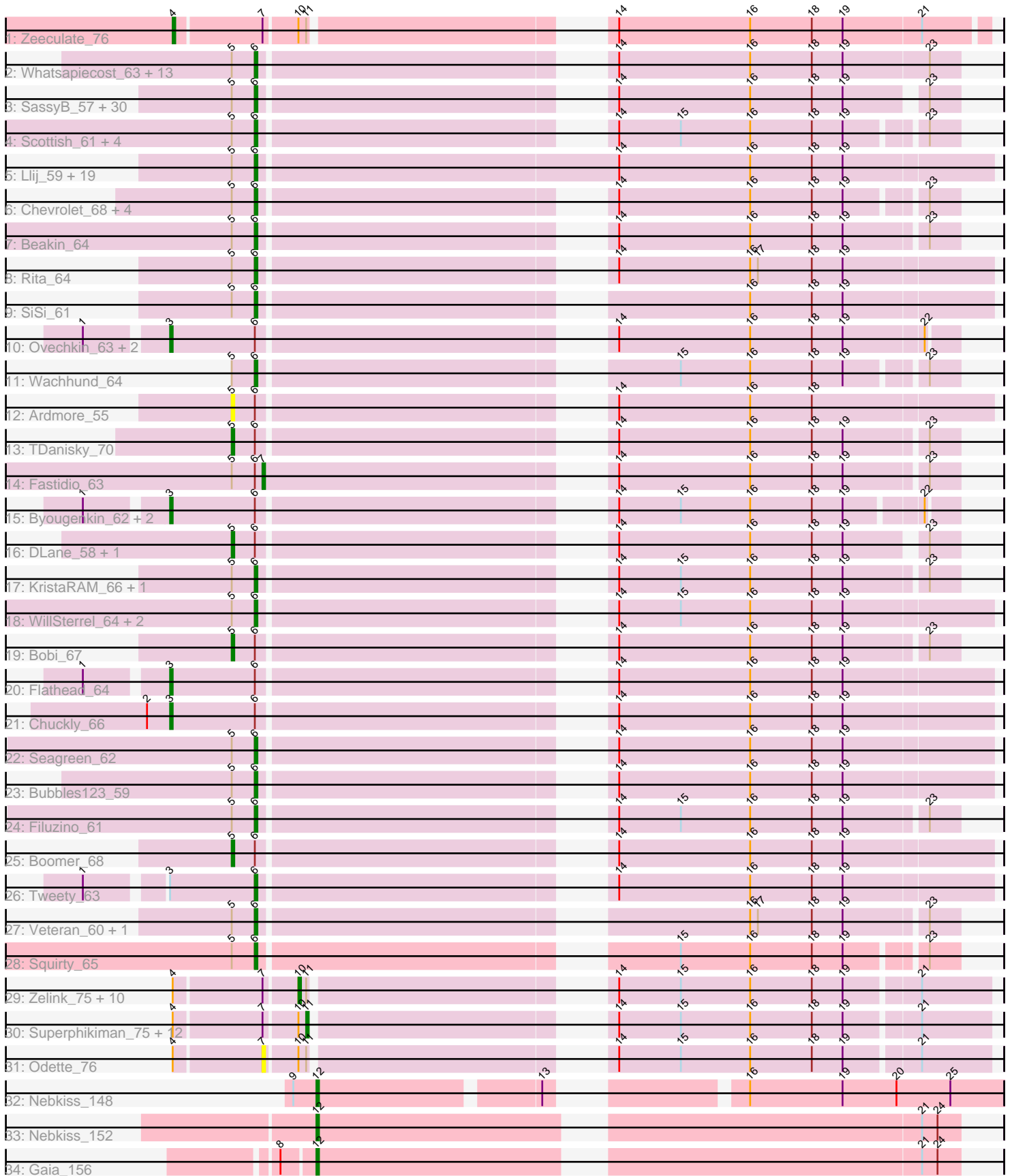


Pham 183569



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 183569 Report

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

Pham number 183569 has 135 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Zeeculate\_76
- Track 2 : Whatsapiecost\_63, Melissauren88\_61, Phanphagia\_59, Hamulus\_63, Jabbawokkie\_77, Girafales\_71, Akhila\_54, Zapner\_76, DotProduct\_58, Florinda\_74, Blarby\_75, Fruitloop\_59, Quico\_71, MilanaBonita\_53
- Track 3 : SassyB\_57, Taj\_67, Plumbus\_65, Strokeseat\_59, Kenuha5\_60, Wee\_67, DeadP\_69, Phalconet\_61, Totinger\_62, JalFarm20\_76, Juice456\_64, Leozinho\_62, Mozy\_72, Spikelee\_70, VRedHorse\_63, DosHalletts\_65, Mantra\_59, DillTech15\_60, LittleShirley\_62, Hlubikazi\_59, SuperGrey\_66, Batiatus\_61, CaptainTrips\_60, IMpilo\_59, Shauna1\_61, MilleniumForce\_66, ShroomBoi\_65, StAnnes\_61, PopTart\_57, Mandlovu\_59, Hades\_64
- Track 4 : Scottish\_61, Blexus\_61, Stap\_60, Polka14\_61, OldBen\_60
- Track 5 : Llij\_59, Donkeykong\_66, Ramsey\_62, SG4\_60, UncleRicky\_62, Poenanya\_63, XFactor\_61, DirtMcgirt\_62, Radiance\_62, Krakatau\_60, Alexphander\_67, Enby\_64, Dante\_64, Lorde\_63, Phatniss\_61, PMC\_60, Rockne\_64, Drago\_60, OwlsT2W\_63, Doomphist\_63
- Track 6 : Chevrolet\_68, ArcusAngelus\_65, Sparkdehlily\_70, TChen\_64, LunaStella\_62
- Track 7 : Beakin\_64
- Track 8 : Rita\_64
- Track 9 : SiSi\_61
- Track 10 : Ovechkin\_63, Ms6\_59, Bipolar\_62
- Track 11 : Wachhund\_64
- Track 12 : Ardmore\_55
- Track 13 : TDanisky\_70
- Track 14 : Fastidio\_63
- Track 15 : Byougenkin\_62, Emma\_65, Moonbeam\_62
- Track 16 : DLane\_58, Ogopogo\_68
- Track 17 : KristaRAM\_66, PhesterPhotato\_63
- Track 18 : WillSterrel\_64, Spartacus\_65, IrishSherpFalk\_64
- Track 19 : Bobi\_67
- Track 20 : Flathead\_64
- Track 21 : Chuckly\_66
- Track 22 : Seagreen\_62
- Track 23 : Bubbles123\_59
- Track 24 : Filuzino\_61
- Track 25 : Boomer\_68
- Track 26 : Tweety\_63

- Track 27 : Veteran\_60, Starcevich\_63
- Track 28 : Squirty\_65
- Track 29 : Zelink\_75, Kalah2\_72, Redno2\_74, Ejimix\_77, Yeet\_73, Dallas\_76, ThreeRngTarjay\_75, HokkenD\_70, Halley\_79, Lucky2013\_75, Schatzie\_73
- Track 30 : Superphikiman\_75, Bagrid\_78, DmpstrDiver\_78, Squint\_78, Phoebus\_80, Beem\_77, Porcelain\_77, JuicyJay\_76, NihilNomen\_78, EricMillard\_77, MiaZeal\_78, Ariel\_77, Hughesyang\_77
- Track 31 : Odette\_76
- Track 32 : Nebkiss\_148
- Track 33 : Nebkiss\_152
- Track 34 : Gaia\_156

