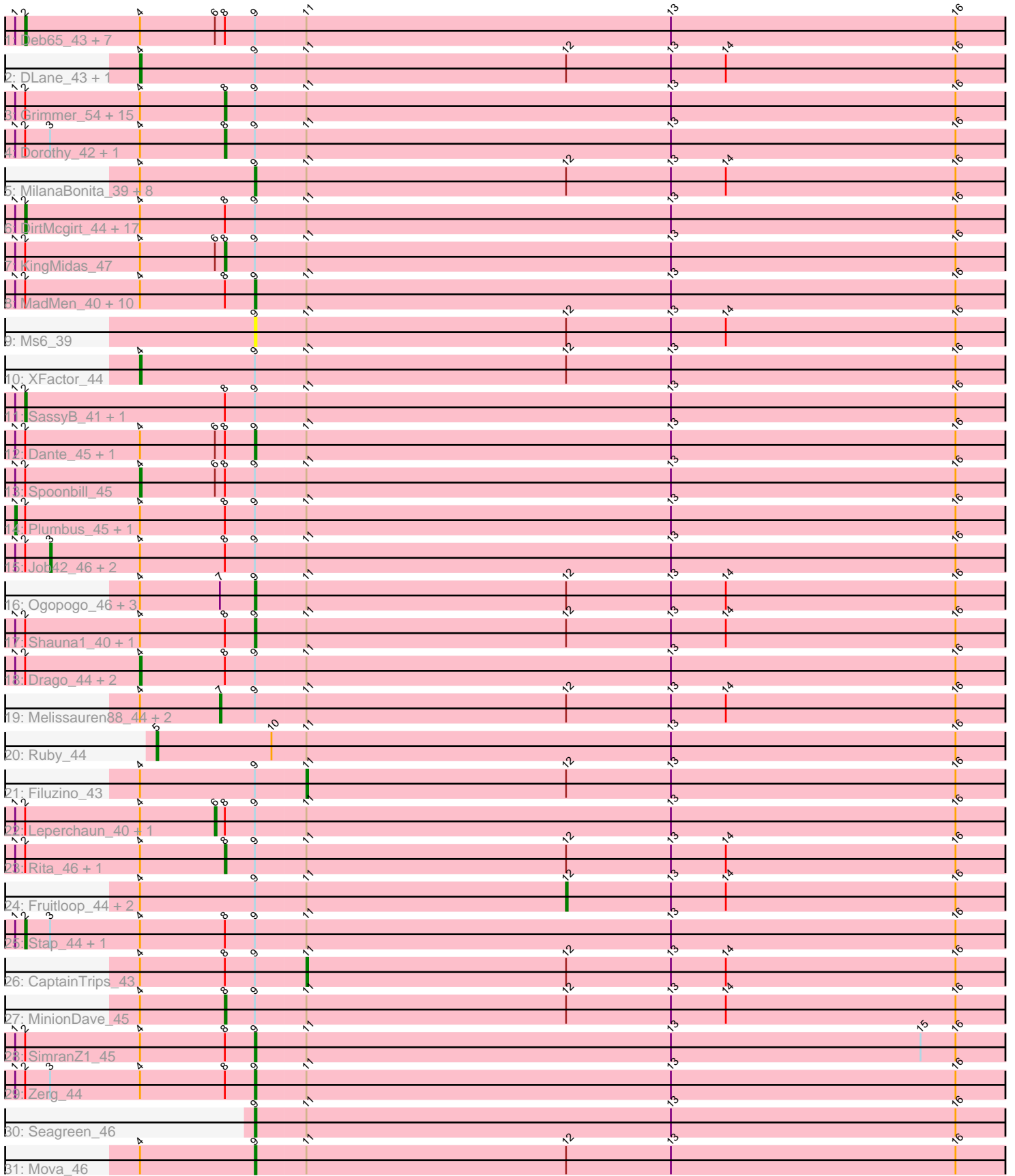


Pham 202813



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 202813 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202813 has 108 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Deb65\_43, Nimbo\_42, JoeyJr\_43, PHappiness\_43, Inventum\_42, Geralt\_43, Polka14\_44, Pacc40\_42
- Track 2 : DLane\_43, Cornucopia\_49
- Track 3 : Grimmer\_54, TDanisky\_48, Chuckly\_45, Estave1\_46, Marker\_46, Modragons\_46, Blarby\_56, Llama\_47, Tootsieroll\_47, Krakatau\_43, OfUltron\_47, Taj\_47, OlympiaSaint\_45, Burwell21\_45, Phatniss\_43, DoRead\_47
- Track 4 : Dorothy\_42, Doomphist\_45
- Track 5 : MilanaBonita\_39, StAnnes\_45, Akhila\_39, LunaBlu\_48, Galactic\_45, KristaRAM\_45, Flathead\_46, Guppsters\_46, Ovechkin\_43
- Track 6 : DirtMcgirt\_44, Martik\_46, Jarcob\_46, Llij\_42, Lizziana\_52, Koella\_40, Nitzel\_41, Ibhubesi\_46, LilMoolah\_44, Latretium\_48, Priscilla\_46, Eradicator\_37, Nivrat\_44, ArcusAngelus\_49, BodEinwohner17\_44, Yorick\_43, Sparkdehlily\_48, Cabrinians\_47
- Track 7 : KingMidas\_47
- Track 8 : MadMen\_40, Leozinho\_45, NormanBulbieJr\_47, Chevrolet\_52, Mozy\_54, ShowerHandel\_48, FreddyB\_46, ShiLan\_46, Seabastian\_47, Crumble\_41, Eish\_46
- Track 9 : Ms6\_39
- Track 10 : XFactor\_44
- Track 11 : SassyB\_41, PopTart\_41
- Track 12 : Dante\_45, Scottish\_46
- Track 13 : Spoonbill\_45
- Track 14 : Plumbus\_45, Boomer\_48
- Track 15 : Job42\_46, Blexus\_43, RockyHorror\_46
- Track 16 : Ogopogo\_46, PhesterPhotato\_47, SG4\_44, Enby\_47
- Track 17 : Shauna1\_40, LittleShirley\_45
- Track 18 : Drago\_44, Rockne\_43, PMC\_40
- Track 19 : Melissauren88\_44, Phalconet\_44, VRedHorse\_46
- Track 20 : Ruby\_44
- Track 21 : Filuzino\_43
- Track 22 : Leperchaun\_40, RitaG\_43
- Track 23 : Rita\_46, Kenuha5\_41
- Track 24 : Fruitloop\_44, Ardmore\_38, SuperGrey\_46
- Track 25 : Stap\_44, Phasih\_43
- Track 26 : CaptainTrips\_43
- Track 27 : MinionDave\_45
- Track 28 : SimranZ1\_45
- Track 29 : Zerg\_44

- Track 30 : Seagreen\_46
- Track 31 : Mova\_46

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

The start number called the most often in the published annotations is 9, it was called in 32 of the 103 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_39, Chevrolet\_52, Crumble\_41, Dante\_45, Eish\_46, Enby\_47, Flathead\_46, FreddyB\_46, Galactic\_45, Guppsters\_46, KristaRAM\_45, Leozinho\_45, LittleShirley\_45, LunaBlu\_48, MadMen\_40, MilanaBonita\_39, Mova\_46, Mozy\_54, Ms6\_39, NormanBulbieJr\_47, Ogopogo\_46, Ovechkin\_43, PhesterPhotato\_47, SG4\_44, Scottish\_46, Seabastian\_47, Seagreen\_46, Shauna1\_40, ShiLan\_46, ShowerHandel\_48, SimranZ1\_45, StAnnes\_45, Zerg\_44,

