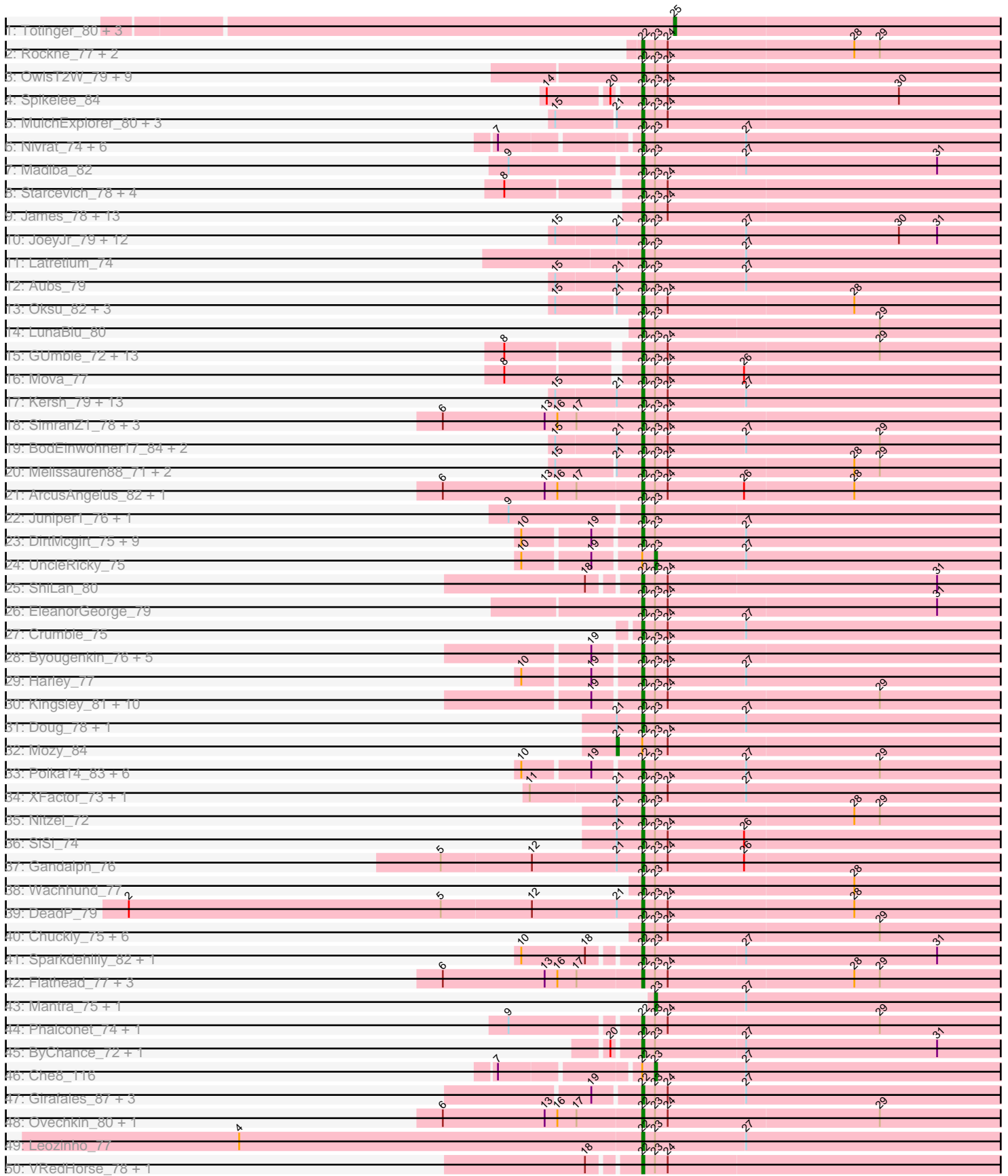
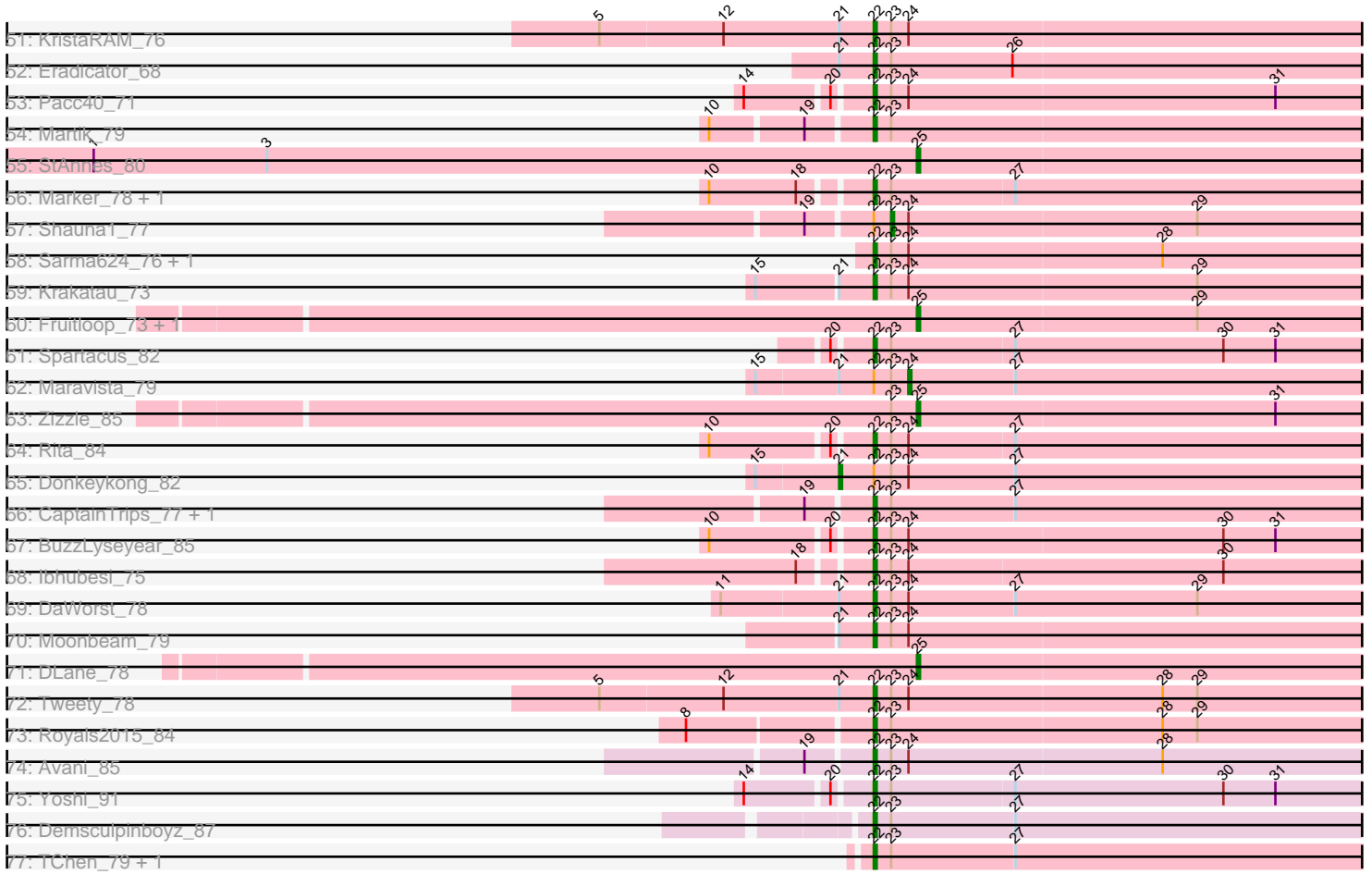


Pham 189449



Pham 189449



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 189449 Report

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

Pham number 189449 has 222 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Totinger\_80, Fastidio\_78, DillTech15\_85, LittleShirley\_84
- Track 2 : Rockne\_77, Boomer\_80, PMC\_73
- Track 3 : OwlsT2W\_79, Llama\_82, Ochi17\_81, Sebastian\_83, AlpineSix\_82, ThetaBob\_80, OfUltron\_83, Soul22\_80, Jinglebell\_82, Modragons\_80
- Track 4 : Spikelee\_84
- Track 5 : MulchExplorer\_80, QuickMath\_76, Kimberlium\_77, Juice456\_74
- Track 6 : Nivrat\_74, Pollywog\_78, LilMoolah\_76, Zerg\_76, Che9d\_89, SuperGrey\_78, Renaud18\_87
- Track 7 : Madiba\_82
- Track 8 : Starceвич\_78, Dante\_77, Zapner\_86, Blarby\_86, Jabbawokkie\_87
- Track 9 : James\_78, Plumbus\_79, Hamulus\_78, PopTart\_68, Jarcob\_77, Clifton\_70, Saal\_77, SassyB\_68, Lizziana\_82, Philus\_80, DRBy19\_81, Gorge\_79, OlympiaSaint\_77, Mattes\_79
- Track 10 : JoeyJr\_79, PHappiness\_79, Nimbo\_71, Geralt\_72, OldBen\_76, Leperchaun\_77, RedBird\_80, Daenerys\_78, Inventum\_77, Dorothy\_80, Sassafras\_80, RitaG\_79, Deb65\_72
- Track 11 : Latretium\_74
- Track 12 : Aubs\_79
- Track 13 : Oksu\_82, BigPhil\_71, Cerasum\_71, Coco12\_74
- Track 14 : LunaBlu\_80
- Track 15 : GUmble\_72, JalFarm20\_86, Bobi\_84, DotProduct\_74, Ardmore\_63, GigiOuiOui\_72, Seagreen\_79, Akhila\_72, MilanaBonita\_71, Bipolar\_80, Veteran\_70, Firehouse51\_74, Wee\_83, Taj\_84
- Track 16 : Mova\_77
- Track 17 : Kersh\_79, FreddyB\_87, Brocalys\_70, Cabrinians\_77, Sabbb\_79, Karhdo\_76, Priscilla\_75, MadMen\_75, BobaPhett\_80, LastJedi\_69, Koella\_69, NormanBulbieJr\_74, SwagPigglett\_81, Frankie\_87
- Track 18 : SimranZ1\_78, Estave1\_84, Hades\_78, Fancypants\_82
- Track 19 : BodEinwohner17\_84, Squirty\_79, Stap\_72
- Track 20 : Melissauren88\_71, Minnie\_75, Sandalphon\_73
- Track 21 : ArcusAngelus\_82, Chevrolet\_85
- Track 22 : Juniper1\_76, Mahavrat\_74
- Track 23 : DirtMcgirt\_75, Lij\_72, Blexus\_74, Pippy\_74, Tootsieroll\_76, Drago\_73, Enby\_77, Lorde\_76, Phatniss\_73, Mutaforma13\_84
- Track 24 : UncleRicky\_75
- Track 25 : ShiLan\_80
- Track 26 : EleanorGeorge\_79

