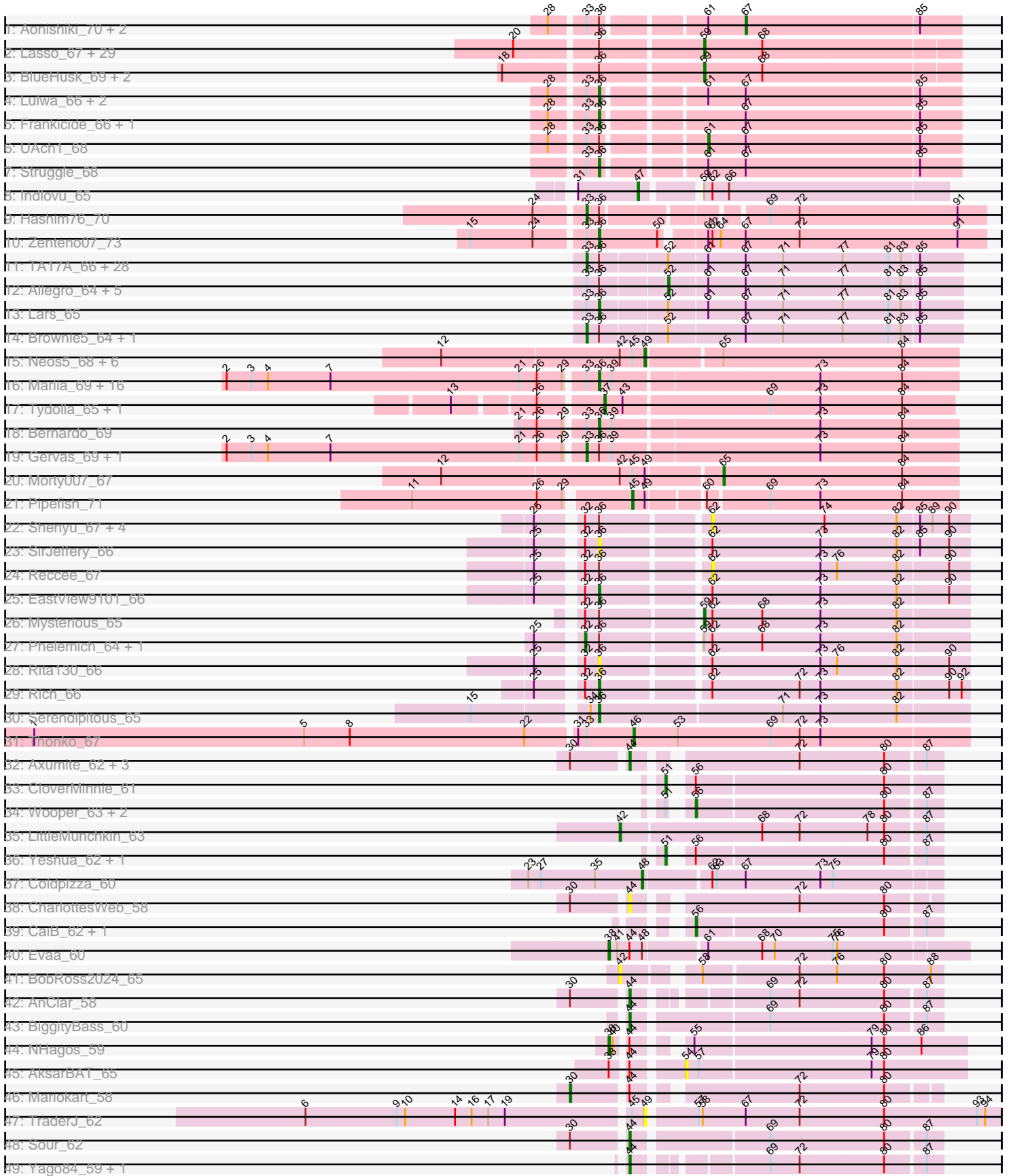


Pham 294484



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 294484 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294484 has 156 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Aonishiki\_70, Eugenia\_68, HogWash\_68
- Track 2 : Lasso\_67, MelsMeow\_67, Buckeye\_68, Phareon\_66, Inverness\_66, Basato\_67, DonSanchon\_64, Grand2040\_66, ElvisPhasley\_68, BlackStallion\_68, Chorkpop\_68, Gyarad\_0067, Mikota\_65, Dingo\_65, Caspiboi\_67, ImtiyazSitla\_68, Sheila\_64, Adriana\_69, GeneCoco\_68, RedRaider89\_67, Horchata\_65, TooFast2Furius\_69, MiniBoss\_65, Hamish\_65, AltPhacts\_66, Scrick\_67, Potter\_65, Maskar\_68, Nathan\_68, Ashraf\_68
- Track 3 : BlueHusk\_69, Melc17\_65, Dati\_65
- Track 4 : Lulwa\_66, Usavi\_69, Zaider\_69
- Track 5 : Frankicide\_66, Gwilliam\_69
- Track 6 : UAch1\_68
- Track 7 : Struggle\_68
- Track 8 : Indlovu\_65
- Track 9 : Hashim76\_70
- Track 10 : Zenteno07\_73
- Track 11 : TA17A\_66, West99\_64, Kheth\_64, Tres\_64, Ares\_64, Rhinoforte\_64, Glass\_65, Blocker23\_64, Calamitous\_65, LizLemon\_64, Bananafish\_65, Kolhan\_65, Boyle\_64, Lephleur\_64, Holeinone\_64, ItsyBitsy1\_63, FrenchFry\_65, LilSmirk\_64, Eaglehorse\_64, Qyrzula\_58, Godines\_65, MasterPo\_65, Arbiter\_62, Laurie\_64, Rosebush\_63, Opia\_65, Hedgerow\_64, Sabella\_64, PrinceCharming\_65
- Track 12 : Allegro\_64, Faze9\_63, Coffee\_64, Kaleb\_64, Vic9\_00063, Phantasmagoria\_63
- Track 13 : Lars\_65
- Track 14 : Brownie5\_64, Tinciduntolum\_65
- Track 15 : Neos5\_68, Obutu\_70, SlippinJimmy\_71, Briakila\_68, Chentzyk\_70, Marley1013\_69, Phayeta\_71
- Track 16 : Marlia\_69, Kronus\_68, MmasiCarm\_69, Chandler\_68, Compostia\_67, Yahalom\_66, Mulaychimus\_69, Phaedrus\_63, LestyG\_66, Kamiyu\_68, Shenandoah\_67, Baloo\_67, Mortcellus\_68, SwainyDoc\_69, Olivio\_68, Daisy\_67, Akoma\_68
- Track 17 : Tydolla\_65, HarveySr\_67
- Track 18 : Bernardo\_69
- Track 19 : Gervas\_69, Ben11\_68
- Track 20 : Morty007\_67
- Track 21 : Pipefish\_71
- Track 22 : Shenyu\_67, StinkyVeggy\_66, DigitDog\_67, KarasumaRum\_66, Nangang\_66

- Track 23 : SirJeffery\_66
- Track 24 : Reccee\_67
- Track 25 : EastView9101\_66
- Track 26 : Mysterious\_65
- Track 27 : Phelemich\_64, Reprobate\_65
- Track 28 : Rita130\_66
- Track 29 : Rich\_66
- Track 30 : Serendipitous\_65
- Track 31 : Thonko\_67
- Track 32 : Axumite\_62, Shatter\_62, Ligma\_62, Fresco\_62
- Track 33 : CloverMinnie\_61
- Track 34 : Wooper\_63, FelixTres\_63, Blackpen\_61
- Track 35 : LittleMunchkin\_63
- Track 36 : Yeshua\_62, AnarQue\_64
- Track 37 : Coldpizza\_60
- Track 38 : CharlottesWeb\_58
- Track 39 : CaiB\_62, MakoManhole\_59
- Track 40 : Evaa\_60
- Track 41 : BobRoss2024\_65
- Track 42 : AnClar\_58
- Track 43 : BiggityBass\_60
- Track 44 : NHagos\_59
- Track 45 : AksarBAT\_65
- Track 46 : Mariokart\_58
- Track 47 : TraderJ\_62
- Track 48 : Sour\_62
- Track 49 : Yago84\_59, Sisko\_60

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

The start number called the most often in the published annotations is 33, it was called in 33 of the 132 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arbiter\_62, Ares\_64, Bananafish\_65, Ben11\_68, Blocker23\_64, Boyle\_64, Brownie5\_64, Calamitous\_65, Eaglehorse\_64, FrenchFry\_65, Gervas\_69, Glass\_65, Godines\_65, Hashim76\_70, Hedgerow\_64, Holeinone\_64, ItsyBitsy1\_63, Kheth\_64, Kolhan\_65, Laurie\_64, Lephleur\_64, LilSmirk\_64, LizLemon\_64, MasterPo\_65, Opia\_65, PrinceCharming\_65, Qyrzula\_58, Rhinoforte\_64, Rosebush\_63, Sabella\_64, TA17A\_66, Tinciduntolum\_65, Tres\_64, West99\_64,

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

- Akoma\_68, Allegro\_64, Aonishiki\_70, Baloo\_67, Bernardo\_69, Chandler\_68, Coffee\_64, Compostia\_67, Daisy\_67, Eugenia\_68, Faze9\_63, Frankicide\_66, Gwilliam\_69, HogWash\_68, Kaleb\_64, Kamiyu\_68, Kronus\_68, Lars\_65, LestyG\_66, Lulwa\_66, Marlia\_69, MmasiCarm\_69, Mortcellus\_68, Mulaychimus\_69, Olivio\_68, Phaedrus\_63, Phantasmagoria\_63, Shenandoah\_67, Struggle\_68, SwainyDoc\_69, Thonko\_67, UAch1\_68, Usavi\_69, Vic9\_00063, Yahalom\_66, Zaider\_69, Zenteno07\_73,

