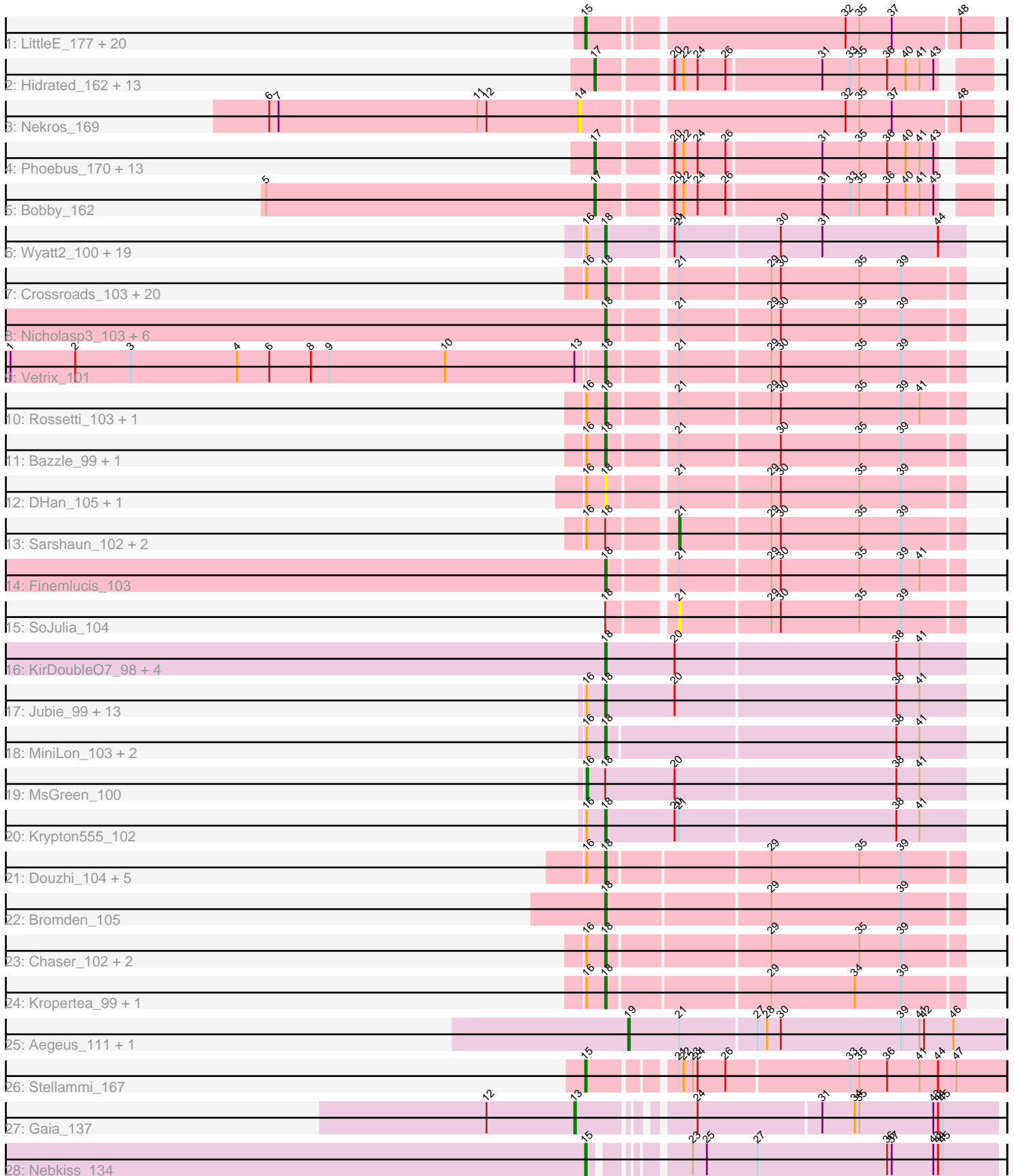


Pham 308200



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 308200 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308200 has 152 members, 31 are drafts.

