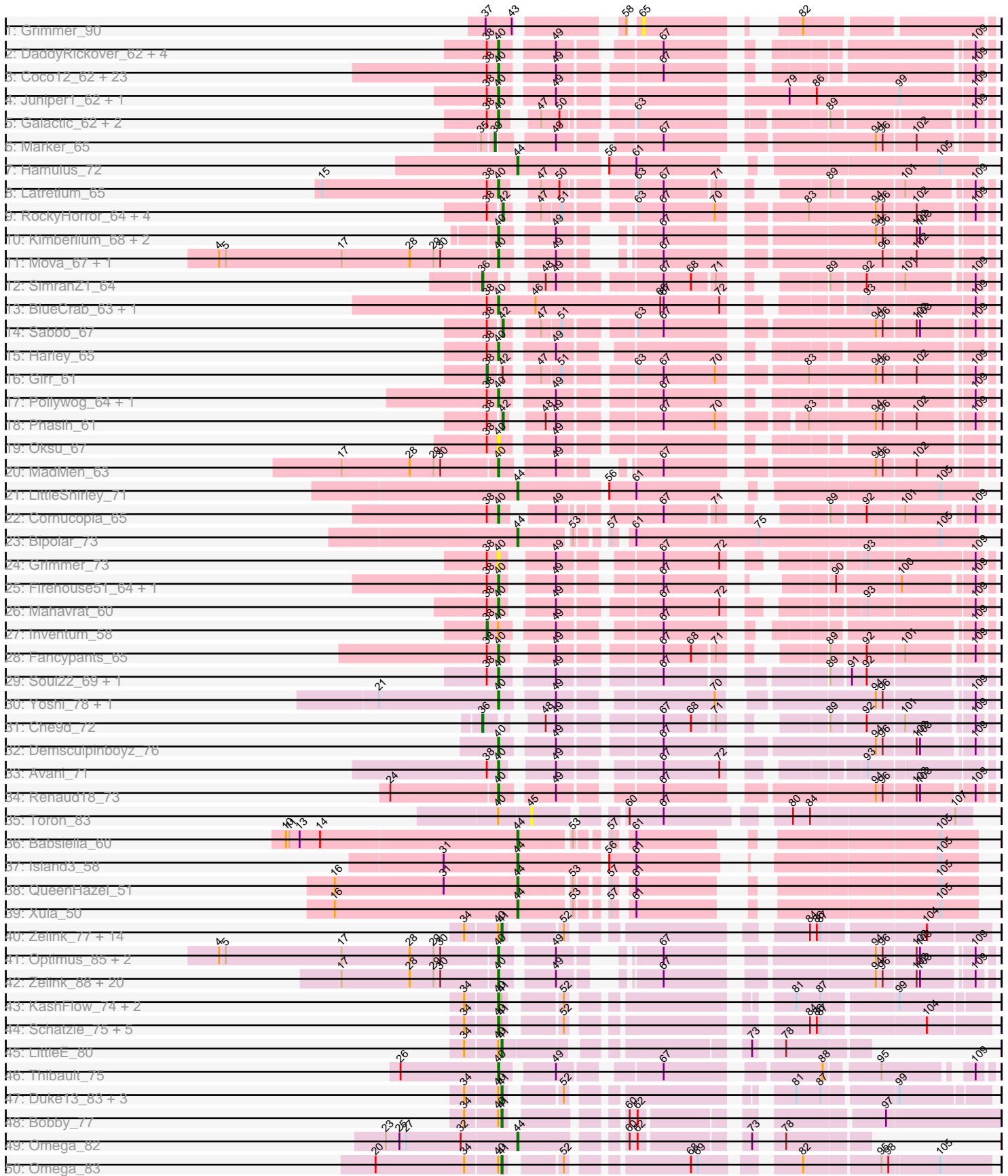
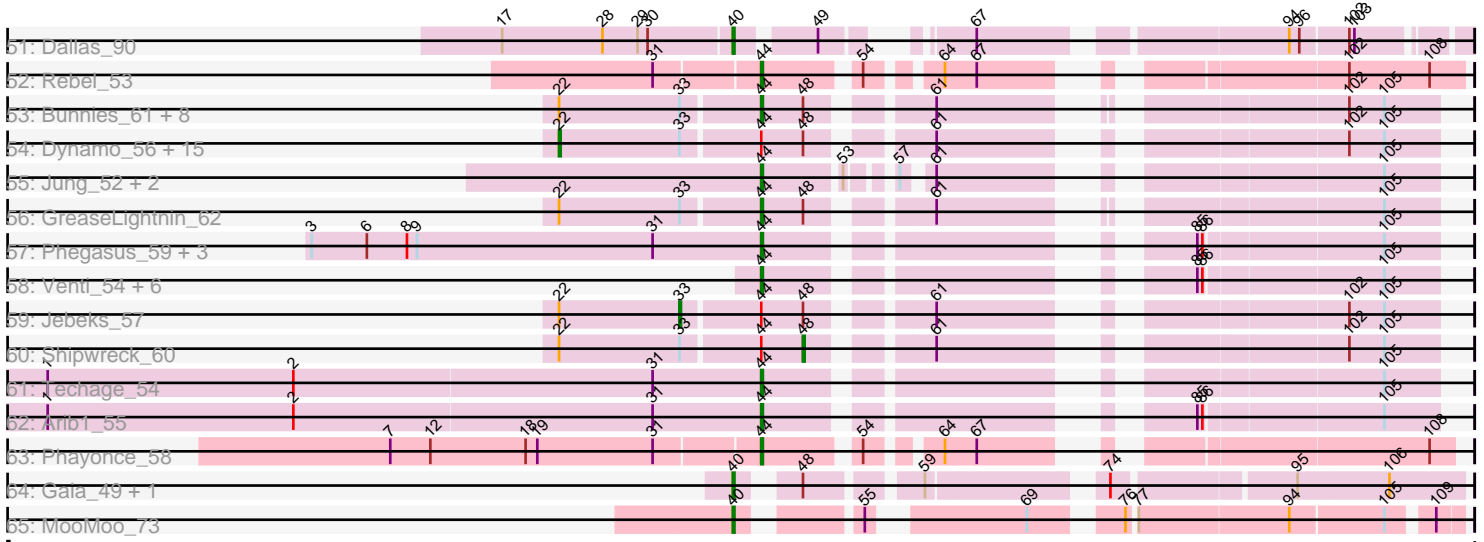


Pham 202705



Pham 202705



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 202705 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202705 has 188 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Grimmer\_90
- Track 2 : DaddyRickover\_62, Sassafras\_61, RedBird\_61, Aubs\_63, Dorothy\_61
- Track 3 : Coco12\_62, Velveteen\_58, GUmbie\_61, DRBy19\_66, Eradicator\_56, Yorick\_62, BigPhil\_59, Lizziana\_69, LilMoolah\_61, IbOuu\_64, Sarma624\_61, Che8\_68, Saal\_65, BuzzLyseyear\_69, Guppsters\_63, Gorge\_67, Philus\_66, Job42\_65, Cerasum\_59, James\_67, Mattes\_67, Nivrat\_59, Kingsley\_60, OlympiaSaint\_65
- Track 4 : Juniper1\_62, Estave1\_66
- Track 5 : Galactic\_62, Ibhubesi\_63, LunaBlu\_65
- Track 6 : Marker\_65
- Track 7 : Hamulus\_72
- Track 8 : Latretium\_65
- Track 9 : RockyHorror\_64, MisterCuddles\_61, Ruby\_59, Zerg\_63, Doug\_65
- Track 10 : Kimberlium\_68, MulchExplorer\_71, QuickMath\_67
- Track 11 : Mova\_67, Madiba\_64
- Track 12 : SimranZ1\_64
- Track 13 : BlueCrab\_63, ByChance\_55
- Track 14 : Sabbb\_67
- Track 15 : Harley\_65
- Track 16 : Girr\_61
- Track 17 : Pollywog\_64, Royals2015\_66
- Track 18 : Phasih\_61
- Track 19 : Oksu\_67
- Track 20 : MadMen\_63
- Track 21 : LittleShirley\_71
- Track 22 : Cornucopia\_65
- Track 23 : Bipolar\_73
- Track 24 : Grimmer\_73
- Track 25 : Firehouse51\_64, Mutaforma13\_67
- Track 26 : Mahavrat\_60
- Track 27 : Inventum\_58
- Track 28 : Fancypants\_65
- Track 29 : Soul22\_69, GigiOuiOui\_59
- Track 30 : Yoshi\_78, ThetaBob\_70
- Track 31 : Che9d\_72
- Track 32 : Demsculpinboyz\_76
- Track 33 : Avani\_71

- Track 34 : Renaud18\_73
- Track 35 : Toron\_83
- Track 36 : Babsiella\_60
- Track 37 : Island3\_58
- Track 38 : QueenHazel\_51
- Track 39 : Xula\_50
- Track 40 : Zelink\_77, Kalah2\_74, NihilNomen\_80, Beem\_79, Ejimix\_79, Phoebus\_82, JuicyJay\_77, DmpstrDiver\_80, Bombitas\_69, Odette\_78, Dallas\_78, ThreeRngTarjay\_77, EricMillard\_78, Bagrid\_80, Hughesyang\_79
- Track 41 : Optimus\_85, BAKA\_92, EricMillard\_84
- Track 42 : Zelink\_88, Halley\_92, Bombitas\_79, Dove\_76, Phoebus\_93, Minerva\_90, Beem\_91, DmpstrDiver\_91, Klein\_91, Schatzie\_86, Constella\_76, JuicyJay\_88, NihilNomen\_92, Odette\_89, Hughesyang\_91, Bagrid\_90, Wanda\_95, Yeet\_84, Kalah2\_85, ThreeRngTarjay\_88, HokkenD\_80
- Track 43 : KashFlow\_74, Minerva\_82, BAKA\_84
- Track 44 : Schatzie\_75, Redno2\_76, Yeet\_74, Dove\_65, HokkenD\_71, Halley\_81
- Track 45 : LittleE\_80
- Track 46 : Thibault\_75
- Track 47 : Duke13\_83, Thibault\_67, Pound\_80, Constella\_66
- Track 48 : Bobby\_77
- Track 49 : Omega\_82
- Track 50 : Omega\_83
- Track 51 : Dallas\_90
- Track 52 : Rebel\_53
- Track 53 : Bunnies\_61, CactusJack\_56, Thespis\_58, Vidya\_55, Gavriela\_56, Phineas\_58, Camster\_58, Pygmy\_61, Ksqared\_59
- Track 54 : Dynamo\_56, Malithi\_57, Bogie\_60, Glaske\_55, Brusacoram\_58, Willsammy\_56, Atcoo\_58, Megiddo\_56, KilKor\_56, Bobi\_76, Phalm\_56, HUHilltop\_59, StevieRay\_61, Necropolis\_55, Sonah\_57, StressBall\_56
- Track 55 : Jung\_52, Xeno\_56, HC\_52
- Track 56 : GreaseLightnin\_62
- Track 57 : Phegasus\_59, Mangethe\_59, Majeke\_59, Zilizebeth\_59
- Track 58 : Venti\_54, Kari\_53, FirstPlacePfu\_55, Langerak\_54, Fishburne\_53, Polkaroo\_56, Bartholomew\_53
- Track 59 : Jebeks\_57
- Track 60 : Shipwreck\_60
- Track 61 : Techage\_54
- Track 62 : Arib1\_55
- Track 63 : Phayonce\_58
- Track 64 : Gaia\_49, Nebkiss\_53
- Track 65 : MooMoo\_73

