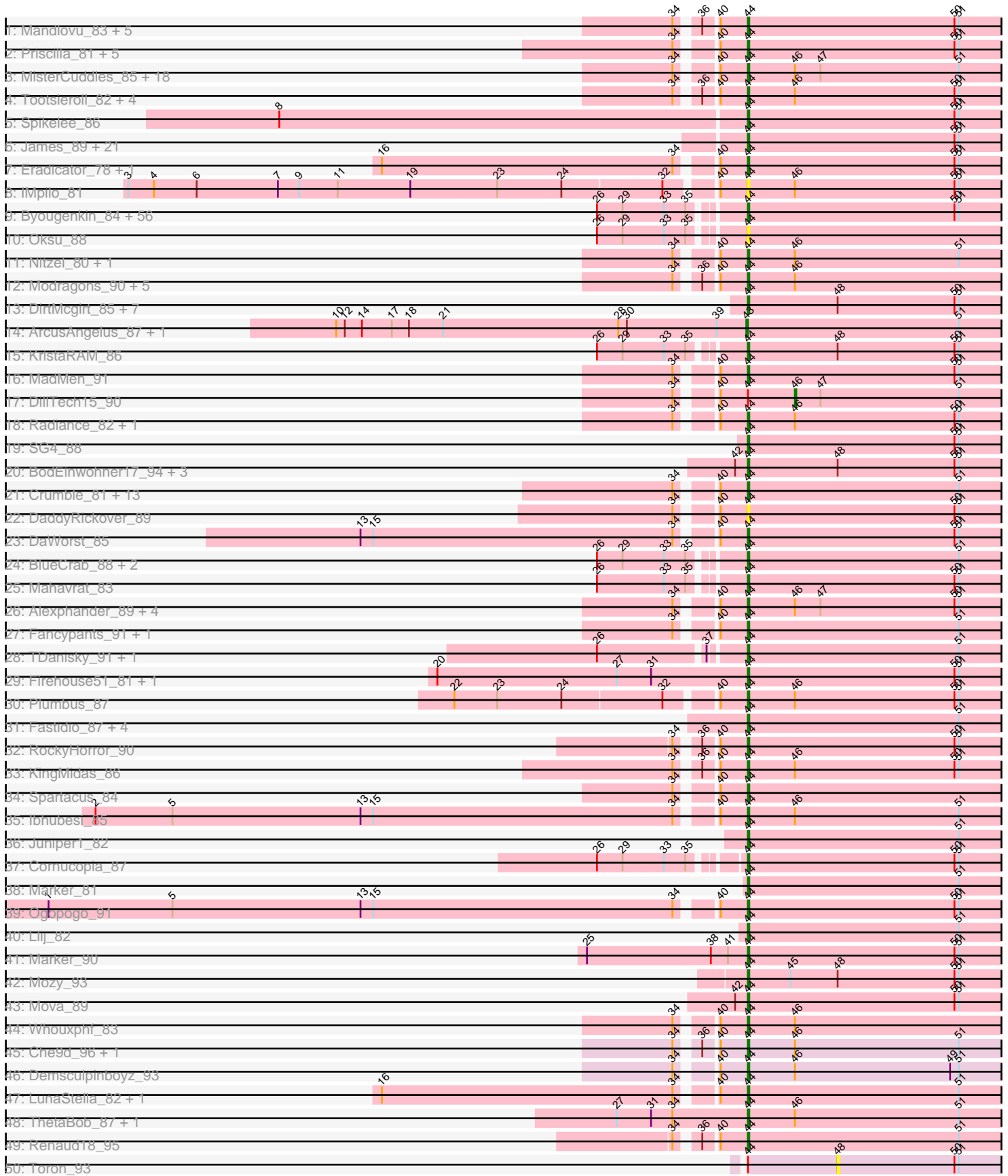


# Pham 193734



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 193734 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193734 has 207 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Mandlovu\_83, Hlubikazi\_83, PopTart\_79, SassyB\_79, Strokeseat\_83, Wachhund\_83
- Track 2 : Priscilla\_81, NormanBulbieJr\_79, Nivrat\_84, LilMoolah\_86, Koella\_73, Shauna1\_85
- Track 3 : MisterCuddles\_85, PHappiness\_86, Zerg\_86, RitaG\_86, QuickMath\_87, MulchExplorer\_91, Nimbo\_78, Geralt\_79, Ovechkin\_91, Juice456\_85, Girr\_84, SiSi\_83, OldBen\_83, Veteran\_79, Mantra\_84, Deb65\_79, Kimberlium\_89, Ruby\_82, Daenerys\_85
- Track 4 : Tootsieroll\_82, Seagreen\_86, Polka14\_91, Doomphist\_90, Poenanya\_90
- Track 5 : Spikelee\_86
- Track 6 : James\_89, Hegedechwinu\_86, Galactic\_86, JalFarm20\_93, ShiLan\_88, Jabbawokkie\_93, Spoonbill\_84, Beakin\_78, OlympiaSaint\_88, Moonbeam\_86, Empress\_86, Che8\_91, MilleniumForce\_87, Mattes\_85, CaptainTrips\_88, Jarcob\_88, Rialto\_89, Hades\_85, MinionDave\_84, Blarby\_93, Phasih\_82, Zapner\_92
- Track 7 : Eradicator\_78, ShroomBoi\_84
- Track 8 : IMpilo\_81
- Track 9 : Byougenkin\_84, Phalconet\_84, Madiba\_87, Kenuha5\_81, Emma\_90, Batiatus\_85, Royals2015\_92, Girafales\_93, Inventum\_83, Cerasum\_81, Aubs\_86, Hegedechwinu\_95, Flathead\_89, Guppsters\_80, PhesterPhotato\_91, Yorick\_78, IbOuu\_83, Taj\_94, Quico\_93, Bubbles123\_80, WillSterrel\_84, Bobi\_90, Eish\_92, MilanaBonita\_81, Soul22\_87, Hamulus\_87, Ramsey\_90, Blexus\_82, Coco12\_84, Squirty\_86, RedBird\_86, Dorothy\_86, Krakatau\_79, BigPhil\_80, Donkeykong\_92, Leperchaun\_87, StAnnes\_91, Velveteen\_81, Tweety\_87, IrishSherpFalk\_85, Job42\_86, Phanphagia\_88, Sarma624\_86, BuzzLyseyear\_94, Sassafras\_87, Florinda\_96, Ms6\_88, OwlsT2W\_85, Gandalph\_85, SuperGrey\_86, Akhila\_82, Whatsapiecost\_78, JoeyJr\_89, DeadP\_88, Spartacus\_92, Stap\_82, Kingsley\_91
- Track 10 : Oksu\_88
- Track 11 : Nitzel\_80, Estave1\_90
- Track 12 : Modragons\_90, Seabastian\_93, Jinglebell\_92, Llama\_92, OfUltron\_93, Ochi17\_91
- Track 13 : DirtMcgirt\_85, Boomer\_89, Lorde\_86, Enby\_87, UncleRicky\_85, Rockne\_87, PMC\_83, Drago\_83
- Track 14 : ArcusAngelus\_87, Chevrolet\_90
- Track 15 : KristaRAM\_86
- Track 16 : MadMen\_91
- Track 17 : DillTech15\_90
- Track 18 : Radiance\_82, Clifton\_77

- Track 19 : SG4\_88
- Track 20 : BodEinwohner17\_94, Philus\_88, DRBy19\_89, Scottish\_86
- Track 21 : Crumble\_81, FreddyB\_94, Pippy\_81, Burwell21\_80, Cabrinians\_82, Saal\_82, BobaPhett\_86, Leozinho\_84, Lizziana\_87, LastJedi\_76, SwagPiggett\_87, Gorge\_84, Brocalys\_76, Maravista\_83
- Track 22 : DaddyRickover\_89
- Track 23 : DaWorst\_85
- Track 24 : BlueCrab\_88, EleanorGeorge\_83, Sabbb\_87
- Track 25 : Mahavrat\_83
- Track 26 : Alexphander\_89, GigiOuiOui\_82, Starcevich\_87, Karhdo\_82, GUmbe\_84
- Track 27 : Fancypants\_91, Harley\_87
- Track 28 : TDanisky\_91, Sparkdehlily\_90
- Track 29 : Firehouse51\_81, Mutaforma13\_88
- Track 30 : Plumbus\_87
- Track 31 : Fastidio\_87, LittleShirley\_91, Totinger\_87, Zizzle\_89, Kersh\_87
- Track 32 : RockyHorror\_90
- Track 33 : KingMidas\_86
- Track 34 : Spartacus\_84
- Track 35 : lbhubesi\_85
- Track 36 : Juniper1\_82
- Track 37 : Cornucopia\_87
- Track 38 : Marker\_81
- Track 39 : Ogopogo\_91
- Track 40 : Llij\_82
- Track 41 : Marker\_90
- Track 42 : Mozy\_93
- Track 43 : Mova\_89
- Track 44 : Whouxphf\_83
- Track 45 : Che9d\_96, SimranZ1\_85
- Track 46 : Demsculpinboyz\_93
- Track 47 : LunaStella\_82, TChen\_84
- Track 48 : ThetaBob\_87, MooMoo\_82
- Track 49 : Renaud18\_95
- Track 50 : Toron\_93

