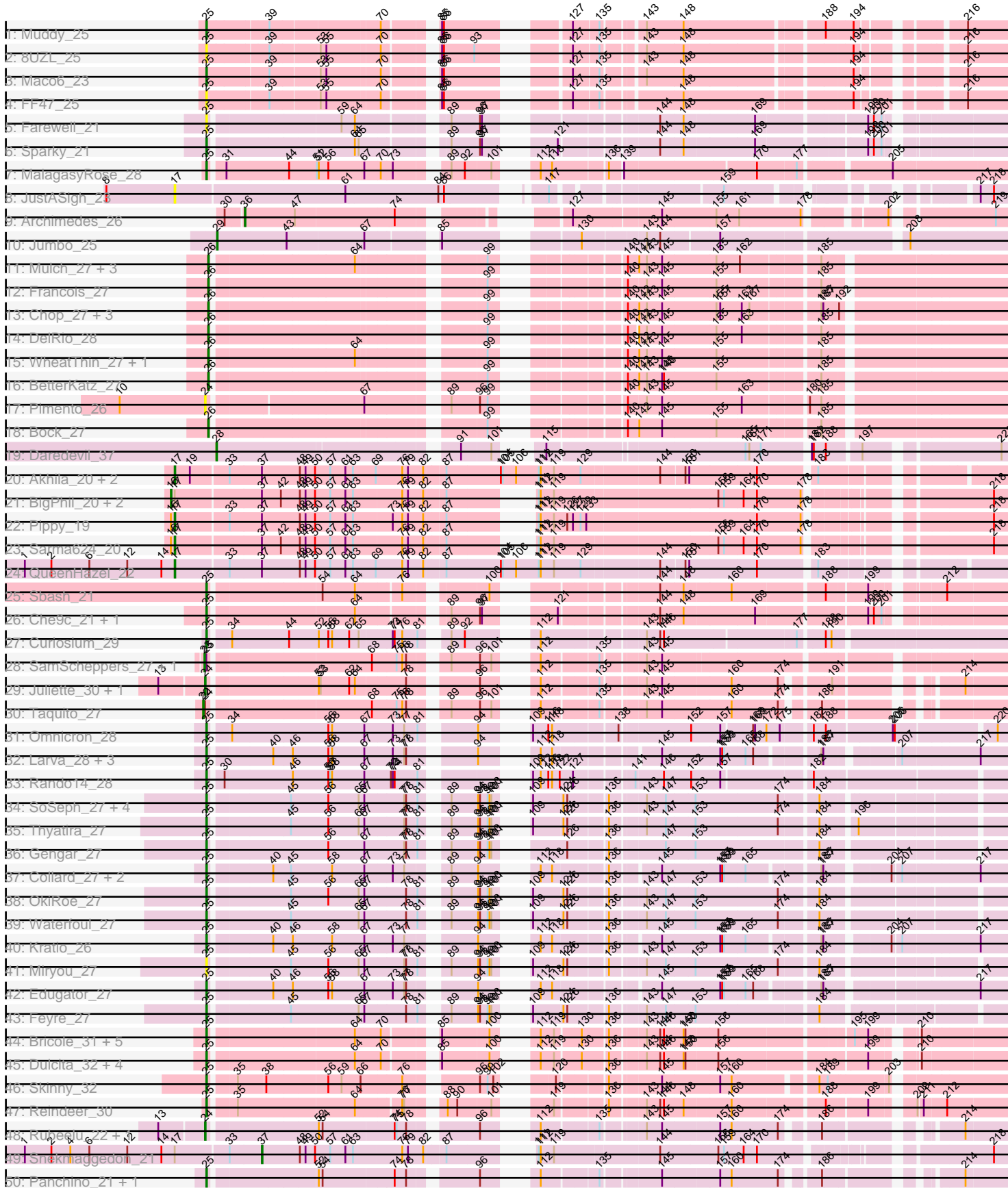
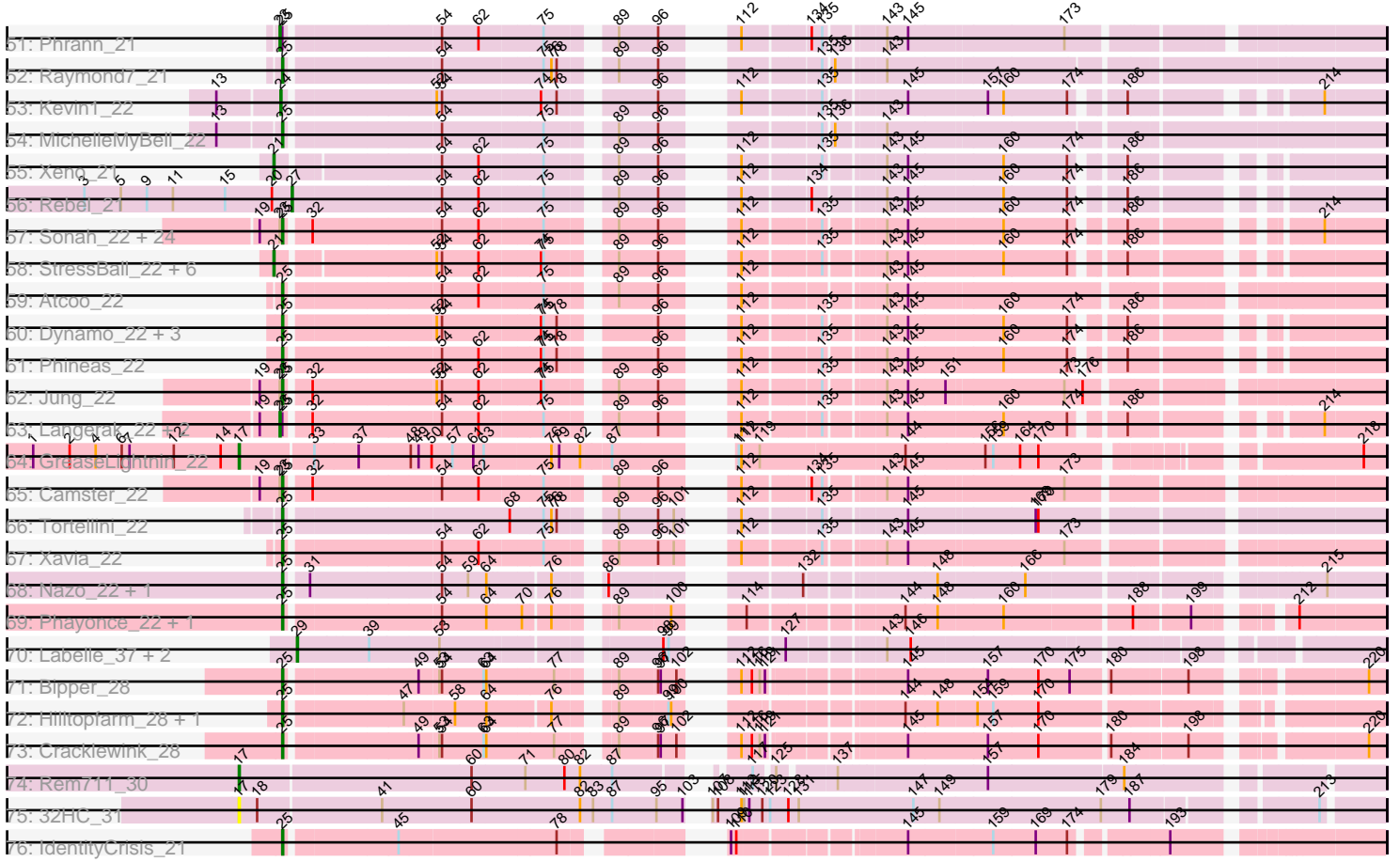


Pham 157651



Pham 157651



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 157651 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157651 has 150 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Muddy\_25
- Track 2 : 8UZL\_25
- Track 3 : Maco6\_23
- Track 4 : FF47\_25
- Track 5 : Farewell\_21
- Track 6 : Sparky\_21
- Track 7 : MalagasyRose\_28
- Track 8 : JustASigh\_23
- Track 9 : Archimedes\_26
- Track 10 : Jumbo\_25
- Track 11 : Mulch\_27, Parada\_27, NancyRae\_27, Brylie\_27
- Track 12 : Francois\_27
- Track 13 : Chop\_27, Ayotoya\_27, GrandSlam\_27, Hamood\_27
- Track 14 : DelRio\_28
- Track 15 : WheatThin\_27, Nadeem\_27
- Track 16 : BetterKatz\_27
- Track 17 : Pimento\_26
- Track 18 : Bock\_27
- Track 19 : Daredevil\_37
- Track 20 : Akhila\_20, MilanaBonita\_20, Xula\_21
- Track 21 : BigPhil\_20, Cerasum\_20, Velveteen\_20
- Track 22 : Pippy\_19
- Track 23 : Sarma624\_20
- Track 24 : QueenHazel\_22
- Track 25 : Sbash\_21
- Track 26 : Che9c\_21, Purky\_22
- Track 27 : Curiosium\_29
- Track 28 : SamScheppers\_27, Eponine\_29
- Track 29 : Juliette\_30, Ruthiejr\_29
- Track 30 : Taquito\_27
- Track 31 : Omnicron\_28
- Track 32 : Larva\_28, Psycho\_28, Dadosky\_28, AlleyCat\_28
- Track 33 : Rando14\_28
- Track 34 : SoSeph\_27, Heftyboy\_27, Paola\_27, Guillsminger\_27, Leston\_27
- Track 35 : Thyatira\_27
- Track 36 : Gengar\_27
- Track 37 : Collard\_27, InvictusManeo\_27, Agent47\_27

- Track 38 : OkiRoe\_27
- Track 39 : Waterfoul\_27
- Track 40 : Kratio\_26
- Track 41 : Miryou\_27
- Track 42 : Edugator\_27
- Track 43 : Feyre\_27
- Track 44 : Bricole\_31, IPhane7\_31, Bongo\_31, TyDawg\_31, PegLeg\_31, LilhomieP\_30
- Track 45 : Dulcita\_32, Auspice\_31, SlimJimmy\_30, Diminimus\_32, Glaske16\_32
- Track 46 : Skinny\_32
- Track 47 : Reindeer\_30
- Track 48 : Rubeelu\_22, Butters\_22
- Track 49 : Snekmaggedon\_21
- Track 50 : Panchino\_21, SkinnyPete\_21
- Track 51 : Phrann\_21
- Track 52 : Raymond7\_21
- Track 53 : Kevin1\_22
- Track 54 : MichelleMyBell\_22
- Track 55 : Xeno\_21
- Track 56 : Rebel\_21
- Track 57 : Sonah\_22, Bartholomew\_22, Venti\_22, Polkaroo\_22, Brusacoram\_22, Mangethe\_22, Necropolis\_22, Majeke\_22, Babsiella\_22, StevieRay\_22, Bunnies\_22, HUHilltop\_22, Vidya\_22, FirstPlacePfu\_22, Jebeks\_22, Donovan\_22, Ksqured\_22, Thespis\_22, HC\_22, Zilizebeth\_22, Phegasus\_22, Arib1\_22, Juniormint\_22, Fishburne\_22, Techage\_22
- Track 58 : StressBall\_22, Glaske\_22, KilKor\_22, Phalm\_22, Shweta\_21, Megiddo\_22, CactusJack\_22
- Track 59 : Atcoo\_22
- Track 60 : Dynamo\_22, Andies\_21, Willsammy\_22, Scitech\_21
- Track 61 : Phineas\_22
- Track 62 : Jung\_22
- Track 63 : Langerak\_22, Malithi\_22, Kari\_22
- Track 64 : GreaseLightnin\_22
- Track 65 : Camster\_22
- Track 66 : Tortellini\_22
- Track 67 : Xavia\_22
- Track 68 : Nazo\_22, BigNuz\_22
- Track 69 : Phayonce\_22, ThulaThula\_22
- Track 70 : Labelle\_37, Madruga\_36, Patience\_38
- Track 71 : Bipper\_28
- Track 72 : Hilltopfarm\_28, Typha\_28
- Track 73 : Cracklewink\_28
- Track 74 : Rem711\_30
- Track 75 : 32HC\_31
- Track 76 : IdentityCrisis\_21