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

The start number called the most often in the published annotations is 40, it was called in 91 of the 173 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aubs\_63, Avani\_71, BAKA\_84, BAKA\_92, Bagrid\_90, Beem\_91, BigPhil\_59, BlueCrab\_63, Bombitas\_79, BuzzLyseyear\_69, ByChance\_55, Cerasum\_59,

Che8\_68, Coco12\_62, Constella\_76, Cornucopia\_65, DRBy19\_66, DaddyRickover\_62, Dallas\_90, Demsculpinboyz\_76, DmpstrDiver\_91, Dorothy\_61, Dove\_65, Dove\_76, Eradicator\_56, EricMillard\_84, Estave1\_66, Fancypants\_65, Firehouse51\_64, GUmbie\_61, Gaia\_49, Galactic\_62, GigiOuiOui\_59, Gorge\_67, Grimmer\_73, Guppsters\_63, Halley\_81, Halley\_92, Harley\_65, HokkenD\_71, HokkenD\_80, Hughesyang\_91, IbOuu\_64, lbhubesi\_63, James\_67, Job42\_65, JuicyJay\_88, Juniper1\_62, Kalah2\_85, KashFlow\_74, Kimberlium\_68, Kingsley\_60, Klein\_91, Latretium\_65, LilMoolah\_61, Lizziana\_69, LunaBlu\_65, MadMen\_63, Madiba\_64, Mahavrat\_60, Mattes\_67, Minerva\_82, Minerva\_90, MooMoo\_73, Mova\_67, MulchExplorer\_71, Mutaforma13\_67, Nebkiss\_53, NihilNomen\_92, Nivrat\_59, Odette\_89, Oksu\_67, OlympiaSaint\_65, Optimus\_85, Philus\_66, Phoebus\_93, Pollywog\_64, QuickMath\_67, RedBird\_61, Redno2\_76, Renaud18\_73, Royals2015\_66, Saal\_65, Sarma624\_61, Sassafras\_61, Schatzie\_75, Schatzie\_86, Soul22\_69, ThetaBob\_70, Thibault\_75, ThreeRngTarjay\_88, Velveteen\_58, Wanda\_95, Yeet\_74, Yeet\_84, Yorick\_62, Yoshi\_78, Zelink\_88,

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

- Bagrid\_80, Beem\_79, Bobby\_77, Bombitas\_69, Constella\_66, Dallas\_78, DmpstrDiver\_80, Duke13\_83, Ejimix\_79, EricMillard\_78, Hughesyang\_79, Inventum\_58, JuicyJay\_77, Kalah2\_74, LittleE\_80, NihilNomen\_80, Odette\_78, Omega\_83, Phoebus\_82, Pound\_80, Thibault\_67, ThreeRngTarjay\_77, Toron\_83, Zelink\_77,

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

- Arib1\_55, Atcoo\_58, Babsiella\_60, Bartholomew\_53, Bipolar\_73, Bobi\_76, Bogie\_60, Brusacoram\_58, Bunnies\_61, CactusJack\_56, Camster\_58, Che9d\_72, Doug\_65, Dynamo\_56, FirstPlacePfu\_55, Fishburne\_53, Gavriela\_56, Girr\_61, Glaske\_55, GreaseLightnin\_62, Grimmer\_90, HC\_52, HUHilltop\_59, Hamulus\_72, Island3\_58, Jebeks\_57, Jung\_52, Kari\_53, KilKor\_56, Ksquared\_59, Langerak\_54, LittleShirley\_71, Majeke\_59, Malithi\_57, Mangethe\_59, Marker\_65, Megiddo\_56, MisterCuddles\_61, Necropolis\_55, Omega\_82, Phalm\_56, Phasih\_61, Phayonce\_58, Phegasus\_59, Phineas\_58, Polkaroo\_56, Pygmy\_61, QueenHazel\_51, Rebel\_53, RockyHorror\_64, Ruby\_59, Sabbb\_67, Shipwreck\_60, SimranZ1\_64, Sonah\_57, StevieRay\_61, StressBall\_56, Techage\_54, Thespis\_58, Venti\_54, Vidya\_55, Willsammy\_56, Xeno\_56, Xula\_50, Zerg\_63, Zilizebeth\_59,

### Summary by start number:

Start 22:

- Found in 28 of 188 ( 14.9% ) of genes in pham
- Manual Annotations of this start: 16 of 173
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Atcoo\_58 (P1), Bobi\_76 (F1), Bogie\_60 (P1), Brusacoram\_58 (P1), Dynamo\_56 (P1), Glaske\_55 (P1), HUHilltop\_59 (P1), KilKor\_56 (P1), Malithi\_57 (P1), Megiddo\_56 (P1), Necropolis\_55 (P1), Phalm\_56 (P1), Sonah\_57 (P1), StevieRay\_61 (P1), StressBall\_56 (P1), Willsammy\_56 (P1),

Start 33:

- Found in 28 of 188 ( 14.9% ) of genes in pham
- Manual Annotations of this start: 1 of 173
- Called 3.6% of time when present
- Phage (with cluster) where this start called: Jebeks\_57 (P1),

Start 36:

- Found in 2 of 188 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 173
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Che9d\_72 (F2), SimranZ1\_64 (F1),

Start 38:

- Found in 59 of 188 ( 31.4% ) of genes in pham
- Manual Annotations of this start: 2 of 173
- Called 3.4% of time when present
- Phage (with cluster) where this start called: Girr\_61 (F1), Inventum\_58 (F1),

Start 39:

- Found in 1 of 188 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 173
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marker\_65 (F1),

Start 40:

- Found in 122 of 188 ( 64.9% ) of genes in pham
- Manual Annotations of this start: 91 of 173
- Called 80.3% of time when present
- Phage (with cluster) where this start called: Aubs\_63 (F1), Avani\_71 (F2), BAKA\_84 (J), BAKA\_92 (J), Bagrid\_90 (J), Beem\_91 (J), BigPhil\_59 (F1), BlueCrab\_63 (F1), Bombitas\_79 (J), BuzzLyseyear\_69 (F1), ByChance\_55 (F1), Cerasum\_59 (F1), Che8\_68 (F1), Coco12\_62 (F1), Constella\_76 (J), Cornucopia\_65 (F1), DRBy19\_66 (F1), DaddyRickover\_62 (F1), Dallas\_90 (J), Demsculpinboyz\_76 (F2), DmpstrDiver\_91 (J), Dorothy\_61 (F1), Dove\_65 (J), Dove\_76 (J), Eradicator\_56 (F1), EricMillard\_84 (J), Estave1\_66 (F1), Fancypants\_65 (F1), Firehouse51\_64 (F1), GUmbie\_61 (F1), Gaia\_49 (X), Galactic\_62 (F1), GigiOuiOui\_59 (F1), Gorge\_67 (F1), Grimmer\_73 (F1), Guppsters\_63 (F1), Halley\_81 (J), Halley\_92 (J), Harley\_65 (F1), HokkenD\_71 (J), HokkenD\_80 (J), Hughesyang\_91 (J), IbOuu\_64 (F1), Ibhubesi\_63 (F1), James\_67 (F1), Job42\_65 (F1), JuicyJay\_88 (J), Juniper1\_62 (F1), Kalah2\_85 (J), KashFlow\_74 (J), Kimberlium\_68 (F1), Kingsley\_60 (F1), Klein\_91 (J), Latretium\_65 (F1), LilMoolah\_61 (F1), Lizziana\_69 (F1), LunaBlu\_65 (F1), MadMen\_63 (F1), Madiba\_64 (F1), Mahavrat\_60 (F1), Mattes\_67 (F1), Minerva\_82 (J), Minerva\_90 (J), MooMoo\_73 (singleton), Mova\_67 (F1), MulchExplorer\_71 (F1), Mutaforma13\_67 (F1), Nebkiss\_53 (X), NihilNomen\_92 (J), Nivrat\_59 (F1), Odette\_89 (J), Oksu\_67 (F1), OlympiaSaint\_65 (F1), Optimus\_85 (J), Philus\_66 (F1), Phoebus\_93 (J), Pollywog\_64 (F1), QuickMath\_67 (F1), RedBird\_61 (F1), Redno2\_76 (J), Renaud18\_73 (F4), Royals2015\_66 (F1), Saal\_65 (F1), Sarma624\_61 (F1), Sassafra\_61 (F1), Schatzie\_75 (J), Schatzie\_86 (J), Soul22\_69 (F2), ThetaBob\_70 (F4), Thibault\_75 (J), ThreeRngTarjay\_88 (J), Velveteen\_58 (F1), Wanda\_95 (J), Yeet\_74 (J), Yeet\_84 (J), Yorick\_62 (F1), Yoshi\_78 (F2), Zelink\_88 (J),

Start 41:

- Found in 31 of 188 ( 16.5% ) of genes in pham
- Manual Annotations of this start: 20 of 173
- Called 71.0% of time when present
- Phage (with cluster) where this start called: Bagrid\_80 (J), Beem\_79 (J), Bobby\_77 (J), Bombitas\_69 (J), Constella\_66 (J), Dallas\_78 (J), DmpstrDiver\_80 (J), Duke13\_83 (J), Ejimix\_79 (J), EricMillard\_78 (J), Hughesyang\_79 (J), JuicyJay\_77

(J), Kalah2\_74 (J), LittleE\_80 (J), NihilNomen\_80 (J), Odette\_78 (J), Omega\_83 (J), Phoebus\_82 (J), Pound\_80 (J), Thibault\_67 (J), ThreeRngTarjay\_77 (J), Zelink\_77 (J),

Start 42:

- Found in 8 of 188 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 7 of 173
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Doug\_65 (F1), MisterCuddles\_61 (F1), Phasih\_61 (F1), RockyHorror\_64 (F1), Ruby\_59 (F1), Sabbb\_67 (F1), Zerg\_63 (F1),