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

The start number called the most often in the published annotations is 6, it was called in 89 of the 129 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_54, Alexphander\_67, ArcusAngelus\_65, Batiatus\_61, Beakin\_64, Blarby\_75, Blexus\_61, Bubbles123\_59, CaptainTrips\_60, Chevrolet\_68, Dante\_64, DeadP\_69, DillTech15\_60, DirtMcgirt\_62, Donkeykong\_66, Doomphist\_63, DosHalletts\_65, DotProduct\_58, Drago\_60, Enby\_64, Filuzino\_61, Florinda\_74, Fruitloop\_59, Girafales\_71, Hades\_64, Hamulus\_63, Hlubikazi\_59, IMpilo\_59, IrishSherpFalk\_64, Jabbawokkie\_77, JalFarm20\_76, Juice456\_64, Kenuha5\_60, Krakatau\_60, KristaRAM\_66, Leozinho\_62, LittleShirley\_62, Llij\_59, Lorde\_63, LunaStella\_62, Mandlovu\_59, Mantra\_59, Melissauren88\_61, MilanaBonita\_53, MilleniumForce\_66, Mozy\_72, OldBen\_60, OwlsT2W\_63, PMC\_60, Phalconet\_61, Phanphagia\_59, Phatniss\_61, PhesterPhotato\_63, Plumbus\_65, Poenanya\_63, Polka14\_61, PopTart\_57, Quico\_71, Radiance\_62, Ramsey\_62, Rita\_64, Rockne\_64, SG4\_60, SassyB\_57, Scottish\_61, Seagreen\_62, Shauna1\_61, ShroomBoi\_65, SiSi\_61, Sparkdehlily\_70, Spartacus\_65, Spikelee\_70, Squirty\_65, StAnnes\_61, Stap\_60, Starcevich\_63, Strokeseat\_59, SuperGrey\_66, TChen\_64, Taj\_67, Totinger\_62, Tweety\_63, UncleRicky\_62, VRedHorse\_63, Veteran\_60, Wachhund\_64, Wee\_67, Whatsapiecost\_63, WillSterrel\_64, XFactor\_61, Zapner\_76,

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

- Ardmore\_55, Bipolar\_62, Bobi\_67, Boomer\_68, Byougenkin\_62, Chuckly\_66, DLane\_58, Emma\_65, Fastidio\_63, Flathead\_64, Moonbeam\_62, Ms6\_59, Ogopogo\_68, Ovechkin\_63, TDanisky\_70,

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

- Ariel\_77, Bagrid\_78, Beem\_77, Dallas\_76, DmpstrDiver\_78, Ejimix\_77, EricMillard\_77, Gaia\_156, Halley\_79, HokkenD\_70, Hughesyang\_77, JuicyJay\_76, Kalah2\_72, Lucky2013\_75, MiaZeal\_78, Nebkiss\_148, Nebkiss\_152, NihilNomen\_78, Odette\_76, Phoebus\_80, Porcelain\_77, Redno2\_74, Schatzie\_73, Squint\_78, Superphikiman\_75, ThreeRngTarjay\_75, Yeet\_73, Zeeculate\_76, Zelink\_75,

**Summary by start number:**

Start 3:

- Found in 9 of 135 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 7 of 129
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Bipolar\_62 (F1), Byougenkin\_62 (F1), Chuckly\_66 (F1), Emma\_65 (F1), Flathead\_64 (F1), Moonbeam\_62 (F1), Ms6\_59 (F1), Ovechkin\_63 (F1),

#### Start 4:

- Found in 26 of 135 ( 19.3% ) of genes in pham
- Manual Annotations of this start: 1 of 129
- Called 3.8% of time when present
- Phage (with cluster) where this start called: Zeeculate\_76 (A1),

#### Start 5:

- Found in 97 of 135 ( 71.9% ) of genes in pham
- Manual Annotations of this start: 5 of 129
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Ardmore\_55 (F1), Bobi\_67 (F1), Boomer\_68 (F1), DLane\_58 (F1), Ogopogo\_68 (F1), TDanisky\_70 (F1),

#### Start 6:

- Found in 106 of 135 ( 78.5% ) of genes in pham
- Manual Annotations of this start: 89 of 129
- Called 85.8% of time when present
- Phage (with cluster) where this start called: Akhila\_54 (F1), Alexphander\_67 (F1), ArcusAngelus\_65 (F1), Batiatus\_61 (F1), Beakin\_64 (F1), Blarby\_75 (F), Blexus\_61 (F1), Bubbles123\_59 (F1), CaptainTrips\_60 (F1), Chevrolet\_68 (F1), Dante\_64 (F1), DeadP\_69 (F1), DillTech15\_60 (F1), DirtMcgirt\_62 (F1), Donkeykong\_66 (F1), Doomphist\_63 (F1), DosHalletts\_65 (F1), DotProduct\_58 (F1), Drago\_60 (F1), Enby\_64 (F1), Filuzino\_61 (F1), Florinda\_74 (F1), Fruitloop\_59 (F1), Girafales\_71 (F1), Hades\_64 (F1), Hamulus\_63 (F1), Hlubikazi\_59 (F1), IMpilo\_59 (F1), IrishSherpFalk\_64 (F1), Jabbawokkie\_77 (F2), JalFarm20\_76 (F1), Juice456\_64 (F1), Kenuha5\_60 (F1), Krakatau\_60 (F1), KristaRAM\_66 (F1), Leozinho\_62 (F1), LittleShirley\_62 (F1), Llij\_59 (F1), Lorde\_63 (F1), LunaStella\_62 (F4), Mandlovu\_59 (F1), Mantra\_59 (F1), Melissauren88\_61 (F1), MilanaBonita\_53 (F1), MilleniumForce\_66 (F1), Mozy\_72 (F1), OldBen\_60 (F1), OwlsT2W\_63 (F1), PMC\_60 (F1), Phalconet\_61 (F1), Phanphagia\_59 (F1), Phatniss\_61 (F1), PhesterPhotato\_63 (F1), Plumbus\_65 (F1), Poenanya\_63 (F1), Polka14\_61 (F1), PopTart\_57 (F1), Quico\_71 (F1), Radiance\_62 (F1), Ramsey\_62 (F1), Rita\_64 (F1), Rockne\_64 (F1), SG4\_60 (F1), SassyB\_57 (F1), Scottish\_61 (F1), Seagreen\_62 (F1), Shauna1\_61 (F1), ShroomBoi\_65 (F1), SiSi\_61 (F1), Sparkdehlily\_70 (F1), Spartacus\_65 (F1), Spikelee\_70 (F1), Squirty\_65 (F3), StAnnes\_61 (F1), Stap\_60 (F1), Starcevich\_63 (F1), Strokeseat\_59 (F1), SuperGrey\_66 (F1), TChen\_64 (F4), Taj\_67 (F1), Totinger\_62 (F1), Tweety\_63 (F1), UncleRicky\_62 (F1), VRedHorse\_63 (F1), Veteran\_60 (F1), Wachhund\_64 (F1), Wee\_67 (F1), Whatsapiecost\_63 (F1), WillSterrel\_64 (F1), XFactor\_61 (F1), Zapner\_76 (F2),

#### Start 7:

- Found in 27 of 135 ( 20.0% ) of genes in pham
- Manual Annotations of this start: 1 of 129
- Called 7.4% of time when present
- Phage (with cluster) where this start called: Fastidio\_63 (F1), Odette\_76 (J),

Start 10:

- Found in 26 of 135 ( 19.3% ) of genes in pham
- Manual Annotations of this start: 11 of 129
- Called 42.3% of time when present
- Phage (with cluster) where this start called: Dallas\_76 (J), Ejimix\_77 (J), Halley\_79 (J), HokkenD\_70 (J), Kalah2\_72 (J), Lucky2013\_75 (J), Redno2\_74 (J), Schatzie\_73 (J), ThreeRngTarjay\_75 (J), Yeet\_73 (J), Zelink\_75 (J),

Start 11:

- Found in 26 of 135 ( 19.3% ) of genes in pham
- Manual Annotations of this start: 12 of 129
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Ariel\_77 (J), Bagrid\_78 (J), Beem\_77 (J), DmpstrDiver\_78 (J), EricMillard\_77 (J), Hughesyang\_77 (J), JuicyJay\_76 (J), MiaZeal\_78 (J), NihilNomen\_78 (J), Phoebus\_80 (J), Porcelain\_77 (J), Squint\_78 (J), Superphikiman\_75 (J),

Start 12:

- Found in 3 of 135 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gaia\_156 (X), Nebkiss\_148 (X), Nebkiss\_152 (X),

**Summary by clusters:**

There are 8 clusters represented in this pham: F1, F2, F3, F4, F, J, A1, X,

Info for manual annotations of cluster A1:

- Start number 4 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster F1:

- Start number 3 was manually annotated 7 times for cluster F1.
- Start number 5 was manually annotated 5 times for cluster F1.
- Start number 6 was manually annotated 84 times for cluster F1.
- Start number 7 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 6 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 6 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 6 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster J:

- Start number 10 was manually annotated 11 times for cluster J.
- Start number 11 was manually annotated 12 times for cluster J.

