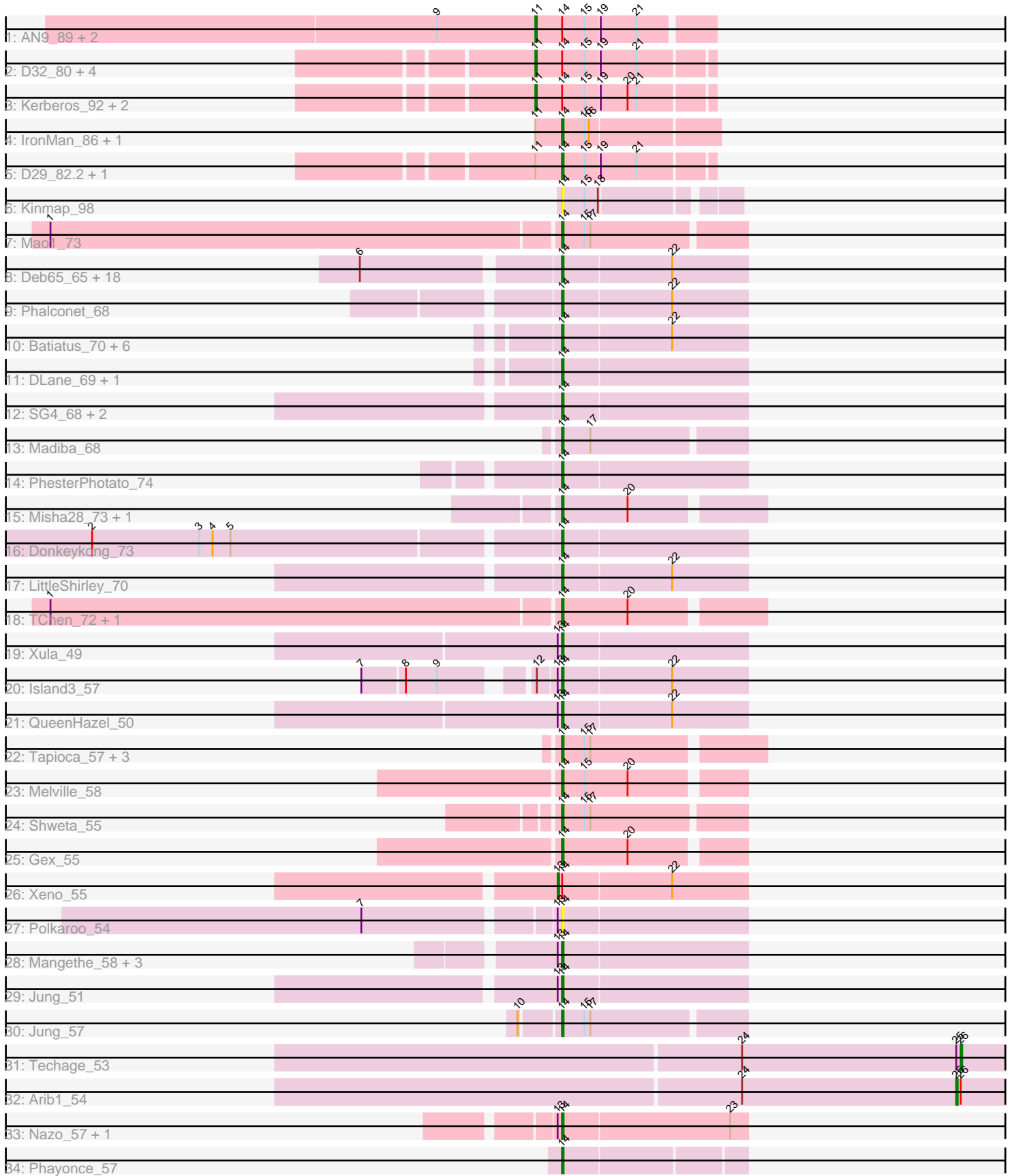


Pham 216096



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 216096 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216096 has 80 members, 5 are drafts.

