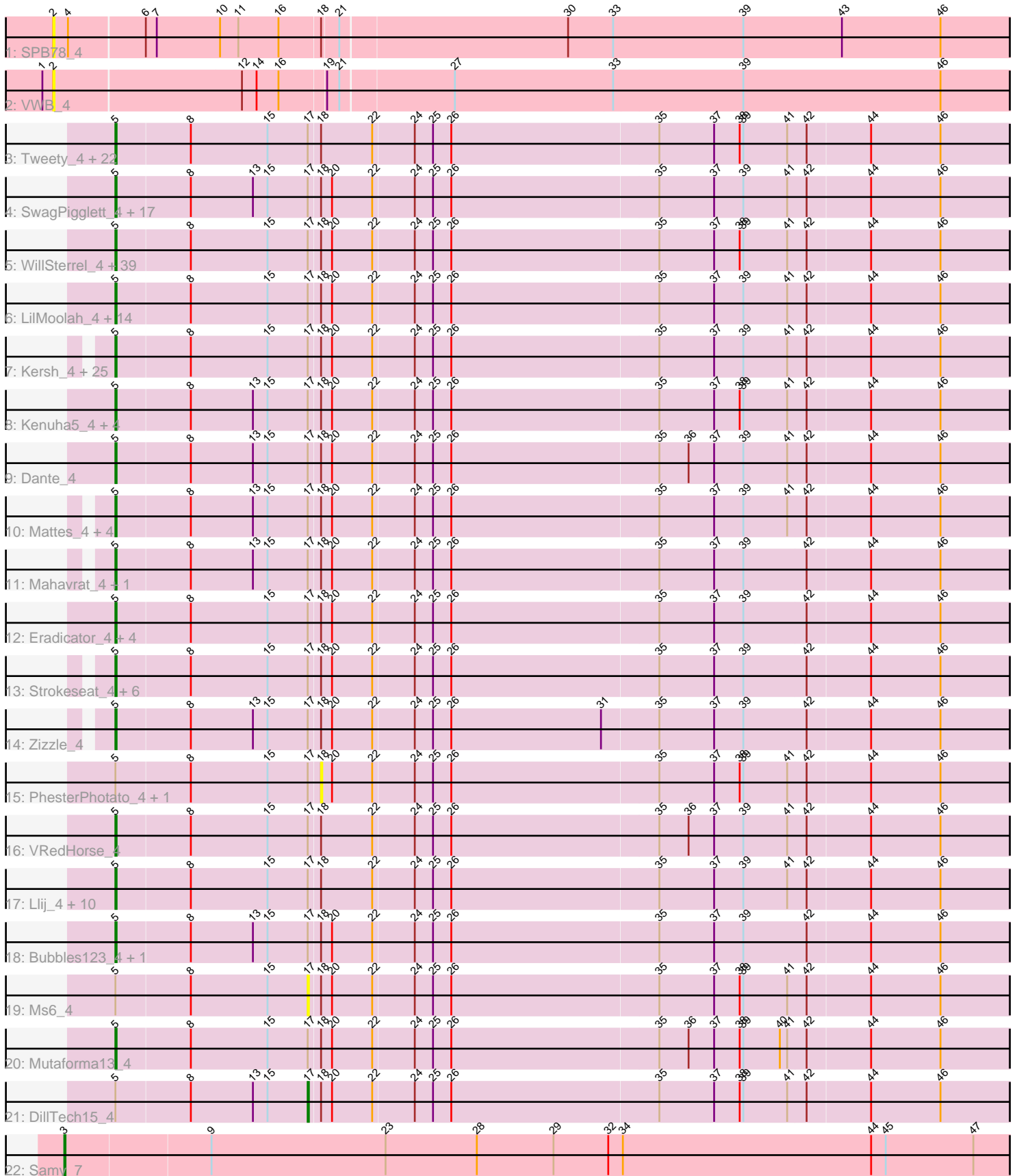


Pham 157630



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 157630 Report

This analysis was run 04/13/24 on database version 558.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 157630 has 170 members, 15 are drafts.

Phages represented in each track:

- Track 1 : SPB78\_4
- Track 2 : VWB\_4
- Track 3 : Tweety\_4, BodEinwohner17\_4, Scottish\_4, Nimbo\_4, KingMidas\_4, RedBird\_4, PHappiness\_4, JoeyJr\_4, Dorothy\_4, Geralt\_4, Radiance\_4, OldBen\_4, Inventum\_4, Daenerys\_4, DaddyRickover\_4, BlueCrab\_4, Sassafras\_4, Doomphist\_4, Pacc40\_4, RitaG\_4, Poenanya\_4, Polka14\_4, Deb65\_4
- Track 4 : SwagPiggett\_4, MisterCuddles\_4, Burwell21\_4, ByChance\_4, Che8\_4, Lizziana\_4, MadMen\_4, ShiLan\_4, Zerg\_4, Guppsters\_4, Gandalph\_4, ShowerHandel\_4, Yorick\_4, Ruby\_4, Jarcob\_4, Martik\_4, Philus\_4, Girr\_4
- Track 5 : WillSterrel\_4, DotProduct\_4, PopTart\_4, QuickMath\_4, Firehouse51\_4, Rita\_4, Aubs\_4, Phatniss\_4, DeadP\_4, Ovechkin\_4, Hamulus\_4, Bipolar\_4, KristaRAM\_5, Empress\_4, Taj\_4, MilleniumForce\_5, ShroomBoi\_4, Emma\_4, XFactor\_4, Spartacus\_4, StAnnes\_4, DLane\_4, IrishSherpFalk\_4, EleanorGeorge\_4, Ardmore\_4, Fruitloop\_4, SassyB\_4, Wee\_4, MinionDave\_5, Batiatus\_4, Chuckly\_4, SG4\_4, Phanphagia\_4, Shauna1\_4, Whatsapiecost\_4, Phalconet\_4, Royals2015\_4, SiSi\_4, Melissauren88\_4, CaptainTrips\_5
- Track 6 : LilMoolah\_4, Fancypants\_4, Chevrolet\_3, Sandalphon\_4, Estave1\_4, Krakatau\_5, FreddyB\_4, Veteran\_4, Phasih\_4, Minnie\_4, Blexus\_4, Florinda\_4, GUmbe\_4, ArcusAngelus\_4, Priscilla\_4
- Track 7 : Kersh\_4, Leperchaun\_4, Ochi17\_4, LunaBlu\_4, Karhdo\_4, Wachhund\_4, Sebastian\_4, Brocalys\_4, Gorge\_4, Ibhuesi\_4, Saal\_4, Juniper1\_4, Llama\_4, AlpineSix\_4, Modragons\_4, Latretium\_4, Sabbb\_4, Maravista\_4, OfUltron\_4, Nitzel\_5, Byougenkin\_4, Jinglebell\_4, Galactic\_4, Harley\_4, Hades\_4, Whouxphf\_4
- Track 8 : Kenuha5\_4, Akhila\_5, SuperGrey\_4, MilanaBonita\_5, Filuzino\_4
- Track 9 : Dante\_4
- Track 10 : Mattes\_4, BobaPhett\_4, James\_4, LastJedi\_4, Cabrinians\_4
- Track 11 : Mahavrat\_4, Eish\_4
- Track 12 : Eradicator\_4, Koella\_4, Crumble\_4, OlympiaSaint\_4, Nivrat\_4
- Track 13 : Strokeseat\_4, Clifton\_4, Hlubikazi\_4, Mandlovu\_4, NormanBulbieJr\_4, MulchSalad\_4, Pippy\_4
- Track 14 : Zizzle\_4
- Track 15 : PhesterPhotato\_4, IbOuu\_4
- Track 16 : VRedHorse\_4

- Track 17 : Llij\_4, Mantra\_4, GigiOuiOui\_4, Doug\_4, Spoonbill\_4, Sparkdehlily\_4, TDanisky\_4, Rockne\_4, DRBy19\_4, Moonbeam\_4, PMC\_4
- Track 18 : Bubbles123\_4, Donkeykong\_4
- Track 19 : Ms6\_4
- Track 20 : Mutaforma13\_4
- Track 21 : DillTech15\_4
- Track 22 : Samy\_7

