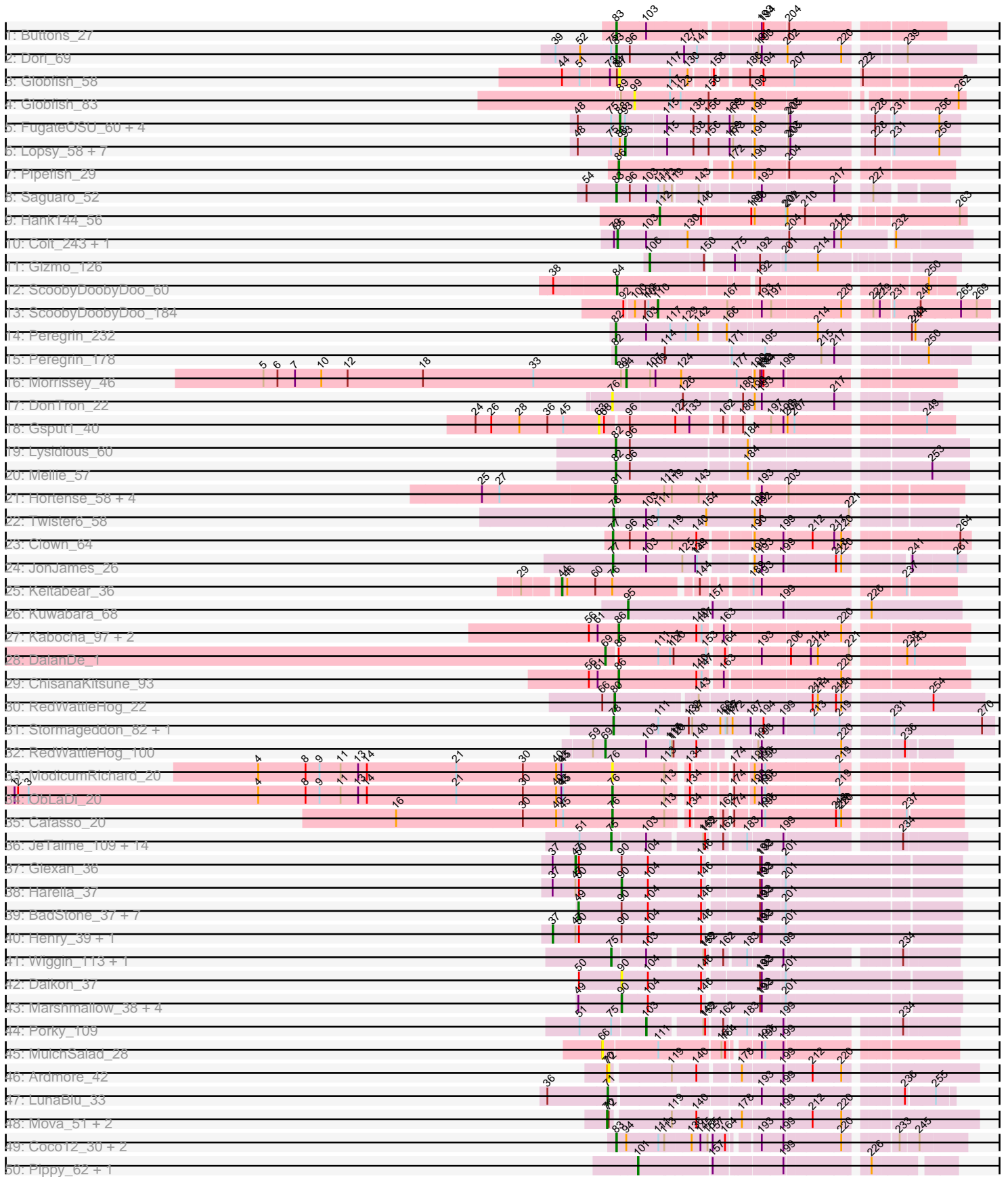
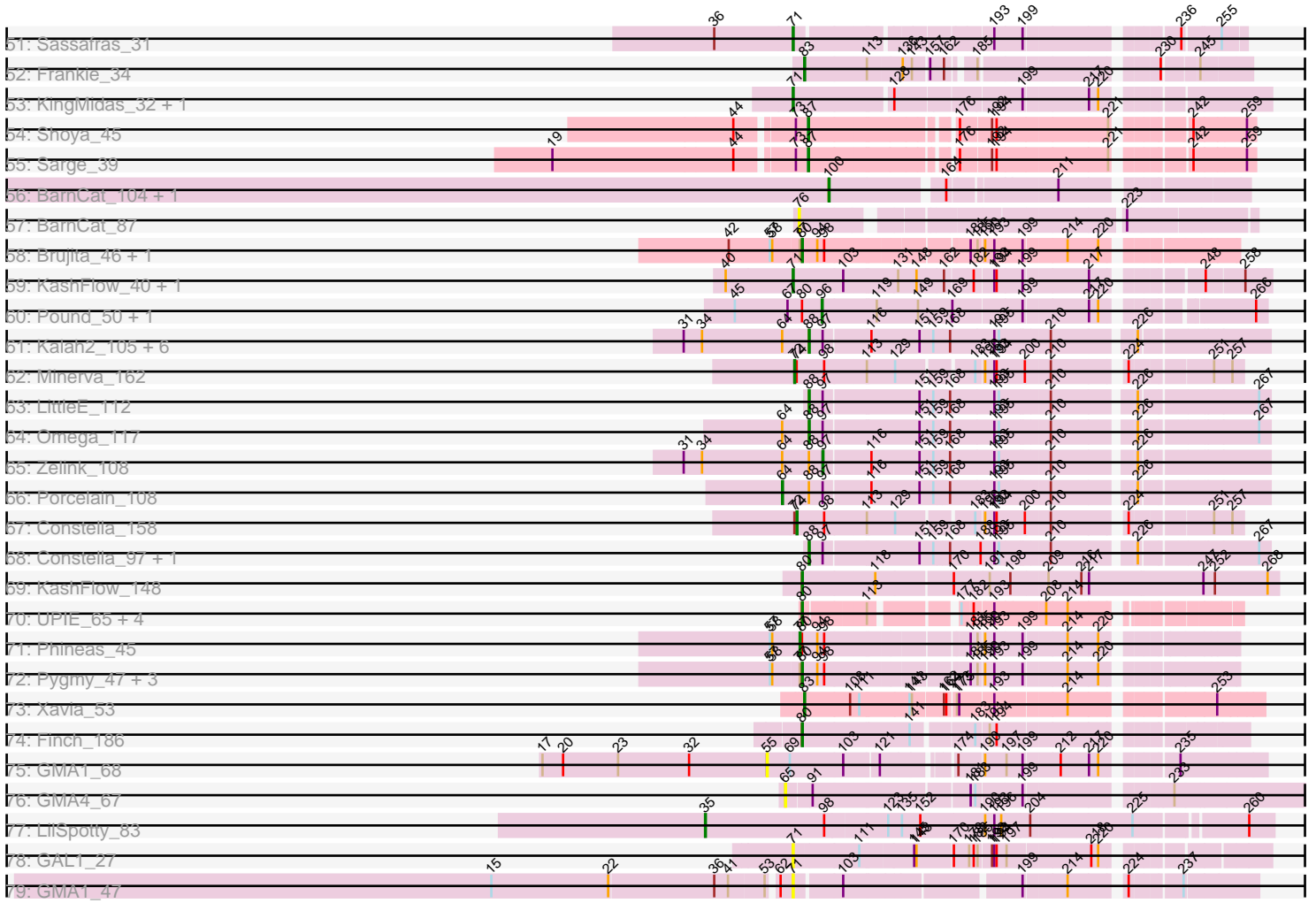


Pham 171256



Pham 171256



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 171256 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171256 has 149 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Buttons\_27
- Track 2 : Dori\_69
- Track 3 : Globfish\_58
- Track 4 : Globfish\_83
- Track 5 : FugateOSU\_60, Placalicious\_60, Orfeu\_59, Toni\_59, LostAndPhound\_60
- Track 6 : Lopsy\_58, Buckeye\_60, LeiMonet\_62, Coletti\_62, KingTut\_52, Adriana\_61, Matalotodo\_59, Podrick\_58
- Track 7 : Pipefish\_29
- Track 8 : Saguaro\_52
- Track 9 : Hank144\_56
- Track 10 : Colt\_243, Cane17\_242
- Track 11 : Gizmo\_126
- Track 12 : ScoobyDoobyDoo\_60
- Track 13 : ScoobyDoobyDoo\_184
- Track 14 : Peregrin\_232
- Track 15 : Peregrin\_178
- Track 16 : Morrissey\_46
- Track 17 : DonTron\_22
- Track 18 : Gspu1\_40
- Track 19 : Lysidious\_60
- Track 20 : Mellie\_57
- Track 21 : Hortense\_58, Adora\_55, Shlim410\_56, Twinkle\_57, Howe\_58
- Track 22 : Twister6\_58
- Track 23 : Clown\_64
- Track 24 : JonJames\_26
- Track 25 : Keitabear\_36
- Track 26 : Kuwabara\_68
- Track 27 : Kabocha\_97, Chidiebere\_96, Schomber\_94
- Track 28 : DalanDe\_1
- Track 29 : ChisanaKitsune\_93
- Track 30 : RedWattleHog\_22
- Track 31 : Stormageddon\_82, RedWattleHog\_85
- Track 32 : RedWattleHog\_100
- Track 33 : ModicumRichard\_20
- Track 34 : ObLaDi\_20
- Track 35 : Cafasso\_20