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

- Adriana\_69, AksarBAT\_65, AltPhacts\_66, AnClar\_58, AnarQue\_64, Ashraf\_68, Axumite\_62, Basato\_67, BiggityBass\_60, BlackStallion\_68, Blackpen\_61, BlueHusk\_69, BobRoss2024\_65, Briakila\_68, Buckeye\_68, CaiB\_62, Caspiboi\_67, CharlottesWeb\_58, Chentzyk\_70, Chorkpop\_68, CloverMinnie\_61, Coldpizza\_60, Dati\_65, DigitDog\_67, Dingo\_65, DonSanchon\_64, EastView9101\_66, ElvisPhasley\_68, Evaa\_60, FelixTres\_63, Fresco\_62, GeneCoco\_68, Grand2040\_66, Gyarad\_0067, Hamish\_65, HarveySr\_67, Horchata\_65, ImtiyazSitla\_68, Indlovu\_65, Inverness\_66, KarasumaRum\_66, Lasso\_67, Ligma\_62, LittleMunchkin\_63, MakoManhole\_59, Mariokart\_58, Marley1013\_69, Maskar\_68, Melc17\_65, MelsMeow\_67, Mikota\_65, MiniBoss\_65, Morty007\_67, Mysterious\_65, NHagos\_59, Nangang\_66, Nathan\_68, Neos5\_68, Obutu\_70, Phareon\_66, Phayeta\_71, Phelemich\_64, Pipefish\_71, Potter\_65, Reccee\_67, RedRaider89\_67, Reprobate\_65, Rich\_66, Rita130\_66, Scrick\_67, Serendipitous\_65, Shatter\_62, Sheila\_64, Shenyu\_67, SirJeffery\_66, Sisko\_60, SlippinJimmy\_71, Sour\_62, StinkyVeggy\_66, TooFast2Furius\_69, TraderJ\_62, Tydolla\_65, Wooper\_63, Yago84\_59, Yeshua\_62,

### Summary by start number:

Start 30:

- Found in 8 of 156 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Mariokart\_58 (DR),

Start 32:

- Found in 13 of 156 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 2 of 132
- Called 15.4% of time when present
- Phage (with cluster) where this start called: Phelemich\_64 (B5), Reprobate\_65 (B5),

Start 33:

- Found in 71 of 156 ( 45.5% ) of genes in pham
- Manual Annotations of this start: 33 of 132
- Called 47.9% of time when present
- Phage (with cluster) where this start called: Arbiter\_62 (B2), Ares\_64 (B2), Bananafish\_65 (B2), Ben11\_68 (B3), Blocker23\_64 (B2), Boyle\_64 (B2), Brownie5\_64 (B2), Calamitous\_65 (B2), Eaglehorse\_64 (B2), FrenchFry\_65 (B2), Gervas\_69 (B3), Glass\_65 (B2), Godines\_65 (B2), Hashim76\_70 (B13), Hedgerow\_64 (B2), Holeinone\_64 (B2), ItsyBitsy1\_63 (B2), Kheth\_64 (B2), Kolhan\_65 (B2), Laurie\_64 (B2), Lephleur\_64 (B2), LilSmirk\_64 (B2), LizLemon\_64 (B2), MasterPo\_65 (B2), Opia\_65 (B2), PrinceCharming\_65 (B2), Qyrzula\_58 (B2), Rhinoforte\_64 (B2), Rosebush\_63 (B2), Sabella\_64 (B2), TA17A\_66 (B2), Tinciduntolum\_65 (B2), Tres\_64 (B2), West99\_64 (B2),

Start 36:

- Found in 117 of 156 ( 75.0% ) of genes in pham
- Manual Annotations of this start: 24 of 132
- Called 26.5% of time when present
- Phage (with cluster) where this start called: Akoma\_68 (B3), Baloo\_67 (B3), Bernardo\_69 (B3), Chandler\_68 (B3), Compostia\_67 (B3), Daisy\_67 (B3), EastView9101\_66 (B5), Frankicide\_66 (B1), Gwilliam\_69 (B1), Kamiyu\_68 (B3), Kronus\_68 (B3), Lars\_65 (B2), LestyG\_66 (B3), Lulwa\_66 (B1), Marlia\_69 (B3),

MmasiCarm\_69 (B3), Mortcellus\_68 (B3), Mulaychimus\_69 (B3), Olivio\_68 (B3), Phaedrus\_63 (B3), Rich\_66 (B5), Rita130\_66 (B5), Serendipitous\_65 (B5), Shenandoah\_67 (B3), SirJeffery\_66 (B5), Struggle\_68 (B1), SwainyDoc\_69 (B3), Usavi\_69 (B1), Yahalom\_66 (B3), Zaider\_69 (B1), Zenteno07\_73 (B13),

Start 37:

- Found in 2 of 156 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 132
- Called 100.0% of time when present
- Phage (with cluster) where this start called: HarveySr\_67 (B3), Tydolla\_65 (B3),

Start 38:

- Found in 3 of 156 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 132
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Evaa\_60 (DR), NHagos\_59 (DR),

Start 42:

- Found in 10 of 156 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 20.0% of time when present
- Phage (with cluster) where this start called: BobRoss2024\_65 (DR), LittleMunchkin\_63 (DR),

Start 44:

- Found in 14 of 156 ( 9.0% ) of genes in pham
- Manual Annotations of this start: 9 of 132
- Called 71.4% of time when present
- Phage (with cluster) where this start called: AnClar\_58 (DR), Axumite\_62 (DR), BiggityBass\_60 (DR), CharlottesWeb\_58 (DR), Fresco\_62 (DR), Ligma\_62 (DR), Shatter\_62 (DR), Sisko\_60 (DR), Sour\_62 (DR), Yago84\_59 (DR),

Start 45:

- Found in 10 of 156 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Pipefish\_71 (B3),

Start 46:

- Found in 1 of 156 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thonko\_67 (B8),

Start 47:

- Found in 1 of 156 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlovu\_65 (B11),

Start 48:

- Found in 2 of 156 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 132

- Called 50.0% of time when present
- Phage (with cluster) where this start called: Coldpizza\_60 (DR),

#### Start 49:

- Found in 10 of 156 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 6 of 132
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Briakila\_68 (B3), Chentzyk\_70 (B3), Marley1013\_69 (B3), Neos5\_68 (B3), Obutu\_70 (B3), Phayeta\_71 (B3), SlippinJimmy\_71 (B3), TraderJ\_62 (DR),

#### Start 51:

- Found in 6 of 156 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 3 of 132
- Called 50.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_64 (DR), CloverMinnie\_61 (DR), Yeshua\_62 (DR),

#### Start 52:

- Found in 38 of 156 ( 24.4% ) of genes in pham
- Manual Annotations of this start: 6 of 132
- Called 15.8% of time when present
- Phage (with cluster) where this start called: Allegro\_64 (B2), Coffee\_64 (B2), Faze9\_63 (B2), Kaleb\_64 (B2), Phantasmagoria\_63 (B2), Vic9\_00063 (B2),

#### Start 54:

- Found in 1 of 156 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AksarBAT\_65 (DR),

#### Start 56:

- Found in 8 of 156 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 3 of 132
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Blackpen\_61 (DR), CaiB\_62 (DR), FelixTres\_63 (DR), MakoManhole\_59 (DR), Wooper\_63 (DR),

#### Start 59:

- Found in 37 of 156 ( 23.7% ) of genes in pham
- Manual Annotations of this start: 33 of 132
- Called 91.9% of time when present
- Phage (with cluster) where this start called: Adriana\_69 (B1), AltPhacts\_66 (B1), Ashraf\_68 (B1), Basato\_67 (B1), BlackStallion\_68 (B1), BlueHusk\_69 (B1), Buckeye\_68 (B1), CaspiBoi\_67 (B1), Chorkpop\_68 (B1), Dati\_65 (B1), Dingo\_65 (B1), DonSanchon\_64 (B1), ElvisPhasley\_68 (B1), GeneCoco\_68 (B1), Grand2040\_66 (B1), Gyarad\_0067 (B1), Hamish\_65 (B1), Horchata\_65 (B1), ImtiyazSitla\_68 (B1), Inverness\_66 (B1), Lasso\_67 (B1), Maskar\_68 (B1), Melc17\_65 (B1), MelsMeow\_67 (B1), Mikota\_65 (B1), MiniBoss\_65 (B1), Mysterious\_65 (B5), Nathan\_68 (B1), Phareon\_66 (B1), Potter\_65 (B1), RedRaider89\_67 (B1), Scrick\_67 (B1), Sheila\_64 (B1), TooFast2Furius\_69 (B1),

#### Start 61:

- Found in 46 of 156 ( 29.5% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 2.2% of time when present
- Phage (with cluster) where this start called: UAch1\_68 (B1),

Start 62:

- Found in 16 of 156 ( 10.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 37.5% of time when present
- Phage (with cluster) where this start called: DigitDog\_67 (B5), KarasumaRum\_66 (B5), Nangang\_66 (B5), Reccee\_67 (B5), Shenyu\_67 (B5), StinkyVeggy\_66 (B5),

Start 65:

- Found in 8 of 156 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Morty007\_67 (B3),

Start 67:

- Found in 51 of 156 ( 32.7% ) of genes in pham
- Manual Annotations of this start: 1 of 132
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Aonishiki\_70 (B1), Eugenia\_68 (B1), HogWash\_68 (B1),

### **Summary by clusters:**

There are 8 clusters represented in this pham: B8, B11, B5, B13, B2, B3, DR, B1,

Info for manual annotations of cluster B1:

- Start number 36 was manually annotated 6 times for cluster B1.
- Start number 59 was manually annotated 32 times for cluster B1.
- Start number 61 was manually annotated 1 time for cluster B1.
- Start number 67 was manually annotated 1 time for cluster B1.