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

The start number called the most often in the published annotations is 5, it was called in 153 of the 155 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_5, AlpineSix\_4, ArcusAngelus\_4, Ardmore\_4, Aubs\_4, Batiatus\_4, Bipolar\_4, Blexus\_4, BlueCrab\_4, BobaPhett\_4, BodEinwohner17\_4, Brocalys\_4, Bubbles123\_4, Burwell21\_4, ByChance\_4, Byougenkin\_4, Cabrinians\_4, CaptainTrips\_5, Che8\_4, Chevrolet\_3, Chuckly\_4, Clifton\_4, Crumble\_4, DLane\_4, DRBy19\_4, DaddyRickover\_4, Daenerys\_4, Dante\_4, DeadP\_4, Deb65\_4, Donkeykong\_4, Doomphist\_4, Dorothy\_4, DotProduct\_4, Doug\_4, Eish\_4, EleanorGeorge\_4, Emma\_4, Empress\_4, Eradicator\_4, Estave1\_4, Fancypants\_4, Filuzino\_4, Firehouse51\_4, Florinda\_4, FreddyB\_4, Fruitloop\_4, GUmble\_4, Galactic\_4, Gandalph\_4, Geralt\_4, GigiOuiOui\_4, Girr\_4, Gorge\_4, Guppsters\_4, Hades\_4, Hamulus\_4, Harley\_4, Hlubikazi\_4, Ibhubes\_i\_4, Inventum\_4, IrishSherpFalk\_4, James\_4, Jarcob\_4, Jinglebell\_4, JoeyJr\_4, Juniper1\_4, Karhdo\_4, Kenuha5\_4, Kersh\_4, KingMidas\_4, Koella\_4, Krakatau\_5, KristaRAM\_5, LastJedi\_4, Latretium\_4, Leperchaun\_4, LilMoolah\_4, Lizziana\_4, Llama\_4, Llij\_4, LunaBlu\_4, MadMen\_4, Mahavrat\_4, Mandlovu\_4, Mantra\_4, Maravista\_4, Martik\_4, Mattes\_4, Melissauren88\_4, MilanaBonita\_5, MilleniumForce\_5, MinionDave\_5, Minnie\_4, MisterCuddles\_4, Modragons\_4, Moonbeam\_4, MulchSalad\_4, Mutaforma13\_4, Nimbo\_4, Nitzel\_5, Nivrat\_4, NormanBulbieJr\_4, Ochi17\_4, OfUltron\_4, OldBen\_4, OlympiaSaint\_4, Ovechkin\_4, PHappiness\_4, PMC\_4, Pacc40\_4, Phalconet\_4, Phanphagia\_4, Phasih\_4, Phatniss\_4, Philus\_4, Pippy\_4, Poenanya\_4, Polka14\_4, PopTart\_4, Priscilla\_4, QuickMath\_4, Radiance\_4, RedBird\_4, RitaG\_4, Rita\_4, Rockne\_4, Royals2015\_4, Ruby\_4, SG4\_4, Saal\_4, Sabbb\_4, Sandalphon\_4, Sassafras\_4, SassyB\_4, Scottish\_4, Seabastian\_4, Shauna1\_4, ShiLan\_4, ShowerHandel\_4, ShroomBoi\_4, SiSi\_4, Sparkdehlily\_4, Spartacus\_4, Spoonbill\_4, StAnnes\_4, Strokeseat\_4, SuperGrey\_4, SwagPiggett\_4, TDanisky\_4, Taj\_4, Tweety\_4, VRedHorse\_4, Veteran\_4, Wachhund\_4, Wee\_4, Whatsapiecost\_4, Whouphf\_4, WillSterrel\_4, XFactor\_4, Yorick\_4, Zerg\_4, Zizzle\_4,

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

- DillTech15\_4, IbOuu\_4, Ms6\_4, PhesterPhotato\_4,

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

- SPB78\_4, Samy\_7, VWB\_4,

**Summary by start number:**

Start 2:

- Found in 2 of 170 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SPB78\_4 (BA), VWB\_4 (BA),

#### Start 3:

- Found in 1 of 170 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 155
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy\_7 (singleton),