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

The start number called the most often in the published annotations is 25, it was called in 86 of the 137 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 8UZL\_25, Agent47\_27, AlleyCat\_28, Andies\_21, Arib1\_22, Atcoo\_22, Auspice\_31, Babsiella\_22, Bartholomew\_22, BigNuz\_22, Bipper\_28, Bongo\_31, Bricole\_31, Brusacoram\_22, Bunnies\_22, Camster\_22, Che9c\_21, Collard\_27, Cracklewink\_28, Curiosium\_29, Dadosky\_28, Diminimus\_32, Donovan\_22, Dulcita\_32, Dynamo\_22, Edugator\_27, FF47\_25, Farewell\_21, Feyre\_27, FirstPlacePfu\_22, Fishburne\_22, Gengar\_27, Glaske16\_32, Guillsminger\_27, HC\_22, HUHilltop\_22, Heftyboy\_27, Hilltopfarm\_28, IPhane7\_31, IdentityCrisis\_21, InvictusManeo\_27, Jebeks\_22, Jung\_22, Juniormint\_22, Kratio\_26, Ksquared\_22, Larva\_28, Leston\_27, LilhomieP\_30, Maco6\_23, Majeke\_22, MalagasyRose\_28, Mangethe\_22, MichelleMyBell\_22, Miryou\_27, Muddy\_25, Nazo\_22, Necropolis\_22, OkiRoe\_27, Omnicron\_28, Panchino\_21, Paola\_27, PegLeg\_31, Phayonce\_22, Phegasus\_22, Phineas\_22, Polkaroo\_22, Psycho\_28, Purky\_22, Rando14\_28, Raymond7\_21, Reindeer\_30, Sbash\_21, Scitech\_21, SkinnyPete\_21, Skinny\_32, SlimJimmy\_30, SoSeph\_27, Sonah\_22, Sparky\_21, StevieRay\_22, Techage\_22, Thespis\_22, ThulaThula\_22, Thyatira\_27, Tortellini\_22, TyDawg\_31, Typha\_28, Venti\_22, Vidya\_22, Waterfoul\_27, Willsammy\_22, Xavia\_22, Zilizebeth\_22,

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

- Eponine\_29, Kari\_22, Langerak\_22, Malithi\_22, Phrann\_21, SamScheppers\_27,

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

- 32HC\_31, Akhila\_20, Archimedes\_26, Ayotoya\_27, BetterKatz\_27, BigPhil\_20, Bock\_27, Brylie\_27, Butters\_22, CactusJack\_22, Cerasum\_20, Chop\_27, Daredevil\_37, DelRio\_28, Francois\_27, Glaske\_22, GrandSlam\_27, GreaseLightnin\_22, Hamood\_27, Juliette\_30, Jumbo\_25, JustASigh\_23, Kevin1\_22, KilKor\_22, Labelle\_37, Madruga\_36, Megiddo\_22, MilanaBonita\_20, Mulch\_27, Nadeem\_27, NancyRae\_27, Parada\_27, Patience\_38, Phalm\_22, Pimento\_26, Pippy\_19, QueenHazel\_22, Rebel\_21, Rem711\_30, Rubeelu\_22, Ruthiejr\_29, Sarma624\_20, Shweta\_21, Snekmaggon\_21, StressBall\_22, Taquito\_27, Velveteen\_20, WheatThin\_27, Xeno\_21, Xula\_21,

### Summary by start number:

Start 16:

- Found in 5 of 150 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 3 of 137
- Called 60.0% of time when present
- Phage (with cluster) where this start called: BigPhil\_20 (F1), Cerasum\_20 (F1), Velveteen\_20 (F1),

Start 17:

- Found in 14 of 150 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 8 of 137
- Called 71.4% of time when present
- Phage (with cluster) where this start called: 32HC\_31 (Z), Akhila\_20 (F1), GreaseLightnin\_22 (P1), JustASigh\_23 (AH), MilanaBonita\_20 (F1), Pippy\_19 (F1), QueenHazel\_22 (I1), Rem711\_30 (Z), Sarma624\_20 (F1), Xula\_21 (I1),

Start 21:

- Found in 8 of 150 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 8 of 137

- Called 100.0% of time when present
- Phage (with cluster) where this start called: CactusJack\_22 (P1), Glaske\_22 (P1), KilKor\_22 (P1), Megiddo\_22 (P1), Phalm\_22 (P1), Shweta\_21 (N), StressBall\_22 (P1), Xeno\_21 (N),

#### Start 22:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Taquito\_27 (K4),

#### Start 23:

- Found in 33 of 150 ( 22.0% ) of genes in pham
- Manual Annotations of this start: 5 of 137
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Eponine\_29 (K4), Kari\_22 (P1), Langerak\_22 (P1), Malithi\_22 (P1), Phrann\_21 (N), SamScheppers\_27 (K4),

#### Start 24:

- Found in 7 of 150 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 5 of 137
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Butters\_22 (N), Juliette\_30 (K4), Kevin1\_22 (N), Pimento\_26 (DI), Rubeelu\_22 (N), Ruthiejr\_29 (K4),

#### Start 25:

- Found in 100 of 150 ( 66.7% ) of genes in pham
- Manual Annotations of this start: 86 of 137
- Called 94.0% of time when present
- Phage (with cluster) where this start called: 8UZL\_25 (AB), Agent47\_27 (K5), AlleyCat\_28 (K5), Andies\_21 (N), Arib1\_22 (P1), Atcoo\_22 (P1), Auspice\_31 (M1), Babsiella\_22 (I1), Bartholomew\_22 (P1), BigNuz\_22 (P4), Bipper\_28 (Y), Bongo\_31 (M1), Bricole\_31 (M1), Brusacoram\_22 (P1), Bunnies\_22 (P1), Camster\_22 (P1), Che9c\_21 (I2), Collard\_27 (K5), Cracklewink\_28 (Y), Curiosium\_29 (K1), Dadosky\_28 (K5), Diminimus\_32 (M1), Donovan\_22 (P1), Dulcita\_32 (M1), Dynamo\_22 (P1), Edugator\_27 (K5), FF47\_25 (AB), Farewell\_21 (AF), Feyre\_27 (K5), FirstPlacePfu\_22 (P1), Fishburne\_22 (P1), Gengar\_27 (K5), Glaske16\_32 (M1), Guillsminger\_27 (K5), HC\_22 (I1), HUHilltop\_22 (P1), Heftyboy\_27 (K5), Hilltopfarm\_28 (Y), IPhane7\_31 (M1), IdentityCrisis\_21 (singleton), InvictusManeo\_27 (K5), Jebeks\_22 (P1), Jung\_22 (P1), Juniormint\_22 (P1), Kratio\_26 (K5), Ksquared\_22 (P1), Larva\_28 (K5), Leston\_27 (K5), LilhomieP\_30 (M1), Maco6\_23 (AB), Majeke\_22 (P1), MalagasyRose\_28 (AG), Mangethe\_22 (P1), MichelleMyBell\_22 (N), Miryou\_27 (K5), Muddy\_25 (AB), Nazo\_22 (P4), Necropolis\_22 (P1), OkiRoe\_27 (K5), Omnicron\_28 (K5), Panchino\_21 (N), Paola\_27 (K5), PegLeg\_31 (M1), Phayonce\_22 (P5), Phegasus\_22 (P1), Phineas\_22 (P1), Polkaroo\_22 (P1), Psycho\_28 (K5), Purky\_22 (P6), Rando14\_28 (K5), Raymond7\_21 (N), Reindeer\_30 (M1), Sbash\_21 (I2), Scitech\_21 (N), SkinnyPete\_21 (N), Skinny\_32 (M1), SlimJimmy\_30 (M1), SoSeph\_27 (K5), Sonah\_22 (P1), Sparky\_21 (AF), StevieRay\_22 (P1), Techage\_22 (P1), Thespis\_22 (P1), ThulaThula\_22 (P5), Thyatira\_27 (K5), Tortellini\_22 (P2), TyDawg\_31 (M1), Typha\_28 (Y), Venti\_22 (P1), Vidya\_22 (P1), Waterfoul\_27 (K5), Willsammy\_22 (P1), Xavia\_22 (P3), Zilizebeth\_22 (P1),

Start 26:

- Found in 14 of 150 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 13 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya\_27 (DI), BetterKatz\_27 (DI), Bock\_27 (DI), Brylie\_27 (DI), Chop\_27 (DI), DelRio\_28 (DI), Francois\_27 (DI), GrandSlam\_27 (DI), Hamood\_27 (DI), Mulch\_27 (DI), Nadeem\_27 (DI), NancyRae\_27 (DI), Parada\_27 (DI), WheatThin\_27 (DI),

Start 27:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rebel\_21 (N),

Start 28:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Daredevil\_37 (DL),

Start 29:

- Found in 4 of 150 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 4 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jumbo\_25 (DF3), Labelle\_37 (U), Madruga\_36 (U), Patience\_38 (U),

Start 36:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archimedes\_26 (DA),

Start 37:

- Found in 11 of 150 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Snekmaggon\_21 (N),

**Summary by clusters:**

There are 26 clusters represented in this pham: DL, DI, singleton, DA, K1, AB, M1, K5, K4, AG, I1, I2, DF3, P5, P2, P3, P1, P6, P4, AF, AH, N, U, Y, Z, F1,

Info for manual annotations of cluster AB:

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

Info for manual annotations of cluster AF:

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

Info for manual annotations of cluster AG:

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

Info for manual annotations of cluster DA:

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

Info for manual annotations of cluster DF3:

- Start number 29 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DI:

- Start number 26 was manually annotated 13 times for cluster DI.