Phages represented in each track:

- Track 1 : AN9\_89, VC3\_88, ANI8\_89
- Track 2 : D32\_80, Travvers\_92, Tomathan\_92, Naji\_81, DBQu4n\_92
- Track 3 : Kerberos\_92, StarStuff\_92, Pomar16\_92
- Track 4 : IronMan\_86, Bactobuster\_81
- Track 5 : D29\_82.2, Duplo\_93
- Track 6 : Kinmap\_98
- Track 7 : Mao1\_73
- Track 8 : Deb65\_65, Dorothy\_73, Geralt\_65, JoeyJr\_72, Daenerys\_71, PHappiness\_72, Inventum\_70, RedBird\_73, RitaG\_72, Doomphist\_75, Poenanya\_75, Scottish\_70, Sassafras\_73, Polka14\_76, Leperchaun\_70, OldBen\_69, Empress\_70, KingMidas\_71, Nimbo\_64
- Track 9 : Phalconet\_68
- Track 10 : Batiatus\_70, Ovechkin\_74, Kingsley\_75, Babsiella\_59, Brushbloom\_79, Quico\_81, Florinda\_84
- Track 11 : DLane\_69, Ms6\_70
- Track 12 : SG4\_68, Hegedechwinu\_71, StAnnes\_69
- Track 13 : Madiba\_68
- Track 14 : PhesterPhotato\_74
- Track 15 : Misha28\_73, TootsiePop\_73
- Track 16 : Donkeykong\_73
- Track 17 : LittleShirley\_70
- Track 18 : TChen\_72, LunaStella\_70
- Track 19 : Xula\_49
- Track 20 : Island3\_57
- Track 21 : QueenHazel\_50
- Track 22 : Tapioca\_57, Andies\_53, BuzzLyseyear\_73, BodEinwohner17\_71
- Track 23 : Melville\_58
- Track 24 : Shweta\_55
- Track 25 : Gex\_55
- Track 26 : Xen0\_55
- Track 27 : Polkaroo\_54
- Track 28 : Mangethe\_58, Zilizebeth\_58, Majeke\_58, Phegasus\_58
- Track 29 : Jung\_51
- Track 30 : Jung\_57
- Track 31 : Techage\_53
- Track 32 : Arib1\_54
- Track 33 : Nazo\_57, BigNuz\_56

- Track 34 : Phayonce\_57

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

The start number called the most often in the published annotations is 14, it was called in 62 of the 75 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Andies\_53, Babsiella\_59, Bactobuster\_81, Batiatus\_70, BigNuz\_56, BodEinwohner17\_71, Brushbloom\_79, BuzzLyseyear\_73, D29\_82.2, DLane\_69, Daenerys\_71, Deb65\_65, Donkeykong\_73, Doomphist\_75, Dorothy\_73, Duplo\_93, Empress\_70, Florinda\_84, Geralt\_65, Gex\_55, Hegedechwinu\_71, Inventum\_70, IronMan\_86, Island3\_57, JoeyJr\_72, Jung\_51, Jung\_57, KingMidas\_71, Kingsley\_75, Kinmap\_98, Leperchaun\_70, LittleShirley\_70, LunaStella\_70, Madiba\_68, Majeke\_58, Mangethe\_58, Mao1\_73, Melville\_58, Misha28\_73, Ms6\_70, Nazo\_57, Nimbo\_64, OldBen\_69, Ovechkin\_74, PHappiness\_72, Phalconet\_68, Phayonce\_57, Phegasus\_58, PhesterPhotato\_74, Poenanya\_75, Polka14\_76, Polkaroo\_54, QueenHazel\_50, Quico\_81, RedBird\_73, RitaG\_72, SG4\_68, Sassafras\_73, Scottish\_70, Shweta\_55, StAnnes\_69, TChen\_72, Tapioca\_57, TootsiePop\_73, Xula\_49, Zilizebeth\_58,