Start 44:

- Found in 54 of 188 ( 28.7% ) of genes in pham
- Manual Annotations of this start: 32 of 173
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Arib1\_55 (P1), Babsiella\_60 (I1), Bartholomew\_53 (P1), Bipolar\_73 (F1), Bunnies\_61 (P1), CactusJack\_56 (P1), Camster\_58 (P1), FirstPlacePfu\_55 (P1), Fishburne\_53 (P1), Gavriela\_56 (P1), GreaseLightnin\_62 (P1), HC\_52 (I1), Hamulus\_72 (F1), Island3\_58 (I1), Jung\_52 (P1), Kari\_53 (P1), Ksquared\_59 (P1), Langerak\_54 (P1), LittleShirley\_71 (F1), Majeke\_59 (P1), Mangethe\_59 (P1), Omega\_82 (J), Phayonce\_58 (P5), Phegasus\_59 (P1), Phineas\_58 (P1), Polkaroo\_56 (P1), Pygmy\_61 (P1), QueenHazel\_51 (I1), Rebel\_53 (N), Techage\_54 (P1), Thespis\_58 (P1), Venti\_54 (P1), Vidya\_55 (P1), Xeno\_56 (N), Xula\_50 (I1), Zilizebeth\_59 (P1),

Start 45:

- Found in 1 of 188 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Toron\_83 (F6),

Start 48:

- Found in 33 of 188 ( 17.6% ) of genes in pham
- Manual Annotations of this start: 1 of 173
- Called 3.0% of time when present
- Phage (with cluster) where this start called: Shipwreck\_60 (P1),

Start 65:

- Found in 1 of 188 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grimmer\_90 (F1),

### Summary by clusters:

There are 11 clusters represented in this pham: F1, singleton, P1, F4, F6, P5, I1, J, F2, N, X,

Info for manual annotations of cluster F1:

- Start number 22 was manually annotated 1 time for cluster F1.
- Start number 36 was manually annotated 1 time for cluster F1.
- Start number 38 was manually annotated 2 times for cluster F1.
- Start number 39 was manually annotated 1 time for cluster F1.

- Start number 40 was manually annotated 49 times for cluster F1.
- Start number 42 was manually annotated 7 times for cluster F1.
- Start number 44 was manually annotated 3 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 36 was manually annotated 1 time for cluster F2.
- Start number 40 was manually annotated 4 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 40 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster I1:

- Start number 44 was manually annotated 5 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 40 was manually annotated 33 times for cluster J.
- Start number 41 was manually annotated 20 times for cluster J.
- Start number 44 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster N:

- Start number 44 was manually annotated 2 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 22 was manually annotated 15 times for cluster P1.
- Start number 33 was manually annotated 1 time for cluster P1.
- Start number 44 was manually annotated 20 times for cluster P1.
- Start number 48 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P5:

- Start number 44 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster X:

- Start number 40 was manually annotated 2 times for cluster X.

### **Gene Information:**

Gene: Arib1\_55 Start: 36318, Stop: 36641, Start Num: 44

Candidate Starts for Arib1\_55:

(1, 35895), (2, 36042), (31, 36255), (Start: 44 @36318 has 32 MA's), (85, 36507), (86, 36510), (105, 36609),

Gene: Atcoo\_58 Start: 40217, Stop: 40654, Start Num: 22

Candidate Starts for Atcoo\_58:

(Start: 22 @40217 has 16 MA's), (Start: 33 @40289 has 1 MA's), (Start: 44 @40331 has 32 MA's), (Start: 48 @40355 has 1 MA's), (61, 40412), (102, 40601), (105, 40622),

Gene: Aubs\_63 Start: 41384, Stop: 41719, Start Num: 40

Candidate Starts for Aubs\_63:

(Start: 38 @41375 has 2 MA's), (Start: 40 @41384 has 91 MA's), (49, 41423), (67, 41495), (109, 41708),



Gene: Avani\_71 Start: 41759, Stop: 42094, Start Num: 40

Candidate Starts for Avani\_71:

(Start: 38 @41750 has 2 MA's), (Start: 40 @41759 has 91 MA's), (49, 41792), (67, 41864), (72, 41912), (93, 41999),

Gene: BAKA\_92 Start: 57196, Stop: 57537, Start Num: 40

Candidate Starts for BAKA\_92:

(4, 56956), (5, 56962), (17, 57064), (28, 57124), (29, 57145), (30, 57151), (Start: 40 @57196 has 91 MA's), (49, 57235), (67, 57289), (94, 57451), (96, 57457), (102, 57484), (103, 57487), (109, 57526),

Gene: BAKA\_84 Start: 53281, Stop: 52940, Start Num: 40

Candidate Starts for BAKA\_84:

(34, 53308), (Start: 40 @53281 has 91 MA's), (Start: 41 @53278 has 20 MA's), (52, 53242), (81, 53095), (87, 53074), (99, 53014),

Gene: Babsiella\_60 Start: 39552, Stop: 39869, Start Num: 44

Candidate Starts for Babsiella\_60:

(10, 39354), (11, 39357), (13, 39366), (14, 39384), (Start: 44 @39552 has 32 MA's), (53, 39594), (57, 39612), (61, 39624), (105, 39837),

Gene: Bagrid\_90 Start: 56063, Stop: 56404, Start Num: 40

Candidate Starts for Bagrid\_90:

(17, 55931), (28, 55991), (29, 56012), (30, 56018), (Start: 40 @56063 has 91 MA's), (49, 56102), (67, 56156), (94, 56318), (96, 56324), (102, 56351), (103, 56354), (109, 56393),

Gene: Bagrid\_80 Start: 51928, Stop: 51584, Start Num: 41

Candidate Starts for Bagrid\_80:

(34, 51958), (Start: 40 @51931 has 91 MA's), (Start: 41 @51928 has 20 MA's), (52, 51892), (84, 51730), (86, 51724), (87, 51721), (104, 51637),

Gene: Bartholomew\_53 Start: 36260, Stop: 36583, Start Num: 44

Candidate Starts for Bartholomew\_53:

(Start: 44 @36260 has 32 MA's), (85, 36449), (86, 36452), (105, 36551),

Gene: Beem\_79 Start: 52789, Stop: 52445, Start Num: 41

Candidate Starts for Beem\_79:

(34, 52819), (Start: 40 @52792 has 91 MA's), (Start: 41 @52789 has 20 MA's), (52, 52753), (84, 52591), (86, 52585), (87, 52582), (104, 52498),

Gene: Beem\_91 Start: 56924, Stop: 57265, Start Num: 40

Candidate Starts for Beem\_91:

(17, 56792), (28, 56852), (29, 56873), (30, 56879), (Start: 40 @56924 has 91 MA's), (49, 56963), (67, 57017), (94, 57179), (96, 57185), (102, 57212), (103, 57215), (109, 57254),

Gene: BigPhil\_59 Start: 37375, Stop: 37716, Start Num: 40

Candidate Starts for BigPhil\_59:

(Start: 38 @37366 has 2 MA's), (Start: 40 @37375 has 91 MA's), (49, 37414), (67, 37492), (109, 37705),

Gene: Bipolar\_73 Start: 45463, Stop: 45828, Start Num: 44

Candidate Starts for Bipolar\_73:

(Start: 44 @45463 has 32 MA's), (53, 45505), (57, 45523), (61, 45535), (75, 45643), (105, 45796),

Gene: BlueCrab\_63 Start: 41722, Stop: 42096, Start Num: 40

Candidate Starts for BlueCrab\_63:

(Start: 38 @41713 has 2 MA's), (Start: 40 @41722 has 91 MA's), (46, 41755), (66, 41863), (67, 41866), (72, 41914), (93, 42001), (109, 42085),

Gene: Bobby\_77 Start: 51896, Stop: 51546, Start Num: 41

Candidate Starts for Bobby\_77:

(34, 51926), (Start: 40 @51899 has 91 MA's), (Start: 41 @51896 has 20 MA's), (60, 51821), (62, 51815), (97, 51644),

Gene: Bobi\_76 Start: 47153, Stop: 47593, Start Num: 22

Candidate Starts for Bobi\_76:

(Start: 22 @47153 has 16 MA's), (Start: 33 @47225 has 1 MA's), (Start: 44 @47267 has 32 MA's), (Start: 48 @47291 has 1 MA's), (61, 47348), (102, 47540), (105, 47561),

Gene: Bogie\_60 Start: 39977, Stop: 40417, Start Num: 22

Candidate Starts for Bogie\_60:

(Start: 22 @39977 has 16 MA's), (Start: 33 @40049 has 1 MA's), (Start: 44 @40091 has 32 MA's), (Start: 48 @40115 has 1 MA's), (61, 40172), (102, 40364), (105, 40385),

Gene: Bombitas\_79 Start: 54087, Stop: 54428, Start Num: 40

Candidate Starts for Bombitas\_79:

(17, 53955), (28, 54015), (29, 54036), (30, 54042), (Start: 40 @54087 has 91 MA's), (49, 54126), (67, 54180), (94, 54342), (96, 54348), (102, 54375), (103, 54378), (109, 54417),

Gene: Bombitas\_69 Start: 49952, Stop: 49608, Start Num: 41

Candidate Starts for Bombitas\_69:

(34, 49982), (Start: 40 @49955 has 91 MA's), (Start: 41 @49952 has 20 MA's), (52, 49916), (84, 49754), (86, 49748), (87, 49745), (104, 49661),

Gene: Brusacoram\_58 Start: 38760, Stop: 39197, Start Num: 22

Candidate Starts for Brusacoram\_58:

(Start: 22 @38760 has 16 MA's), (Start: 33 @38832 has 1 MA's), (Start: 44 @38874 has 32 MA's), (Start: 48 @38898 has 1 MA's), (61, 38955), (102, 39144), (105, 39165),

Gene: Bunnies\_61 Start: 40221, Stop: 40544, Start Num: 44

Candidate Starts for Bunnies\_61:

(Start: 22 @40107 has 16 MA's), (Start: 33 @40179 has 1 MA's), (Start: 44 @40221 has 32 MA's), (Start: 48 @40245 has 1 MA's), (61, 40302), (102, 40491), (105, 40512),

Gene: BuzzLyseyear\_69 Start: 42383, Stop: 42724, Start Num: 40

Candidate Starts for BuzzLyseyear\_69:

(Start: 38 @42374 has 2 MA's), (Start: 40 @42383 has 91 MA's), (49, 42422), (67, 42500), (109, 42713),

Gene: ByChance\_55 Start: 36650, Stop: 37024, Start Num: 40

Candidate Starts for ByChance\_55:

(Start: 38 @36641 has 2 MA's), (Start: 40 @36650 has 91 MA's), (46, 36683), (66, 36791), (67, 36794), (72, 36842), (93, 36929), (109, 37013),

Gene: CactusJack\_56 Start: 39089, Stop: 39412, Start Num: 44

Candidate Starts for CactusJack\_56:

(Start: 22 @38975 has 16 MA's), (Start: 33 @39047 has 1 MA's), (Start: 44 @39089 has 32 MA's),  
(Start: 48 @39113 has 1 MA's), (61, 39170), (102, 39359), (105, 39380),

Gene: Camster\_58 Start: 38552, Stop: 38878, Start Num: 44

Candidate Starts for Camster\_58:

(Start: 22 @38438 has 16 MA's), (Start: 33 @38510 has 1 MA's), (Start: 44 @38552 has 32 MA's),  
(Start: 48 @38576 has 1 MA's), (61, 38633), (102, 38825), (105, 38846),

Gene: Cerasum\_59 Start: 37393, Stop: 37734, Start Num: 40

Candidate Starts for Cerasum\_59:

(Start: 38 @37384 has 2 MA's), (Start: 40 @37393 has 91 MA's), (49, 37432), (67, 37510), (109,  
37723),

Gene: Che8\_68 Start: 43879, Stop: 44220, Start Num: 40

Candidate Starts for Che8\_68:

(Start: 38 @43870 has 2 MA's), (Start: 40 @43879 has 91 MA's), (49, 43918), (67, 43996), (109,  
44209),

Gene: Che9d\_72 Start: 41100, Stop: 41432, Start Num: 36

Candidate Starts for Che9d\_72:

(Start: 36 @41100 has 2 MA's), (Start: 48 @41130 has 1 MA's), (49, 41139), (67, 41217), (68, 41241),  
(71, 41259), (89, 41313), (92, 41340), (101, 41370), (109, 41421),

Gene: Coco12\_62 Start: 41450, Stop: 41791, Start Num: 40

Candidate Starts for Coco12\_62:

(Start: 38 @41441 has 2 MA's), (Start: 40 @41450 has 91 MA's), (49, 41489), (67, 41567), (109,  
41780),

Gene: Constella\_76 Start: 51061, Stop: 51402, Start Num: 40

Candidate Starts for Constella\_76:

(17, 50929), (28, 50989), (29, 51010), (30, 51016), (Start: 40 @51061 has 91 MA's), (49, 51100), (67,  
51154), (94, 51316), (96, 51322), (102, 51349), (103, 51352), (109, 51391),

Gene: Constella\_66 Start: 46926, Stop: 46588, Start Num: 41

Candidate Starts for Constella\_66:

(34, 46956), (Start: 40 @46929 has 91 MA's), (Start: 41 @46926 has 20 MA's), (52, 46890), (81,  
46743), (87, 46722), (99, 46662),

Gene: Cornucopia\_65 Start: 41687, Stop: 42007, Start Num: 40

Candidate Starts for Cornucopia\_65:

(Start: 38 @41678 has 2 MA's), (Start: 40 @41687 has 91 MA's), (49, 41720), (67, 41792), (71, 41834),  
(89, 41888), (92, 41915), (101, 41945), (109, 41996),

Gene: DRBy19\_66 Start: 42134, Stop: 42475, Start Num: 40

Candidate Starts for DRBy19\_66:

(Start: 38 @42125 has 2 MA's), (Start: 40 @42134 has 91 MA's), (49, 42173), (67, 42251), (109,  
42464),

Gene: DaddyRickover\_62 Start: 41176, Stop: 41511, Start Num: 40

Candidate Starts for DaddyRickover\_62:

(Start: 38 @41167 has 2 MA's), (Start: 40 @41176 has 91 MA's), (49, 41215), (67, 41287), (109,  
41500),

Gene: Dallas\_78 Start: 51710, Stop: 51366, Start Num: 41

Candidate Starts for Dallas\_78:

(34, 51740), (Start: 40 @51713 has 91 MA's), (Start: 41 @51710 has 20 MA's), (52, 51674), (84, 51512), (86, 51506), (87, 51503), (104, 51419),

Gene: Dallas\_90 Start: 55845, Stop: 56192, Start Num: 40

Candidate Starts for Dallas\_90:

(17, 55713), (28, 55773), (29, 55794), (30, 55800), (Start: 40 @55845 has 91 MA's), (49, 55884), (67, 55938), (94, 56100), (96, 56106), (102, 56133), (103, 56136),

Gene: Demsculpinboyz\_76 Start: 41371, Stop: 41736, Start Num: 40

Candidate Starts for Demsculpinboyz\_76:

(Start: 40 @41371 has 91 MA's), (49, 41410), (67, 41488), (94, 41650), (96, 41656), (102, 41683), (103, 41686), (109, 41725),

Gene: DmpstrDiver\_80 Start: 52136, Stop: 51792, Start Num: 41

Candidate Starts for DmpstrDiver\_80:

(34, 52166), (Start: 40 @52139 has 91 MA's), (Start: 41 @52136 has 20 MA's), (52, 52100), (84, 51938), (86, 51932), (87, 51929), (104, 51845),

Gene: DmpstrDiver\_91 Start: 56259, Stop: 56600, Start Num: 40

Candidate Starts for DmpstrDiver\_91:

(17, 56127), (28, 56187), (29, 56208), (30, 56214), (Start: 40 @56259 has 91 MA's), (49, 56298), (67, 56352), (94, 56514), (96, 56520), (102, 56547), (103, 56550), (109, 56589),

Gene: Dorothy\_61 Start: 40350, Stop: 40685, Start Num: 40

Candidate Starts for Dorothy\_61:

(Start: 38 @40341 has 2 MA's), (Start: 40 @40350 has 91 MA's), (49, 40389), (67, 40461), (109, 40674),

Gene: Doug\_65 Start: 41707, Stop: 42063, Start Num: 42

Candidate Starts for Doug\_65:

(Start: 38 @41698 has 2 MA's), (Start: 42 @41707 has 7 MA's), (47, 41728), (51, 41743), (63, 41794), (67, 41815), (70, 41860), (83, 41920), (94, 41977), (96, 41983), (102, 42010), (109, 42052),

Gene: Dove\_76 Start: 52353, Stop: 52694, Start Num: 40

Candidate Starts for Dove\_76:

(17, 52221), (28, 52281), (29, 52302), (30, 52308), (Start: 40 @52353 has 91 MA's), (49, 52392), (67, 52446), (94, 52608), (96, 52614), (102, 52641), (103, 52644), (109, 52683),

Gene: Dove\_65 Start: 48221, Stop: 47874, Start Num: 40

Candidate Starts for Dove\_65:

(34, 48248), (Start: 40 @48221 has 91 MA's), (Start: 41 @48218 has 20 MA's), (52, 48182), (84, 48020), (86, 48014), (87, 48011), (104, 47927),

Gene: Duke13\_83 Start: 52490, Stop: 52152, Start Num: 41

Candidate Starts for Duke13\_83:

(34, 52520), (Start: 40 @52493 has 91 MA's), (Start: 41 @52490 has 20 MA's), (52, 52454), (81, 52307), (87, 52286), (99, 52226),

Gene: Dynamo\_56 Start: 38011, Stop: 38451, Start Num: 22

Candidate Starts for Dynamo\_56:

(Start: 22 @38011 has 16 MA's), (Start: 33 @38083 has 1 MA's), (Start: 44 @38125 has 32 MA's),  
(Start: 48 @38149 has 1 MA's), (61, 38206), (102, 38398), (105, 38419),

Gene: Ejimix\_79 Start: 53578, Stop: 53234, Start Num: 41

Candidate Starts for Ejimix\_79:

(34, 53608), (Start: 40 @53581 has 91 MA's), (Start: 41 @53578 has 20 MA's), (52, 53542), (84, 53380), (86, 53374), (87, 53371), (104, 53287),

Gene: Eradicator\_56 Start: 39233, Stop: 39574, Start Num: 40

Candidate Starts for Eradicator\_56:

(Start: 38 @39224 has 2 MA's), (Start: 40 @39233 has 91 MA's), (49, 39272), (67, 39350), (109, 39563),

Gene: EricMillard\_84 Start: 55991, Stop: 56332, Start Num: 40

Candidate Starts for EricMillard\_84:

(4, 55751), (5, 55757), (17, 55859), (28, 55919), (29, 55940), (30, 55946), (Start: 40 @55991 has 91 MA's), (49, 56030), (67, 56084), (94, 56246), (96, 56252), (102, 56279), (103, 56282), (109, 56321),

Gene: EricMillard\_78 Start: 52781, Stop: 52437, Start Num: 41

Candidate Starts for EricMillard\_78:

(34, 52811), (Start: 40 @52784 has 91 MA's), (Start: 41 @52781 has 20 MA's), (52, 52745), (84, 52583), (86, 52577), (87, 52574), (104, 52490),

Gene: Estave1\_66 Start: 42262, Stop: 42642, Start Num: 40

Candidate Starts for Estave1\_66:

(Start: 38 @42253 has 2 MA's), (Start: 40 @42262 has 91 MA's), (49, 42301), (79, 42472), (86, 42496), (99, 42568), (109, 42631),

Gene: Fancypants\_65 Start: 41674, Stop: 42000, Start Num: 40

Candidate Starts for Fancypants\_65:

(Start: 38 @41665 has 2 MA's), (Start: 40 @41674 has 91 MA's), (49, 41707), (67, 41785), (68, 41809), (71, 41827), (89, 41881), (92, 41908), (101, 41938), (109, 41989),

Gene: Firehouse51\_64 Start: 44558, Stop: 44872, Start Num: 40

Candidate Starts for Firehouse51\_64:

(Start: 38 @44549 has 2 MA's), (Start: 40 @44558 has 91 MA's), (49, 44591), (67, 44663), (90, 44762), (100, 44810), (109, 44861),

Gene: FirstPlacePfu\_55 Start: 36292, Stop: 36615, Start Num: 44

Candidate Starts for FirstPlacePfu\_55:

(Start: 44 @36292 has 32 MA's), (85, 36481), (86, 36484), (105, 36583),

Gene: Fishburne\_53 Start: 36260, Stop: 36583, Start Num: 44

Candidate Starts for Fishburne\_53:

(Start: 44 @36260 has 32 MA's), (85, 36449), (86, 36452), (105, 36551),

Gene: GUmbie\_61 Start: 40460, Stop: 40801, Start Num: 40

Candidate Starts for GUmbie\_61:

(Start: 38 @40451 has 2 MA's), (Start: 40 @40460 has 91 MA's), (49, 40499), (67, 40577), (109, 40790),