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

The start number called the most often in the published annotations is 44, it was called in 196 of the 199 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Akhila\_82, Alexphander\_89, Aubs\_86, Batiatus\_85, Beakin\_78, BigPhil\_80, Blarby\_93, Blexus\_82, BlueCrab\_88, BobaPhett\_86, Bobi\_90, BodEinwohner17\_94, Boomer\_89, Brocalys\_76, Bubbles123\_80, Burwell21\_80, BuzzLyseyear\_94, Byougenkin\_84, Cabrinians\_82, CaptainTrips\_88, Cerasum\_81, Che8\_91, Che9d\_96, Clifton\_77, Coco12\_84, Cornucopia\_87, Crumble\_81, DRBy19\_89, DaWorst\_85, DaddyRickover\_89, Daenerys\_85, DeadP\_88, Deb65\_79, Demsculpinboyz\_93, DirtMcgirt\_85, Donkeykong\_92, Doomphist\_90, Dorothy\_86, Drago\_83, Eish\_92, EleanorGeorge\_83, Emma\_90, Empress\_86, Enby\_87, Eradicator\_78, Estave1\_90, Fancypants\_91, Fastidio\_87, Firehouse51\_81,

Flathead\_89, Florinda\_96, FreddyB\_94, GUmbie\_84, Galactic\_86, Gandalph\_85, Geralt\_79, GigiOuiOui\_82, Girafales\_93, Girr\_84, Gorge\_84, Guppsters\_80, Hades\_85, Hamulus\_87, Harley\_87, Hegedechwinu\_86, Hegedechwinu\_95, Hlubikazi\_83, IMpilo\_81, IbOuu\_83, Ibhubesi\_85, Inventum\_83, IrishSherpFalk\_85, Jabbawokkie\_93, JalFarm20\_93, James\_89, Jarcob\_88, Jinglebell\_92, Job42\_86, JoeyJr\_89, Juice456\_85, Juniper1\_82, Karhdo\_82, Kenuha5\_81, Kersh\_87, Kimberlium\_89, KingMidas\_86, Kingsley\_91, Koella\_73, Krakatau\_79, KristaRAM\_86, LastJedi\_76, Leozinho\_84, Leperchaun\_87, LilMoolah\_86, LittleShirley\_91, Lizziana\_87, Llama\_92, Llij\_82, Lorde\_86, LunaStella\_82, MadMen\_91, Madiba\_87, Mahavrat\_83, Mandlovu\_83, Mantra\_84, Maravista\_83, Marker\_81, Marker\_90, Mattes\_85, MilanaBonita\_81, MilleniumForce\_87, MinionDave\_84, MisterCuddles\_85, Modragons\_90, MooMoo\_82, Moonbeam\_86, Mova\_89, Mozy\_93, Ms6\_88, MulchExplorer\_91, Mutaforma13\_88, Nimbo\_78, Nitzel\_80, Nivrat\_84, NormanBulbieJr\_79, Ochi17\_91, OfUltron\_93, Ogopogo\_91, Oksu\_88, OldBen\_83, OlympiaSaint\_88, Ovechkin\_91, OwlsT2W\_85, PHappiness\_86, PMC\_83, Phalconet\_84, Phanphagia\_88, Phasih\_82, PhesterPhotato\_91, Philus\_88, Pippy\_81, Plumbus\_87, Poenanya\_90, Polka14\_91, PopTart\_79, Priscilla\_81, QuickMath\_87, Quico\_93, Radiance\_82, Ramsey\_90, RedBird\_86, Renaud18\_95, Rialto\_89, RitaG\_86, Rockne\_87, RockyHorror\_90, Royals2015\_92, Ruby\_82, SG4\_88, Saal\_82, Sabbb\_87, Sarma624\_86, Sassafras\_87, SassyB\_79, Scottish\_86, Seabastian\_93, Seagreen\_86, Shauna1\_85, ShiLan\_88, ShroomBoi\_84, SiSi\_83, SimranZ1\_85, Soul22\_87, Sparkdehlily\_90, Spartacus\_84, Spartacus\_92, Spikelee\_86, Spoonbill\_84, Squirty\_86, StAnnes\_91, Stap\_82, Starcevich\_87, Strokeseat\_83, SuperGrey\_86, SwagPigglett\_87, TChen\_84, TDanisky\_91, Taj\_94, ThetaBob\_87, Tootsieroll\_82, Totinger\_87, Tweety\_87, UncleRicky\_85, Velveteen\_81, Veteran\_79, Wachhund\_83, Whatsapiecost\_78, Whouxphf\_83, WillSterrel\_84, Yorick\_78, Zapner\_92, Zerg\_86, Zizzle\_89,

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

- DillTech15\_90, Toron\_93,

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

- ArcusAngelus\_87, Chevrolet\_90,

### Summary by start number:

Start 43:

- Found in 2 of 207 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 199
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArcusAngelus\_87 (F1), Chevrolet\_90 (F1),

Start 44:

- Found in 205 of 207 ( 99.0% ) of genes in pham
- Manual Annotations of this start: 196 of 199
- Called 99.0% of time when present
- Phage (with cluster) where this start called: Akhila\_82 (F1), Alexphander\_89 (F1), Aubs\_86 (F1), Batiatus\_85 (F1), Beakin\_78 (F1), BigPhil\_80 (F1), Blarby\_93 (F), Blexus\_82 (F1), BlueCrab\_88 (F1), BobaPhett\_86 (F1), Bobi\_90 (F1), BodEinwohner17\_94 (F1), Boomer\_89 (F1), Brocalys\_76 (F1), Bubbles123\_80 (F1), Burwell21\_80 (F1), BuzzLyseyear\_94 (F1), Byougenkin\_84 (F1), Cabrinians\_82 (F1),

CaptainTrips\_88 (F1), Cerasum\_81 (F1), Che8\_91 (F1), Che9d\_96 (F2), Clifton\_77 (F1), Coco12\_84 (F1), Cornucopia\_87 (F1), Crumble\_81 (F1), DRBy19\_89 (F1), DaWorst\_85 (F1), DaddyRickover\_89 (F1), Daenerys\_85 (F1), DeadP\_88 (F1), Deb65\_79 (F1), Demsculpinboyz\_93 (F2), DirtMcgirt\_85 (F1), Donkeykong\_92 (F1), Doomphist\_90 (F1), Dorothy\_86 (F1), Drago\_83 (F1), Eish\_92 (F1), EleanorGeorge\_83 (F1), Emma\_90 (F1), Empress\_86 (F1), Enby\_87 (F1), Eradicator\_78 (F1), Estave1\_90 (F1), Fancypants\_91 (F1), Fastidio\_87 (F1), Firehouse51\_81 (F1), Flathead\_89 (F1), Florinda\_96 (F1), FreddyB\_94 (F1), GUmbie\_84 (F1), Galactic\_86 (F1), Gandolph\_85 (F1), Geralt\_79 (F1), GigiOuiOui\_82 (F1), Girafales\_93 (F1), Girr\_84 (F1), Gorge\_84 (F1), Guppsters\_80 (F1), Hades\_85 (F1), Hamulus\_87 (F1), Harley\_87 (F1), Hegedechwinu\_86 (F1), Hegedechwinu\_95 (F1), Hlubikazi\_83 (F1), IMpilo\_81 (F1), IbOuu\_83 (F1), Ibhuesi\_85 (F1), Inventum\_83 (F1), IrishSherpFalk\_85 (F1), Jabbawokkie\_93 (F2), JalFarm20\_93 (F1), James\_89 (F1), Jarcob\_88 (F1), Jinglebell\_92 (F1), Job42\_86 (F1), JoeyJr\_89 (F1), Juice456\_85 (F1), Juniper1\_82 (F1), Karhdo\_82 (F1), Kenuha5\_81 (F1), Kersh\_87 (F1), Kimberlium\_89 (F1), KingMidas\_86 (F1), Kingsley\_91 (F1), Koella\_73 (F1), Krakatau\_79 (F1), KristaRAM\_86 (F1), LastJedi\_76 (F1), Leozinho\_84 (F1), Leperchaun\_87 (F1), LilMoolah\_86 (F1), LittleShirley\_91 (F1), Lizziana\_87 (F1), Llama\_92 (F1), Llij\_82 (F1), Lorde\_86 (F1), LunaStella\_82 (F4), MadMen\_91 (F1), Madiba\_87 (F1), Mahavrat\_83 (F1), Mandlovu\_83 (F1), Mantra\_84 (F1), Maravista\_83 (F1), Marker\_81 (F1), Marker\_90 (F1), Mattes\_85 (F1), MilanaBonita\_81 (F1), MilleniumForce\_87 (F1), MinionDave\_84 (F1), MisterCuddles\_85 (F1), Modragons\_90 (F1), MooMoo\_82 (singleton), Moonbeam\_86 (F1), Mova\_89 (F1), Mozy\_93 (F1), Ms6\_88 (F1), MulchExplorer\_91 (F1), Mutaforma13\_88 (F1), Nimbo\_78 (F1), Nitzel\_80 (F1), Nivrat\_84 (F1), NormanBulbieJr\_79 (F1), Ochi17\_91 (F1), OfUltron\_93 (F1), Ogotopogo\_91 (F1), Oksu\_88 (F1), OldBen\_83 (F1), OlympiaSaint\_88 (F1), Ovechkin\_91 (F1), OwlsT2W\_85 (F1), PHappiness\_86 (F1), PMC\_83 (F1), Phalconet\_84 (F1), Phanphagia\_88 (F1), Phasih\_82 (F1), PhesterPhotato\_91 (F1), Philus\_88 (F1), Pippy\_81 (F1), Plumbus\_87 (F1), Poenanya\_90 (F1), Polka14\_91 (F1), PopTart\_79 (F1), Priscilla\_81 (F1), QuickMath\_87 (F1), Quico\_93 (F1), Radiance\_82 (F1), Ramsey\_90 (F1), RedBird\_86 (F1), Renaud18\_95 (F4), Rialto\_89 (F1), RitaG\_86 (F1), Rockne\_87 (F1), RockyHorror\_90 (F1), Royals2015\_92 (F1), Ruby\_82 (F1), SG4\_88 (F1), Saal\_82 (F1), Sabbb\_87 (F1), Sarma624\_86 (F1), Sassafras\_87 (F1), SassyB\_79 (F1), Scottish\_86 (F1), Sebastian\_93 (F1), Seagreen\_86 (F1), Shauna1\_85 (F1), ShiLan\_88 (F1), ShroomBoi\_84 (F1), SiSi\_83 (F1), SimranZ1\_85 (F1), Soul22\_87 (F2), Sparkdehlily\_90 (F1), Spartacus\_84 (F1), Spartacus\_92 (F1), Spikelee\_86 (F1), Spoonbill\_84 (F1), Squirty\_86 (F3), StAnnes\_91 (F1), Stap\_82 (F1), Starceвич\_87 (F1), Strokeseat\_83 (F1), SuperGrey\_86 (F1), SwagPigglett\_87 (F1), TChen\_84 (F4), TDanisky\_91 (F1), Taj\_94 (F1), ThetaBob\_87 (F4), Tootsieroll\_82 (F1), Totinger\_87 (F1), Tweety\_87 (F1), UncleRicky\_85 (F1), Velveteen\_81 (F1), Veteran\_79 (F1), Wachhund\_83 (F1), Whatsapiecost\_78 (F1), Whouxphf\_83 (F1), WillSterrel\_84 (F1), Yorick\_78 (F1), Zapner\_92 (F2), Zerg\_86 (F1), Zizzle\_89 (F1),