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

- ArcusAngelus\_49, Ardmore\_38, Blarby\_56, Blexus\_43, BodEinwohner17\_44, Boomer\_48, Burwell21\_45, Cabrinians\_47, CaptainTrips\_43, Chuckly\_45, Cornucopia\_49, DLane\_43, Deb65\_43, DirtMcgirt\_44, DoRead\_47, Doomphist\_45, Dorothy\_42, Drago\_44, Eradicator\_37, Estave1\_46, Filuzino\_43, Fruitloop\_44, Geralt\_43, Grimmer\_54, Ibhubesi\_46, Inventum\_42, Jarcob\_46, Job42\_46, JoeyJr\_43, Kenuha5\_41, KingMidas\_47, Koella\_40, Krakatau\_43, Latretium\_48, Leperchaun\_40, LilMoolah\_44, Lizziana\_52, Llama\_47, Llij\_42, Marker\_46, Martik\_46, Melissauren88\_44, MinionDave\_45, Modragons\_46, Nimbo\_42, Nitzel\_41, Nivrat\_44, OfUltron\_47, OlympiaSaint\_45, PHappiness\_43, PMC\_40, Pacc40\_42, Phalconet\_44, Phasih\_43, Phatniss\_43, Plumbus\_45, Polka14\_44, PopTart\_41, Priscilla\_46, RitaG\_43, Rita\_46, Rockne\_43, RockyHorror\_46, SassyB\_41, Sparkdehlily\_48, Spoonbill\_45, Stap\_44, SuperGrey\_46, TDanisky\_48, Taj\_47, Tootsieroll\_47, VRedHorse\_46, XFactor\_44, Yorick\_43,

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

- Ruby\_44,

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

Start 1:

- Found in 79 of 108 ( 73.1% ) of genes in pham
- Manual Annotations of this start: 2 of 103
- Called 2.5% of time when present
- Phage (with cluster) where this start called: Boomer\_48 (F1), Plumbus\_45 (F1),

Start 2:

- Found in 79 of 108 ( 73.1% ) of genes in pham
- Manual Annotations of this start: 30 of 103
- Called 38.0% of time when present
- Phage (with cluster) where this start called: ArcusAngelus\_49 (F1), BodEinwohner17\_44 (F1), Cabrinians\_47 (F1), Deb65\_43 (F1), DirtMcgirt\_44 (F1), Eradicator\_37 (F1), Geralt\_43 (F1), Ibhubesi\_46 (F1), Inventum\_42 (F1), Jarcob\_46 (F1), JoeyJr\_43 (F1), Koella\_40 (F1), Latretium\_48 (F1), LilMoolah\_44 (F1),

Lizziana\_52 (F1), Llij\_42 (F1), Martik\_46 (F1), Nimbo\_42 (F1), Nitzel\_41 (F1), Nivrat\_44 (F1), PHappiness\_43 (F1), Pacc40\_42 (F1), Phasih\_43 (F1), Polka14\_44 (F1), PopTart\_41 (F1), Priscilla\_46 (F1), SassyB\_41 (F1), Sparkdehlily\_48 (F1), Stap\_44 (F1), Yorick\_43 (F1),

Start 3:

- Found in 8 of 108 ( 7.4% ) of genes in pham
- Manual Annotations of this start: 3 of 103
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Blexus\_43 (F1), Job42\_46 (F1), RockyHorror\_46 (F1),

Start 4:

- Found in 103 of 108 ( 95.4% ) of genes in pham
- Manual Annotations of this start: 7 of 103
- Called 6.8% of time when present
- Phage (with cluster) where this start called: Cornucopia\_49 (F1), DLane\_43 (F1), Drago\_44 (F1), PMC\_40 (F1), Rockne\_43 (F1), Spoonbill\_45 (F1), XFactor\_44 (F1),

Start 5:

- Found in 1 of 108 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ruby\_44 (F1),

Start 6:

- Found in 14 of 108 ( 13.0% ) of genes in pham
- Manual Annotations of this start: 2 of 103
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Leperchaun\_40 (F1), RitaG\_43 (F1),

Start 7:

- Found in 7 of 108 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 3 of 103
- Called 42.9% of time when present
- Phage (with cluster) where this start called: Melissauren88\_44 (F1), Phalconet\_44 (F1), VRedHorse\_46 (F1),

Start 8:

- Found in 81 of 108 ( 75.0% ) of genes in pham
- Manual Annotations of this start: 19 of 103
- Called 27.2% of time when present
- Phage (with cluster) where this start called: Blarby\_56 (F), Burwell21\_45 (F1), Chuckly\_45 (F1), DoRead\_47 (F1), Doomphist\_45 (F1), Dorothy\_42 (F1), Estave1\_46 (F1), Grimmer\_54 (F1), Kenuha5\_41 (F1), KingMidas\_47 (F1), Krakatau\_43 (F1), Llama\_47 (F1), Marker\_46 (F1), MinionDave\_45 (F1), Modragons\_46 (F1), OfUltron\_47 (F1), OlympiaSaint\_45 (F1), Phatniss\_43 (F1), Rita\_46 (F1), TDanisky\_48 (F1), Taj\_47 (F1), Tootsieroll\_47 (F1),

Start 9:

- Found in 107 of 108 ( 99.1% ) of genes in pham
- Manual Annotations of this start: 32 of 103
- Called 30.8% of time when present

- Phage (with cluster) where this start called: Akhila\_39 (F1), Chevrolet\_52 (F1), Crumble\_41 (F1), Dante\_45 (F1), Eish\_46 (F1), Enby\_47 (F1), Flathead\_46 (F1), FreddyB\_46 (F1), Galactic\_45 (F1), Guppsters\_46 (F1), KristaRAM\_45 (F1), Leozinho\_45 (F1), LittleShirley\_45 (F1), LunaBlu\_48 (F1), MadMen\_40 (F1), MilanaBonita\_39 (F1), Mova\_46 (F1), Mozy\_54 (F1), Ms6\_39 (F1), NormanBulbieJr\_47 (F1), Ogopogo\_46 (F1), Ovechkin\_43 (F1), PhesterPhotato\_47 (F1), SG4\_44 (F1), Scottish\_46 (F1), Seabastian\_47 (F1), Seagreen\_46 (F1), Shauna1\_40 (F1), ShiLan\_46 (F1), ShowerHandel\_48 (F1), SimranZ1\_45 (F1), StAnnes\_45 (F1), Zerg\_44 (F1),

Start 11:

- Found in 108 of 108 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 2 of 103
- Called 1.9% of time when present
- Phage (with cluster) where this start called: CaptainTrips\_43 (F1), Filuzino\_43 (F1),

Start 12:

- Found in 31 of 108 ( 28.7% ) of genes in pham
- Manual Annotations of this start: 2 of 103
- Called 9.7% of time when present
- Phage (with cluster) where this start called: Ardmore\_38 (F1), Fruitloop\_44 (F1), SuperGrey\_46 (F1),

### **Summary by clusters:**

There are 2 clusters represented in this pham: F1, F,

Info for manual annotations of cluster F1:

- Start number 1 was manually annotated 2 times for cluster F1.
- Start number 2 was manually annotated 30 times for cluster F1.
- Start number 3 was manually annotated 3 times for cluster F1.
- Start number 4 was manually annotated 7 times for cluster F1.
- Start number 5 was manually annotated 1 time for cluster F1.
- Start number 6 was manually annotated 2 times for cluster F1.
- Start number 7 was manually annotated 3 times for cluster F1.
- Start number 8 was manually annotated 19 times for cluster F1.
- Start number 9 was manually annotated 32 times for cluster F1.
- Start number 11 was manually annotated 2 times for cluster F1.
- Start number 12 was manually annotated 2 times for cluster F1.