Info for manual annotations of cluster DL:

- Start number 28 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster F1:

- Start number 16 was manually annotated 3 times for cluster F1.
- Start number 17 was manually annotated 4 times for cluster F1.

Info for manual annotations of cluster I1:

- Start number 17 was manually annotated 2 times for cluster I1.
- Start number 25 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 25 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster K1:

- Start number 25 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K4:

- Start number 22 was manually annotated 1 time for cluster K4.
- Start number 23 was manually annotated 2 times for cluster K4.
- Start number 24 was manually annotated 2 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 25 was manually annotated 20 times for cluster K5.

Info for manual annotations of cluster M1:

- Start number 25 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster N:

- Start number 21 was manually annotated 2 times for cluster N.
- Start number 23 was manually annotated 1 time for cluster N.
- Start number 24 was manually annotated 3 times for cluster N.
- Start number 25 was manually annotated 5 times for cluster N.
- Start number 27 was manually annotated 1 time for cluster N.
- Start number 37 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P1:

- Start number 17 was manually annotated 1 time for cluster P1.
- Start number 21 was manually annotated 6 times for cluster P1.
- Start number 23 was manually annotated 2 times for cluster P1.
- Start number 25 was manually annotated 27 times for cluster P1.



Info for manual annotations of cluster P2:

- Start number 25 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 25 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

- Start number 25 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 25 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:

- Start number 25 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster U:

- Start number 29 was manually annotated 3 times for cluster U.

Info for manual annotations of cluster Y:

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

Info for manual annotations of cluster Z:

- Start number 17 was manually annotated 1 time for cluster Z.

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

Gene: 32HC\_31 Start: 25140, Stop: 26351, Start Num: 17

Candidate Starts for 32HC\_31:

(Start: 17 @25140 has 8 MA's), (18, 25161), (41, 25299), (60, 25401), (82, 25524), (83, 25539), (87, 25560), (95, 25611), (103, 25641), (107, 25644), (108, 25650), (112, 25677), (113, 25680), (115, 25686), (120, 25701), (123, 25707), (128, 25728), (131, 25740), (147, 25872), (149, 25899), (179, 26082), (187, 26115), (213, 26289),

Gene: 8UZL\_25 Start: 21727, Stop: 22752, Start Num: 25

Candidate Starts for 8UZL\_25:

(Start: 25 @21727 has 86 MA's), (39, 21817), (53, 21886), (55, 21895), (70, 21973), (85, 22036), (86, 22039), (93, 22087), (127, 22183), (135, 22219), (143, 22270), (148, 22327), (194, 22564), (216, 22690),

Gene: Agent47\_27 Start: 24079, Stop: 25143, Start Num: 25

Candidate Starts for Agent47\_27:

(Start: 25 @24079 has 86 MA's), (40, 24169), (45, 24196), (58, 24259), (67, 24307), (73, 24346), (77, 24364), (89, 24409), (94, 24448), (112, 24496), (118, 24514), (136, 24589), (145, 24655), (157, 24745), (158, 24748), (159, 24751), (165, 24784), (185, 24883), (187, 24886), (204, 24970), (207, 24982), (217, 25099),

Gene: Akhila\_20 Start: 20281, Stop: 21492, Start Num: 17

Candidate Starts for Akhila\_20:

(Start: 17 @20281 has 8 MA's), (19, 20305), (33, 20362), (Start: 37 @20410 has 1 MA's), (48, 20470), (49, 20479), (50, 20494), (57, 20518), (61, 20542), (63, 20554), (69, 20590), (76, 20629), (79, 20638), (82, 20662), (87, 20692), (104, 20776), (105, 20779), (106, 20800), (111, 20836), (112, 20839), (119,

20860), (129, 20902), (144, 21019), (150, 21055), (151, 21061), (170, 21166), (183, 21247),

Gene: AlleyCat\_28 Start: 24010, Stop: 25074, Start Num: 25

Candidate Starts for AlleyCat\_28:

(Start: 25 @24010 has 86 MA's), (40, 24100), (46, 24130), (56, 24184), (58, 24190), (67, 24238), (73, 24277), (77, 24295), (78, 24298), (94, 24379), (112, 24427), (118, 24445), (145, 24586), (157, 24676), (158, 24679), (159, 24682), (165, 24715), (168, 24727), (185, 24814), (187, 24817), (207, 24913), (217, 25030),

Gene: Andies\_21 Start: 20194, Stop: 21228, Start Num: 25

Candidate Starts for Andies\_21:

(Start: 25 @20194 has 86 MA's), (52, 20350), (54, 20356), (74, 20464), (75, 20467), (78, 20482), (96, 20569), (112, 20614), (135, 20695), (143, 20752), (145, 20776), (160, 20881), (174, 20953), (186, 20998),

Gene: Archimedes\_26 Start: 23367, Stop: 24368, Start Num: 36

Candidate Starts for Archimedes\_26:

(30, 23343), (Start: 36 @23367 has 1 MA's), (47, 23445), (74, 23595), (127, 23766), (145, 23898), (155, 23982), (161, 24018), (178, 24114), (202, 24213), (219, 24348),

Gene: Arib1\_22 Start: 21305, Stop: 22342, Start Num: 25

Candidate Starts for Arib1\_22:

(19, 21281), (Start: 23 @21302 has 5 MA's), (Start: 25 @21305 has 86 MA's), (32, 21329), (54, 21467), (62, 21509), (75, 21578), (89, 21638), (96, 21683), (112, 21728), (135, 21809), (143, 21866), (145, 21890), (160, 21995), (174, 22067), (186, 22112), (214, 22277),

Gene: Atcoo\_22 Start: 21759, Stop: 22826, Start Num: 25

Candidate Starts for Atcoo\_22:

(Start: 25 @21759 has 86 MA's), (54, 21921), (62, 21963), (75, 22032), (89, 22092), (96, 22137), (112, 22182), (143, 22320), (145, 22344),

Gene: Auspice\_31 Start: 26992, Stop: 28047, Start Num: 25

Candidate Starts for Auspice\_31:

(Start: 25 @26992 has 86 MA's), (64, 27205), (70, 27241), (85, 27304), (100, 27376), (112, 27406), (119, 27427), (130, 27463), (136, 27499), (143, 27547), (144, 27568), (146, 27574), (148, 27604), (150, 27607), (156, 27655), (199, 27865), (210, 27919),

Gene: Ayotoya\_27 Start: 24101, Stop: 25168, Start Num: 26

Candidate Starts for Ayotoya\_27:

(Start: 26 @24101 has 13 MA's), (99, 24479), (140, 24620), (142, 24635), (143, 24647), (145, 24671), (155, 24755), (157, 24761), (163, 24794), (167, 24806), (185, 24902), (187, 24905), (192, 24926),

Gene: Babsiella\_22 Start: 21313, Stop: 22350, Start Num: 25

Candidate Starts for Babsiella\_22:

(19, 21289), (Start: 23 @21310 has 5 MA's), (Start: 25 @21313 has 86 MA's), (32, 21337), (54, 21475), (62, 21517), (75, 21586), (89, 21646), (96, 21691), (112, 21736), (135, 21817), (143, 21874), (145, 21898), (160, 22003), (174, 22075), (186, 22120), (214, 22285),

Gene: Bartholomew\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Bartholomew\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: BetterKatz\_27 Start: 23574, Stop: 24641, Start Num: 26

Candidate Starts for BetterKatz\_27:

(Start: 26 @23574 has 13 MA's), (99, 23952), (140, 24093), (142, 24108), (143, 24120), (145, 24144), (146, 24147), (155, 24228), (185, 24375),

Gene: BigNuz\_22 Start: 21497, Stop: 22546, Start Num: 25

Candidate Starts for BigNuz\_22:

(Start: 25 @21497 has 86 MA's), (31, 21518), (54, 21659), (59, 21689), (64, 21710), (76, 21773), (86, 21812), (132, 21971), (148, 22103), (166, 22199), (215, 22484),

Gene: BigPhil\_20 Start: 20087, Stop: 21244, Start Num: 16

Candidate Starts for BigPhil\_20:

(Start: 16 @20087 has 3 MA's), (Start: 17 @20090 has 8 MA's), (Start: 37 @20219 has 1 MA's), (42, 20249), (48, 20279), (49, 20288), (50, 20303), (57, 20327), (61, 20351), (63, 20363), (76, 20438), (79, 20447), (82, 20471), (87, 20501), (111, 20585), (112, 20588), (119, 20609), (156, 20858), (159, 20867), (164, 20897), (170, 20918), (178, 20987), (218, 21221),

Gene: Bipper\_28 Start: 26155, Stop: 27216, Start Num: 25

Candidate Starts for Bipper\_28:

(Start: 25 @26155 has 86 MA's), (49, 26293), (53, 26314), (54, 26317), (63, 26365), (64, 26368), (77, 26443), (89, 26488), (96, 26530), (97, 26533), (102, 26551), (112, 26575), (116, 26587), (119, 26596), (121, 26602), (145, 26734), (157, 26824), (170, 26881), (175, 26917), (180, 26956), (198, 27037), (220, 27199),

Gene: Bock\_27 Start: 23324, Stop: 24391, Start Num: 26

Candidate Starts for Bock\_27:

(Start: 26 @23324 has 13 MA's), (99, 23702), (140, 23843), (142, 23858), (145, 23894), (155, 23978), (185, 24125),

Gene: Bongo\_31 Start: 26992, Stop: 28047, Start Num: 25

Candidate Starts for Bongo\_31:

(Start: 25 @26992 has 86 MA's), (64, 27205), (70, 27241), (85, 27304), (100, 27376), (112, 27406), (119, 27427), (130, 27463), (136, 27499), (143, 27547), (144, 27568), (146, 27574), (148, 27604), (150, 27607), (156, 27655), (195, 27844), (199, 27865), (210, 27919),

Gene: Bricole\_31 Start: 26978, Stop: 28033, Start Num: 25

Candidate Starts for Bricole\_31:

(Start: 25 @26978 has 86 MA's), (64, 27191), (70, 27227), (85, 27290), (100, 27362), (112, 27392), (119, 27413), (130, 27449), (136, 27485), (143, 27533), (144, 27554), (146, 27560), (148, 27590), (150, 27593), (156, 27641), (195, 27830), (199, 27851), (210, 27905),

Gene: Brusacoram\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Brusacoram\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Brylie\_27 Start: 23315, Stop: 24382, Start Num: 26

Candidate Starts for Brylie\_27:

(Start: 26 @23315 has 13 MA's), (64, 23525), (99, 23693), (140, 23834), (142, 23849), (143, 23861), (145, 23885), (155, 23969), (162, 24005), (185, 24116),

Gene: Bunnies\_22 Start: 21321, Stop: 22358, Start Num: 25

Candidate Starts for Bunnies\_22:

(19, 21297), (Start: 23 @21318 has 5 MA's), (Start: 25 @21321 has 86 MA's), (32, 21345), (54, 21483), (62, 21525), (75, 21594), (89, 21654), (96, 21699), (112, 21744), (135, 21825), (143, 21882), (145, 21906), (160, 22011), (174, 22083), (186, 22128), (214, 22293),