Phages represented in each track:

- Track 1 : LittleE\_177, Lucky2013\_166, KashFlow\_167, MiaZeal\_173, EricMillard\_167, Rearden\_169, BronnyJames\_165, Courthouse\_167, Klein\_173, Omega\_179, Superphikiman\_168, Hannaconda\_162, Nibley\_163, Squint\_165, Porcelain\_170, Shaboozey\_168, ThreeRngTarjay\_166, Bagrid\_178, Ariel\_170, Wanda\_167, Gonephishing\_163
- Track 2 : Hidrated\_162, Beem\_170, BAKA\_175, DmpstrDiver\_171, Ejimix\_160, Constella\_165, Zelink\_162, Xiaokay\_165, Odette\_173, Optimus\_168, Marleymoo\_156, Duke13\_172, Hughesyang\_168, Pound\_163
- Track 3 : Nekros\_169
- Track 4 : Phoebus\_170, HokkenD\_164, Dove\_156, Minerva\_169, Kalah2\_166, Bombitas\_156, Halley\_170, Schatzie\_164, Yeet\_161, JuicyJay\_164, Thibault\_153, Redno2\_163, Dallas\_169, NihilNomen\_171
- Track 5 : Bobby\_162
- Track 6 : Wyatt2\_100, JoeDirt\_100, Appletree2\_97, Silverleaf\_97, Rose5\_100, UPIE\_98, LeBron\_98, CicholasNage\_95, Zaria\_100, Halena\_97, Acquire49\_99, DirkDirk\_95, Calm\_101, MAckerman\_98, Enceladus\_95, AvadaKedavra\_99, OhShagHennessy\_94, Tyson\_101, Wamburggrxpress\_97, Poochiewood\_96
- Track 7 : Crossroads\_103, DrSeegs\_101, OverPar\_104, LilDestine\_100, DanBing\_102, Baoshan\_103, Miley16\_102, Wigglewiggle\_101, Loadrie\_100, GuuelaD\_98, Breezona\_102, Itos\_102, Lynnae\_103, Zakai\_103, Gabriela\_102, BobsGarage\_101, Winky\_102, Faith1\_101, Wilder\_102, BigCheese\_101, Claus\_101
- Track 8 : Nicholasp3\_103, Underpass\_95, MkaliMitinis3\_103, Kahlid\_102, Gardann\_102, Rumpelstiltskin\_99, Netyap\_100
- Track 9 : Vetrix\_101
- Track 10 : Rossetti\_103, Tourach\_103
- Track 11 : Bazzle\_99, Archie\_99
- Track 12 : DHan\_105, ZhongYanYuan\_99
- Track 13 : Sarshaun\_102, Lewan\_102, Soap141\_101
- Track 14 : Finemlucis\_103
- Track 15 : SoJulia\_104
- Track 16 : KirDoubleO7\_98, Ellson\_99, DuncansLeg\_101, BourbonZero\_101, LiyuLake\_99
- Track 17 : Jubie\_99, Kingsolomon\_97, Moostard\_96, Snenia\_98, Nicholas\_97, Jobypre\_99, Red305\_100, Clautastrophe\_98, Lumos\_99, Bellis\_100, Samty\_99, Whirlwind\_100, Finny\_100, TriFive\_100
- Track 18 : MiniLon\_103, Lolly9\_98, MiniMac\_103
- Track 19 : MsGreen\_100

- Track 20 : Krypton555\_102
- Track 21 : Douzhi\_104, Sheng711\_105, PYPDinur\_104, Quby\_104, BrainDrainer\_105, Douge\_104
- Track 22 : Bromden\_105
- Track 23 : Chaser\_102, FarmResident\_105, ChutneyChips\_105
- Track 24 : Kropertea\_99, DyoEdafos\_106
- Track 25 : Aegeus\_111, Baudelaire\_111
- Track 26 : Stellammi\_167
- Track 27 : Gaia\_137
- Track 28 : Nebkiss\_134