Gene: Gaia\_49 Start: 36916, Stop: 36548, Start Num: 40

Candidate Starts for Gaia\_49:

(Start: 40 @36916 has 91 MA's), (Start: 48 @36892 has 1 MA's), (59, 36835), (74, 36745), (95, 36646), (106, 36592),

Gene: Galactic\_62 Start: 40920, Stop: 41261, Start Num: 40

Candidate Starts for Galactic\_62:

(Start: 38 @40911 has 2 MA's), (Start: 40 @40920 has 91 MA's), (47, 40941), (50, 40956), (63, 41007), (89, 41145), (109, 41250),

Gene: Gavriela\_56 Start: 39089, Stop: 39412, Start Num: 44

Candidate Starts for Gavriela\_56:

(Start: 22 @38975 has 16 MA's), (Start: 33 @39047 has 1 MA's), (Start: 44 @39089 has 32 MA's), (Start: 48 @39113 has 1 MA's), (61, 39170), (102, 39359), (105, 39380),

Gene: GigiOuiOui\_59 Start: 39900, Stop: 40250, Start Num: 40

Candidate Starts for GigiOuiOui\_59:

(Start: 38 @39891 has 2 MA's), (Start: 40 @39900 has 91 MA's), (49, 39939), (67, 40017), (89, 40131), (91, 40146), (92, 40158),

Gene: Girr\_61 Start: 40755, Stop: 41120, Start Num: 38

Candidate Starts for Girr\_61:

(Start: 38 @40755 has 2 MA's), (Start: 42 @40764 has 7 MA's), (47, 40785), (51, 40800), (63, 40851), (67, 40872), (70, 40917), (83, 40977), (94, 41034), (96, 41040), (102, 41067), (109, 41109),

Gene: Glaske\_55 Start: 38975, Stop: 39412, Start Num: 22

Candidate Starts for Glaske\_55:

(Start: 22 @38975 has 16 MA's), (Start: 33 @39047 has 1 MA's), (Start: 44 @39089 has 32 MA's), (Start: 48 @39113 has 1 MA's), (61, 39170), (102, 39359), (105, 39380),

Gene: Gorge\_67 Start: 42402, Stop: 42743, Start Num: 40

Candidate Starts for Gorge\_67:

(Start: 38 @42393 has 2 MA's), (Start: 40 @42402 has 91 MA's), (49, 42441), (67, 42519), (109, 42732),

Gene: GreaseLightnin\_62 Start: 40455, Stop: 40778, Start Num: 44

Candidate Starts for GreaseLightnin\_62:

(Start: 22 @40341 has 16 MA's), (Start: 33 @40413 has 1 MA's), (Start: 44 @40455 has 32 MA's), (Start: 48 @40479 has 1 MA's), (61, 40536), (105, 40746),

Gene: Grimmer\_90 Start: 48780, Stop: 49022, Start Num: 65

Candidate Starts for Grimmer\_90:

(37, 48684), (43, 48705), (58, 48774), (65, 48780), (82, 48876),

Gene: Grimmer\_73 Start: 42556, Stop: 42891, Start Num: 40

Candidate Starts for Grimmer\_73:

(Start: 38 @42547 has 2 MA's), (Start: 40 @42556 has 91 MA's), (49, 42589), (67, 42661), (72, 42709), (93, 42796), (109, 42880),

Gene: Guppsters\_63 Start: 40585, Stop: 40926, Start Num: 40

Candidate Starts for Guppsters\_63:

(Start: 38 @40576 has 2 MA's), (Start: 40 @40585 has 91 MA's), (49, 40624), (67, 40702), (109, 40915),

Gene: HC\_52 Start: 35682, Stop: 35999, Start Num: 44

Candidate Starts for HC\_52:

(Start: 44 @35682 has 32 MA's), (53, 35724), (57, 35742), (61, 35754), (105, 35967),

Gene: HUHilltop\_59 Start: 38234, Stop: 38674, Start Num: 22

Candidate Starts for HUHilltop\_59:

(Start: 22 @38234 has 16 MA's), (Start: 33 @38306 has 1 MA's), (Start: 44 @38348 has 32 MA's),  
(Start: 48 @38372 has 1 MA's), (61, 38429), (102, 38621), (105, 38642),

Gene: Halley\_92 Start: 56924, Stop: 57265, Start Num: 40

Candidate Starts for Halley\_92:

(17, 56792), (28, 56852), (29, 56873), (30, 56879), (Start: 40 @56924 has 91 MA's), (49, 56963), (67,  
57017), (94, 57179), (96, 57185), (102, 57212), (103, 57215), (109, 57254),

Gene: Halley\_81 Start: 52792, Stop: 52445, Start Num: 40

Candidate Starts for Halley\_81:

(34, 52819), (Start: 40 @52792 has 91 MA's), (Start: 41 @52789 has 20 MA's), (52, 52753), (84,  
52591), (86, 52585), (87, 52582), (104, 52498),

Gene: Hamulus\_72 Start: 45640, Stop: 45987, Start Num: 44

Candidate Starts for Hamulus\_72:

(Start: 44 @45640 has 32 MA's), (56, 45712), (61, 45736), (105, 45955),

Gene: Harley\_65 Start: 42034, Stop: 42369, Start Num: 40

Candidate Starts for Harley\_65:

(Start: 38 @42025 has 2 MA's), (Start: 40 @42034 has 91 MA's), (49, 42073),

Gene: HokkenD\_71 Start: 51061, Stop: 50714, Start Num: 40

Candidate Starts for HokkenD\_71:

(34, 51088), (Start: 40 @51061 has 91 MA's), (Start: 41 @51058 has 20 MA's), (52, 51022), (84,  
50860), (86, 50854), (87, 50851), (104, 50767),

Gene: HokkenD\_80 Start: 55193, Stop: 55534, Start Num: 40

Candidate Starts for HokkenD\_80:

(17, 55061), (28, 55121), (29, 55142), (30, 55148), (Start: 40 @55193 has 91 MA's), (49, 55232), (67,  
55286), (94, 55448), (96, 55454), (102, 55481), (103, 55484), (109, 55523),

Gene: Hughesyang\_91 Start: 56882, Stop: 57223, Start Num: 40

Candidate Starts for Hughesyang\_91:

(17, 56750), (28, 56810), (29, 56831), (30, 56837), (Start: 40 @56882 has 91 MA's), (49, 56921), (67,  
56975), (94, 57137), (96, 57143), (102, 57170), (103, 57173), (109, 57212),

Gene: Hughesyang\_79 Start: 52747, Stop: 52403, Start Num: 41

Candidate Starts for Hughesyang\_79:

(34, 52777), (Start: 40 @52750 has 91 MA's), (Start: 41 @52747 has 20 MA's), (52, 52711), (84,  
52549), (86, 52543), (87, 52540), (104, 52456),

Gene: lbOuu\_64 Start: 41437, Stop: 41772, Start Num: 40

Candidate Starts for lbOuu\_64:

(Start: 38 @41428 has 2 MA's), (Start: 40 @41437 has 91 MA's), (49, 41476), (67, 41548), (109,  
41761),

Gene: lbhubesi\_63 Start: 41044, Stop: 41385, Start Num: 40

Candidate Starts for lbhubesi\_63:

(Start: 38 @41035 has 2 MA's), (Start: 40 @41044 has 91 MA's), (47, 41065), (50, 41080), (63, 41131), (89, 41269), (109, 41374),

Gene: Inventum\_58 Start: 40539, Stop: 40883, Start Num: 38

Candidate Starts for Inventum\_58:

(Start: 38 @40539 has 2 MA's), (Start: 40 @40548 has 91 MA's), (49, 40587), (67, 40659), (109, 40872),

Gene: Island3\_58 Start: 38408, Stop: 38749, Start Num: 44

Candidate Starts for Island3\_58:

(31, 38345), (Start: 44 @38408 has 32 MA's), (56, 38480), (61, 38504), (105, 38717),

Gene: James\_67 Start: 42527, Stop: 42868, Start Num: 40

Candidate Starts for James\_67:

(Start: 38 @42518 has 2 MA's), (Start: 40 @42527 has 91 MA's), (49, 42566), (67, 42644), (109, 42857),

Gene: Jebeks\_57 Start: 37603, Stop: 37971, Start Num: 33

Candidate Starts for Jebeks\_57:

(Start: 22 @37531 has 16 MA's), (Start: 33 @37603 has 1 MA's), (Start: 44 @37645 has 32 MA's), (Start: 48 @37669 has 1 MA's), (61, 37726), (102, 37918), (105, 37939),

Gene: Job42\_65 Start: 42942, Stop: 43283, Start Num: 40

Candidate Starts for Job42\_65:

(Start: 38 @42933 has 2 MA's), (Start: 40 @42942 has 91 MA's), (49, 42981), (67, 43059), (109, 43272),

Gene: JuicyJay\_77 Start: 53923, Stop: 53579, Start Num: 41

Candidate Starts for JuicyJay\_77:

(34, 53953), (Start: 40 @53926 has 91 MA's), (Start: 41 @53923 has 20 MA's), (52, 53887), (84, 53725), (86, 53719), (87, 53716), (104, 53632),

Gene: JuicyJay\_88 Start: 58058, Stop: 58399, Start Num: 40

Candidate Starts for JuicyJay\_88:

(17, 57926), (28, 57986), (29, 58007), (30, 58013), (Start: 40 @58058 has 91 MA's), (49, 58097), (67, 58151), (94, 58313), (96, 58319), (102, 58346), (103, 58349), (109, 58388),

Gene: Jung\_52 Start: 35997, Stop: 36314, Start Num: 44

Candidate Starts for Jung\_52:

(Start: 44 @35997 has 32 MA's), (53, 36039), (57, 36057), (61, 36069), (105, 36282),

Gene: Juniper1\_62 Start: 41298, Stop: 41678, Start Num: 40

Candidate Starts for Juniper1\_62:

(Start: 38 @41289 has 2 MA's), (Start: 40 @41298 has 91 MA's), (49, 41337), (79, 41508), (86, 41532), (99, 41604), (109, 41667),

Gene: Kalah2\_74 Start: 52082, Stop: 51738, Start Num: 41

Candidate Starts for Kalah2\_74:

(34, 52112), (Start: 40 @52085 has 91 MA's), (Start: 41 @52082 has 20 MA's), (52, 52046), (84, 51884), (86, 51878), (87, 51875), (104, 51791),

Gene: Kalah2\_85 Start: 56217, Stop: 56558, Start Num: 40

Candidate Starts for Kalah2\_85:



(17, 56085), (28, 56145), (29, 56166), (30, 56172), (Start: 40 @56217 has 91 MA's), (49, 56256), (67, 56310), (94, 56472), (96, 56478), (102, 56505), (103, 56508), (109, 56547),