Gene: Butters\_22 Start: 19998, Stop: 21038, Start Num: 24

Candidate Starts for Butters\_22:

(13, 19932), (Start: 24 @19998 has 5 MA's), (52, 20157), (54, 20163), (74, 20271), (75, 20274), (78, 20289), (96, 20379), (112, 20424), (135, 20505), (143, 20562), (145, 20586), (157, 20673), (160, 20691), (174, 20763), (186, 20808), (214, 20973),

Gene: CactusJack\_22 Start: 21561, Stop: 22601, Start Num: 21

Candidate Starts for CactusJack\_22:

(Start: 21 @21561 has 8 MA's), (52, 21720), (54, 21726), (62, 21768), (74, 21834), (75, 21837), (89, 21897), (96, 21942), (112, 21987), (135, 22068), (143, 22125), (145, 22149), (160, 22254), (174, 22326), (186, 22371),

Gene: Camster\_22 Start: 21300, Stop: 22367, Start Num: 25

Candidate Starts for Camster\_22:

(19, 21276), (Start: 23 @21297 has 5 MA's), (Start: 25 @21300 has 86 MA's), (32, 21324), (54, 21462), (62, 21504), (75, 21573), (89, 21633), (96, 21678), (112, 21723), (134, 21792), (135, 21804), (143, 21861), (145, 21885), (173, 22056),

Gene: Cerasum\_20 Start: 20087, Stop: 21244, Start Num: 16

Candidate Starts for Cerasum\_20:

(Start: 16 @20087 has 3 MA's), (Start: 17 @20090 has 8 MA's), (Start: 37 @20219 has 1 MA's), (42, 20249), (48, 20279), (49, 20288), (50, 20303), (57, 20327), (61, 20351), (63, 20363), (76, 20438), (79, 20447), (82, 20471), (87, 20501), (111, 20585), (112, 20588), (119, 20609), (156, 20858), (159, 20867), (164, 20897), (170, 20918), (178, 20987), (218, 21221),

Gene: Che9c\_21 Start: 21007, Stop: 22053, Start Num: 25

Candidate Starts for Che9c\_21:

(Start: 25 @21007 has 86 MA's), (64, 21220), (89, 21331), (96, 21373), (97, 21376), (121, 21445), (144, 21577), (148, 21613), (169, 21721), (199, 21874), (200, 21883), (201, 21895),

Gene: Chop\_27 Start: 23849, Stop: 24916, Start Num: 26

Candidate Starts for Chop\_27:

(Start: 26 @23849 has 13 MA's), (99, 24227), (140, 24368), (142, 24383), (143, 24395), (145, 24419), (155, 24503), (157, 24509), (163, 24542), (167, 24554), (185, 24650), (187, 24653), (192, 24674),

Gene: Collard\_27 Start: 24040, Stop: 25104, Start Num: 25

Candidate Starts for Collard\_27:

(Start: 25 @24040 has 86 MA's), (40, 24130), (45, 24157), (58, 24220), (67, 24268), (73, 24307), (77, 24325), (89, 24370), (94, 24409), (112, 24457), (118, 24475), (136, 24550), (145, 24616), (157, 24706), (158, 24709), (159, 24712), (165, 24745), (185, 24844), (187, 24847), (204, 24931), (207, 24943), (217, 25060),

Gene: Cracklewink\_28 Start: 26155, Stop: 27216, Start Num: 25

Candidate Starts for Cracklewink\_28:

(Start: 25 @26155 has 86 MA's), (49, 26293), (53, 26314), (54, 26317), (63, 26365), (64, 26368), (77, 26443), (89, 26488), (96, 26530), (97, 26533), (102, 26551), (112, 26575), (116, 26587), (119, 26596), (121, 26602), (145, 26734), (157, 26824), (170, 26881), (180, 26956), (198, 27037), (220, 27199),

Gene: Curiosium\_29 Start: 23069, Stop: 24148, Start Num: 25

Candidate Starts for Curiosium\_29:

(Start: 25 @23069 has 86 MA's), (34, 23096), (44, 23183), (52, 23228), (56, 23243), (58, 23249), (62, 23276), (65, 23291), (73, 23336), (74, 23339), (76, 23351), (81, 23372), (89, 23399), (92, 23420), (112, 23486), (143, 23630), (144, 23651), (146, 23657), (177, 23855), (188, 23888), (190, 23897),

Gene: Dadosky\_28 Start: 24011, Stop: 25075, Start Num: 25

Candidate Starts for Dadosky\_28:

(Start: 25 @24011 has 86 MA's), (40, 24101), (46, 24131), (56, 24185), (58, 24191), (67, 24239), (73, 24278), (77, 24296), (78, 24299), (94, 24380), (112, 24428), (118, 24446), (145, 24587), (157, 24677), (158, 24680), (159, 24683), (165, 24716), (168, 24728), (185, 24815), (187, 24818), (207, 24914), (217, 25031),

Gene: Daredevil\_37 Start: 34603, Stop: 35670, Start Num: 28

Candidate Starts for Daredevil\_37:

(Start: 28 @34603 has 1 MA's), (91, 34948), (101, 34993), (115, 35023), (165, 35314), (167, 35320), (171, 35338), (181, 35404), (182, 35407), (188, 35425), (197, 35473), (221, 35659),

Gene: DelRio\_28 Start: 24323, Stop: 25387, Start Num: 26

Candidate Starts for DelRio\_28:

(Start: 26 @24323 has 13 MA's), (99, 24701), (140, 24842), (142, 24854), (143, 24866), (145, 24890), (155, 24974), (163, 25013), (185, 25121),

Gene: Diminimus\_32 Start: 26991, Stop: 28046, Start Num: 25

Candidate Starts for Diminimus\_32:

(Start: 25 @26991 has 86 MA's), (64, 27204), (70, 27240), (85, 27303), (100, 27375), (112, 27405), (119, 27426), (130, 27462), (136, 27498), (143, 27546), (144, 27567), (146, 27573), (148, 27603), (150, 27606), (156, 27654), (199, 27864), (210, 27918),

Gene: Donovan\_22 Start: 21288, Stop: 22325, Start Num: 25

Candidate Starts for Donovan\_22:

(19, 21264), (Start: 23 @21285 has 5 MA's), (Start: 25 @21288 has 86 MA's), (32, 21312), (54, 21450), (62, 21492), (75, 21561), (89, 21621), (96, 21666), (112, 21711), (135, 21792), (143, 21849), (145, 21873), (160, 21978), (174, 22050), (186, 22095), (214, 22260),

Gene: Dulcita\_32 Start: 26991, Stop: 28046, Start Num: 25

Candidate Starts for Dulcita\_32:

(Start: 25 @26991 has 86 MA's), (64, 27204), (70, 27240), (85, 27303), (100, 27375), (112, 27405), (119, 27426), (130, 27462), (136, 27498), (143, 27546), (144, 27567), (146, 27573), (148, 27603), (150, 27606), (156, 27654), (199, 27864), (210, 27918),

Gene: Dynamo\_22 Start: 21688, Stop: 22722, Start Num: 25

Candidate Starts for Dynamo\_22:

(Start: 25 @21688 has 86 MA's), (52, 21844), (54, 21850), (74, 21958), (75, 21961), (78, 21976), (96, 22063), (112, 22108), (135, 22189), (143, 22246), (145, 22270), (160, 22375), (174, 22447), (186, 22492),

Gene: Edugator\_27 Start: 24010, Stop: 25074, Start Num: 25

Candidate Starts for Edugator\_27:

(Start: 25 @24010 has 86 MA's), (40, 24100), (46, 24130), (56, 24184), (58, 24190), (67, 24238), (73, 24277), (77, 24295), (78, 24298), (94, 24379), (112, 24427), (118, 24445), (145, 24586), (157, 24676), (158, 24679), (159, 24682), (165, 24715), (168, 24727), (185, 24814), (187, 24817), (217, 25030),

Gene: Eponine\_29 Start: 24914, Stop: 25987, Start Num: 23

Candidate Starts for Eponine\_29:

(Start: 23 @24914 has 5 MA's), (Start: 25 @24917 has 86 MA's), (68, 25157), (75, 25193), (76, 25202), (78, 25208), (89, 25253), (96, 25298), (101, 25316), (112, 25343), (135, 25424), (143, 25481), (145, 25505),

Gene: FF47\_25 Start: 21654, Stop: 22679, Start Num: 25

Candidate Starts for FF47\_25:

(Start: 25 @21654 has 86 MA's), (39, 21744), (53, 21813), (55, 21822), (70, 21900), (85, 21963), (86, 21966), (127, 22110), (135, 22146), (148, 22254), (194, 22491), (216, 22617),

Gene: Farewell\_21 Start: 21884, Stop: 22930, Start Num: 25

Candidate Starts for Farewell\_21:

(Start: 25 @21884 has 86 MA's), (59, 22076), (64, 22097), (89, 22208), (96, 22250), (97, 22253), (144, 22454), (148, 22490), (169, 22598), (199, 22751), (200, 22760), (201, 22772),

Gene: Feyre\_27 Start: 23851, Stop: 24918, Start Num: 25

Candidate Starts for Feyre\_27:

(Start: 25 @23851 has 86 MA's), (45, 23968), (65, 24073), (67, 24079), (78, 24139), (81, 24154), (89, 24181), (94, 24220), (96, 24223), (99, 24235), (100, 24238), (101, 24241), (109, 24256), (124, 24301), (126, 24307), (136, 24361), (143, 24409), (147, 24439), (153, 24484), (184, 24667),

Gene: FirstPlacePfu\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for FirstPlacePfu\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Fishburne\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Fishburne\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Francois\_27 Start: 23338, Stop: 24405, Start Num: 26

Candidate Starts for Francois\_27:

(Start: 26 @23338 has 13 MA's), (99, 23716), (140, 23857), (143, 23884), (145, 23908), (155, 23992), (185, 24139),

Gene: Gengar\_27 Start: 23958, Stop: 25028, Start Num: 25

Candidate Starts for Gengar\_27:

(Start: 25 @23958 has 86 MA's), (56, 24132), (67, 24186), (77, 24243), (78, 24246), (81, 24261), (89, 24288), (94, 24327), (96, 24330), (99, 24342), (100, 24345), (101, 24348), (126, 24417), (136, 24471), (147, 24549), (153, 24594), (184, 24777),

Gene: Glaske\_22 Start: 21561, Stop: 22601, Start Num: 21

Candidate Starts for Glaske\_22:

(Start: 21 @21561 has 8 MA's), (52, 21720), (54, 21726), (62, 21768), (74, 21834), (75, 21837), (89, 21897), (96, 21942), (112, 21987), (135, 22068), (143, 22125), (145, 22149), (160, 22254), (174, 22326), (186, 22371),

Gene: Glaske16\_32 Start: 26991, Stop: 28046, Start Num: 25

Candidate Starts for Glaske16\_32:

(Start: 25 @26991 has 86 MA's), (64, 27204), (70, 27240), (85, 27303), (100, 27375), (112, 27405), (119, 27426), (130, 27462), (136, 27498), (143, 27546), (144, 27567), (146, 27573), (148, 27603), (150, 27606), (156, 27654), (199, 27864), (210, 27918),

Gene: GrandSlam\_27 Start: 23849, Stop: 24916, Start Num: 26

Candidate Starts for GrandSlam\_27:

(Start: 26 @23849 has 13 MA's), (99, 24227), (140, 24368), (142, 24383), (143, 24395), (145, 24419), (155, 24503), (157, 24509), (163, 24542), (167, 24554), (185, 24650), (187, 24653), (192, 24674),

Gene: GreaseLightnin\_22 Start: 21355, Stop: 22509, Start Num: 17

Candidate Starts for GreaseLightnin\_22:

(1, 21118), (2, 21160), (4, 21190), (6, 21220), (7, 21229), (12, 21280), (14, 21334), (Start: 17 @21355 has 8 MA's), (33, 21436), (Start: 37 @21484 has 1 MA's), (48, 21544), (49, 21553), (50, 21568), (57, 21592), (61, 21616), (63, 21628), (76, 21703), (79, 21712), (82, 21736), (87, 21766), (111, 21850), (112, 21853), (119, 21874), (144, 22033), (156, 22123), (159, 22132), (164, 22162), (170, 22183), (218, 22486),

Gene: Guillsminger\_27 Start: 23933, Stop: 25000, Start Num: 25

Candidate Starts for Guillsminger\_27:

(Start: 25 @23933 has 86 MA's), (45, 24050), (56, 24107), (65, 24155), (67, 24161), (77, 24218), (78, 24221), (81, 24236), (89, 24263), (94, 24302), (96, 24305), (99, 24317), (100, 24320), (101, 24323), (109, 24338), (124, 24383), (126, 24389), (136, 24443), (143, 24491), (147, 24521), (153, 24566), (174, 24695), (184, 24749),

Gene: HC\_22 Start: 21369, Stop: 22406, Start Num: 25

Candidate Starts for HC\_22:

(19, 21345), (Start: 23 @21366 has 5 MA's), (Start: 25 @21369 has 86 MA's), (32, 21393), (54, 21531), (62, 21573), (75, 21642), (89, 21702), (96, 21747), (112, 21792), (135, 21873), (143, 21930), (145, 21954), (160, 22059), (174, 22131), (186, 22176), (214, 22341),

Gene: HUHilltop\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for HUHilltop\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Hamood\_27 Start: 23849, Stop: 24916, Start Num: 26

Candidate Starts for Hamood\_27:

(Start: 26 @23849 has 13 MA's), (99, 24227), (140, 24368), (142, 24383), (143, 24395), (145, 24419), (155, 24503), (157, 24509), (163, 24542), (167, 24554), (185, 24650), (187, 24653), (192, 24674),

Gene: Heftyboy\_27 Start: 24081, Stop: 25148, Start Num: 25

Candidate Starts for Heftyboy\_27:

(Start: 25 @24081 has 86 MA's), (45, 24198), (56, 24255), (65, 24303), (67, 24309), (77, 24366), (78, 24369), (81, 24384), (89, 24411), (94, 24450), (96, 24453), (99, 24465), (100, 24468), (101, 24471), (109, 24486), (124, 24531), (126, 24537), (136, 24591), (143, 24639), (147, 24669), (153, 24714), (174, 24843), (184, 24897),

Gene: Hilltopfarm\_28 Start: 26055, Stop: 27092, Start Num: 25

Candidate Starts for Hilltopfarm\_28:

(Start: 25 @26055 has 86 MA's), (47, 26178), (58, 26232), (64, 26268), (76, 26331), (89, 26379), (99, 26433), (100, 26436), (144, 26622), (148, 26658), (154, 26700), (159, 26718), (170, 26769),

Gene: IPhone7\_31 Start: 26992, Stop: 28047, Start Num: 25

Candidate Starts for IPhone7\_31:

(Start: 25 @26992 has 86 MA's), (64, 27205), (70, 27241), (85, 27304), (100, 27376), (112, 27406), (119, 27427), (130, 27463), (136, 27499), (143, 27547), (144, 27568), (146, 27574), (148, 27604), (150, 27607), (156, 27655), (195, 27844), (199, 27865), (210, 27919),

Gene: IdentityCrisis\_21 Start: 19031, Stop: 20086, Start Num: 25

Candidate Starts for IdentityCrisis\_21:

(Start: 25 @19031 has 86 MA's), (45, 19148), (78, 19322), (109, 19439), (110, 19445), (145, 19610), (159, 19703), (169, 19751), (174, 19787), (193, 19880),

Gene: InvictusManeo\_27 Start: 24083, Stop: 25147, Start Num: 25

Candidate Starts for InvictusManeo\_27:

(Start: 25 @24083 has 86 MA's), (40, 24173), (45, 24200), (58, 24263), (67, 24311), (73, 24350), (77, 24368), (89, 24413), (94, 24452), (112, 24500), (118, 24518), (136, 24593), (145, 24659), (157, 24749), (158, 24752), (159, 24755), (165, 24788), (185, 24887), (187, 24890), (204, 24974), (207, 24986), (217, 25103),

Gene: Jebeks\_22 Start: 21284, Stop: 22321, Start Num: 25

Candidate Starts for Jebeks\_22:

(19, 21260), (Start: 23 @21281 has 5 MA's), (Start: 25 @21284 has 86 MA's), (32, 21308), (54, 21446), (62, 21488), (75, 21557), (89, 21617), (96, 21662), (112, 21707), (135, 21788), (143, 21845), (145, 21869), (160, 21974), (174, 22046), (186, 22091), (214, 22256),

Gene: Juliette\_30 Start: 24531, Stop: 25565, Start Num: 24

Candidate Starts for Juliette\_30:

(13, 24465), (Start: 24 @24531 has 5 MA's), (52, 24687), (53, 24690), (62, 24735), (64, 24744), (78, 24819), (96, 24906), (112, 24951), (135, 25032), (143, 25089), (145, 25113), (160, 25218), (174, 25290), (191, 25350), (214, 25500),

Gene: Jumbo\_25 Start: 36377, Stop: 37471, Start Num: 29

Candidate Starts for Jumbo\_25:

(Start: 29 @36377 has 4 MA's), (43, 36485), (67, 36602), (85, 36689), (130, 36851), (143, 36944), (144, 36965), (157, 37052), (208, 37319),

Gene: Jung\_22 Start: 21225, Stop: 22292, Start Num: 25

Candidate Starts for Jung\_22:

(19, 21201), (Start: 23 @21222 has 5 MA's), (Start: 25 @21225 has 86 MA's), (32, 21249), (52, 21381), (54, 21387), (62, 21429), (74, 21495), (75, 21498), (89, 21558), (96, 21603), (112, 21648), (135, 21729), (143, 21786), (145, 21810), (151, 21852), (173, 21981), (176, 22002),

Gene: Juniormint\_22 Start: 21325, Stop: 22380, Start Num: 25

Candidate Starts for Juniormint\_22:

(19, 21301), (Start: 23 @21322 has 5 MA's), (Start: 25 @21325 has 86 MA's), (32, 21349), (54, 21487), (62, 21529), (75, 21598), (89, 21676), (96, 21721), (112, 21766), (135, 21847), (143, 21904), (145, 21928), (160, 22033), (174, 22105), (186, 22150), (214, 22315),

Gene: JustASigh\_23 Start: 22794, Stop: 23885, Start Num: 17

Candidate Starts for JustASigh\_23:

(8, 22689), (Start: 17 @22794 has 8 MA's), (61, 23058), (84, 23202), (86, 23211), (117, 23322), (159, 23547), (217, 23841), (218, 23862),



Gene: Kari\_22 Start: 21296, Stop: 22336, Start Num: 23

Candidate Starts for Kari\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Kevin1\_22 Start: 19999, Stop: 21036, Start Num: 24

Candidate Starts for Kevin1\_22:

(13, 19933), (Start: 24 @19999 has 5 MA's), (52, 20155), (54, 20161), (74, 20269), (78, 20287), (96, 20377), (112, 20422), (135, 20503), (145, 20584), (157, 20671), (160, 20689), (174, 20761), (186, 20806), (214, 20971),

Gene: KilKor\_22 Start: 21561, Stop: 22601, Start Num: 21

Candidate Starts for KilKor\_22:

(Start: 21 @21561 has 8 MA's), (52, 21720), (54, 21726), (62, 21768), (74, 21834), (75, 21837), (89, 21897), (96, 21942), (112, 21987), (135, 22068), (143, 22125), (145, 22149), (160, 22254), (174, 22326), (186, 22371),

Gene: Kratio\_26 Start: 23714, Stop: 24778, Start Num: 25

Candidate Starts for Kratio\_26:

(Start: 25 @23714 has 86 MA's), (40, 23804), (46, 23834), (58, 23894), (67, 23942), (73, 23981), (77, 23999), (94, 24083), (112, 24131), (118, 24149), (136, 24224), (145, 24290), (157, 24380), (158, 24383), (159, 24386), (165, 24419), (185, 24518), (187, 24521), (204, 24605), (207, 24617), (217, 24734),

Gene: Ksquared\_22 Start: 21321, Stop: 22358, Start Num: 25

Candidate Starts for Ksquared\_22:

(19, 21297), (Start: 23 @21318 has 5 MA's), (Start: 25 @21321 has 86 MA's), (32, 21345), (54, 21483), (62, 21525), (75, 21594), (89, 21654), (96, 21699), (112, 21744), (135, 21825), (143, 21882), (145, 21906), (160, 22011), (174, 22083), (186, 22128), (214, 22293),

Gene: Labelle\_37 Start: 32043, Stop: 33083, Start Num: 29

Candidate Starts for Labelle\_37:

(Start: 29 @32043 has 4 MA's), (39, 32121), (53, 32199), (98, 32412), (99, 32418), (127, 32496), (143, 32589), (146, 32616),

Gene: Langerak\_22 Start: 21280, Stop: 22320, Start Num: 23

Candidate Starts for Langerak\_22:

(19, 21259), (Start: 23 @21280 has 5 MA's), (Start: 25 @21283 has 86 MA's), (32, 21307), (54, 21445), (62, 21487), (75, 21556), (89, 21616), (96, 21661), (112, 21706), (135, 21787), (143, 21844), (145, 21868), (160, 21973), (174, 22045), (186, 22090), (214, 22255),

Gene: Larva\_28 Start: 23878, Stop: 24942, Start Num: 25

Candidate Starts for Larva\_28:

(Start: 25 @23878 has 86 MA's), (40, 23968), (46, 23998), (56, 24052), (58, 24058), (67, 24106), (73, 24145), (77, 24163), (78, 24166), (94, 24247), (112, 24295), (118, 24313), (145, 24454), (157, 24544), (158, 24547), (159, 24550), (165, 24583), (168, 24595), (185, 24682), (187, 24685), (207, 24781), (217, 24898),