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

- AN9\_89, ANI8\_89, D32\_80, DBQu4n\_92, Kerberos\_92, Naji\_81, Pomar16\_92, StarStuff\_92, Tomathan\_92, Travvers\_92, VC3\_88, Xeno\_55,

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

- Arib1\_54, Techage\_53,

### **Summary by start number:**

Start 11:

- Found in 15 of 80 ( 18.8% ) of genes in pham
- Manual Annotations of this start: 10 of 75
- Called 73.3% of time when present
- Phage (with cluster) where this start called: AN9\_89 (A2), ANI8\_89 (A2), D32\_80 (A2), DBQu4n\_92 (A2), Kerberos\_92 (A2), Naji\_81 (A2), Pomar16\_92 (A2), StarStuff\_92 (A2), Tomathan\_92 (A2), Travvers\_92 (A2), VC3\_88 (A2),

Start 13:

- Found in 12 of 80 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Xeno\_55 (N),

Start 14:

- Found in 78 of 80 ( 97.5% ) of genes in pham
- Manual Annotations of this start: 62 of 75
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Andies\_53 (N), Babsiella\_59 (I1), Bactobuster\_81 (A2), Batiatus\_70 (F1), BigNuz\_56 (P4), BodEinwohner17\_71 (F1),

Brushbloom\_79 (F1), BuzzLyseyear\_73 (F1), D29\_82.2 (A2), DLane\_69 (F1), Daenerys\_71 (F1), Deb65\_65 (F1), Donkeykong\_73 (F1), Doomphist\_75 (F1), Dorothy\_73 (F1), Duplo\_93 (A2), Empress\_70 (F1), Florinda\_84 (F1), Geralt\_65 (F1), Gex\_55 (N), Hegedechwinu\_71 (F1), Inventum\_70 (F1), IronMan\_86 (A2), Island3\_57 (I1), JoeyJr\_72 (F1), Jung\_51 (P1), Jung\_57 (P1), KingMidas\_71 (F1), Kingsley\_75 (F1), Kinmap\_98 (A21), Leperchaun\_70 (F1), LittleShirley\_70 (F1), LunaStella\_70 (F4), Madiba\_68 (F1), Majeke\_58 (P1), Mangethe\_58 (P1), Mao1\_73 (AD), Melville\_58 (N), Misha28\_73 (F1), Ms6\_70 (F1), Nazo\_57 (P4), Nimbo\_64 (F1), OldBen\_69 (F1), Ovechkin\_74 (F1), PHappiness\_72 (F1), Phalconet\_68 (F1), Phayonce\_57 (P5), Phegasus\_58 (P1), PhesterPhotato\_74 (F1), Poenanya\_75 (F1), Polka14\_76 (F1), Polkaroo\_54 (P1), QueenHazel\_50 (I1), Quico\_81 (F1), RedBird\_73 (F1), RitaG\_72 (F1), SG4\_68 (F1), Sassafras\_73 (F1), Scottish\_70 (F1), Shweta\_55 (N), StAnnes\_69 (F1), TChen\_72 (F4), Tapioca\_57 (N), TootsiePop\_73 (F1), Xula\_49 (I1), Zilizebeth\_58 (P1),

Start 25:

- Found in 2 of 80 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Arib1\_54 (P1),

Start 26:

- Found in 2 of 80 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Techage\_53 (P1),

### Summary by clusters:

There are 10 clusters represented in this pham: F1, P1, F4, AD, P4, P5, I1, N, A2, A21,

Info for manual annotations of cluster A2:

- Start number 11 was manually annotated 10 times for cluster A2.
- Start number 14 was manually annotated 4 times for cluster A2.

Info for manual annotations of cluster AD:

- Start number 14 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster F1:

- Start number 14 was manually annotated 37 times for cluster F1.