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

The start number called the most often in the published annotations is 18, it was called in 74 of the 121 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_99, Appletree2\_97, Archie\_99, AvadaKedavra\_99, Baoshan\_103, Bazzle\_99, Bellis\_100, BigCheese\_101, BobsGarage\_101, BourbonZero\_101, BrainDrainer\_105, Breezona\_102, Bromden\_105, Calm\_101, Chaser\_102, ChutneyChips\_105, CicholasNage\_95, Claus\_101, Clautastrophe\_98, Crossroads\_103, DHan\_105, DanBing\_102, DirkDirk\_95, Douge\_104, Douzhi\_104, DrSeegs\_101, DuncansLeg\_101, DyoEdafos\_106, Ellson\_99, Enceladus\_95, Faith1\_101, FarmResident\_105, Finemlucis\_103, Finnry\_100, Gabriela\_102, Gardann\_102, GuuelaD\_98, Halena\_97, Itos\_102, Jobypre\_99, JoeDirt\_100, Jubie\_99, Kahlid\_102, Kingsolomon\_97, KirDoubleO7\_98, Kropertea\_99, Krypton555\_102, LeBron\_98, LilDestine\_100, LiyuLake\_99, Loadrie\_100, Lolly9\_98, Lumos\_99, Lynnae\_103, MAckerman\_98, Miley16\_102, MiniLon\_103, MiniMac\_103, MkaliMitinis3\_103, Moostard\_96, Netyap\_100, Nicholas\_97, Nicholasp3\_103, OhShagHennessy\_94, OverPar\_104, PYPDinur\_104, Poochiewood\_96, Quby\_104, Red305\_100, Rose5\_100, Rossetti\_103, Rumpelstiltskin\_99, Samty\_99, Sheng711\_105, Silverleaf\_97, Snenia\_98, Tourach\_103, TriFive\_100, Tyson\_101, UPIE\_98, Underpass\_95, Vetrix\_101, Wamburgrxpress\_97, Whirlwind\_100, Wigglewiggles\_101, Wilder\_102, Winky\_102, Wyatt2\_100, Zakai\_103, Zaria\_100, ZhongYanYuan\_99,

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

- Lewan\_102, MsGreen\_100, Sarshaun\_102, SoJulia\_104, Soap141\_101,

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

- Aegeus\_111, Ariel\_170, BAKA\_175, Bagrid\_178, Baudelaire\_111, Beem\_170, Bobby\_162, Bombitas\_156, BronnyJames\_165, Constella\_165, Courthouse\_167, Dallas\_169, DmpstrDiver\_171, Dove\_156, Duke13\_172, Ejimix\_160, EricMillard\_167, Gaia\_137, Gonephishing\_163, Halley\_170, Hannaconda\_162, Hidrated\_162, HokkenD\_164, Hughesyang\_168, JuicyJay\_164, Kalah2\_166, KashFlow\_167, Klein\_173, LittleE\_177, Lucky2013\_166, Marleymoo\_156, MiaZeal\_173, Minerva\_169, Nebkiss\_134, Nekros\_169, Nibley\_163, NihilNomen\_171, Odette\_173, Omega\_179, Optimus\_168, Phoebus\_170, Porcelain\_170, Pound\_163, Rearden\_169, Redno2\_163, Schatzie\_164, Shaboozey\_168, Squint\_165, Stellammi\_167, Superphikiman\_168, Thibault\_153, ThreeRngTarjay\_166,

Wanda\_167, Xiaokay\_165, Yeet\_161, Zelink\_162,

### Summary by start number:

#### Start 13:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 121
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Gaia\_137 (X),

#### Start 14:

- Found in 1 of 152 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nekros\_169 (J),

#### Start 15:

- Found in 23 of 152 ( 15.1% ) of genes in pham
- Manual Annotations of this start: 17 of 121
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ariel\_170 (J), Bagrid\_178 (J), BronnyJames\_165 (J), Courthouse\_167 (J), EricMillard\_167 (J), Gonephishing\_163 (J), Hannaconda\_162 (J), KashFlow\_167 (J), Klein\_173 (J), LittleE\_177 (J), Lucky2013\_166 (J), MiaZeal\_173 (J), Nebkiss\_134 (X), Nibley\_163 (J), Omega\_179 (J), Porcelain\_170 (J), Rearden\_169 (J), Shaboozey\_168 (J), Squint\_165 (J), Stellammi\_167 (UNK), Superphikiman\_168 (J), ThreeRngTarjay\_166 (J), Wanda\_167 (J),