Info for manual annotations of cluster B11:

- Start number 47 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B13:

- Start number 33 was manually annotated 1 time for cluster B13.
- Start number 36 was manually annotated 1 time for cluster B13.

Info for manual annotations of cluster B2:

- Start number 33 was manually annotated 30 times for cluster B2.
- Start number 36 was manually annotated 1 time for cluster B2.
- Start number 52 was manually annotated 6 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 33 was manually annotated 2 times for cluster B3.
- Start number 36 was manually annotated 13 times for cluster B3.
- Start number 37 was manually annotated 2 times for cluster B3.
- Start number 45 was manually annotated 1 time for cluster B3.
- Start number 49 was manually annotated 6 times for cluster B3.

- Start number 65 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster B5:

- Start number 32 was manually annotated 2 times for cluster B5.
- Start number 36 was manually annotated 3 times for cluster B5.
- Start number 59 was manually annotated 1 time for cluster B5.

Info for manual annotations of cluster B8:

- Start number 46 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster DR:

- Start number 30 was manually annotated 1 time for cluster DR.
- Start number 38 was manually annotated 2 times for cluster DR.
- Start number 42 was manually annotated 1 time for cluster DR.
- Start number 44 was manually annotated 9 times for cluster DR.
- Start number 48 was manually annotated 1 time for cluster DR.
- Start number 51 was manually annotated 3 times for cluster DR.
- Start number 56 was manually annotated 3 times for cluster DR.

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

Gene: Adriana\_69 Start: 57994, Stop: 58173, Start Num: 59

Candidate Starts for Adriana\_69:

(20, 57871), (Start: 36 @57925 has 24 MA's), (Start: 59 @57994 has 33 MA's), (68, 58036),

Gene: Akoma\_68 Start: 57286, Stop: 57534, Start Num: 36

Candidate Starts for Akoma\_68:

(2, 57025), (3, 57043), (4, 57055), (7, 57100), (21, 57235), (26, 57247), (29, 57265), (Start: 33 @57277 has 33 MA's), (Start: 36 @57286 has 24 MA's), (39, 57295), (73, 57439), (84, 57496),

Gene: AksarBAT\_65 Start: 51976, Stop: 52173, Start Num: 54

Candidate Starts for AksarBAT\_65:

(Start: 38 @51946 has 2 MA's), (Start: 44 @51955 has 9 MA's), (54, 51976), (57, 51985), (79, 52105), (80, 52114),

Gene: Allegro\_64 Start: 55516, Stop: 55722, Start Num: 52

Candidate Starts for Allegro\_64:

(Start: 33 @55462 has 33 MA's), (Start: 36 @55471 has 24 MA's), (Start: 52 @55516 has 6 MA's), (Start: 61 @55543 has 1 MA's), (Start: 67 @55570 has 1 MA's), (71, 55597), (77, 55639), (81, 55672), (83, 55681), (85, 55693),

Gene: AltPhacts\_66 Start: 56481, Stop: 56660, Start Num: 59

Candidate Starts for AltPhacts\_66:

(20, 56358), (Start: 36 @56412 has 24 MA's), (Start: 59 @56481 has 33 MA's), (68, 56523),

Gene: AnClar\_58 Start: 51779, Stop: 51976, Start Num: 44

Candidate Starts for AnClar\_58:

(Start: 30 @51743 has 1 MA's), (Start: 44 @51779 has 9 MA's), (69, 51857), (72, 51878), (80, 51938), (87, 51965),

Gene: AnarQue\_64 Start: 52219, Stop: 52398, Start Num: 51

Candidate Starts for AnarQue\_64:

(Start: 51 @52219 has 3 MA's), (Start: 56 @52228 has 3 MA's), (80, 52360), (87, 52387),

Gene: Aonishiki\_70 Start: 57199, Stop: 57351, Start Num: 67

Candidate Starts for Aonishiki\_70:

(28, 57079), (Start: 33 @57100 has 33 MA's), (Start: 36 @57109 has 24 MA's), (Start: 61 @57172 has 1 MA's), (Start: 67 @57199 has 1 MA's), (85, 57322),

Gene: Arbiter\_62 Start: 55569, Stop: 55829, Start Num: 33

Candidate Starts for Arbiter\_62:

(Start: 33 @55569 has 33 MA's), (Start: 36 @55578 has 24 MA's), (Start: 52 @55623 has 6 MA's), (Start: 61 @55650 has 1 MA's), (Start: 67 @55677 has 1 MA's), (71, 55704), (77, 55746), (81, 55779), (83, 55788), (85, 55800),

Gene: Ares\_64 Start: 55540, Stop: 55800, Start Num: 33

Candidate Starts for Ares\_64:

(Start: 33 @55540 has 33 MA's), (Start: 36 @55549 has 24 MA's), (Start: 52 @55594 has 6 MA's), (Start: 61 @55621 has 1 MA's), (Start: 67 @55648 has 1 MA's), (71, 55675), (77, 55717), (81, 55750), (83, 55759), (85, 55771),

Gene: Ashraf\_68 Start: 57146, Stop: 57325, Start Num: 59

Candidate Starts for Ashraf\_68:

(20, 57023), (Start: 36 @57077 has 24 MA's), (Start: 59 @57146 has 33 MA's), (68, 57188),

Gene: Axumite\_62 Start: 50626, Stop: 50826, Start Num: 44

Candidate Starts for Axumite\_62:

(Start: 30 @50590 has 1 MA's), (Start: 44 @50626 has 9 MA's), (72, 50728), (80, 50788), (87, 50815),

Gene: Baloo\_67 Start: 57118, Stop: 57366, Start Num: 36

Candidate Starts for Baloo\_67:

(2, 56857), (3, 56875), (4, 56887), (7, 56932), (21, 57067), (26, 57079), (29, 57097), (Start: 33 @57109 has 33 MA's), (Start: 36 @57118 has 24 MA's), (39, 57127), (73, 57271), (84, 57328),

Gene: Bananafish\_65 Start: 55470, Stop: 55730, Start Num: 33

Candidate Starts for Bananafish\_65:

(Start: 33 @55470 has 33 MA's), (Start: 36 @55479 has 24 MA's), (Start: 52 @55524 has 6 MA's), (Start: 61 @55551 has 1 MA's), (Start: 67 @55578 has 1 MA's), (71, 55605), (77, 55647), (81, 55680), (83, 55689), (85, 55701),

Gene: Basato\_67 Start: 57199, Stop: 57378, Start Num: 59

Candidate Starts for Basato\_67:

(20, 57076), (Start: 36 @57130 has 24 MA's), (Start: 59 @57199 has 33 MA's), (68, 57241),

Gene: Ben11\_68 Start: 57494, Stop: 57751, Start Num: 33

Candidate Starts for Ben11\_68:

(2, 57242), (3, 57260), (4, 57272), (7, 57317), (21, 57452), (26, 57464), (29, 57482), (Start: 33 @57494 has 33 MA's), (Start: 36 @57503 has 24 MA's), (39, 57512), (73, 57656), (84, 57713),

Gene: Bernardo\_69 Start: 57484, Stop: 57732, Start Num: 36

Candidate Starts for Bernardo\_69:

(21, 57433), (26, 57445), (29, 57463), (Start: 33 @57475 has 33 MA's), (Start: 36 @57484 has 24 MA's), (39, 57493), (73, 57637), (84, 57694),

Gene: BiggityBass\_60 Start: 52323, Stop: 52532, Start Num: 44  
Candidate Starts for BiggityBass\_60:  
(Start: 44 @52323 has 9 MA's), (69, 52413), (80, 52494), (87, 52521),

Gene: BlackStallion\_68 Start: 57193, Stop: 57372, Start Num: 59  
Candidate Starts for BlackStallion\_68:  
(20, 57070), (Start: 36 @57124 has 24 MA's), (Start: 59 @57193 has 33 MA's), (68, 57235),

Gene: Blackpen\_61 Start: 50667, Stop: 50837, Start Num: 56  
Candidate Starts for Blackpen\_61:  
(Start: 51 @50658 has 3 MA's), (Start: 56 @50667 has 3 MA's), (80, 50799), (87, 50826),

Gene: Blocker23\_64 Start: 55537, Stop: 55797, Start Num: 33  
Candidate Starts for Blocker23\_64:  
(Start: 33 @55537 has 33 MA's), (Start: 36 @55546 has 24 MA's), (Start: 52 @55591 has 6 MA's),  
(Start: 61 @55618 has 1 MA's), (Start: 67 @55645 has 1 MA's), (71, 55672), (77, 55714), (81, 55747),  
(83, 55756), (85, 55768),

Gene: BlueHusk\_69 Start: 56949, Stop: 57128, Start Num: 59  
Candidate Starts for BlueHusk\_69:  
(18, 56817), (Start: 36 @56880 has 24 MA's), (Start: 59 @56949 has 33 MA's), (68, 56991),