Info for manual annotations of cluster F4:

- Start number 14 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster I1:

- Start number 14 was manually annotated 4 times for cluster I1.

Info for manual annotations of cluster N:

- Start number 13 was manually annotated 1 time for cluster N.
- Start number 14 was manually annotated 5 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 14 was manually annotated 6 times for cluster P1.
- Start number 25 was manually annotated 1 time for cluster P1.
- Start number 26 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P4:

- Start number 14 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 14 was manually annotated 1 time for cluster P5.

**Gene Information:**

Gene: AN9\_89 Start: 48160, Stop: 48047, Start Num: 11

Candidate Starts for AN9\_89:

(9, 48226), (Start: 11 @48160 has 10 MA's), (Start: 14 @48142 has 62 MA's), (15, 48127), (19, 48118), (21, 48094),

Gene: ANI8\_89 Start: 48160, Stop: 48047, Start Num: 11

Candidate Starts for ANI8\_89:

(9, 48226), (Start: 11 @48160 has 10 MA's), (Start: 14 @48142 has 62 MA's), (15, 48127), (19, 48118), (21, 48094),

Gene: Andies\_53 Start: 38224, Stop: 38349, Start Num: 14

Candidate Starts for Andies\_53:

(Start: 14 @38224 has 62 MA's), (15, 38239), (17, 38242),

Gene: Arib1\_54 Start: 36196, Stop: 36321, Start Num: 25

Candidate Starts for Arib1\_54:

(24, 36052), (Start: 25 @36196 has 1 MA's), (Start: 26 @36199 has 1 MA's),

Gene: Babsiella\_59 Start: 39433, Stop: 39555, Start Num: 14

Candidate Starts for Babsiella\_59:

(Start: 14 @39433 has 62 MA's), (22, 39505),

Gene: Bactobuster\_81 Start: 48864, Stop: 48763, Start Num: 14

Candidate Starts for Bactobuster\_81:

(Start: 11 @48882 has 10 MA's), (Start: 14 @48864 has 62 MA's), (15, 48849), (16, 48846),

Gene: Batiatus\_70 Start: 44968, Stop: 45090, Start Num: 14

Candidate Starts for Batiatus\_70:

(Start: 14 @44968 has 62 MA's), (22, 45040),

Gene: BigNuz\_56 Start: 39756, Stop: 39878, Start Num: 14

Candidate Starts for BigNuz\_56:

(Start: 13 @39753 has 1 MA's), (Start: 14 @39756 has 62 MA's), (23, 39867),

Gene: BodEinwohner17\_71 Start: 45997, Stop: 46113, Start Num: 14

Candidate Starts for BodEinwohner17\_71:

(Start: 14 @45997 has 62 MA's), (15, 46012), (17, 46015),

Gene: Brushbloom\_79 Start: 45900, Stop: 46022, Start Num: 14  
Candidate Starts for Brushbloom\_79:  
(Start: 14 @45900 has 62 MA's), (22, 45972),

Gene: BuzzLyseyear\_73 Start: 47467, Stop: 47583, Start Num: 14  
Candidate Starts for BuzzLyseyear\_73:  
(Start: 14 @47467 has 62 MA's), (15, 47482), (17, 47485),

Gene: D29\_82.2 Start: 46114, Stop: 46019, Start Num: 14  
Candidate Starts for D29\_82.2:  
(Start: 11 @46132 has 10 MA's), (Start: 14 @46114 has 62 MA's), (15, 46099), (19, 46090), (21, 46066),

Gene: D32\_80 Start: 46132, Stop: 46019, Start Num: 11  
Candidate Starts for D32\_80:  
(Start: 11 @46132 has 10 MA's), (Start: 14 @46114 has 62 MA's), (15, 46099), (19, 46090), (21, 46066),