- Track 36 : JeTaime\_109, Nimrod\_111, Kimchi\_115, Teaspoon\_111, Goku\_110, 244\_112, BaboJay\_110, BigBubba\_112, Stank\_113, Icee\_112, Filch\_113, TBrady12\_114, Xandras\_110, Goldilocks\_114, Holt\_116
- Track 37 : Glexan\_36
- Track 38 : Harella\_37
- Track 39 : BadStone\_37, ABCat\_37, Tuco\_39, DrDrey\_39, BilboSwaggins\_38, Myrale\_38, ShamWow\_38, Dusk\_37
- Track 40 : Henry\_39, Gator\_36
- Track 41 : Wiggin\_113, Marshmallow\_109
- Track 42 : Daikon\_37
- Track 43 : Marshmallow\_38, Teaspoon\_39, Balomoji\_37, Pumpkin\_40, Toto\_38
- Track 44 : Porky\_109
- Track 45 : MulchSalad\_28
- Track 46 : Ardmore\_42
- Track 47 : LunaBlu\_33
- Track 48 : Mova\_51, Bobi\_53, Mutaforma13\_54
- Track 49 : Coco12\_30, Starcevich\_34, JalFarm20\_33
- Track 50 : Pippy\_62, Maravista\_65
- Track 51 : Sassafras\_31
- Track 52 : Frankie\_34
- Track 53 : KingMidas\_32, Leozinho\_32
- Track 54 : Shoya\_45
- Track 55 : Sarge\_39
- Track 56 : BarnCat\_104, LeeroyJenkins\_114
- Track 57 : BarnCat\_87
- Track 58 : Brujita\_46, Island3\_46
- Track 59 : KashFlow\_40, Hannaconda\_43
- Track 60 : Pound\_50, Bombitas\_45
- Track 61 : Kalah2\_105, Phoebus\_113, Dallas\_113, EricMillard\_105, Hughesyang\_111, ThreeRngTarjay\_109, DmpstrDiver\_113
- Track 62 : Minerva\_162
- Track 63 : LittleE\_112
- Track 64 : Omega\_117
- Track 65 : Zelink\_108
- Track 66 : Porcelain\_108
- Track 67 : Constella\_158
- Track 68 : Constella\_97, Thibault\_95
- Track 69 : KashFlow\_148
- Track 70 : UPIE\_65, Enceladus\_63, JoeDirt\_64, Rose5\_65, Wamburgrxpress\_65
- Track 71 : Phineas\_45
- Track 72 : Pygmy\_47, Bogie\_47, Shipwreck\_47, HUHilltop\_45
- Track 73 : Xavia\_53
- Track 74 : Finch\_186
- Track 75 : GMA1\_68
- Track 76 : GMA4\_67
- Track 77 : LilSpotty\_83
- Track 78 : GAL1\_27
- Track 79 : GMA1\_47

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

The start number called the most often in the published annotations is 75, it was called in 17 of the 130 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_112, BaboJay\_110, BigBubba\_112, Filch\_113, Goku\_110, Goldilocks\_114, Holt\_116, Icee\_112, JeTaime\_109, Kimchi\_115, Marshmallow\_109, Nimrod\_111, Stank\_113, TBrady12\_114, Teaspoon\_111, Wiggin\_113, Xandras\_110,

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

- Adriana\_61, Buckeye\_60, Coletti\_62, Dori\_69, FugateOSU\_60, KingTut\_52, LeiMonet\_62, Lopsy\_58, LostAndPhound\_60, Matalotodo\_59, Orfeu\_59, Placalicious\_60, Podrick\_58, Porky\_109, Toni\_59,

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

- ABCat\_37, Adora\_55, Ardmore\_42, BadStone\_37, Balomoji\_37, BarnCat\_104, BarnCat\_87, BilboSwaggins\_38, Bobi\_53, Bogie\_47, Bombitas\_45, Brujita\_46, Buttons\_27, Cafasso\_20, Cane17\_242, Chidiebere\_96, ChisanaKitsune\_93, Clown\_64, Coco12\_30, Colt\_243, Constella\_158, Constella\_97, Daikon\_37, DalanDe\_1, Dallas\_113, DmpstrDiver\_113, DonTron\_22, DrDrey\_39, Dusk\_37, Enceladus\_63, EricMillard\_105, Finch\_186, Frankie\_34, GAL1\_27, GMA1\_47, GMA1\_68, GMA4\_67, Gator\_36, Gizmo\_126, Glexan\_36, Globfish\_58, Globfish\_83, Gsput1\_40, HUHilltop\_45, Hank144\_56, Hannaconda\_43, Harella\_37, Henry\_39, Hortense\_58, Howe\_58, Hughesyang\_111, Island3\_46, JalFarm20\_33, JoeDirt\_64, JonJames\_26, Kabocha\_97, Kalah2\_105, KashFlow\_148, KashFlow\_40, Keitabear\_36, KingMidas\_32, Kuwabara\_68, LeeroyJenkins\_114, Leozinho\_32, LilSpotty\_83, LittleE\_112, LunaBlu\_33, Lysidious\_60, Maravista\_65, Marshmallow\_38, Mellie\_57, Minerva\_162, ModicumRichard\_20, Morrissey\_46, Mova\_51, MulchSalad\_28, Mutaforma13\_54, Myrale\_38, ObLaDi\_20, Omega\_117, Peregrin\_178, Peregrin\_232, Phineas\_45, Phoebus\_113, Pipefish\_29, Pippy\_62, Porcelain\_108, Pound\_50, Pumpkin\_40, Pygmy\_47, RedWattleHog\_100, RedWattleHog\_22, RedWattleHog\_85, Rose5\_65, Saguaro\_52, Sarge\_39, Sassafras\_31, Schomber\_94, ScoobyDoobyDoo\_184, ScoobyDoobyDoo\_60, ShamWow\_38, Shipwreck\_47, Shlim410\_56, Shoya\_45, Starcevich\_34, Stormageddon\_82, Teaspoon\_39, Thibault\_95, ThreeRngTarjay\_109, Toto\_38, Tuco\_39, Twinkle\_57, Twister6\_58, UPIE\_65, Wamburgxpress\_65, Xavia\_53, Zelink\_108,

### Summary by start number:

Start 35:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilSpotty\_83 (singleton),

Start 37:

- Found in 4 of 149 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 2 of 130
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Gator\_36 (E), Henry\_39 (E),

Start 44:

- Found in 4 of 149 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Keitabear\_36 (DE1),

Start 47:

- Found in 4 of 149 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Glexan\_36 (E),

Start 49:

- Found in 13 of 149 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 7 of 130
- Called 61.5% of time when present
- Phage (with cluster) where this start called: ABCat\_37 (E), BadStone\_37 (E), BilboSwaggins\_38 (E), DrDrey\_39 (E), Dusk\_37 (E), Myrale\_38 (E), ShamWow\_38 (E), Tuco\_39 (E),

Start 55:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA1\_68 (singleton),

Start 63:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gsput1\_40 (CU2),

Start 64:

- Found in 10 of 149 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Porcelain\_108 (J),

Start 65:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4\_67 (singleton),

Start 66:

- Found in 2 of 149 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MulchSalad\_28 (F),

Start 69:

- Found in 3 of 149 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 130
- Called 66.7% of time when present

- Phage (with cluster) where this start called: DalanDe\_1 (DQ), RedWattleHog\_100 (DX),

#### Start 70:

- Found in 4 of 149 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 3 of 130
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Bobi\_53 (F1), Mova\_51 (F1), Mutaforma13\_54 (F1),

#### Start 71:

- Found in 8 of 149 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 6 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GAL1\_27 (singleton), GMA1\_47 (singleton), Hannaconda\_43 (J), KashFlow\_40 (J), KingMidas\_32 (F1), Leozinho\_32 (F1), LunaBlu\_33 (F1), Sassafras\_31 (F1),

#### Start 72:

- Found in 6 of 149 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Ardmore\_42 (F1), Minerva\_162 (J),

#### Start 74:

- Found in 2 of 149 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Constella\_158 (J),

#### Start 75:

- Found in 32 of 149 ( 21.5% ) of genes in pham
- Manual Annotations of this start: 17 of 130
- Called 53.1% of time when present
- Phage (with cluster) where this start called: 244\_112 (E), BaboJay\_110 (E), BigBubba\_112 (E), Filch\_113 (E), Goku\_110 (E), Goldilocks\_114 (E), Holt\_116 (E), Icee\_112 (E), JeTaime\_109 (E), Kimchi\_115 (E), Marshmallow\_109 (E), Nimrod\_111 (E), Stank\_113 (E), TBrady12\_114 (E), Teaspoon\_111 (E), Wiggin\_113 (E), Xandras\_110 (E),

#### Start 76:

- Found in 6 of 149 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 2 of 130
- Called 83.3% of time when present
- Phage (with cluster) where this start called: BarnCat\_87 (GB), Cafasso\_20 (DZ), DonTron\_22 (CP), ModicumRichard\_20 (DZ), ObLaDi\_20 (DZ),

#### Start 77:

- Found in 9 of 149 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 3 of 130
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Clown\_64 (DC2), JonJames\_26 (DD), Phineas\_45 (P1),

Start 78:

- Found in 3 of 149 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 3 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog\_85 (DX), Stormageddon\_82 (DX), Twister6\_58 (DC1),

Start 80:

- Found in 17 of 149 ( 11.4% ) of genes in pham
- Manual Annotations of this start: 14 of 130
- Called 82.4% of time when present
- Phage (with cluster) where this start called: Bogie\_47 (P1), Brujita\_46 (I1), Enceladus\_63 (L1), Finch\_186 (singleton), HUHilltop\_45 (P1), Island3\_46 (I1), JoeDirt\_64 (L1), KashFlow\_148 (J), Pygmy\_47 (P1), RedWattleHog\_22 (DX), Rose5\_65 (L1), Shipwreck\_47 (P1), UPIE\_65 (L1), Wamburgxpress\_65 (L1),

Start 81:

- Found in 5 of 149 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 5 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adora\_55 (CZ4), Hortense\_58 (CZ4), Howe\_58 (CZ4), Shlim410\_56 (CZ4), Twinkle\_57 (CZ4),

Start 82:

- Found in 4 of 149 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 4 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lysidious\_60 (CV), Mellie\_57 (CV), Peregrin\_178 (CB), Peregrin\_232 (CB),

Start 83:

- Found in 8 of 149 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 8 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Buttons\_27 (A1), Coco12\_30 (F1), Dori\_69 (AD), Frankie\_34 (F1), JalFarm20\_33 (F1), Saguario\_52 (B7), Starcevich\_34 (F1), Xavia\_53 (P3),