- Track 27 : Crumble\_75
- Track 28 : Byougenkin\_76, Bubbles123\_73, IrishSherpFalk\_78, Radiance\_77, Ramsey\_82, Phasih\_74
- Track 29 : Harley\_77
- Track 30 : Kingsley\_81, SG4\_75, Cornie\_73, Batiatus\_77, Mandlovu\_73, Ogotogo\_83, Hlubikazi\_73, Strokeseat\_73, Whatsapiecost\_72, PhesterPhotato\_81, Phanphagia\_76
- Track 31 : Doug\_78, Rialto\_85
- Track 32 : Mozy\_84
- Track 33 : Polka14\_83, DaddyRickover\_82, Doomphist\_82, KingMidas\_78, Poenanya\_82, Empress\_77, Scottish\_77
- Track 34 : XFactor\_73, Whouxphf\_74
- Track 35 : Nitzel\_72
- Track 36 : SiSi\_74
- Track 37 : Gandalph\_76
- Track 38 : Wachhund\_77
- Track 39 : DeadP\_79
- Track 40 : Chuckly\_75, Hegedechwinu\_79, DosHalletts\_81, IbOuu\_75, Spoonbill\_75, Galactic\_77, MilleniumForce\_78
- Track 41 : Sparkdehlily\_82, TDanisky\_83
- Track 42 : Flathead\_77, MisterCuddles\_75, Girr\_74, Ruby\_72
- Track 43 : Mantra\_75, Emma\_81
- Track 44 : Phalconet\_74, Ms6\_76
- Track 45 : ByChance\_72, ShowerHandel\_81
- Track 46 : Che8\_116
- Track 47 : Girafales\_87, Quico\_87, Eish\_81, Florinda\_90
- Track 48 : Ovechkin\_80, ShroomBoi\_78
- Track 49 : Leozinho\_77
- Track 50 : VRedHorse\_78, Cornucopia\_79
- Track 51 : KristaRAM\_76
- Track 52 : Eradicator\_68
- Track 53 : Pacc40\_71
- Track 54 : Martik\_79
- Track 55 : StAnnes\_80
- Track 56 : Marker\_78, Job42\_79
- Track 57 : Shauna1\_77
- Track 58 : Sarma624\_76, Velveteen\_72
- Track 59 : Krakatau\_73
- Track 60 : Fruitloop\_73, IMpilo\_72
- Track 61 : Spartacus\_82
- Track 62 : Maravista\_79
- Track 63 : Zizzle\_85
- Track 64 : Rita\_84
- Track 65 : Donkeykong\_82
- Track 66 : CaptainTrips\_77, MinionDave\_73
- Track 67 : BuzzLyseyear\_85
- Track 68 : Ibhubesi\_75
- Track 69 : DaWorst\_78
- Track 70 : Moonbeam\_79
- Track 71 : DLane\_78
- Track 72 : Tweety\_78
- Track 73 : Royals2015\_84
- Track 74 : Avani\_85

- Track 75 : Yoshi\_91
- Track 76 : Demsculpinboyz\_87
- Track 77 : TChen\_79, LunaStella\_77

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

The start number called the most often in the published annotations is 22, it was called in 198 of the 214 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_72, AlpineSix\_82, ArcusAngelus\_82, Ardmore\_63, Aubs\_79, Avani\_85, Batiatus\_77, BigPhil\_71, Bipolar\_80, Blarby\_86, Blexus\_74, BobaPhett\_80, Bobi\_84, BodEinwohner17\_84, Boomer\_80, Brocalys\_70, Bubbles123\_73, BuzzLyseyear\_85, ByChance\_72, Byougenkin\_76, Cabrinians\_77, CaptainTrips\_77, Cerasum\_71, Che9d\_89, Chevrolet\_85, Chuckly\_75, Clifton\_70, Coco12\_74, Cornie\_73, Cornucopia\_79, Crumble\_75, DRBy19\_81, DaWorst\_78, DaddyRickover\_82, Daenerys\_78, Dante\_77, DeadP\_79, Deb65\_72, Demsculpinboyz\_87, DirtMcgirt\_75, Doomphist\_82, Dorothy\_80, DosHalletts\_81, DotProduct\_74, Doug\_78, Drago\_73, Eish\_81, EleanorGeorge\_79, Empress\_77, Enby\_77, Eradicator\_68, Estave1\_84, Fancypants\_82, Firehouse51\_74, Flathead\_77, Florinda\_90, Frankie\_87, FreddyB\_87, GUmbie\_72, Galactic\_77, Gandolph\_76, Geralt\_72, GigiOuiOui\_72, Girafales\_87, Girr\_74, Gorge\_79, Hades\_78, Hamulus\_78, Harley\_77, Hegedechwinu\_79, Hlubikazi\_73, IbOuu\_75, Ibhubesi\_75, Inventum\_77, IrishSherpFalk\_78, Jabbawokkie\_87, JalFarm20\_86, James\_78, Jacob\_77, Jinglebell\_82, Job42\_79, JoeyJr\_79, Juice456\_74, Juniper1\_76, Karhdo\_76, Kersh\_79, Kimberlium\_77, KingMidas\_78, Kingsley\_81, Koella\_69, Krakatau\_73, KristaRAM\_76, LastJedi\_69, Latretium\_74, Leozinho\_77, Leperchaun\_77, LilMoolah\_76, Lizziana\_82, Llama\_82, Llij\_72, Lorde\_76, LunaBlu\_80, LunaStella\_77, MadMen\_75, Madiba\_82, Mahavrat\_74, Mandlovu\_73, Marker\_78, Martik\_79, Mattes\_79, Melissauren88\_71, MilanaBonita\_71, MilleniumForce\_78, MinionDave\_73, Minnie\_75, MisterCuddles\_75, Modragons\_80, Moonbeam\_79, Mova\_77, Ms6\_76, MulchExplorer\_80, Mutaforma13\_84, Nimbo\_71, Nitzel\_72, Nivrat\_74, NormanBulbieJr\_74, Ochi17\_81, OfUltron\_83, Ogopogo\_83, Oksu\_82, OldBen\_76, OlympiaSaint\_77, Ovechkin\_80, OwlsT2W\_79, PHappiness\_79, PMC\_73, Pacc40\_71, Phalconet\_74, Phanphagia\_76, Phasih\_74, Phatniss\_73, PhesterPhotato\_81, Philus\_80, Pippy\_74, Plumbus\_79, Poenanya\_82, Polka14\_83, Pollywog\_78, PopTart\_68, Priscilla\_75, QuickMath\_76, Quico\_87, Radiance\_77, Ramsey\_82, RedBird\_80, Renaud18\_87, Rialto\_85, RitaG\_79, Rita\_84, Rockne\_77, Royals2015\_84, Ruby\_72, SG4\_75, Saal\_77, Sabbb\_79, Sandalphon\_73, Sarma624\_76, Sassafras\_80, SassyB\_68, Scottish\_77, Seabastian\_83, Seagreen\_79, ShiLan\_80, ShowerHandel\_81, ShroomBoi\_78, SiSi\_74, SimranZ1\_78, Soul22\_80, Sparkdehlily\_82, Spartacus\_82, Spikelee\_84, Spoonbill\_75, Squirty\_79, Stap\_72, Starcevich\_78, Strokeseat\_73, SuperGrey\_78, SwagPiggett\_81, TChen\_79, TDanisky\_83, Taj\_84, ThetaBob\_80, Tootsieroll\_76, Tweety\_78, VRedHorse\_78, Velveteen\_72, Veteran\_70, Wachhund\_77, Wee\_83, Whatsapiecost\_72, Whouxphf\_74, XFactor\_73, Yoshi\_91, Zapner\_86, Zerg\_76,

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

- Che8\_116, Donkeykong\_82, Maravista\_79, Mozy\_84, Shauna1\_77, UncleRicky\_75,

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

- DLANE\_78, DillTech15\_85, Emma\_81, Fastidio\_78, Fruitloop\_73, IMpilo\_72, LittleShirley\_84, Mantra\_75, StAnnes\_80, Totinger\_80, Zizzle\_85,

### Summary by start number:

Start 21:

- Found in 59 of 222 ( 26.6% ) of genes in pham
- Manual Annotations of this start: 2 of 214
- Called 3.4% of time when present
- Phage (with cluster) where this start called: Donkeykong\_82 (F1), Mozy\_84 (F1),

Start 22:

- Found in 211 of 222 ( 95.0% ) of genes in pham
- Manual Annotations of this start: 198 of 214
- Called 97.2% of time when present
- Phage (with cluster) where this start called: Akhila\_72 (F1), AlpineSix\_82 (F1), ArcusAngelus\_82 (F1), Ardmore\_63 (F1), Aubs\_79 (F1), Avani\_85 (F2), Batiatus\_77 (F1), BigPhil\_71 (F1), Bipolar\_80 (F1), Blarby\_86 (F), Blexus\_74 (F1), BobaPhett\_80 (F1), Bobi\_84 (F1), BodEinwohner17\_84 (F1), Boomer\_80 (F1), Brocalys\_70 (F1), Bubbles123\_73 (F1), BuzzLyseyear\_85 (F1), ByChance\_72 (F1), Byougenkin\_76 (F1), Cabrinians\_77 (F1), CaptainTrips\_77 (F1), Cerasum\_71 (F1), Che9d\_89 (F2), Chevrolet\_85 (F1), Chuckly\_75 (F1), Clifton\_70 (F1), Coco12\_74 (F1), Cornie\_73 (F5), Cornucopia\_79 (F1), Crumble\_75 (F1), DRBy19\_81 (F1), DaWorst\_78 (F1), DaddyRickover\_82 (F1), Daenerys\_78 (F1), Dante\_77 (F1), DeadP\_79 (F1), Deb65\_72 (F1), Demsculpinboyz\_87 (F2), DirtMcgirt\_75 (F1), Doomphist\_82 (F1), Dorothy\_80 (F1), DosHalletts\_81 (F1), DotProduct\_74 (F1), Doug\_78 (F1), Drago\_73 (F1), Eish\_81 (F1), EleanorGeorge\_79 (F1), Empress\_77 (F1), Enby\_77 (F1), Eradicator\_68 (F1), Estave1\_84 (F1), Fancypants\_82 (F1), Firehouse51\_74 (F1), Flathead\_77 (F1), Florinda\_90 (F1), Frankie\_87 (F1), FreddyB\_87 (F1), GUmbie\_72 (F1), Galactic\_77 (F1), Gandolph\_76 (F1), Geralt\_72 (F1), GigiOuiOui\_72 (F1), Girafales\_87 (F1), Girr\_74 (F1), Gorge\_79 (F1), Hades\_78 (F1), Hamulus\_78 (F1), Harley\_77 (F1), Hegedechwinu\_79 (F1), Hlubikazi\_73 (F1), IbOuu\_75 (F1), Ibhubesi\_75 (F1), Inventum\_77 (F1), IrishSherpFalk\_78 (F1), Jabbawokkie\_87 (F2), JalFarm20\_86 (F1), James\_78 (F1), Jarcob\_77 (F1), Jinglebell\_82 (F1), Job42\_79 (F1), JoeyJr\_79 (F1), Juice456\_74 (F1), Juniper1\_76 (F1), Karhdo\_76 (F1), Kersh\_79 (F1), Kimberlium\_77 (F1), KingMidas\_78 (F1), Kingsley\_81 (F1), Koella\_69 (F1), Krakatau\_73 (F1), KristaRAM\_76 (F1), LastJedi\_69 (F1), Latretium\_74 (F1), Leozinho\_77 (F1), Leperchaun\_77 (F1), LilMoolah\_76 (F1), Lizziana\_82 (F1), Llama\_82 (F1), Llij\_72 (F1), Lorde\_76 (F1), LunaBlu\_80 (F1), LunaStella\_77 (F4), MadMen\_75 (F1), Madiba\_82 (F1), Mahavrat\_74 (F1), Mandlovu\_73 (F1), Marker\_78 (F1), Martik\_79 (F1), Mattes\_79 (F1), Melissauren88\_71 (F1), MilanaBonita\_71 (F1), MilleniumForce\_78 (F1), MinionDave\_73 (F1), Minnie\_75 (F1), MisterCuddles\_75 (F1), Modragons\_80 (F1), Moonbeam\_79 (F1), Mova\_77 (F1), Ms6\_76 (F1), MulchExplorer\_80 (F1), Mutaforma13\_84 (F1), Nimbo\_71 (F1), Nitzel\_72 (F1), Nivrat\_74 (F1), NormanBulbieJr\_74 (F1), Ochi17\_81 (F1), OfUltron\_83 (F1), Ogopogo\_83 (F1), Oksu\_82 (F1), OldBen\_76 (F1), OlympiaSaint\_77 (F1), Ovechkin\_80 (F1), OwlsT2W\_79 (F1), PHappiness\_79 (F1), PMC\_73 (F1), Pacc40\_71 (F1), Phalconet\_74 (F1), Phanphagia\_76 (F1), Phasih\_74 (F1), Phatniss\_73 (F1), PhesterPotato\_81 (F1), Philus\_80 (F1), Pippy\_74 (F1), Plumbus\_79 (F1), Poenanya\_82 (F1), Polka14\_83 (F1), Pollywog\_78 (F1), PopTart\_68 (F1), Priscilla\_75 (F1), QuickMath\_76 (F1), Quico\_87 (F1), Radiance\_77 (F1), Ramsey\_82 (F1), RedBird\_80 (F1), Renaud18\_87 (F4), Rialto\_85 (F1),