Gene: DBQu4n\_92 Start: 49747, Stop: 49634, Start Num: 11  
Candidate Starts for DBQu4n\_92:  
(Start: 11 @49747 has 10 MA's), (Start: 14 @49729 has 62 MA's), (15, 49714), (19, 49705), (21, 49681),

Gene: DLane\_69 Start: 44902, Stop: 45024, Start Num: 14  
Candidate Starts for DLane\_69:  
(Start: 14 @44902 has 62 MA's),

Gene: Daenerys\_71 Start: 46948, Stop: 47070, Start Num: 14  
Candidate Starts for Daenerys\_71:  
(6, 46825), (Start: 14 @46948 has 62 MA's), (22, 47020),

Gene: Deb65\_65 Start: 44669, Stop: 44791, Start Num: 14  
Candidate Starts for Deb65\_65:  
(6, 44546), (Start: 14 @44669 has 62 MA's), (22, 44741),

Gene: Donkeykong\_73 Start: 46520, Stop: 46642, Start Num: 14  
Candidate Starts for Donkeykong\_73:  
(2, 46217), (3, 46289), (4, 46298), (5, 46310), (Start: 14 @46520 has 62 MA's),

Gene: Doomphist\_75 Start: 46761, Stop: 46883, Start Num: 14  
Candidate Starts for Doomphist\_75:  
(6, 46638), (Start: 14 @46761 has 62 MA's), (22, 46833),

Gene: Dorothy\_73 Start: 45386, Stop: 45508, Start Num: 14  
Candidate Starts for Dorothy\_73:  
(6, 45263), (Start: 14 @45386 has 62 MA's), (22, 45458),

Gene: Duplo\_93 Start: 49786, Stop: 49691, Start Num: 14  
Candidate Starts for Duplo\_93:  
(Start: 11 @49804 has 10 MA's), (Start: 14 @49786 has 62 MA's), (15, 49771), (19, 49762), (21, 49738),

Gene: Empress\_70 Start: 45572, Stop: 45694, Start Num: 14

Candidate Starts for Empress\_70:  
(6, 45449), (Start: 14 @45572 has 62 MA's), (22, 45644),

Gene: Florinda\_84 Start: 47608, Stop: 47730, Start Num: 14  
Candidate Starts for Florinda\_84:  
(Start: 14 @47608 has 62 MA's), (22, 47680),

Gene: Geralt\_65 Start: 44668, Stop: 44790, Start Num: 14  
Candidate Starts for Geralt\_65:  
(6, 44545), (Start: 14 @44668 has 62 MA's), (22, 44740),

Gene: Gex\_55 Start: 36173, Stop: 36286, Start Num: 14  
Candidate Starts for Gex\_55:  
(Start: 14 @36173 has 62 MA's), (20, 36215),

Gene: Hegedechwinu\_71 Start: 42986, Stop: 43108, Start Num: 14  
Candidate Starts for Hegedechwinu\_71:  
(Start: 14 @42986 has 62 MA's),

Gene: Inventum\_70 Start: 45584, Stop: 45706, Start Num: 14  
Candidate Starts for Inventum\_70:  
(6, 45461), (Start: 14 @45584 has 62 MA's), (22, 45656),

Gene: IronMan\_86 Start: 50377, Stop: 50276, Start Num: 14  
Candidate Starts for IronMan\_86:  
(Start: 11 @50395 has 10 MA's), (Start: 14 @50377 has 62 MA's), (15, 50362), (16, 50359),

Gene: Island3\_57 Start: 38289, Stop: 38411, Start Num: 14  
Candidate Starts for Island3\_57:  
(7, 38178), (8, 38205), (9, 38226), (12, 38274), (Start: 13 @38286 has 1 MA's), (Start: 14 @38289 has 62 MA's), (22, 38361),

Gene: JoeyJr\_72 Start: 46573, Stop: 46695, Start Num: 14  
Candidate Starts for JoeyJr\_72:  
(6, 46450), (Start: 14 @46573 has 62 MA's), (22, 46645),