Info for manual annotations of cluster X:

- Start number 12 was manually annotated 3 times for cluster X.

**Gene Information:**

Gene: Akhila\_54 Start: 37131, Stop: 37376, Start Num: 6

Candidate Starts for Akhila\_54:

(Start: 5 @37122 has 5 MA's), (Start: 6 @37131 has 89 MA's), (14, 37248), (16, 37299), (18, 37323), (19, 37335), (23, 37365),

Gene: Alexphander\_67 Start: 41450, Stop: 41710, Start Num: 6

Candidate Starts for Alexphander\_67:

(Start: 5 @41441 has 5 MA's), (Start: 6 @41450 has 89 MA's), (14, 41567), (16, 41618), (18, 41642), (19, 41654),

Gene: ArcusAngelus\_65 Start: 41801, Stop: 42043, Start Num: 6

Candidate Starts for ArcusAngelus\_65:

(Start: 5 @41792 has 5 MA's), (Start: 6 @41801 has 89 MA's), (14, 41918), (16, 41969), (18, 41993), (19, 42005), (23, 42032),

Gene: Ardmore\_55 Start: 39208, Stop: 39477, Start Num: 5

Candidate Starts for Ardmore\_55:

(Start: 5 @39208 has 5 MA's), (Start: 6 @39217 has 89 MA's), (14, 39334), (16, 39385), (18, 39409),

Gene: Ariel\_77 Start: 48076, Stop: 47840, Start Num: 11

Candidate Starts for Ariel\_77:

(Start: 4 @48124 has 1 MA's), (Start: 7 @48091 has 1 MA's), (Start: 10 @48079 has 11 MA's), (Start: 11 @48076 has 12 MA's), (14, 47980), (15, 47956), (16, 47929), (18, 47905), (19, 47893), (21, 47866),

Gene: Bagrid\_78 Start: 51492, Stop: 51256, Start Num: 11

Candidate Starts for Bagrid\_78:

(Start: 4 @51540 has 1 MA's), (Start: 7 @51507 has 1 MA's), (Start: 10 @51495 has 11 MA's), (Start: 11 @51492 has 12 MA's), (14, 51396), (15, 51372), (16, 51345), (18, 51321), (19, 51309), (21, 51282),

Gene: Batiatus\_61 Start: 41091, Stop: 41336, Start Num: 6

Candidate Starts for Batiatus\_61:

(Start: 5 @41082 has 5 MA's), (Start: 6 @41091 has 89 MA's), (14, 41208), (16, 41259), (18, 41283), (19, 41295), (23, 41325),

Gene: Beakin\_64 Start: 40412, Stop: 40657, Start Num: 6

Candidate Starts for Beakin\_64:

(Start: 5 @40403 has 5 MA's), (Start: 6 @40412 has 89 MA's), (14, 40529), (16, 40580), (18, 40604), (19, 40616), (23, 40646),

Gene: Beem\_77 Start: 52353, Stop: 52117, Start Num: 11

Candidate Starts for Beem\_77:

(Start: 4 @52401 has 1 MA's), (Start: 7 @52368 has 1 MA's), (Start: 10 @52356 has 11 MA's), (Start: 11 @52353 has 12 MA's), (14, 52257), (15, 52233), (16, 52206), (18, 52182), (19, 52170), (21, 52143),

Gene: Bipolar\_62 Start: 40980, Stop: 41258, Start Num: 3

Candidate Starts for Bipolar\_62:

(1, 40953), (Start: 3 @40980 has 7 MA's), (Start: 6 @41013 has 89 MA's), (14, 41130), (16, 41181), (18, 41205), (19, 41217), (22, 41247),

Gene: Blarby\_75 Start: 42860, Stop: 43105, Start Num: 6

Candidate Starts for Blarby\_75:

(Start: 5 @42851 has 5 MA's), (Start: 6 @42860 has 89 MA's), (14, 42977), (16, 43028), (18, 43052), (19, 43064), (23, 43094),

Gene: Blexus\_61 Start: 41606, Stop: 41848, Start Num: 6

Candidate Starts for Blexus\_61:

(Start: 5 @41597 has 5 MA's), (Start: 6 @41606 has 89 MA's), (14, 41723), (15, 41747), (16, 41774), (18, 41798), (19, 41810), (23, 41837),

Gene: Bobi\_67 Start: 42685, Stop: 42939, Start Num: 5

Candidate Starts for Bobi\_67:

(Start: 5 @42685 has 5 MA's), (Start: 6 @42694 has 89 MA's), (14, 42811), (16, 42862), (18, 42886), (19, 42898), (23, 42928),

Gene: Boomer\_68 Start: 43345, Stop: 43614, Start Num: 5

Candidate Starts for Boomer\_68:

(Start: 5 @43345 has 5 MA's), (Start: 6 @43354 has 89 MA's), (14, 43471), (16, 43522), (18, 43546), (19, 43558),

Gene: Bubbles123\_59 Start: 41000, Stop: 41260, Start Num: 6

Candidate Starts for Bubbles123\_59:

(Start: 5 @40991 has 5 MA's), (Start: 6 @41000 has 89 MA's), (14, 41117), (16, 41168), (18, 41192), (19, 41204),

Gene: Byougenkin\_62 Start: 40862, Stop: 41137, Start Num: 3

Candidate Starts for Byougenkin\_62:

(1, 40835), (Start: 3 @40862 has 7 MA's), (Start: 6 @40895 has 89 MA's), (14, 41012), (15, 41036), (16, 41063), (18, 41087), (19, 41099), (22, 41126),

Gene: CaptainTrips\_60 Start: 40536, Stop: 40778, Start Num: 6

Candidate Starts for CaptainTrips\_60:

(Start: 5 @40527 has 5 MA's), (Start: 6 @40536 has 89 MA's), (14, 40653), (16, 40704), (18, 40728), (19, 40740), (23, 40767),

Gene: Chevrolet\_68 Start: 41802, Stop: 42044, Start Num: 6

Candidate Starts for Chevrolet\_68:

(Start: 5 @41793 has 5 MA's), (Start: 6 @41802 has 89 MA's), (14, 41919), (16, 41970), (18, 41994), (19, 42006), (23, 42033),

Gene: Chuckly\_66 Start: 41790, Stop: 42083, Start Num: 3

Candidate Starts for Chuckly\_66:

(2, 41781), (Start: 3 @41790 has 7 MA's), (Start: 6 @41823 has 89 MA's), (14, 41940), (16, 41991), (18, 42015), (19, 42027),

Gene: DLane\_58 Start: 39732, Stop: 39983, Start Num: 5

Candidate Starts for DLane\_58:

(Start: 5 @39732 has 5 MA's), (Start: 6 @39741 has 89 MA's), (14, 39858), (16, 39909), (18, 39933), (19, 39945), (23, 39972),

Gene: Dallas\_76 Start: 51277, Stop: 51038, Start Num: 10

Candidate Starts for Dallas\_76:

(Start: 4 @51322 has 1 MA's), (Start: 7 @51289 has 1 MA's), (Start: 10 @51277 has 11 MA's), (Start: 11 @51274 has 12 MA's), (14, 51178), (15, 51154), (16, 51127), (18, 51103), (19, 51091), (21, 51064),

Gene: Dante\_64 Start: 40964, Stop: 41224, Start Num: 6

Candidate Starts for Dante\_64:

(Start: 5 @40955 has 5 MA's), (Start: 6 @40964 has 89 MA's), (14, 41081), (16, 41132), (18, 41156), (19, 41168),

Gene: DeadP\_69 Start: 43608, Stop: 43850, Start Num: 6

Candidate Starts for DeadP\_69:

(Start: 5 @43599 has 5 MA's), (Start: 6 @43608 has 89 MA's), (14, 43725), (16, 43776), (18, 43800), (19, 43812), (23, 43839),

Gene: DillTech15\_60 Start: 39620, Stop: 39865, Start Num: 6

Candidate Starts for DillTech15\_60:

(Start: 5 @39611 has 5 MA's), (Start: 6 @39620 has 89 MA's), (14, 39737), (16, 39788), (18, 39812), (19, 39824), (23, 39854),

Gene: DirtMcgirt\_62 Start: 39701, Stop: 39982, Start Num: 6

Candidate Starts for DirtMcgirt\_62:

(Start: 5 @39692 has 5 MA's), (Start: 6 @39701 has 89 MA's), (14, 39839), (16, 39890), (18, 39914), (19, 39926),

Gene: DmpstrDiver\_78 Start: 51700, Stop: 51464, Start Num: 11

Candidate Starts for DmpstrDiver\_78:

(Start: 4 @51748 has 1 MA's), (Start: 7 @51715 has 1 MA's), (Start: 10 @51703 has 11 MA's), (Start: 11 @51700 has 12 MA's), (14, 51604), (15, 51580), (16, 51553), (18, 51529), (19, 51517), (21, 51490),

Gene: Donkeykong\_66 Start: 43636, Stop: 43896, Start Num: 6

Candidate Starts for Donkeykong\_66:

(Start: 5 @43627 has 5 MA's), (Start: 6 @43636 has 89 MA's), (14, 43753), (16, 43804), (18, 43828), (19, 43840),

Gene: Doomphist\_63 Start: 42131, Stop: 42391, Start Num: 6

Candidate Starts for Doomphist\_63:

(Start: 5 @42122 has 5 MA's), (Start: 6 @42131 has 89 MA's), (14, 42248), (16, 42299), (18, 42323), (19, 42335),

Gene: DosHalletts\_65 Start: 42489, Stop: 42731, Start Num: 6

Candidate Starts for DosHalletts\_65:

(Start: 5 @42480 has 5 MA's), (Start: 6 @42489 has 89 MA's), (14, 42606), (16, 42657), (18, 42681), (19, 42693), (23, 42720),

Gene: DotProduct\_58 Start: 39968, Stop: 40213, Start Num: 6

Candidate Starts for DotProduct\_58:

(Start: 5 @39959 has 5 MA's), (Start: 6 @39968 has 89 MA's), (14, 40085), (16, 40136), (18, 40160), (19, 40172), (23, 40202),

Gene: Drago\_60 Start: 39704, Stop: 39985, Start Num: 6

Candidate Starts for Drago\_60:

(Start: 5 @39695 has 5 MA's), (Start: 6 @39704 has 89 MA's), (14, 39842), (16, 39893), (18, 39917), (19, 39929),



Gene: Ejimix\_77 Start: 53145, Stop: 52906, Start Num: 10

Candidate Starts for Ejimix\_77:

(Start: 4 @53190 has 1 MA's), (Start: 7 @53157 has 1 MA's), (Start: 10 @53145 has 11 MA's), (Start: 11 @53142 has 12 MA's), (14, 53046), (15, 53022), (16, 52995), (18, 52971), (19, 52959), (21, 52932),

Gene: Emma\_65 Start: 40892, Stop: 41170, Start Num: 3

Candidate Starts for Emma\_65:

(1, 40865), (Start: 3 @40892 has 7 MA's), (Start: 6 @40925 has 89 MA's), (14, 41042), (15, 41066), (16, 41093), (18, 41117), (19, 41129), (22, 41159),

Gene: Enby\_64 Start: 39980, Stop: 40261, Start Num: 6

Candidate Starts for Enby\_64:

(Start: 5 @39971 has 5 MA's), (Start: 6 @39980 has 89 MA's), (14, 40118), (16, 40169), (18, 40193), (19, 40205),

Gene: EricMillard\_77 Start: 52345, Stop: 52109, Start Num: 11

Candidate Starts for EricMillard\_77:

(Start: 4 @52393 has 1 MA's), (Start: 7 @52360 has 1 MA's), (Start: 10 @52348 has 11 MA's), (Start: 11 @52345 has 12 MA's), (14, 52249), (15, 52225), (16, 52198), (18, 52174), (19, 52162), (21, 52135),

Gene: Fastidio\_63 Start: 39770, Stop: 40015, Start Num: 7

Candidate Starts for Fastidio\_63:

(Start: 5 @39758 has 5 MA's), (Start: 6 @39767 has 89 MA's), (Start: 7 @39770 has 1 MA's), (14, 39887), (16, 39938), (18, 39962), (19, 39974), (23, 40004),

Gene: Filuzino\_61 Start: 40043, Stop: 40288, Start Num: 6

Candidate Starts for Filuzino\_61:

(Start: 5 @40034 has 5 MA's), (Start: 6 @40043 has 89 MA's), (14, 40160), (15, 40184), (16, 40211), (18, 40235), (19, 40247), (23, 40277),

Gene: Flathead\_64 Start: 41649, Stop: 41942, Start Num: 3

Candidate Starts for Flathead\_64:

(1, 41622), (Start: 3 @41649 has 7 MA's), (Start: 6 @41682 has 89 MA's), (14, 41799), (16, 41850), (18, 41874), (19, 41886),

Gene: Florinda\_74 Start: 43140, Stop: 43385, Start Num: 6

Candidate Starts for Florinda\_74:

(Start: 5 @43131 has 5 MA's), (Start: 6 @43140 has 89 MA's), (14, 43257), (16, 43308), (18, 43332), (19, 43344), (23, 43374),

Gene: Fruitloop\_59 Start: 41357, Stop: 41602, Start Num: 6

Candidate Starts for Fruitloop\_59:

(Start: 5 @41348 has 5 MA's), (Start: 6 @41357 has 89 MA's), (14, 41474), (16, 41525), (18, 41549), (19, 41561), (23, 41591),

Gene: Gaia\_156 Start: 80770, Stop: 80540, Start Num: 12

Candidate Starts for Gaia\_156:

(8, 80782), (Start: 12 @80770 has 3 MA's), (21, 80554), (24, 80548),

Gene: Girafales\_71 Start: 42931, Stop: 43176, Start Num: 6

Candidate Starts for Girafales\_71:

(Start: 5 @42922 has 5 MA's), (Start: 6 @42931 has 89 MA's), (14, 43048), (16, 43099), (18, 43123), (19, 43135), (23, 43165),

Gene: Hades\_64 Start: 41858, Stop: 42103, Start Num: 6

Candidate Starts for Hades\_64:

(Start: 5 @41849 has 5 MA's), (Start: 6 @41858 has 89 MA's), (14, 41975), (16, 42026), (18, 42050), (19, 42062), (23, 42092),

Gene: Halley\_79 Start: 52356, Stop: 52117, Start Num: 10

Candidate Starts for Halley\_79:

(Start: 4 @52401 has 1 MA's), (Start: 7 @52368 has 1 MA's), (Start: 10 @52356 has 11 MA's), (Start: 11 @52353 has 12 MA's), (14, 52257), (15, 52233), (16, 52206), (18, 52182), (19, 52170), (21, 52143),

Gene: Hamulus\_63 Start: 41500, Stop: 41745, Start Num: 6

Candidate Starts for Hamulus\_63:

(Start: 5 @41491 has 5 MA's), (Start: 6 @41500 has 89 MA's), (14, 41617), (16, 41668), (18, 41692), (19, 41704), (23, 41734),

Gene: Hlubikazi\_59 Start: 39078, Stop: 39323, Start Num: 6

Candidate Starts for Hlubikazi\_59:

(Start: 5 @39069 has 5 MA's), (Start: 6 @39078 has 89 MA's), (14, 39195), (16, 39246), (18, 39270), (19, 39282), (23, 39312),

Gene: HokkenD\_70 Start: 50625, Stop: 50386, Start Num: 10

Candidate Starts for HokkenD\_70:

(Start: 4 @50670 has 1 MA's), (Start: 7 @50637 has 1 MA's), (Start: 10 @50625 has 11 MA's), (Start: 11 @50622 has 12 MA's), (14, 50526), (15, 50502), (16, 50475), (18, 50451), (19, 50439), (21, 50412),

Gene: Hughesyang\_77 Start: 52311, Stop: 52075, Start Num: 11

Candidate Starts for Hughesyang\_77:

(Start: 4 @52359 has 1 MA's), (Start: 7 @52326 has 1 MA's), (Start: 10 @52314 has 11 MA's), (Start: 11 @52311 has 12 MA's), (14, 52215), (15, 52191), (16, 52164), (18, 52140), (19, 52128), (21, 52101),

Gene: IMPilo\_59 Start: 39129, Stop: 39374, Start Num: 6

Candidate Starts for IMPilo\_59:

(Start: 5 @39120 has 5 MA's), (Start: 6 @39129 has 89 MA's), (14, 39246), (16, 39297), (18, 39321), (19, 39333), (23, 39363),

Gene: IrishSherpFalk\_64 Start: 42715, Stop: 42975, Start Num: 6

Candidate Starts for IrishSherpFalk\_64:

(Start: 5 @42706 has 5 MA's), (Start: 6 @42715 has 89 MA's), (14, 42832), (15, 42856), (16, 42883), (18, 42907), (19, 42919),

Gene: Jabbawokkie\_77 Start: 42780, Stop: 43025, Start Num: 6

Candidate Starts for Jabbawokkie\_77:

(Start: 5 @42771 has 5 MA's), (Start: 6 @42780 has 89 MA's), (14, 42897), (16, 42948), (18, 42972), (19, 42984), (23, 43014),

Gene: JalFarm20\_76 Start: 45182, Stop: 45427, Start Num: 6

Candidate Starts for JalFarm20\_76:

(Start: 5 @45173 has 5 MA's), (Start: 6 @45182 has 89 MA's), (14, 45299), (16, 45350), (18, 45374), (19, 45386), (23, 45416),

Gene: Juice456\_64 Start: 43138, Stop: 43383, Start Num: 6

Candidate Starts for Juice456\_64:

(Start: 5 @43129 has 5 MA's), (Start: 6 @43138 has 89 MA's), (14, 43255), (16, 43306), (18, 43330), (19, 43342), (23, 43372),

Gene: JuicyJay\_76 Start: 53487, Stop: 53251, Start Num: 11

Candidate Starts for JuicyJay\_76:

(Start: 4 @53535 has 1 MA's), (Start: 7 @53502 has 1 MA's), (Start: 10 @53490 has 11 MA's), (Start: 11 @53487 has 12 MA's), (14, 53391), (15, 53367), (16, 53340), (18, 53316), (19, 53304), (21, 53277),

Gene: Kalah2\_72 Start: 51649, Stop: 51410, Start Num: 10

Candidate Starts for Kalah2\_72:

(Start: 4 @51694 has 1 MA's), (Start: 7 @51661 has 1 MA's), (Start: 10 @51649 has 11 MA's), (Start: 11 @51646 has 12 MA's), (14, 51550), (15, 51526), (16, 51499), (18, 51475), (19, 51463), (21, 51436),

Gene: Kenuha5\_60 Start: 39618, Stop: 39863, Start Num: 6

Candidate Starts for Kenuha5\_60:

(Start: 5 @39609 has 5 MA's), (Start: 6 @39618 has 89 MA's), (14, 39735), (16, 39786), (18, 39810), (19, 39822), (23, 39852),

Gene: Krakatau\_60 Start: 40313, Stop: 40573, Start Num: 6

Candidate Starts for Krakatau\_60:

(Start: 5 @40304 has 5 MA's), (Start: 6 @40313 has 89 MA's), (14, 40430), (16, 40481), (18, 40505), (19, 40517),

Gene: KristaRAM\_66 Start: 43507, Stop: 43752, Start Num: 6

Candidate Starts for KristaRAM\_66:

(Start: 5 @43498 has 5 MA's), (Start: 6 @43507 has 89 MA's), (14, 43624), (15, 43648), (16, 43675), (18, 43699), (19, 43711), (23, 43741),

Gene: Leozinho\_62 Start: 40337, Stop: 40579, Start Num: 6

Candidate Starts for Leozinho\_62:

(Start: 5 @40328 has 5 MA's), (Start: 6 @40337 has 89 MA's), (14, 40454), (16, 40505), (18, 40529), (19, 40541), (23, 40568),

Gene: LittleShirley\_62 Start: 41497, Stop: 41742, Start Num: 6

Candidate Starts for LittleShirley\_62:

(Start: 5 @41488 has 5 MA's), (Start: 6 @41497 has 89 MA's), (14, 41614), (16, 41665), (18, 41689), (19, 41701), (23, 41731),

Gene: Llij\_59 Start: 39858, Stop: 40139, Start Num: 6

Candidate Starts for Llij\_59:

(Start: 5 @39849 has 5 MA's), (Start: 6 @39858 has 89 MA's), (14, 39996), (16, 40047), (18, 40071), (19, 40083),

Gene: Lorde\_63 Start: 39145, Stop: 39426, Start Num: 6

Candidate Starts for Lorde\_63:

(Start: 5 @39136 has 5 MA's), (Start: 6 @39145 has 89 MA's), (14, 39283), (16, 39334), (18, 39358), (19, 39370),

Gene: Lucky2013\_75 Start: 48095, Stop: 47856, Start Num: 10

Candidate Starts for Lucky2013\_75:

(Start: 4 @48140 has 1 MA's), (Start: 7 @48107 has 1 MA's), (Start: 10 @48095 has 11 MA's), (Start: 11 @48092 has 12 MA's), (14, 47996), (15, 47972), (16, 47945), (18, 47921), (19, 47909), (21, 47882),

Gene: LunaStella\_62 Start: 40537, Stop: 40782, Start Num: 6  
Candidate Starts for LunaStella\_62:  
(Start: 5 @40528 has 5 MA's), (Start: 6 @40537 has 89 MA's), (14, 40654), (16, 40705), (18, 40729),  
(19, 40741), (23, 40771),

Gene: Mandlovu\_59 Start: 39020, Stop: 39265, Start Num: 6  
Candidate Starts for Mandlovu\_59:  
(Start: 5 @39011 has 5 MA's), (Start: 6 @39020 has 89 MA's), (14, 39137), (16, 39188), (18, 39212),  
(19, 39224), (23, 39254),