RitaG\_79 (F1), Rita\_84 (F1), Rockne\_77 (F1), Royals2015\_84 (F1), Ruby\_72 (F1), SG4\_75 (F1), Saal\_77 (F1), Sabbb\_79 (F1), Sandalphon\_73 (F1), Sarma624\_76 (F1), Sassafras\_80 (F1), SassyB\_68 (F1), Scottish\_77 (F1), Seabastian\_83 (F1), Seagreen\_79 (F1), ShiLan\_80 (F1), ShowerHandel\_81 (F1), ShroomBoi\_78 (F1), SiSi\_74 (F1), SimranZ1\_78 (F1), Soul22\_80 (F2), Sparkdehlily\_82 (F1), Spartacus\_82 (F1), Spikelee\_84 (F1), Spoonbill\_75 (F1), Squirty\_79 (F3), Stap\_72 (F1), Starcevich\_78 (F1), Strokeseat\_73 (F1), SuperGrey\_78 (F1), SwagPigglett\_81 (F1), TChen\_79 (F4), TDanisky\_83 (F1), Taj\_84 (F1), ThetaBob\_80 (F4), Tootsieroll\_76 (F1), Tweety\_78 (F1), VRedHorse\_78 (F1), Velveteen\_72 (F1), Veteran\_70 (F1), Wachhund\_77 (F1), Wee\_83 (F1), Whatsapiecost\_72 (F1), Whouxphf\_74 (F1), XFactor\_73 (F1), Yoshi\_91 (F2), Zapner\_86 (F2), Zerg\_76 (F1),

#### Start 23:

- Found in 214 of 222 ( 96.4% ) of genes in pham
- Manual Annotations of this start: 5 of 214
- Called 2.3% of time when present
- Phage (with cluster) where this start called: Che8\_116 (F1), Emma\_81 (F1), Mantra\_75 (F1), Shauna1\_77 (F1), UncleRicky\_75 (F1),

#### Start 24:

- Found in 145 of 222 ( 65.3% ) of genes in pham
- Manual Annotations of this start: 1 of 214
- Called 0.7% of time when present
- Phage (with cluster) where this start called: Maravista\_79 (F1),

#### Start 25:

- Found in 9 of 222 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 8 of 214
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DLane\_78 (F1), DillTech15\_85 (F1), Fastidio\_78 (F1), Fruitloop\_73 (F1), IMpilo\_72 (F1), LittleShirley\_84 (F1), StAnnes\_80 (F1), Totinger\_80 (F1), Zizzle\_85 (F1),

### **Summary by clusters:**

There are 6 clusters represented in this pham: F1, F2, F3, F4, F5, F,

#### Info for manual annotations of cluster F1:

- Start number 21 was manually annotated 2 times for cluster F1.
- Start number 22 was manually annotated 185 times for cluster F1.
- Start number 23 was manually annotated 5 times for cluster F1.
- Start number 24 was manually annotated 1 time for cluster F1.
- Start number 25 was manually annotated 8 times for cluster F1.

#### Info for manual annotations of cluster F2:

- Start number 22 was manually annotated 7 times for cluster F2.

#### Info for manual annotations of cluster F3:

- Start number 22 was manually annotated 1 time for cluster F3.

#### Info for manual annotations of cluster F4:

- Start number 22 was manually annotated 4 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 22 was manually annotated 1 time for cluster F5.

**Gene Information:**

Gene: Akhila\_72 Start: 46445, Stop: 46639, Start Num: 22

Candidate Starts for Akhila\_72:

(8, 46388), (Start: 22 @46445 has 198 MA's), (Start: 23 @46451 has 5 MA's), (Start: 24 @46457 has 1 MA's), (29, 46556),

Gene: AlpineSix\_82 Start: 48470, Stop: 48664, Start Num: 22

Candidate Starts for AlpineSix\_82:

(Start: 22 @48470 has 198 MA's), (Start: 23 @48476 has 5 MA's), (Start: 24 @48482 has 1 MA's),

Gene: ArcusAngelus\_82 Start: 49485, Stop: 49679, Start Num: 22

Candidate Starts for ArcusAngelus\_82:

(6, 49392), (13, 49440), (16, 49446), (17, 49455), (Start: 22 @49485 has 198 MA's), (Start: 23 @49491 has 5 MA's), (Start: 24 @49497 has 1 MA's), (26, 49533), (28, 49584),

Gene: Ardmore\_63 Start: 42651, Stop: 42845, Start Num: 22

Candidate Starts for Ardmore\_63:

(8, 42594), (Start: 22 @42651 has 198 MA's), (Start: 23 @42657 has 5 MA's), (Start: 24 @42663 has 1 MA's), (29, 42762),

Gene: Aubs\_79 Start: 48985, Stop: 49179, Start Num: 22

Candidate Starts for Aubs\_79:

(15, 48946), (Start: 21 @48973 has 2 MA's), (Start: 22 @48985 has 198 MA's), (Start: 23 @48991 has 5 MA's), (27, 49033),

Gene: Avani\_85 Start: 45896, Stop: 46090, Start Num: 22

Candidate Starts for Avani\_85:

(19, 45875), (Start: 22 @45896 has 198 MA's), (Start: 23 @45902 has 5 MA's), (Start: 24 @45908 has 1 MA's), (28, 45995),

Gene: Batiatus\_77 Start: 48075, Stop: 48269, Start Num: 22

Candidate Starts for Batiatus\_77:

(19, 48054), (Start: 22 @48075 has 198 MA's), (Start: 23 @48081 has 5 MA's), (Start: 24 @48087 has 1 MA's), (29, 48186),

Gene: BigPhil\_71 Start: 44058, Stop: 44252, Start Num: 22

Candidate Starts for BigPhil\_71:

(15, 44019), (Start: 21 @44046 has 2 MA's), (Start: 22 @44058 has 198 MA's), (Start: 23 @44064 has 5 MA's), (Start: 24 @44070 has 1 MA's), (28, 44157),

Gene: Bipolar\_80 Start: 49707, Stop: 49901, Start Num: 22

Candidate Starts for Bipolar\_80:

(8, 49650), (Start: 22 @49707 has 198 MA's), (Start: 23 @49713 has 5 MA's), (Start: 24 @49719 has 1 MA's), (29, 49818),

Gene: Blarby\_86 Start: 46798, Stop: 46992, Start Num: 22



Candidate Starts for Blarby\_86:

(8, 46741), (Start: 22 @46798 has 198 MA's), (Start: 23 @46804 has 5 MA's), (Start: 24 @46810 has 1 MA's),

Gene: Blexus\_74 Start: 48240, Stop: 48434, Start Num: 22

Candidate Starts for Blexus\_74:

(10, 48189), (19, 48219), (Start: 22 @48240 has 198 MA's), (Start: 23 @48246 has 5 MA's), (27, 48288),

Gene: BobaPhett\_80 Start: 50539, Stop: 50733, Start Num: 22

Candidate Starts for BobaPhett\_80:

(15, 50500), (Start: 21 @50527 has 2 MA's), (Start: 22 @50539 has 198 MA's), (Start: 23 @50545 has 5 MA's), (Start: 24 @50551 has 1 MA's), (27, 50587),

Gene: Bobi\_84 Start: 50362, Stop: 50556, Start Num: 22

Candidate Starts for Bobi\_84:

(8, 50305), (Start: 22 @50362 has 198 MA's), (Start: 23 @50368 has 5 MA's), (Start: 24 @50374 has 1 MA's), (29, 50473),

Gene: BodEinwohner17\_84 Start: 50516, Stop: 50710, Start Num: 22

Candidate Starts for BodEinwohner17\_84:

(15, 50477), (Start: 21 @50504 has 2 MA's), (Start: 22 @50516 has 198 MA's), (Start: 23 @50522 has 5 MA's), (Start: 24 @50528 has 1 MA's), (27, 50564), (29, 50627),

Gene: Boomer\_80 Start: 48517, Stop: 48711, Start Num: 22

Candidate Starts for Boomer\_80:

(Start: 22 @48517 has 198 MA's), (Start: 23 @48523 has 5 MA's), (Start: 24 @48529 has 1 MA's), (28, 48616), (29, 48628),

Gene: Brocalys\_70 Start: 46019, Stop: 46213, Start Num: 22

Candidate Starts for Brocalys\_70:

(15, 45980), (Start: 21 @46007 has 2 MA's), (Start: 22 @46019 has 198 MA's), (Start: 23 @46025 has 5 MA's), (Start: 24 @46031 has 1 MA's), (27, 46067),

Gene: Bubbles123\_73 Start: 47867, Stop: 48061, Start Num: 22

Candidate Starts for Bubbles123\_73:

(19, 47846), (Start: 22 @47867 has 198 MA's), (Start: 23 @47873 has 5 MA's), (Start: 24 @47879 has 1 MA's),

Gene: BuzzLyseyear\_85 Start: 51018, Stop: 51218, Start Num: 22

Candidate Starts for BuzzLyseyear\_85:

(10, 50967), (20, 51006), (Start: 22 @51018 has 198 MA's), (Start: 23 @51024 has 5 MA's), (Start: 24 @51030 has 1 MA's), (30, 51138), (31, 51156),

Gene: ByChance\_72 Start: 44595, Stop: 44795, Start Num: 22

Candidate Starts for ByChance\_72:

(20, 44583), (Start: 22 @44595 has 198 MA's), (Start: 23 @44601 has 5 MA's), (27, 44643), (31, 44733),

Gene: Byougenkin\_76 Start: 45736, Stop: 45930, Start Num: 22

Candidate Starts for Byougenkin\_76:

(19, 45715), (Start: 22 @45736 has 198 MA's), (Start: 23 @45742 has 5 MA's), (Start: 24 @45748 has 1 MA's),

Gene: Cabrinians\_77 Start: 47939, Stop: 48133, Start Num: 22

Candidate Starts for Cabrinians\_77:

(15, 47900), (Start: 21 @47927 has 2 MA's), (Start: 22 @47939 has 198 MA's), (Start: 23 @47945 has 5 MA's), (Start: 24 @47951 has 1 MA's), (27, 47987),

Gene: CaptainTrips\_77 Start: 47526, Stop: 47720, Start Num: 22

Candidate Starts for CaptainTrips\_77:

(19, 47505), (Start: 22 @47526 has 198 MA's), (Start: 23 @47532 has 5 MA's), (27, 47574),

Gene: Cerasum\_71 Start: 44076, Stop: 44270, Start Num: 22

Candidate Starts for Cerasum\_71:

(15, 44037), (Start: 21 @44064 has 2 MA's), (Start: 22 @44076 has 198 MA's), (Start: 23 @44082 has 5 MA's), (Start: 24 @44088 has 1 MA's), (28, 44175),

Gene: Che8\_116 Start: 48446, Stop: 48634, Start Num: 23

Candidate Starts for Che8\_116:

(7, 48380), (Start: 22 @48440 has 198 MA's), (Start: 23 @48446 has 5 MA's), (27, 48488),

Gene: Che9d\_89 Start: 48164, Stop: 48358, Start Num: 22

Candidate Starts for Che9d\_89:

(7, 48104), (Start: 22 @48164 has 198 MA's), (Start: 23 @48170 has 5 MA's), (27, 48212),

Gene: Chevrolet\_85 Start: 49486, Stop: 49680, Start Num: 22

Candidate Starts for Chevrolet\_85:

(6, 49393), (13, 49441), (16, 49447), (17, 49456), (Start: 22 @49486 has 198 MA's), (Start: 23 @49492 has 5 MA's), (Start: 24 @49498 has 1 MA's), (26, 49534), (28, 49585),