Gene: Jung\_51 Start: 35878, Stop: 36000, Start Num: 14  
Candidate Starts for Jung\_51:  
(Start: 13 @35875 has 1 MA's), (Start: 14 @35878 has 62 MA's),

Gene: Jung\_57 Start: 38107, Stop: 38223, Start Num: 14  
Candidate Starts for Jung\_57:  
(10, 38083), (Start: 14 @38107 has 62 MA's), (15, 38122), (17, 38125),

Gene: Kerberos\_92 Start: 49767, Stop: 49654, Start Num: 11  
Candidate Starts for Kerberos\_92:  
(Start: 11 @49767 has 10 MA's), (Start: 14 @49749 has 62 MA's), (15, 49734), (19, 49725), (20, 49707), (21, 49701),

Gene: KingMidas\_71 Start: 45987, Stop: 46109, Start Num: 14  
Candidate Starts for KingMidas\_71:  
(6, 45864), (Start: 14 @45987 has 62 MA's), (22, 46059),

Gene: Kingsley\_75 Start: 48363, Stop: 48485, Start Num: 14  
Candidate Starts for Kingsley\_75:  
(Start: 14 @48363 has 62 MA's), (22, 48435),

Gene: Kinmap\_98 Start: 49864, Stop: 49757, Start Num: 14  
Candidate Starts for Kinmap\_98:  
(Start: 14 @49864 has 62 MA's), (15, 49849), (18, 49840),

Gene: Leperchaun\_70 Start: 45807, Stop: 45929, Start Num: 14  
Candidate Starts for Leperchaun\_70:  
(6, 45684), (Start: 14 @45807 has 62 MA's), (22, 45879),

Gene: LittleShirley\_70 Start: 44567, Stop: 44689, Start Num: 14  
Candidate Starts for LittleShirley\_70:  
(Start: 14 @44567 has 62 MA's), (22, 44639),

Gene: LunaStella\_70 Start: 45241, Stop: 45366, Start Num: 14  
Candidate Starts for LunaStella\_70:  
(1, 44905), (Start: 14 @45241 has 62 MA's), (20, 45283),

Gene: Madiba\_68 Start: 44600, Stop: 44716, Start Num: 14  
Candidate Starts for Madiba\_68:  
(Start: 14 @44600 has 62 MA's), (17, 44618),

Gene: Majeke\_58 Start: 37716, Stop: 37838, Start Num: 14  
Candidate Starts for Majeke\_58:  
(Start: 13 @37713 has 1 MA's), (Start: 14 @37716 has 62 MA's),

Gene: Mangethe\_58 Start: 37716, Stop: 37838, Start Num: 14  
Candidate Starts for Mangethe\_58:  
(Start: 13 @37713 has 1 MA's), (Start: 14 @37716 has 62 MA's),

Gene: Mao1\_73 Start: 53391, Stop: 53507, Start Num: 14  
Candidate Starts for Mao1\_73:  
(1, 53055), (Start: 14 @53391 has 62 MA's), (15, 53406), (17, 53409),

Gene: Melville\_58 Start: 36158, Stop: 36271, Start Num: 14  
Candidate Starts for Melville\_58:  
(Start: 14 @36158 has 62 MA's), (15, 36173), (20, 36200),

Gene: Misha28\_73 Start: 45868, Stop: 45993, Start Num: 14  
Candidate Starts for Misha28\_73:  
(Start: 14 @45868 has 62 MA's), (20, 45910),

Gene: Ms6\_70 Start: 41131, Stop: 41253, Start Num: 14  
Candidate Starts for Ms6\_70:  
(Start: 14 @41131 has 62 MA's),

Gene: Naji\_81 Start: 46132, Stop: 46019, Start Num: 11  
Candidate Starts for Naji\_81:  
(Start: 11 @46132 has 10 MA's), (Start: 14 @46114 has 62 MA's), (15, 46099), (19, 46090), (21, 46066),