#### Start 5:

- Found in 167 of 170 ( 98.2% ) of genes in pham
- Manual Annotations of this start: 153 of 155
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Akhila\_5 (F1), AlpineSix\_4 (F1), ArcusAngelus\_4 (F1), Ardmore\_4 (F1), Aubs\_4 (F1), Batiatus\_4 (F1), Bipolar\_4 (F1), Blexus\_4 (F1), BlueCrab\_4 (F1), BobaPhett\_4 (F1), BodEinwohner17\_4 (F1), Brocalys\_4 (F1), Bubbles123\_4 (F1), Burwell21\_4 (F1), ByChance\_4 (F1), Byougenkin\_4 (F1), Cabrinians\_4 (F1), CaptainTrips\_5 (F1), Che8\_4 (F1), Chevrolet\_3 (F1), Chuckly\_4 (F1), Clifton\_4 (F1), Crumble\_4 (F1), DLane\_4 (F1), DRBy19\_4 (F1), DaddyRickover\_4 (F1), Daenerys\_4 (F1), Dante\_4 (F1), DeadP\_4 (F1), Deb65\_4 (F1), Donkeykong\_4 (F1), Doomphist\_4 (F1), Dorothy\_4 (F1), DotProduct\_4 (F1), Doug\_4 (F1), Eish\_4 (F1), EleanorGeorge\_4 (F1), Emma\_4 (F1), Empress\_4 (F1), Eradicator\_4 (F1), Estave1\_4 (F1), Fancypants\_4 (F1), Filuzino\_4 (F1), Firehouse51\_4 (F1), Florinda\_4 (F1), FreddyB\_4 (F1), Fruitloop\_4 (F1), GUMbie\_4 (F1), Galactic\_4 (F1), Gandolph\_4 (F1), Geralt\_4 (F1), GigiOuiOui\_4 (F1), Girr\_4 (F1), Gorge\_4 (F1), Guppsters\_4 (F1), Hades\_4 (F1), Hamulus\_4 (F1), Harley\_4 (F1), Hlubikazi\_4 (F1), Ibhubesi\_4 (F1), Inventum\_4 (F1), IrishSherpFalk\_4 (F1), James\_4 (F1), Jarcob\_4 (F1), Jinglebell\_4 (F1), JoeyJr\_4 (F1), Juniper1\_4 (F1), Karhdo\_4 (F1), Kenuha5\_4 (F1), Kersh\_4 (F1), KingMidas\_4 (F1), Koella\_4 (F1), Krakatau\_5 (F1), KristaRAM\_5 (F1), LastJedi\_4 (F1), Latretium\_4 (F1), Leperchaun\_4 (F1), LilMoolah\_4 (F1), Lizziana\_4 (F1), Llama\_4 (F1), Llij\_4 (F1), LunaBlu\_4 (F1), MadMen\_4 (F1), Mahavrat\_4 (F1), Mandlovu\_4 (F1), Mantra\_4 (F1), Maravista\_4 (F1), Martik\_4 (F1), Mattes\_4 (F1), Melissauren88\_4 (F1), MilanaBonita\_5 (F1), MilleniumForce\_5 (F1), MinionDave\_5 (F1), Minnie\_4 (F1), MisterCuddles\_4 (F1), Modragons\_4 (F1), Moonbeam\_4 (F1), MulchSalad\_4 (F1), Mutaforma13\_4 (F1), Nimbo\_4 (F1), Nitzel\_5 (F1), Nivrat\_4 (F1), NormanBulbieJr\_4 (F1), Ochi17\_4 (F1), OfUltron\_4 (F1), OldBen\_4 (F1), OlympiaSaint\_4 (F1), Ovechkin\_4 (F1), PHappiness\_4 (F1), PMC\_4 (F1), Pacc40\_4 (F1), Phalconet\_4 (F1), Phanphagia\_4 (F1), Phasih\_4 (F1), Phatniss\_4 (F1), Philus\_4 (F1), Pippy\_4 (F1), Poenanya\_4 (F1), Polka14\_4 (F1), PopTart\_4 (F1), Priscilla\_4 (F1), QuickMath\_4 (F1), Radiance\_4 (F1), RedBird\_4 (F1), RitaG\_4 (F1), Rita\_4 (F1), Rockne\_4 (F1), Royals2015\_4 (F1), Ruby\_4 (F1), SG4\_4 (F1), Saal\_4 (F1), Sabbb\_4 (F1), Sandalphon\_4 (F1), Sassafras\_4 (F1), SassyB\_4 (F1), Scottish\_4 (F1), Sebastian\_4 (F1), Shauna1\_4 (F1), ShiLan\_4 (F1), ShowerHandel\_4 (F1), ShroomBoi\_4 (F1), SiSi\_4 (F1), Sparkdehlily\_4 (F1), Spartacus\_4 (F1), Spoonbill\_4 (F1), StAnnes\_4 (F1), Strokeseat\_4 (F1), SuperGrey\_4 (F1), SwagPigglett\_4 (F1), TDanisky\_4 (F1), Taj\_4 (F1), Tweety\_4 (F1), VRedHorse\_4 (F1), Veteran\_4 (F1), Wachhund\_4 (F1), Wee\_4 (F1), Whatsapiecost\_4 (F1), Whouxphf\_4 (F1), WillSterrel\_4 (F1), XFactor\_4 (F1), Yorick\_4 (F1), Zerg\_4 (F1), Zizzle\_4 (F1),

#### Start 17:

- Found in 167 of 170 ( 98.2% ) of genes in pham
- Manual Annotations of this start: 1 of 155
- Called 1.2% of time when present
- Phage (with cluster) where this start called: DillTech15\_4 (F1), Ms6\_4 (F1),

Start 18:

- Found in 168 of 170 ( 98.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.2% of time when present
- Phage (with cluster) where this start called: IbOuu\_4 (F1), PhesterPhotato\_4 (F1),

### **Summary by clusters:**

There are 4 clusters represented in this pham: F1, singleton, BA, F,

Info for manual annotations of cluster F1:

- Start number 5 was manually annotated 153 times for cluster F1.
- Start number 17 was manually annotated 1 time for cluster F1.

### **Gene Information:**

Gene: Akhila\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for Akhila\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (13, 4371), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (38, 4764), (39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: AlpineSix\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for AlpineSix\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: ArcusAngelus\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for ArcusAngelus\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Ardmore\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Ardmore\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Aubs\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Aubs\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119),

(41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Batiatus\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Batiatus\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Bipolar\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Bipolar\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Blexus\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Blexus\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: BlueCrab\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for BlueCrab\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: BobaPhett\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for BobaPhett\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (13, 3696), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: BodEinwohner17\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for BodEinwohner17\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Brocalys\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Brocalys\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Bubbles123\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Bubbles123\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (42, 4170), (44, 4221), (46, 4278),

Gene: Burwell21\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Burwell21\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (13, 3707), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (20, 3770), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: ByChance\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for ByChance\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Byougenkin\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Byougenkin\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Cabrinians\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Cabrinians\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (13, 3696), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: CaptainTrips\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for CaptainTrips\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (38, 4764), (39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: Che8\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Che8\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (13, 3707), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (20, 3770), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Chevrolet\_3 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for Chevrolet\_3:

(Start: 5 @3598 has 153 MA's), (8, 3658), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Chuckly\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Chuckly\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Clifton\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Clifton\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: Crumble\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for Crumble\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (42, 4156), (44, 4207), (46, 4264),

Gene: DLane\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for DLane\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: DRBy19\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for DRBy19\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: DaddyRickover\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for DaddyRickover\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Daenerys\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Daenerys\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Dante\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Dante\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (36, 4074), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: DeadP\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for DeadP\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Deb65\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Deb65\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: DillTech15\_4 Start: 3768, Stop: 4367, Start Num: 17

Candidate Starts for DillTech15\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),



Gene: Donkeykong\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Donkeykong\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (42, 4170), (44, 4221), (46, 4278),

Gene: Doomphist\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Doomphist\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Dorothy\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Dorothy\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: DotProduct\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for DotProduct\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (20, 3787), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (38, 4117), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: Doug\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Doug\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Eish\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Eish\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (13, 3696), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: EleanorGeorge\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for EleanorGeorge\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Emma\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Emma\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Empress\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Empress\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (20, 3770), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Eradicator\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Eradicator\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (42, 4155), (44, 4206), (46, 4263),

Gene: Estave1\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Estave1\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Fancypants\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Fancypants\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Filuzino\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for Filuzino\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (13, 3724), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (20, 3787), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (38, 4117), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: Firehouse51\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Firehouse51\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Florinda\_4 Start: 3615, Stop: 4370, Start Num: 5

Candidate Starts for Florinda\_4:

(Start: 5 @3615 has 153 MA's), (8, 3675), (15, 3738), (Start: 17 @3771 has 1 MA's), (18, 3780), (20, 3789), (22, 3822), (24, 3855), (25, 3870), (26, 3885), (35, 4053), (37, 4098), (39, 4122), (41, 4158), (42, 4173), (44, 4224), (46, 4281),

Gene: FreddyB\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for FreddyB\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Fruitloop\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Fruitloop\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: GUmbie\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for GUmbie\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (20, 3787), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (39, 4120), (41, 4156),

(42, 4171), (44, 4222), (46, 4279),

Gene: Galactic\_4 Start: 3584, Stop: 4339, Start Num: 5

Candidate Starts for Galactic\_4:

(Start: 5 @3584 has 153 MA's), (8, 3644), (15, 3707), (Start: 17 @3740 has 1 MA's), (18, 3749), (20, 3758), (22, 3791), (24, 3824), (25, 3839), (26, 3854), (35, 4022), (37, 4067), (39, 4091), (41, 4127), (42, 4142), (44, 4193), (46, 4250),

Gene: Gandalph\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Gandalph\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Geralt\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Geralt\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: GigiOuiOui\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for GigiOuiOui\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Girr\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for Girr\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Gorge\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Gorge\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Guppsters\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Guppsters\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Hades\_4 Start: 3600, Stop: 4355, Start Num: 5

Candidate Starts for Hades\_4:

(Start: 5 @3600 has 153 MA's), (8, 3660), (15, 3723), (Start: 17 @3756 has 1 MA's), (18, 3765), (20, 3774), (22, 3807), (24, 3840), (25, 3855), (26, 3870), (35, 4038), (37, 4083), (39, 4107), (41, 4143), (42, 4158), (44, 4209), (46, 4266),

Gene: Hamulus\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for Hamulus\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (20, 3787), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (38, 4117), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: Harley\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Harley\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Hlubikazi\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Hlubikazi\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: lbOuu\_4 Start: 3761, Stop: 4351, Start Num: 18

Candidate Starts for lbOuu\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (20, 3770), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: lbhubesi\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for lbhubesi\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Inventum\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Inventum\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: IrishSherpFalk\_4 Start: 3600, Stop: 4355, Start Num: 5

Candidate Starts for IrishSherpFalk\_4:

(Start: 5 @3600 has 153 MA's), (8, 3660), (15, 3723), (Start: 17 @3756 has 1 MA's), (18, 3765), (20, 3774), (22, 3807), (24, 3840), (25, 3855), (26, 3870), (35, 4038), (37, 4083), (38, 4104), (39, 4107), (41, 4143), (42, 4158), (44, 4209), (46, 4266),

Gene: James\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for James\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (13, 3696), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Jarcob\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Jarcob\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (13, 3708), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Jinglebell\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for Jinglebell\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: JoeyJr\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for JoeyJr\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Juniper1\_4 Start: 3584, Stop: 4339, Start Num: 5

Candidate Starts for Juniper1\_4:

(Start: 5 @3584 has 153 MA's), (8, 3644), (15, 3707), (Start: 17 @3740 has 1 MA's), (18, 3749), (20, 3758), (22, 3791), (24, 3824), (25, 3839), (26, 3854), (35, 4022), (37, 4067), (39, 4091), (41, 4127), (42, 4142), (44, 4193), (46, 4250),