Gene: BobRoss2024\_65 Start: 51837, Stop: 52049, Start Num: 42  
Candidate Starts for BobRoss2024\_65:  
(Start: 42 @51837 has 1 MA's), (58, 51882), (72, 51948), (76, 51975), (80, 52008), (88, 52041),

Gene: Boyle\_64 Start: 55578, Stop: 55838, Start Num: 33  
Candidate Starts for Boyle\_64:  
(Start: 33 @55578 has 33 MA's), (Start: 36 @55587 has 24 MA's), (Start: 52 @55632 has 6 MA's),  
(Start: 61 @55659 has 1 MA's), (Start: 67 @55686 has 1 MA's), (71, 55713), (77, 55755), (81, 55788),  
(83, 55797), (85, 55809),

Gene: Briakila\_68 Start: 57517, Stop: 57732, Start Num: 49  
Candidate Starts for Briakila\_68:  
(12, 57373), (Start: 42 @57499 has 1 MA's), (Start: 45 @57508 has 1 MA's), (Start: 49 @57517 has 6 MA's),  
(Start: 65 @57568 has 1 MA's), (84, 57694),

Gene: Brownie5\_64 Start: 55580, Stop: 55840, Start Num: 33  
Candidate Starts for Brownie5\_64:  
(Start: 33 @55580 has 33 MA's), (Start: 36 @55589 has 24 MA's), (Start: 52 @55634 has 6 MA's),  
(Start: 67 @55688 has 1 MA's), (71, 55715), (77, 55757), (81, 55790), (83, 55799), (85, 55811),

Gene: Buckeye\_68 Start: 58013, Stop: 58192, Start Num: 59  
Candidate Starts for Buckeye\_68:  
(20, 57890), (Start: 36 @57944 has 24 MA's), (Start: 59 @58013 has 33 MA's), (68, 58055),

Gene: CaiB\_62 Start: 52012, Stop: 52182, Start Num: 56  
Candidate Starts for CaiB\_62:  
(Start: 56 @52012 has 3 MA's), (80, 52144), (87, 52171),

Gene: Calamitous\_65 Start: 55468, Stop: 55728, Start Num: 33  
Candidate Starts for Calamitous\_65:

(Start: 33 @55468 has 33 MA's), (Start: 36 @55477 has 24 MA's), (Start: 52 @55522 has 6 MA's), (Start: 61 @55549 has 1 MA's), (Start: 67 @55576 has 1 MA's), (71, 55603), (77, 55645), (81, 55678), (83, 55687), (85, 55699),

Gene: Caspiboi\_67 Start: 57156, Stop: 57335, Start Num: 59

Candidate Starts for Caspiboi\_67:

(20, 57033), (Start: 36 @57087 has 24 MA's), (Start: 59 @57156 has 33 MA's), (68, 57198),

Gene: Chandler\_68 Start: 58065, Stop: 58313, Start Num: 36

Candidate Starts for Chandler\_68:

(2, 57804), (3, 57822), (4, 57834), (7, 57879), (21, 58014), (26, 58026), (29, 58044), (Start: 33 @58056 has 33 MA's), (Start: 36 @58065 has 24 MA's), (39, 58074), (73, 58218), (84, 58275),

Gene: CharlottesWeb\_58 Start: 49213, Stop: 49410, Start Num: 44

Candidate Starts for CharlottesWeb\_58:

(Start: 30 @49177 has 1 MA's), (Start: 44 @49213 has 9 MA's), (72, 49315), (80, 49375),

Gene: Chentzyk\_70 Start: 58269, Stop: 58484, Start Num: 49

Candidate Starts for Chentzyk\_70:

(12, 58125), (Start: 42 @58251 has 1 MA's), (Start: 45 @58260 has 1 MA's), (Start: 49 @58269 has 6 MA's), (Start: 65 @58320 has 1 MA's), (84, 58446),

Gene: Chorkpop\_68 Start: 56930, Stop: 57109, Start Num: 59

Candidate Starts for Chorkpop\_68:

(20, 56807), (Start: 36 @56861 has 24 MA's), (Start: 59 @56930 has 33 MA's), (68, 56972),

Gene: CloverMinnie\_61 Start: 51166, Stop: 51345, Start Num: 51

Candidate Starts for CloverMinnie\_61:

(Start: 51 @51166 has 3 MA's), (Start: 56 @51175 has 3 MA's), (80, 51307),

Gene: Coffee\_64 Start: 55626, Stop: 55832, Start Num: 52

Candidate Starts for Coffee\_64:

(Start: 33 @55572 has 33 MA's), (Start: 36 @55581 has 24 MA's), (Start: 52 @55626 has 6 MA's), (Start: 61 @55653 has 1 MA's), (Start: 67 @55680 has 1 MA's), (71, 55707), (77, 55749), (81, 55782), (83, 55791), (85, 55803),

Gene: Coldpizza\_60 Start: 52423, Stop: 52629, Start Num: 48

Candidate Starts for Coldpizza\_60:

(23, 52342), (27, 52351), (35, 52390), (Start: 48 @52423 has 1 MA's), (62, 52468), (63, 52471), (Start: 67 @52492 has 1 MA's), (73, 52546), (75, 52555),

Gene: Compostia\_67 Start: 57686, Stop: 57934, Start Num: 36

Candidate Starts for Compostia\_67:

(2, 57425), (3, 57443), (4, 57455), (7, 57500), (21, 57635), (26, 57647), (29, 57665), (Start: 33 @57677 has 33 MA's), (Start: 36 @57686 has 24 MA's), (39, 57695), (73, 57839), (84, 57896),

Gene: Daisy\_67 Start: 56849, Stop: 57097, Start Num: 36

Candidate Starts for Daisy\_67:

(2, 56588), (3, 56606), (4, 56618), (7, 56663), (21, 56798), (26, 56810), (29, 56828), (Start: 33 @56840 has 33 MA's), (Start: 36 @56849 has 24 MA's), (39, 56858), (73, 57002), (84, 57059),

Gene: Dati\_65 Start: 57259, Stop: 57438, Start Num: 59

Candidate Starts for Dati\_65:

(18, 57127), (Start: 36 @57190 has 24 MA's), (Start: 59 @57259 has 33 MA's), (68, 57301),

Gene: DigitDog\_67 Start: 58467, Stop: 58649, Start Num: 62

Candidate Starts for DigitDog\_67:

(25, 58365), (Start: 32 @58392 has 2 MA's), (Start: 36 @58401 has 24 MA's), (62, 58467), (74, 58548), (82, 58599), (85, 58614), (89, 58623), (90, 58635),

Gene: Dingo\_65 Start: 56457, Stop: 56636, Start Num: 59

Candidate Starts for Dingo\_65:

(20, 56334), (Start: 36 @56388 has 24 MA's), (Start: 59 @56457 has 33 MA's), (68, 56499),

Gene: DonSanchon\_64 Start: 56612, Stop: 56791, Start Num: 59

Candidate Starts for DonSanchon\_64:

(20, 56489), (Start: 36 @56543 has 24 MA's), (Start: 59 @56612 has 33 MA's), (68, 56654),

Gene: Eaglehorse\_64 Start: 55458, Stop: 55718, Start Num: 33

Candidate Starts for Eaglehorse\_64:

(Start: 33 @55458 has 33 MA's), (Start: 36 @55467 has 24 MA's), (Start: 52 @55512 has 6 MA's), (Start: 61 @55539 has 1 MA's), (Start: 67 @55566 has 1 MA's), (71, 55593), (77, 55635), (81, 55668), (83, 55677), (85, 55689),

Gene: EastView9101\_66 Start: 58038, Stop: 58286, Start Num: 36

Candidate Starts for EastView9101\_66:

(25, 58002), (Start: 32 @58029 has 2 MA's), (Start: 36 @58038 has 24 MA's), (62, 58104), (73, 58182), (82, 58236), (90, 58272),

Gene: ElvisPhasley\_68 Start: 57946, Stop: 58125, Start Num: 59

Candidate Starts for ElvisPhasley\_68:

(20, 57823), (Start: 36 @57877 has 24 MA's), (Start: 59 @57946 has 33 MA's), (68, 57988),

Gene: Eugenia\_68 Start: 57577, Stop: 57729, Start Num: 67

Candidate Starts for Eugenia\_68:

(28, 57457), (Start: 33 @57478 has 33 MA's), (Start: 36 @57487 has 24 MA's), (Start: 61 @57550 has 1 MA's), (Start: 67 @57577 has 1 MA's), (85, 57700),

Gene: Evaa\_60 Start: 49769, Stop: 50017, Start Num: 38

Candidate Starts for Evaa\_60:

(Start: 38 @49769 has 2 MA's), (41, 49775), (Start: 44 @49784 has 9 MA's), (Start: 48 @49793 has 1 MA's), (Start: 61 @49835 has 1 MA's), (68, 49874), (70, 49883), (75, 49925), (76, 49928),

Gene: Faze9\_63 Start: 55651, Stop: 55857, Start Num: 52

Candidate Starts for Faze9\_63:

(Start: 33 @55597 has 33 MA's), (Start: 36 @55606 has 24 MA's), (Start: 52 @55651 has 6 MA's), (Start: 61 @55678 has 1 MA's), (Start: 67 @55705 has 1 MA's), (71, 55732), (77, 55774), (81, 55807), (83, 55816), (85, 55828),

Gene: FelixTres\_63 Start: 51482, Stop: 51652, Start Num: 56

Candidate Starts for FelixTres\_63:

(Start: 51 @51473 has 3 MA's), (Start: 56 @51482 has 3 MA's), (80, 51614), (87, 51641),