Gene: Nazo\_57 Start: 39956, Stop: 40078, Start Num: 14  
Candidate Starts for Nazo\_57:  
(Start: 13 @39953 has 1 MA's), (Start: 14 @39956 has 62 MA's), (23, 40067),

Gene: Nimbo\_64 Start: 44671, Stop: 44793, Start Num: 14  
Candidate Starts for Nimbo\_64:  
(6, 44548), (Start: 14 @44671 has 62 MA's), (22, 44743),

Gene: OldBen\_69 Start: 46063, Stop: 46185, Start Num: 14  
Candidate Starts for OldBen\_69:  
(6, 45940), (Start: 14 @46063 has 62 MA's), (22, 46135),

Gene: Ovechkin\_74 Start: 46191, Stop: 46313, Start Num: 14  
Candidate Starts for Ovechkin\_74:  
(Start: 14 @46191 has 62 MA's), (22, 46263),

Gene: PHappiness\_72 Start: 46892, Stop: 47014, Start Num: 14  
Candidate Starts for PHappiness\_72:  
(6, 46769), (Start: 14 @46892 has 62 MA's), (22, 46964),

Gene: Phalconet\_68 Start: 43304, Stop: 43426, Start Num: 14  
Candidate Starts for Phalconet\_68:  
(Start: 14 @43304 has 62 MA's), (22, 43376),

Gene: Phayonce\_57 Start: 40353, Stop: 40469, Start Num: 14  
Candidate Starts for Phayonce\_57:  
(Start: 14 @40353 has 62 MA's),

Gene: Phegasus\_58 Start: 37683, Stop: 37805, Start Num: 14  
Candidate Starts for Phegasus\_58:  
(Start: 13 @37680 has 1 MA's), (Start: 14 @37683 has 62 MA's),

Gene: PhesterPhotato\_74 Start: 45630, Stop: 45752, Start Num: 14  
Candidate Starts for PhesterPhotato\_74:  
(Start: 14 @45630 has 62 MA's),

Gene: Poenanya\_75 Start: 46761, Stop: 46883, Start Num: 14  
Candidate Starts for Poenanya\_75:  
(6, 46638), (Start: 14 @46761 has 62 MA's), (22, 46833),

Gene: Polka14\_76 Start: 47551, Stop: 47673, Start Num: 14  
Candidate Starts for Polka14\_76:  
(6, 47428), (Start: 14 @47551 has 62 MA's), (22, 47623),

Gene: Polkaroo\_54 Start: 37256, Stop: 37378, Start Num: 14  
Candidate Starts for Polkaroo\_54:  
(7, 37136), (Start: 13 @37253 has 1 MA's), (Start: 14 @37256 has 62 MA's),

Gene: Pomar16\_92 Start: 49840, Stop: 49727, Start Num: 11  
Candidate Starts for Pomar16\_92:  
(Start: 11 @49840 has 10 MA's), (Start: 14 @49822 has 62 MA's), (15, 49807), (19, 49798), (20, 49780), (21, 49774),

Gene: QueenHazel\_50 Start: 36087, Stop: 36209, Start Num: 14  
Candidate Starts for QueenHazel\_50:  
(Start: 13 @36084 has 1 MA's), (Start: 14 @36087 has 62 MA's), (22, 36159),

Gene: Quico\_81 Start: 47428, Stop: 47550, Start Num: 14  
Candidate Starts for Quico\_81:  
(Start: 14 @47428 has 62 MA's), (22, 47500),

Gene: RedBird\_73 Start: 45253, Stop: 45375, Start Num: 14  
Candidate Starts for RedBird\_73:  
(6, 45130), (Start: 14 @45253 has 62 MA's), (22, 45325),

Gene: RitaG\_72 Start: 46694, Stop: 46816, Start Num: 14  
Candidate Starts for RitaG\_72:  
(6, 46571), (Start: 14 @46694 has 62 MA's), (22, 46766),