Gene: Chuckly\_75 Start: 45320, Stop: 45514, Start Num: 22

Candidate Starts for Chuckly\_75:

(Start: 22 @45320 has 198 MA's), (Start: 23 @45326 has 5 MA's), (Start: 24 @45332 has 1 MA's), (29, 45431),

Gene: Clifton\_70 Start: 46275, Stop: 46469, Start Num: 22

Candidate Starts for Clifton\_70:

(Start: 22 @46275 has 198 MA's), (Start: 23 @46281 has 5 MA's), (Start: 24 @46287 has 1 MA's),

Gene: Coco12\_74 Start: 48133, Stop: 48327, Start Num: 22

Candidate Starts for Coco12\_74:

(15, 48094), (Start: 21 @48121 has 2 MA's), (Start: 22 @48133 has 198 MA's), (Start: 23 @48139 has 5 MA's), (Start: 24 @48145 has 1 MA's), (28, 48232),

Gene: Cornie\_73 Start: 46457, Stop: 46651, Start Num: 22

Candidate Starts for Cornie\_73:

(19, 46436), (Start: 22 @46457 has 198 MA's), (Start: 23 @46463 has 5 MA's), (Start: 24 @46469 has 1 MA's), (29, 46568),

Gene: Cornucopia\_79 Start: 47061, Stop: 47261, Start Num: 22

Candidate Starts for Cornucopia\_79:

(18, 47040), (Start: 22 @47061 has 198 MA's), (Start: 23 @47067 has 5 MA's), (Start: 24 @47073 has 1 MA's),

Gene: Crumble\_75 Start: 44664, Stop: 44858, Start Num: 22

Candidate Starts for Crumble\_75:  
(Start: 22 @44664 has 198 MA's), (Start: 23 @44670 has 5 MA's), (Start: 24 @44676 has 1 MA's),  
(27, 44712),

Gene: DLane\_78 Start: 48965, Stop: 49144, Start Num: 25  
Candidate Starts for DLane\_78:  
(Start: 25 @48965 has 8 MA's),

Gene: DRBy19\_81 Start: 50004, Stop: 50198, Start Num: 22  
Candidate Starts for DRBy19\_81:  
(Start: 22 @50004 has 198 MA's), (Start: 23 @50010 has 5 MA's), (Start: 24 @50016 has 1 MA's),

Gene: DaWorst\_78 Start: 47602, Stop: 47796, Start Num: 22  
Candidate Starts for DaWorst\_78:  
(11, 47551), (Start: 21 @47590 has 2 MA's), (Start: 22 @47602 has 198 MA's), (Start: 23 @47608 has  
5 MA's), (Start: 24 @47614 has 1 MA's), (27, 47650), (29, 47713),

Gene: DaddyRickover\_82 Start: 49806, Stop: 50000, Start Num: 22  
Candidate Starts for DaddyRickover\_82:  
(10, 49755), (19, 49785), (Start: 22 @49806 has 198 MA's), (Start: 23 @49812 has 5 MA's), (27,  
49854), (29, 49917),

Gene: Daenerys\_78 Start: 49582, Stop: 49776, Start Num: 22  
Candidate Starts for Daenerys\_78:  
(15, 49543), (Start: 21 @49570 has 2 MA's), (Start: 22 @49582 has 198 MA's), (Start: 23 @49588 has  
5 MA's), (27, 49630), (30, 49702), (31, 49720),

Gene: Dante\_77 Start: 49912, Stop: 50106, Start Num: 22  
Candidate Starts for Dante\_77:  
(8, 49855), (Start: 22 @49912 has 198 MA's), (Start: 23 @49918 has 5 MA's), (Start: 24 @49924 has  
1 MA's),

Gene: DeadP\_79 Start: 47021, Stop: 47215, Start Num: 22  
Candidate Starts for DeadP\_79:  
(2, 46781), (5, 46928), (12, 46970), (Start: 21 @47009 has 2 MA's), (Start: 22 @47021 has 198 MA's),  
(Start: 23 @47027 has 5 MA's), (Start: 24 @47033 has 1 MA's), (28, 47120),

Gene: Deb65\_72 Start: 47304, Stop: 47498, Start Num: 22  
Candidate Starts for Deb65\_72:  
(15, 47265), (Start: 21 @47292 has 2 MA's), (Start: 22 @47304 has 198 MA's), (Start: 23 @47310 has  
5 MA's), (27, 47352), (30, 47424), (31, 47442),

Gene: Demsculpinboyz\_87 Start: 46593, Stop: 46787, Start Num: 22  
Candidate Starts for Demsculpinboyz\_87:  
(Start: 22 @46593 has 198 MA's), (Start: 23 @46599 has 5 MA's), (27, 46641),

Gene: DillTech15\_85 Start: 48458, Stop: 48637, Start Num: 25  
Candidate Starts for DillTech15\_85:  
(Start: 25 @48458 has 8 MA's),

Gene: DirtMcgirt\_75 Start: 45127, Stop: 45321, Start Num: 22  
Candidate Starts for DirtMcgirt\_75:

(10, 45076), (19, 45106), (Start: 22 @45127 has 198 MA's), (Start: 23 @45133 has 5 MA's), (27, 45175),

Gene: Donkeykong\_82 Start: 49531, Stop: 49737, Start Num: 21

Candidate Starts for Donkeykong\_82:

(15, 49504), (Start: 21 @49531 has 2 MA's), (Start: 22 @49543 has 198 MA's), (Start: 23 @49549 has 5 MA's), (Start: 24 @49555 has 1 MA's), (27, 49591),

Gene: Doomphist\_82 Start: 49215, Stop: 49409, Start Num: 22

Candidate Starts for Doomphist\_82:

(10, 49164), (19, 49194), (Start: 22 @49215 has 198 MA's), (Start: 23 @49221 has 5 MA's), (27, 49263), (29, 49326),

Gene: Dorothy\_80 Start: 50033, Stop: 50227, Start Num: 22

Candidate Starts for Dorothy\_80:

(15, 49994), (Start: 21 @50021 has 2 MA's), (Start: 22 @50033 has 198 MA's), (Start: 23 @50039 has 5 MA's), (27, 50081), (30, 50153), (31, 50171),

Gene: DosHalletts\_81 Start: 49751, Stop: 49945, Start Num: 22

Candidate Starts for DosHalletts\_81:

(Start: 22 @49751 has 198 MA's), (Start: 23 @49757 has 5 MA's), (Start: 24 @49763 has 1 MA's), (29, 49862),

Gene: DotProduct\_74 Start: 46756, Stop: 46950, Start Num: 22

Candidate Starts for DotProduct\_74:

(8, 46699), (Start: 22 @46756 has 198 MA's), (Start: 23 @46762 has 5 MA's), (Start: 24 @46768 has 1 MA's), (29, 46867),

Gene: Doug\_78 Start: 49287, Stop: 49481, Start Num: 22

Candidate Starts for Doug\_78:

(Start: 21 @49275 has 2 MA's), (Start: 22 @49287 has 198 MA's), (Start: 23 @49293 has 5 MA's), (27, 49335),

Gene: Drago\_73 Start: 45130, Stop: 45324, Start Num: 22

Candidate Starts for Drago\_73:

(10, 45079), (19, 45109), (Start: 22 @45130 has 198 MA's), (Start: 23 @45136 has 5 MA's), (27, 45178),

Gene: Eish\_81 Start: 49043, Stop: 49237, Start Num: 22

Candidate Starts for Eish\_81:

(19, 49022), (Start: 22 @49043 has 198 MA's), (Start: 23 @49049 has 5 MA's), (Start: 24 @49055 has 1 MA's), (27, 49091),

Gene: EleanorGeorge\_79 Start: 48608, Stop: 48808, Start Num: 22

Candidate Starts for EleanorGeorge\_79:

(Start: 22 @48608 has 198 MA's), (Start: 23 @48614 has 5 MA's), (Start: 24 @48620 has 1 MA's), (31, 48746),

Gene: Emma\_81 Start: 47424, Stop: 47612, Start Num: 23

Candidate Starts for Emma\_81:

(Start: 23 @47424 has 5 MA's), (27, 47466),

Gene: Empress\_77 Start: 48026, Stop: 48220, Start Num: 22

Candidate Starts for Empress\_77:

(10, 47975), (19, 48005), (Start: 22 @48026 has 198 MA's), (Start: 23 @48032 has 5 MA's), (27, 48074), (29, 48137),

Gene: Enby\_77 Start: 45406, Stop: 45600, Start Num: 22

Candidate Starts for Enby\_77:

(10, 45355), (19, 45385), (Start: 22 @45406 has 198 MA's), (Start: 23 @45412 has 5 MA's), (27, 45454),

Gene: Eradicator\_68 Start: 45850, Stop: 46044, Start Num: 22

Candidate Starts for Eradicator\_68:

(Start: 21 @45838 has 2 MA's), (Start: 22 @45850 has 198 MA's), (Start: 23 @45856 has 5 MA's), (26, 45898),

Gene: Estave1\_84 Start: 51480, Stop: 51674, Start Num: 22

Candidate Starts for Estave1\_84:

(6, 51387), (13, 51435), (16, 51441), (17, 51450), (Start: 22 @51480 has 198 MA's), (Start: 23 @51486 has 5 MA's), (Start: 24 @51492 has 1 MA's),

Gene: Fancypants\_82 Start: 49778, Stop: 49978, Start Num: 22

Candidate Starts for Fancypants\_82:

(6, 49685), (13, 49733), (16, 49739), (17, 49748), (Start: 22 @49778 has 198 MA's), (Start: 23 @49784 has 5 MA's), (Start: 24 @49790 has 1 MA's),

Gene: Fastidio\_78 Start: 45266, Stop: 45445, Start Num: 25

Candidate Starts for Fastidio\_78:

(Start: 25 @45266 has 8 MA's),

Gene: Firehouse51\_74 Start: 49005, Stop: 49199, Start Num: 22

Candidate Starts for Firehouse51\_74:

(8, 48948), (Start: 22 @49005 has 198 MA's), (Start: 23 @49011 has 5 MA's), (Start: 24 @49017 has 1 MA's), (29, 49116),

Gene: Flathead\_77 Start: 47586, Stop: 47780, Start Num: 22

Candidate Starts for Flathead\_77:

(6, 47493), (13, 47541), (16, 47547), (17, 47556), (Start: 22 @47586 has 198 MA's), (Start: 23 @47592 has 5 MA's), (Start: 24 @47598 has 1 MA's), (28, 47685), (29, 47697),

Gene: Florinda\_90 Start: 50668, Stop: 50862, Start Num: 22

Candidate Starts for Florinda\_90:

(19, 50647), (Start: 22 @50668 has 198 MA's), (Start: 23 @50674 has 5 MA's), (Start: 24 @50680 has 1 MA's), (27, 50716),

Gene: Frankie\_87 Start: 49956, Stop: 50150, Start Num: 22

Candidate Starts for Frankie\_87:

(15, 49917), (Start: 21 @49944 has 2 MA's), (Start: 22 @49956 has 198 MA's), (Start: 23 @49962 has 5 MA's), (Start: 24 @49968 has 1 MA's), (27, 50004),

Gene: FreddyB\_87 Start: 49586, Stop: 49780, Start Num: 22

Candidate Starts for FreddyB\_87:

(15, 49547), (Start: 21 @49574 has 2 MA's), (Start: 22 @49586 has 198 MA's), (Start: 23 @49592 has 5 MA's), (Start: 24 @49598 has 1 MA's), (27, 49634),

Gene: Fruitloop\_73 Start: 47530, Stop: 47709, Start Num: 25  
Candidate Starts for Fruitloop\_73:  
(Start: 25 @47530 has 8 MA's), (29, 47626),

Gene: GUmbie\_72 Start: 47176, Stop: 47370, Start Num: 22  
Candidate Starts for GUmbie\_72:  
(8, 47119), (Start: 22 @47176 has 198 MA's), (Start: 23 @47182 has 5 MA's), (Start: 24 @47188 has 1 MA's), (29, 47287),