Gene: Kari\_53 Start: 36257, Stop: 36580, Start Num: 44

Candidate Starts for Kari\_53:

(Start: 44 @36257 has 32 MA's), (85, 36446), (86, 36449), (105, 36548),

Gene: KashFlow\_74 Start: 47820, Stop: 47479, Start Num: 40

Candidate Starts for KashFlow\_74:

(34, 47847), (Start: 40 @47820 has 91 MA's), (Start: 41 @47817 has 20 MA's), (52, 47781), (81, 47634), (87, 47613), (99, 47553),

Gene: KilKor\_56 Start: 39668, Stop: 40105, Start Num: 22

Candidate Starts for KilKor\_56:

(Start: 22 @39668 has 16 MA's), (Start: 33 @39740 has 1 MA's), (Start: 44 @39782 has 32 MA's), (Start: 48 @39806 has 1 MA's), (61, 39863), (102, 40052), (105, 40073),

Gene: Kimberlium\_68 Start: 43340, Stop: 43681, Start Num: 40

Candidate Starts for Kimberlium\_68:

(Start: 40 @43340 has 91 MA's), (49, 43379), (67, 43433), (94, 43595), (96, 43601), (102, 43628), (103, 43631),

Gene: Kingsley\_60 Start: 40183, Stop: 40524, Start Num: 40

Candidate Starts for Kingsley\_60:

(Start: 38 @40174 has 2 MA's), (Start: 40 @40183 has 91 MA's), (49, 40222), (67, 40300), (109, 40513),

Gene: Klein\_91 Start: 55893, Stop: 56234, Start Num: 40

Candidate Starts for Klein\_91:

(17, 55761), (28, 55821), (29, 55842), (30, 55848), (Start: 40 @55893 has 91 MA's), (49, 55932), (67, 55986), (94, 56148), (96, 56154), (102, 56181), (103, 56184), (109, 56223),

Gene: Ksquared\_59 Start: 40221, Stop: 40544, Start Num: 44

Candidate Starts for Ksquared\_59:

(Start: 22 @40107 has 16 MA's), (Start: 33 @40179 has 1 MA's), (Start: 44 @40221 has 32 MA's), (Start: 48 @40245 has 1 MA's), (61, 40302), (102, 40491), (105, 40512),

Gene: Langerak\_54 Start: 36276, Stop: 36599, Start Num: 44

Candidate Starts for Langerak\_54:

(Start: 44 @36276 has 32 MA's), (85, 36465), (86, 36468), (105, 36567),

Gene: Latretium\_65 Start: 41581, Stop: 41904, Start Num: 40

Candidate Starts for Latretium\_65:

(15, 41428), (Start: 38 @41572 has 2 MA's), (Start: 40 @41581 has 91 MA's), (47, 41602), (50, 41617), (63, 41668), (67, 41689), (71, 41731), (89, 41785), (101, 41842), (109, 41893),

Gene: LilMoolah\_61 Start: 40447, Stop: 40788, Start Num: 40

Candidate Starts for LilMoolah\_61:

(Start: 38 @40438 has 2 MA's), (Start: 40 @40447 has 91 MA's), (49, 40486), (67, 40564), (109, 40777),

Gene: LittleE\_80 Start: 51274, Stop: 51020, Start Num: 41

Candidate Starts for LittleE\_80:

(34, 51304), (Start: 40 @51277 has 91 MA's), (Start: 41 @51274 has 20 MA's), (73, 51103), (78, 51088),

Gene: LittleShirley\_71 Start: 44686, Stop: 45033, Start Num: 44

Candidate Starts for LittleShirley\_71:

(Start: 44 @44686 has 32 MA's), (56, 44758), (61, 44782), (105, 45001),

Gene: Lizziana\_69 Start: 42008, Stop: 42349, Start Num: 40

Candidate Starts for Lizziana\_69:

(Start: 38 @41999 has 2 MA's), (Start: 40 @42008 has 91 MA's), (49, 42047), (67, 42125), (109, 42338),

Gene: LunaBlu\_65 Start: 41579, Stop: 41920, Start Num: 40

Candidate Starts for LunaBlu\_65:

(Start: 38 @41570 has 2 MA's), (Start: 40 @41579 has 91 MA's), (47, 41600), (50, 41615), (63, 41666), (89, 41804), (109, 41909),

Gene: MadMen\_63 Start: 41307, Stop: 41648, Start Num: 40

Candidate Starts for MadMen\_63:

(17, 41175), (28, 41235), (29, 41256), (30, 41262), (Start: 40 @41307 has 91 MA's), (49, 41346), (67, 41400), (94, 41562), (96, 41568), (102, 41595),

Gene: Madiba\_64 Start: 40812, Stop: 41153, Start Num: 40

Candidate Starts for Madiba\_64:

(4, 40572), (5, 40578), (17, 40680), (28, 40740), (29, 40761), (30, 40767), (Start: 40 @40812 has 91 MA's), (49, 40851), (67, 40905), (96, 41073), (102, 41100),

Gene: Mahavrat\_60 Start: 40518, Stop: 40859, Start Num: 40

Candidate Starts for Mahavrat\_60:

(Start: 38 @40509 has 2 MA's), (Start: 40 @40518 has 91 MA's), (49, 40551), (67, 40629), (72, 40677), (93, 40764), (109, 40848),

Gene: Majeke\_59 Start: 37835, Stop: 38158, Start Num: 44

Candidate Starts for Majeke\_59:

(3, 37568), (6, 37601), (8, 37625), (9, 37631), (31, 37772), (Start: 44 @37835 has 32 MA's), (85, 38024), (86, 38027), (105, 38126),

Gene: Malithi\_57 Start: 38149, Stop: 38589, Start Num: 22

Candidate Starts for Malithi\_57:

(Start: 22 @38149 has 16 MA's), (Start: 33 @38221 has 1 MA's), (Start: 44 @38263 has 32 MA's), (Start: 48 @38287 has 1 MA's), (61, 38344), (102, 38536), (105, 38557),

Gene: Mangethe\_59 Start: 37835, Stop: 38158, Start Num: 44

Candidate Starts for Mangethe\_59:

(3, 37568), (6, 37601), (8, 37625), (9, 37631), (31, 37772), (Start: 44 @37835 has 32 MA's), (85, 38024), (86, 38027), (105, 38126),

Gene: Marker\_65 Start: 41128, Stop: 41487, Start Num: 39

Candidate Starts for Marker\_65:

(35, 41119), (Start: 39 @41128 has 1 MA's), (49, 41167), (67, 41239), (94, 41401), (96, 41407), (102, 41434),

Gene: Mattes\_67 Start: 42527, Stop: 42868, Start Num: 40

Candidate Starts for Mattes\_67:

(Start: 38 @42518 has 2 MA's), (Start: 40 @42527 has 91 MA's), (49, 42566), (67, 42644), (109, 42857),

Gene: Megiddo\_56 Start: 38999, Stop: 39439, Start Num: 22

Candidate Starts for Megiddo\_56:

(Start: 22 @38999 has 16 MA's), (Start: 33 @39071 has 1 MA's), (Start: 44 @39113 has 32 MA's), (Start: 48 @39137 has 1 MA's), (61, 39194), (102, 39386), (105, 39407),

Gene: Minerva\_82 Start: 52925, Stop: 52584, Start Num: 40

Candidate Starts for Minerva\_82:

(34, 52952), (Start: 40 @52925 has 91 MA's), (Start: 41 @52922 has 20 MA's), (52, 52886), (81, 52739), (87, 52718), (99, 52658),

Gene: Minerva\_90 Start: 56841, Stop: 57182, Start Num: 40

Candidate Starts for Minerva\_90:

(17, 56709), (28, 56769), (29, 56790), (30, 56796), (Start: 40 @56841 has 91 MA's), (49, 56880), (67, 56934), (94, 57096), (96, 57102), (102, 57129), (103, 57132), (109, 57171),

Gene: MisterCuddles\_61 Start: 40764, Stop: 41120, Start Num: 42

Candidate Starts for MisterCuddles\_61:

(Start: 38 @40755 has 2 MA's), (Start: 42 @40764 has 7 MA's), (47, 40785), (51, 40800), (63, 40851), (67, 40872), (70, 40917), (83, 40977), (94, 41034), (96, 41040), (102, 41067), (109, 41109),

Gene: MooMoo\_73 Start: 46091, Stop: 46441, Start Num: 40

Candidate Starts for MooMoo\_73:

(Start: 40 @46091 has 91 MA's), (55, 46145), (69, 46220), (76, 46262), (77, 46265), (94, 46352), (105, 46406), (109, 46427),

Gene: Mova\_67 Start: 41316, Stop: 41657, Start Num: 40

Candidate Starts for Mova\_67:

(4, 41076), (5, 41082), (17, 41184), (28, 41244), (29, 41265), (30, 41271), (Start: 40 @41316 has 91 MA's), (49, 41355), (67, 41409), (96, 41577), (102, 41604),

Gene: MulchExplorer\_71 Start: 43339, Stop: 43680, Start Num: 40

Candidate Starts for MulchExplorer\_71:

(Start: 40 @43339 has 91 MA's), (49, 43378), (67, 43432), (94, 43594), (96, 43600), (102, 43627), (103, 43630),

Gene: Mutaforma13\_67 Start: 43868, Stop: 44182, Start Num: 40

Candidate Starts for Mutaforma13\_67:

(Start: 38 @43859 has 2 MA's), (Start: 40 @43868 has 91 MA's), (49, 43901), (67, 43973), (90, 44072), (100, 44120), (109, 44171),

Gene: Nebkiss\_53 Start: 36617, Stop: 36249, Start Num: 40

Candidate Starts for Nebkiss\_53:

(Start: 40 @36617 has 91 MA's), (Start: 48 @36593 has 1 MA's), (59, 36536), (74, 36446), (95, 36347), (106, 36293),

Gene: Necropolis\_55 Start: 37600, Stop: 38040, Start Num: 22

Candidate Starts for Necropolis\_55:

(Start: 22 @37600 has 16 MA's), (Start: 33 @37672 has 1 MA's), (Start: 44 @37714 has 32 MA's), (Start: 48 @37738 has 1 MA's), (61, 37795), (102, 37987), (105, 38008),

Gene: NihilNomen\_80 Start: 52876, Stop: 52532, Start Num: 41

Candidate Starts for NihilNomen\_80:

(34, 52906), (Start: 40 @52879 has 91 MA's), (Start: 41 @52876 has 20 MA's), (52, 52840), (84, 52678), (86, 52672), (87, 52669), (104, 52585),