#### Start 46:

- Found in 50 of 207 ( 24.2% ) of genes in pham
- Manual Annotations of this start: 1 of 199
- Called 2.0% of time when present
- Phage (with cluster) where this start called: DillTech15\_90 (F1),

#### Start 48:

- Found in 15 of 207 ( 7.2% ) of genes in pham

- No Manual Annotations of this start.
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Toron\_93 (F6),

### **Summary by clusters:**

There are 7 clusters represented in this pham: F1, F2, F3, F4, F6, F, singleton,

Info for manual annotations of cluster F1:

- Start number 43 was manually annotated 2 times for cluster F1.
- Start number 44 was manually annotated 185 times for cluster F1.
- Start number 46 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 44 was manually annotated 5 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 44 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 44 was manually annotated 4 times for cluster F4.

### **Gene Information:**

Gene: Akhila\_82 Start: 49158, Stop: 49349, Start Num: 44

Candidate Starts for Akhila\_82:

(26, 49068), (29, 49086), (33, 49113), (35, 49128), (Start: 44 @49158 has 196 MA's), (50, 49302), (51, 49305),

Gene: Alexphander\_89 Start: 51574, Stop: 51765, Start Num: 44

Candidate Starts for Alexphander\_89:

(34, 51535), (40, 51556), (Start: 44 @51574 has 196 MA's), (Start: 46 @51607 has 1 MA's), (47, 51625), (50, 51718), (51, 51721),

Gene: ArcusAngelus\_87 Start: 51185, Stop: 51376, Start Num: 43

Candidate Starts for ArcusAngelus\_87:

(10, 50897), (12, 50903), (14, 50915), (17, 50936), (18, 50948), (21, 50972), (28, 51095), (30, 51101), (39, 51164), (Start: 43 @51185 has 2 MA's), (51, 51332),

Gene: Aubs\_86 Start: 50998, Stop: 51189, Start Num: 44

Candidate Starts for Aubs\_86:

(26, 50908), (29, 50926), (33, 50953), (35, 50968), (Start: 44 @50998 has 196 MA's), (50, 51142), (51, 51145),

Gene: Batiatus\_85 Start: 50156, Stop: 50347, Start Num: 44

Candidate Starts for Batiatus\_85:

(26, 50066), (29, 50084), (33, 50111), (35, 50126), (Start: 44 @50156 has 196 MA's), (50, 50300), (51, 50303),

Gene: Beakin\_78 Start: 46641, Stop: 46835, Start Num: 44  
Candidate Starts for Beakin\_78:  
(Start: 44 @46641 has 196 MA's), (50, 46785), (51, 46788),

Gene: BigPhil\_80 Start: 46481, Stop: 46672, Start Num: 44  
Candidate Starts for BigPhil\_80:  
(26, 46391), (29, 46409), (33, 46436), (35, 46451), (Start: 44 @46481 has 196 MA's), (50, 46625), (51, 46628),

Gene: Blarby\_93 Start: 48509, Stop: 48700, Start Num: 44  
Candidate Starts for Blarby\_93:  
(Start: 44 @48509 has 196 MA's), (50, 48653), (51, 48656),

Gene: Blexus\_82 Start: 50332, Stop: 50523, Start Num: 44  
Candidate Starts for Blexus\_82:  
(26, 50242), (29, 50260), (33, 50287), (35, 50302), (Start: 44 @50332 has 196 MA's), (50, 50476), (51, 50479),

Gene: BlueCrab\_88 Start: 51366, Stop: 51557, Start Num: 44  
Candidate Starts for BlueCrab\_88:  
(26, 51276), (29, 51294), (33, 51321), (35, 51336), (Start: 44 @51366 has 196 MA's), (51, 51513),

Gene: BobaPhett\_86 Start: 52098, Stop: 52289, Start Num: 44  
Candidate Starts for BobaPhett\_86:  
(34, 52059), (40, 52080), (Start: 44 @52098 has 196 MA's), (51, 52245),

Gene: Bobi\_90 Start: 51901, Stop: 52092, Start Num: 44  
Candidate Starts for Bobi\_90:  
(26, 51811), (29, 51829), (33, 51856), (35, 51871), (Start: 44 @51901 has 196 MA's), (50, 52045), (51, 52048),

Gene: BodEinwohner17\_94 Start: 52790, Stop: 52981, Start Num: 44  
Candidate Starts for BodEinwohner17\_94:  
(42, 52781), (Start: 44 @52790 has 196 MA's), (48, 52853), (50, 52934), (51, 52937),

Gene: Boomer\_89 Start: 50947, Stop: 51138, Start Num: 44  
Candidate Starts for Boomer\_89:  
(Start: 44 @50947 has 196 MA's), (48, 51010), (50, 51091), (51, 51094),

Gene: Brocalys\_76 Start: 47578, Stop: 47769, Start Num: 44  
Candidate Starts for Brocalys\_76:  
(34, 47539), (40, 47560), (Start: 44 @47578 has 196 MA's), (51, 47725),

Gene: Bubbles123\_80 Start: 49875, Stop: 50066, Start Num: 44  
Candidate Starts for Bubbles123\_80:  
(26, 49785), (29, 49803), (33, 49830), (35, 49845), (Start: 44 @49875 has 196 MA's), (50, 50019), (51, 50022),

Gene: Burwell21\_80 Start: 49864, Stop: 50055, Start Num: 44  
Candidate Starts for Burwell21\_80:  
(34, 49825), (40, 49846), (Start: 44 @49864 has 196 MA's), (51, 50011),

Gene: BuzzLyseyear\_94 Start: 53072, Stop: 53266, Start Num: 44

Candidate Starts for BuzzLyseyear\_94:

(26, 52982), (29, 53000), (33, 53027), (35, 53042), (Start: 44 @53072 has 196 MA's), (50, 53216), (51, 53219),

Gene: Byougenkin\_84 Start: 47756, Stop: 47947, Start Num: 44

Candidate Starts for Byougenkin\_84:

(26, 47666), (29, 47684), (33, 47711), (35, 47726), (Start: 44 @47756 has 196 MA's), (50, 47900), (51, 47903),

Gene: Cabrinians\_82 Start: 49498, Stop: 49689, Start Num: 44

Candidate Starts for Cabrinians\_82:

(34, 49459), (40, 49480), (Start: 44 @49498 has 196 MA's), (51, 49645),

Gene: CaptainTrips\_88 Start: 50521, Stop: 50715, Start Num: 44

Candidate Starts for CaptainTrips\_88:

(Start: 44 @50521 has 196 MA's), (50, 50665), (51, 50668),

Gene: Cerasum\_81 Start: 46499, Stop: 46690, Start Num: 44

Candidate Starts for Cerasum\_81:

(26, 46409), (29, 46427), (33, 46454), (35, 46469), (Start: 44 @46499 has 196 MA's), (50, 46643), (51, 46646),

Gene: Che8\_91 Start: 51257, Stop: 51448, Start Num: 44

Candidate Starts for Che8\_91:

(Start: 44 @51257 has 196 MA's), (50, 51401), (51, 51404),

Gene: Che9d\_96 Start: 50082, Stop: 50273, Start Num: 44

Candidate Starts for Che9d\_96:

(34, 50043), (36, 50055), (40, 50064), (Start: 44 @50082 has 196 MA's), (Start: 46 @50115 has 1 MA's), (51, 50229),

Gene: Chevrolet\_90 Start: 51186, Stop: 51377, Start Num: 43

Candidate Starts for Chevrolet\_90:

(10, 50898), (12, 50904), (14, 50916), (17, 50937), (18, 50949), (21, 50973), (28, 51096), (30, 51102), (39, 51165), (Start: 43 @51186 has 2 MA's), (51, 51333),

Gene: Clifton\_77 Start: 48485, Stop: 48676, Start Num: 44

Candidate Starts for Clifton\_77:

(34, 48446), (40, 48467), (Start: 44 @48485 has 196 MA's), (Start: 46 @48518 has 1 MA's), (50, 48629), (51, 48632),

Gene: Coco12\_84 Start: 50556, Stop: 50747, Start Num: 44

Candidate Starts for Coco12\_84:

(26, 50466), (29, 50484), (33, 50511), (35, 50526), (Start: 44 @50556 has 196 MA's), (50, 50700), (51, 50703),