Gene: Galactic\_77 Start: 47768, Stop: 47962, Start Num: 22  
Candidate Starts for Galactic\_77:  
(Start: 22 @47768 has 198 MA's), (Start: 23 @47774 has 5 MA's), (Start: 24 @47780 has 1 MA's), (29, 47879),

Gene: Gandalph\_76 Start: 45213, Stop: 45407, Start Num: 22  
Candidate Starts for Gandalph\_76:  
(5, 45120), (12, 45162), (Start: 21 @45201 has 2 MA's), (Start: 22 @45213 has 198 MA's), (Start: 23 @45219 has 5 MA's), (Start: 24 @45225 has 1 MA's), (26, 45261),

Gene: Geralt\_72 Start: 47302, Stop: 47496, Start Num: 22  
Candidate Starts for Geralt\_72:  
(15, 47263), (Start: 21 @47290 has 2 MA's), (Start: 22 @47302 has 198 MA's), (Start: 23 @47308 has 5 MA's), (27, 47350), (30, 47422), (31, 47440),

Gene: GigiOuiOui\_72 Start: 46847, Stop: 47041, Start Num: 22  
Candidate Starts for GigiOuiOui\_72:  
(8, 46790), (Start: 22 @46847 has 198 MA's), (Start: 23 @46853 has 5 MA's), (Start: 24 @46859 has 1 MA's), (29, 46958),

Gene: Girafales\_87 Start: 50273, Stop: 50467, Start Num: 22  
Candidate Starts for Girafales\_87:  
(19, 50252), (Start: 22 @50273 has 198 MA's), (Start: 23 @50279 has 5 MA's), (Start: 24 @50285 has 1 MA's), (27, 50321),

Gene: Girr\_74 Start: 48056, Stop: 48250, Start Num: 22  
Candidate Starts for Girr\_74:  
(6, 47963), (13, 48011), (16, 48017), (17, 48026), (Start: 22 @48056 has 198 MA's), (Start: 23 @48062 has 5 MA's), (Start: 24 @48068 has 1 MA's), (28, 48155), (29, 48167),

Gene: Gorge\_79 Start: 49214, Stop: 49408, Start Num: 22  
Candidate Starts for Gorge\_79:  
(Start: 22 @49214 has 198 MA's), (Start: 23 @49220 has 5 MA's), (Start: 24 @49226 has 1 MA's),

Gene: Hades\_78 Start: 46407, Stop: 46607, Start Num: 22  
Candidate Starts for Hades\_78:  
(6, 46314), (13, 46362), (16, 46368), (17, 46377), (Start: 22 @46407 has 198 MA's), (Start: 23 @46413 has 5 MA's), (Start: 24 @46419 has 1 MA's),

Gene: Hamulus\_78 Start: 48238, Stop: 48432, Start Num: 22  
Candidate Starts for Hamulus\_78:  
(Start: 22 @48238 has 198 MA's), (Start: 23 @48244 has 5 MA's), (Start: 24 @48250 has 1 MA's),

Gene: Harley\_77 Start: 47356, Stop: 47550, Start Num: 22

Candidate Starts for Harley\_77:

(10, 47305), (19, 47335), (Start: 22 @47356 has 198 MA's), (Start: 23 @47362 has 5 MA's), (Start: 24 @47368 has 1 MA's), (27, 47404),

Gene: Hegedechwinu\_79 Start: 46787, Stop: 46981, Start Num: 22

Candidate Starts for Hegedechwinu\_79:

(Start: 22 @46787 has 198 MA's), (Start: 23 @46793 has 5 MA's), (Start: 24 @46799 has 1 MA's), (29, 46898),

Gene: Hlubikazi\_73 Start: 45616, Stop: 45810, Start Num: 22

Candidate Starts for Hlubikazi\_73:

(19, 45595), (Start: 22 @45616 has 198 MA's), (Start: 23 @45622 has 5 MA's), (Start: 24 @45628 has 1 MA's), (29, 45727),

Gene: IMpilo\_72 Start: 45266, Stop: 45451, Start Num: 25

Candidate Starts for IMpilo\_72:

(Start: 25 @45266 has 8 MA's), (29, 45362),

Gene: IbOuu\_75 Start: 46081, Stop: 46275, Start Num: 22

Candidate Starts for IbOuu\_75:

(Start: 22 @46081 has 198 MA's), (Start: 23 @46087 has 5 MA's), (Start: 24 @46093 has 1 MA's), (29, 46192),

Gene: Ibhubesi\_75 Start: 45530, Stop: 45730, Start Num: 22

Candidate Starts for Ibhubesi\_75:

(18, 45509), (Start: 22 @45530 has 198 MA's), (Start: 23 @45536 has 5 MA's), (Start: 24 @45542 has 1 MA's), (30, 45650),

Gene: Inventum\_77 Start: 48218, Stop: 48412, Start Num: 22

Candidate Starts for Inventum\_77:

(15, 48179), (Start: 21 @48206 has 2 MA's), (Start: 22 @48218 has 198 MA's), (Start: 23 @48224 has 5 MA's), (27, 48266), (30, 48338), (31, 48356),

Gene: IrishSherpFalk\_78 Start: 48590, Stop: 48784, Start Num: 22

Candidate Starts for IrishSherpFalk\_78:

(19, 48569), (Start: 22 @48590 has 198 MA's), (Start: 23 @48596 has 5 MA's), (Start: 24 @48602 has 1 MA's),

Gene: Jabbawokkie\_87 Start: 46718, Stop: 46912, Start Num: 22

Candidate Starts for Jabbawokkie\_87:

(8, 46661), (Start: 22 @46718 has 198 MA's), (Start: 23 @46724 has 5 MA's), (Start: 24 @46730 has 1 MA's),

Gene: JalFarm20\_86 Start: 48804, Stop: 48998, Start Num: 22

Candidate Starts for JalFarm20\_86:

(8, 48747), (Start: 22 @48804 has 198 MA's), (Start: 23 @48810 has 5 MA's), (Start: 24 @48816 has 1 MA's), (29, 48915),

Gene: James\_78 Start: 49339, Stop: 49533, Start Num: 22

Candidate Starts for James\_78:

(Start: 22 @49339 has 198 MA's), (Start: 23 @49345 has 5 MA's), (Start: 24 @49351 has 1 MA's),

Gene: Jarcob\_77 Start: 48936, Stop: 49130, Start Num: 22

Candidate Starts for Jarcob\_77:  
(Start: 22 @48936 has 198 MA's), (Start: 23 @48942 has 5 MA's), (Start: 24 @48948 has 1 MA's),

Gene: Jinglebell\_82 Start: 48469, Stop: 48663, Start Num: 22  
Candidate Starts for Jinglebell\_82:  
(Start: 22 @48469 has 198 MA's), (Start: 23 @48475 has 5 MA's), (Start: 24 @48481 has 1 MA's),

Gene: Job42\_79 Start: 51003, Stop: 51203, Start Num: 22  
Candidate Starts for Job42\_79:  
(10, 50952), (18, 50982), (Start: 22 @51003 has 198 MA's), (Start: 23 @51009 has 5 MA's), (27, 51051),

Gene: JoeyJr\_79 Start: 49207, Stop: 49401, Start Num: 22  
Candidate Starts for JoeyJr\_79:  
(15, 49168), (Start: 21 @49195 has 2 MA's), (Start: 22 @49207 has 198 MA's), (Start: 23 @49213 has 5 MA's), (27, 49255), (30, 49327), (31, 49345),

Gene: Juice456\_74 Start: 46952, Stop: 47146, Start Num: 22  
Candidate Starts for Juice456\_74:  
(15, 46913), (Start: 21 @46940 has 2 MA's), (Start: 22 @46952 has 198 MA's), (Start: 23 @46958 has 5 MA's), (Start: 24 @46964 has 1 MA's),

Gene: Juniper1\_76 Start: 47591, Stop: 47791, Start Num: 22  
Candidate Starts for Juniper1\_76:  
(9, 47531), (Start: 22 @47591 has 198 MA's), (Start: 23 @47597 has 5 MA's),

Gene: Karhdo\_76 Start: 46840, Stop: 47034, Start Num: 22  
Candidate Starts for Karhdo\_76:  
(15, 46801), (Start: 21 @46828 has 2 MA's), (Start: 22 @46840 has 198 MA's), (Start: 23 @46846 has 5 MA's), (Start: 24 @46852 has 1 MA's), (27, 46888),

Gene: Kersh\_79 Start: 50026, Stop: 50220, Start Num: 22  
Candidate Starts for Kersh\_79:  
(15, 49987), (Start: 21 @50014 has 2 MA's), (Start: 22 @50026 has 198 MA's), (Start: 23 @50032 has 5 MA's), (Start: 24 @50038 has 1 MA's), (27, 50074),

Gene: Kimberlium\_77 Start: 47081, Stop: 47275, Start Num: 22  
Candidate Starts for Kimberlium\_77:  
(15, 47042), (Start: 21 @47069 has 2 MA's), (Start: 22 @47081 has 198 MA's), (Start: 23 @47087 has 5 MA's), (Start: 24 @47093 has 1 MA's),

Gene: KingMidas\_78 Start: 48441, Stop: 48635, Start Num: 22  
Candidate Starts for KingMidas\_78:  
(10, 48390), (19, 48420), (Start: 22 @48441 has 198 MA's), (Start: 23 @48447 has 5 MA's), (27, 48489), (29, 48552),

Gene: Kingsley\_81 Start: 50278, Stop: 50472, Start Num: 22  
Candidate Starts for Kingsley\_81:  
(19, 50257), (Start: 22 @50278 has 198 MA's), (Start: 23 @50284 has 5 MA's), (Start: 24 @50290 has 1 MA's), (29, 50389),

Gene: Koella\_69 Start: 43838, Stop: 44032, Start Num: 22  
Candidate Starts for Koella\_69:



(15, 43799), (Start: 21 @43826 has 2 MA's), (Start: 22 @43838 has 198 MA's), (Start: 23 @43844 has 5 MA's), (Start: 24 @43850 has 1 MA's), (27, 43886),

Gene: Krakatau\_73 Start: 44496, Stop: 44690, Start Num: 22

Candidate Starts for Krakatau\_73:

(15, 44457), (Start: 21 @44484 has 2 MA's), (Start: 22 @44496 has 198 MA's), (Start: 23 @44502 has 5 MA's), (Start: 24 @44508 has 1 MA's), (29, 44607),

Gene: KristaRAM\_76 Start: 47138, Stop: 47332, Start Num: 22

Candidate Starts for KristaRAM\_76:

(5, 47045), (12, 47087), (Start: 21 @47126 has 2 MA's), (Start: 22 @47138 has 198 MA's), (Start: 23 @47144 has 5 MA's), (Start: 24 @47150 has 1 MA's),

Gene: LastJedi\_69 Start: 46413, Stop: 46607, Start Num: 22

Candidate Starts for LastJedi\_69:

(15, 46374), (Start: 21 @46401 has 2 MA's), (Start: 22 @46413 has 198 MA's), (Start: 23 @46419 has 5 MA's), (Start: 24 @46425 has 1 MA's), (27, 46461),

Gene: Latretium\_74 Start: 45801, Stop: 45995, Start Num: 22

Candidate Starts for Latretium\_74:

(Start: 22 @45801 has 198 MA's), (Start: 23 @45807 has 5 MA's), (27, 45849),

Gene: Leozinho\_77 Start: 45874, Stop: 46068, Start Num: 22

Candidate Starts for Leozinho\_77:

(4, 45685), (Start: 22 @45874 has 198 MA's), (Start: 23 @45880 has 5 MA's), (27, 45922),

Gene: Leperchaun\_77 Start: 48441, Stop: 48635, Start Num: 22

Candidate Starts for Leperchaun\_77:

(15, 48402), (Start: 21 @48429 has 2 MA's), (Start: 22 @48441 has 198 MA's), (Start: 23 @48447 has 5 MA's), (27, 48489), (30, 48561), (31, 48579),