Gene: Leston\_27 Start: 24063, Stop: 25130, Start Num: 25

Candidate Starts for Leston\_27:

(Start: 25 @24063 has 86 MA's), (45, 24180), (56, 24237), (65, 24285), (67, 24291), (77, 24348), (78, 24351), (81, 24366), (89, 24393), (94, 24432), (96, 24435), (99, 24447), (100, 24450), (101, 24453),

(109, 24468), (124, 24513), (126, 24519), (136, 24573), (143, 24621), (147, 24651), (153, 24696), (174, 24825), (184, 24879),

Gene: LilhomieP\_30 Start: 26992, Stop: 28047, Start Num: 25

Candidate Starts for LilhomieP\_30:

(Start: 25 @26992 has 86 MA's), (64, 27205), (70, 27241), (85, 27304), (100, 27376), (112, 27406), (119, 27427), (130, 27463), (136, 27499), (143, 27547), (144, 27568), (146, 27574), (148, 27604), (150, 27607), (156, 27655), (195, 27844), (199, 27865), (210, 27919),

Gene: Maco6\_23 Start: 20985, Stop: 22013, Start Num: 25

Candidate Starts for Maco6\_23:

(Start: 25 @20985 has 86 MA's), (39, 21075), (53, 21144), (55, 21153), (70, 21231), (85, 21294), (86, 21297), (127, 21441), (135, 21477), (143, 21528), (148, 21585), (194, 21825), (216, 21951),

Gene: Madruga\_36 Start: 31712, Stop: 32752, Start Num: 29

Candidate Starts for Madruga\_36:

(Start: 29 @31712 has 4 MA's), (39, 31790), (53, 31868), (98, 32081), (99, 32087), (127, 32165), (143, 32258), (146, 32285),

Gene: Majeke\_22 Start: 21305, Stop: 22342, Start Num: 25

Candidate Starts for Majeke\_22:

(19, 21281), (Start: 23 @21302 has 5 MA's), (Start: 25 @21305 has 86 MA's), (32, 21329), (54, 21467), (62, 21509), (75, 21578), (89, 21638), (96, 21683), (112, 21728), (135, 21809), (143, 21866), (145, 21890), (160, 21995), (174, 22067), (186, 22112), (214, 22277),

Gene: MalagasyRose\_28 Start: 22698, Stop: 23777, Start Num: 25

Candidate Starts for MalagasyRose\_28:

(Start: 25 @22698 has 86 MA's), (31, 22719), (44, 22812), (51, 22854), (52, 22857), (56, 22872), (67, 22926), (70, 22947), (73, 22965), (89, 23028), (92, 23049), (101, 23088), (112, 23115), (118, 23133), (136, 23211), (139, 23229), (170, 23424), (177, 23484), (205, 23607),

Gene: Malithi\_22 Start: 21221, Stop: 22261, Start Num: 23

Candidate Starts for Malithi\_22:

(19, 21200), (Start: 23 @21221 has 5 MA's), (Start: 25 @21224 has 86 MA's), (32, 21248), (54, 21386), (62, 21428), (75, 21497), (89, 21557), (96, 21602), (112, 21647), (135, 21728), (143, 21785), (145, 21809), (160, 21914), (174, 21986), (186, 22031), (214, 22196),

Gene: Mangethe\_22 Start: 21305, Stop: 22342, Start Num: 25

Candidate Starts for Mangethe\_22:

(19, 21281), (Start: 23 @21302 has 5 MA's), (Start: 25 @21305 has 86 MA's), (32, 21329), (54, 21467), (62, 21509), (75, 21578), (89, 21638), (96, 21683), (112, 21728), (135, 21809), (143, 21866), (145, 21890), (160, 21995), (174, 22067), (186, 22112), (214, 22277),

Gene: Megiddo\_22 Start: 21561, Stop: 22601, Start Num: 21

Candidate Starts for Megiddo\_22:

(Start: 21 @21561 has 8 MA's), (52, 21720), (54, 21726), (62, 21768), (74, 21834), (75, 21837), (89, 21897), (96, 21942), (112, 21987), (135, 22068), (143, 22125), (145, 22149), (160, 22254), (174, 22326), (186, 22371),

Gene: MichelleMyBell\_22 Start: 20029, Stop: 21114, Start Num: 25

Candidate Starts for MichelleMyBell\_22:

(13, 19963), (Start: 25 @20029 has 86 MA's), (54, 20191), (75, 20302), (89, 20362), (96, 20407), (135, 20533), (136, 20542), (143, 20590),

Gene: MilanaBonita\_20 Start: 20281, Stop: 21492, Start Num: 17

Candidate Starts for MilanaBonita\_20:

(Start: 17 @20281 has 8 MA's), (19, 20305), (33, 20362), (Start: 37 @20410 has 1 MA's), (48, 20470), (49, 20479), (50, 20494), (57, 20518), (61, 20542), (63, 20554), (69, 20590), (76, 20629), (79, 20638), (82, 20662), (87, 20692), (104, 20776), (105, 20779), (106, 20800), (111, 20836), (112, 20839), (119, 20860), (129, 20902), (144, 21019), (150, 21055), (151, 21061), (170, 21166), (183, 21247),

Gene: Miryou\_27 Start: 23918, Stop: 24985, Start Num: 25

Candidate Starts for Miryou\_27:

(Start: 25 @23918 has 86 MA's), (45, 24035), (56, 24092), (65, 24140), (67, 24146), (77, 24203), (78, 24206), (81, 24221), (89, 24248), (94, 24287), (96, 24290), (99, 24302), (100, 24305), (101, 24308), (109, 24323), (124, 24368), (126, 24374), (136, 24428), (143, 24476), (147, 24506), (153, 24551), (174, 24680), (184, 24734),

Gene: Muddy\_25 Start: 21935, Stop: 22960, Start Num: 25

Candidate Starts for Muddy\_25:

(Start: 25 @21935 has 86 MA's), (39, 22025), (70, 22181), (85, 22244), (86, 22247), (127, 22391), (135, 22427), (143, 22478), (148, 22535), (188, 22733), (194, 22772), (216, 22898),

Gene: Mulch\_27 Start: 23315, Stop: 24382, Start Num: 26

Candidate Starts for Mulch\_27:

(Start: 26 @23315 has 13 MA's), (64, 23525), (99, 23693), (140, 23834), (142, 23849), (143, 23861), (145, 23885), (155, 23969), (162, 24005), (185, 24116),

Gene: Nadeem\_27 Start: 23315, Stop: 24382, Start Num: 26

Candidate Starts for Nadeem\_27:

(Start: 26 @23315 has 13 MA's), (64, 23525), (99, 23693), (140, 23834), (142, 23849), (143, 23861), (145, 23885), (155, 23969), (185, 24116),

Gene: NancyRae\_27 Start: 23321, Stop: 24388, Start Num: 26

Candidate Starts for NancyRae\_27:

(Start: 26 @23321 has 13 MA's), (64, 23531), (99, 23699), (140, 23840), (142, 23855), (143, 23867), (145, 23891), (155, 23975), (162, 24011), (185, 24122),

Gene: Nazo\_22 Start: 21497, Stop: 22546, Start Num: 25

Candidate Starts for Nazo\_22:

(Start: 25 @21497 has 86 MA's), (31, 21518), (54, 21659), (59, 21689), (64, 21710), (76, 21773), (86, 21812), (132, 21971), (148, 22103), (166, 22199), (215, 22484),

Gene: Necropolis\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Necropolis\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: OkiRoe\_27 Start: 23934, Stop: 25001, Start Num: 25

Candidate Starts for OkiRoe\_27:

(Start: 25 @23934 has 86 MA's), (45, 24051), (56, 24108), (65, 24156), (67, 24162), (78, 24222), (81, 24237), (89, 24264), (94, 24303), (96, 24306), (99, 24318), (100, 24321), (101, 24324), (109, 24339), (124, 24384), (126, 24390), (136, 24444), (143, 24492), (147, 24522), (153, 24567), (174, 24696), (184, 24750),

Gene: Omnicron\_28 Start: 22797, Stop: 23876, Start Num: 25

Candidate Starts for Omnicron\_28:

(Start: 25 @22797 has 86 MA's), (34, 22824), (56, 22971), (58, 22977), (67, 23025), (73, 23064), (77, 23082), (81, 23100), (94, 23166), (109, 23202), (116, 23226), (118, 23232), (138, 23325), (152, 23427), (157, 23472), (168, 23517), (169, 23520), (172, 23538), (175, 23559), (182, 23601), (188, 23619), (205, 23715), (206, 23718), (220, 23859),

Gene: Panchino\_21 Start: 20180, Stop: 21217, Start Num: 25

Candidate Starts for Panchino\_21:

(Start: 25 @20180 has 86 MA's), (52, 20336), (54, 20342), (74, 20450), (78, 20468), (96, 20558), (112, 20603), (135, 20684), (145, 20765), (157, 20852), (160, 20870), (174, 20942), (186, 20987), (214, 21152),

Gene: Paola\_27 Start: 23933, Stop: 25000, Start Num: 25

Candidate Starts for Paola\_27:

(Start: 25 @23933 has 86 MA's), (45, 24050), (56, 24107), (65, 24155), (67, 24161), (77, 24218), (78, 24221), (81, 24236), (89, 24263), (94, 24302), (96, 24305), (99, 24317), (100, 24320), (101, 24323), (109, 24338), (124, 24383), (126, 24389), (136, 24443), (143, 24491), (147, 24521), (153, 24566), (174, 24695), (184, 24749),

Gene: Parada\_27 Start: 23315, Stop: 24382, Start Num: 26

Candidate Starts for Parada\_27:

(Start: 26 @23315 has 13 MA's), (64, 23525), (99, 23693), (140, 23834), (142, 23849), (143, 23861), (145, 23885), (155, 23969), (162, 24005), (185, 24116),

Gene: Patience\_38 Start: 32593, Stop: 33633, Start Num: 29

Candidate Starts for Patience\_38:

(Start: 29 @32593 has 4 MA's), (39, 32671), (53, 32749), (98, 32962), (99, 32968), (127, 33046), (143, 33139), (146, 33166),

Gene: PegLeg\_31 Start: 26991, Stop: 28046, Start Num: 25

Candidate Starts for PegLeg\_31:

(Start: 25 @26991 has 86 MA's), (64, 27204), (70, 27240), (85, 27303), (100, 27375), (112, 27405), (119, 27426), (130, 27462), (136, 27498), (143, 27546), (144, 27567), (146, 27573), (148, 27603), (150, 27606), (156, 27654), (195, 27843), (199, 27864), (210, 27918),

Gene: Phalm\_22 Start: 21561, Stop: 22601, Start Num: 21

Candidate Starts for Phalm\_22:

(Start: 21 @21561 has 8 MA's), (52, 21720), (54, 21726), (62, 21768), (74, 21834), (75, 21837), (89, 21897), (96, 21942), (112, 21987), (135, 22068), (143, 22125), (145, 22149), (160, 22254), (174, 22326), (186, 22371),

Gene: Phayonce\_22 Start: 21448, Stop: 22485, Start Num: 25

Candidate Starts for Phayonce\_22:

(Start: 25 @21448 has 86 MA's), (54, 21610), (64, 21661), (70, 21697), (76, 21724), (89, 21772), (100, 21829), (114, 21865), (144, 22018), (148, 22054), (160, 22126), (188, 22261), (199, 22315), (212, 22393),

Gene: Phegasus\_22 Start: 21305, Stop: 22342, Start Num: 25

Candidate Starts for Phegasus\_22:

(19, 21281), (Start: 23 @21302 has 5 MA's), (Start: 25 @21305 has 86 MA's), (32, 21329), (54, 21467), (62, 21509), (75, 21578), (89, 21638), (96, 21683), (112, 21728), (135, 21809), (143, 21866), (145, 21890), (160, 21995), (174, 22067), (186, 22112), (214, 22277),

Gene: Phineas\_22 Start: 21670, Stop: 22707, Start Num: 25

Candidate Starts for Phineas\_22:

(Start: 25 @21670 has 86 MA's), (54, 21835), (62, 21877), (74, 21943), (75, 21946), (78, 21961), (96, 22048), (112, 22093), (135, 22174), (143, 22231), (145, 22255), (160, 22360), (174, 22432), (186, 22477),

Gene: Phrann\_21 Start: 20409, Stop: 21479, Start Num: 23

Candidate Starts for Phrann\_21:

(Start: 23 @20409 has 5 MA's), (Start: 25 @20412 has 86 MA's), (54, 20574), (62, 20616), (75, 20685), (89, 20745), (96, 20790), (112, 20835), (134, 20904), (135, 20916), (143, 20973), (145, 20997), (173, 21168),

Gene: Pimento\_26 Start: 22790, Stop: 23857, Start Num: 24

Candidate Starts for Pimento\_26:

(10, 22655), (Start: 24 @22790 has 5 MA's), (67, 23009), (89, 23111), (96, 23153), (99, 23165), (140, 23309), (143, 23336), (145, 23360), (163, 23483), (180, 23573), (185, 23591),

Gene: Pippy\_19 Start: 20253, Stop: 21410, Start Num: 17

Candidate Starts for Pippy\_19:

(Start: 16 @20250 has 3 MA's), (Start: 17 @20253 has 8 MA's), (33, 20334), (Start: 37 @20382 has 1 MA's), (48, 20442), (49, 20451), (50, 20466), (57, 20490), (61, 20514), (63, 20526), (73, 20586), (76, 20601), (79, 20610), (82, 20634), (87, 20664), (111, 20748), (112, 20751), (119, 20772), (126, 20793), (127, 20802), (129, 20814), (133, 20823), (170, 21084), (178, 21153), (218, 21387),

Gene: Polkaroo\_22 Start: 21315, Stop: 22352, Start Num: 25

Candidate Starts for Polkaroo\_22:

(19, 21291), (Start: 23 @21312 has 5 MA's), (Start: 25 @21315 has 86 MA's), (32, 21339), (54, 21477), (62, 21519), (75, 21588), (89, 21648), (96, 21693), (112, 21738), (135, 21819), (143, 21876), (145, 21900), (160, 22005), (174, 22077), (186, 22122), (214, 22287),

Gene: Psycho\_28 Start: 24008, Stop: 25072, Start Num: 25

Candidate Starts for Psycho\_28:

(Start: 25 @24008 has 86 MA's), (40, 24098), (46, 24128), (56, 24182), (58, 24188), (67, 24236), (73, 24275), (77, 24293), (78, 24296), (94, 24377), (112, 24425), (118, 24443), (145, 24584), (157, 24674), (158, 24677), (159, 24680), (165, 24713), (168, 24725), (185, 24812), (187, 24815), (207, 24911), (217, 25028),

Gene: Purky\_22 Start: 21124, Stop: 22170, Start Num: 25

Candidate Starts for Purky\_22:

(Start: 25 @21124 has 86 MA's), (64, 21337), (89, 21448), (96, 21490), (97, 21493), (121, 21562), (144, 21694), (148, 21730), (169, 21838), (199, 21991), (200, 22000), (201, 22012),

Gene: QueenHazel\_22 Start: 21423, Stop: 22634, Start Num: 17

Candidate Starts for QueenHazel\_22:

(1, 21186), (2, 21228), (6, 21288), (12, 21348), (14, 21402), (Start: 17 @21423 has 8 MA's), (33, 21504), (Start: 37 @21552 has 1 MA's), (48, 21612), (49, 21621), (50, 21636), (57, 21660), (61, 21684), (63, 21696), (69, 21732), (76, 21771), (79, 21780), (82, 21804), (87, 21834), (104, 21918), (105, 21921), (106, 21942), (111, 21978), (112, 21981), (119, 22002), (129, 22044), (144, 22161), (150, 22197), (151, 22203), (170, 22308), (183, 22389),

Gene: Rando14\_28 Start: 22698, Stop: 23777, Start Num: 25

Candidate Starts for Rando14\_28:

(Start: 25 @22698 has 86 MA's), (30, 22716), (46, 22818), (56, 22872), (57, 22875), (58, 22878), (67, 22926), (72, 22962), (73, 22965), (74, 22968), (81, 23001), (109, 23103), (112, 23115), (116, 23127), (118, 23133), (122, 23145), (127, 23166), (141, 23244), (146, 23286), (152, 23328), (157, 23373), (182, 23502),

Gene: Raymond7\_21 Start: 20415, Stop: 21500, Start Num: 25

Candidate Starts for Raymond7\_21:

(Start: 25 @20415 has 86 MA's), (54, 20577), (75, 20688), (76, 20697), (78, 20703), (89, 20748), (96, 20793), (135, 20919), (136, 20928), (143, 20976),

Gene: Rebel\_21 Start: 19868, Stop: 20905, Start Num: 27

Candidate Starts for Rebel\_21:

(3, 19631), (5, 19673), (9, 19703), (11, 19733), (15, 19793), (20, 19847), (Start: 27 @19868 has 1 MA's), (54, 20030), (62, 20072), (75, 20141), (89, 20201), (96, 20246), (112, 20291), (134, 20360), (143, 20429), (145, 20453), (160, 20558), (174, 20630), (186, 20675),

Gene: Reindeer\_30 Start: 26952, Stop: 28001, Start Num: 25

Candidate Starts for Reindeer\_30:

(Start: 25 @26952 has 86 MA's), (35, 26988), (64, 27165), (76, 27228), (77, 27231), (88, 27270), (90, 27285), (101, 27336), (119, 27384), (136, 27453), (143, 27501), (144, 27522), (146, 27528), (148, 27558), (160, 27630), (188, 27765), (199, 27819), (209, 27870), (211, 27876), (212, 27909),

Gene: Rem711\_30 Start: 25189, Stop: 26352, Start Num: 17

Candidate Starts for Rem711\_30:

(Start: 17 @25189 has 8 MA's), (60, 25450), (71, 25510), (80, 25555), (82, 25573), (87, 25609), (117, 25717), (125, 25732), (137, 25789), (157, 25951), (184, 26101),

Gene: Rubeelu\_22 Start: 19998, Stop: 21038, Start Num: 24

Candidate Starts for Rubeelu\_22:

(13, 19932), (Start: 24 @19998 has 5 MA's), (52, 20157), (54, 20163), (74, 20271), (75, 20274), (78, 20289), (96, 20379), (112, 20424), (135, 20505), (143, 20562), (145, 20586), (157, 20673), (160, 20691), (174, 20763), (186, 20808), (214, 20973),

Gene: Ruthiejr\_29 Start: 24262, Stop: 25296, Start Num: 24

Candidate Starts for Ruthiejr\_29:

(13, 24196), (Start: 24 @24262 has 5 MA's), (52, 24418), (53, 24421), (62, 24466), (64, 24475), (78, 24550), (96, 24637), (112, 24682), (135, 24763), (143, 24820), (145, 24844), (160, 24949), (174, 25021), (191, 25081), (214, 25231),

Gene: SamScheppers\_27 Start: 24552, Stop: 25625, Start Num: 23

Candidate Starts for SamScheppers\_27:

(Start: 23 @24552 has 5 MA's), (Start: 25 @24555 has 86 MA's), (68, 24795), (75, 24831), (76, 24840), (78, 24846), (89, 24891), (96, 24936), (101, 24954), (112, 24981), (135, 25062), (143, 25119), (145, 25143),

Gene: Sarma624\_20 Start: 20090, Stop: 21244, Start Num: 17

Candidate Starts for Sarma624\_20:

(Start: 16 @20087 has 3 MA's), (Start: 17 @20090 has 8 MA's), (Start: 37 @20219 has 1 MA's), (42, 20249), (48, 20279), (49, 20288), (50, 20303), (57, 20327), (61, 20351), (63, 20363), (76, 20438), (79, 20447), (82, 20471), (87, 20501), (111, 20585), (112, 20588), (119, 20609), (156, 20858), (159, 20867), (164, 20897), (170, 20918), (178, 20987), (218, 21221),

Gene: Sbash\_21 Start: 21030, Stop: 22079, Start Num: 25

Candidate Starts for Sbash\_21:

(Start: 25 @21030 has 86 MA's), (54, 21192), (64, 21243), (76, 21306), (100, 21411), (144, 21600), (148, 21636), (160, 21708), (188, 21843), (199, 21897), (212, 21987),

Gene: Scitech\_21 Start: 20194, Stop: 21228, Start Num: 25

Candidate Starts for Scitech\_21:

(Start: 25 @20194 has 86 MA's), (52, 20350), (54, 20356), (74, 20464), (75, 20467), (78, 20482), (96, 20569), (112, 20614), (135, 20695), (143, 20752), (145, 20776), (160, 20881), (174, 20953), (186, 20998),

Gene: Shweta\_21 Start: 20201, Stop: 21238, Start Num: 21

Candidate Starts for Shweta\_21:

(Start: 21 @20201 has 8 MA's), (52, 20357), (54, 20363), (62, 20405), (74, 20471), (75, 20474), (89, 20534), (96, 20579), (112, 20624), (135, 20705), (143, 20762), (145, 20786), (160, 20891), (174, 20963), (186, 21008),

Gene: Skinny\_32 Start: 27432, Stop: 28493, Start Num: 25

Candidate Starts for Skinny\_32:

(Start: 25 @27432 has 86 MA's), (35, 27468), (38, 27510), (56, 27600), (59, 27621), (66, 27648), (76, 27711), (96, 27801), (99, 27813), (102, 27822), (120, 27867), (136, 27933), (145, 28005), (157, 28095), (160, 28113), (184, 28230), (189, 28242), (203, 28332),