Gene: Cornucopia\_87 Start: 49024, Stop: 49215, Start Num: 44

Candidate Starts for Cornucopia\_87:

(26, 48937), (29, 48955), (33, 48982), (35, 48997), (Start: 44 @49024 has 196 MA's), (50, 49168), (51, 49171),

Gene: Crumble\_81 Start: 46223, Stop: 46414, Start Num: 44

Candidate Starts for Crumble\_81:



(34, 46184), (40, 46205), (Start: 44 @46223 has 196 MA's), (51, 46370),

Gene: DRBy19\_89 Start: 52206, Stop: 52397, Start Num: 44

Candidate Starts for DRBy19\_89:

(42, 52197), (Start: 44 @52206 has 196 MA's), (48, 52269), (50, 52350), (51, 52353),

Gene: DaWorst\_85 Start: 49498, Stop: 49689, Start Num: 44

Candidate Starts for DaWorst\_85:

(13, 49240), (15, 49249), (34, 49459), (40, 49480), (Start: 44 @49498 has 196 MA's), (50, 49642), (51, 49645),

Gene: DaddyRickover\_89 Start: 51447, Stop: 51641, Start Num: 44

Candidate Starts for DaddyRickover\_89:

(34, 51408), (40, 51429), (Start: 44 @51447 has 196 MA's), (50, 51591), (51, 51594),

Gene: Daenerys\_85 Start: 51607, Stop: 51801, Start Num: 44

Candidate Starts for Daenerys\_85:

(34, 51568), (40, 51589), (Start: 44 @51607 has 196 MA's), (Start: 46 @51640 has 1 MA's), (47, 51658), (51, 51754),

Gene: DeadP\_88 Start: 49580, Stop: 49771, Start Num: 44

Candidate Starts for DeadP\_88:

(26, 49490), (29, 49508), (33, 49535), (35, 49550), (Start: 44 @49580 has 196 MA's), (50, 49724), (51, 49727),

Gene: Deb65\_79 Start: 49330, Stop: 49524, Start Num: 44

Candidate Starts for Deb65\_79:

(34, 49291), (40, 49312), (Start: 44 @49330 has 196 MA's), (Start: 46 @49363 has 1 MA's), (47, 49381), (51, 49477),

Gene: Demsculpinboyz\_93 Start: 47969, Stop: 48160, Start Num: 44

Candidate Starts for Demsculpinboyz\_93:

(34, 47930), (40, 47951), (Start: 44 @47969 has 196 MA's), (Start: 46 @48002 has 1 MA's), (49, 48110), (51, 48116),

Gene: DillTech15\_90 Start: 49750, Stop: 49911, Start Num: 46

Candidate Starts for DillTech15\_90:

(34, 49678), (40, 49699), (Start: 44 @49717 has 196 MA's), (Start: 46 @49750 has 1 MA's), (47, 49768), (51, 49864),

Gene: DirtMcgirt\_85 Start: 47557, Stop: 47748, Start Num: 44

Candidate Starts for DirtMcgirt\_85:

(Start: 44 @47557 has 196 MA's), (48, 47620), (50, 47701), (51, 47704),

Gene: Donkeykong\_92 Start: 52603, Stop: 52794, Start Num: 44

Candidate Starts for Donkeykong\_92:

(26, 52513), (29, 52531), (33, 52558), (35, 52573), (Start: 44 @52603 has 196 MA's), (50, 52747), (51, 52750),

Gene: Doomphist\_90 Start: 51293, Stop: 51484, Start Num: 44

Candidate Starts for Doomphist\_90:

(34, 51254), (36, 51266), (40, 51275), (Start: 44 @51293 has 196 MA's), (Start: 46 @51326 has 1 MA's), (50, 51437), (51, 51440),

Gene: Dorothy\_86 Start: 51975, Stop: 52166, Start Num: 44

Candidate Starts for Dorothy\_86:

(26, 51885), (29, 51903), (33, 51930), (35, 51945), (Start: 44 @51975 has 196 MA's), (50, 52119), (51, 52122),

Gene: Drago\_83 Start: 47560, Stop: 47751, Start Num: 44

Candidate Starts for Drago\_83:

(Start: 44 @47560 has 196 MA's), (48, 47623), (50, 47704), (51, 47707),

Gene: Eish\_92 Start: 51904, Stop: 52095, Start Num: 44

Candidate Starts for Eish\_92:

(26, 51814), (29, 51832), (33, 51859), (35, 51874), (Start: 44 @51904 has 196 MA's), (50, 52048), (51, 52051),

Gene: EleanorGeorge\_83 Start: 49812, Stop: 50003, Start Num: 44

Candidate Starts for EleanorGeorge\_83:

(26, 49722), (29, 49740), (33, 49767), (35, 49782), (Start: 44 @49812 has 196 MA's), (51, 49959),

Gene: Emma\_90 Start: 49602, Stop: 49793, Start Num: 44

Candidate Starts for Emma\_90:

(26, 49512), (29, 49530), (33, 49557), (35, 49572), (Start: 44 @49602 has 196 MA's), (50, 49746), (51, 49749),

Gene: Empress\_86 Start: 50288, Stop: 50479, Start Num: 44

Candidate Starts for Empress\_86:

(Start: 44 @50288 has 196 MA's), (50, 50432), (51, 50435),

Gene: Enby\_87 Start: 47836, Stop: 48027, Start Num: 44

Candidate Starts for Enby\_87:

(Start: 44 @47836 has 196 MA's), (48, 47899), (50, 47980), (51, 47983),

Gene: Eradicator\_78 Start: 48518, Stop: 48712, Start Num: 44

Candidate Starts for Eradicator\_78:

(16, 48275), (34, 48479), (40, 48500), (Start: 44 @48518 has 196 MA's), (50, 48662), (51, 48665),

Gene: Estave1\_90 Start: 52818, Stop: 53009, Start Num: 44

Candidate Starts for Estave1\_90:

(34, 52779), (40, 52800), (Start: 44 @52818 has 196 MA's), (Start: 46 @52851 has 1 MA's), (51, 52965),

Gene: Fancypants\_91 Start: 51836, Stop: 52027, Start Num: 44

Candidate Starts for Fancypants\_91:

(34, 51797), (40, 51818), (Start: 44 @51836 has 196 MA's), (51, 51983),

Gene: Fastidio\_87 Start: 47612, Stop: 47806, Start Num: 44

Candidate Starts for Fastidio\_87:

(Start: 44 @47612 has 196 MA's), (51, 47759),

Gene: Firehouse51\_81 Start: 51230, Stop: 51421, Start Num: 44

Candidate Starts for Firehouse51\_81:

(20, 51014), (27, 51140), (31, 51164), (Start: 44 @51230 has 196 MA's), (50, 51374), (51, 51377),

Gene: Flathead\_89 Start: 50736, Stop: 50927, Start Num: 44  
Candidate Starts for Flathead\_89:  
(26, 50646), (29, 50664), (33, 50691), (35, 50706), (Start: 44 @50736 has 196 MA's), (50, 50880), (51, 50883),

Gene: Florinda\_96 Start: 51997, Stop: 52188, Start Num: 44  
Candidate Starts for Florinda\_96:  
(26, 51907), (29, 51925), (33, 51952), (35, 51967), (Start: 44 @51997 has 196 MA's), (50, 52141), (51, 52144),

Gene: FreddyB\_94 Start: 51145, Stop: 51336, Start Num: 44  
Candidate Starts for FreddyB\_94:  
(34, 51106), (40, 51127), (Start: 44 @51145 has 196 MA's), (51, 51292),

Gene: GUmbie\_84 Start: 50333, Stop: 50527, Start Num: 44  
Candidate Starts for GUmbie\_84:  
(34, 50294), (40, 50315), (Start: 44 @50333 has 196 MA's), (Start: 46 @50366 has 1 MA's), (47, 50384), (50, 50477), (51, 50480),

Gene: Galactic\_86 Start: 49992, Stop: 50183, Start Num: 44  
Candidate Starts for Galactic\_86:  
(Start: 44 @49992 has 196 MA's), (50, 50136), (51, 50139),

Gene: Gandalph\_85 Start: 47567, Stop: 47758, Start Num: 44  
Candidate Starts for Gandalph\_85:  
(26, 47477), (29, 47495), (33, 47522), (35, 47537), (Start: 44 @47567 has 196 MA's), (50, 47711), (51, 47714),

Gene: Geralt\_79 Start: 49328, Stop: 49522, Start Num: 44  
Candidate Starts for Geralt\_79:  
(34, 49289), (40, 49310), (Start: 44 @49328 has 196 MA's), (Start: 46 @49361 has 1 MA's), (47, 49379), (51, 49475),

Gene: GigiOuiOui\_82 Start: 49726, Stop: 49917, Start Num: 44  
Candidate Starts for GigiOuiOui\_82:  
(34, 49687), (40, 49708), (Start: 44 @49726 has 196 MA's), (Start: 46 @49759 has 1 MA's), (47, 49777), (50, 49870), (51, 49873),

Gene: Girafales\_93 Start: 51602, Stop: 51793, Start Num: 44  
Candidate Starts for Girafales\_93:  
(26, 51512), (29, 51530), (33, 51557), (35, 51572), (Start: 44 @51602 has 196 MA's), (50, 51746), (51, 51749),

Gene: Girr\_84 Start: 50725, Stop: 50919, Start Num: 44  
Candidate Starts for Girr\_84:  
(34, 50686), (40, 50707), (Start: 44 @50725 has 196 MA's), (Start: 46 @50758 has 1 MA's), (47, 50776), (51, 50872),

Gene: Gorge\_84 Start: 50772, Stop: 50963, Start Num: 44  
Candidate Starts for Gorge\_84:  
(34, 50733), (40, 50754), (Start: 44 @50772 has 196 MA's), (51, 50919),