### **Gene Information:**

Gene: Akhila\_39 Start: 31622, Stop: 31023, Start Num: 9

Candidate Starts for Akhila\_39:

(Start: 4 @31691 has 7 MA's), (Start: 9 @31622 has 32 MA's), (Start: 11 @31592 has 2 MA's), (Start: 12 @31436 has 2 MA's), (13, 31373), (14, 31340), (16, 31202),

Gene: ArcusAngelus\_49 Start: 37110, Stop: 36370, Start Num: 2

Candidate Starts for ArcusAngelus\_49:

(Start: 1 @37116 has 2 MA's), (Start: 2 @37110 has 30 MA's), (Start: 4 @37041 has 7 MA's), (Start: 8 @36990 has 19 MA's), (Start: 9 @36972 has 32 MA's), (Start: 11 @36942 has 2 MA's), (13, 36723), (16, 36552),

Gene: Ardmore\_38 Start: 33212, Stop: 32799, Start Num: 12

Candidate Starts for Ardmore\_38:

(Start: 4 @33467 has 7 MA's), (Start: 9 @33398 has 32 MA's), (Start: 11 @33368 has 2 MA's), (Start: 12 @33212 has 2 MA's), (13, 33149), (14, 33116), (16, 32978),

Gene: Blarby\_56 Start: 35403, Stop: 34783, Start Num: 8

Candidate Starts for Blarby\_56:

(Start: 1 @35529 has 2 MA's), (Start: 2 @35523 has 30 MA's), (Start: 4 @35454 has 7 MA's), (Start: 8 @35403 has 19 MA's), (Start: 9 @35385 has 32 MA's), (Start: 11 @35355 has 2 MA's), (13, 35136), (16, 34965),

Gene: Blexus\_43 Start: 34826, Stop: 34104, Start Num: 3

Candidate Starts for Blexus\_43:

(Start: 1 @34847 has 2 MA's), (Start: 2 @34841 has 30 MA's), (Start: 3 @34826 has 3 MA's), (Start: 4 @34772 has 7 MA's), (Start: 8 @34721 has 19 MA's), (Start: 9 @34703 has 32 MA's), (Start: 11 @34673 has 2 MA's), (13, 34454), (16, 34283),

Gene: BodEinwohner17\_44 Start: 34783, Stop: 34043, Start Num: 2

Candidate Starts for BodEinwohner17\_44:

(Start: 1 @34789 has 2 MA's), (Start: 2 @34783 has 30 MA's), (Start: 4 @34714 has 7 MA's), (Start: 8 @34663 has 19 MA's), (Start: 9 @34645 has 32 MA's), (Start: 11 @34615 has 2 MA's), (13, 34396), (16, 34225),

Gene: Boomer\_48 Start: 36022, Stop: 35276, Start Num: 1

Candidate Starts for Boomer\_48:

(Start: 1 @36022 has 2 MA's), (Start: 2 @36016 has 30 MA's), (Start: 4 @35947 has 7 MA's), (Start: 8 @35896 has 19 MA's), (Start: 9 @35878 has 32 MA's), (Start: 11 @35848 has 2 MA's), (13, 35629), (16, 35458),

Gene: Burwell21\_45 Start: 35928, Stop: 35308, Start Num: 8

Candidate Starts for Burwell21\_45:

(Start: 1 @36054 has 2 MA's), (Start: 2 @36048 has 30 MA's), (Start: 4 @35979 has 7 MA's), (Start: 8 @35928 has 19 MA's), (Start: 9 @35910 has 32 MA's), (Start: 11 @35880 has 2 MA's), (13, 35661), (16, 35490),

Gene: Cabrinians\_47 Start: 36126, Stop: 35386, Start Num: 2

Candidate Starts for Cabrinians\_47:

(Start: 1 @36132 has 2 MA's), (Start: 2 @36126 has 30 MA's), (Start: 4 @36057 has 7 MA's), (Start: 8 @36006 has 19 MA's), (Start: 9 @35988 has 32 MA's), (Start: 11 @35958 has 2 MA's), (13, 35739), (16, 35568),

Gene: CaptainTrips\_43 Start: 34800, Stop: 34231, Start Num: 11

Candidate Starts for CaptainTrips\_43:

(Start: 4 @34899 has 7 MA's), (Start: 8 @34848 has 19 MA's), (Start: 9 @34830 has 32 MA's), (Start: 11 @34800 has 2 MA's), (Start: 12 @34644 has 2 MA's), (13, 34581), (14, 34548), (16, 34410),

Gene: Chevrolet\_52 Start: 36973, Stop: 36371, Start Num: 9

Candidate Starts for Chevrolet\_52:

(Start: 1 @37117 has 2 MA's), (Start: 2 @37111 has 30 MA's), (Start: 4 @37042 has 7 MA's), (Start: 8 @36991 has 19 MA's), (Start: 9 @36973 has 32 MA's), (Start: 11 @36943 has 2 MA's), (13, 36724), (16, 36553),

Gene: Chuckly\_45 Start: 34691, Stop: 34071, Start Num: 8

Candidate Starts for Chuckly\_45:

(Start: 1 @34817 has 2 MA's), (Start: 2 @34811 has 30 MA's), (Start: 4 @34742 has 7 MA's), (Start: 8 @34691 has 19 MA's), (Start: 9 @34673 has 32 MA's), (Start: 11 @34643 has 2 MA's), (13, 34424), (16, 34253),

Gene: Cornucopia\_49 Start: 36045, Stop: 35377, Start Num: 4

Candidate Starts for Cornucopia\_49:

(Start: 4 @36045 has 7 MA's), (Start: 9 @35976 has 32 MA's), (Start: 11 @35946 has 2 MA's), (Start: 12 @35790 has 2 MA's), (13, 35727), (14, 35694), (16, 35556),

Gene: Crumble\_41 Start: 31924, Stop: 31322, Start Num: 9

Candidate Starts for Crumble\_41:

(Start: 1 @32068 has 2 MA's), (Start: 2 @32062 has 30 MA's), (Start: 4 @31993 has 7 MA's), (Start: 8 @31942 has 19 MA's), (Start: 9 @31924 has 32 MA's), (Start: 11 @31894 has 2 MA's), (13, 31675), (16, 31504),

Gene: DLane\_43 Start: 34828, Stop: 34160, Start Num: 4

Candidate Starts for DLane\_43:

(Start: 4 @34828 has 7 MA's), (Start: 9 @34759 has 32 MA's), (Start: 11 @34729 has 2 MA's), (Start: 12 @34573 has 2 MA's), (13, 34510), (14, 34477), (16, 34339),

Gene: Dante\_45 Start: 34409, Stop: 33807, Start Num: 9

Candidate Starts for Dante\_45:

(Start: 1 @34553 has 2 MA's), (Start: 2 @34547 has 30 MA's), (Start: 4 @34478 has 7 MA's), (Start: 6 @34433 has 2 MA's), (Start: 8 @34427 has 19 MA's), (Start: 9 @34409 has 32 MA's), (Start: 11 @34379 has 2 MA's), (13, 34160), (16, 33989),

Gene: Deb65\_43 Start: 34402, Stop: 33662, Start Num: 2

Candidate Starts for Deb65\_43:

(Start: 1 @34408 has 2 MA's), (Start: 2 @34402 has 30 MA's), (Start: 4 @34333 has 7 MA's), (Start: 6 @34288 has 2 MA's), (Start: 8 @34282 has 19 MA's), (Start: 9 @34264 has 32 MA's), (Start: 11 @34234 has 2 MA's), (13, 34015), (16, 33844),

Gene: DirtMcgirt\_44 Start: 34084, Stop: 33344, Start Num: 2

Candidate Starts for DirtMcgirt\_44:

(Start: 1 @34090 has 2 MA's), (Start: 2 @34084 has 30 MA's), (Start: 4 @34015 has 7 MA's), (Start: 8 @33964 has 19 MA's), (Start: 9 @33946 has 32 MA's), (Start: 11 @33916 has 2 MA's), (13, 33697), (16, 33526),

Gene: DoRead\_47 Start: 34679, Stop: 34059, Start Num: 8

Candidate Starts for DoRead\_47:

(Start: 1 @34805 has 2 MA's), (Start: 2 @34799 has 30 MA's), (Start: 4 @34730 has 7 MA's), (Start: 8 @34679 has 19 MA's), (Start: 9 @34661 has 32 MA's), (Start: 11 @34631 has 2 MA's), (13, 34412), (16, 34241),