#### Start 16:

- Found in 80 of 152 ( 52.6% ) of genes in pham
- Manual Annotations of this start: 1 of 121
- Called 1.2% of time when present
- Phage (with cluster) where this start called: MsGreen\_100 (L3),

#### Start 17:

- Found in 29 of 152 ( 19.1% ) of genes in pham
- Manual Annotations of this start: 25 of 121
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA\_175 (J), Beem\_170 (J), Bobby\_162 (J), Bombitas\_156 (J), Constella\_165 (J), Dallas\_169 (J), DmpstrDiver\_171 (J), Dove\_156 (J), Duke13\_172 (J), Ejimix\_160 (J), Halley\_170 (J), Hidrated\_162 (J), HokkenD\_164 (J), Hughesyang\_168 (J), JuicyJay\_164 (J), Kalah2\_166 (J), Marleymoo\_156 (J), Minerva\_169 (J), NihilNomen\_171 (J), Odette\_173 (J), Optimus\_168 (J), Phoebus\_170 (J), Pound\_163 (J), Redno2\_163 (J), Schatzie\_164 (J), Thibault\_153 (J), Xiaokay\_165 (J), Yeet\_161 (J), Zelink\_162 (J),

#### Start 18:

- Found in 96 of 152 ( 63.2% ) of genes in pham
- Manual Annotations of this start: 74 of 121
- Called 94.8% of time when present
- Phage (with cluster) where this start called: Acquire49\_99 (L1), Appletree2\_97 (L1), Archie\_99 (L2), AvadaKedavra\_99 (L1), Baoshan\_103 (L2), Bazzle\_99 (L2), Bellis\_100 (L3), BigCheese\_101 (L2), BobsGarage\_101 (L2), BourbonZero\_101 (L3),

BrainDrainer\_105 (L4), Breezona\_102 (L2), Bromden\_105 (L4), Calm\_101 (L1), Chaser\_102 (L4), ChutneyChips\_105 (L4), CicholasNage\_95 (L1), Claus\_101 (L2), Clautastrophe\_98 (L3), Crossroads\_103 (L2), DHan\_105 (L2), DanBing\_102 (L2), DirkDirk\_95 (L1), Douge\_104 (L4), Douzhi\_104 (L4), DrSeegs\_101 (L2), DuncansLeg\_101 (L3), DyoEdafos\_106 (L4), Ellson\_99 (L3), Enceladus\_95 (L1), Faith1\_101 (L2), FarmResident\_105 (L4), Finemlucis\_103 (L2), Finnry\_100 (L3), Gabriela\_102 (L2), Gardann\_102 (L2), GuuelaD\_98 (L2), Halena\_97 (L1), Itos\_102 (L2), Jobypre\_99 (L3), JoeDirt\_100 (L1), Jubie\_99 (L3), Kahlid\_102 (L2), Kingsolomon\_97 (L3), KirDoubleO7\_98 (L3), Kropertea\_99 (L4), Krypton555\_102 (L3), LeBron\_98 (L1), LilDestine\_100 (L2), LiyuLake\_99 (L3), Loadrie\_100 (L2), Lolly9\_98 (L3), Lumos\_99 (L3), Lynnae\_103 (L2), MAckerman\_98 (L1), Miley16\_102 (L2), MiniLon\_103 (L3), MiniMac\_103 (L3), MkaliMitinis3\_103 (L2), Moostard\_96 (L3), Netyap\_100 (L2), Nicholas\_97 (L3), Nicholasp3\_103 (L2), OhShagHennessy\_94 (L1), OverPar\_104 (L2), PYPDinur\_104 (L4), Poochiewood\_96 (L1), Quby\_104 (L4), Red305\_100 (L3), Rose5\_100 (L1), Rossetti\_103 (L2), Rumpelstiltskin\_99 (L2), Samty\_99 (L3), Sheng711\_105 (L4), Silverleaf\_97 (L1), Snenia\_98 (L3), Tourach\_103 (L2), TriFive\_100 (L3), Tyson\_101 (L1), UPIE\_98 (L1), Underpass\_95 (L2), Vetrix\_101 (L2), Wamburgxpress\_97 (L1), Whirlwind\_100 (L3), Wigglewiggles\_101 (L2), Wilder\_102 (L2), Winky\_102 (L2), Wyatt2\_100 (L1), Zakai\_103 (L2), Zaria\_100 (L1), ZhongYanYuan\_99 (L2),