Gene: SG4\_68 Start: 43359, Stop: 43481, Start Num: 14  
Candidate Starts for SG4\_68:  
(Start: 14 @43359 has 62 MA's),

Gene: Sassafras\_73 Start: 45583, Stop: 45705, Start Num: 14  
Candidate Starts for Sassafras\_73:  
(6, 45460), (Start: 14 @45583 has 62 MA's), (22, 45655),

Gene: Scottish\_70 Start: 45242, Stop: 45364, Start Num: 14  
Candidate Starts for Scottish\_70:  
(6, 45119), (Start: 14 @45242 has 62 MA's), (22, 45314),

Gene: Shweta\_55 Start: 36817, Stop: 36933, Start Num: 14  
Candidate Starts for Shweta\_55:  
(Start: 14 @36817 has 62 MA's), (15, 36832), (17, 36835),

Gene: StAnnes\_69 Start: 44436, Stop: 44558, Start Num: 14  
Candidate Starts for StAnnes\_69:  
(Start: 14 @44436 has 62 MA's),

Gene: StarStuff\_92 Start: 49802, Stop: 49689, Start Num: 11  
Candidate Starts for StarStuff\_92:  
(Start: 11 @49802 has 10 MA's), (Start: 14 @49784 has 62 MA's), (15, 49769), (19, 49760), (20, 49742), (21, 49736),

Gene: TChen\_72 Start: 47192, Stop: 47317, Start Num: 14  
Candidate Starts for TChen\_72:  
(1, 46856), (Start: 14 @47192 has 62 MA's), (20, 47234),

Gene: Tapioca\_57 Start: 38663, Stop: 38788, Start Num: 14  
Candidate Starts for Tapioca\_57:  
(Start: 14 @38663 has 62 MA's), (15, 38678), (17, 38681),

Gene: Techage\_53 Start: 36249, Stop: 36371, Start Num: 26  
Candidate Starts for Techage\_53:  
(24, 36102), (Start: 25 @36246 has 1 MA's), (Start: 26 @36249 has 1 MA's),

Gene: Tomathan\_92 Start: 49881, Stop: 49768, Start Num: 11

Candidate Starts for Tomathan\_92:

(Start: 11 @49881 has 10 MA's), (Start: 14 @49863 has 62 MA's), (15, 49848), (19, 49839), (21, 49815),

Gene: TootsiePop\_73 Start: 45868, Stop: 45993, Start Num: 14

Candidate Starts for TootsiePop\_73:

(Start: 14 @45868 has 62 MA's), (20, 45910),

Gene: Travvers\_92 Start: 49798, Stop: 49685, Start Num: 11

Candidate Starts for Travvers\_92:

(Start: 11 @49798 has 10 MA's), (Start: 14 @49780 has 62 MA's), (15, 49765), (19, 49756), (21, 49732),

Gene: VC3\_88 Start: 48160, Stop: 48047, Start Num: 11

Candidate Starts for VC3\_88:

(9, 48226), (Start: 11 @48160 has 10 MA's), (Start: 14 @48142 has 62 MA's), (15, 48127), (19, 48118), (21, 48094),

Gene: Xeno\_55 Start: 35530, Stop: 35655, Start Num: 13

Candidate Starts for Xeno\_55:

(Start: 13 @35530 has 1 MA's), (Start: 14 @35533 has 62 MA's), (22, 35605),

Gene: Xula\_49 Start: 35689, Stop: 35811, Start Num: 14

Candidate Starts for Xula\_49:

(Start: 13 @35686 has 1 MA's), (Start: 14 @35689 has 62 MA's),

Gene: Zilizebeth\_58 Start: 37707, Stop: 37829, Start Num: 14

Candidate Starts for Zilizebeth\_58:

(Start: 13 @37704 has 1 MA's), (Start: 14 @37707 has 62 MA's),