Gene: Guppsters\_80 Start: 47829, Stop: 48020, Start Num: 44

Candidate Starts for Guppsters\_80:

(26, 47739), (29, 47757), (33, 47784), (35, 47799), (Start: 44 @47829 has 196 MA's), (50, 47973), (51, 47976),

Gene: Hades\_85 Start: 48319, Stop: 48510, Start Num: 44

Candidate Starts for Hades\_85:

(Start: 44 @48319 has 196 MA's), (50, 48463), (51, 48466),

Gene: Hamulus\_87 Start: 50245, Stop: 50436, Start Num: 44

Candidate Starts for Hamulus\_87:

(26, 50155), (29, 50173), (33, 50200), (35, 50215), (Start: 44 @50245 has 196 MA's), (50, 50389), (51, 50392),

Gene: Harley\_87 Start: 50249, Stop: 50440, Start Num: 44

Candidate Starts for Harley\_87:

(34, 50210), (40, 50231), (Start: 44 @50249 has 196 MA's), (51, 50396),

Gene: Hegedechwinu\_86 Start: 49091, Stop: 49282, Start Num: 44

Candidate Starts for Hegedechwinu\_86:

(Start: 44 @49091 has 196 MA's), (50, 49235), (51, 49238),

Gene: Hegedechwinu\_95 Start: 51291, Stop: 51482, Start Num: 44

Candidate Starts for Hegedechwinu\_95:

(26, 51201), (29, 51219), (33, 51246), (35, 51261), (Start: 44 @51291 has 196 MA's), (50, 51435), (51, 51438),

Gene: Hlubikazi\_83 Start: 48105, Stop: 48296, Start Num: 44

Candidate Starts for Hlubikazi\_83:

(34, 48066), (36, 48078), (40, 48087), (Start: 44 @48105 has 196 MA's), (50, 48249), (51, 48252),

Gene: IMpilo\_81 Start: 48163, Stop: 48354, Start Num: 44

Candidate Starts for IMpilo\_81:

(3, 47743), (4, 47761), (6, 47791), (7, 47848), (9, 47863), (11, 47890), (19, 47941), (23, 48001), (24, 48046), (32, 48115), (40, 48145), (Start: 44 @48163 has 196 MA's), (Start: 46 @48196 has 1 MA's), (50, 48307), (51, 48310),

Gene: lbOuu\_83 Start: 48576, Stop: 48767, Start Num: 44

Candidate Starts for lbOuu\_83:

(26, 48486), (29, 48504), (33, 48531), (35, 48546), (Start: 44 @48576 has 196 MA's), (50, 48720), (51, 48723),

Gene: lbhubesi\_85 Start: 48630, Stop: 48821, Start Num: 44

Candidate Starts for lbhubesi\_85:

(2, 48186), (5, 48240), (13, 48372), (15, 48381), (34, 48591), (40, 48612), (Start: 44 @48630 has 196 MA's), (Start: 46 @48663 has 1 MA's), (51, 48777),

Gene: Inventum\_83 Start: 50160, Stop: 50351, Start Num: 44

Candidate Starts for Inventum\_83:

(26, 50070), (29, 50088), (33, 50115), (35, 50130), (Start: 44 @50160 has 196 MA's), (50, 50304), (51, 50307),

Gene: IrishSherpFalk\_85 Start: 50523, Stop: 50714, Start Num: 44

Candidate Starts for IrishSherpFalk\_85:

(26, 50433), (29, 50451), (33, 50478), (35, 50493), (Start: 44 @50523 has 196 MA's), (50, 50667), (51, 50670),

Gene: Jabbawokkie\_93 Start: 48429, Stop: 48620, Start Num: 44

Candidate Starts for Jabbawokkie\_93:

(Start: 44 @48429 has 196 MA's), (50, 48573), (51, 48576),

Gene: JalFarm20\_93 Start: 51108, Stop: 51299, Start Num: 44

Candidate Starts for JalFarm20\_93:

(Start: 44 @51108 has 196 MA's), (50, 51252), (51, 51255),

Gene: James\_89 Start: 52290, Stop: 52481, Start Num: 44

Candidate Starts for James\_89:

(Start: 44 @52290 has 196 MA's), (50, 52434), (51, 52437),

Gene: Jacob\_88 Start: 51889, Stop: 52080, Start Num: 44

Candidate Starts for Jacob\_88:

(Start: 44 @51889 has 196 MA's), (50, 52033), (51, 52036),

Gene: Jinglebell\_92 Start: 50797, Stop: 50988, Start Num: 44

Candidate Starts for Jinglebell\_92:

(34, 50758), (36, 50770), (40, 50779), (Start: 44 @50797 has 196 MA's), (Start: 46 @50830 has 1 MA's),

Gene: Job42\_86 Start: 52824, Stop: 53018, Start Num: 44

Candidate Starts for Job42\_86:

(26, 52734), (29, 52752), (33, 52779), (35, 52794), (Start: 44 @52824 has 196 MA's), (50, 52968), (51, 52971),

Gene: JoeyJr\_89 Start: 52069, Stop: 52260, Start Num: 44

Candidate Starts for JoeyJr\_89:

(26, 51979), (29, 51997), (33, 52024), (35, 52039), (Start: 44 @52069 has 196 MA's), (50, 52213), (51, 52216),

Gene: Juice456\_85 Start: 50234, Stop: 50428, Start Num: 44

Candidate Starts for Juice456\_85:

(34, 50195), (40, 50216), (Start: 44 @50234 has 196 MA's), (Start: 46 @50267 has 1 MA's), (47, 50285), (51, 50381),

Gene: Juniper1\_82 Start: 49262, Stop: 49456, Start Num: 44

Candidate Starts for Juniper1\_82:

(Start: 44 @49262 has 196 MA's), (51, 49409),

Gene: Karhdo\_82 Start: 48112, Stop: 48303, Start Num: 44

Candidate Starts for Karhdo\_82:

(34, 48073), (40, 48094), (Start: 44 @48112 has 196 MA's), (Start: 46 @48145 has 1 MA's), (47, 48163), (50, 48256), (51, 48259),

Gene: Kenuha5\_81 Start: 50648, Stop: 50839, Start Num: 44

Candidate Starts for Kenuha5\_81:

(26, 50558), (29, 50576), (33, 50603), (35, 50618), (Start: 44 @50648 has 196 MA's), (50, 50792), (51, 50795),

Gene: Kersh\_87 Start: 51927, Stop: 52118, Start Num: 44

Candidate Starts for Kersh\_87:

(Start: 44 @51927 has 196 MA's), (51, 52074),

Gene: Kimberlium\_89 Start: 50334, Stop: 50528, Start Num: 44

Candidate Starts for Kimberlium\_89:

(34, 50295), (40, 50316), (Start: 44 @50334 has 196 MA's), (Start: 46 @50367 has 1 MA's), (47, 50385), (51, 50481),

Gene: KingMidas\_86 Start: 50519, Stop: 50710, Start Num: 44

Candidate Starts for KingMidas\_86:

(34, 50480), (36, 50492), (40, 50501), (Start: 44 @50519 has 196 MA's), (Start: 46 @50552 has 1 MA's), (50, 50663), (51, 50666),

Gene: Kingsley\_91 Start: 53163, Stop: 53354, Start Num: 44

Candidate Starts for Kingsley\_91:

(26, 53073), (29, 53091), (33, 53118), (35, 53133), (Start: 44 @53163 has 196 MA's), (50, 53307), (51, 53310),

Gene: Koella\_73 Start: 45397, Stop: 45588, Start Num: 44

Candidate Starts for Koella\_73:

(34, 45358), (40, 45379), (Start: 44 @45397 has 196 MA's), (50, 45541), (51, 45544),

Gene: Krakatau\_79 Start: 46133, Stop: 46327, Start Num: 44

Candidate Starts for Krakatau\_79:

(26, 46043), (29, 46061), (33, 46088), (35, 46103), (Start: 44 @46133 has 196 MA's), (50, 46277), (51, 46280),

Gene: KristaRAM\_86 Start: 49807, Stop: 49998, Start Num: 44

Candidate Starts for KristaRAM\_86:

(26, 49717), (29, 49735), (33, 49762), (35, 49777), (Start: 44 @49807 has 196 MA's), (48, 49870), (50, 49951), (51, 49954),

Gene: LastJedi\_76 Start: 47972, Stop: 48163, Start Num: 44

Candidate Starts for LastJedi\_76:

(34, 47933), (40, 47954), (Start: 44 @47972 has 196 MA's), (51, 48119),

Gene: Leozinho\_84 Start: 47775, Stop: 47969, Start Num: 44

Candidate Starts for Leozinho\_84:

(34, 47736), (40, 47757), (Start: 44 @47775 has 196 MA's), (51, 47922),

Gene: Leperchaun\_87 Start: 51303, Stop: 51494, Start Num: 44

Candidate Starts for Leperchaun\_87:

(26, 51213), (29, 51231), (33, 51258), (35, 51273), (Start: 44 @51303 has 196 MA's), (50, 51447), (51, 51450),

Gene: LilMoolah\_86 Start: 50912, Stop: 51106, Start Num: 44

Candidate Starts for LilMoolah\_86:

(34, 50873), (40, 50894), (Start: 44 @50912 has 196 MA's), (50, 51056), (51, 51059),

Gene: LittleShirley\_91 Start: 50888, Stop: 51082, Start Num: 44

Candidate Starts for LittleShirley\_91:

(Start: 44 @50888 has 196 MA's), (51, 51035),

Gene: Lizziana\_87 Start: 51221, Stop: 51412, Start Num: 44  
Candidate Starts for Lizziana\_87:  
(34, 51182), (40, 51203), (Start: 44 @51221 has 196 MA's), (51, 51368),