Gene: LilMoolah\_76 Start: 47994, Stop: 48188, Start Num: 22

Candidate Starts for LilMoolah\_76:

(7, 47934), (Start: 22 @47994 has 198 MA's), (Start: 23 @48000 has 5 MA's), (27, 48042),

Gene: LittleShirley\_84 Start: 48939, Stop: 49118, Start Num: 25

Candidate Starts for LittleShirley\_84:

(Start: 25 @48939 has 8 MA's),

Gene: Lizziana\_82 Start: 49662, Stop: 49856, Start Num: 22

Candidate Starts for Lizziana\_82:

(Start: 22 @49662 has 198 MA's), (Start: 23 @49668 has 5 MA's), (Start: 24 @49674 has 1 MA's),

Gene: Llama\_82 Start: 48325, Stop: 48519, Start Num: 22

Candidate Starts for Llama\_82:

(Start: 22 @48325 has 198 MA's), (Start: 23 @48331 has 5 MA's), (Start: 24 @48337 has 1 MA's),

Gene: Llij\_72 Start: 45284, Stop: 45478, Start Num: 22

Candidate Starts for Llij\_72:

(10, 45233), (19, 45263), (Start: 22 @45284 has 198 MA's), (Start: 23 @45290 has 5 MA's), (27, 45332),

Gene: Lorde\_76 Start: 44571, Stop: 44765, Start Num: 22

Candidate Starts for Lorde\_76:  
(10, 44520), (19, 44550), (Start: 22 @44571 has 198 MA's), (Start: 23 @44577 has 5 MA's), (27, 44619),

Gene: LunaBlu\_80 Start: 48426, Stop: 48626, Start Num: 22  
Candidate Starts for LunaBlu\_80:  
(Start: 22 @48426 has 198 MA's), (Start: 23 @48432 has 5 MA's), (29, 48537),

Gene: LunaStella\_77 Start: 47635, Stop: 47829, Start Num: 22  
Candidate Starts for LunaStella\_77:  
(Start: 22 @47635 has 198 MA's), (Start: 23 @47641 has 5 MA's), (27, 47683),

Gene: MadMen\_75 Start: 46684, Stop: 46878, Start Num: 22  
Candidate Starts for MadMen\_75:  
(15, 46645), (Start: 21 @46672 has 2 MA's), (Start: 22 @46684 has 198 MA's), (Start: 23 @46690 has 5 MA's), (Start: 24 @46696 has 1 MA's), (27, 46732),

Gene: Madiba\_82 Start: 49507, Stop: 49707, Start Num: 22  
Candidate Starts for Madiba\_82:  
(9, 49447), (Start: 22 @49507 has 198 MA's), (Start: 23 @49513 has 5 MA's), (27, 49555), (31, 49645),

Gene: Mahavrat\_74 Start: 45799, Stop: 45999, Start Num: 22  
Candidate Starts for Mahavrat\_74:  
(9, 45739), (Start: 22 @45799 has 198 MA's), (Start: 23 @45805 has 5 MA's),

Gene: Mandlovu\_73 Start: 45558, Stop: 45752, Start Num: 22  
Candidate Starts for Mandlovu\_73:  
(19, 45537), (Start: 22 @45558 has 198 MA's), (Start: 23 @45564 has 5 MA's), (Start: 24 @45570 has 1 MA's), (29, 45669),

Gene: Mantra\_75 Start: 47635, Stop: 47823, Start Num: 23  
Candidate Starts for Mantra\_75:  
(Start: 23 @47635 has 5 MA's), (27, 47677),

Gene: Maravista\_79 Start: 50796, Stop: 50978, Start Num: 24  
Candidate Starts for Maravista\_79:  
(15, 50745), (Start: 21 @50772 has 2 MA's), (Start: 22 @50784 has 198 MA's), (Start: 23 @50790 has 5 MA's), (Start: 24 @50796 has 1 MA's), (27, 50832),

Gene: Marker\_78 Start: 47091, Stop: 47291, Start Num: 22  
Candidate Starts for Marker\_78:  
(10, 47040), (18, 47070), (Start: 22 @47091 has 198 MA's), (Start: 23 @47097 has 5 MA's), (27, 47139),

Gene: Martik\_79 Start: 50085, Stop: 50279, Start Num: 22  
Candidate Starts for Martik\_79:  
(10, 50034), (19, 50064), (Start: 22 @50085 has 198 MA's), (Start: 23 @50091 has 5 MA's),

Gene: Mattes\_79 Start: 49339, Stop: 49533, Start Num: 22  
Candidate Starts for Mattes\_79:  
(Start: 22 @49339 has 198 MA's), (Start: 23 @49345 has 5 MA's), (Start: 24 @49351 has 1 MA's),

Gene: Melissauren88\_71 Start: 45359, Stop: 45553, Start Num: 22  
Candidate Starts for Melissauren88\_71:  
(15, 45320), (Start: 21 @45347 has 2 MA's), (Start: 22 @45359 has 198 MA's), (Start: 23 @45365 has 5 MA's), (Start: 24 @45371 has 1 MA's), (28, 45458), (29, 45470),

Gene: MilanaBonita\_71 Start: 46445, Stop: 46639, Start Num: 22  
Candidate Starts for MilanaBonita\_71:  
(8, 46388), (Start: 22 @46445 has 198 MA's), (Start: 23 @46451 has 5 MA's), (Start: 24 @46457 has 1 MA's), (29, 46556),

Gene: MilleniumForce\_78 Start: 48391, Stop: 48585, Start Num: 22  
Candidate Starts for MilleniumForce\_78:  
(Start: 22 @48391 has 198 MA's), (Start: 23 @48397 has 5 MA's), (Start: 24 @48403 has 1 MA's), (29, 48502),

Gene: MinionDave\_73 Start: 47526, Stop: 47720, Start Num: 22  
Candidate Starts for MinionDave\_73:  
(19, 47505), (Start: 22 @47526 has 198 MA's), (Start: 23 @47532 has 5 MA's), (27, 47574),

Gene: Minnie\_75 Start: 49817, Stop: 50011, Start Num: 22  
Candidate Starts for Minnie\_75:  
(15, 49778), (Start: 21 @49805 has 2 MA's), (Start: 22 @49817 has 198 MA's), (Start: 23 @49823 has 5 MA's), (Start: 24 @49829 has 1 MA's), (28, 49916), (29, 49928),

Gene: MisterCuddles\_75 Start: 48056, Stop: 48250, Start Num: 22  
Candidate Starts for MisterCuddles\_75:  
(6, 47963), (13, 48011), (16, 48017), (17, 48026), (Start: 22 @48056 has 198 MA's), (Start: 23 @48062 has 5 MA's), (Start: 24 @48068 has 1 MA's), (28, 48155), (29, 48167),

Gene: Modragons\_80 Start: 48313, Stop: 48507, Start Num: 22  
Candidate Starts for Modragons\_80:  
(Start: 22 @48313 has 198 MA's), (Start: 23 @48319 has 5 MA's), (Start: 24 @48325 has 1 MA's),

Gene: Moonbeam\_79 Start: 48632, Stop: 48826, Start Num: 22  
Candidate Starts for Moonbeam\_79:  
(Start: 21 @48620 has 2 MA's), (Start: 22 @48632 has 198 MA's), (Start: 23 @48638 has 5 MA's), (Start: 24 @48644 has 1 MA's),

Gene: Mova\_77 Start: 46925, Stop: 47119, Start Num: 22  
Candidate Starts for Mova\_77:  
(8, 46868), (Start: 22 @46925 has 198 MA's), (Start: 23 @46931 has 5 MA's), (Start: 24 @46937 has 1 MA's), (26, 46973),

Gene: Mozy\_84 Start: 47336, Stop: 47542, Start Num: 21  
Candidate Starts for Mozy\_84:  
(Start: 21 @47336 has 2 MA's), (Start: 22 @47348 has 198 MA's), (Start: 23 @47354 has 5 MA's), (Start: 24 @47360 has 1 MA's),

Gene: Ms6\_76 Start: 44008, Stop: 44208, Start Num: 22  
Candidate Starts for Ms6\_76:  
(9, 43951), (Start: 22 @44008 has 198 MA's), (Start: 23 @44014 has 5 MA's), (Start: 24 @44020 has 1 MA's), (29, 44119),

Gene: MulchExplorer\_80 Start: 47080, Stop: 47274, Start Num: 22  
Candidate Starts for MulchExplorer\_80:  
(15, 47041), (Start: 21 @47068 has 2 MA's), (Start: 22 @47080 has 198 MA's), (Start: 23 @47086 has 5 MA's), (Start: 24 @47092 has 1 MA's),

Gene: Mutaforma13\_84 Start: 49054, Stop: 49248, Start Num: 22  
Candidate Starts for Mutaforma13\_84:  
(10, 49003), (19, 49033), (Start: 22 @49054 has 198 MA's), (Start: 23 @49060 has 5 MA's), (27, 49102),

Gene: Nimbo\_71 Start: 47305, Stop: 47499, Start Num: 22  
Candidate Starts for Nimbo\_71:  
(15, 47266), (Start: 21 @47293 has 2 MA's), (Start: 22 @47305 has 198 MA's), (Start: 23 @47311 has 5 MA's), (27, 47353), (30, 47425), (31, 47443),

Gene: Nitzel\_72 Start: 45364, Stop: 45558, Start Num: 22  
Candidate Starts for Nitzel\_72:  
(Start: 21 @45352 has 2 MA's), (Start: 22 @45364 has 198 MA's), (Start: 23 @45370 has 5 MA's), (28, 45463), (29, 45475),

Gene: Nivrat\_74 Start: 47867, Stop: 48061, Start Num: 22  
Candidate Starts for Nivrat\_74:  
(7, 47807), (Start: 22 @47867 has 198 MA's), (Start: 23 @47873 has 5 MA's), (27, 47915),

Gene: NormanBulbieJr\_74 Start: 47852, Stop: 48046, Start Num: 22  
Candidate Starts for NormanBulbieJr\_74:  
(15, 47813), (Start: 21 @47840 has 2 MA's), (Start: 22 @47852 has 198 MA's), (Start: 23 @47858 has 5 MA's), (Start: 24 @47864 has 1 MA's), (27, 47900),

Gene: Ochi17\_81 Start: 47920, Stop: 48114, Start Num: 22  
Candidate Starts for Ochi17\_81:  
(Start: 22 @47920 has 198 MA's), (Start: 23 @47926 has 5 MA's), (Start: 24 @47932 has 1 MA's),

Gene: OfUltron\_83 Start: 48469, Stop: 48663, Start Num: 22  
Candidate Starts for OfUltron\_83:  
(Start: 22 @48469 has 198 MA's), (Start: 23 @48475 has 5 MA's), (Start: 24 @48481 has 1 MA's),

Gene: Ogopogo\_83 Start: 47640, Stop: 47834, Start Num: 22  
Candidate Starts for Ogopogo\_83:  
(19, 47619), (Start: 22 @47640 has 198 MA's), (Start: 23 @47646 has 5 MA's), (Start: 24 @47652 has 1 MA's), (29, 47751),

Gene: Oksu\_82 Start: 49980, Stop: 50174, Start Num: 22  
Candidate Starts for Oksu\_82:  
(15, 49941), (Start: 21 @49968 has 2 MA's), (Start: 22 @49980 has 198 MA's), (Start: 23 @49986 has 5 MA's), (Start: 24 @49992 has 1 MA's), (28, 50079),

Gene: OldBen\_76 Start: 48697, Stop: 48891, Start Num: 22  
Candidate Starts for OldBen\_76:  
(15, 48658), (Start: 21 @48685 has 2 MA's), (Start: 22 @48697 has 198 MA's), (Start: 23 @48703 has 5 MA's), (27, 48745), (30, 48817), (31, 48835),

Gene: OlympiaSaint\_77 Start: 48281, Stop: 48475, Start Num: 22

Candidate Starts for OlympiaSaint\_77:

(Start: 22 @48281 has 198 MA's), (Start: 23 @48287 has 5 MA's), (Start: 24 @48293 has 1 MA's),

Gene: Ovechkin\_80 Start: 48621, Stop: 48815, Start Num: 22

Candidate Starts for Ovechkin\_80:

(6, 48528), (13, 48576), (16, 48582), (17, 48591), (Start: 22 @48621 has 198 MA's), (Start: 23 @48627 has 5 MA's), (Start: 24 @48633 has 1 MA's), (29, 48732),

Gene: OwlsT2W\_79 Start: 47966, Stop: 48160, Start Num: 22

Candidate Starts for OwlsT2W\_79:

(Start: 22 @47966 has 198 MA's), (Start: 23 @47972 has 5 MA's), (Start: 24 @47978 has 1 MA's),

Gene: PHappiness\_79 Start: 49526, Stop: 49720, Start Num: 22

Candidate Starts for PHappiness\_79:

(15, 49487), (Start: 21 @49514 has 2 MA's), (Start: 22 @49526 has 198 MA's), (Start: 23 @49532 has 5 MA's), (27, 49574), (30, 49646), (31, 49664),

Gene: PMC\_73 Start: 46741, Stop: 46935, Start Num: 22

Candidate Starts for PMC\_73:

(Start: 22 @46741 has 198 MA's), (Start: 23 @46747 has 5 MA's), (Start: 24 @46753 has 1 MA's), (28, 46840), (29, 46852),

Gene: Pacc40\_71 Start: 48080, Stop: 48280, Start Num: 22

Candidate Starts for Pacc40\_71:

(14, 48041), (20, 48068), (Start: 22 @48080 has 198 MA's), (Start: 23 @48086 has 5 MA's), (Start: 24 @48092 has 1 MA's), (31, 48218),

Gene: Phalconet\_74 Start: 46862, Stop: 47062, Start Num: 22

Candidate Starts for Phalconet\_74:

(9, 46805), (Start: 22 @46862 has 198 MA's), (Start: 23 @46868 has 5 MA's), (Start: 24 @46874 has 1 MA's), (29, 46973),

Gene: Phanphagia\_76 Start: 48074, Stop: 48268, Start Num: 22

Candidate Starts for Phanphagia\_76:

(19, 48053), (Start: 22 @48074 has 198 MA's), (Start: 23 @48080 has 5 MA's), (Start: 24 @48086 has 1 MA's), (29, 48185),

Gene: Phasih\_74 Start: 46843, Stop: 47037, Start Num: 22

Candidate Starts for Phasih\_74:

(19, 46822), (Start: 22 @46843 has 198 MA's), (Start: 23 @46849 has 5 MA's), (Start: 24 @46855 has 1 MA's),

Gene: Phatniss\_73 Start: 46379, Stop: 46573, Start Num: 22

Candidate Starts for Phatniss\_73:

(10, 46328), (19, 46358), (Start: 22 @46379 has 198 MA's), (Start: 23 @46385 has 5 MA's), (27, 46427),

Gene: PhesterPhotato\_81 Start: 48042, Stop: 48236, Start Num: 22

Candidate Starts for PhesterPhotato\_81:

(19, 48021), (Start: 22 @48042 has 198 MA's), (Start: 23 @48048 has 5 MA's), (Start: 24 @48054 has 1 MA's), (29, 48153),

Gene: Philus\_80 Start: 49980, Stop: 50174, Start Num: 22

Candidate Starts for Philus\_80:  
(Start: 22 @49980 has 198 MA's), (Start: 23 @49986 has 5 MA's), (Start: 24 @49992 has 1 MA's),

Gene: Pippy\_74 Start: 46980, Stop: 47174, Start Num: 22  
Candidate Starts for Pippy\_74:  
(10, 46929), (19, 46959), (Start: 22 @46980 has 198 MA's), (Start: 23 @46986 has 5 MA's), (27, 47028),

Gene: Plumbus\_79 Start: 45679, Stop: 45873, Start Num: 22  
Candidate Starts for Plumbus\_79:  
(Start: 22 @45679 has 198 MA's), (Start: 23 @45685 has 5 MA's), (Start: 24 @45691 has 1 MA's),

Gene: Poenanya\_82 Start: 49215, Stop: 49409, Start Num: 22  
Candidate Starts for Poenanya\_82:  
(10, 49164), (19, 49194), (Start: 22 @49215 has 198 MA's), (Start: 23 @49221 has 5 MA's), (27, 49263), (29, 49326),

Gene: Polka14\_83 Start: 50005, Stop: 50199, Start Num: 22  
Candidate Starts for Polka14\_83:  
(10, 49954), (19, 49984), (Start: 22 @50005 has 198 MA's), (Start: 23 @50011 has 5 MA's), (27, 50053), (29, 50116),

Gene: Pollywog\_78 Start: 48909, Stop: 49103, Start Num: 22  
Candidate Starts for Pollywog\_78:  
(7, 48849), (Start: 22 @48909 has 198 MA's), (Start: 23 @48915 has 5 MA's), (27, 48957),

Gene: PopTart\_68 Start: 44946, Stop: 45140, Start Num: 22  
Candidate Starts for PopTart\_68:  
(Start: 22 @44946 has 198 MA's), (Start: 23 @44952 has 5 MA's), (Start: 24 @44958 has 1 MA's),

Gene: Priscilla\_75 Start: 47950, Stop: 48144, Start Num: 22  
Candidate Starts for Priscilla\_75:  
(15, 47911), (Start: 21 @47938 has 2 MA's), (Start: 22 @47950 has 198 MA's), (Start: 23 @47956 has 5 MA's), (Start: 24 @47962 has 1 MA's), (27, 47998),

Gene: QuickMath\_76 Start: 47304, Stop: 47498, Start Num: 22  
Candidate Starts for QuickMath\_76:  
(15, 47265), (Start: 21 @47292 has 2 MA's), (Start: 22 @47304 has 198 MA's), (Start: 23 @47310 has 5 MA's), (Start: 24 @47316 has 1 MA's),

Gene: Quico\_87 Start: 50488, Stop: 50682, Start Num: 22  
Candidate Starts for Quico\_87:  
(19, 50467), (Start: 22 @50488 has 198 MA's), (Start: 23 @50494 has 5 MA's), (Start: 24 @50500 has 1 MA's), (27, 50536),

Gene: Radiance\_77 Start: 48660, Stop: 48854, Start Num: 22  
Candidate Starts for Radiance\_77:  
(19, 48639), (Start: 22 @48660 has 198 MA's), (Start: 23 @48666 has 5 MA's), (Start: 24 @48672 has 1 MA's),

Gene: Ramsey\_82 Start: 50142, Stop: 50336, Start Num: 22  
Candidate Starts for Ramsey\_82:

(19, 50121), (Start: 22 @50142 has 198 MA's), (Start: 23 @50148 has 5 MA's), (Start: 24 @50154 has 1 MA's),

Gene: RedBird\_80 Start: 49900, Stop: 50094, Start Num: 22

Candidate Starts for RedBird\_80:

(15, 49861), (Start: 21 @49888 has 2 MA's), (Start: 22 @49900 has 198 MA's), (Start: 23 @49906 has 5 MA's), (27, 49948), (30, 50020), (31, 50038),

Gene: Renaud18\_87 Start: 48934, Stop: 49128, Start Num: 22

Candidate Starts for Renaud18\_87:

(7, 48874), (Start: 22 @48934 has 198 MA's), (Start: 23 @48940 has 5 MA's), (27, 48982),

Gene: Rialto\_85 Start: 49531, Stop: 49725, Start Num: 22

Candidate Starts for Rialto\_85:

(Start: 21 @49519 has 2 MA's), (Start: 22 @49531 has 198 MA's), (Start: 23 @49537 has 5 MA's), (27, 49579),

Gene: Rita\_84 Start: 50330, Stop: 50530, Start Num: 22

Candidate Starts for Rita\_84:

(10, 50279), (20, 50318), (Start: 22 @50330 has 198 MA's), (Start: 23 @50336 has 5 MA's), (Start: 24 @50342 has 1 MA's), (27, 50378),

Gene: RitaG\_79 Start: 49328, Stop: 49522, Start Num: 22

Candidate Starts for RitaG\_79:

(15, 49289), (Start: 21 @49316 has 2 MA's), (Start: 22 @49328 has 198 MA's), (Start: 23 @49334 has 5 MA's), (27, 49376), (30, 49448), (31, 49466),

Gene: Rockne\_77 Start: 46753, Stop: 46947, Start Num: 22

Candidate Starts for Rockne\_77:

(Start: 22 @46753 has 198 MA's), (Start: 23 @46759 has 5 MA's), (Start: 24 @46765 has 1 MA's), (28, 46852), (29, 46864),

Gene: Royals2015\_84 Start: 48180, Stop: 48374, Start Num: 22

Candidate Starts for Royals2015\_84:

(8, 48120), (Start: 22 @48180 has 198 MA's), (Start: 23 @48186 has 5 MA's), (28, 48279), (29, 48291),

Gene: Ruby\_72 Start: 48057, Stop: 48251, Start Num: 22

Candidate Starts for Ruby\_72:

(6, 47964), (13, 48012), (16, 48018), (17, 48027), (Start: 22 @48057 has 198 MA's), (Start: 23 @48063 has 5 MA's), (Start: 24 @48069 has 1 MA's), (28, 48156), (29, 48168),

Gene: SG4\_75 Start: 46923, Stop: 47117, Start Num: 22

Candidate Starts for SG4\_75:

(19, 46902), (Start: 22 @46923 has 198 MA's), (Start: 23 @46929 has 5 MA's), (Start: 24 @46935 has 1 MA's), (29, 47034),

Gene: Saal\_77 Start: 49033, Stop: 49227, Start Num: 22

Candidate Starts for Saal\_77:

(Start: 22 @49033 has 198 MA's), (Start: 23 @49039 has 5 MA's), (Start: 24 @49045 has 1 MA's),

Gene: Sabbb\_79 Start: 46001, Stop: 46195, Start Num: 22

Candidate Starts for Sabbb\_79:

(15, 45962), (Start: 21 @45989 has 2 MA's), (Start: 22 @46001 has 198 MA's), (Start: 23 @46007 has 5 MA's), (Start: 24 @46013 has 1 MA's), (27, 46049),

Gene: Sandalphon\_73 Start: 47802, Stop: 47996, Start Num: 22

Candidate Starts for Sandalphon\_73:

(15, 47763), (Start: 21 @47790 has 2 MA's), (Start: 22 @47802 has 198 MA's), (Start: 23 @47808 has 5 MA's), (Start: 24 @47814 has 1 MA's), (28, 47901), (29, 47913),

Gene: Sarma624\_76 Start: 44752, Stop: 44946, Start Num: 22

Candidate Starts for Sarma624\_76:

(Start: 22 @44752 has 198 MA's), (Start: 23 @44758 has 5 MA's), (Start: 24 @44764 has 1 MA's), (28, 44851),

Gene: Sassafras\_80 Start: 48217, Stop: 48411, Start Num: 22

Candidate Starts for Sassafras\_80:

(15, 48178), (Start: 21 @48205 has 2 MA's), (Start: 22 @48217 has 198 MA's), (Start: 23 @48223 has 5 MA's), (27, 48265), (30, 48337), (31, 48355),

Gene: SassyB\_68 Start: 44946, Stop: 45140, Start Num: 22

Candidate Starts for SassyB\_68:

(Start: 22 @44946 has 198 MA's), (Start: 23 @44952 has 5 MA's), (Start: 24 @44958 has 1 MA's),

Gene: Scottish\_77 Start: 47696, Stop: 47890, Start Num: 22

Candidate Starts for Scottish\_77:

(10, 47645), (19, 47675), (Start: 22 @47696 has 198 MA's), (Start: 23 @47702 has 5 MA's), (27, 47744), (29, 47807),

Gene: Seabastian\_83 Start: 48470, Stop: 48664, Start Num: 22

Candidate Starts for Seabastian\_83:

(Start: 22 @48470 has 198 MA's), (Start: 23 @48476 has 5 MA's), (Start: 24 @48482 has 1 MA's),

Gene: Seagreen\_79 Start: 48958, Stop: 49152, Start Num: 22

Candidate Starts for Seagreen\_79:

(8, 48901), (Start: 22 @48958 has 198 MA's), (Start: 23 @48964 has 5 MA's), (Start: 24 @48970 has 1 MA's), (29, 49069),

Gene: Shauna1\_77 Start: 48330, Stop: 48518, Start Num: 23

Candidate Starts for Shauna1\_77:

(19, 48303), (Start: 22 @48324 has 198 MA's), (Start: 23 @48330 has 5 MA's), (Start: 24 @48336 has 1 MA's), (29, 48435),

Gene: ShiLan\_80 Start: 50778, Stop: 50978, Start Num: 22

Candidate Starts for ShiLan\_80:

(18, 50757), (Start: 22 @50778 has 198 MA's), (Start: 23 @50784 has 5 MA's), (Start: 24 @50790 has 1 MA's), (31, 50916),

Gene: ShowerHandel\_81 Start: 48533, Stop: 48733, Start Num: 22

Candidate Starts for ShowerHandel\_81:

(20, 48521), (Start: 22 @48533 has 198 MA's), (Start: 23 @48539 has 5 MA's), (27, 48581), (31, 48671),

Gene: ShroomBoi\_78 Start: 48199, Stop: 48393, Start Num: 22

Candidate Starts for ShroomBoi\_78:



(6, 48106), (13, 48154), (16, 48160), (17, 48169), (Start: 22 @48199 has 198 MA's), (Start: 23 @48205 has 5 MA's), (Start: 24 @48211 has 1 MA's), (29, 48310),

Gene: SiSi\_74 Start: 47154, Stop: 47348, Start Num: 22

Candidate Starts for SiSi\_74:

(Start: 21 @47142 has 2 MA's), (Start: 22 @47154 has 198 MA's), (Start: 23 @47160 has 5 MA's), (Start: 24 @47166 has 1 MA's), (26, 47202),

Gene: SimranZ1\_78 Start: 47379, Stop: 47573, Start Num: 22

Candidate Starts for SimranZ1\_78:

(6, 47286), (13, 47334), (16, 47340), (17, 47349), (Start: 22 @47379 has 198 MA's), (Start: 23 @47385 has 5 MA's), (Start: 24 @47391 has 1 MA's),

Gene: Soul22\_80 Start: 46482, Stop: 46676, Start Num: 22

Candidate Starts for Soul22\_80:

(Start: 22 @46482 has 198 MA's), (Start: 23 @46488 has 5 MA's), (Start: 24 @46494 has 1 MA's),

Gene: Sparkdehlily\_82 Start: 46721, Stop: 46921, Start Num: 22

Candidate Starts for Sparkdehlily\_82:

(10, 46670), (18, 46700), (Start: 22 @46721 has 198 MA's), (Start: 23 @46727 has 5 MA's), (27, 46769), (31, 46859),

Gene: Spartacus\_82 Start: 50350, Stop: 50550, Start Num: 22

Candidate Starts for Spartacus\_82:

(20, 50338), (Start: 22 @50350 has 198 MA's), (Start: 23 @50356 has 5 MA's), (27, 50398), (30, 50470), (31, 50488),

Gene: Spikelee\_84 Start: 50288, Stop: 50488, Start Num: 22

Candidate Starts for Spikelee\_84:

(14, 50249), (20, 50276), (Start: 22 @50288 has 198 MA's), (Start: 23 @50294 has 5 MA's), (Start: 24 @50300 has 1 MA's), (30, 50408),

Gene: Spoonbill\_75 Start: 46325, Stop: 46519, Start Num: 22

Candidate Starts for Spoonbill\_75:

(Start: 22 @46325 has 198 MA's), (Start: 23 @46331 has 5 MA's), (Start: 24 @46337 has 1 MA's), (29, 46436),

Gene: Squirty\_79 Start: 51431, Stop: 51625, Start Num: 22

Candidate Starts for Squirty\_79:

(15, 51392), (Start: 21 @51419 has 2 MA's), (Start: 22 @51431 has 198 MA's), (Start: 23 @51437 has 5 MA's), (Start: 24 @51443 has 1 MA's), (27, 51479), (29, 51542),

Gene: StAnnes\_80 Start: 49402, Stop: 49581, Start Num: 25

Candidate Starts for StAnnes\_80:

(1, 49117), (3, 49177), (Start: 25 @49402 has 8 MA's),

Gene: Stap\_72 Start: 45362, Stop: 45556, Start Num: 22

Candidate Starts for Stap\_72:

(15, 45323), (Start: 21 @45350 has 2 MA's), (Start: 22 @45362 has 198 MA's), (Start: 23 @45368 has 5 MA's), (Start: 24 @45374 has 1 MA's), (27, 45410), (29, 45473),

Gene: Starcevich\_78 Start: 49205, Stop: 49399, Start Num: 22

Candidate Starts for Starcevich\_78:

(8, 49148), (Start: 22 @49205 has 198 MA's), (Start: 23 @49211 has 5 MA's), (Start: 24 @49217 has 1 MA's),

Gene: Strokeseat\_73 Start: 45615, Stop: 45809, Start Num: 22

Candidate Starts for Strokeseat\_73:

(19, 45594), (Start: 22 @45615 has 198 MA's), (Start: 23 @45621 has 5 MA's), (Start: 24 @45627 has 1 MA's), (29, 45726),

Gene: SuperGrey\_78 Start: 50054, Stop: 50248, Start Num: 22

Candidate Starts for SuperGrey\_78:

(7, 49994), (Start: 22 @50054 has 198 MA's), (Start: 23 @50060 has 5 MA's), (27, 50102),

Gene: SwagPiggett\_81 Start: 50169, Stop: 50363, Start Num: 22

Candidate Starts for SwagPiggett\_81:

(15, 50130), (Start: 21 @50157 has 2 MA's), (Start: 22 @50169 has 198 MA's), (Start: 23 @50175 has 5 MA's), (Start: 24 @50181 has 1 MA's), (27, 50217),

Gene: TChen\_79 Start: 49586, Stop: 49780, Start Num: 22

Candidate Starts for TChen\_79:

(Start: 22 @49586 has 198 MA's), (Start: 23 @49592 has 5 MA's), (27, 49634),

Gene: TDanisky\_83 Start: 46721, Stop: 46921, Start Num: 22

Candidate Starts for TDanisky\_83:

(10, 46670), (18, 46700), (Start: 22 @46721 has 198 MA's), (Start: 23 @46727 has 5 MA's), (27, 46769), (31, 46859),

Gene: Taj\_84 Start: 49766, Stop: 49960, Start Num: 22

Candidate Starts for Taj\_84:

(8, 49709), (Start: 22 @49766 has 198 MA's), (Start: 23 @49772 has 5 MA's), (Start: 24 @49778 has 1 MA's), (29, 49877),

Gene: ThetaBob\_80 Start: 47770, Stop: 47964, Start Num: 22

Candidate Starts for ThetaBob\_80:

(Start: 22 @47770 has 198 MA's), (Start: 23 @47776 has 5 MA's), (Start: 24 @47782 has 1 MA's),

Gene: Tootsieroll\_76 Start: 49177, Stop: 49371, Start Num: 22

Candidate Starts for Tootsieroll\_76:

(10, 49126), (19, 49156), (Start: 22 @49177 has 198 MA's), (Start: 23 @49183 has 5 MA's), (27, 49225),

Gene: Totinger\_80 Start: 48016, Stop: 48195, Start Num: 25

Candidate Starts for Totinger\_80:

(Start: 25 @48016 has 8 MA's),

Gene: Tweety\_78 Start: 48767, Stop: 48961, Start Num: 22

Candidate Starts for Tweety\_78:

(5, 48674), (12, 48716), (Start: 21 @48755 has 2 MA's), (Start: 22 @48767 has 198 MA's), (Start: 23 @48773 has 5 MA's), (Start: 24 @48779 has 1 MA's), (28, 48866), (29, 48878),

Gene: UncleRicky\_75 Start: 46633, Stop: 46821, Start Num: 23

Candidate Starts for UncleRicky\_75:

(10, 46576), (19, 46606), (Start: 22 @46627 has 198 MA's), (Start: 23 @46633 has 5 MA's), (27, 46675),

Gene: VRedHorse\_78 Start: 45879, Stop: 46079, Start Num: 22  
Candidate Starts for VRedHorse\_78:  
(18, 45858), (Start: 22 @45879 has 198 MA's), (Start: 23 @45885 has 5 MA's), (Start: 24 @45891 has 1 MA's),

Gene: Velveteen\_72 Start: 44752, Stop: 44946, Start Num: 22  
Candidate Starts for Velveteen\_72:  
(Start: 22 @44752 has 198 MA's), (Start: 23 @44758 has 5 MA's), (Start: 24 @44764 has 1 MA's),  
(28, 44851),

Gene: Veteran\_70 Start: 47022, Stop: 47216, Start Num: 22  
Candidate Starts for Veteran\_70:  
(8, 46965), (Start: 22 @47022 has 198 MA's), (Start: 23 @47028 has 5 MA's), (Start: 24 @47034 has 1 MA's), (29, 47133),

Gene: Wachhund\_77 Start: 45808, Stop: 46002, Start Num: 22  
Candidate Starts for Wachhund\_77:  
(Start: 22 @45808 has 198 MA's), (Start: 23 @45814 has 5 MA's), (28, 45907),

Gene: Wee\_83 Start: 49842, Stop: 50036, Start Num: 22  
Candidate Starts for Wee\_83:  
(8, 49785), (Start: 22 @49842 has 198 MA's), (Start: 23 @49848 has 5 MA's), (Start: 24 @49854 has 1 MA's), (29, 49953),

Gene: Whatsapiecost\_72 Start: 43662, Stop: 43856, Start Num: 22  
Candidate Starts for Whatsapiecost\_72:  
(19, 43641), (Start: 22 @43662 has 198 MA's), (Start: 23 @43668 has 5 MA's), (Start: 24 @43674 has 1 MA's), (29, 43773),

Gene: Whouxphf\_74 Start: 47939, Stop: 48133, Start Num: 22  
Candidate Starts for Whouxphf\_74:  
(11, 47888), (Start: 21 @47927 has 2 MA's), (Start: 22 @47939 has 198 MA's), (Start: 23 @47945 has 5 MA's), (Start: 24 @47951 has 1 MA's), (27, 47987),

Gene: XFactor\_73 Start: 47232, Stop: 47426, Start Num: 22  
Candidate Starts for XFactor\_73:  
(11, 47181), (Start: 21 @47220 has 2 MA's), (Start: 22 @47232 has 198 MA's), (Start: 23 @47238 has 5 MA's), (Start: 24 @47244 has 1 MA's), (27, 47280),

Gene: Yoshi\_91 Start: 49208, Stop: 49408, Start Num: 22  
Candidate Starts for Yoshi\_91:  
(14, 49169), (20, 49196), (Start: 22 @49208 has 198 MA's), (Start: 23 @49214 has 5 MA's), (27, 49256), (30, 49328), (31, 49346),

Gene: Zapner\_86 Start: 46812, Stop: 47006, Start Num: 22  
Candidate Starts for Zapner\_86:  
(8, 46755), (Start: 22 @46812 has 198 MA's), (Start: 23 @46818 has 5 MA's), (Start: 24 @46824 has 1 MA's),

Gene: Zerg\_76 Start: 47879, Stop: 48073, Start Num: 22  
Candidate Starts for Zerg\_76:  
(7, 47819), (Start: 22 @47879 has 198 MA's), (Start: 23 @47885 has 5 MA's), (27, 47927),

Gene: Zizzle\_85 Start: 50965, Stop: 51150, Start Num: 25

Candidate Starts for Zizzle\_85:

(Start: 23 @50956 has 5 MA's), (Start: 25 @50965 has 8 MA's), (31, 51088),