Gene: NihilNomen\_92 Start: 57011, Stop: 57352, Start Num: 40

Candidate Starts for NihilNomen\_92:

(17, 56879), (28, 56939), (29, 56960), (30, 56966), (Start: 40 @57011 has 91 MA's), (49, 57050), (67, 57104), (94, 57266), (96, 57272), (102, 57299), (103, 57302), (109, 57341),

Gene: Nivrat\_59 Start: 40320, Stop: 40661, Start Num: 40

Candidate Starts for Nivrat\_59:

(Start: 38 @40311 has 2 MA's), (Start: 40 @40320 has 91 MA's), (49, 40359), (67, 40437), (109, 40650),

Gene: Odette\_78 Start: 51918, Stop: 51574, Start Num: 41

Candidate Starts for Odette\_78:

(34, 51948), (Start: 40 @51921 has 91 MA's), (Start: 41 @51918 has 20 MA's), (52, 51882), (84, 51720), (86, 51714), (87, 51711), (104, 51627),

Gene: Odette\_89 Start: 56053, Stop: 56394, Start Num: 40

Candidate Starts for Odette\_89:

(17, 55921), (28, 55981), (29, 56002), (30, 56008), (Start: 40 @56053 has 91 MA's), (49, 56092), (67, 56146), (94, 56308), (96, 56314), (102, 56341), (103, 56344), (109, 56383),

Gene: Oksu\_67 Start: 43933, Stop: 44274, Start Num: 40

Candidate Starts for Oksu\_67:

(Start: 38 @43924 has 2 MA's), (Start: 40 @43933 has 91 MA's), (49, 43972),

Gene: OlympiaSaint\_65 Start: 41469, Stop: 41810, Start Num: 40

Candidate Starts for OlympiaSaint\_65:

(Start: 38 @41460 has 2 MA's), (Start: 40 @41469 has 91 MA's), (49, 41508), (67, 41586), (109, 41799),

Gene: Omega\_82 Start: 52706, Stop: 52464, Start Num: 44

Candidate Starts for Omega\_82:

(23, 52817), (25, 52805), (27, 52799), (32, 52751), (Start: 44 @52706 has 32 MA's), (60, 52631), (62, 52625), (73, 52547), (78, 52532),

Gene: Omega\_83 Start: 53053, Stop: 52703, Start Num: 41

Candidate Starts for Omega\_83:

(20, 53161), (34, 53083), (Start: 40 @53056 has 91 MA's), (Start: 41 @53053 has 20 MA's), (52, 53017), (68, 52930), (69, 52924), (82, 52858), (95, 52795), (98, 52789), (105, 52747),

Gene: Optimus\_85 Start: 55545, Stop: 55886, Start Num: 40

Candidate Starts for Optimus\_85:

(4, 55305), (5, 55311), (17, 55413), (28, 55473), (29, 55494), (30, 55500), (Start: 40 @55545 has 91 MA's), (49, 55584), (67, 55638), (94, 55800), (96, 55806), (102, 55833), (103, 55836), (109, 55875),

Gene: Phalm\_56 Start: 38975, Stop: 39412, Start Num: 22

Candidate Starts for Phalm\_56:

(Start: 22 @38975 has 16 MA's), (Start: 33 @39047 has 1 MA's), (Start: 44 @39089 has 32 MA's),  
(Start: 48 @39113 has 1 MA's), (61, 39170), (102, 39359), (105, 39380),

Gene: Phasih\_61 Start: 41374, Stop: 41724, Start Num: 42

Candidate Starts for Phasih\_61:

(Start: 38 @41365 has 2 MA's), (Start: 42 @41374 has 7 MA's), (Start: 48 @41395 has 1 MA's), (49,  
41404), (67, 41482), (70, 41527), (83, 41581), (94, 41638), (96, 41644), (102, 41671), (109, 41713),

Gene: Phayonce\_58 Start: 40466, Stop: 40795, Start Num: 44

Candidate Starts for Phayonce\_58:

(7, 40253), (12, 40277), (18, 40334), (19, 40340), (31, 40409), (Start: 44 @40466 has 32 MA's), (54,  
40514), (64, 40547), (67, 40565), (108, 40781),

Gene: Phegasus\_59 Start: 37802, Stop: 38125, Start Num: 44

Candidate Starts for Phegasus\_59:

(3, 37535), (6, 37568), (8, 37592), (9, 37598), (31, 37739), (Start: 44 @37802 has 32 MA's), (85,  
37991), (86, 37994), (105, 38093),

Gene: Philus\_66 Start: 42110, Stop: 42451, Start Num: 40

Candidate Starts for Philus\_66:

(Start: 38 @42101 has 2 MA's), (Start: 40 @42110 has 91 MA's), (49, 42149), (67, 42227), (109,  
42440),

Gene: Phineas\_58 Start: 38683, Stop: 39009, Start Num: 44

Candidate Starts for Phineas\_58:

(Start: 22 @38569 has 16 MA's), (Start: 33 @38641 has 1 MA's), (Start: 44 @38683 has 32 MA's),  
(Start: 48 @38707 has 1 MA's), (61, 38764), (102, 38956), (105, 38977),

Gene: Phoebus\_82 Start: 54058, Stop: 53714, Start Num: 41

Candidate Starts for Phoebus\_82:

(34, 54088), (Start: 40 @54061 has 91 MA's), (Start: 41 @54058 has 20 MA's), (52, 54022), (84,  
53860), (86, 53854), (87, 53851), (104, 53767),

Gene: Phoebus\_93 Start: 58193, Stop: 58534, Start Num: 40

Candidate Starts for Phoebus\_93:

(17, 58061), (28, 58121), (29, 58142), (30, 58148), (Start: 40 @58193 has 91 MA's), (49, 58232), (67,  
58286), (94, 58448), (96, 58454), (102, 58481), (103, 58484), (109, 58523),

Gene: Polkaroo\_56 Start: 37599, Stop: 37922, Start Num: 44

Candidate Starts for Polkaroo\_56:

(Start: 44 @37599 has 32 MA's), (85, 37788), (86, 37791), (105, 37890),

Gene: Pollywog\_64 Start: 41787, Stop: 42128, Start Num: 40

Candidate Starts for Pollywog\_64:

(Start: 38 @41778 has 2 MA's), (Start: 40 @41787 has 91 MA's), (49, 41826), (67, 41904), (109,  
42117),

Gene: Pound\_80 Start: 54194, Stop: 53856, Start Num: 41

Candidate Starts for Pound\_80:

(34, 54224), (Start: 40 @54197 has 91 MA's), (Start: 41 @54194 has 20 MA's), (52, 54158), (81,  
54011), (87, 53990), (99, 53930),

Gene: Pygmy\_61 Start: 40147, Stop: 40473, Start Num: 44

Candidate Starts for Pygmy\_61:

(Start: 22 @40033 has 16 MA's), (Start: 33 @40105 has 1 MA's), (Start: 44 @40147 has 32 MA's),  
(Start: 48 @40171 has 1 MA's), (61, 40228), (102, 40420), (105, 40441),

Gene: QueenHazel\_51 Start: 36206, Stop: 36523, Start Num: 44

Candidate Starts for QueenHazel\_51:

(16, 36047), (31, 36143), (Start: 44 @36206 has 32 MA's), (53, 36248), (57, 36266), (61, 36278), (105,  
36491),

Gene: QuickMath\_67 Start: 43563, Stop: 43904, Start Num: 40

Candidate Starts for QuickMath\_67:

(Start: 40 @43563 has 91 MA's), (49, 43602), (67, 43656), (94, 43818), (96, 43824), (102, 43851),  
(103, 43854),

Gene: Rebel\_53 Start: 34876, Stop: 35211, Start Num: 44

Candidate Starts for Rebel\_53:

(31, 34819), (Start: 44 @34876 has 32 MA's), (54, 34924), (64, 34957), (67, 34975), (102, 35143),  
(108, 35191),

Gene: RedBird\_61 Start: 40229, Stop: 40564, Start Num: 40

Candidate Starts for RedBird\_61:

(Start: 38 @40220 has 2 MA's), (Start: 40 @40229 has 91 MA's), (49, 40268), (67, 40340), (109,  
40553),

Gene: Redno2\_76 Start: 49675, Stop: 49328, Start Num: 40

Candidate Starts for Redno2\_76:

(34, 49702), (Start: 40 @49675 has 91 MA's), (Start: 41 @49672 has 20 MA's), (52, 49636), (84,  
49474), (86, 49468), (87, 49465), (104, 49381),

Gene: Renaud18\_73 Start: 42883, Stop: 43242, Start Num: 40

Candidate Starts for Renaud18\_73:

(24, 42793), (Start: 40 @42883 has 91 MA's), (49, 42922), (67, 42994), (94, 43156), (96, 43162), (102,  
43189), (103, 43192), (109, 43231),

Gene: RockyHorror\_64 Start: 40636, Stop: 40992, Start Num: 42

Candidate Starts for RockyHorror\_64:

(Start: 38 @40627 has 2 MA's), (Start: 42 @40636 has 7 MA's), (47, 40657), (51, 40672), (63, 40723),  
(67, 40744), (70, 40789), (83, 40849), (94, 40906), (96, 40912), (102, 40939), (109, 40981),

Gene: Royals2015\_66 Start: 41205, Stop: 41546, Start Num: 40

Candidate Starts for Royals2015\_66:

(Start: 38 @41196 has 2 MA's), (Start: 40 @41205 has 91 MA's), (49, 41244), (67, 41322), (109,  
41535),

Gene: Ruby\_59 Start: 40765, Stop: 41121, Start Num: 42

Candidate Starts for Ruby\_59:

(Start: 38 @40756 has 2 MA's), (Start: 42 @40765 has 7 MA's), (47, 40786), (51, 40801), (63, 40852),  
(67, 40873), (70, 40918), (83, 40978), (94, 41035), (96, 41041), (102, 41068), (109, 41110),

Gene: Saal\_65 Start: 42221, Stop: 42562, Start Num: 40

Candidate Starts for Saal\_65:

(Start: 38 @42212 has 2 MA's), (Start: 40 @42221 has 91 MA's), (49, 42260), (67, 42338), (109,  
42551),

Gene: Sabbb\_67 Start: 41906, Stop: 42262, Start Num: 42

Candidate Starts for Sabbb\_67:

(Start: 38 @41897 has 2 MA's), (Start: 42 @41906 has 7 MA's), (47, 41927), (51, 41942), (63, 41993), (67, 42014), (94, 42176), (96, 42182), (102, 42209), (103, 42212), (109, 42251),

Gene: Sarma624\_61 Start: 37375, Stop: 37716, Start Num: 40

Candidate Starts for Sarma624\_61:

(Start: 38 @37366 has 2 MA's), (Start: 40 @37375 has 91 MA's), (49, 37414), (67, 37492), (109, 37705),

Gene: Sassafras\_61 Start: 40547, Stop: 40882, Start Num: 40

Candidate Starts for Sassafras\_61:

(Start: 38 @40538 has 2 MA's), (Start: 40 @40547 has 91 MA's), (49, 40586), (67, 40658), (109, 40871),

Gene: Schatzie\_75 Start: 51668, Stop: 51321, Start Num: 40

Candidate Starts for Schatzie\_75:

(34, 51695), (Start: 40 @51668 has 91 MA's), (Start: 41 @51665 has 20 MA's), (52, 51629), (84, 51467), (86, 51461), (87, 51458), (104, 51374),

Gene: Schatzie\_86 Start: 55800, Stop: 56141, Start Num: 40

Candidate Starts for Schatzie\_86:

(17, 55668), (28, 55728), (29, 55749), (30, 55755), (Start: 40 @55800 has 91 MA's), (49, 55839), (67, 55893), (94, 56055), (96, 56061), (102, 56088), (103, 56091), (109, 56130),

Gene: Shipwreck\_60 Start: 40146, Stop: 40448, Start Num: 48

Candidate Starts for Shipwreck\_60:

(Start: 22 @40008 has 16 MA's), (Start: 33 @40080 has 1 MA's), (Start: 44 @40122 has 32 MA's), (Start: 48 @40146 has 1 MA's), (61, 40203), (102, 40395), (105, 40416),

Gene: SimranZ1\_64 Start: 41403, Stop: 41735, Start Num: 36

Candidate Starts for SimranZ1\_64:

(Start: 36 @41403 has 2 MA's), (Start: 48 @41433 has 1 MA's), (49, 41442), (67, 41520), (68, 41544), (71, 41562), (89, 41616), (92, 41643), (101, 41673), (109, 41724),

Gene: Sonah\_57 Start: 37705, Stop: 38145, Start Num: 22

Candidate Starts for Sonah\_57:

(Start: 22 @37705 has 16 MA's), (Start: 33 @37777 has 1 MA's), (Start: 44 @37819 has 32 MA's), (Start: 48 @37843 has 1 MA's), (61, 37900), (102, 38092), (105, 38113),

Gene: Soul22\_69 Start: 42555, Stop: 42905, Start Num: 40

Candidate Starts for Soul22\_69:

(Start: 38 @42546 has 2 MA's), (Start: 40 @42555 has 91 MA's), (49, 42594), (67, 42672), (89, 42786), (91, 42801), (92, 42813),

Gene: StevieRay\_61 Start: 40026, Stop: 40466, Start Num: 22

Candidate Starts for StevieRay\_61:

(Start: 22 @40026 has 16 MA's), (Start: 33 @40098 has 1 MA's), (Start: 44 @40140 has 32 MA's), (Start: 48 @40164 has 1 MA's), (61, 40221), (102, 40413), (105, 40434),

Gene: StressBall\_56 Start: 38975, Stop: 39412, Start Num: 22

Candidate Starts for StressBall\_56:

(Start: 22 @38975 has 16 MA's), (Start: 33 @39047 has 1 MA's), (Start: 44 @39089 has 32 MA's),  
(Start: 48 @39113 has 1 MA's), (61, 39170), (102, 39359), (105, 39380),

Gene: Techage\_54 Start: 36368, Stop: 36694, Start Num: 44

Candidate Starts for Techage\_54:

(1, 35945), (2, 36092), (31, 36305), (Start: 44 @36368 has 32 MA's), (105, 36662),

Gene: Thespis\_58 Start: 38874, Stop: 39197, Start Num: 44

Candidate Starts for Thespis\_58:

(Start: 22 @38760 has 16 MA's), (Start: 33 @38832 has 1 MA's), (Start: 44 @38874 has 32 MA's),  
(Start: 48 @38898 has 1 MA's), (61, 38955), (102, 39144), (105, 39165),

Gene: ThetaBob\_70 Start: 42862, Stop: 43218, Start Num: 40

Candidate Starts for ThetaBob\_70:

(21, 42760), (Start: 40 @42862 has 91 MA's), (49, 42901), (70, 43018), (94, 43132), (96, 43138), (109,  
43207),

Gene: Thibault\_75 Start: 51674, Stop: 52018, Start Num: 40

Candidate Starts for Thibault\_75:

(26, 51590), (Start: 40 @51674 has 91 MA's), (49, 51713), (67, 51785), (88, 51902), (95, 51944), (109,  
52007),

Gene: Thibault\_67 Start: 47871, Stop: 47533, Start Num: 41

Candidate Starts for Thibault\_67:

(34, 47901), (Start: 40 @47874 has 91 MA's), (Start: 41 @47871 has 20 MA's), (52, 47835), (81,  
47688), (87, 47667), (99, 47607),

Gene: ThreeRngTarjay\_77 Start: 52950, Stop: 52606, Start Num: 41

Candidate Starts for ThreeRngTarjay\_77:

(34, 52980), (Start: 40 @52953 has 91 MA's), (Start: 41 @52950 has 20 MA's), (52, 52914), (84,  
52752), (86, 52746), (87, 52743), (104, 52659),

Gene: ThreeRngTarjay\_88 Start: 57085, Stop: 57426, Start Num: 40

Candidate Starts for ThreeRngTarjay\_88:

(17, 56953), (28, 57013), (29, 57034), (30, 57040), (Start: 40 @57085 has 91 MA's), (49, 57124), (67,  
57178), (94, 57340), (96, 57346), (102, 57373), (103, 57376), (109, 57415),

Gene: Toron\_83 Start: 50561, Stop: 50893, Start Num: 45

Candidate Starts for Toron\_83:

(Start: 40 @50534 has 91 MA's), (45, 50561), (60, 50624), (67, 50654), (80, 50744), (84, 50759), (107,  
50879),

Gene: Velveteen\_58 Start: 37375, Stop: 37716, Start Num: 40

Candidate Starts for Velveteen\_58:

(Start: 38 @37366 has 2 MA's), (Start: 40 @37375 has 91 MA's), (49, 37414), (67, 37492), (109,  
37705),

Gene: Venti\_54 Start: 36260, Stop: 36583, Start Num: 44

Candidate Starts for Venti\_54:

(Start: 44 @36260 has 32 MA's), (85, 36449), (86, 36452), (105, 36551),

Gene: Vidya\_55 Start: 37618, Stop: 37944, Start Num: 44

Candidate Starts for Vidya\_55:



(Start: 22 @37504 has 16 MA's), (Start: 33 @37576 has 1 MA's), (Start: 44 @37618 has 32 MA's),  
(Start: 48 @37642 has 1 MA's), (61, 37699), (102, 37891), (105, 37912),

Gene: Wanda\_95 Start: 56202, Stop: 56543, Start Num: 40

Candidate Starts for Wanda\_95:

(17, 56070), (28, 56130), (29, 56151), (30, 56157), (Start: 40 @56202 has 91 MA's), (49, 56241), (67,  
56295), (94, 56457), (96, 56463), (102, 56490), (103, 56493), (109, 56532),

Gene: Willsammy\_56 Start: 39151, Stop: 39588, Start Num: 22

Candidate Starts for Willsammy\_56:

(Start: 22 @39151 has 16 MA's), (Start: 33 @39223 has 1 MA's), (Start: 44 @39265 has 32 MA's),  
(Start: 48 @39289 has 1 MA's), (61, 39346), (102, 39535), (105, 39556),

Gene: Xeno\_56 Start: 35652, Stop: 35969, Start Num: 44

Candidate Starts for Xeno\_56:

(Start: 44 @35652 has 32 MA's), (53, 35694), (57, 35712), (61, 35724), (105, 35937),

Gene: Xula\_50 Start: 35808, Stop: 36125, Start Num: 44

Candidate Starts for Xula\_50:

(16, 35649), (Start: 44 @35808 has 32 MA's), (53, 35850), (57, 35868), (61, 35880), (105, 36093),

Gene: Yeet\_74 Start: 51170, Stop: 50823, Start Num: 40

Candidate Starts for Yeet\_74:

(34, 51197), (Start: 40 @51170 has 91 MA's), (Start: 41 @51167 has 20 MA's), (52, 51131), (84,  
50969), (86, 50963), (87, 50960), (104, 50876),

Gene: Yeet\_84 Start: 55302, Stop: 55643, Start Num: 40

Candidate Starts for Yeet\_84:

(17, 55170), (28, 55230), (29, 55251), (30, 55257), (Start: 40 @55302 has 91 MA's), (49, 55341), (67,  
55395), (94, 55557), (96, 55563), (102, 55590), (103, 55593), (109, 55632),

Gene: Yorick\_62 Start: 41335, Stop: 41676, Start Num: 40

Candidate Starts for Yorick\_62:

(Start: 38 @41326 has 2 MA's), (Start: 40 @41335 has 91 MA's), (49, 41374), (67, 41452), (109,  
41665),

Gene: Yoshi\_78 Start: 43126, Stop: 43482, Start Num: 40

Candidate Starts for Yoshi\_78:

(21, 43024), (Start: 40 @43126 has 91 MA's), (49, 43165), (70, 43282), (94, 43396), (96, 43402), (109,  
43471),

Gene: Zelink\_77 Start: 53262, Stop: 52918, Start Num: 41

Candidate Starts for Zelink\_77:

(34, 53292), (Start: 40 @53265 has 91 MA's), (Start: 41 @53262 has 20 MA's), (52, 53226), (84,  
53064), (86, 53058), (87, 53055), (104, 52971),

Gene: Zelink\_88 Start: 57397, Stop: 57738, Start Num: 40

Candidate Starts for Zelink\_88:

(17, 57265), (28, 57325), (29, 57346), (30, 57352), (Start: 40 @57397 has 91 MA's), (49, 57436), (67,  
57490), (94, 57652), (96, 57658), (102, 57685), (103, 57688), (109, 57727),

Gene: Zerg\_63 Start: 40748, Stop: 41104, Start Num: 42

Candidate Starts for Zerg\_63:

(Start: 38 @40739 has 2 MA's), (Start: 42 @40748 has 7 MA's), (47, 40769), (51, 40784), (63, 40835), (67, 40856), (70, 40901), (83, 40961), (94, 41018), (96, 41024), (102, 41051), (109, 41093),

Gene: Zilizebeth\_59 Start: 37826, Stop: 38149, Start Num: 44

Candidate Starts for Zilizebeth\_59:

(3, 37559), (6, 37592), (8, 37616), (9, 37622), (31, 37763), (Start: 44 @37826 has 32 MA's), (85, 38015), (86, 38018), (105, 38117),