Gene: Llama\_92 Start: 50653, Stop: 50844, Start Num: 44  
Candidate Starts for Llama\_92:  
(34, 50614), (36, 50626), (40, 50635), (Start: 44 @50653 has 196 MA's), (Start: 46 @50686 has 1 MA's),

Gene: Llij\_82 Start: 48031, Stop: 48237, Start Num: 44  
Candidate Starts for Llij\_82:  
(Start: 44 @48031 has 196 MA's), (51, 48178),

Gene: Lorde\_86 Start: 47001, Stop: 47192, Start Num: 44  
Candidate Starts for Lorde\_86:  
(Start: 44 @47001 has 196 MA's), (48, 47064), (50, 47145), (51, 47148),

Gene: LunaStella\_82 Start: 49031, Stop: 49222, Start Num: 44  
Candidate Starts for LunaStella\_82:  
(16, 48788), (34, 48992), (40, 49013), (Start: 44 @49031 has 196 MA's), (51, 49178),

Gene: MadMen\_91 Start: 50786, Stop: 50977, Start Num: 44  
Candidate Starts for MadMen\_91:  
(34, 50747), (40, 50768), (Start: 44 @50786 has 196 MA's), (50, 50930), (51, 50933),

Gene: Madiba\_87 Start: 50422, Stop: 50613, Start Num: 44  
Candidate Starts for Madiba\_87:  
(26, 50332), (29, 50350), (33, 50377), (35, 50392), (Start: 44 @50422 has 196 MA's), (50, 50566), (51, 50569),

Gene: Mahavrat\_83 Start: 48291, Stop: 48485, Start Num: 44  
Candidate Starts for Mahavrat\_83:  
(26, 48201), (33, 48246), (35, 48261), (Start: 44 @48291 has 196 MA's), (50, 48435), (51, 48438),

Gene: Mandlovu\_83 Start: 48047, Stop: 48238, Start Num: 44  
Candidate Starts for Mandlovu\_83:  
(34, 48008), (36, 48020), (40, 48029), (Start: 44 @48047 has 196 MA's), (50, 48191), (51, 48194),

Gene: Mantra\_84 Start: 50297, Stop: 50491, Start Num: 44  
Candidate Starts for Mantra\_84:  
(34, 50258), (40, 50279), (Start: 44 @50297 has 196 MA's), (Start: 46 @50330 has 1 MA's), (47, 50348), (51, 50444),

Gene: Maravista\_83 Start: 51829, Stop: 52020, Start Num: 44  
Candidate Starts for Maravista\_83:  
(34, 51790), (40, 51811), (Start: 44 @51829 has 196 MA's), (51, 51976),

Gene: Marker\_81 Start: 47828, Stop: 48019, Start Num: 44  
Candidate Starts for Marker\_81:  
(Start: 44 @47828 has 196 MA's), (51, 47975),

Gene: Marker\_90 Start: 50417, Stop: 50608, Start Num: 44

Candidate Starts for Marker\_90:  
(25, 50306), (38, 50393), (41, 50405), (Start: 44 @50417 has 196 MA's), (50, 50561), (51, 50564),

Gene: Mattes\_85 Start: 51022, Stop: 51213, Start Num: 44  
Candidate Starts for Mattes\_85:  
(Start: 44 @51022 has 196 MA's), (50, 51166), (51, 51169),

Gene: MilanaBonita\_81 Start: 49158, Stop: 49349, Start Num: 44  
Candidate Starts for MilanaBonita\_81:  
(26, 49068), (29, 49086), (33, 49113), (35, 49128), (Start: 44 @49158 has 196 MA's), (50, 49302), (51, 49305),

Gene: MilleniumForce\_87 Start: 51123, Stop: 51314, Start Num: 44  
Candidate Starts for MilleniumForce\_87:  
(Start: 44 @51123 has 196 MA's), (50, 51267), (51, 51270),

Gene: MinionDave\_84 Start: 50521, Stop: 50715, Start Num: 44  
Candidate Starts for MinionDave\_84:  
(Start: 44 @50521 has 196 MA's), (50, 50665), (51, 50668),

Gene: MisterCuddles\_85 Start: 50725, Stop: 50919, Start Num: 44  
Candidate Starts for MisterCuddles\_85:  
(34, 50686), (40, 50707), (Start: 44 @50725 has 196 MA's), (Start: 46 @50758 has 1 MA's), (47, 50776), (51, 50872),

Gene: Modragons\_90 Start: 50641, Stop: 50832, Start Num: 44  
Candidate Starts for Modragons\_90:  
(34, 50602), (36, 50614), (40, 50623), (Start: 44 @50641 has 196 MA's), (Start: 46 @50674 has 1 MA's),

Gene: MooMoo\_82 Start: 48612, Stop: 48803, Start Num: 44  
Candidate Starts for MooMoo\_82:  
(27, 48522), (31, 48546), (34, 48561), (Start: 44 @48612 has 196 MA's), (Start: 46 @48645 has 1 MA's), (51, 48759),

Gene: Moonbeam\_86 Start: 50370, Stop: 50561, Start Num: 44  
Candidate Starts for Moonbeam\_86:  
(Start: 44 @50370 has 196 MA's), (50, 50514), (51, 50517),

Gene: Mova\_89 Start: 50668, Stop: 50859, Start Num: 44  
Candidate Starts for Mova\_89:  
(42, 50659), (Start: 44 @50668 has 196 MA's), (50, 50812), (51, 50815),

Gene: Mozy\_93 Start: 50398, Stop: 50589, Start Num: 44  
Candidate Starts for Mozy\_93:  
(Start: 44 @50398 has 196 MA's), (45, 50428), (48, 50461), (50, 50542), (51, 50545),

Gene: Ms6\_88 Start: 47292, Stop: 47483, Start Num: 44  
Candidate Starts for Ms6\_88:  
(26, 47202), (29, 47220), (33, 47247), (35, 47262), (Start: 44 @47292 has 196 MA's), (50, 47436), (51, 47439),

Gene: MulchExplorer\_91 Start: 50005, Stop: 50199, Start Num: 44



Candidate Starts for MulchExplorer\_91:

(34, 49966), (40, 49987), (Start: 44 @50005 has 196 MA's), (Start: 46 @50038 has 1 MA's), (47, 50056), (51, 50152),

Gene: Mutaforma13\_88 Start: 50073, Stop: 50264, Start Num: 44

Candidate Starts for Mutaforma13\_88:

(20, 49857), (27, 49983), (31, 50007), (Start: 44 @50073 has 196 MA's), (50, 50217), (51, 50220),

Gene: Nimbo\_78 Start: 49330, Stop: 49524, Start Num: 44

Candidate Starts for Nimbo\_78:

(34, 49291), (40, 49312), (Start: 44 @49330 has 196 MA's), (Start: 46 @49363 has 1 MA's), (47, 49381), (51, 49477),

Gene: Nitzel\_80 Start: 47396, Stop: 47587, Start Num: 44

Candidate Starts for Nitzel\_80:

(34, 47357), (40, 47378), (Start: 44 @47396 has 196 MA's), (Start: 46 @47429 has 1 MA's), (51, 47543),

Gene: Nivrat\_84 Start: 50785, Stop: 50979, Start Num: 44

Candidate Starts for Nivrat\_84:

(34, 50746), (40, 50767), (Start: 44 @50785 has 196 MA's), (50, 50929), (51, 50932),

Gene: NormanBulbieJr\_79 Start: 49411, Stop: 49602, Start Num: 44

Candidate Starts for NormanBulbieJr\_79:

(34, 49372), (40, 49393), (Start: 44 @49411 has 196 MA's), (50, 49555), (51, 49558),

Gene: Ochi17\_91 Start: 50248, Stop: 50439, Start Num: 44

Candidate Starts for Ochi17\_91:

(34, 50209), (36, 50221), (40, 50230), (Start: 44 @50248 has 196 MA's), (Start: 46 @50281 has 1 MA's),

Gene: OfUltron\_93 Start: 50797, Stop: 50988, Start Num: 44

Candidate Starts for OfUltron\_93:

(34, 50758), (36, 50770), (40, 50779), (Start: 44 @50797 has 196 MA's), (Start: 46 @50830 has 1 MA's),

Gene: Ogopogo\_91 Start: 50054, Stop: 50248, Start Num: 44

Candidate Starts for Ogopogo\_91:

(1, 49577), (5, 49664), (13, 49796), (15, 49805), (34, 50015), (40, 50036), (Start: 44 @50054 has 196 MA's), (50, 50198), (51, 50201),

Gene: Oksu\_88 Start: 51378, Stop: 51569, Start Num: 44

Candidate Starts for Oksu\_88:

(26, 51288), (29, 51306), (33, 51333), (35, 51348), (Start: 44 @51378 has 196 MA's),

Gene: OldBen\_83 Start: 50722, Stop: 50916, Start Num: 44

Candidate Starts for OldBen\_83:

(34, 50683), (40, 50704), (Start: 44 @50722 has 196 MA's), (Start: 46 @50755 has 1 MA's), (47, 50773), (51, 50869),

Gene: OlympiaSaint\_88 Start: 51232, Stop: 51423, Start Num: 44

Candidate Starts for OlympiaSaint\_88:

(Start: 44 @51232 has 196 MA's), (50, 51376), (51, 51379),

Gene: Ovechkin\_91 Start: 51496, Stop: 51687, Start Num: 44

Candidate Starts for Ovechkin\_91:

(34, 51457), (40, 51478), (Start: 44 @51496 has 196 MA's), (Start: 46 @51529 has 1 MA's), (47, 51547), (51, 51643),