Gene: Frankicide\_66 Start: 56878, Stop: 57120, Start Num: 36

Candidate Starts for Frankicide\_66:

(28, 56848), (Start: 33 @56869 has 33 MA's), (Start: 36 @56878 has 24 MA's), (Start: 67 @56968 has 1 MA's), (85, 57091),

Gene: FrenchFry\_65 Start: 55583, Stop: 55843, Start Num: 33

Candidate Starts for FrenchFry\_65:

(Start: 33 @55583 has 33 MA's), (Start: 36 @55592 has 24 MA's), (Start: 52 @55637 has 6 MA's), (Start: 61 @55664 has 1 MA's), (Start: 67 @55691 has 1 MA's), (71, 55718), (77, 55760), (81, 55793), (83, 55802), (85, 55814),

Gene: Fresco\_62 Start: 50626, Stop: 50826, Start Num: 44

Candidate Starts for Fresco\_62:

(Start: 30 @50590 has 1 MA's), (Start: 44 @50626 has 9 MA's), (72, 50728), (80, 50788), (87, 50815),

Gene: GeneCoco\_68 Start: 57462, Stop: 57641, Start Num: 59

Candidate Starts for GeneCoco\_68:

(20, 57339), (Start: 36 @57393 has 24 MA's), (Start: 59 @57462 has 33 MA's), (68, 57504),

Gene: Gervas\_69 Start: 57701, Stop: 57958, Start Num: 33

Candidate Starts for Gervas\_69:

(2, 57449), (3, 57467), (4, 57479), (7, 57524), (21, 57659), (26, 57671), (29, 57689), (Start: 33 @57701 has 33 MA's), (Start: 36 @57710 has 24 MA's), (39, 57719), (73, 57863), (84, 57920),

Gene: Glass\_65 Start: 55585, Stop: 55845, Start Num: 33

Candidate Starts for Glass\_65:

(Start: 33 @55585 has 33 MA's), (Start: 36 @55594 has 24 MA's), (Start: 52 @55639 has 6 MA's), (Start: 61 @55666 has 1 MA's), (Start: 67 @55693 has 1 MA's), (71, 55720), (77, 55762), (81, 55795), (83, 55804), (85, 55816),

Gene: Godines\_65 Start: 55844, Stop: 56104, Start Num: 33

Candidate Starts for Godines\_65:

(Start: 33 @55844 has 33 MA's), (Start: 36 @55853 has 24 MA's), (Start: 52 @55898 has 6 MA's), (Start: 61 @55925 has 1 MA's), (Start: 67 @55952 has 1 MA's), (71, 55979), (77, 56021), (81, 56054), (83, 56063), (85, 56075),

Gene: Grand2040\_66 Start: 57405, Stop: 57584, Start Num: 59

Candidate Starts for Grand2040\_66:

(20, 57282), (Start: 36 @57336 has 24 MA's), (Start: 59 @57405 has 33 MA's), (68, 57447),

Gene: Gwilliam\_69 Start: 57728, Stop: 57970, Start Num: 36

Candidate Starts for Gwilliam\_69:

(28, 57698), (Start: 33 @57719 has 33 MA's), (Start: 36 @57728 has 24 MA's), (Start: 67 @57818 has 1 MA's), (85, 57941),

Gene: Gyarad\_0067 Start: 56782, Stop: 56961, Start Num: 59

Candidate Starts for Gyarad\_0067:

(20, 56659), (Start: 36 @56713 has 24 MA's), (Start: 59 @56782 has 33 MA's), (68, 56824),

Gene: Hamish\_65 Start: 56845, Stop: 57024, Start Num: 59

Candidate Starts for Hamish\_65:

(20, 56722), (Start: 36 @56776 has 24 MA's), (Start: 59 @56845 has 33 MA's), (68, 56887),

Gene: HarveySr\_67 Start: 56727, Stop: 56969, Start Num: 37

Candidate Starts for HarveySr\_67:

(13, 56631), (26, 56685), (Start: 37 @56727 has 2 MA's), (43, 56739), (69, 56841), (73, 56877), (84, 56934),

Gene: Hashim76\_70 Start: 58554, Stop: 58817, Start Num: 33

Candidate Starts for Hashim76\_70:

(24, 58521), (Start: 33 @58554 has 33 MA's), (Start: 36 @58563 has 24 MA's), (69, 58665), (72, 58686), (91, 58797),

Gene: Hedgerow\_64 Start: 55555, Stop: 55815, Start Num: 33

Candidate Starts for Hedgerow\_64:

(Start: 33 @55555 has 33 MA's), (Start: 36 @55564 has 24 MA's), (Start: 52 @55609 has 6 MA's), (Start: 61 @55636 has 1 MA's), (Start: 67 @55663 has 1 MA's), (71, 55690), (77, 55732), (81, 55765), (83, 55774), (85, 55786),

Gene: HogWash\_68 Start: 57799, Stop: 57951, Start Num: 67

Candidate Starts for HogWash\_68:

(28, 57679), (Start: 33 @57700 has 33 MA's), (Start: 36 @57709 has 24 MA's), (Start: 61 @57772 has 1 MA's), (Start: 67 @57799 has 1 MA's), (85, 57922),

Gene: Holeinone\_64 Start: 55443, Stop: 55703, Start Num: 33

Candidate Starts for Holeinone\_64:

(Start: 33 @55443 has 33 MA's), (Start: 36 @55452 has 24 MA's), (Start: 52 @55497 has 6 MA's), (Start: 61 @55524 has 1 MA's), (Start: 67 @55551 has 1 MA's), (71, 55578), (77, 55620), (81, 55653), (83, 55662), (85, 55674),

Gene: Horchata\_65 Start: 56937, Stop: 57116, Start Num: 59

Candidate Starts for Horchata\_65:

(20, 56814), (Start: 36 @56868 has 24 MA's), (Start: 59 @56937 has 33 MA's), (68, 56979),

Gene: ImtiyazSitla\_68 Start: 57146, Stop: 57325, Start Num: 59

Candidate Starts for ImtiyazSitla\_68:

(20, 57023), (Start: 36 @57077 has 24 MA's), (Start: 59 @57146 has 33 MA's), (68, 57188),

Gene: Indlovu\_65 Start: 58320, Stop: 58526, Start Num: 47

Candidate Starts for Indlovu\_65:

(31, 58278), (Start: 47 @58320 has 1 MA's), (Start: 59 @58353 has 33 MA's), (62, 58359), (66, 58371),

Gene: Inverness\_66 Start: 56946, Stop: 57125, Start Num: 59

Candidate Starts for Inverness\_66:

(20, 56823), (Start: 36 @56877 has 24 MA's), (Start: 59 @56946 has 33 MA's), (68, 56988),

Gene: ItsyBitsy1\_63 Start: 55673, Stop: 55933, Start Num: 33

Candidate Starts for ItsyBitsy1\_63:

(Start: 33 @55673 has 33 MA's), (Start: 36 @55682 has 24 MA's), (Start: 52 @55727 has 6 MA's), (Start: 61 @55754 has 1 MA's), (Start: 67 @55781 has 1 MA's), (71, 55808), (77, 55850), (81, 55883), (83, 55892), (85, 55904),

Gene: Kaleb\_64 Start: 55644, Stop: 55850, Start Num: 52

Candidate Starts for Kaleb\_64:

(Start: 33 @55590 has 33 MA's), (Start: 36 @55599 has 24 MA's), (Start: 52 @55644 has 6 MA's), (Start: 61 @55671 has 1 MA's), (Start: 67 @55698 has 1 MA's), (71, 55725), (77, 55767), (81, 55800), (83, 55809), (85, 55821),

Gene: Kamiyu\_68 Start: 57245, Stop: 57493, Start Num: 36

Candidate Starts for Kamiyu\_68:

(2, 56984), (3, 57002), (4, 57014), (7, 57059), (21, 57194), (26, 57206), (29, 57224), (Start: 33 @57236 has 33 MA's), (Start: 36 @57245 has 24 MA's), (39, 57254), (73, 57398), (84, 57455),

Gene: KarasumaRum\_66 Start: 58294, Stop: 58476, Start Num: 62

Candidate Starts for KarasumaRum\_66:

(25, 58192), (Start: 32 @58219 has 2 MA's), (Start: 36 @58228 has 24 MA's), (62, 58294), (74, 58375), (82, 58426), (85, 58441), (89, 58450), (90, 58462),

Gene: Kheth\_64 Start: 55502, Stop: 55762, Start Num: 33

Candidate Starts for Kheth\_64:

(Start: 33 @55502 has 33 MA's), (Start: 36 @55511 has 24 MA's), (Start: 52 @55556 has 6 MA's), (Start: 61 @55583 has 1 MA's), (Start: 67 @55610 has 1 MA's), (71, 55637), (77, 55679), (81, 55712), (83, 55721), (85, 55733),

Gene: Kolhan\_65 Start: 55479, Stop: 55739, Start Num: 33

Candidate Starts for Kolhan\_65:

(Start: 33 @55479 has 33 MA's), (Start: 36 @55488 has 24 MA's), (Start: 52 @55533 has 6 MA's), (Start: 61 @55560 has 1 MA's), (Start: 67 @55587 has 1 MA's), (71, 55614), (77, 55656), (81, 55689), (83, 55698), (85, 55710),

Gene: Kronus\_68 Start: 58341, Stop: 58589, Start Num: 36

Candidate Starts for Kronus\_68:

(2, 58080), (3, 58098), (4, 58110), (7, 58155), (21, 58290), (26, 58302), (29, 58320), (Start: 33 @58332 has 33 MA's), (Start: 36 @58341 has 24 MA's), (39, 58350), (73, 58494), (84, 58551),

Gene: Lars\_65 Start: 55572, Stop: 55823, Start Num: 36

Candidate Starts for Lars\_65:

(Start: 33 @55563 has 33 MA's), (Start: 36 @55572 has 24 MA's), (Start: 52 @55617 has 6 MA's), (Start: 61 @55644 has 1 MA's), (Start: 67 @55671 has 1 MA's), (71, 55698), (77, 55740), (81, 55773), (83, 55782), (85, 55794),

Gene: Lasso\_67 Start: 57164, Stop: 57343, Start Num: 59

Candidate Starts for Lasso\_67:

(20, 57041), (Start: 36 @57095 has 24 MA's), (Start: 59 @57164 has 33 MA's), (68, 57206),

Gene: Laurie\_64 Start: 55263, Stop: 55523, Start Num: 33

Candidate Starts for Laurie\_64:

(Start: 33 @55263 has 33 MA's), (Start: 36 @55272 has 24 MA's), (Start: 52 @55317 has 6 MA's), (Start: 61 @55344 has 1 MA's), (Start: 67 @55371 has 1 MA's), (71, 55398), (77, 55440), (81, 55473), (83, 55482), (85, 55494),

Gene: Lephleur\_64 Start: 55428, Stop: 55688, Start Num: 33

Candidate Starts for Lephleur\_64:

(Start: 33 @55428 has 33 MA's), (Start: 36 @55437 has 24 MA's), (Start: 52 @55482 has 6 MA's), (Start: 61 @55509 has 1 MA's), (Start: 67 @55536 has 1 MA's), (71, 55563), (77, 55605), (81, 55638), (83, 55647), (85, 55659),

Gene: LestyG\_66 Start: 56771, Stop: 57019, Start Num: 36

Candidate Starts for LestyG\_66:

(2, 56510), (3, 56528), (4, 56540), (7, 56585), (21, 56720), (26, 56732), (29, 56750), (Start: 33 @56762 has 33 MA's), (Start: 36 @56771 has 24 MA's), (39, 56780), (73, 56924), (84, 56981),

Gene: Ligma\_62 Start: 50626, Stop: 50826, Start Num: 44

Candidate Starts for Ligma\_62:

(Start: 30 @50590 has 1 MA's), (Start: 44 @50626 has 9 MA's), (72, 50728), (80, 50788), (87, 50815),

Gene: LilSmirk\_64 Start: 55461, Stop: 55721, Start Num: 33

Candidate Starts for LilSmirk\_64:

(Start: 33 @55461 has 33 MA's), (Start: 36 @55470 has 24 MA's), (Start: 52 @55515 has 6 MA's),  
(Start: 61 @55542 has 1 MA's), (Start: 67 @55569 has 1 MA's), (71, 55596), (77, 55638), (81, 55671),  
(83, 55680), (85, 55692),

Gene: LittleMunchkin\_63 Start: 53357, Stop: 53581, Start Num: 42

Candidate Starts for LittleMunchkin\_63:

(Start: 42 @53357 has 1 MA's), (68, 53456), (72, 53483), (78, 53531), (80, 53543), (87, 53570),

Gene: LizLemon\_64 Start: 55590, Stop: 55850, Start Num: 33

Candidate Starts for LizLemon\_64:

(Start: 33 @55590 has 33 MA's), (Start: 36 @55599 has 24 MA's), (Start: 52 @55644 has 6 MA's),  
(Start: 61 @55671 has 1 MA's), (Start: 67 @55698 has 1 MA's), (71, 55725), (77, 55767), (81, 55800),  
(83, 55809), (85, 55821),

Gene: Lulwa\_66 Start: 56139, Stop: 56381, Start Num: 36

Candidate Starts for Lulwa\_66:

(28, 56109), (Start: 33 @56130 has 33 MA's), (Start: 36 @56139 has 24 MA's), (Start: 61 @56202 has  
1 MA's), (Start: 67 @56229 has 1 MA's), (85, 56352),

Gene: MakoManhole\_59 Start: 50530, Stop: 50700, Start Num: 56

Candidate Starts for MakoManhole\_59:

(Start: 56 @50530 has 3 MA's), (80, 50662), (87, 50689),

Gene: Mariokart\_58 Start: 49462, Stop: 49695, Start Num: 30

Candidate Starts for Mariokart\_58:

(Start: 30 @49462 has 1 MA's), (Start: 44 @49498 has 9 MA's), (72, 49600), (80, 49660),

Gene: Marley1013\_69 Start: 58226, Stop: 58441, Start Num: 49

Candidate Starts for Marley1013\_69:

(12, 58082), (Start: 42 @58208 has 1 MA's), (Start: 45 @58217 has 1 MA's), (Start: 49 @58226 has 6  
MA's), (Start: 65 @58277 has 1 MA's), (84, 58403),

Gene: Marlia\_69 Start: 57714, Stop: 57962, Start Num: 36

Candidate Starts for Marlia\_69:

(2, 57453), (3, 57471), (4, 57483), (7, 57528), (21, 57663), (26, 57675), (29, 57693), (Start: 33 @57705  
has 33 MA's), (Start: 36 @57714 has 24 MA's), (39, 57723), (73, 57867), (84, 57924),

Gene: Maskar\_68 Start: 57146, Stop: 57325, Start Num: 59

Candidate Starts for Maskar\_68:

(20, 57023), (Start: 36 @57077 has 24 MA's), (Start: 59 @57146 has 33 MA's), (68, 57188),

Gene: MasterPo\_65 Start: 55460, Stop: 55720, Start Num: 33

Candidate Starts for MasterPo\_65:

(Start: 33 @55460 has 33 MA's), (Start: 36 @55469 has 24 MA's), (Start: 52 @55514 has 6 MA's),  
(Start: 61 @55541 has 1 MA's), (Start: 67 @55568 has 1 MA's), (71, 55595), (77, 55637), (81, 55670),  
(83, 55679), (85, 55691),

Gene: Melc17\_65 Start: 57547, Stop: 57726, Start Num: 59

Candidate Starts for Melc17\_65:

(18, 57415), (Start: 36 @57478 has 24 MA's), (Start: 59 @57547 has 33 MA's), (68, 57589),

Gene: MelsMeow\_67 Start: 57199, Stop: 57378, Start Num: 59

Candidate Starts for MelsMeow\_67:

(20, 57076), (Start: 36 @57130 has 24 MA's), (Start: 59 @57199 has 33 MA's), (68, 57241),

Gene: Mikota\_65 Start: 56445, Stop: 56624, Start Num: 59

Candidate Starts for Mikota\_65:

(20, 56322), (Start: 36 @56376 has 24 MA's), (Start: 59 @56445 has 33 MA's), (68, 56487),

Gene: MiniBoss\_65 Start: 56250, Stop: 56429, Start Num: 59

Candidate Starts for MiniBoss\_65:

(20, 56127), (Start: 36 @56181 has 24 MA's), (Start: 59 @56250 has 33 MA's), (68, 56292),

Gene: MmasiCarm\_69 Start: 57696, Stop: 57944, Start Num: 36

Candidate Starts for MmasiCarm\_69:

(2, 57435), (3, 57453), (4, 57465), (7, 57510), (21, 57645), (26, 57657), (29, 57675), (Start: 33 @57687 has 33 MA's), (Start: 36 @57696 has 24 MA's), (39, 57705), (73, 57849), (84, 57906),

Gene: Mortcellus\_68 Start: 58358, Stop: 58606, Start Num: 36

Candidate Starts for Mortcellus\_68:

(2, 58097), (3, 58115), (4, 58127), (7, 58172), (21, 58307), (26, 58319), (29, 58337), (Start: 33 @58349 has 33 MA's), (Start: 36 @58358 has 24 MA's), (39, 58367), (73, 58511), (84, 58568),

Gene: Morty007\_67 Start: 58277, Stop: 58441, Start Num: 65

Candidate Starts for Morty007\_67:

(12, 58082), (Start: 42 @58208 has 1 MA's), (Start: 45 @58217 has 1 MA's), (Start: 49 @58226 has 6 MA's), (Start: 65 @58277 has 1 MA's), (84, 58403),

Gene: Mulaychimus\_69 Start: 57713, Stop: 57961, Start Num: 36

Candidate Starts for Mulaychimus\_69:

(2, 57452), (3, 57470), (4, 57482), (7, 57527), (21, 57662), (26, 57674), (29, 57692), (Start: 33 @57704 has 33 MA's), (Start: 36 @57713 has 24 MA's), (39, 57722), (73, 57866), (84, 57923),

Gene: Mysterious\_65 Start: 58405, Stop: 58593, Start Num: 59

Candidate Starts for Mysterious\_65:

(Start: 32 @58336 has 2 MA's), (Start: 36 @58345 has 24 MA's), (Start: 59 @58405 has 33 MA's), (62, 58411), (68, 58447), (73, 58489), (82, 58543),

Gene: NHagos\_59 Start: 49828, Stop: 50055, Start Num: 38

Candidate Starts for NHagos\_59:

(Start: 38 @49828 has 2 MA's), (40, 49831), (Start: 44 @49837 has 9 MA's), (55, 49864), (79, 49987), (80, 49996), (86, 50023),

Gene: Nangang\_66 Start: 58493, Stop: 58675, Start Num: 62

Candidate Starts for Nangang\_66:

(25, 58391), (Start: 32 @58418 has 2 MA's), (Start: 36 @58427 has 24 MA's), (62, 58493), (74, 58574), (82, 58625), (85, 58640), (89, 58649), (90, 58661),

Gene: Nathan\_68 Start: 57281, Stop: 57460, Start Num: 59

Candidate Starts for Nathan\_68:

(20, 57158), (Start: 36 @57212 has 24 MA's), (Start: 59 @57281 has 33 MA's), (68, 57323),

Gene: Neos5\_68 Start: 57688, Stop: 57903, Start Num: 49

Candidate Starts for Neos5\_68:

(12, 57544), (Start: 42 @57670 has 1 MA's), (Start: 45 @57679 has 1 MA's), (Start: 49 @57688 has 6 MA's), (Start: 65 @57739 has 1 MA's), (84, 57865),

Gene: Obutu\_70 Start: 57908, Stop: 58123, Start Num: 49

Candidate Starts for Obutu\_70:

(12, 57764), (Start: 42 @57890 has 1 MA's), (Start: 45 @57899 has 1 MA's), (Start: 49 @57908 has 6 MA's), (Start: 65 @57959 has 1 MA's), (84, 58085),

Gene: Olivio\_68 Start: 57508, Stop: 57756, Start Num: 36

Candidate Starts for Olivio\_68:

(2, 57247), (3, 57265), (4, 57277), (7, 57322), (21, 57457), (26, 57469), (29, 57487), (Start: 33 @57499 has 33 MA's), (Start: 36 @57508 has 24 MA's), (39, 57517), (73, 57661), (84, 57718),

Gene: Opia\_65 Start: 55480, Stop: 55740, Start Num: 33

Candidate Starts for Opia\_65:

(Start: 33 @55480 has 33 MA's), (Start: 36 @55489 has 24 MA's), (Start: 52 @55534 has 6 MA's), (Start: 61 @55561 has 1 MA's), (Start: 67 @55588 has 1 MA's), (71, 55615), (77, 55657), (81, 55690), (83, 55699), (85, 55711),

Gene: Phaedrus\_63 Start: 56718, Stop: 56966, Start Num: 36

Candidate Starts for Phaedrus\_63:

(2, 56457), (3, 56475), (4, 56487), (7, 56532), (21, 56667), (26, 56679), (29, 56697), (Start: 33 @56709 has 33 MA's), (Start: 36 @56718 has 24 MA's), (39, 56727), (73, 56871), (84, 56928),

Gene: Phantasmagoria\_63 Start: 55526, Stop: 55732, Start Num: 52

Candidate Starts for Phantasmagoria\_63:

(Start: 33 @55472 has 33 MA's), (Start: 36 @55481 has 24 MA's), (Start: 52 @55526 has 6 MA's), (Start: 61 @55553 has 1 MA's), (Start: 67 @55580 has 1 MA's), (71, 55607), (77, 55649), (81, 55682), (83, 55691), (85, 55703),

Gene: Phareon\_66 Start: 56635, Stop: 56814, Start Num: 59

Candidate Starts for Phareon\_66:

(20, 56512), (Start: 36 @56566 has 24 MA's), (Start: 59 @56635 has 33 MA's), (68, 56677),

Gene: Phayeta\_71 Start: 57812, Stop: 58027, Start Num: 49

Candidate Starts for Phayeta\_71:

(12, 57668), (Start: 42 @57794 has 1 MA's), (Start: 45 @57803 has 1 MA's), (Start: 49 @57812 has 6 MA's), (Start: 65 @57863 has 1 MA's), (84, 57989),

Gene: Phelemich\_64 Start: 58168, Stop: 58425, Start Num: 32

Candidate Starts for Phelemich\_64:

(25, 58141), (Start: 32 @58168 has 2 MA's), (Start: 36 @58177 has 24 MA's), (Start: 59 @58237 has 33 MA's), (62, 58243), (68, 58279), (73, 58321), (82, 58375),

Gene: Pipefish\_71 Start: 58442, Stop: 58660, Start Num: 45

Candidate Starts for Pipefish\_71:

(11, 58295), (26, 58382), (29, 58400), (Start: 45 @58442 has 1 MA's), (Start: 49 @58451 has 6 MA's), (60, 58487), (69, 58529), (73, 58565), (84, 58622),

Gene: Potter\_65 Start: 56927, Stop: 57106, Start Num: 59

Candidate Starts for Potter\_65:

(20, 56804), (Start: 36 @56858 has 24 MA's), (Start: 59 @56927 has 33 MA's), (68, 56969),

Gene: PrinceCharming\_65 Start: 55515, Stop: 55775, Start Num: 33

Candidate Starts for PrinceCharming\_65:

(Start: 33 @55515 has 33 MA's), (Start: 36 @55524 has 24 MA's), (Start: 52 @55569 has 6 MA's),  
(Start: 61 @55596 has 1 MA's), (Start: 67 @55623 has 1 MA's), (71, 55650), (77, 55692), (81, 55725),  
(83, 55734), (85, 55746),

Gene: Qyrzula\_58 Start: 55591, Stop: 55851, Start Num: 33

Candidate Starts for Qyrzula\_58:

(Start: 33 @55591 has 33 MA's), (Start: 36 @55600 has 24 MA's), (Start: 52 @55645 has 6 MA's),  
(Start: 61 @55672 has 1 MA's), (Start: 67 @55699 has 1 MA's), (71, 55726), (77, 55768), (81, 55801),  
(83, 55810), (85, 55822),

Gene: Reccee\_67 Start: 58488, Stop: 58670, Start Num: 62

Candidate Starts for Reccee\_67:

(25, 58386), (Start: 32 @58413 has 2 MA's), (Start: 36 @58422 has 24 MA's), (62, 58488), (73, 58566),  
(76, 58578), (82, 58620), (90, 58656),

Gene: RedRaider89\_67 Start: 57358, Stop: 57537, Start Num: 59

Candidate Starts for RedRaider89\_67:

(20, 57235), (Start: 36 @57289 has 24 MA's), (Start: 59 @57358 has 33 MA's), (68, 57400),

Gene: Reprobate\_65 Start: 58173, Stop: 58430, Start Num: 32

Candidate Starts for Reprobate\_65:

(25, 58146), (Start: 32 @58173 has 2 MA's), (Start: 36 @58182 has 24 MA's), (Start: 59 @58242 has  
33 MA's), (62, 58248), (68, 58284), (73, 58326), (82, 58380),

Gene: Rhinoforte\_64 Start: 55513, Stop: 55773, Start Num: 33

Candidate Starts for Rhinoforte\_64:

(Start: 33 @55513 has 33 MA's), (Start: 36 @55522 has 24 MA's), (Start: 52 @55567 has 6 MA's),  
(Start: 61 @55594 has 1 MA's), (Start: 67 @55621 has 1 MA's), (71, 55648), (77, 55690), (81, 55723),  
(83, 55732), (85, 55744),

Gene: Rich\_66 Start: 59397, Stop: 59645, Start Num: 36

Candidate Starts for Rich\_66:

(25, 59361), (Start: 32 @59388 has 2 MA's), (Start: 36 @59397 has 24 MA's), (62, 59463), (72, 59526),  
(73, 59541), (82, 59595), (90, 59631), (92, 59640),

Gene: Rita130\_66 Start: 58235, Stop: 58483, Start Num: 36

Candidate Starts for Rita130\_66:

(25, 58199), (Start: 32 @58226 has 2 MA's), (Start: 36 @58235 has 24 MA's), (62, 58301), (73, 58379),  
(76, 58391), (82, 58433), (90, 58469),

Gene: Rosebush\_63 Start: 55576, Stop: 55836, Start Num: 33

Candidate Starts for Rosebush\_63:

(Start: 33 @55576 has 33 MA's), (Start: 36 @55585 has 24 MA's), (Start: 52 @55630 has 6 MA's),  
(Start: 61 @55657 has 1 MA's), (Start: 67 @55684 has 1 MA's), (71, 55711), (77, 55753), (81, 55786),  
(83, 55795), (85, 55807),

Gene: Sabella\_64 Start: 55412, Stop: 55672, Start Num: 33

Candidate Starts for Sabella\_64:

(Start: 33 @55412 has 33 MA's), (Start: 36 @55421 has 24 MA's), (Start: 52 @55466 has 6 MA's), (Start: 61 @55493 has 1 MA's), (Start: 67 @55520 has 1 MA's), (71, 55547), (77, 55589), (81, 55622), (83, 55631), (85, 55643),

Gene: Scrick\_67 Start: 56929, Stop: 57108, Start Num: 59

Candidate Starts for Scrick\_67:

(20, 56806), (Start: 36 @56860 has 24 MA's), (Start: 59 @56929 has 33 MA's), (68, 56971),

Gene: Serendipitous\_65 Start: 57769, Stop: 58026, Start Num: 36

Candidate Starts for Serendipitous\_65:

(15, 57688), (34, 57763), (Start: 36 @57769 has 24 MA's), (71, 57895), (73, 57922), (82, 57976),

Gene: Shatter\_62 Start: 50626, Stop: 50826, Start Num: 44

Candidate Starts for Shatter\_62:

(Start: 30 @50590 has 1 MA's), (Start: 44 @50626 has 9 MA's), (72, 50728), (80, 50788), (87, 50815),

Gene: Sheila\_64 Start: 56299, Stop: 56478, Start Num: 59

Candidate Starts for Sheila\_64:

(20, 56176), (Start: 36 @56230 has 24 MA's), (Start: 59 @56299 has 33 MA's), (68, 56341),