Start 19:

- Found in 2 of 152 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 121
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aegeus\_111 (L5), Baudelaire\_111 (L5),

Start 21:

- Found in 64 of 152 ( 42.1% ) of genes in pham
- Manual Annotations of this start: 1 of 121
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Lewan\_102 (L2), Sarshaun\_102 (L2), SoJulia\_104 (L2), Soap141\_101 (L2),

### Summary by clusters:

There are 8 clusters represented in this pham: J, L4, L5, L2, L3, L1, X, UNK,

Info for manual annotations of cluster J:

- Start number 15 was manually annotated 15 times for cluster J.
- Start number 17 was manually annotated 25 times for cluster J.

Info for manual annotations of cluster L1:

- Start number 18 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 18 was manually annotated 31 times for cluster L2.
- Start number 21 was manually annotated 1 time for cluster L2.

Info for manual annotations of cluster L3:

- Start number 16 was manually annotated 1 time for cluster L3.
- Start number 18 was manually annotated 18 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 18 was manually annotated 6 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 19 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster UNK:

- Start number 15 was manually annotated 1 time for cluster UNK.

Info for manual annotations of cluster X:

- Start number 13 was manually annotated 1 time for cluster X.
- Start number 15 was manually annotated 1 time for cluster X.

### **Gene Information:**

Gene: Acquire49\_99 Start: 60543, Stop: 60767, Start Num: 18

Candidate Starts for Acquire49\_99:

(Start: 16 @60531 has 1 MA's), (Start: 18 @60543 has 74 MA's), (20, 60582), (Start: 21 @60585 has 1 MA's), (30, 60648), (31, 60675), (44, 60750),

Gene: Aegeus\_111 Start: 63785, Stop: 64024, Start Num: 19

Candidate Starts for Aegeus\_111:

(Start: 19 @63785 has 2 MA's), (Start: 21 @63818 has 1 MA's), (27, 63866), (28, 63872), (30, 63881), (39, 63959), (41, 63971), (42, 63974), (46, 63992),

Gene: Appletree2\_97 Start: 60133, Stop: 60357, Start Num: 18

Candidate Starts for Appletree2\_97:

(Start: 16 @60121 has 1 MA's), (Start: 18 @60133 has 74 MA's), (20, 60172), (Start: 21 @60175 has 1 MA's), (30, 60238), (31, 60265), (44, 60340),

Gene: Archie\_99 Start: 61717, Stop: 61935, Start Num: 18

Candidate Starts for Archie\_99:

(Start: 16 @61705 has 1 MA's), (Start: 18 @61717 has 74 MA's), (Start: 21 @61756 has 1 MA's), (30, 61819), (35, 61870), (39, 61897),

Gene: Ariel\_170 Start: 87126, Stop: 87374, Start Num: 15

Candidate Starts for Ariel\_170:

(Start: 15 @87126 has 17 MA's), (32, 87282), (35, 87291), (37, 87312), (48, 87354),

Gene: AvadaKedavra\_99 Start: 60655, Stop: 60879, Start Num: 18

Candidate Starts for AvadaKedavra\_99:

(Start: 16 @60643 has 1 MA's), (Start: 18 @60655 has 74 MA's), (20, 60694), (Start: 21 @60697 has 1 MA's), (30, 60760), (31, 60787), (44, 60862),

Gene: BAKA\_175 Start: 91948, Stop: 92181, Start Num: 17

Candidate Starts for BAKA\_175:

(Start: 17 @91948 has 25 MA's), (20, 91990), (22, 91996), (24, 92005), (26, 92023), (31, 92083), (33, 92101), (35, 92107), (36, 92125), (40, 92137), (41, 92146), (43, 92155),

Gene: Bagrid\_178 Start: 92406, Stop: 92654, Start Num: 15

Candidate Starts for Bagrid\_178:

(Start: 15 @92406 has 17 MA's), (32, 92562), (35, 92571), (37, 92592), (48, 92634),

Gene: Baoshan\_103 Start: 62502, Stop: 62720, Start Num: 18

Candidate Starts for Baoshan\_103:

(Start: 16 @62490 has 1 MA's), (Start: 18 @62502 has 74 MA's), (Start: 21 @62541 has 1 MA's), (29, 62598), (30, 62604), (35, 62655), (39, 62682),

Gene: Baudelaire\_111 Start: 63785, Stop: 64024, Start Num: 19

Candidate Starts for Baudelaire\_111:

(Start: 19 @63785 has 2 MA's), (Start: 21 @63818 has 1 MA's), (27, 63866), (28, 63872), (30, 63881), (39, 63959), (41, 63971), (42, 63974), (46, 63992),

Gene: Bazzle\_99 Start: 62273, Stop: 62491, Start Num: 18

Candidate Starts for Bazzle\_99:

(Start: 16 @62261 has 1 MA's), (Start: 18 @62273 has 74 MA's), (Start: 21 @62312 has 1 MA's), (30, 62375), (35, 62426), (39, 62453),

Gene: Beem\_170 Start: 91103, Stop: 91336, Start Num: 17

Candidate Starts for Beem\_170:

(Start: 17 @91103 has 25 MA's), (20, 91145), (22, 91151), (24, 91160), (26, 91178), (31, 91238), (33, 91256), (35, 91262), (36, 91280), (40, 91292), (41, 91301), (43, 91310),

Gene: Bellis\_100 Start: 62047, Stop: 62277, Start Num: 18

Candidate Starts for Bellis\_100:

(Start: 16 @62035 has 1 MA's), (Start: 18 @62047 has 74 MA's), (20, 62092), (38, 62233), (41, 62248),

Gene: BigCheese\_101 Start: 62491, Stop: 62709, Start Num: 18

Candidate Starts for BigCheese\_101:

(Start: 16 @62479 has 1 MA's), (Start: 18 @62491 has 74 MA's), (Start: 21 @62530 has 1 MA's), (29, 62587), (30, 62593), (35, 62644), (39, 62671),

Gene: Bobby\_162 Start: 92095, Stop: 92328, Start Num: 17

Candidate Starts for Bobby\_162:

(5, 91882), (Start: 17 @92095 has 25 MA's), (20, 92137), (22, 92143), (24, 92152), (26, 92170), (31, 92230), (33, 92248), (35, 92254), (36, 92272), (40, 92284), (41, 92293), (43, 92302),

Gene: BobsGarage\_101 Start: 62491, Stop: 62709, Start Num: 18

Candidate Starts for BobsGarage\_101:

(Start: 16 @62479 has 1 MA's), (Start: 18 @62491 has 74 MA's), (Start: 21 @62530 has 1 MA's), (29, 62587), (30, 62593), (35, 62644), (39, 62671),

Gene: Bombitas\_156 Start: 87333, Stop: 87566, Start Num: 17

Candidate Starts for Bombitas\_156:

(Start: 17 @87333 has 25 MA's), (20, 87375), (22, 87381), (24, 87390), (26, 87408), (31, 87468), (35, 87492), (36, 87510), (40, 87522), (41, 87531), (43, 87540),

Gene: BourbonZero\_101 Start: 62227, Stop: 62457, Start Num: 18

Candidate Starts for BourbonZero\_101:

(Start: 18 @62227 has 74 MA's), (20, 62272), (38, 62413), (41, 62428),

Gene: BrainDrainer\_105 Start: 62537, Stop: 62758, Start Num: 18

Candidate Starts for BrainDrainer\_105:

(Start: 16 @62525 has 1 MA's), (Start: 18 @62537 has 74 MA's), (29, 62636), (35, 62693), (39, 62720),

Gene: Breezona\_102 Start: 62826, Stop: 63044, Start Num: 18

Candidate Starts for Breezona\_102:

(Start: 16 @62814 has 1 MA's), (Start: 18 @62826 has 74 MA's), (Start: 21 @62865 has 1 MA's), (29, 62922), (30, 62928), (35, 62979), (39, 63006),