Gene: OwlsT2W\_85 Start: 49397, Stop: 49591, Start Num: 44

Candidate Starts for OwlsT2W\_85:

(26, 49307), (29, 49325), (33, 49352), (35, 49367), (Start: 44 @49397 has 196 MA's), (50, 49541), (51, 49544),

Gene: PHappiness\_86 Start: 51551, Stop: 51745, Start Num: 44

Candidate Starts for PHappiness\_86:

(34, 51512), (40, 51533), (Start: 44 @51551 has 196 MA's), (Start: 46 @51584 has 1 MA's), (47, 51602), (51, 51698),

Gene: PMC\_83 Start: 49171, Stop: 49362, Start Num: 44

Candidate Starts for PMC\_83:

(Start: 44 @49171 has 196 MA's), (48, 49234), (50, 49315), (51, 49318),

Gene: Phalconet\_84 Start: 49500, Stop: 49691, Start Num: 44

Candidate Starts for Phalconet\_84:

(26, 49410), (29, 49428), (33, 49455), (35, 49470), (Start: 44 @49500 has 196 MA's), (50, 49644), (51, 49647),

Gene: Phanphagia\_88 Start: 51402, Stop: 51593, Start Num: 44

Candidate Starts for Phanphagia\_88:

(26, 51312), (29, 51330), (33, 51357), (35, 51372), (Start: 44 @51402 has 196 MA's), (50, 51546), (51, 51549),

Gene: Phasih\_82 Start: 48915, Stop: 49109, Start Num: 44

Candidate Starts for Phasih\_82:

(Start: 44 @48915 has 196 MA's), (50, 49059), (51, 49062),

Gene: PhesterPhotato\_91 Start: 50668, Stop: 50859, Start Num: 44

Candidate Starts for PhesterPhotato\_91:

(26, 50578), (29, 50596), (33, 50623), (35, 50638), (Start: 44 @50668 has 196 MA's), (50, 50812), (51, 50815),

Gene: Philus\_88 Start: 52182, Stop: 52373, Start Num: 44

Candidate Starts for Philus\_88:

(42, 52173), (Start: 44 @52182 has 196 MA's), (48, 52245), (50, 52326), (51, 52329),

Gene: Pippy\_81 Start: 48881, Stop: 49072, Start Num: 44

Candidate Starts for Pippy\_81:

(34, 48842), (40, 48863), (Start: 44 @48881 has 196 MA's), (51, 49028),

Gene: Plumbus\_87 Start: 48034, Stop: 48225, Start Num: 44

Candidate Starts for Plumbus\_87:

(22, 47842), (23, 47872), (24, 47917), (32, 47986), (40, 48016), (Start: 44 @48034 has 196 MA's), (Start: 46 @48067 has 1 MA's), (50, 48178), (51, 48181),

Gene: Poenanya\_90 Start: 51293, Stop: 51484, Start Num: 44

Candidate Starts for Poenanya\_90:

(34, 51254), (36, 51266), (40, 51275), (Start: 44 @51293 has 196 MA's), (Start: 46 @51326 has 1 MA's), (50, 51437), (51, 51440),

Gene: Polka14\_91 Start: 52083, Stop: 52274, Start Num: 44

Candidate Starts for Polka14\_91:

(34, 52044), (36, 52056), (40, 52065), (Start: 44 @52083 has 196 MA's), (Start: 46 @52116 has 1 MA's), (50, 52227), (51, 52230),

Gene: PopTart\_79 Start: 47647, Stop: 47841, Start Num: 44

Candidate Starts for PopTart\_79:

(34, 47608), (36, 47620), (40, 47629), (Start: 44 @47647 has 196 MA's), (50, 47791), (51, 47794),

Gene: Priscilla\_81 Start: 49509, Stop: 49700, Start Num: 44

Candidate Starts for Priscilla\_81:

(34, 49470), (40, 49491), (Start: 44 @49509 has 196 MA's), (50, 49653), (51, 49656),

Gene: QuickMath\_87 Start: 50586, Stop: 50780, Start Num: 44

Candidate Starts for QuickMath\_87:

(34, 50547), (40, 50568), (Start: 44 @50586 has 196 MA's), (Start: 46 @50619 has 1 MA's), (47, 50637), (51, 50733),

Gene: Quico\_93 Start: 51817, Stop: 52008, Start Num: 44

Candidate Starts for Quico\_93:

(26, 51727), (29, 51745), (33, 51772), (35, 51787), (Start: 44 @51817 has 196 MA's), (50, 51961), (51, 51964),

Gene: Radiance\_82 Start: 49827, Stop: 50018, Start Num: 44

Candidate Starts for Radiance\_82:

(34, 49788), (40, 49809), (Start: 44 @49827 has 196 MA's), (Start: 46 @49860 has 1 MA's), (50, 49971), (51, 49974),

Gene: Ramsey\_90 Start: 52082, Stop: 52276, Start Num: 44

Candidate Starts for Ramsey\_90:

(26, 51992), (29, 52010), (33, 52037), (35, 52052), (Start: 44 @52082 has 196 MA's), (50, 52226), (51, 52229),

Gene: RedBird\_86 Start: 51845, Stop: 52036, Start Num: 44

Candidate Starts for RedBird\_86:

(26, 51755), (29, 51773), (33, 51800), (35, 51815), (Start: 44 @51845 has 196 MA's), (50, 51989), (51, 51992),

Gene: Renaud18\_95 Start: 51127, Stop: 51318, Start Num: 44

Candidate Starts for Renaud18\_95:

(34, 51088), (36, 51100), (40, 51109), (Start: 44 @51127 has 196 MA's), (51, 51274),

Gene: Rialto\_89 Start: 50466, Stop: 50657, Start Num: 44

Candidate Starts for Rialto\_89:

(Start: 44 @50466 has 196 MA's), (50, 50610), (51, 50613),

Gene: RitaG\_86 Start: 51353, Stop: 51547, Start Num: 44

Candidate Starts for RitaG\_86:

(34, 51314), (40, 51335), (Start: 44 @51353 has 196 MA's), (Start: 46 @51386 has 1 MA's), (47, 51404), (51, 51500),

Gene: Rockne\_87 Start: 49183, Stop: 49374, Start Num: 44

Candidate Starts for Rockne\_87:

(Start: 44 @49183 has 196 MA's), (48, 49246), (50, 49327), (51, 49330),

Gene: RockyHorror\_90 Start: 50340, Stop: 50534, Start Num: 44

Candidate Starts for RockyHorror\_90:

(34, 50301), (36, 50313), (40, 50322), (Start: 44 @50340 has 196 MA's), (50, 50484), (51, 50487),

Gene: Royals2015\_92 Start: 50165, Stop: 50356, Start Num: 44

Candidate Starts for Royals2015\_92:

(26, 50075), (29, 50093), (33, 50120), (35, 50135), (Start: 44 @50165 has 196 MA's), (50, 50309), (51, 50312),

Gene: Ruby\_82 Start: 50726, Stop: 50920, Start Num: 44

Candidate Starts for Ruby\_82:

(34, 50687), (40, 50708), (Start: 44 @50726 has 196 MA's), (Start: 46 @50759 has 1 MA's), (47, 50777), (51, 50873),

Gene: SG4\_88 Start: 51448, Stop: 51639, Start Num: 44

Candidate Starts for SG4\_88:

(Start: 44 @51448 has 196 MA's), (50, 51592), (51, 51595),

Gene: Saal\_82 Start: 50592, Stop: 50783, Start Num: 44

Candidate Starts for Saal\_82:

(34, 50553), (40, 50574), (Start: 44 @50592 has 196 MA's), (51, 50739),

Gene: Sabbb\_87 Start: 48021, Stop: 48212, Start Num: 44

Candidate Starts for Sabbb\_87:

(26, 47931), (29, 47949), (33, 47976), (35, 47991), (Start: 44 @48021 has 196 MA's), (51, 48168),

Gene: Sarma624\_86 Start: 47175, Stop: 47366, Start Num: 44

Candidate Starts for Sarma624\_86:

(26, 47085), (29, 47103), (33, 47130), (35, 47145), (Start: 44 @47175 has 196 MA's), (50, 47319), (51, 47322),

Gene: Sassafras\_87 Start: 50159, Stop: 50350, Start Num: 44

Candidate Starts for Sassafras\_87:

(26, 50069), (29, 50087), (33, 50114), (35, 50129), (Start: 44 @50159 has 196 MA's), (50, 50303), (51, 50306),

Gene: SassyB\_79 Start: 47647, Stop: 47841, Start Num: 44

Candidate Starts for SassyB\_79:

(34, 47608), (36, 47620), (40, 47629), (Start: 44 @47647 has 196 MA's), (50, 47791), (51, 47794),

Gene: Scottish\_86 Start: 49958, Stop: 50149, Start Num: 44

Candidate Starts for Scottish\_86:

(42, 49949), (Start: 44 @49958 has 196 MA's), (48, 50021), (50, 50102), (51, 50105),

Gene: Seabastian\_93 Start: 50798, Stop: 50989, Start Num: 44

Candidate Starts for Seabastian\_93:

(34, 50759), (36, 50771), (40, 50780), (Start: 44 @50798 has 196 MA's), (Start: 46 @50831 has 1 MA's),

Gene: Seagreen\_86 Start: 50834, Stop: 51025, Start Num: 44

Candidate Starts for Seagreen\_86:

(34, 50795), (36, 50807), (40, 50816), (Start: 44 @50834 has 196 MA's), (Start: 46 @50867 has 1 MA's), (50, 50978), (51, 50981),

Gene: Shauna1\_85 Start: 51018, Stop: 51209, Start Num: 44

Candidate Starts for Shauna1\_85:

(34, 50979), (40, 51000), (Start: 44 @51018 has 196 MA's), (50, 51162), (51, 51165),