Gene: Shenandoah\_67 Start: 56910, Stop: 57158, Start Num: 36

Candidate Starts for Shenandoah\_67:

(2, 56649), (3, 56667), (4, 56679), (7, 56724), (21, 56859), (26, 56871), (29, 56889), (Start: 33 @56901 has 33 MA's), (Start: 36 @56910 has 24 MA's), (39, 56919), (73, 57063), (84, 57120),

Gene: Shenyu\_67 Start: 58862, Stop: 59044, Start Num: 62

Candidate Starts for Shenyu\_67:

(25, 58760), (Start: 32 @58787 has 2 MA's), (Start: 36 @58796 has 24 MA's), (62, 58862), (74, 58943), (82, 58994), (85, 59009), (89, 59018), (90, 59030),

Gene: SirJeffery\_66 Start: 58371, Stop: 58619, Start Num: 36

Candidate Starts for SirJeffery\_66:

(25, 58335), (Start: 32 @58362 has 2 MA's), (Start: 36 @58371 has 24 MA's), (62, 58437), (73, 58515), (82, 58569), (85, 58584), (90, 58605),

Gene: Sisko\_60 Start: 50847, Stop: 51044, Start Num: 44

Candidate Starts for Sisko\_60:

(Start: 44 @50847 has 9 MA's), (69, 50925), (72, 50946), (80, 51006), (87, 51033),

Gene: SlippinJimmy\_71 Start: 58709, Stop: 58924, Start Num: 49

Candidate Starts for SlippinJimmy\_71:

(12, 58565), (Start: 42 @58691 has 1 MA's), (Start: 45 @58700 has 1 MA's), (Start: 49 @58709 has 6 MA's), (Start: 65 @58760 has 1 MA's), (84, 58886),

Gene: Sour\_62 Start: 53064, Stop: 53273, Start Num: 44

Candidate Starts for Sour\_62:

(Start: 30 @53028 has 1 MA's), (Start: 44 @53064 has 9 MA's), (69, 53154), (80, 53235), (87, 53262),

Gene: StinkyVeggy\_66 Start: 58294, Stop: 58476, Start Num: 62

Candidate Starts for StinkyVeggy\_66:

(25, 58192), (Start: 32 @58219 has 2 MA's), (Start: 36 @58228 has 24 MA's), (62, 58294), (74, 58375), (82, 58426), (85, 58441), (89, 58450), (90, 58462),

Gene: Struggle\_68 Start: 56927, Stop: 57169, Start Num: 36

Candidate Starts for Struggle\_68:

(Start: 33 @56918 has 33 MA's), (Start: 36 @56927 has 24 MA's), (Start: 61 @56990 has 1 MA's), (Start: 67 @57017 has 1 MA's), (85, 57140),

Gene: SwainyDoc\_69 Start: 57674, Stop: 57922, Start Num: 36

Candidate Starts for SwainyDoc\_69:

(2, 57413), (3, 57431), (4, 57443), (7, 57488), (21, 57623), (26, 57635), (29, 57653), (Start: 33 @57665 has 33 MA's), (Start: 36 @57674 has 24 MA's), (39, 57683), (73, 57827), (84, 57884),

Gene: TA17A\_66 Start: 55418, Stop: 55678, Start Num: 33

Candidate Starts for TA17A\_66:

(Start: 33 @55418 has 33 MA's), (Start: 36 @55427 has 24 MA's), (Start: 52 @55472 has 6 MA's), (Start: 61 @55499 has 1 MA's), (Start: 67 @55526 has 1 MA's), (71, 55553), (77, 55595), (81, 55628), (83, 55637), (85, 55649),

Gene: Thonko\_67 Start: 56230, Stop: 56466, Start Num: 46

Candidate Starts for Thonko\_67:

(1, 55804), (5, 55999), (8, 56032), (22, 56158), (31, 56191), (Start: 33 @56197 has 33 MA's), (Start: 46 @56230 has 1 MA's), (53, 56260), (69, 56326), (72, 56347), (73, 56362),

Gene: Tinciduntolum\_65 Start: 55579, Stop: 55839, Start Num: 33

Candidate Starts for Tinciduntolum\_65:

(Start: 33 @55579 has 33 MA's), (Start: 36 @55588 has 24 MA's), (Start: 52 @55633 has 6 MA's), (Start: 67 @55687 has 1 MA's), (71, 55714), (77, 55756), (81, 55789), (83, 55798), (85, 55810),

Gene: TooFast2Furius\_69 Start: 57172, Stop: 57351, Start Num: 59

Candidate Starts for TooFast2Furius\_69:

(20, 57049), (Start: 36 @57103 has 24 MA's), (Start: 59 @57172 has 33 MA's), (68, 57214),

Gene: TraderJ\_62 Start: 51541, Stop: 51786, Start Num: 49

Candidate Starts for TraderJ\_62:

(6, 51304), (9, 51370), (10, 51376), (14, 51412), (16, 51424), (17, 51436), (19, 51448), (Start: 45 @51532 has 1 MA's), (Start: 49 @51541 has 6 MA's), (57, 51571), (58, 51574), (Start: 67 @51604 has 1 MA's), (72, 51643), (80, 51703), (93, 51769), (94, 51775),

Gene: Tres\_64 Start: 55433, Stop: 55693, Start Num: 33

Candidate Starts for Tres\_64:

(Start: 33 @55433 has 33 MA's), (Start: 36 @55442 has 24 MA's), (Start: 52 @55487 has 6 MA's), (Start: 61 @55514 has 1 MA's), (Start: 67 @55541 has 1 MA's), (71, 55568), (77, 55610), (81, 55643), (83, 55652), (85, 55664),

Gene: Tydolla\_65 Start: 57176, Stop: 57418, Start Num: 37

Candidate Starts for Tydolla\_65:

(13, 57080), (26, 57134), (Start: 37 @57176 has 2 MA's), (43, 57188), (69, 57290), (73, 57326), (84, 57383),

Gene: UAch1\_68 Start: 57127, Stop: 57306, Start Num: 61

Candidate Starts for UAch1\_68:

(28, 57034), (Start: 33 @57055 has 33 MA's), (Start: 36 @57064 has 24 MA's), (Start: 61 @57127 has 1 MA's), (Start: 67 @57154 has 1 MA's), (85, 57277),

Gene: Usavi\_69 Start: 57492, Stop: 57734, Start Num: 36

Candidate Starts for Usavi\_69:

(28, 57462), (Start: 33 @57483 has 33 MA's), (Start: 36 @57492 has 24 MA's), (Start: 61 @57555 has 1 MA's), (Start: 67 @57582 has 1 MA's), (85, 57705),

Gene: Vic9\_00063 Start: 56338, Stop: 56544, Start Num: 52

Candidate Starts for Vic9\_00063:

(Start: 33 @56284 has 33 MA's), (Start: 36 @56293 has 24 MA's), (Start: 52 @56338 has 6 MA's), (Start: 61 @56365 has 1 MA's), (Start: 67 @56392 has 1 MA's), (71, 56419), (77, 56461), (81, 56494), (83, 56503), (85, 56515),

Gene: West99\_64 Start: 55606, Stop: 55866, Start Num: 33

Candidate Starts for West99\_64:

(Start: 33 @55606 has 33 MA's), (Start: 36 @55615 has 24 MA's), (Start: 52 @55660 has 6 MA's), (Start: 61 @55687 has 1 MA's), (Start: 67 @55714 has 1 MA's), (71, 55741), (77, 55783), (81, 55816), (83, 55825), (85, 55837),

Gene: Wooper\_63 Start: 51561, Stop: 51731, Start Num: 56

Candidate Starts for Wooper\_63:

(Start: 51 @51552 has 3 MA's), (Start: 56 @51561 has 3 MA's), (80, 51693), (87, 51720),

Gene: Yago84\_59 Start: 50332, Stop: 50529, Start Num: 44

Candidate Starts for Yago84\_59:

(Start: 44 @50332 has 9 MA's), (69, 50410), (72, 50431), (80, 50491), (87, 50518),

Gene: Yahalom\_66 Start: 57095, Stop: 57343, Start Num: 36

Candidate Starts for Yahalom\_66:

(2, 56834), (3, 56852), (4, 56864), (7, 56909), (21, 57044), (26, 57056), (29, 57074), (Start: 33 @57086 has 33 MA's), (Start: 36 @57095 has 24 MA's), (39, 57104), (73, 57248), (84, 57305),

Gene: Yeshua\_62 Start: 51529, Stop: 51708, Start Num: 51

Candidate Starts for Yeshua\_62:

(Start: 51 @51529 has 3 MA's), (Start: 56 @51538 has 3 MA's), (80, 51670), (87, 51697),

Gene: Zaider\_69 Start: 57303, Stop: 57545, Start Num: 36

Candidate Starts for Zaider\_69:

(28, 57273), (Start: 33 @57294 has 33 MA's), (Start: 36 @57303 has 24 MA's), (Start: 61 @57366 has 1 MA's), (Start: 67 @57393 has 1 MA's), (85, 57516),

Gene: Zenteno07\_73 Start: 58751, Stop: 59014, Start Num: 36

Candidate Starts for Zenteno07\_73:

(15, 58664), (24, 58709), (Start: 33 @58742 has 33 MA's), (Start: 36 @58751 has 24 MA's), (50, 58790), (Start: 61 @58817 has 1 MA's), (62, 58820), (64, 58826), (Start: 67 @58844 has 1 MA's), (72, 58883), (91, 58994),