Gene: SkinnyPete\_21 Start: 20204, Stop: 21241, Start Num: 25

Candidate Starts for SkinnyPete\_21:

(Start: 25 @20204 has 86 MA's), (52, 20360), (54, 20366), (74, 20474), (78, 20492), (96, 20582), (112, 20627), (135, 20708), (145, 20789), (157, 20876), (160, 20894), (174, 20966), (186, 21011), (214, 21176),

Gene: SlimJimmy\_30 Start: 26975, Stop: 28030, Start Num: 25

Candidate Starts for SlimJimmy\_30:

(Start: 25 @26975 has 86 MA's), (64, 27188), (70, 27224), (85, 27287), (100, 27359), (112, 27389), (119, 27410), (130, 27446), (136, 27482), (143, 27530), (144, 27551), (146, 27557), (148, 27587), (150, 27590), (156, 27638), (199, 27848), (210, 27902),

Gene: Snekmaggedon\_21 Start: 20006, Stop: 21031, Start Num: 37

Candidate Starts for Snekmaggedon\_21:

(1, 19640), (2, 19682), (4, 19712), (6, 19742), (12, 19802), (14, 19856), (Start: 17 @19877 has 8 MA's), (33, 19958), (Start: 37 @20006 has 1 MA's), (48, 20066), (49, 20075), (50, 20090), (57, 20114), (61, 20138), (63, 20150), (76, 20225), (79, 20234), (82, 20258), (87, 20288), (111, 20372), (112, 20375), (119, 20396), (144, 20555), (156, 20645), (159, 20654), (164, 20684), (170, 20705), (218, 21008),

Gene: SoSeph\_27 Start: 24081, Stop: 25148, Start Num: 25

Candidate Starts for SoSeph\_27:

(Start: 25 @24081 has 86 MA's), (45, 24198), (56, 24255), (65, 24303), (67, 24309), (77, 24366), (78, 24369), (81, 24384), (89, 24411), (94, 24450), (96, 24453), (99, 24465), (100, 24468), (101, 24471), (109, 24486), (124, 24531), (126, 24537), (136, 24591), (143, 24639), (147, 24669), (153, 24714), (174, 24843), (184, 24897),

Gene: Sonah\_22 Start: 21289, Stop: 22326, Start Num: 25

Candidate Starts for Sonah\_22:

(19, 21265), (Start: 23 @21286 has 5 MA's), (Start: 25 @21289 has 86 MA's), (32, 21313), (54, 21451), (62, 21493), (75, 21562), (89, 21622), (96, 21667), (112, 21712), (135, 21793), (143, 21850),

(145, 21874), (160, 21979), (174, 22051), (186, 22096), (214, 22261),

Gene: Sparky\_21 Start: 21885, Stop: 22931, Start Num: 25

Candidate Starts for Sparky\_21:

(Start: 25 @21885 has 86 MA's), (64, 22098), (65, 22104), (89, 22209), (96, 22251), (97, 22254), (121, 22323), (144, 22455), (148, 22491), (169, 22599), (199, 22752), (200, 22761), (201, 22773),

Gene: StevieRay\_22 Start: 21290, Stop: 22327, Start Num: 25

Candidate Starts for StevieRay\_22:

(19, 21266), (Start: 23 @21287 has 5 MA's), (Start: 25 @21290 has 86 MA's), (32, 21314), (54, 21452), (62, 21494), (75, 21563), (89, 21623), (96, 21668), (112, 21713), (135, 21794), (143, 21851), (145, 21875), (160, 21980), (174, 22052), (186, 22097), (214, 22262),

Gene: StressBall\_22 Start: 21561, Stop: 22601, Start Num: 21

Candidate Starts for StressBall\_22:

(Start: 21 @21561 has 8 MA's), (52, 21720), (54, 21726), (62, 21768), (74, 21834), (75, 21837), (89, 21897), (96, 21942), (112, 21987), (135, 22068), (143, 22125), (145, 22149), (160, 22254), (174, 22326), (186, 22371),

Gene: Taquito\_27 Start: 24633, Stop: 25676, Start Num: 22

Candidate Starts for Taquito\_27:

(Start: 22 @24633 has 1 MA's), (Start: 24 @24636 has 5 MA's), (68, 24876), (75, 24912), (76, 24921), (78, 24927), (89, 24972), (96, 25017), (101, 25035), (112, 25062), (135, 25143), (143, 25200), (145, 25224), (160, 25329), (174, 25401), (186, 25446),

Gene: Techage\_22 Start: 21290, Stop: 22327, Start Num: 25

Candidate Starts for Techage\_22:

(19, 21266), (Start: 23 @21287 has 5 MA's), (Start: 25 @21290 has 86 MA's), (32, 21314), (54, 21452), (62, 21494), (75, 21563), (89, 21623), (96, 21668), (112, 21713), (135, 21794), (143, 21851), (145, 21875), (160, 21980), (174, 22052), (186, 22097), (214, 22262),

Gene: Thespis\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Thespis\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: ThulaThula\_22 Start: 21454, Stop: 22491, Start Num: 25

Candidate Starts for ThulaThula\_22:

(Start: 25 @21454 has 86 MA's), (54, 21616), (64, 21667), (70, 21703), (76, 21730), (89, 21778), (100, 21835), (114, 21871), (144, 22024), (148, 22060), (160, 22132), (188, 22267), (199, 22321), (212, 22399),

Gene: Thyatira\_27 Start: 23933, Stop: 25000, Start Num: 25

Candidate Starts for Thyatira\_27:

(Start: 25 @23933 has 86 MA's), (45, 24050), (56, 24107), (65, 24155), (67, 24161), (77, 24218), (78, 24221), (81, 24236), (89, 24263), (94, 24302), (96, 24305), (99, 24317), (100, 24320), (101, 24323), (109, 24338), (124, 24383), (126, 24389), (136, 24443), (143, 24491), (147, 24521), (153, 24566), (174, 24695), (184, 24749), (196, 24794),

Gene: Tortellini\_22 Start: 21866, Stop: 22936, Start Num: 25

Candidate Starts for Tortellini\_22:



(Start: 25 @21866 has 86 MA's), (68, 22106), (75, 22142), (76, 22151), (78, 22157), (89, 22202), (96, 22247), (101, 22265), (112, 22292), (135, 22373), (145, 22454), (169, 22592), (170, 22595),

Gene: TyDawg\_31 Start: 26992, Stop: 28047, Start Num: 25

Candidate Starts for TyDawg\_31:

(Start: 25 @26992 has 86 MA's), (64, 27205), (70, 27241), (85, 27304), (100, 27376), (112, 27406), (119, 27427), (130, 27463), (136, 27499), (143, 27547), (144, 27568), (146, 27574), (148, 27604), (150, 27607), (156, 27655), (195, 27844), (199, 27865), (210, 27919),

Gene: Typha\_28 Start: 26025, Stop: 27062, Start Num: 25

Candidate Starts for Typha\_28:

(Start: 25 @26025 has 86 MA's), (47, 26148), (58, 26202), (64, 26238), (76, 26301), (89, 26349), (99, 26403), (100, 26406), (144, 26592), (148, 26628), (154, 26670), (159, 26688), (170, 26739),

Gene: Velveteen\_20 Start: 20087, Stop: 21244, Start Num: 16

Candidate Starts for Velveteen\_20:

(Start: 16 @20087 has 3 MA's), (Start: 17 @20090 has 8 MA's), (Start: 37 @20219 has 1 MA's), (42, 20249), (48, 20279), (49, 20288), (50, 20303), (57, 20327), (61, 20351), (63, 20363), (76, 20438), (79, 20447), (82, 20471), (87, 20501), (111, 20585), (112, 20588), (119, 20609), (156, 20858), (159, 20867), (164, 20897), (170, 20918), (178, 20987), (218, 21221),

Gene: Venti\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Venti\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Vidya\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Vidya\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),

Gene: Waterfoul\_27 Start: 23954, Stop: 25021, Start Num: 25

Candidate Starts for Waterfoul\_27:

(Start: 25 @23954 has 86 MA's), (45, 24071), (65, 24176), (67, 24182), (78, 24242), (81, 24257), (89, 24284), (94, 24323), (96, 24326), (99, 24338), (100, 24341), (101, 24344), (109, 24359), (124, 24404), (126, 24410), (136, 24464), (143, 24512), (147, 24542), (153, 24587), (174, 24716), (184, 24770),

Gene: WheatThin\_27 Start: 23315, Stop: 24382, Start Num: 26

Candidate Starts for WheatThin\_27:

(Start: 26 @23315 has 13 MA's), (64, 23525), (99, 23693), (140, 23834), (142, 23849), (143, 23861), (145, 23885), (155, 23969), (185, 24116),

Gene: Willsammy\_22 Start: 21571, Stop: 22605, Start Num: 25

Candidate Starts for Willsammy\_22:

(Start: 25 @21571 has 86 MA's), (52, 21727), (54, 21733), (74, 21841), (75, 21844), (78, 21859), (96, 21946), (112, 21991), (135, 22072), (143, 22129), (145, 22153), (160, 22258), (174, 22330), (186, 22375),

Gene: Xavia\_22 Start: 21888, Stop: 22955, Start Num: 25

Candidate Starts for Xavia\_22:

(Start: 25 @21888 has 86 MA's), (54, 22050), (62, 22092), (75, 22161), (89, 22221), (96, 22266), (101, 22284), (112, 22311), (135, 22392), (143, 22449), (145, 22473), (173, 22644),

Gene: Xeno\_21 Start: 20200, Stop: 21240, Start Num: 21

Candidate Starts for Xeno\_21:

(Start: 21 @20200 has 8 MA's), (54, 20365), (62, 20407), (75, 20476), (89, 20536), (96, 20581), (112, 20626), (135, 20707), (143, 20764), (145, 20788), (160, 20893), (174, 20965), (186, 21010),

Gene: Xula\_21 Start: 20946, Stop: 22157, Start Num: 17

Candidate Starts for Xula\_21:

(Start: 17 @20946 has 8 MA's), (19, 20970), (33, 21027), (Start: 37 @21075 has 1 MA's), (48, 21135), (49, 21144), (50, 21159), (57, 21183), (61, 21207), (63, 21219), (69, 21255), (76, 21294), (79, 21303), (82, 21327), (87, 21357), (104, 21441), (105, 21444), (106, 21465), (111, 21501), (112, 21504), (119, 21525), (129, 21567), (144, 21684), (150, 21720), (151, 21726), (170, 21831), (183, 21912),

Gene: Zilizebeth\_22 Start: 21299, Stop: 22336, Start Num: 25

Candidate Starts for Zilizebeth\_22:

(19, 21275), (Start: 23 @21296 has 5 MA's), (Start: 25 @21299 has 86 MA's), (32, 21323), (54, 21461), (62, 21503), (75, 21572), (89, 21632), (96, 21677), (112, 21722), (135, 21803), (143, 21860), (145, 21884), (160, 21989), (174, 22061), (186, 22106), (214, 22271),