Gene: Karhdo\_4 Start: 3601, Stop: 4356, Start Num: 5

Candidate Starts for Karhdo\_4:

(Start: 5 @3601 has 153 MA's), (8, 3661), (15, 3724), (Start: 17 @3757 has 1 MA's), (18, 3766), (20, 3775), (22, 3808), (24, 3841), (25, 3856), (26, 3871), (35, 4039), (37, 4084), (39, 4108), (41, 4144), (42, 4159), (44, 4210), (46, 4267),

Gene: Kenuha5\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Kenuha5\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Kersh\_4 Start: 3588, Stop: 4343, Start Num: 5

Candidate Starts for Kersh\_4:

(Start: 5 @3588 has 153 MA's), (8, 3648), (15, 3711), (Start: 17 @3744 has 1 MA's), (18, 3753), (20, 3762), (22, 3795), (24, 3828), (25, 3843), (26, 3858), (35, 4026), (37, 4071), (39, 4095), (41, 4131), (42, 4146), (44, 4197), (46, 4254),

Gene: KingMidas\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for KingMidas\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Koella\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Koella\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (42, 4155), (44, 4206), (46, 4263),

Gene: Krakatau\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for Krakatau\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: KristaRAM\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for KristaRAM\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (38, 4764), (39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: LastJedi\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for LastJedi\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (13, 3696), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Latretium\_4 Start: 3584, Stop: 4339, Start Num: 5

Candidate Starts for Latretium\_4:

(Start: 5 @3584 has 153 MA's), (8, 3644), (15, 3707), (Start: 17 @3740 has 1 MA's), (18, 3749), (20, 3758), (22, 3791), (24, 3824), (25, 3839), (26, 3854), (35, 4022), (37, 4067), (39, 4091), (41, 4127), (42, 4142), (44, 4193), (46, 4250),

Gene: Leperchaun\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Leperchaun\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: LilMoolah\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for LilMoolah\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Lizziana\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for Lizziana\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Llama\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for Llama\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: Llij\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Llij\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: LunaBlu\_4 Start: 3584, Stop: 4339, Start Num: 5

Candidate Starts for LunaBlu\_4:

(Start: 5 @3584 has 153 MA's), (8, 3644), (15, 3707), (Start: 17 @3740 has 1 MA's), (18, 3749), (20, 3758), (22, 3791), (24, 3824), (25, 3839), (26, 3854), (35, 4022), (37, 4067), (39, 4091), (41, 4127), (42, 4142), (44, 4193), (46, 4250),

Gene: MadMen\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for MadMen\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Mahavrat\_4 Start: 3584, Stop: 4339, Start Num: 5

Candidate Starts for Mahavrat\_4:

(Start: 5 @3584 has 153 MA's), (8, 3644), (13, 3695), (15, 3707), (Start: 17 @3740 has 1 MA's), (18, 3749), (20, 3758), (22, 3791), (24, 3824), (25, 3839), (26, 3854), (35, 4022), (37, 4067), (39, 4091), (42, 4142), (44, 4193), (46, 4250),

Gene: Mandlovu\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Mandlovu\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: Mantra\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Mantra\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Maravista\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Maravista\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Martik\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for Martik\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Mattes\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Mattes\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (13, 3696), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Melissauren88\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Melissauren88\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: MilanaBonita\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for MilanaBonita\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (13, 4371), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (38, 4764),

(39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: MilleniumForce\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for MilleniumForce\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (38, 4764), (39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: MinionDave\_5 Start: 4260, Stop: 5015, Start Num: 5

Candidate Starts for MinionDave\_5:

(Start: 5 @4260 has 153 MA's), (8, 4320), (15, 4383), (Start: 17 @4416 has 1 MA's), (18, 4425), (20, 4434), (22, 4467), (24, 4500), (25, 4515), (26, 4530), (35, 4698), (37, 4743), (38, 4764), (39, 4767), (41, 4803), (42, 4818), (44, 4869), (46, 4926),

Gene: Minnie\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Minnie\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: MisterCuddles\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for MisterCuddles\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: Modragons\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for Modragons\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: Moonbeam\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Moonbeam\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Ms6\_4 Start: 3768, Stop: 4367, Start Num: 17

Candidate Starts for Ms6\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: MulchSalad\_4 Start: 3599, Stop: 4354, Start Num: 5

Candidate Starts for MulchSalad\_4:

(Start: 5 @3599 has 153 MA's), (8, 3659), (15, 3722), (Start: 17 @3755 has 1 MA's), (18, 3764), (20, 3773), (22, 3806), (24, 3839), (25, 3854), (26, 3869), (35, 4037), (37, 4082), (39, 4106), (42, 4157), (44, 4208), (46, 4265),