Gene: ShiLan\_88 Start: 52745, Stop: 52936, Start Num: 44

Candidate Starts for ShiLan\_88:

(Start: 44 @52745 has 196 MA's), (50, 52889), (51, 52892),

Gene: ShroomBoi\_84 Start: 49987, Stop: 50181, Start Num: 44

Candidate Starts for ShroomBoi\_84:

(16, 49744), (34, 49948), (40, 49969), (Start: 44 @49987 has 196 MA's), (50, 50131), (51, 50134),

Gene: SiSi\_83 Start: 49822, Stop: 50016, Start Num: 44

Candidate Starts for SiSi\_83:

(34, 49783), (40, 49804), (Start: 44 @49822 has 196 MA's), (Start: 46 @49855 has 1 MA's), (47, 49873), (51, 49969),

Gene: SimranZ1\_85 Start: 49492, Stop: 49683, Start Num: 44

Candidate Starts for SimranZ1\_85:

(34, 49453), (36, 49465), (40, 49474), (Start: 44 @49492 has 196 MA's), (Start: 46 @49525 has 1 MA's), (51, 49639),

Gene: Soul22\_87 Start: 48510, Stop: 48701, Start Num: 44

Candidate Starts for Soul22\_87:

(26, 48420), (29, 48438), (33, 48465), (35, 48480), (Start: 44 @48510 has 196 MA's), (50, 48654), (51, 48657),

Gene: Sparkdehlily\_90 Start: 48520, Stop: 48711, Start Num: 44

Candidate Starts for Sparkdehlily\_90:

(26, 48430), (37, 48499), (Start: 44 @48520 has 196 MA's), (51, 48667),

Gene: Spartacus\_84 Start: 50812, Stop: 51003, Start Num: 44

Candidate Starts for Spartacus\_84:

(34, 50773), (40, 50794), (Start: 44 @50812 has 196 MA's),

Gene: Spartacus\_92 Start: 52968, Stop: 53159, Start Num: 44

Candidate Starts for Spartacus\_92:

(26, 52878), (29, 52896), (33, 52923), (35, 52938), (Start: 44 @52968 has 196 MA's), (50, 53112), (51, 53115),

Gene: Spikelee\_86 Start: 51144, Stop: 51335, Start Num: 44

Candidate Starts for Spikelee\_86:

(8, 50820), (Start: 44 @51144 has 196 MA's), (50, 51288), (51, 51291),

Gene: Spoonbill\_84 Start: 48658, Stop: 48849, Start Num: 44

Candidate Starts for Spoonbill\_84:  
(Start: 44 @48658 has 196 MA's), (50, 48802), (51, 48805),

Gene: Squirty\_86 Start: 54093, Stop: 54284, Start Num: 44  
Candidate Starts for Squirty\_86:  
(26, 54003), (29, 54021), (33, 54048), (35, 54063), (Start: 44 @54093 has 196 MA's), (50, 54237), (51, 54240),

Gene: StAnnes\_91 Start: 52176, Stop: 52367, Start Num: 44  
Candidate Starts for StAnnes\_91:  
(26, 52086), (29, 52104), (33, 52131), (35, 52146), (Start: 44 @52176 has 196 MA's), (50, 52320), (51, 52323),

Gene: Stap\_82 Start: 47808, Stop: 47999, Start Num: 44  
Candidate Starts for Stap\_82:  
(26, 47718), (29, 47736), (33, 47763), (35, 47778), (Start: 44 @47808 has 196 MA's), (50, 47952), (51, 47955),

Gene: Starcevich\_87 Start: 51682, Stop: 51873, Start Num: 44  
Candidate Starts for Starcevich\_87:  
(34, 51643), (40, 51664), (Start: 44 @51682 has 196 MA's), (Start: 46 @51715 has 1 MA's), (47, 51733), (50, 51826), (51, 51829),

Gene: Strokeseat\_83 Start: 48104, Stop: 48295, Start Num: 44  
Candidate Starts for Strokeseat\_83:  
(34, 48065), (36, 48077), (40, 48086), (Start: 44 @48104 has 196 MA's), (50, 48248), (51, 48251),

Gene: SuperGrey\_86 Start: 52315, Stop: 52506, Start Num: 44  
Candidate Starts for SuperGrey\_86:  
(26, 52225), (29, 52243), (33, 52270), (35, 52285), (Start: 44 @52315 has 196 MA's), (50, 52459), (51, 52462),

Gene: SwagPigglett\_87 Start: 51728, Stop: 51919, Start Num: 44  
Candidate Starts for SwagPigglett\_87:  
(34, 51689), (40, 51710), (Start: 44 @51728 has 196 MA's), (51, 51875),

Gene: TChen\_84 Start: 50982, Stop: 51173, Start Num: 44  
Candidate Starts for TChen\_84:  
(16, 50739), (34, 50943), (40, 50964), (Start: 44 @50982 has 196 MA's), (51, 51129),

Gene: TDanisky\_91 Start: 48520, Stop: 48711, Start Num: 44  
Candidate Starts for TDanisky\_91:  
(26, 48430), (37, 48499), (Start: 44 @48520 has 196 MA's), (51, 48667),

Gene: Taj\_94 Start: 52417, Stop: 52608, Start Num: 44  
Candidate Starts for Taj\_94:  
(26, 52327), (29, 52345), (33, 52372), (35, 52387), (Start: 44 @52417 has 196 MA's), (50, 52561), (51, 52564),

Gene: ThetaBob\_87 Start: 49422, Stop: 49613, Start Num: 44  
Candidate Starts for ThetaBob\_87:  
(27, 49332), (31, 49356), (34, 49371), (Start: 44 @49422 has 196 MA's), (Start: 46 @49455 has 1 MA's), (51, 49569),

Gene: Tootsieroll\_82 Start: 50768, Stop: 50959, Start Num: 44  
Candidate Starts for Tootsieroll\_82:  
(34, 50729), (36, 50741), (40, 50750), (Start: 44 @50768 has 196 MA's), (Start: 46 @50801 has 1 MA's), (50, 50912), (51, 50915),

Gene: Toron\_93 Start: 53533, Stop: 53661, Start Num: 48  
Candidate Starts for Toron\_93:  
(Start: 44 @53470 has 196 MA's), (48, 53533), (50, 53614), (51, 53617),

Gene: Totinger\_87 Start: 49965, Stop: 50159, Start Num: 44  
Candidate Starts for Totinger\_87:  
(Start: 44 @49965 has 196 MA's), (51, 50112),

Gene: Tweety\_87 Start: 51494, Stop: 51688, Start Num: 44  
Candidate Starts for Tweety\_87:  
(26, 51404), (29, 51422), (33, 51449), (35, 51464), (Start: 44 @51494 has 196 MA's), (50, 51638), (51, 51641),

Gene: UncleRicky\_85 Start: 49057, Stop: 49248, Start Num: 44  
Candidate Starts for UncleRicky\_85:  
(Start: 44 @49057 has 196 MA's), (48, 49120), (50, 49201), (51, 49204),

Gene: Velveteen\_81 Start: 47175, Stop: 47366, Start Num: 44  
Candidate Starts for Velveteen\_81:  
(26, 47085), (29, 47103), (33, 47130), (35, 47145), (Start: 44 @47175 has 196 MA's), (50, 47319), (51, 47322),

Gene: Veteran\_79 Start: 49690, Stop: 49884, Start Num: 44  
Candidate Starts for Veteran\_79:  
(34, 49651), (40, 49672), (Start: 44 @49690 has 196 MA's), (Start: 46 @49723 has 1 MA's), (47, 49741), (51, 49837),

Gene: Wachhund\_83 Start: 47446, Stop: 47637, Start Num: 44  
Candidate Starts for Wachhund\_83:  
(34, 47407), (36, 47419), (40, 47428), (Start: 44 @47446 has 196 MA's), (50, 47590), (51, 47593),

Gene: Whatsapiecost\_78 Start: 45288, Stop: 45479, Start Num: 44  
Candidate Starts for Whatsapiecost\_78:  
(26, 45198), (29, 45216), (33, 45243), (35, 45258), (Start: 44 @45288 has 196 MA's), (50, 45432), (51, 45435),

Gene: Whouxphf\_83 Start: 49899, Stop: 50090, Start Num: 44  
Candidate Starts for Whouxphf\_83:  
(34, 49860), (40, 49881), (Start: 44 @49899 has 196 MA's), (Start: 46 @49932 has 1 MA's),

Gene: WillSterrel\_84 Start: 50556, Stop: 50747, Start Num: 44  
Candidate Starts for WillSterrel\_84:  
(26, 50466), (29, 50484), (33, 50511), (35, 50526), (Start: 44 @50556 has 196 MA's), (50, 50700), (51, 50703),

Gene: Yorick\_78 Start: 50209, Stop: 50403, Start Num: 44  
Candidate Starts for Yorick\_78:

(26, 50119), (29, 50137), (33, 50164), (35, 50179), (Start: 44 @50209 has 196 MA's), (50, 50353), (51, 50356),

Gene: Zapner\_92 Start: 48523, Stop: 48714, Start Num: 44

Candidate Starts for Zapner\_92:

(Start: 44 @48523 has 196 MA's), (50, 48667), (51, 48670),

Gene: Zerg\_86 Start: 50153, Stop: 50347, Start Num: 44

Candidate Starts for Zerg\_86:

(34, 50114), (40, 50135), (Start: 44 @50153 has 196 MA's), (Start: 46 @50186 has 1 MA's), (47, 50204), (51, 50300),

Gene: Zizzle\_89 Start: 51868, Stop: 52059, Start Num: 44

Candidate Starts for Zizzle\_89:

(Start: 44 @51868 has 196 MA's), (51, 52015),