Start 84:

- Found in 2 of 149 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 50.0% of time when present
- Phage (with cluster) where this start called: ScoobyDoobyDoo\_60 (C2),

Start 85:

- Found in 2 of 149 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cane17\_242 (C1), Colt\_243 (C1),

Start 86:

- Found in 6 of 149 ( 4.0% ) of genes in pham



- Manual Annotations of this start: 5 of 130
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Chidiebere\_96 (DQ), ChisanaKitsune\_93 (DQ), Kabocha\_97 (DQ), Pipefish\_29 (B3), Schomber\_94 (DQ),

#### Start 87:

- Found in 3 of 149 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Globfish\_58 (AY), Sarge\_39 (FB), Shoya\_45 (FB),

#### Start 88:

- Found in 26 of 149 ( 17.4% ) of genes in pham
- Manual Annotations of this start: 15 of 130
- Called 61.5% of time when present
- Phage (with cluster) where this start called: Constella\_97 (J), Dallas\_113 (J), DmpstrDiver\_113 (J), EricMillard\_105 (J), FugateOSU\_60 (B1), Hughesyang\_111 (J), Kalah2\_105 (J), LittleE\_112 (J), LostAndPhound\_60 (B1), Omega\_117 (J), Orfeu\_59 (B1), Phoebus\_113 (J), Placalicious\_60 (B1), Thibault\_95 (J), ThreeRngTarjay\_109 (J), Toni\_59 (B1),

#### Start 90:

- Found in 18 of 149 ( 12.1% ) of genes in pham
- Manual Annotations of this start: 6 of 130
- Called 38.9% of time when present
- Phage (with cluster) where this start called: Balomoji\_37 (E), Daikon\_37 (E), Harella\_37 (E), Marshmallow\_38 (E), Pumpkin\_40 (E), Teaspoon\_39 (E), Toto\_38 (E),

#### Start 93:

- Found in 13 of 149 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 5 of 130
- Called 61.5% of time when present
- Phage (with cluster) where this start called: Adriana\_61 (B1), Buckeye\_60 (B1), Coletti\_62 (B1), KingTut\_52 (B1), LeiMonet\_62 (B1), Lopsy\_58 (B1), Matalotodo\_59 (B1), Podrick\_58 (B1),

#### Start 94:

- Found in 11 of 149 ( 7.4% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Morrissey\_46 (CD),

#### Start 95:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kuwabara\_68 (DN4),

#### Start 96:

- Found in 8 of 149 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 2 of 130

- Called 25.0% of time when present
- Phage (with cluster) where this start called: Bombitas\_45 (J), Pound\_50 (J),

Start 97:

- Found in 13 of 149 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Zelink\_108 (J),

Start 99:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Globfish\_83 (AY),

Start 100:

- Found in 3 of 149 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 66.7% of time when present
- Phage (with cluster) where this start called: BarnCat\_104 (GB), LeeroyJenkins\_114 (GB),

Start 101:

- Found in 2 of 149 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Maravista\_65 (F1), Pippy\_62 (F1),

Start 103:

- Found in 31 of 149 ( 20.8% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 3.2% of time when present
- Phage (with cluster) where this start called: Porky\_109 (E),

Start 106:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gizmo\_126 (C1),

Start 110:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ScoobyDoobyDoo\_184 (C2),

Start 112:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 130
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hank144\_56 (BD2),

**Summary by clusters:**

There are 34 clusters represented in this pham: singleton, DD, CZ4, FB, DZ, DX, DQ, CU2, I1, A1, DN4, BD2, C2, C1, P3, P1, E, AD, F, CB, J, CD, GB, L1, AY, CP, DC2, CV, DC1, F1, DE1, B7, B1, B3,

Info for manual annotations of cluster A1:

- Start number 83 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster AD:

- Start number 83 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster B1:

- Start number 88 was manually annotated 4 times for cluster B1.
- Start number 93 was manually annotated 5 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 86 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster B7:

- Start number 83 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster BD2:

- Start number 112 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster C1:

- Start number 85 was manually annotated 2 times for cluster C1.
- Start number 106 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster C2:

- Start number 84 was manually annotated 1 time for cluster C2.
- Start number 110 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster CB:

- Start number 82 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CD:

- Start number 94 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CV:

- Start number 82 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CZ4:

- Start number 81 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster DC1:

- Start number 78 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 77 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DD:

- Start number 77 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 44 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster DN4:

- Start number 95 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DQ:

- Start number 69 was manually annotated 1 time for cluster DQ.
- Start number 86 was manually annotated 4 times for cluster DQ.

Info for manual annotations of cluster DX:

- Start number 69 was manually annotated 1 time for cluster DX.
- Start number 78 was manually annotated 2 times for cluster DX.
- Start number 80 was manually annotated 1 time for cluster DX.

Info for manual annotations of cluster DZ:

- Start number 76 was manually annotated 2 times for cluster DZ.

Info for manual annotations of cluster E:

- Start number 37 was manually annotated 2 times for cluster E.
- Start number 47 was manually annotated 1 time for cluster E.
- Start number 49 was manually annotated 7 times for cluster E.
- Start number 75 was manually annotated 17 times for cluster E.
- Start number 90 was manually annotated 6 times for cluster E.
- Start number 103 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster F1:

- Start number 70 was manually annotated 3 times for cluster F1.
- Start number 71 was manually annotated 4 times for cluster F1.
- Start number 83 was manually annotated 4 times for cluster F1.
- Start number 101 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster FB:

- Start number 87 was manually annotated 2 times for cluster FB.

Info for manual annotations of cluster GB:

- Start number 100 was manually annotated 1 time for cluster GB.

Info for manual annotations of cluster I1:

- Start number 80 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 64 was manually annotated 1 time for cluster J.
- Start number 71 was manually annotated 2 times for cluster J.
- Start number 72 was manually annotated 1 time for cluster J.
- Start number 74 was manually annotated 1 time for cluster J.
- Start number 80 was manually annotated 1 time for cluster J.
- Start number 88 was manually annotated 11 times for cluster J.
- Start number 96 was manually annotated 2 times for cluster J.

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

Info for manual annotations of cluster L1:

- Start number 80 was manually annotated 5 times for cluster L1.

Info for manual annotations of cluster P1:

- Start number 77 was manually annotated 1 time for cluster P1.
- Start number 80 was manually annotated 4 times for cluster P1.

Info for manual annotations of cluster P3:

- Start number 83 was manually annotated 1 time for cluster P3.

### **Gene Information:**

Gene: 244\_112 Start: 62827, Stop: 63327, Start Num: 75

Candidate Starts for 244\_112:

(51, 62773), (Start: 75 @62827 has 17 MA's), (Start: 103 @62881 has 1 MA's), (149, 62962), (152, 62965), (162, 62989), (183, 63022), (199, 63079), (234, 63241),

Gene: ABCat\_37 Start: 34121, Stop: 33534, Start Num: 49

Candidate Starts for ABCat\_37:

(Start: 49 @34121 has 7 MA's), (Start: 90 @34055 has 6 MA's), (104, 34013), (146, 33926), (192, 33848), (193, 33845), (201, 33809),

Gene: Adora\_55 Start: 40141, Stop: 40647, Start Num: 81

Candidate Starts for Adora\_55:

(25, 39916), (27, 39946), (Start: 81 @40141 has 5 MA's), (113, 40216), (119, 40228), (143, 40270), (193, 40357), (203, 40396),

Gene: Adriana\_61 Start: 53245, Stop: 52730, Start Num: 93

Candidate Starts for Adriana\_61:

(48, 53323), (Start: 75 @53269 has 17 MA's), (Start: 88 @53254 has 15 MA's), (Start: 93 @53245 has 5 MA's), (115, 53179), (138, 53134), (156, 53110), (169, 53074), (173, 53068), (190, 53035), (203, 52981), (205, 52978), (228, 52861), (231, 52840), (256, 52765),

Gene: Ardmore\_42 Start: 34484, Stop: 35032, Start Num: 72

Candidate Starts for Ardmore\_42:

(Start: 70 @34481 has 3 MA's), (Start: 72 @34484 has 1 MA's), (119, 34574), (140, 34616), (178, 34676), (199, 34742), (212, 34784), (220, 34832),

Gene: BaboJay\_110 Start: 64000, Stop: 64500, Start Num: 75

Candidate Starts for BaboJay\_110:

(51, 63946), (Start: 75 @64000 has 17 MA's), (Start: 103 @64054 has 1 MA's), (149, 64135), (152, 64138), (162, 64162), (183, 64195), (199, 64252), (234, 64414),

Gene: BadStone\_37 Start: 34121, Stop: 33534, Start Num: 49

Candidate Starts for BadStone\_37:

(Start: 49 @34121 has 7 MA's), (Start: 90 @34055 has 6 MA's), (104, 34013), (146, 33926), (192, 33848), (193, 33845), (201, 33809),

Gene: Balomoji\_37 Start: 33789, Stop: 33268, Start Num: 90

Candidate Starts for Balomoji\_37:

(Start: 49 @33855 has 7 MA's), (Start: 90 @33789 has 6 MA's), (104, 33747), (146, 33660), (192, 33582), (193, 33579), (201, 33543),

Gene: BarnCat\_104 Start: 54966, Stop: 54505, Start Num: 100

Candidate Starts for BarnCat\_104:

(Start: 100 @54966 has 1 MA's), (164, 54837), (211, 54714),

Gene: BarnCat\_87 Start: 49536, Stop: 49024, Start Num: 76

Candidate Starts for BarnCat\_87:

(Start: 76 @49536 has 2 MA's), (223, 49179),

Gene: BigBubba\_112 Start: 62473, Stop: 62973, Start Num: 75

Candidate Starts for BigBubba\_112:

(51, 62419), (Start: 75 @62473 has 17 MA's), (Start: 103 @62527 has 1 MA's), (149, 62608), (152, 62611), (162, 62635), (183, 62668), (199, 62725), (234, 62887),

Gene: BilboSwaggins\_38 Start: 34129, Stop: 33542, Start Num: 49

Candidate Starts for BilboSwaggins\_38:

(Start: 49 @34129 has 7 MA's), (Start: 90 @34063 has 6 MA's), (104, 34021), (146, 33934), (192, 33856), (193, 33853), (201, 33817),

Gene: Bobi\_53 Start: 37484, Stop: 38035, Start Num: 70

Candidate Starts for Bobi\_53:

(Start: 70 @37484 has 3 MA's), (Start: 72 @37487 has 1 MA's), (119, 37577), (140, 37619), (178, 37679), (199, 37745), (212, 37787), (220, 37835),

Gene: Bogie\_47 Start: 33238, Stop: 33729, Start Num: 80

Candidate Starts for Bogie\_47:

(57, 33199), (58, 33202), (Start: 77 @33235 has 3 MA's), (Start: 80 @33238 has 14 MA's), (Start: 94 @33256 has 1 MA's), (98, 33265), (181, 33430), (185, 33439), (190, 33445), (193, 33457), (199, 33493), (214, 33544), (220, 33583),

Gene: Bombitas\_45 Start: 41655, Stop: 42164, Start Num: 96

Candidate Starts for Bombitas\_45:

(45, 41544), (67, 41613), (Start: 80 @41631 has 14 MA's), (Start: 96 @41655 has 2 MA's), (119, 41721), (149, 41775), (169, 41820), (199, 41907), (217, 41985), (220, 41997), (266, 42150),

Gene: Brujita\_46 Start: 33137, Stop: 33628, Start Num: 80

Candidate Starts for Brujita\_46:

(42, 33044), (57, 33098), (58, 33101), (Start: 77 @33134 has 3 MA's), (Start: 80 @33137 has 14 MA's), (Start: 94 @33155 has 1 MA's), (98, 33164), (181, 33329), (185, 33338), (190, 33344), (193, 33356), (199, 33392), (214, 33443), (220, 33482),

Gene: Buckeye\_60 Start: 52975, Stop: 52460, Start Num: 93

Candidate Starts for Buckeye\_60:

(48, 53053), (Start: 75 @52999 has 17 MA's), (Start: 88 @52984 has 15 MA's), (Start: 93 @52975 has 5 MA's), (115, 52909), (138, 52864), (156, 52840), (169, 52804), (173, 52798), (190, 52765), (203, 52711), (205, 52708), (228, 52591), (231, 52570), (256, 52495),

Gene: Buttons\_27 Start: 21411, Stop: 21896, Start Num: 83

Candidate Starts for Buttons\_27:

(Start: 83 @21411 has 8 MA's), (Start: 103 @21459 has 1 MA's), (193, 21630), (194, 21633), (204, 21672),

Gene: Cafasso\_20 Start: 18713, Stop: 18225, Start Num: 76

Candidate Starts for Cafasso\_20:

(16, 19079), (30, 18863), (40, 18806), (45, 18794), (Start: 76 @18713 has 2 MA's), (113, 18629), (134, 18605), (162, 18569), (174, 18560), (193, 18521), (195, 18515), (218, 18401), (219, 18395), (220, 18392), (237, 18314),

Gene: Cane17\_242 Start: 148701, Stop: 149255, Start Num: 85

Candidate Starts for Cane17\_242:

(79, 148695), (Start: 85 @148701 has 2 MA's), (Start: 103 @148749 has 1 MA's), (130, 148812), (204, 148968), (217, 149040), (220, 149052), (232, 149130),

Gene: Chidiebere\_96 Start: 69963, Stop: 70481, Start Num: 86

Candidate Starts for Chidiebere\_96:

(56, 69921), (61, 69936), (Start: 86 @69963 has 5 MA's), (140, 70086), (147, 70095), (163, 70119), (220, 70299),

Gene: ChisanaKitsune\_93 Start: 68907, Stop: 69425, Start Num: 86

Candidate Starts for ChisanaKitsune\_93:

(56, 68865), (61, 68880), (Start: 86 @68907 has 5 MA's), (140, 69030), (147, 69039), (163, 69063), (220, 69243),

Gene: Clown\_64 Start: 45007, Stop: 45525, Start Num: 77

Candidate Starts for Clown\_64:

(Start: 77 @45007 has 3 MA's), (Start: 96 @45031 has 2 MA's), (Start: 103 @45058 has 1 MA's), (119, 45097), (140, 45136), (190, 45214), (199, 45262), (212, 45304), (217, 45340), (220, 45352), (264, 45511),

Gene: Coco12\_30 Start: 26826, Stop: 26320, Start Num: 83

Candidate Starts for Coco12\_30:

(Start: 83 @26826 has 8 MA's), (Start: 94 @26811 has 1 MA's), (111, 26760), (113, 26751), (136, 26709), (145, 26694), (155, 26682), (157, 26679), (164, 26658), (193, 26619), (199, 26583), (220, 26493), (233, 26427), (245, 26397),

Gene: Coletti\_62 Start: 53240, Stop: 52725, Start Num: 93

Candidate Starts for Coletti\_62:

(48, 53318), (Start: 75 @53264 has 17 MA's), (Start: 88 @53249 has 15 MA's), (Start: 93 @53240 has 5 MA's), (115, 53174), (138, 53129), (156, 53105), (169, 53069), (173, 53063), (190, 53030), (203, 52976), (205, 52973), (228, 52856), (231, 52835), (256, 52760),

Gene: Colt\_243 Start: 147893, Stop: 148447, Start Num: 85

Candidate Starts for Colt\_243:

(79, 147887), (Start: 85 @147893 has 2 MA's), (Start: 103 @147941 has 1 MA's), (130, 148004), (204, 148160), (217, 148232), (220, 148244), (232, 148322),

Gene: Constella\_158 Start: 86054, Stop: 86563, Start Num: 74

Candidate Starts for Constella\_158:

(Start: 72 @86051 has 1 MA's), (Start: 74 @86054 has 1 MA's), (98, 86087), (113, 86138), (129, 86174), (183, 86264), (190, 86273), (193, 86285), (194, 86288), (200, 86321), (210, 86351), (224, 86432), (251, 86525), (257, 86549),

Gene: Constella\_97 Start: 58172, Stop: 58714, Start Num: 88

Candidate Starts for Constella\_97:

(Start: 88 @58172 has 15 MA's), (Start: 97 @58190 has 1 MA's), (151, 58310), (159, 58325), (168, 58343), (188, 58382), (193, 58400), (195, 58406), (210, 58466), (226, 58559), (267, 58700),

Gene: Daikon\_37 Start: 33801, Stop: 33280, Start Num: 90

Candidate Starts for Daikon\_37:

(50, 33867), (Start: 90 @33801 has 6 MA's), (104, 33759), (146, 33672), (192, 33594), (193, 33591), (201, 33555),

Gene: DalanDe\_1 Start: 1, Stop: 522, Start Num: 69

Candidate Starts for DalanDe\_1:

(Start: 69 @1 has 2 MA's), (Start: 86 @16 has 5 MA's), (111, 76), (117, 94), (120, 100), (153, 154), (164, 175), (193, 226), (206, 271), (211, 301), (214, 313), (221, 364), (238, 430), (243, 442),

Gene: Dallas\_113 Start: 64402, Stop: 64944, Start Num: 88

Candidate Starts for Dallas\_113:

(31, 64240), (34, 64264), (Start: 64 @64369 has 1 MA's), (Start: 88 @64402 has 15 MA's), (Start: 97 @64420 has 1 MA's), (116, 64477), (151, 64540), (159, 64555), (168, 64573), (193, 64630), (195, 64636), (210, 64696), (226, 64789),

Gene: DmpstrDiver\_113 Start: 63822, Stop: 64364, Start Num: 88

Candidate Starts for DmpstrDiver\_113:

(31, 63660), (34, 63684), (Start: 64 @63789 has 1 MA's), (Start: 88 @63822 has 15 MA's), (Start: 97 @63840 has 1 MA's), (116, 63897), (151, 63960), (159, 63975), (168, 63993), (193, 64050), (195, 64056), (210, 64116), (226, 64209),

Gene: DonTron\_22 Start: 10785, Stop: 11264, Start Num: 76

Candidate Starts for DonTron\_22:

(Start: 76 @10785 has 2 MA's), (126, 10896), (180, 10980), (190, 10998), (193, 11010), (217, 11124),

Gene: Dori\_69 Start: 53193, Stop: 53732, Start Num: 83

Candidate Starts for Dori\_69:

(39, 53091), (52, 53133), (Start: 75 @53184 has 17 MA's), (Start: 83 @53193 has 8 MA's), (Start: 96 @53214 has 2 MA's), (127, 53301), (141, 53322), (191, 53409), (193, 53415), (202, 53454), (220, 53541), (239, 53619),

Gene: DrDrey\_39 Start: 34621, Stop: 34034, Start Num: 49

Candidate Starts for DrDrey\_39:

(Start: 49 @34621 has 7 MA's), (Start: 90 @34555 has 6 MA's), (104, 34513), (146, 34426), (192, 34348), (193, 34345), (201, 34309),

Gene: Dusk\_37 Start: 33781, Stop: 33194, Start Num: 49

Candidate Starts for Dusk\_37:

(Start: 49 @33781 has 7 MA's), (Start: 90 @33715 has 6 MA's), (104, 33673), (146, 33586), (192, 33508), (193, 33505), (201, 33469),

Gene: Enceladus\_63 Start: 44580, Stop: 45038, Start Num: 80

Candidate Starts for Enceladus\_63:

(Start: 80 @44580 has 14 MA's), (113, 44652), (177, 44742), (182, 44754), (193, 44775), (208, 44838), (214, 44865),

Gene: EricMillard\_105 Start: 63462, Stop: 64004, Start Num: 88



Candidate Starts for EricMillard\_105:

(31, 63300), (34, 63324), (Start: 64 @63429 has 1 MA's), (Start: 88 @63462 has 15 MA's), (Start: 97 @63480 has 1 MA's), (116, 63537), (151, 63600), (159, 63615), (168, 63633), (193, 63690), (195, 63696), (210, 63756), (226, 63849),

Gene: Filch\_113 Start: 63036, Stop: 63536, Start Num: 75

Candidate Starts for Filch\_113:

(51, 62982), (Start: 75 @63036 has 17 MA's), (Start: 103 @63090 has 1 MA's), (149, 63171), (152, 63174), (162, 63198), (183, 63231), (199, 63288), (234, 63450),

Gene: Finch\_186 Start: 111122, Stop: 111628, Start Num: 80

Candidate Starts for Finch\_186:

(Start: 80 @111122 has 14 MA's), (141, 111254), (183, 111326), (191, 111341), (194, 111350),

Gene: Frankie\_34 Start: 27904, Stop: 27416, Start Num: 83

Candidate Starts for Frankie\_34:

(Start: 83 @27904 has 8 MA's), (113, 27829), (136, 27787), (143, 27775), (157, 27757), (162, 27739), (185, 27712), (230, 27517), (245, 27478),

Gene: FugateOSU\_60 Start: 53224, Stop: 52700, Start Num: 88

Candidate Starts for FugateOSU\_60:

(48, 53293), (Start: 75 @53239 has 17 MA's), (Start: 88 @53224 has 15 MA's), (Start: 93 @53215 has 5 MA's), (115, 53149), (138, 53104), (156, 53080), (169, 53044), (173, 53038), (190, 53005), (203, 52951), (205, 52948), (228, 52831), (231, 52810), (256, 52735),

Gene: GAL1\_27 Start: 22156, Stop: 22695, Start Num: 71

Candidate Starts for GAL1\_27:

(Start: 71 @22156 has 6 MA's), (111, 22234), (145, 22300), (148, 22303), (170, 22348), (179, 22366), (182, 22372), (185, 22375), (192, 22390), (193, 22393), (194, 22396), (197, 22408), (218, 22510), (220, 22519),

Gene: GMA1\_68 Start: 40382, Stop: 40945, Start Num: 55

Candidate Starts for GMA1\_68:

(17, 40088), (20, 40115), (23, 40187), (32, 40280), (55, 40382), (Start: 69 @40412 has 2 MA's), (Start: 103 @40481 has 1 MA's), (121, 40520), (174, 40598), (190, 40628), (197, 40655), (199, 40676), (212, 40718), (217, 40754), (220, 40766), (235, 40838),

Gene: GMA1\_47 Start: 30722, Stop: 31246, Start Num: 71

Candidate Starts for GMA1\_47:

(15, 30347), (22, 30500), (36, 30635), (41, 30653), (53, 30698), (62, 30707), (Start: 71 @30722 has 6 MA's), (Start: 103 @30779 has 1 MA's), (199, 30986), (214, 31037), (224, 31097), (237, 31154),

Gene: GMA4\_67 Start: 43840, Stop: 44490, Start Num: 65

Candidate Starts for GMA4\_67:

(65, 43840), (91, 43870), (181, 44059), (183, 44065), (199, 44122), (233, 44284),

Gene: Gator\_36 Start: 33782, Stop: 33150, Start Num: 37

Candidate Starts for Gator\_36:

(Start: 37 @33782 has 2 MA's), (Start: 47 @33743 has 1 MA's), (50, 33737), (Start: 90 @33671 has 6 MA's), (104, 33629), (146, 33542), (192, 33464), (193, 33461), (201, 33425),

Gene: Gizmo\_126 Start: 66298, Stop: 65843, Start Num: 106

Candidate Starts for Gizmo\_126:

(Start: 106 @66298 has 1 MA's), (150, 66211), (175, 66175), (192, 66139), (201, 66100), (214, 66049),

Gene: Glexan\_36 Start: 33731, Stop: 33138, Start Num: 47

Candidate Starts for Glexan\_36:

(Start: 37 @33770 has 2 MA's), (Start: 47 @33731 has 1 MA's), (50, 33725), (Start: 90 @33659 has 6 MA's), (104, 33617), (146, 33530), (192, 33452), (193, 33449), (201, 33413),

Gene: Globfish\_58 Start: 33707, Stop: 34201, Start Num: 87

Candidate Starts for Globfish\_58:

(Start: 44 @33614 has 1 MA's), (51, 33644), (73, 33692), (Start: 84 @33704 has 1 MA's), (Start: 87 @33707 has 2 MA's), (117, 33788), (130, 33818), (158, 33851), (186, 33896), (194, 33917), (207, 33965), (222, 34058),

Gene: Globfish\_83 Start: 46529, Stop: 47017, Start Num: 99

Candidate Starts for Globfish\_83:

(89, 46508), (99, 46529), (117, 46586), (123, 46604), (156, 46646), (190, 46721), (262, 47006),

Gene: Goku\_110 Start: 63579, Stop: 64079, Start Num: 75

Candidate Starts for Goku\_110:

(51, 63525), (Start: 75 @63579 has 17 MA's), (Start: 103 @63633 has 1 MA's), (149, 63714), (152, 63717), (162, 63741), (183, 63774), (199, 63831), (234, 63993),

Gene: Goldilocks\_114 Start: 63260, Stop: 63760, Start Num: 75

Candidate Starts for Goldilocks\_114:

(51, 63206), (Start: 75 @63260 has 17 MA's), (Start: 103 @63314 has 1 MA's), (149, 63395), (152, 63398), (162, 63422), (183, 63455), (199, 63512), (234, 63674),

Gene: Gspu1\_40 Start: 30337, Stop: 30849, Start Num: 63

Candidate Starts for Gspu1\_40:

(24, 30127), (26, 30154), (28, 30202), (36, 30250), (45, 30277), (63, 30337), (68, 30346), (Start: 96 @30382 has 2 MA's), (122, 30451), (133, 30475), (162, 30523), (180, 30550), (197, 30580), (199, 30601), (202, 30604), (207, 30616), (249, 30802),

Gene: HUHilltop\_45 Start: 31495, Stop: 31986, Start Num: 80

Candidate Starts for HUHilltop\_45:

(57, 31456), (58, 31459), (Start: 77 @31492 has 3 MA's), (Start: 80 @31495 has 14 MA's), (Start: 94 @31513 has 1 MA's), (98, 31522), (181, 31687), (185, 31696), (190, 31702), (193, 31714), (199, 31750), (214, 31801), (220, 31840),

Gene: Hank144\_56 Start: 39762, Stop: 39295, Start Num: 112

Candidate Starts for Hank144\_56:

(Start: 112 @39762 has 1 MA's), (146, 39693), (188, 39615), (190, 39609), (201, 39561), (202, 39558), (210, 39531), (263, 39306),

Gene: Hannaconda\_43 Start: 36122, Stop: 36664, Start Num: 71

Candidate Starts for Hannaconda\_43:

(40, 36035), (Start: 71 @36122 has 6 MA's), (Start: 103 @36185 has 1 MA's), (131, 36251), (148, 36275), (162, 36308), (182, 36341), (193, 36362), (194, 36365), (199, 36398), (217, 36476), (248, 36587), (258, 36635),

Gene: Harella\_37 Start: 34175, Stop: 33654, Start Num: 90

Candidate Starts for Harella\_37:

(Start: 37 @34286 has 2 MA's), (Start: 47 @34247 has 1 MA's), (50, 34241), (Start: 90 @34175 has 6 MA's), (104, 34133), (146, 34046), (192, 33968), (193, 33965), (201, 33929),

Gene: Henry\_39 Start: 34174, Stop: 33542, Start Num: 37

Candidate Starts for Henry\_39:

(Start: 37 @34174 has 2 MA's), (Start: 47 @34135 has 1 MA's), (50, 34129), (Start: 90 @34063 has 6 MA's), (104, 34021), (146, 33934), (192, 33856), (193, 33853), (201, 33817),

Gene: Holt\_116 Start: 63658, Stop: 64158, Start Num: 75

Candidate Starts for Holt\_116:

(51, 63604), (Start: 75 @63658 has 17 MA's), (Start: 103 @63712 has 1 MA's), (149, 63793), (152, 63796), (162, 63820), (183, 63853), (199, 63910), (234, 64072),

Gene: Hortense\_58 Start: 41496, Stop: 42002, Start Num: 81

Candidate Starts for Hortense\_58:

(25, 41271), (27, 41301), (Start: 81 @41496 has 5 MA's), (113, 41571), (119, 41583), (143, 41625), (193, 41712), (203, 41751),

Gene: Howe\_58 Start: 41496, Stop: 42002, Start Num: 81

Candidate Starts for Howe\_58:

(25, 41271), (27, 41301), (Start: 81 @41496 has 5 MA's), (113, 41571), (119, 41583), (143, 41625), (193, 41712), (203, 41751),

Gene: Hughesyang\_111 Start: 64353, Stop: 64895, Start Num: 88

Candidate Starts for Hughesyang\_111:

(31, 64191), (34, 64215), (Start: 64 @64320 has 1 MA's), (Start: 88 @64353 has 15 MA's), (Start: 97 @64371 has 1 MA's), (116, 64428), (151, 64491), (159, 64506), (168, 64524), (193, 64581), (195, 64587), (210, 64647), (226, 64740),

Gene: Icee\_112 Start: 62768, Stop: 63268, Start Num: 75

Candidate Starts for Icee\_112:

(51, 62714), (Start: 75 @62768 has 17 MA's), (Start: 103 @62822 has 1 MA's), (149, 62903), (152, 62906), (162, 62930), (183, 62963), (199, 63020), (234, 63182),

Gene: Island3\_46 Start: 33137, Stop: 33628, Start Num: 80

Candidate Starts for Island3\_46:

(42, 33044), (57, 33098), (58, 33101), (Start: 77 @33134 has 3 MA's), (Start: 80 @33137 has 14 MA's), (Start: 94 @33155 has 1 MA's), (98, 33164), (181, 33329), (185, 33338), (190, 33344), (193, 33356), (199, 33392), (214, 33443), (220, 33482),

Gene: JalFarm20\_33 Start: 27847, Stop: 27341, Start Num: 83

Candidate Starts for JalFarm20\_33:

(Start: 83 @27847 has 8 MA's), (Start: 94 @27832 has 1 MA's), (111, 27781), (113, 27772), (136, 27730), (145, 27715), (155, 27703), (157, 27700), (164, 27679), (193, 27640), (199, 27604), (220, 27514), (233, 27448), (245, 27418),