Gene: Mantra\_59 Start: 39905, Stop: 40150, Start Num: 6  
Candidate Starts for Mantra\_59:  
(Start: 5 @39896 has 5 MA's), (Start: 6 @39905 has 89 MA's), (14, 40022), (16, 40073), (18, 40097),  
(19, 40109), (23, 40139),

Gene: Melissauren88\_61 Start: 40538, Stop: 40783, Start Num: 6  
Candidate Starts for Melissauren88\_61:  
(Start: 5 @40529 has 5 MA's), (Start: 6 @40538 has 89 MA's), (14, 40655), (16, 40706), (18, 40730),  
(19, 40742), (23, 40772),

Gene: MiaZeal\_78 Start: 48748, Stop: 48512, Start Num: 11  
Candidate Starts for MiaZeal\_78:  
(Start: 4 @48796 has 1 MA's), (Start: 7 @48763 has 1 MA's), (Start: 10 @48751 has 11 MA's), (Start:  
11 @48748 has 12 MA's), (14, 48652), (15, 48628), (16, 48601), (18, 48577), (19, 48565), (21, 48538),

Gene: MilanaBonita\_53 Start: 37131, Stop: 37376, Start Num: 6  
Candidate Starts for MilanaBonita\_53:  
(Start: 5 @37122 has 5 MA's), (Start: 6 @37131 has 89 MA's), (14, 37248), (16, 37299), (18, 37323),  
(19, 37335), (23, 37365),

Gene: MilleniumForce\_66 Start: 43226, Stop: 43471, Start Num: 6  
Candidate Starts for MilleniumForce\_66:  
(Start: 5 @43217 has 5 MA's), (Start: 6 @43226 has 89 MA's), (14, 43343), (16, 43394), (18, 43418),  
(19, 43430), (23, 43460),

Gene: Moonbeam\_62 Start: 40821, Stop: 41099, Start Num: 3  
Candidate Starts for Moonbeam\_62:  
(1, 40794), (Start: 3 @40821 has 7 MA's), (Start: 6 @40854 has 89 MA's), (14, 40971), (15, 40995),  
(16, 41022), (18, 41046), (19, 41058), (22, 41088),

Gene: Mozy\_72 Start: 43539, Stop: 43784, Start Num: 6  
Candidate Starts for Mozy\_72:  
(Start: 5 @43530 has 5 MA's), (Start: 6 @43539 has 89 MA's), (14, 43656), (16, 43707), (18, 43731),  
(19, 43743), (23, 43773),

Gene: Ms6\_59 Start: 36408, Stop: 36686, Start Num: 3  
Candidate Starts for Ms6\_59:  
(1, 36381), (Start: 3 @36408 has 7 MA's), (Start: 6 @36441 has 89 MA's), (14, 36558), (16, 36609),  
(18, 36633), (19, 36645), (22, 36675),

Gene: Nebkiss\_148 Start: 74972, Stop: 74739, Start Num: 12  
Candidate Starts for Nebkiss\_148:

(9, 74981), (Start: 12 @74972 has 3 MA's), (13, 74891), (16, 74837), (19, 74801), (20, 74780), (25, 74759),

Gene: Nebkiss\_152 Start: 75886, Stop: 75656, Start Num: 12

Candidate Starts for Nebkiss\_152:

(Start: 12 @75886 has 3 MA's), (21, 75670), (24, 75664),

Gene: NihilNomen\_78 Start: 52440, Stop: 52204, Start Num: 11

Candidate Starts for NihilNomen\_78:

(Start: 4 @52488 has 1 MA's), (Start: 7 @52455 has 1 MA's), (Start: 10 @52443 has 11 MA's), (Start: 11 @52440 has 12 MA's), (14, 52344), (15, 52320), (16, 52293), (18, 52269), (19, 52257), (21, 52230),

Gene: Odette\_76 Start: 51497, Stop: 51246, Start Num: 7

Candidate Starts for Odette\_76:

(Start: 4 @51530 has 1 MA's), (Start: 7 @51497 has 1 MA's), (Start: 10 @51485 has 11 MA's), (Start: 11 @51482 has 12 MA's), (14, 51386), (15, 51362), (16, 51335), (18, 51311), (19, 51299), (21, 51272),

Gene: Ogopogo\_68 Start: 41513, Stop: 41767, Start Num: 5

Candidate Starts for Ogopogo\_68:

(Start: 5 @41513 has 5 MA's), (Start: 6 @41522 has 89 MA's), (14, 41639), (16, 41690), (18, 41714), (19, 41726), (23, 41756),

Gene: OldBen\_60 Start: 40876, Stop: 41118, Start Num: 6

Candidate Starts for OldBen\_60:

(Start: 5 @40867 has 5 MA's), (Start: 6 @40876 has 89 MA's), (14, 40993), (15, 41017), (16, 41044), (18, 41068), (19, 41080), (23, 41107),

Gene: Ovechkin\_63 Start: 41821, Stop: 42099, Start Num: 3

Candidate Starts for Ovechkin\_63:

(1, 41794), (Start: 3 @41821 has 7 MA's), (Start: 6 @41854 has 89 MA's), (14, 41971), (16, 42022), (18, 42046), (19, 42058), (22, 42088),

Gene: OwlsT2W\_63 Start: 41188, Stop: 41448, Start Num: 6

Candidate Starts for OwlsT2W\_63:

(Start: 5 @41179 has 5 MA's), (Start: 6 @41188 has 89 MA's), (14, 41305), (16, 41356), (18, 41380), (19, 41392),

Gene: PMC\_60 Start: 41578, Stop: 41838, Start Num: 6

Candidate Starts for PMC\_60:

(Start: 5 @41569 has 5 MA's), (Start: 6 @41578 has 89 MA's), (14, 41695), (16, 41746), (18, 41770), (19, 41782),

Gene: Phalconet\_61 Start: 39809, Stop: 40051, Start Num: 6

Candidate Starts for Phalconet\_61:

(Start: 5 @39800 has 5 MA's), (Start: 6 @39809 has 89 MA's), (14, 39926), (16, 39977), (18, 40001), (19, 40013), (23, 40040),

Gene: Phanphagia\_59 Start: 41400, Stop: 41645, Start Num: 6

Candidate Starts for Phanphagia\_59:

(Start: 5 @41391 has 5 MA's), (Start: 6 @41400 has 89 MA's), (14, 41517), (16, 41568), (18, 41592), (19, 41604), (23, 41634),

Gene: Phatniss\_61 Start: 40953, Stop: 41234, Start Num: 6

Candidate Starts for Phatniss\_61:

(Start: 5 @40944 has 5 MA's), (Start: 6 @40953 has 89 MA's), (14, 41091), (16, 41142), (18, 41166), (19, 41178),

Gene: PhesterPhotato\_63 Start: 40626, Stop: 40871, Start Num: 6

Candidate Starts for PhesterPhotato\_63:

(Start: 5 @40617 has 5 MA's), (Start: 6 @40626 has 89 MA's), (14, 40743), (15, 40767), (16, 40794), (18, 40818), (19, 40830), (23, 40860),

Gene: Phoebus\_80 Start: 53622, Stop: 53386, Start Num: 11

Candidate Starts for Phoebus\_80:

(Start: 4 @53670 has 1 MA's), (Start: 7 @53637 has 1 MA's), (Start: 10 @53625 has 11 MA's), (Start: 11 @53622 has 12 MA's), (14, 53526), (15, 53502), (16, 53475), (18, 53451), (19, 53439), (21, 53412),

Gene: Plumbus\_65 Start: 41277, Stop: 41522, Start Num: 6

Candidate Starts for Plumbus\_65:

(Start: 5 @41268 has 5 MA's), (Start: 6 @41277 has 89 MA's), (14, 41394), (16, 41445), (18, 41469), (19, 41481), (23, 41511),

Gene: Poenanya\_63 Start: 42131, Stop: 42391, Start Num: 6

Candidate Starts for Poenanya\_63:

(Start: 5 @42122 has 5 MA's), (Start: 6 @42131 has 89 MA's), (14, 42248), (16, 42299), (18, 42323), (19, 42335),

Gene: Polka14\_61 Start: 40519, Stop: 40761, Start Num: 6

Candidate Starts for Polka14\_61:

(Start: 5 @40510 has 5 MA's), (Start: 6 @40519 has 89 MA's), (14, 40636), (15, 40660), (16, 40687), (18, 40711), (19, 40723), (23, 40750),

Gene: PopTart\_57 Start: 39434, Stop: 39676, Start Num: 6

Candidate Starts for PopTart\_57:

(Start: 5 @39425 has 5 MA's), (Start: 6 @39434 has 89 MA's), (14, 39551), (16, 39602), (18, 39626), (19, 39638), (23, 39665),

Gene: Porcelain\_77 Start: 48748, Stop: 48512, Start Num: 11

Candidate Starts for Porcelain\_77:

(Start: 4 @48796 has 1 MA's), (Start: 7 @48763 has 1 MA's), (Start: 10 @48751 has 11 MA's), (Start: 11 @48748 has 12 MA's), (14, 48652), (15, 48628), (16, 48601), (18, 48577), (19, 48565), (21, 48538),

Gene: Quico\_71 Start: 42960, Stop: 43205, Start Num: 6

Candidate Starts for Quico\_71:

(Start: 5 @42951 has 5 MA's), (Start: 6 @42960 has 89 MA's), (14, 43077), (16, 43128), (18, 43152), (19, 43164), (23, 43194),

Gene: Radiance\_62 Start: 41069, Stop: 41329, Start Num: 6

Candidate Starts for Radiance\_62:

(Start: 5 @41060 has 5 MA's), (Start: 6 @41069 has 89 MA's), (14, 41186), (16, 41237), (18, 41261), (19, 41273),

Gene: Ramsey\_62 Start: 41382, Stop: 41642, Start Num: 6

Candidate Starts for Ramsey\_62:

(Start: 5 @41373 has 5 MA's), (Start: 6 @41382 has 89 MA's), (14, 41499), (16, 41550), (18, 41574), (19, 41586),

Gene: Redno2\_74 Start: 49239, Stop: 49000, Start Num: 10

Candidate Starts for Redno2\_74:

(Start: 4 @49284 has 1 MA's), (Start: 7 @49251 has 1 MA's), (Start: 10 @49239 has 11 MA's), (Start: 11 @49236 has 12 MA's), (14, 49140), (15, 49116), (16, 49089), (18, 49065), (19, 49053), (21, 49026),

Gene: Rita\_64 Start: 39681, Stop: 39941, Start Num: 6

Candidate Starts for Rita\_64:

(Start: 5 @39672 has 5 MA's), (Start: 6 @39681 has 89 MA's), (14, 39798), (16, 39849), (17, 39852), (18, 39873), (19, 39885),

Gene: Rockne\_64 Start: 41590, Stop: 41850, Start Num: 6

Candidate Starts for Rockne\_64:

(Start: 5 @41581 has 5 MA's), (Start: 6 @41590 has 89 MA's), (14, 41707), (16, 41758), (18, 41782), (19, 41794),

Gene: SG4\_60 Start: 40468, Stop: 40728, Start Num: 6

Candidate Starts for SG4\_60:

(Start: 5 @40459 has 5 MA's), (Start: 6 @40468 has 89 MA's), (14, 40585), (16, 40636), (18, 40660), (19, 40672),

Gene: SassyB\_57 Start: 39434, Stop: 39676, Start Num: 6

Candidate Starts for SassyB\_57:

(Start: 5 @39425 has 5 MA's), (Start: 6 @39434 has 89 MA's), (14, 39551), (16, 39602), (18, 39626), (19, 39638), (23, 39665),

Gene: Schatzie\_73 Start: 51232, Stop: 50993, Start Num: 10

Candidate Starts for Schatzie\_73:

(Start: 4 @51277 has 1 MA's), (Start: 7 @51244 has 1 MA's), (Start: 10 @51232 has 11 MA's), (Start: 11 @51229 has 12 MA's), (14, 51133), (15, 51109), (16, 51082), (18, 51058), (19, 51046), (21, 51019),

Gene: Scottish\_61 Start: 40596, Stop: 40838, Start Num: 6

Candidate Starts for Scottish\_61:

(Start: 5 @40587 has 5 MA's), (Start: 6 @40596 has 89 MA's), (14, 40713), (15, 40737), (16, 40764), (18, 40788), (19, 40800), (23, 40827),

Gene: Seagreen\_62 Start: 40771, Stop: 41031, Start Num: 6

Candidate Starts for Seagreen\_62:

(Start: 5 @40762 has 5 MA's), (Start: 6 @40771 has 89 MA's), (14, 40888), (16, 40939), (18, 40963), (19, 40975),

Gene: Shauna1\_61 Start: 41309, Stop: 41554, Start Num: 6

Candidate Starts for Shauna1\_61:

(Start: 5 @41300 has 5 MA's), (Start: 6 @41309 has 89 MA's), (14, 41426), (16, 41477), (18, 41501), (19, 41513), (23, 41543),

Gene: ShroomBoi\_65 Start: 41918, Stop: 42163, Start Num: 6

Candidate Starts for ShroomBoi\_65:

(Start: 5 @41909 has 5 MA's), (Start: 6 @41918 has 89 MA's), (14, 42035), (16, 42086), (18, 42110), (19, 42122), (23, 42152),

Gene: SiSi\_61 Start: 40370, Stop: 40630, Start Num: 6

Candidate Starts for SiSi\_61:

(Start: 5 @40361 has 5 MA's), (Start: 6 @40370 has 89 MA's), (16, 40538), (18, 40562), (19, 40574),

Gene: Sparkdehlily\_70 Start: 42431, Stop: 42676, Start Num: 6

Candidate Starts for Sparkdehlily\_70:

(Start: 5 @42422 has 5 MA's), (Start: 6 @42431 has 89 MA's), (14, 42548), (16, 42599), (18, 42623), (19, 42635), (23, 42665),

Gene: Spartacus\_65 Start: 41631, Stop: 41891, Start Num: 6

Candidate Starts for Spartacus\_65:

(Start: 5 @41622 has 5 MA's), (Start: 6 @41631 has 89 MA's), (14, 41748), (15, 41772), (16, 41799), (18, 41823), (19, 41835),

Gene: Spikelee\_70 Start: 43245, Stop: 43490, Start Num: 6

Candidate Starts for Spikelee\_70:

(Start: 5 @43236 has 5 MA's), (Start: 6 @43245 has 89 MA's), (14, 43362), (16, 43413), (18, 43437), (19, 43449), (23, 43479),

Gene: Squint\_78 Start: 48867, Stop: 48631, Start Num: 11

Candidate Starts for Squint\_78:

(Start: 4 @48915 has 1 MA's), (Start: 7 @48882 has 1 MA's), (Start: 10 @48870 has 11 MA's), (Start: 11 @48867 has 12 MA's), (14, 48771), (15, 48747), (16, 48720), (18, 48696), (19, 48684), (21, 48657),

Gene: Squirty\_65 Start: 42279, Stop: 42521, Start Num: 6

Candidate Starts for Squirty\_65:

(Start: 5 @42270 has 5 MA's), (Start: 6 @42279 has 89 MA's), (15, 42420), (16, 42447), (18, 42471), (19, 42483), (23, 42510),

Gene: StAnnes\_61 Start: 41487, Stop: 41732, Start Num: 6

Candidate Starts for StAnnes\_61:

(Start: 5 @41478 has 5 MA's), (Start: 6 @41487 has 89 MA's), (14, 41604), (16, 41655), (18, 41679), (19, 41691), (23, 41721),