Gene: Mutaforma13\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Mutaforma13\_4:



(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (36, 4074), (37, 4095), (38, 4116), (39, 4119), (40, 4149), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Nimbo\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Nimbo\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Nitzel\_5 Start: 4248, Stop: 5003, Start Num: 5

Candidate Starts for Nitzel\_5:

(Start: 5 @4248 has 153 MA's), (8, 4308), (15, 4371), (Start: 17 @4404 has 1 MA's), (18, 4413), (20, 4422), (22, 4455), (24, 4488), (25, 4503), (26, 4518), (35, 4686), (37, 4731), (39, 4755), (41, 4791), (42, 4806), (44, 4857), (46, 4914),

Gene: Nivrat\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Nivrat\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (42, 4155), (44, 4206), (46, 4263),

Gene: NormanBulbieJr\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for NormanBulbieJr\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: Ochi17\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for Ochi17\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: OfUltron\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for OfUltron\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: OldBen\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for OldBen\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: OlympiaSaint\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for OlympiaSaint\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (42, 4155), (44, 4206), (46, 4263),

Gene: Ovechkin\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Ovechkin\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: PHappiness\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for PHappiness\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: PMC\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for PMC\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Pacc40\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Pacc40\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Phalconet\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Phalconet\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Phanphagia\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Phanphagia\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Phasih\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Phasih\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Phatniss\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Phatniss\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (38, 4101), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: PhesterPhotato\_4 Start: 3777, Stop: 4367, Start Num: 18

Candidate Starts for PhesterPhotato\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Philus\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Philus\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (13, 3708), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Pippy\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Pippy\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: Poenanya\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Poenanya\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Polka14\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Polka14\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (38, 4101), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: PopTart\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for PopTart\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Priscilla\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Priscilla\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: QuickMath\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for QuickMath\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Radiance\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Radiance\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: RedBird\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for RedBird\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Rita\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for Rita\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (20, 3787), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (38, 4117), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: RitaG\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for RitaG\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Rockne\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Rockne\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Royals2015\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Royals2015\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Ruby\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for Ruby\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: SG4\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for SG4\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: SPB78\_4 Start: 3544, Stop: 4344, Start Num: 2

Candidate Starts for SPB78\_4:

(2, 3544), (4, 3556), (6, 3616), (7, 3625), (10, 3676), (11, 3691), (16, 3724), (18, 3757), (21, 3769), (30, 3952), (33, 3988), (39, 4093), (43, 4174), (46, 4255),

Gene: Saal\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Saal\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Sabbb\_4 Start: 3600, Stop: 4355, Start Num: 5

Candidate Starts for Sabbb\_4:

(Start: 5 @3600 has 153 MA's), (8, 3660), (15, 3723), (Start: 17 @3756 has 1 MA's), (18, 3765), (20, 3774), (22, 3807), (24, 3840), (25, 3855), (26, 3870), (35, 4038), (37, 4083), (39, 4107), (41, 4143), (42, 4158), (44, 4209), (46, 4266),

Gene: Samy\_7 Start: 5022, Stop: 5831, Start Num: 3

Candidate Starts for Samy\_7:

(Start: 3 @5022 has 1 MA's), (9, 5139), (23, 5280), (28, 5355), (29, 5418), (32, 5463), (34, 5475), (44, 5679), (45, 5691), (47, 5763),

Gene: Sandalphon\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Sandalphon\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Sassafras\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Sassafras\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: SassyB\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for SassyB\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Scottish\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Scottish\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (38, 4100), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Seabastian\_4 Start: 3594, Stop: 4349, Start Num: 5

Candidate Starts for Seabastian\_4:

(Start: 5 @3594 has 153 MA's), (8, 3654), (15, 3717), (Start: 17 @3750 has 1 MA's), (18, 3759), (20, 3768), (22, 3801), (24, 3834), (25, 3849), (26, 3864), (35, 4032), (37, 4077), (39, 4101), (41, 4137), (42, 4152), (44, 4203), (46, 4260),

Gene: Shauna1\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Shauna1\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: ShiLan\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for ShiLan\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (13, 3708), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: ShowerHandel\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for ShowerHandel\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105), (41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: ShroomBoi\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for ShroomBoi\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: SiSi\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for SiSi\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (38, 4101), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Sparkdehlily\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for Sparkdehlily\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: Spartacus\_4 Start: 3600, Stop: 4355, Start Num: 5

Candidate Starts for Spartacus\_4:

(Start: 5 @3600 has 153 MA's), (8, 3660), (15, 3723), (Start: 17 @3756 has 1 MA's), (18, 3765), (20, 3774), (22, 3807), (24, 3840), (25, 3855), (26, 3870), (35, 4038), (37, 4083), (38, 4104), (39, 4107), (41, 4143), (42, 4158), (44, 4209), (46, 4266),