Gene: JeTaime\_109 Start: 62868, Stop: 63383, Start Num: 75

Candidate Starts for JeTaime\_109:

(51, 62814), (Start: 75 @62868 has 17 MA's), (Start: 103 @62922 has 1 MA's), (149, 63003), (152, 63006), (162, 63030), (183, 63063), (199, 63120), (234, 63282),

Gene: JoeDirt\_64 Start: 45013, Stop: 45471, Start Num: 80

Candidate Starts for JoeDirt\_64:

(Start: 80 @45013 has 14 MA's), (113, 45085), (177, 45175), (182, 45187), (193, 45208), (208, 45271), (214, 45298),

Gene: JonJames\_26 Start: 9049, Stop: 9558, Start Num: 77

Candidate Starts for JonJames\_26:

(Start: 77 @9049 has 3 MA's), (Start: 103 @9103 has 1 MA's), (125, 9160), (139, 9181), (141, 9184), (190, 9256), (193, 9268), (199, 9304), (218, 9385), (220, 9394), (241, 9472), (261, 9544),

Gene: Kabocha\_97 Start: 70776, Stop: 71294, Start Num: 86

Candidate Starts for Kabocha\_97:

(56, 70734), (61, 70749), (Start: 86 @70776 has 5 MA's), (140, 70899), (147, 70908), (163, 70932), (220, 71112),

Gene: Kalah2\_105 Start: 63688, Stop: 64230, Start Num: 88

Candidate Starts for Kalah2\_105:

(31, 63526), (34, 63550), (Start: 64 @63655 has 1 MA's), (Start: 88 @63688 has 15 MA's), (Start: 97 @63706 has 1 MA's), (116, 63763), (151, 63826), (159, 63841), (168, 63859), (193, 63916), (195, 63922), (210, 63982), (226, 64075),

Gene: KashFlow\_40 Start: 35743, Stop: 36285, Start Num: 71

Candidate Starts for KashFlow\_40:

(40, 35656), (Start: 71 @35743 has 6 MA's), (Start: 103 @35806 has 1 MA's), (131, 35872), (148, 35896), (162, 35929), (182, 35962), (193, 35983), (194, 35986), (199, 36019), (217, 36097), (248, 36208), (258, 36256),

Gene: KashFlow\_148 Start: 78305, Stop: 78904, Start Num: 80

Candidate Starts for KashFlow\_148:

(Start: 80 @78305 has 14 MA's), (118, 78395), (170, 78491), (191, 78536), (198, 78563), (209, 78608), (216, 78650), (217, 78659), (247, 78806), (252, 78821), (268, 78890),

Gene: Keitabear\_36 Start: 34510, Stop: 33947, Start Num: 44

Candidate Starts for Keitabear\_36:

(29, 34564), (Start: 44 @34510 has 1 MA's), (46, 34501), (60, 34453), (Start: 76 @34426 has 2 MA's), (144, 34306), (189, 34243), (193, 34231), (237, 34024),

Gene: Kimchi\_115 Start: 63385, Stop: 63885, Start Num: 75

Candidate Starts for Kimchi\_115:

(51, 63331), (Start: 75 @63385 has 17 MA's), (Start: 103 @63439 has 1 MA's), (149, 63520), (152, 63523), (162, 63547), (183, 63580), (199, 63637), (234, 63799),

Gene: KingMidas\_32 Start: 28828, Stop: 29370, Start Num: 71

Candidate Starts for KingMidas\_32:

(Start: 71 @28828 has 6 MA's), (128, 28942), (199, 29095), (217, 29173), (220, 29185),

Gene: KingTut\_52 Start: 48894, Stop: 48379, Start Num: 93

Candidate Starts for KingTut\_52:

(48, 48972), (Start: 75 @48918 has 17 MA's), (Start: 88 @48903 has 15 MA's), (Start: 93 @48894 has 5 MA's), (115, 48828), (138, 48783), (156, 48759), (169, 48723), (173, 48717), (190, 48684), (203, 48630), (205, 48627), (228, 48510), (231, 48489), (256, 48414),

Gene: Kuwabara\_68 Start: 41993, Stop: 42493, Start Num: 95

Candidate Starts for Kuwabara\_68:

(Start: 95 @41993 has 1 MA's), (157, 42122), (199, 42230), (226, 42350),

Gene: LeeroyJenkins\_114 Start: 56842, Stop: 56381, Start Num: 100

Candidate Starts for LeeroyJenkins\_114:

(Start: 100 @56842 has 1 MA's), (164, 56713), (211, 56590),

Gene: LeiMonet\_62 Start: 52626, Stop: 52111, Start Num: 93

Candidate Starts for LeiMonet\_62:

(48, 52704), (Start: 75 @52650 has 17 MA's), (Start: 88 @52635 has 15 MA's), (Start: 93 @52626 has 5 MA's), (115, 52560), (138, 52515), (156, 52491), (169, 52455), (173, 52449), (190, 52416), (203, 52362), (205, 52359), (228, 52242), (231, 52221), (256, 52146),

Gene: Leozinho\_32 Start: 27392, Stop: 27934, Start Num: 71

Candidate Starts for Leozinho\_32:

(Start: 71 @27392 has 6 MA's), (128, 27506), (199, 27659), (217, 27737), (220, 27749),

Gene: LilSpotty\_83 Start: 48505, Stop: 49212, Start Num: 35

Candidate Starts for LilSpotty\_83:

(Start: 35 @48505 has 1 MA's), (98, 48661), (123, 48739), (135, 48757), (152, 48781), (190, 48865), (193, 48877), (196, 48886), (204, 48922), (225, 49051), (260, 49180),

Gene: LittleE\_112 Start: 62894, Stop: 63436, Start Num: 88

Candidate Starts for LittleE\_112:

(Start: 88 @62894 has 15 MA's), (Start: 97 @62912 has 1 MA's), (151, 63032), (159, 63047), (168, 63065), (193, 63122), (195, 63128), (210, 63188), (226, 63281), (267, 63422),

Gene: Lopsy\_58 Start: 51828, Stop: 51313, Start Num: 93

Candidate Starts for Lopsy\_58:

(48, 51906), (Start: 75 @51852 has 17 MA's), (Start: 88 @51837 has 15 MA's), (Start: 93 @51828 has 5 MA's), (115, 51762), (138, 51717), (156, 51693), (169, 51657), (173, 51651), (190, 51618), (203, 51564), (205, 51561), (228, 51444), (231, 51423), (256, 51348),

Gene: LostAndPhound\_60 Start: 52723, Stop: 52199, Start Num: 88

Candidate Starts for LostAndPhound\_60:

(48, 52792), (Start: 75 @52738 has 17 MA's), (Start: 88 @52723 has 15 MA's), (Start: 93 @52714 has 5 MA's), (115, 52648), (138, 52603), (156, 52579), (169, 52543), (173, 52537), (190, 52504), (203, 52450), (205, 52447), (228, 52330), (231, 52309), (256, 52234),

Gene: LunaBlu\_33 Start: 28027, Stop: 28524, Start Num: 71

Candidate Starts for LunaBlu\_33:

(36, 27925), (Start: 71 @28027 has 6 MA's), (193, 28249), (199, 28285), (236, 28450), (255, 28495),

Gene: Lysidious\_60 Start: 40309, Stop: 40836, Start Num: 82

Candidate Starts for Lysidious\_60:

(Start: 82 @40309 has 4 MA's), (Start: 96 @40330 has 2 MA's), (184, 40510),

Gene: Maravista\_65 Start: 42918, Stop: 43388, Start Num: 101

Candidate Starts for Maravista\_65:

(Start: 101 @42918 has 2 MA's), (157, 43035), (199, 43143), (226, 43263),

Gene: Marshmallow\_38 Start: 34061, Stop: 33540, Start Num: 90

Candidate Starts for Marshmallow\_38:

(Start: 49 @34127 has 7 MA's), (Start: 90 @34061 has 6 MA's), (104, 34019), (146, 33932), (192, 33854), (193, 33851), (201, 33815),

Gene: Marshmallow\_109 Start: 63582, Stop: 64082, Start Num: 75

Candidate Starts for Marshmallow\_109:

(Start: 75 @63582 has 17 MA's), (Start: 103 @63636 has 1 MA's), (149, 63717), (152, 63720), (162, 63744), (183, 63777), (199, 63834), (234, 63996),

Gene: Matalotodo\_59 Start: 52707, Stop: 52192, Start Num: 93

Candidate Starts for Matalotodo\_59:

(48, 52785), (Start: 75 @52731 has 17 MA's), (Start: 88 @52716 has 15 MA's), (Start: 93 @52707 has 5 MA's), (115, 52641), (138, 52596), (156, 52572), (169, 52536), (173, 52530), (190, 52497), (203, 52443), (205, 52440), (228, 52323), (231, 52302), (256, 52227),

Gene: Mellie\_57 Start: 38319, Stop: 38846, Start Num: 82

Candidate Starts for Mellie\_57:

(Start: 82 @38319 has 4 MA's), (Start: 96 @38340 has 2 MA's), (184, 38520), (253, 38784),

Gene: Minerva\_162 Start: 85665, Stop: 86177, Start Num: 72

Candidate Starts for Minerva\_162:

(Start: 72 @85665 has 1 MA's), (Start: 74 @85668 has 1 MA's), (98, 85701), (113, 85752), (129, 85788), (183, 85878), (190, 85887), (193, 85899), (194, 85902), (200, 85935), (210, 85965), (224, 86046), (251, 86139), (257, 86163),

Gene: ModicumRichard\_20 Start: 18713, Stop: 18225, Start Num: 76

Candidate Starts for ModicumRichard\_20:

(4, 19316), (8, 19235), (9, 19211), (11, 19175), (13, 19145), (14, 19130), (21, 18977), (30, 18863), (40, 18806), (43, 18797), (45, 18794), (Start: 76 @18713 has 2 MA's), (113, 18629), (134, 18605), (174, 18560), (190, 18533), (193, 18521), (195, 18515), (219, 18395),