Gene: Stap\_60 Start: 40529, Stop: 40771, Start Num: 6

Candidate Starts for Stap\_60:

(Start: 5 @40520 has 5 MA's), (Start: 6 @40529 has 89 MA's), (14, 40646), (15, 40670), (16, 40697), (18, 40721), (19, 40733), (23, 40760),

Gene: Starcevich\_63 Start: 41127, Stop: 41372, Start Num: 6

Candidate Starts for Starcevich\_63:

(Start: 5 @41118 has 5 MA's), (Start: 6 @41127 has 89 MA's), (16, 41295), (17, 41298), (18, 41319), (19, 41331), (23, 41361),

Gene: Strokeseat\_59 Start: 39077, Stop: 39322, Start Num: 6

Candidate Starts for Strokeseat\_59:

(Start: 5 @39068 has 5 MA's), (Start: 6 @39077 has 89 MA's), (14, 39194), (16, 39245), (18, 39269), (19, 39281), (23, 39311),

Gene: SuperGrey\_66 Start: 42795, Stop: 43040, Start Num: 6

Candidate Starts for SuperGrey\_66:

(Start: 5 @42786 has 5 MA's), (Start: 6 @42795 has 89 MA's), (14, 42912), (16, 42963), (18, 42987), (19, 42999), (23, 43029),

Gene: Superphikiman\_75 Start: 47958, Stop: 47722, Start Num: 11



Candidate Starts for Superphikiman\_75:

(Start: 4 @48006 has 1 MA's), (Start: 7 @47973 has 1 MA's), (Start: 10 @47961 has 11 MA's), (Start: 11 @47958 has 12 MA's), (14, 47862), (15, 47838), (16, 47811), (18, 47787), (19, 47775), (21, 47748),

Gene: TChen\_64 Start: 42488, Stop: 42733, Start Num: 6

Candidate Starts for TChen\_64:

(Start: 5 @42479 has 5 MA's), (Start: 6 @42488 has 89 MA's), (14, 42605), (16, 42656), (18, 42680), (19, 42692), (23, 42722),

Gene: TDanisky\_70 Start: 42422, Stop: 42676, Start Num: 5

Candidate Starts for TDanisky\_70:

(Start: 5 @42422 has 5 MA's), (Start: 6 @42431 has 89 MA's), (14, 42548), (16, 42599), (18, 42623), (19, 42635), (23, 42665),

Gene: Taj\_67 Start: 42722, Stop: 42964, Start Num: 6

Candidate Starts for Taj\_67:

(Start: 5 @42713 has 5 MA's), (Start: 6 @42722 has 89 MA's), (14, 42839), (16, 42890), (18, 42914), (19, 42926), (23, 42953),

Gene: ThreeRngTarjay\_75 Start: 52517, Stop: 52278, Start Num: 10

Candidate Starts for ThreeRngTarjay\_75:

(Start: 4 @52562 has 1 MA's), (Start: 7 @52529 has 1 MA's), (Start: 10 @52517 has 11 MA's), (Start: 11 @52514 has 12 MA's), (14, 52418), (15, 52394), (16, 52367), (18, 52343), (19, 52331), (21, 52304),

Gene: Totinger\_62 Start: 40223, Stop: 40468, Start Num: 6

Candidate Starts for Totinger\_62:

(Start: 5 @40214 has 5 MA's), (Start: 6 @40223 has 89 MA's), (14, 40340), (16, 40391), (18, 40415), (19, 40427), (23, 40457),

Gene: Tweety\_63 Start: 42283, Stop: 42543, Start Num: 6

Candidate Starts for Tweety\_63:

(1, 42223), (Start: 3 @42250 has 7 MA's), (Start: 6 @42283 has 89 MA's), (14, 42400), (16, 42451), (18, 42475), (19, 42487),

Gene: UncleRicky\_62 Start: 41201, Stop: 41482, Start Num: 6

Candidate Starts for UncleRicky\_62:

(Start: 5 @41192 has 5 MA's), (Start: 6 @41201 has 89 MA's), (14, 41339), (16, 41390), (18, 41414), (19, 41426),

Gene: VRedHorse\_63 Start: 40277, Stop: 40522, Start Num: 6

Candidate Starts for VRedHorse\_63:

(Start: 5 @40268 has 5 MA's), (Start: 6 @40277 has 89 MA's), (14, 40394), (16, 40445), (18, 40469), (19, 40481), (23, 40511),

Gene: Veteran\_60 Start: 39981, Stop: 40226, Start Num: 6

Candidate Starts for Veteran\_60:

(Start: 5 @39972 has 5 MA's), (Start: 6 @39981 has 89 MA's), (16, 40149), (17, 40152), (18, 40173), (19, 40185), (23, 40215),

Gene: Wachhund\_64 Start: 40911, Stop: 41153, Start Num: 6

Candidate Starts for Wachhund\_64:

(Start: 5 @40902 has 5 MA's), (Start: 6 @40911 has 89 MA's), (15, 41052), (16, 41079), (18, 41103), (19, 41115), (23, 41142),

Gene: Wee\_67 Start: 42798, Stop: 43040, Start Num: 6

Candidate Starts for Wee\_67:

(Start: 5 @42789 has 5 MA's), (Start: 6 @42798 has 89 MA's), (14, 42915), (16, 42966), (18, 42990), (19, 43002), (23, 43029),

Gene: Whatsapiecost\_63 Start: 40201, Stop: 40449, Start Num: 6

Candidate Starts for Whatsapiecost\_63:

(Start: 5 @40192 has 5 MA's), (Start: 6 @40201 has 89 MA's), (14, 40318), (16, 40369), (18, 40393), (19, 40405), (23, 40438),

Gene: WillSterrel\_64 Start: 42748, Stop: 43008, Start Num: 6

Candidate Starts for WillSterrel\_64:

(Start: 5 @42739 has 5 MA's), (Start: 6 @42748 has 89 MA's), (14, 42865), (15, 42889), (16, 42916), (18, 42940), (19, 42952),

Gene: XFactor\_61 Start: 40000, Stop: 40260, Start Num: 6

Candidate Starts for XFactor\_61:

(Start: 5 @39991 has 5 MA's), (Start: 6 @40000 has 89 MA's), (14, 40117), (16, 40168), (18, 40192), (19, 40204),

Gene: Yeet\_73 Start: 50734, Stop: 50495, Start Num: 10

Candidate Starts for Yeet\_73:

(Start: 4 @50779 has 1 MA's), (Start: 7 @50746 has 1 MA's), (Start: 10 @50734 has 11 MA's), (Start: 11 @50731 has 12 MA's), (14, 50635), (15, 50611), (16, 50584), (18, 50560), (19, 50548), (21, 50521),

Gene: Zapner\_76 Start: 42874, Stop: 43119, Start Num: 6

Candidate Starts for Zapner\_76:

(Start: 5 @42865 has 5 MA's), (Start: 6 @42874 has 89 MA's), (14, 42991), (16, 43042), (18, 43066), (19, 43078), (23, 43108),

Gene: Zeeculate\_76 Start: 48094, Stop: 47810, Start Num: 4

Candidate Starts for Zeeculate\_76:

(Start: 4 @48094 has 1 MA's), (Start: 7 @48061 has 1 MA's), (Start: 10 @48049 has 11 MA's), (Start: 11 @48046 has 12 MA's), (14, 47950), (16, 47899), (18, 47875), (19, 47863), (21, 47833),

Gene: Zelink\_75 Start: 52829, Stop: 52590, Start Num: 10

Candidate Starts for Zelink\_75:

(Start: 4 @52874 has 1 MA's), (Start: 7 @52841 has 1 MA's), (Start: 10 @52829 has 11 MA's), (Start: 11 @52826 has 12 MA's), (14, 52730), (15, 52706), (16, 52679), (18, 52655), (19, 52643), (21, 52616),