Gene: Spoonbill\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Spoonbill\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: StAnnes\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for StAnnes\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Strokeseat\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Strokeseat\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (42, 4143), (44, 4194), (46, 4251),

Gene: SuperGrey\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for SuperGrey\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (13, 3723), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: SwagPigglett\_4 Start: 3598, Stop: 4353, Start Num: 5

Candidate Starts for SwagPigglett\_4:

(Start: 5 @3598 has 153 MA's), (8, 3658), (13, 3709), (15, 3721), (Start: 17 @3754 has 1 MA's), (18, 3763), (20, 3772), (22, 3805), (24, 3838), (25, 3853), (26, 3868), (35, 4036), (37, 4081), (39, 4105),

(41, 4141), (42, 4156), (44, 4207), (46, 4264),

Gene: TDanisky\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for TDanisky\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: Taj\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Taj\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Tweety\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Tweety\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: VRedHorse\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for VRedHorse\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (36, 4059), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: VWB\_4 Start: 3615, Stop: 4418, Start Num: 2

Candidate Starts for VWB\_4:

(1, 3606), (2, 3615), (12, 3765), (14, 3777), (16, 3795), (19, 3831), (21, 3840), (27, 3930), (33, 4059), (39, 4164), (46, 4326),

Gene: Veteran\_4 Start: 3613, Stop: 4368, Start Num: 5

Candidate Starts for Veteran\_4:

(Start: 5 @3613 has 153 MA's), (8, 3673), (15, 3736), (Start: 17 @3769 has 1 MA's), (18, 3778), (20, 3787), (22, 3820), (24, 3853), (25, 3868), (26, 3883), (35, 4051), (37, 4096), (39, 4120), (41, 4156), (42, 4171), (44, 4222), (46, 4279),

Gene: Wachhund\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Wachhund\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: Wee\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Wee\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Whatsapiecost\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for Whatsapiecost\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119),

(41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Whouxphf\_4 Start: 3585, Stop: 4340, Start Num: 5

Candidate Starts for Whouxphf\_4:

(Start: 5 @3585 has 153 MA's), (8, 3645), (15, 3708), (Start: 17 @3741 has 1 MA's), (18, 3750), (20, 3759), (22, 3792), (24, 3825), (25, 3840), (26, 3855), (35, 4023), (37, 4068), (39, 4092), (41, 4128), (42, 4143), (44, 4194), (46, 4251),

Gene: WillSterrel\_4 Start: 3600, Stop: 4355, Start Num: 5

Candidate Starts for WillSterrel\_4:

(Start: 5 @3600 has 153 MA's), (8, 3660), (15, 3723), (Start: 17 @3756 has 1 MA's), (18, 3765), (20, 3774), (22, 3807), (24, 3840), (25, 3855), (26, 3870), (35, 4038), (37, 4083), (38, 4104), (39, 4107), (41, 4143), (42, 4158), (44, 4209), (46, 4266),

Gene: XFactor\_4 Start: 3612, Stop: 4367, Start Num: 5

Candidate Starts for XFactor\_4:

(Start: 5 @3612 has 153 MA's), (8, 3672), (15, 3735), (Start: 17 @3768 has 1 MA's), (18, 3777), (20, 3786), (22, 3819), (24, 3852), (25, 3867), (26, 3882), (35, 4050), (37, 4095), (38, 4116), (39, 4119), (41, 4155), (42, 4170), (44, 4221), (46, 4278),

Gene: Yorick\_4 Start: 3596, Stop: 4351, Start Num: 5

Candidate Starts for Yorick\_4:

(Start: 5 @3596 has 153 MA's), (8, 3656), (13, 3707), (15, 3719), (Start: 17 @3752 has 1 MA's), (18, 3761), (20, 3770), (22, 3803), (24, 3836), (25, 3851), (26, 3866), (35, 4034), (37, 4079), (39, 4103), (41, 4139), (42, 4154), (44, 4205), (46, 4262),

Gene: Zerg\_4 Start: 3597, Stop: 4352, Start Num: 5

Candidate Starts for Zerg\_4:

(Start: 5 @3597 has 153 MA's), (8, 3657), (13, 3708), (15, 3720), (Start: 17 @3753 has 1 MA's), (18, 3762), (20, 3771), (22, 3804), (24, 3837), (25, 3852), (26, 3867), (35, 4035), (37, 4080), (39, 4104), (41, 4140), (42, 4155), (44, 4206), (46, 4263),

Gene: Zizzle\_4 Start: 3600, Stop: 4355, Start Num: 5

Candidate Starts for Zizzle\_4:

(Start: 5 @3600 has 153 MA's), (8, 3660), (13, 3711), (15, 3723), (Start: 17 @3756 has 1 MA's), (18, 3765), (20, 3774), (22, 3807), (24, 3840), (25, 3855), (26, 3870), (31, 3993), (35, 4038), (37, 4083), (39, 4107), (42, 4158), (44, 4209), (46, 4266),