Gene: Morrissey\_46 Start: 35134, Stop: 34631, Start Num: 94

Candidate Starts for Morrissey\_46:

(5, 35755), (6, 35731), (7, 35701), (10, 35656), (12, 35611), (18, 35482), (33, 35293), (89, 35143), (Start: 94 @35134 has 1 MA's), (107, 35095), (109, 35086), (124, 35047), (177, 34954), (190, 34927), (192, 34918), (193, 34915), (194, 34912), (199, 34879),

Gene: Mova\_51 Start: 35948, Stop: 36499, Start Num: 70

Candidate Starts for Mova\_51:

(Start: 70 @35948 has 3 MA's), (Start: 72 @35951 has 1 MA's), (119, 36041), (140, 36083), (178, 36143), (199, 36209), (212, 36251), (220, 36299),

Gene: MulchSalad\_28 Start: 23891, Stop: 24409, Start Num: 66

Candidate Starts for MulchSalad\_28:

(66, 23891), (111, 23975), (161, 24071), (164, 24077), (193, 24119), (195, 24125), (199, 24155),

Gene: Mutaforma13\_54 Start: 38739, Stop: 39290, Start Num: 70

Candidate Starts for Mutaforma13\_54:

(Start: 70 @38739 has 3 MA's), (Start: 72 @38742 has 1 MA's), (119, 38832), (140, 38874), (178, 38934), (199, 39000), (212, 39042), (220, 39090),

Gene: Myrale\_38 Start: 33992, Stop: 33405, Start Num: 49

Candidate Starts for Myrale\_38:

(Start: 49 @33992 has 7 MA's), (Start: 90 @33926 has 6 MA's), (104, 33884), (146, 33797), (192, 33719), (193, 33716), (201, 33680),

Gene: Nimrod\_111 Start: 63730, Stop: 64230, Start Num: 75

Candidate Starts for Nimrod\_111:

(51, 63676), (Start: 75 @63730 has 17 MA's), (Start: 103 @63784 has 1 MA's), (149, 63865), (152, 63868), (162, 63892), (183, 63925), (199, 63982), (234, 64144),

Gene: ObLaDi\_20 Start: 18692, Stop: 18204, Start Num: 76

Candidate Starts for ObLaDi\_20:

(1, 19712), (2, 19706), (3, 19688), (4, 19295), (8, 19214), (9, 19190), (11, 19154), (13, 19124), (14, 19109), (21, 18956), (30, 18842), (40, 18785), (43, 18776), (45, 18773), (Start: 76 @18692 has 2 MA's), (113, 18608), (134, 18584), (174, 18539), (190, 18512), (193, 18500), (195, 18494), (219, 18374),

Gene: Omega\_117 Start: 63909, Stop: 64451, Start Num: 88

Candidate Starts for Omega\_117:

(Start: 64 @63876 has 1 MA's), (Start: 88 @63909 has 15 MA's), (Start: 97 @63927 has 1 MA's), (151, 64047), (159, 64062), (168, 64080), (193, 64137), (195, 64143), (210, 64203), (226, 64296), (267, 64437),

Gene: Orfeu\_59 Start: 52711, Stop: 52187, Start Num: 88

Candidate Starts for Orfeu\_59:

(48, 52780), (Start: 75 @52726 has 17 MA's), (Start: 88 @52711 has 15 MA's), (Start: 93 @52702 has 5 MA's), (115, 52636), (138, 52591), (156, 52567), (169, 52531), (173, 52525), (190, 52492), (203, 52438), (205, 52435), (228, 52318), (231, 52297), (256, 52222),

Gene: Peregrin\_232 Start: 114891, Stop: 115472, Start Num: 82

Candidate Starts for Peregrin\_232:

(Start: 82 @114891 has 4 MA's), (Start: 103 @114942 has 1 MA's), (117, 114978), (129, 115002), (142, 115023), (166, 115062), (214, 115197), (240, 115323), (244, 115329),

Gene: Peregrin\_178 Start: 94313, Stop: 94846, Start Num: 82

Candidate Starts for Peregrin\_178:

(Start: 82 @94313 has 4 MA's), (114, 94391), (171, 94499), (195, 94553), (215, 94640), (217, 94661), (250, 94781),

Gene: Phineas\_45 Start: 31827, Stop: 32321, Start Num: 77

Candidate Starts for Phineas\_45:

(57, 31791), (58, 31794), (Start: 77 @31827 has 3 MA's), (Start: 80 @31830 has 14 MA's), (Start: 94 @31848 has 1 MA's), (98, 31857), (181, 32022), (185, 32031), (190, 32037), (193, 32049), (199, 32085), (214, 32136), (220, 32175),

Gene: Phoebus\_113 Start: 65664, Stop: 66206, Start Num: 88

Candidate Starts for Phoebus\_113:

(31, 65502), (34, 65526), (Start: 64 @65631 has 1 MA's), (Start: 88 @65664 has 15 MA's), (Start: 97 @65682 has 1 MA's), (116, 65739), (151, 65802), (159, 65817), (168, 65835), (193, 65892), (195, 65898), (210, 65958), (226, 66051),

Gene: Pipefish\_29 Start: 27509, Stop: 27015, Start Num: 86

Candidate Starts for Pipefish\_29:

(Start: 86 @27509 has 5 MA's), (172, 27344), (190, 27311), (204, 27260),

Gene: Pippy\_62 Start: 40280, Stop: 40750, Start Num: 101

Candidate Starts for Pippy\_62:

(Start: 101 @40280 has 2 MA's), (157, 40397), (199, 40505), (226, 40625),

Gene: Placalicious\_60 Start: 53221, Stop: 52697, Start Num: 88

Candidate Starts for Placalicious\_60:

(48, 53290), (Start: 75 @53236 has 17 MA's), (Start: 88 @53221 has 15 MA's), (Start: 93 @53212 has 5 MA's), (115, 53146), (138, 53101), (156, 53077), (169, 53041), (173, 53035), (190, 53002), (203, 52948), (205, 52945), (228, 52828), (231, 52807), (256, 52732),

Gene: Podrick\_58 Start: 51964, Stop: 51449, Start Num: 93

Candidate Starts for Podrick\_58:

(48, 52042), (Start: 75 @51988 has 17 MA's), (Start: 88 @51973 has 15 MA's), (Start: 93 @51964 has 5 MA's), (115, 51898), (138, 51853), (156, 51829), (169, 51793), (173, 51787), (190, 51754), (203, 51700), (205, 51697), (228, 51580), (231, 51559), (256, 51484),

Gene: Porcelain\_108 Start: 60257, Stop: 60832, Start Num: 64

Candidate Starts for Porcelain\_108:

(Start: 64 @60257 has 1 MA's), (Start: 88 @60290 has 15 MA's), (Start: 97 @60308 has 1 MA's), (116, 60365), (151, 60428), (159, 60443), (168, 60461), (193, 60518), (195, 60524), (210, 60584), (226, 60677),

Gene: Porky\_109 Start: 62562, Stop: 63008, Start Num: 103

Candidate Starts for Porky\_109:

(51, 62454), (Start: 75 @62508 has 17 MA's), (Start: 103 @62562 has 1 MA's), (149, 62643), (152, 62646), (162, 62670), (183, 62703), (199, 62760), (234, 62922),

Gene: Pound\_50 Start: 43906, Stop: 44415, Start Num: 96

Candidate Starts for Pound\_50:

(45, 43795), (67, 43864), (Start: 80 @43882 has 14 MA's), (Start: 96 @43906 has 2 MA's), (119, 43972), (149, 44026), (169, 44071), (199, 44158), (217, 44236), (220, 44248), (266, 44401),

Gene: Pumpkin\_40 Start: 34140, Stop: 33619, Start Num: 90

Candidate Starts for Pumpkin\_40:

(Start: 49 @34206 has 7 MA's), (Start: 90 @34140 has 6 MA's), (104, 34098), (146, 34011), (192, 33933), (193, 33930), (201, 33894),

Gene: Pygmy\_47 Start: 33294, Stop: 33785, Start Num: 80

Candidate Starts for Pygmy\_47:

(57, 33255), (58, 33258), (Start: 77 @33291 has 3 MA's), (Start: 80 @33294 has 14 MA's), (Start: 94 @33312 has 1 MA's), (98, 33321), (181, 33486), (185, 33495), (190, 33501), (193, 33513), (199, 33549), (214, 33600), (220, 33639),

Gene: RedWattleHog\_22 Start: 25760, Stop: 26308, Start Num: 80

Candidate Starts for RedWattleHog\_22:

(66, 25739), (Start: 80 @25760 has 14 MA's), (143, 25880), (212, 26048), (214, 26057), (218, 26087), (220, 26096), (254, 26222),

Gene: RedWattleHog\_85 Start: 77917, Stop: 78504, Start Num: 78

Candidate Starts for RedWattleHog\_85:

(Start: 78 @77917 has 3 MA's), (111, 77989), (132, 78037), (137, 78043), (160, 78091), (165, 78100), (167, 78103), (172, 78112), (187, 78142), (194, 78160), (199, 78193), (213, 78238), (219, 78280), (231, 78340), (270, 78484),

Gene: RedWattleHog\_100 Start: 85618, Stop: 86124, Start Num: 69

Candidate Starts for RedWattleHog\_100:



(59, 85600), (Start: 69 @85618 has 2 MA's), (Start: 103 @85687 has 1 MA's), (117, 85723), (119, 85726), (120, 85729), (140, 85768), (191, 85846), (193, 85852), (220, 85981), (236, 86056),

Gene: Rose5\_65 Start: 45033, Stop: 45491, Start Num: 80

Candidate Starts for Rose5\_65:

(Start: 80 @45033 has 14 MA's), (113, 45105), (177, 45195), (182, 45207), (193, 45228), (208, 45291), (214, 45318),

Gene: Saguaro\_52 Start: 46118, Stop: 45648, Start Num: 83

Candidate Starts for Saguaro\_52:

(54, 46169), (Start: 83 @46118 has 8 MA's), (Start: 96 @46097 has 2 MA's), (Start: 103 @46070 has 1 MA's), (111, 46052), (113, 46043), (119, 46031), (143, 45992), (193, 45905), (217, 45791), (227, 45746),