Gene: Doomphist\_45 Start: 35661, Stop: 35041, Start Num: 8

Candidate Starts for Doomphist\_45:

(Start: 1 @35787 has 2 MA's), (Start: 2 @35781 has 30 MA's), (Start: 3 @35766 has 3 MA's), (Start: 4 @35712 has 7 MA's), (Start: 8 @35661 has 19 MA's), (Start: 9 @35643 has 32 MA's), (Start: 11 @35613 has 2 MA's), (13, 35394), (16, 35223),

Gene: Dorothy\_42 Start: 34460, Stop: 33840, Start Num: 8

Candidate Starts for Dorothy\_42:

(Start: 1 @34586 has 2 MA's), (Start: 2 @34580 has 30 MA's), (Start: 3 @34565 has 3 MA's), (Start: 4 @34511 has 7 MA's), (Start: 8 @34460 has 19 MA's), (Start: 9 @34442 has 32 MA's), (Start: 11 @34412 has 2 MA's), (13, 34193), (16, 34022),

Gene: Drago\_44 Start: 34018, Stop: 33347, Start Num: 4

Candidate Starts for Drago\_44:

(Start: 1 @34093 has 2 MA's), (Start: 2 @34087 has 30 MA's), (Start: 4 @34018 has 7 MA's), (Start: 8 @33967 has 19 MA's), (Start: 9 @33949 has 32 MA's), (Start: 11 @33919 has 2 MA's), (13, 33700), (16, 33529),

Gene: Eish\_46 Start: 34990, Stop: 34388, Start Num: 9

Candidate Starts for Eish\_46:

(Start: 1 @35134 has 2 MA's), (Start: 2 @35128 has 30 MA's), (Start: 4 @35059 has 7 MA's), (Start: 8 @35008 has 19 MA's), (Start: 9 @34990 has 32 MA's), (Start: 11 @34960 has 2 MA's), (13, 34741), (16, 34570),

Gene: Enby\_47 Start: 34342, Stop: 33743, Start Num: 9

Candidate Starts for Enby\_47:

(Start: 4 @34411 has 7 MA's), (Start: 7 @34363 has 3 MA's), (Start: 9 @34342 has 32 MA's), (Start: 11 @34312 has 2 MA's), (Start: 12 @34156 has 2 MA's), (13, 34093), (14, 34060), (16, 33922),

Gene: Eradicator\_37 Start: 32723, Stop: 31983, Start Num: 2

Candidate Starts for Eradicator\_37:

(Start: 1 @32729 has 2 MA's), (Start: 2 @32723 has 30 MA's), (Start: 4 @32654 has 7 MA's), (Start: 8 @32603 has 19 MA's), (Start: 9 @32585 has 32 MA's), (Start: 11 @32555 has 2 MA's), (13, 32336), (16, 32165),

Gene: Estave1\_46 Start: 34410, Stop: 33790, Start Num: 8

Candidate Starts for Estave1\_46:

(Start: 1 @34536 has 2 MA's), (Start: 2 @34530 has 30 MA's), (Start: 4 @34461 has 7 MA's), (Start: 8 @34410 has 19 MA's), (Start: 9 @34392 has 32 MA's), (Start: 11 @34362 has 2 MA's), (13, 34143), (16, 33972),

Gene: Filuzino\_43 Start: 33794, Stop: 33225, Start Num: 11

Candidate Starts for Filuzino\_43:

(Start: 4 @33893 has 7 MA's), (Start: 9 @33824 has 32 MA's), (Start: 11 @33794 has 2 MA's), (Start: 12 @33638 has 2 MA's), (13, 33575), (16, 33404),

Gene: Flathead\_46 Start: 36098, Stop: 35499, Start Num: 9

Candidate Starts for Flathead\_46:

(Start: 4 @36167 has 7 MA's), (Start: 9 @36098 has 32 MA's), (Start: 11 @36068 has 2 MA's), (Start: 12 @35912 has 2 MA's), (13, 35849), (14, 35816), (16, 35678),

Gene: FreddyB\_46 Start: 34836, Stop: 34234, Start Num: 9

Candidate Starts for FreddyB\_46:

(Start: 1 @34980 has 2 MA's), (Start: 2 @34974 has 30 MA's), (Start: 4 @34905 has 7 MA's), (Start: 8 @34854 has 19 MA's), (Start: 9 @34836 has 32 MA's), (Start: 11 @34806 has 2 MA's), (13, 34587),



(16, 34416),

Gene: Fruitloop\_44 Start: 35504, Stop: 35091, Start Num: 12

Candidate Starts for Fruitloop\_44:

(Start: 4 @35759 has 7 MA's), (Start: 9 @35690 has 32 MA's), (Start: 11 @35660 has 2 MA's), (Start: 12 @35504 has 2 MA's), (13, 35441), (14, 35408), (16, 35270),

Gene: Galactic\_45 Start: 35277, Stop: 34678, Start Num: 9

Candidate Starts for Galactic\_45:

(Start: 4 @35346 has 7 MA's), (Start: 9 @35277 has 32 MA's), (Start: 11 @35247 has 2 MA's), (Start: 12 @35091 has 2 MA's), (13, 35028), (14, 34995), (16, 34857),

Gene: Geralt\_43 Start: 34401, Stop: 33661, Start Num: 2

Candidate Starts for Geralt\_43:

(Start: 1 @34407 has 2 MA's), (Start: 2 @34401 has 30 MA's), (Start: 4 @34332 has 7 MA's), (Start: 6 @34287 has 2 MA's), (Start: 8 @34281 has 19 MA's), (Start: 9 @34263 has 32 MA's), (Start: 11 @34233 has 2 MA's), (13, 34014), (16, 33843),

Gene: Grimmer\_54 Start: 36839, Stop: 36219, Start Num: 8

Candidate Starts for Grimmer\_54:

(Start: 1 @36965 has 2 MA's), (Start: 2 @36959 has 30 MA's), (Start: 4 @36890 has 7 MA's), (Start: 8 @36839 has 19 MA's), (Start: 9 @36821 has 32 MA's), (Start: 11 @36791 has 2 MA's), (13, 36572), (16, 36401),

Gene: Guppsters\_46 Start: 35045, Stop: 34446, Start Num: 9

Candidate Starts for Guppsters\_46:

(Start: 4 @35114 has 7 MA's), (Start: 9 @35045 has 32 MA's), (Start: 11 @35015 has 2 MA's), (Start: 12 @34859 has 2 MA's), (13, 34796), (14, 34763), (16, 34625),

Gene: Ibhubesi\_46 Start: 35173, Stop: 34433, Start Num: 2

Candidate Starts for Ibhubesi\_46:

(Start: 1 @35179 has 2 MA's), (Start: 2 @35173 has 30 MA's), (Start: 4 @35104 has 7 MA's), (Start: 8 @35053 has 19 MA's), (Start: 9 @35035 has 32 MA's), (Start: 11 @35005 has 2 MA's), (13, 34786), (16, 34615),

Gene: Inventum\_42 Start: 35114, Stop: 34374, Start Num: 2

Candidate Starts for Inventum\_42:

(Start: 1 @35120 has 2 MA's), (Start: 2 @35114 has 30 MA's), (Start: 4 @35045 has 7 MA's), (Start: 6 @35000 has 2 MA's), (Start: 8 @34994 has 19 MA's), (Start: 9 @34976 has 32 MA's), (Start: 11 @34946 has 2 MA's), (13, 34727), (16, 34556),

Gene: Jacob\_46 Start: 36094, Stop: 35354, Start Num: 2

Candidate Starts for Jacob\_46:

(Start: 1 @36100 has 2 MA's), (Start: 2 @36094 has 30 MA's), (Start: 4 @36025 has 7 MA's), (Start: 8 @35974 has 19 MA's), (Start: 9 @35956 has 32 MA's), (Start: 11 @35926 has 2 MA's), (13, 35707), (16, 35536),

Gene: Job42\_46 Start: 36416, Stop: 35691, Start Num: 3

Candidate Starts for Job42\_46:

(Start: 1 @36437 has 2 MA's), (Start: 2 @36431 has 30 MA's), (Start: 3 @36416 has 3 MA's), (Start: 4 @36362 has 7 MA's), (Start: 8 @36311 has 19 MA's), (Start: 9 @36293 has 32 MA's), (Start: 11 @36263 has 2 MA's), (13, 36044), (16, 35873),

Gene: JoeyJr\_43 Start: 34601, Stop: 33861, Start Num: 2

Candidate Starts for JoeyJr\_43:

(Start: 1 @34607 has 2 MA's), (Start: 2 @34601 has 30 MA's), (Start: 4 @34532 has 7 MA's), (Start: 6 @34487 has 2 MA's), (Start: 8 @34481 has 19 MA's), (Start: 9 @34463 has 32 MA's), (Start: 11 @34433 has 2 MA's), (13, 34214), (16, 34043),

Gene: Kenuha5\_41 Start: 33689, Stop: 33072, Start Num: 8

Candidate Starts for Kenuha5\_41:

(Start: 1 @33815 has 2 MA's), (Start: 2 @33809 has 30 MA's), (Start: 4 @33740 has 7 MA's), (Start: 8 @33689 has 19 MA's), (Start: 9 @33671 has 32 MA's), (Start: 11 @33641 has 2 MA's), (Start: 12 @33485 has 2 MA's), (13, 33422), (14, 33389), (16, 33251),

Gene: KingMidas\_47 Start: 36143, Stop: 35523, Start Num: 8

Candidate Starts for KingMidas\_47:

(Start: 1 @36269 has 2 MA's), (Start: 2 @36263 has 30 MA's), (Start: 4 @36194 has 7 MA's), (Start: 6 @36149 has 2 MA's), (Start: 8 @36143 has 19 MA's), (Start: 9 @36125 has 32 MA's), (Start: 11 @36095 has 2 MA's), (13, 35876), (16, 35705),

Gene: Koella\_40 Start: 32024, Stop: 31284, Start Num: 2

Candidate Starts for Koella\_40:

(Start: 1 @32030 has 2 MA's), (Start: 2 @32024 has 30 MA's), (Start: 4 @31955 has 7 MA's), (Start: 8 @31904 has 19 MA's), (Start: 9 @31886 has 32 MA's), (Start: 11 @31856 has 2 MA's), (13, 31637), (16, 31466),

Gene: Krakatau\_43 Start: 34815, Stop: 34195, Start Num: 8

Candidate Starts for Krakatau\_43:

(Start: 1 @34941 has 2 MA's), (Start: 2 @34935 has 30 MA's), (Start: 4 @34866 has 7 MA's), (Start: 8 @34815 has 19 MA's), (Start: 9 @34797 has 32 MA's), (Start: 11 @34767 has 2 MA's), (13, 34548), (16, 34377),

Gene: KristaRAM\_45 Start: 36010, Stop: 35411, Start Num: 9

Candidate Starts for KristaRAM\_45:

(Start: 4 @36079 has 7 MA's), (Start: 9 @36010 has 32 MA's), (Start: 11 @35980 has 2 MA's), (Start: 12 @35824 has 2 MA's), (13, 35761), (14, 35728), (16, 35590),

Gene: Latretium\_48 Start: 36053, Stop: 35313, Start Num: 2

Candidate Starts for Latretium\_48:

(Start: 1 @36059 has 2 MA's), (Start: 2 @36053 has 30 MA's), (Start: 4 @35984 has 7 MA's), (Start: 8 @35933 has 19 MA's), (Start: 9 @35915 has 32 MA's), (Start: 11 @35885 has 2 MA's), (13, 35666), (16, 35495),

Gene: Leozinho\_45 Start: 34717, Stop: 34115, Start Num: 9

Candidate Starts for Leozinho\_45:

(Start: 1 @34861 has 2 MA's), (Start: 2 @34855 has 30 MA's), (Start: 4 @34786 has 7 MA's), (Start: 8 @34735 has 19 MA's), (Start: 9 @34717 has 32 MA's), (Start: 11 @34687 has 2 MA's), (13, 34468), (16, 34297),

Gene: Leperchaun\_40 Start: 33717, Stop: 33091, Start Num: 6

Candidate Starts for Leperchaun\_40:

(Start: 1 @33837 has 2 MA's), (Start: 2 @33831 has 30 MA's), (Start: 4 @33762 has 7 MA's), (Start: 6 @33717 has 2 MA's), (Start: 8 @33711 has 19 MA's), (Start: 9 @33693 has 32 MA's), (Start: 11 @33663 has 2 MA's), (13, 33444), (16, 33273),

Gene: LilMoolah\_44 Start: 34833, Stop: 34093, Start Num: 2

Candidate Starts for LilMoolah\_44:

(Start: 1 @34839 has 2 MA's), (Start: 2 @34833 has 30 MA's), (Start: 4 @34764 has 7 MA's), (Start: 8 @34713 has 19 MA's), (Start: 9 @34695 has 32 MA's), (Start: 11 @34665 has 2 MA's), (13, 34446), (16, 34275),

Gene: LittleShirley\_45 Start: 35726, Stop: 35127, Start Num: 9

Candidate Starts for LittleShirley\_45:

(Start: 1 @35870 has 2 MA's), (Start: 2 @35864 has 30 MA's), (Start: 4 @35795 has 7 MA's), (Start: 8 @35744 has 19 MA's), (Start: 9 @35726 has 32 MA's), (Start: 11 @35696 has 2 MA's), (Start: 12 @35540 has 2 MA's), (13, 35477), (14, 35444), (16, 35306),

Gene: Lizziana\_52 Start: 37097, Stop: 36357, Start Num: 2

Candidate Starts for Lizziana\_52:

(Start: 1 @37103 has 2 MA's), (Start: 2 @37097 has 30 MA's), (Start: 4 @37028 has 7 MA's), (Start: 8 @36977 has 19 MA's), (Start: 9 @36959 has 32 MA's), (Start: 11 @36929 has 2 MA's), (13, 36710), (16, 36539),

Gene: Llama\_47 Start: 35849, Stop: 35229, Start Num: 8

Candidate Starts for Llama\_47:

(Start: 1 @35975 has 2 MA's), (Start: 2 @35969 has 30 MA's), (Start: 4 @35900 has 7 MA's), (Start: 8 @35849 has 19 MA's), (Start: 9 @35831 has 32 MA's), (Start: 11 @35801 has 2 MA's), (13, 35582), (16, 35411),

Gene: Llij\_42 Start: 34241, Stop: 33501, Start Num: 2

Candidate Starts for Llij\_42:

(Start: 1 @34247 has 2 MA's), (Start: 2 @34241 has 30 MA's), (Start: 4 @34172 has 7 MA's), (Start: 8 @34121 has 19 MA's), (Start: 9 @34103 has 32 MA's), (Start: 11 @34073 has 2 MA's), (13, 33854), (16, 33683),

Gene: LunaBlu\_48 Start: 35936, Stop: 35337, Start Num: 9

Candidate Starts for LunaBlu\_48:

(Start: 4 @36005 has 7 MA's), (Start: 9 @35936 has 32 MA's), (Start: 11 @35906 has 2 MA's), (Start: 12 @35750 has 2 MA's), (13, 35687), (14, 35654), (16, 35516),

Gene: MadMen\_40 Start: 33743, Stop: 33141, Start Num: 9

Candidate Starts for MadMen\_40:

(Start: 1 @33887 has 2 MA's), (Start: 2 @33881 has 30 MA's), (Start: 4 @33812 has 7 MA's), (Start: 8 @33761 has 19 MA's), (Start: 9 @33743 has 32 MA's), (Start: 11 @33713 has 2 MA's), (13, 33494), (16, 33323),

Gene: Marker\_46 Start: 34616, Stop: 33996, Start Num: 8

Candidate Starts for Marker\_46:

(Start: 1 @34742 has 2 MA's), (Start: 2 @34736 has 30 MA's), (Start: 4 @34667 has 7 MA's), (Start: 8 @34616 has 19 MA's), (Start: 9 @34598 has 32 MA's), (Start: 11 @34568 has 2 MA's), (13, 34349), (16, 34178),

Gene: Martik\_46 Start: 36050, Stop: 35310, Start Num: 2

Candidate Starts for Martik\_46:

(Start: 1 @36056 has 2 MA's), (Start: 2 @36050 has 30 MA's), (Start: 4 @35981 has 7 MA's), (Start: 8 @35930 has 19 MA's), (Start: 9 @35912 has 32 MA's), (Start: 11 @35882 has 2 MA's), (13, 35663), (16, 35492),

Gene: Melissauren88\_44 Start: 35089, Stop: 34469, Start Num: 7

Candidate Starts for Melissauren88\_44:

(Start: 4 @35137 has 7 MA's), (Start: 7 @35089 has 3 MA's), (Start: 9 @35068 has 32 MA's), (Start: 11 @35038 has 2 MA's), (Start: 12 @34882 has 2 MA's), (13, 34819), (14, 34786), (16, 34648),

Gene: MilanaBonita\_39 Start: 31622, Stop: 31023, Start Num: 9

Candidate Starts for MilanaBonita\_39:

(Start: 4 @31691 has 7 MA's), (Start: 9 @31622 has 32 MA's), (Start: 11 @31592 has 2 MA's), (Start: 12 @31436 has 2 MA's), (13, 31373), (14, 31340), (16, 31202),

Gene: MinionDave\_45 Start: 35623, Stop: 35006, Start Num: 8

Candidate Starts for MinionDave\_45:

(Start: 4 @35674 has 7 MA's), (Start: 8 @35623 has 19 MA's), (Start: 9 @35605 has 32 MA's), (Start: 11 @35575 has 2 MA's), (Start: 12 @35419 has 2 MA's), (13, 35356), (14, 35323), (16, 35185),

Gene: Modragons\_46 Start: 35695, Stop: 35075, Start Num: 8

Candidate Starts for Modragons\_46:

(Start: 1 @35821 has 2 MA's), (Start: 2 @35815 has 30 MA's), (Start: 4 @35746 has 7 MA's), (Start: 8 @35695 has 19 MA's), (Start: 9 @35677 has 32 MA's), (Start: 11 @35647 has 2 MA's), (13, 35428), (16, 35257),

Gene: Mova\_46 Start: 34887, Stop: 34285, Start Num: 9

Candidate Starts for Mova\_46:

(Start: 4 @34956 has 7 MA's), (Start: 9 @34887 has 32 MA's), (Start: 11 @34857 has 2 MA's), (Start: 12 @34701 has 2 MA's), (13, 34638), (16, 34467),

Gene: Mozy\_54 Start: 37161, Stop: 36559, Start Num: 9

Candidate Starts for Mozy\_54:

(Start: 1 @37305 has 2 MA's), (Start: 2 @37299 has 30 MA's), (Start: 4 @37230 has 7 MA's), (Start: 8 @37179 has 19 MA's), (Start: 9 @37161 has 32 MA's), (Start: 11 @37131 has 2 MA's), (13, 36912), (16, 36741),

Gene: Ms6\_39 Start: 30134, Stop: 29535, Start Num: 9

Candidate Starts for Ms6\_39:

(Start: 9 @30134 has 32 MA's), (Start: 11 @30104 has 2 MA's), (Start: 12 @29948 has 2 MA's), (13, 29885), (14, 29852), (16, 29714),

Gene: Nimbo\_42 Start: 34404, Stop: 33664, Start Num: 2

Candidate Starts for Nimbo\_42:

(Start: 1 @34410 has 2 MA's), (Start: 2 @34404 has 30 MA's), (Start: 4 @34335 has 7 MA's), (Start: 6 @34290 has 2 MA's), (Start: 8 @34284 has 19 MA's), (Start: 9 @34266 has 32 MA's), (Start: 11 @34236 has 2 MA's), (13, 34017), (16, 33846),

Gene: Nitzel\_41 Start: 34509, Stop: 33769, Start Num: 2

Candidate Starts for Nitzel\_41:

(Start: 1 @34515 has 2 MA's), (Start: 2 @34509 has 30 MA's), (Start: 4 @34440 has 7 MA's), (Start: 8 @34389 has 19 MA's), (Start: 9 @34371 has 32 MA's), (Start: 11 @34341 has 2 MA's), (13, 34122), (16, 33951),

Gene: Nivrat\_44 Start: 34706, Stop: 33966, Start Num: 2

Candidate Starts for Nivrat\_44:

(Start: 1 @34712 has 2 MA's), (Start: 2 @34706 has 30 MA's), (Start: 4 @34637 has 7 MA's), (Start: 8 @34586 has 19 MA's), (Start: 9 @34568 has 32 MA's), (Start: 11 @34538 has 2 MA's), (13, 34319),

(16, 34148),

Gene: NormanBulbieJr\_47 Start: 35899, Stop: 35297, Start Num: 9

Candidate Starts for NormanBulbieJr\_47:

(Start: 1 @36043 has 2 MA's), (Start: 2 @36037 has 30 MA's), (Start: 4 @35968 has 7 MA's), (Start: 8 @35917 has 19 MA's), (Start: 9 @35899 has 32 MA's), (Start: 11 @35869 has 2 MA's), (13, 35650), (16, 35479),

Gene: OfUltron\_47 Start: 35851, Stop: 35231, Start Num: 8

Candidate Starts for OfUltron\_47:

(Start: 1 @35977 has 2 MA's), (Start: 2 @35971 has 30 MA's), (Start: 4 @35902 has 7 MA's), (Start: 8 @35851 has 19 MA's), (Start: 9 @35833 has 32 MA's), (Start: 11 @35803 has 2 MA's), (13, 35584), (16, 35413),

Gene: Ogotopogo\_46 Start: 34219, Stop: 33620, Start Num: 9

Candidate Starts for Ogotopogo\_46:

(Start: 4 @34288 has 7 MA's), (Start: 7 @34240 has 3 MA's), (Start: 9 @34219 has 32 MA's), (Start: 11 @34189 has 2 MA's), (Start: 12 @34033 has 2 MA's), (13, 33970), (14, 33937), (16, 33799),

Gene: OlympiaSaint\_45 Start: 34760, Stop: 34140, Start Num: 8

Candidate Starts for OlympiaSaint\_45:

(Start: 1 @34886 has 2 MA's), (Start: 2 @34880 has 30 MA's), (Start: 4 @34811 has 7 MA's), (Start: 8 @34760 has 19 MA's), (Start: 9 @34742 has 32 MA's), (Start: 11 @34712 has 2 MA's), (13, 34493), (16, 34322),

Gene: Ovechkin\_43 Start: 35449, Stop: 34850, Start Num: 9

Candidate Starts for Ovechkin\_43:

(Start: 4 @35518 has 7 MA's), (Start: 9 @35449 has 32 MA's), (Start: 11 @35419 has 2 MA's), (Start: 12 @35263 has 2 MA's), (13, 35200), (14, 35167), (16, 35029),

Gene: PHappiness\_43 Start: 34377, Stop: 33637, Start Num: 2

Candidate Starts for PHappiness\_43:

(Start: 1 @34383 has 2 MA's), (Start: 2 @34377 has 30 MA's), (Start: 4 @34308 has 7 MA's), (Start: 6 @34263 has 2 MA's), (Start: 8 @34257 has 19 MA's), (Start: 9 @34239 has 32 MA's), (Start: 11 @34209 has 2 MA's), (13, 33990), (16, 33819),

Gene: PMC\_40 Start: 34183, Stop: 33512, Start Num: 4

Candidate Starts for PMC\_40:

(Start: 1 @34258 has 2 MA's), (Start: 2 @34252 has 30 MA's), (Start: 4 @34183 has 7 MA's), (Start: 8 @34132 has 19 MA's), (Start: 9 @34114 has 32 MA's), (Start: 11 @34084 has 2 MA's), (13, 33865), (16, 33694),

Gene: Pacc40\_42 Start: 34451, Stop: 33711, Start Num: 2

Candidate Starts for Pacc40\_42:

(Start: 1 @34457 has 2 MA's), (Start: 2 @34451 has 30 MA's), (Start: 4 @34382 has 7 MA's), (Start: 6 @34337 has 2 MA's), (Start: 8 @34331 has 19 MA's), (Start: 9 @34313 has 32 MA's), (Start: 11 @34283 has 2 MA's), (13, 34064), (16, 33893),

Gene: Phalconet\_44 Start: 34467, Stop: 33847, Start Num: 7

Candidate Starts for Phalconet\_44:

(Start: 4 @34515 has 7 MA's), (Start: 7 @34467 has 3 MA's), (Start: 9 @34446 has 32 MA's), (Start: 11 @34416 has 2 MA's), (Start: 12 @34260 has 2 MA's), (13, 34197), (14, 34164), (16, 34026),

Gene: Phasih\_43 Start: 34796, Stop: 34056, Start Num: 2

Candidate Starts for Phasih\_43:

(Start: 1 @34802 has 2 MA's), (Start: 2 @34796 has 30 MA's), (Start: 3 @34781 has 3 MA's), (Start: 4 @34727 has 7 MA's), (Start: 8 @34676 has 19 MA's), (Start: 9 @34658 has 32 MA's), (Start: 11 @34628 has 2 MA's), (13, 34409), (16, 34238),

Gene: Phatniss\_43 Start: 34638, Stop: 34018, Start Num: 8

Candidate Starts for Phatniss\_43:

(Start: 1 @34764 has 2 MA's), (Start: 2 @34758 has 30 MA's), (Start: 4 @34689 has 7 MA's), (Start: 8 @34638 has 19 MA's), (Start: 9 @34620 has 32 MA's), (Start: 11 @34590 has 2 MA's), (13, 34371), (16, 34200),

Gene: PhesterPhotato\_47 Start: 35401, Stop: 34802, Start Num: 9

Candidate Starts for PhesterPhotato\_47:

(Start: 4 @35470 has 7 MA's), (Start: 7 @35422 has 3 MA's), (Start: 9 @35401 has 32 MA's), (Start: 11 @35371 has 2 MA's), (Start: 12 @35215 has 2 MA's), (13, 35152), (14, 35119), (16, 34981),

Gene: Plumbus\_45 Start: 34510, Stop: 33764, Start Num: 1

Candidate Starts for Plumbus\_45:

(Start: 1 @34510 has 2 MA's), (Start: 2 @34504 has 30 MA's), (Start: 4 @34435 has 7 MA's), (Start: 8 @34384 has 19 MA's), (Start: 9 @34366 has 32 MA's), (Start: 11 @34336 has 2 MA's), (13, 34117), (16, 33946),

Gene: Polka14\_44 Start: 35054, Stop: 34314, Start Num: 2

Candidate Starts for Polka14\_44:

(Start: 1 @35060 has 2 MA's), (Start: 2 @35054 has 30 MA's), (Start: 4 @34985 has 7 MA's), (Start: 6 @34940 has 2 MA's), (Start: 8 @34934 has 19 MA's), (Start: 9 @34916 has 32 MA's), (Start: 11 @34886 has 2 MA's), (13, 34667), (16, 34496),

Gene: PopTart\_41 Start: 34264, Stop: 33524, Start Num: 2

Candidate Starts for PopTart\_41:

(Start: 1 @34270 has 2 MA's), (Start: 2 @34264 has 30 MA's), (Start: 8 @34144 has 19 MA's), (Start: 9 @34126 has 32 MA's), (Start: 11 @34096 has 2 MA's), (13, 33877), (16, 33706),

Gene: Priscilla\_46 Start: 36136, Stop: 35396, Start Num: 2

Candidate Starts for Priscilla\_46:

(Start: 1 @36142 has 2 MA's), (Start: 2 @36136 has 30 MA's), (Start: 4 @36067 has 7 MA's), (Start: 8 @36016 has 19 MA's), (Start: 9 @35998 has 32 MA's), (Start: 11 @35968 has 2 MA's), (13, 35749), (16, 35578),

Gene: Rita\_46 Start: 34488, Stop: 33871, Start Num: 8

Candidate Starts for Rita\_46:

(Start: 1 @34614 has 2 MA's), (Start: 2 @34608 has 30 MA's), (Start: 4 @34539 has 7 MA's), (Start: 8 @34488 has 19 MA's), (Start: 9 @34470 has 32 MA's), (Start: 11 @34440 has 2 MA's), (Start: 12 @34284 has 2 MA's), (13, 34221), (14, 34188), (16, 34050),

Gene: RitaG\_43 Start: 34608, Stop: 33982, Start Num: 6

Candidate Starts for RitaG\_43:

(Start: 1 @34728 has 2 MA's), (Start: 2 @34722 has 30 MA's), (Start: 4 @34653 has 7 MA's), (Start: 6 @34608 has 2 MA's), (Start: 8 @34602 has 19 MA's), (Start: 9 @34584 has 32 MA's), (Start: 11 @34554 has 2 MA's), (13, 34335), (16, 34164),

Gene: Rockne\_43 Start: 34183, Stop: 33512, Start Num: 4

Candidate Starts for Rockne\_43:

(Start: 1 @34258 has 2 MA's), (Start: 2 @34252 has 30 MA's), (Start: 4 @34183 has 7 MA's), (Start: 8 @34132 has 19 MA's), (Start: 9 @34114 has 32 MA's), (Start: 11 @34084 has 2 MA's), (13, 33865), (16, 33694),

Gene: RockyHorror\_46 Start: 34639, Stop: 33914, Start Num: 3

Candidate Starts for RockyHorror\_46:

(Start: 1 @34660 has 2 MA's), (Start: 2 @34654 has 30 MA's), (Start: 3 @34639 has 3 MA's), (Start: 4 @34585 has 7 MA's), (Start: 8 @34534 has 19 MA's), (Start: 9 @34516 has 32 MA's), (Start: 11 @34486 has 2 MA's), (13, 34267), (16, 34096),

Gene: Ruby\_44 Start: 35364, Stop: 34702, Start Num: 5

Candidate Starts for Ruby\_44:

(Start: 5 @35364 has 1 MA's), (10, 35295), (Start: 11 @35274 has 2 MA's), (13, 35055), (16, 34884),

Gene: SG4\_44 Start: 34827, Stop: 34228, Start Num: 9

Candidate Starts for SG4\_44:

(Start: 4 @34896 has 7 MA's), (Start: 7 @34848 has 3 MA's), (Start: 9 @34827 has 32 MA's), (Start: 11 @34797 has 2 MA's), (Start: 12 @34641 has 2 MA's), (13, 34578), (14, 34545), (16, 34407),

Gene: SassyB\_41 Start: 34264, Stop: 33524, Start Num: 2

Candidate Starts for SassyB\_41:

(Start: 1 @34270 has 2 MA's), (Start: 2 @34264 has 30 MA's), (Start: 8 @34144 has 19 MA's), (Start: 9 @34126 has 32 MA's), (Start: 11 @34096 has 2 MA's), (13, 33877), (16, 33706),

Gene: Scottish\_46 Start: 35596, Stop: 34994, Start Num: 9

Candidate Starts for Scottish\_46:

(Start: 1 @35740 has 2 MA's), (Start: 2 @35734 has 30 MA's), (Start: 4 @35665 has 7 MA's), (Start: 6 @35620 has 2 MA's), (Start: 8 @35614 has 19 MA's), (Start: 9 @35596 has 32 MA's), (Start: 11 @35566 has 2 MA's), (13, 35347), (16, 35176),