Gene: Sarge\_39 Start: 25703, Stop: 26194, Start Num: 87

Candidate Starts for Sarge\_39:

(19, 25388), (Start: 44 @25622 has 1 MA's), (73, 25688), (Start: 87 @25703 has 2 MA's), (176, 25868), (192, 25904), (194, 25910), (221, 26045), (242, 26117), (259, 26183),

Gene: Sassafras\_31 Start: 27690, Stop: 28187, Start Num: 71

Candidate Starts for Sassafras\_31:

(36, 27588), (Start: 71 @27690 has 6 MA's), (193, 27912), (199, 27948), (236, 28113), (255, 28158),

Gene: Schomber\_94 Start: 69164, Stop: 69682, Start Num: 86

Candidate Starts for Schomber\_94:

(56, 69122), (61, 69137), (Start: 86 @69164 has 5 MA's), (140, 69287), (147, 69296), (163, 69320), (220, 69500),

Gene: ScoobyDoobyDoo\_60 Start: 22027, Stop: 22503, Start Num: 84

Candidate Starts for ScoobyDoobyDoo\_60:

(38, 21928), (Start: 84 @22027 has 1 MA's), (192, 22225), (250, 22462),

Gene: ScoobyDoobyDoo\_184 Start: 103006, Stop: 103509, Start Num: 110

Candidate Starts for ScoobyDoobyDoo\_184:

(92, 102958), (Start: 100 @102973 has 1 MA's), (102, 102985), (105, 102991), (Start: 110 @103006 has 1 MA's), (167, 103123), (193, 103174), (197, 103189), (220, 103300), (227, 103333), (229, 103342), (231, 103357), (246, 103399), (265, 103462), (269, 103489),

Gene: ShamWow\_38 Start: 34129, Stop: 33542, Start Num: 49

Candidate Starts for ShamWow\_38:

(Start: 49 @34129 has 7 MA's), (Start: 90 @34063 has 6 MA's), (104, 34021), (146, 33934), (192, 33856), (193, 33853), (201, 33817),

Gene: Shipwreck\_47 Start: 33269, Stop: 33760, Start Num: 80

Candidate Starts for Shipwreck\_47:

(57, 33230), (58, 33233), (Start: 77 @33266 has 3 MA's), (Start: 80 @33269 has 14 MA's), (Start: 94 @33287 has 1 MA's), (98, 33296), (181, 33461), (185, 33470), (190, 33476), (193, 33488), (199, 33524), (214, 33575), (220, 33614),

Gene: Shlim410\_56 Start: 41496, Stop: 42002, Start Num: 81

Candidate Starts for Shlim410\_56:

(25, 41271), (27, 41301), (Start: 81 @41496 has 5 MA's), (113, 41571), (119, 41583), (143, 41625), (193, 41712), (203, 41751),

Gene: Shoya\_45 Start: 27671, Stop: 28162, Start Num: 87

Candidate Starts for Shoya\_45:

(Start: 44 @27590 has 1 MA's), (73, 27656), (Start: 87 @27671 has 2 MA's), (176, 27836), (192, 27872), (194, 27878), (221, 28013), (242, 28085), (259, 28151),

Gene: Stank\_113 Start: 63457, Stop: 63957, Start Num: 75

Candidate Starts for Stank\_113:

(51, 63403), (Start: 75 @63457 has 17 MA's), (Start: 103 @63511 has 1 MA's), (149, 63592), (152, 63595), (162, 63619), (183, 63652), (199, 63709), (234, 63871),

Gene: Starcevich\_34 Start: 27605, Stop: 27099, Start Num: 83

Candidate Starts for Starcevich\_34:

(Start: 83 @27605 has 8 MA's), (Start: 94 @27590 has 1 MA's), (111, 27539), (113, 27530), (136, 27488), (145, 27473), (155, 27461), (157, 27458), (164, 27437), (193, 27398), (199, 27362), (220, 27272), (233, 27206), (245, 27176),

Gene: Stormageddon\_82 Start: 77898, Stop: 78485, Start Num: 78

Candidate Starts for Stormageddon\_82:

(Start: 78 @77898 has 3 MA's), (111, 77970), (132, 78018), (137, 78024), (160, 78072), (165, 78081), (167, 78084), (172, 78093), (187, 78123), (194, 78141), (199, 78174), (213, 78219), (219, 78261), (231, 78321), (270, 78465),

Gene: TBrady12\_114 Start: 62894, Stop: 63394, Start Num: 75

Candidate Starts for TBrady12\_114:

(51, 62840), (Start: 75 @62894 has 17 MA's), (Start: 103 @62948 has 1 MA's), (149, 63029), (152, 63032), (162, 63056), (183, 63089), (199, 63146), (234, 63308),

Gene: Teaspoon\_111 Start: 63442, Stop: 63942, Start Num: 75

Candidate Starts for Teaspoon\_111:

(51, 63388), (Start: 75 @63442 has 17 MA's), (Start: 103 @63496 has 1 MA's), (149, 63577), (152, 63580), (162, 63604), (183, 63637), (199, 63694), (234, 63856),

Gene: Teaspoon\_39 Start: 34016, Stop: 33495, Start Num: 90

Candidate Starts for Teaspoon\_39:

(Start: 49 @34082 has 7 MA's), (Start: 90 @34016 has 6 MA's), (104, 33974), (146, 33887), (192, 33809), (193, 33806), (201, 33770),

Gene: Thibault\_95 Start: 58448, Stop: 58990, Start Num: 88

Candidate Starts for Thibault\_95:

(Start: 88 @58448 has 15 MA's), (Start: 97 @58466 has 1 MA's), (151, 58586), (159, 58601), (168, 58619), (188, 58658), (193, 58676), (195, 58682), (210, 58742), (226, 58835), (267, 58976),

Gene: ThreeRngTarjay\_109 Start: 64920, Stop: 65462, Start Num: 88

Candidate Starts for ThreeRngTarjay\_109:

(31, 64758), (34, 64782), (Start: 64 @64887 has 1 MA's), (Start: 88 @64920 has 15 MA's), (Start: 97 @64938 has 1 MA's), (116, 64995), (151, 65058), (159, 65073), (168, 65091), (193, 65148), (195, 65154), (210, 65214), (226, 65307),

Gene: Toni\_59 Start: 52612, Stop: 52088, Start Num: 88

Candidate Starts for Toni\_59:

(48, 52681), (Start: 75 @52627 has 17 MA's), (Start: 88 @52612 has 15 MA's), (Start: 93 @52603 has 5 MA's), (115, 52537), (138, 52492), (156, 52468), (169, 52432), (173, 52426), (190, 52393), (203,

52339), (205, 52336), (228, 52219), (231, 52198), (256, 52123),

Gene: Toto\_38 Start: 34063, Stop: 33542, Start Num: 90

Candidate Starts for Toto\_38:

(Start: 49 @34129 has 7 MA's), (Start: 90 @34063 has 6 MA's), (104, 34021), (146, 33934), (192, 33856), (193, 33853), (201, 33817),

Gene: Tuco\_39 Start: 34637, Stop: 34050, Start Num: 49

Candidate Starts for Tuco\_39:

(Start: 49 @34637 has 7 MA's), (Start: 90 @34571 has 6 MA's), (104, 34529), (146, 34442), (192, 34364), (193, 34361), (201, 34325),

Gene: Twinkle\_57 Start: 42555, Stop: 43061, Start Num: 81

Candidate Starts for Twinkle\_57:

(25, 42330), (27, 42360), (Start: 81 @42555 has 5 MA's), (113, 42630), (119, 42642), (143, 42684), (193, 42771), (203, 42810),

Gene: Twister6\_58 Start: 42736, Stop: 43260, Start Num: 78

Candidate Starts for Twister6\_58:

(Start: 78 @42736 has 3 MA's), (Start: 103 @42787 has 1 MA's), (111, 42805), (154, 42883), (190, 42964), (192, 42973), (221, 43114),

Gene: UPIE\_65 Start: 44559, Stop: 45017, Start Num: 80

Candidate Starts for UPIE\_65:

(Start: 80 @44559 has 14 MA's), (113, 44631), (177, 44721), (182, 44733), (193, 44754), (208, 44817), (214, 44844),

Gene: Wamburgrxpress\_65 Start: 44589, Stop: 45047, Start Num: 80

Candidate Starts for Wamburgrxpress\_65:

(Start: 80 @44589 has 14 MA's), (113, 44661), (177, 44751), (182, 44763), (193, 44784), (208, 44847), (214, 44874),

Gene: Wiggin\_113 Start: 62887, Stop: 63387, Start Num: 75

Candidate Starts for Wiggin\_113:

(Start: 75 @62887 has 17 MA's), (Start: 103 @62941 has 1 MA's), (149, 63022), (152, 63025), (162, 63049), (183, 63082), (199, 63139), (234, 63301),

Gene: Xandras\_110 Start: 62710, Stop: 63210, Start Num: 75

Candidate Starts for Xandras\_110:

(51, 62656), (Start: 75 @62710 has 17 MA's), (Start: 103 @62764 has 1 MA's), (149, 62845), (152, 62848), (162, 62872), (183, 62905), (199, 62962), (234, 63124),

Gene: Xavia\_53 Start: 39307, Stop: 39837, Start Num: 83

Candidate Starts for Xavia\_53:

(Start: 83 @39307 has 8 MA's), (108, 39364), (111, 39373), (141, 39436), (143, 39439), (162, 39475), (164, 39478), (173, 39487), (175, 39490), (193, 39532), (214, 39619), (253, 39781),

Gene: Zelink\_108 Start: 64885, Stop: 65409, Start Num: 97

Candidate Starts for Zelink\_108:

(31, 64705), (34, 64729), (Start: 64 @64834 has 1 MA's), (Start: 88 @64867 has 15 MA's), (Start: 97 @64885 has 1 MA's), (116, 64942), (151, 65005), (159, 65020), (168, 65038), (193, 65095), (195, 65101), (210, 65161), (226, 65254),