Gene: Seabastian\_47 Start: 35833, Stop: 35231, Start Num: 9

Candidate Starts for Seabastian\_47:

(Start: 1 @35977 has 2 MA's), (Start: 2 @35971 has 30 MA's), (Start: 4 @35902 has 7 MA's), (Start: 8 @35851 has 19 MA's), (Start: 9 @35833 has 32 MA's), (Start: 11 @35803 has 2 MA's), (13, 35584), (16, 35413),

Gene: Seagreen\_46 Start: 34859, Stop: 34257, Start Num: 9

Candidate Starts for Seagreen\_46:

(Start: 9 @34859 has 32 MA's), (Start: 11 @34829 has 2 MA's), (13, 34610), (16, 34439),

Gene: Shauna1\_40 Start: 33581, Stop: 32982, Start Num: 9

Candidate Starts for Shauna1\_40:

(Start: 1 @33725 has 2 MA's), (Start: 2 @33719 has 30 MA's), (Start: 4 @33650 has 7 MA's), (Start: 8 @33599 has 19 MA's), (Start: 9 @33581 has 32 MA's), (Start: 11 @33551 has 2 MA's), (Start: 12 @33395 has 2 MA's), (13, 33332), (14, 33299), (16, 33161),

Gene: ShiLan\_46 Start: 35945, Stop: 35343, Start Num: 9

Candidate Starts for ShiLan\_46:

(Start: 1 @36089 has 2 MA's), (Start: 2 @36083 has 30 MA's), (Start: 4 @36014 has 7 MA's), (Start: 8 @35963 has 19 MA's), (Start: 9 @35945 has 32 MA's), (Start: 11 @35915 has 2 MA's), (13, 35696), (16, 35525),

Gene: ShowerHandel\_48 Start: 35912, Stop: 35310, Start Num: 9

Candidate Starts for ShowerHandel\_48:

(Start: 1 @36056 has 2 MA's), (Start: 2 @36050 has 30 MA's), (Start: 4 @35981 has 7 MA's), (Start: 8 @35930 has 19 MA's), (Start: 9 @35912 has 32 MA's), (Start: 11 @35882 has 2 MA's), (13, 35663), (16, 35492),

Gene: SimranZ1\_45 Start: 34125, Stop: 33523, Start Num: 9

Candidate Starts for SimranZ1\_45:

(Start: 1 @34269 has 2 MA's), (Start: 2 @34263 has 30 MA's), (Start: 4 @34194 has 7 MA's), (Start: 8 @34143 has 19 MA's), (Start: 9 @34125 has 32 MA's), (Start: 11 @34095 has 2 MA's), (13, 33876), (15, 33726), (16, 33705),

Gene: Sparkdehlily\_48 Start: 35654, Stop: 34914, Start Num: 2

Candidate Starts for Sparkdehlily\_48:

(Start: 1 @35660 has 2 MA's), (Start: 2 @35654 has 30 MA's), (Start: 4 @35585 has 7 MA's), (Start: 8 @35534 has 19 MA's), (Start: 9 @35516 has 32 MA's), (Start: 11 @35486 has 2 MA's), (13, 35267), (16, 35096),

Gene: Spoonbill\_45 Start: 34607, Stop: 33936, Start Num: 4

Candidate Starts for Spoonbill\_45:

(Start: 1 @34682 has 2 MA's), (Start: 2 @34676 has 30 MA's), (Start: 4 @34607 has 7 MA's), (Start: 6 @34562 has 2 MA's), (Start: 8 @34556 has 19 MA's), (Start: 9 @34538 has 32 MA's), (Start: 11 @34508 has 2 MA's), (13, 34289), (16, 34118),

Gene: StAnnes\_45 Start: 36046, Stop: 35447, Start Num: 9

Candidate Starts for StAnnes\_45:

(Start: 4 @36115 has 7 MA's), (Start: 9 @36046 has 32 MA's), (Start: 11 @36016 has 2 MA's), (Start: 12 @35860 has 2 MA's), (13, 35797), (14, 35764), (16, 35626),

Gene: Stap\_44 Start: 34554, Stop: 33814, Start Num: 2

Candidate Starts for Stap\_44:

(Start: 1 @34560 has 2 MA's), (Start: 2 @34554 has 30 MA's), (Start: 3 @34539 has 3 MA's), (Start: 4 @34485 has 7 MA's), (Start: 8 @34434 has 19 MA's), (Start: 9 @34416 has 32 MA's), (Start: 11 @34386 has 2 MA's), (13, 34167), (16, 33996),

Gene: SuperGrey\_46 Start: 35564, Stop: 35151, Start Num: 12

Candidate Starts for SuperGrey\_46:

(Start: 4 @35819 has 7 MA's), (Start: 9 @35750 has 32 MA's), (Start: 11 @35720 has 2 MA's), (Start: 12 @35564 has 2 MA's), (13, 35501), (14, 35468), (16, 35330),

Gene: TDanisky\_48 Start: 35534, Stop: 34914, Start Num: 8

Candidate Starts for TDanisky\_48:

(Start: 1 @35660 has 2 MA's), (Start: 2 @35654 has 30 MA's), (Start: 4 @35585 has 7 MA's), (Start: 8 @35534 has 19 MA's), (Start: 9 @35516 has 32 MA's), (Start: 11 @35486 has 2 MA's), (13, 35267), (16, 35096),

Gene: Taj\_47 Start: 35103, Stop: 34483, Start Num: 8

Candidate Starts for Taj\_47:

(Start: 1 @35229 has 2 MA's), (Start: 2 @35223 has 30 MA's), (Start: 4 @35154 has 7 MA's), (Start: 8 @35103 has 19 MA's), (Start: 9 @35085 has 32 MA's), (Start: 11 @35055 has 2 MA's), (13, 34836), (16, 34665),

Gene: Tootsieroll\_47 Start: 34724, Stop: 34104, Start Num: 8



Candidate Starts for Tootsieroll\_47:

(Start: 1 @34850 has 2 MA's), (Start: 2 @34844 has 30 MA's), (Start: 4 @34775 has 7 MA's), (Start: 8 @34724 has 19 MA's), (Start: 9 @34706 has 32 MA's), (Start: 11 @34676 has 2 MA's), (13, 34457), (16, 34286),

Gene: VRedHorse\_46 Start: 35313, Stop: 34693, Start Num: 7

Candidate Starts for VRedHorse\_46:

(Start: 4 @35361 has 7 MA's), (Start: 7 @35313 has 3 MA's), (Start: 9 @35292 has 32 MA's), (Start: 11 @35262 has 2 MA's), (Start: 12 @35106 has 2 MA's), (13, 35043), (14, 35010), (16, 34872),

Gene: XFactor\_44 Start: 34845, Stop: 34177, Start Num: 4

Candidate Starts for XFactor\_44:

(Start: 4 @34845 has 7 MA's), (Start: 9 @34776 has 32 MA's), (Start: 11 @34746 has 2 MA's), (Start: 12 @34590 has 2 MA's), (13, 34527), (16, 34356),

Gene: Yorick\_43 Start: 34763, Stop: 34023, Start Num: 2

Candidate Starts for Yorick\_43:

(Start: 1 @34769 has 2 MA's), (Start: 2 @34763 has 30 MA's), (Start: 4 @34694 has 7 MA's), (Start: 8 @34643 has 19 MA's), (Start: 9 @34625 has 32 MA's), (Start: 11 @34595 has 2 MA's), (13, 34376), (16, 34205),

Gene: Zerg\_44 Start: 34625, Stop: 34023, Start Num: 9

Candidate Starts for Zerg\_44:

(Start: 1 @34769 has 2 MA's), (Start: 2 @34763 has 30 MA's), (Start: 3 @34748 has 3 MA's), (Start: 4 @34694 has 7 MA's), (Start: 8 @34643 has 19 MA's), (Start: 9 @34625 has 32 MA's), (Start: 11 @34595 has 2 MA's), (13, 34376), (16, 34205),