Gene: Bromden\_105 Start: 63686, Stop: 63910, Start Num: 18

Candidate Starts for Bromden\_105:

(Start: 18 @63686 has 74 MA's), (29, 63788), (39, 63872),

Gene: BronnyJames\_165 Start: 87172, Stop: 87420, Start Num: 15

Candidate Starts for BronnyJames\_165:

(Start: 15 @87172 has 17 MA's), (32, 87328), (35, 87337), (37, 87358), (48, 87400),

Gene: Calm\_101 Start: 60922, Stop: 61146, Start Num: 18

Candidate Starts for Calm\_101:

(Start: 16 @60910 has 1 MA's), (Start: 18 @60922 has 74 MA's), (20, 60961), (Start: 21 @60964 has 1 MA's), (30, 61027), (31, 61054), (44, 61129),

Gene: Chaser\_102 Start: 61886, Stop: 62107, Start Num: 18

Candidate Starts for Chaser\_102:

(Start: 16 @61874 has 1 MA's), (Start: 18 @61886 has 74 MA's), (29, 61985), (35, 62042), (39, 62069),

Gene: ChutneyChips\_105 Start: 62612, Stop: 62833, Start Num: 18

Candidate Starts for ChutneyChips\_105:

(Start: 16 @62600 has 1 MA's), (Start: 18 @62612 has 74 MA's), (29, 62711), (35, 62768), (39, 62795),

Gene: CicholasNage\_95 Start: 60037, Stop: 60261, Start Num: 18

Candidate Starts for CicholasNage\_95:

(Start: 16 @60025 has 1 MA's), (Start: 18 @60037 has 74 MA's), (20, 60076), (Start: 21 @60079 has 1 MA's), (30, 60142), (31, 60169), (44, 60244),

Gene: Claus\_101 Start: 62312, Stop: 62530, Start Num: 18

Candidate Starts for Claus\_101:

(Start: 16 @62300 has 1 MA's), (Start: 18 @62312 has 74 MA's), (Start: 21 @62351 has 1 MA's), (29, 62408), (30, 62414), (35, 62465), (39, 62492),

Gene: Clautastrophe\_98 Start: 62042, Stop: 62272, Start Num: 18

Candidate Starts for Clautastrophe\_98:

(Start: 16 @62030 has 1 MA's), (Start: 18 @62042 has 74 MA's), (20, 62087), (38, 62228), (41, 62243),

Gene: Constella\_165 Start: 89837, Stop: 90070, Start Num: 17

Candidate Starts for Constella\_165:

(Start: 17 @89837 has 25 MA's), (20, 89879), (22, 89885), (24, 89894), (26, 89912), (31, 89972), (33, 89990), (35, 89996), (36, 90014), (40, 90026), (41, 90035), (43, 90044),

Gene: Courthouse\_167 Start: 87570, Stop: 87818, Start Num: 15

Candidate Starts for Courthouse\_167:

(Start: 15 @87570 has 17 MA's), (32, 87726), (35, 87735), (37, 87756), (48, 87798),

Gene: Crossroads\_103 Start: 62378, Stop: 62596, Start Num: 18

Candidate Starts for Crossroads\_103:

(Start: 16 @62366 has 1 MA's), (Start: 18 @62378 has 74 MA's), (Start: 21 @62417 has 1 MA's), (29, 62474), (30, 62480), (35, 62531), (39, 62558),

Gene: DHan\_105 Start: 62730, Stop: 62948, Start Num: 18

Candidate Starts for DHan\_105:

(Start: 16 @62718 has 1 MA's), (Start: 18 @62730 has 74 MA's), (Start: 21 @62769 has 1 MA's), (29, 62826), (30, 62832), (35, 62883), (39, 62910),

Gene: Dallas\_169 Start: 90326, Stop: 90559, Start Num: 17

Candidate Starts for Dallas\_169:

(Start: 17 @90326 has 25 MA's), (20, 90368), (22, 90374), (24, 90383), (26, 90401), (31, 90461), (35, 90485), (36, 90503), (40, 90515), (41, 90524), (43, 90533),

Gene: DanBing\_102 Start: 62194, Stop: 62412, Start Num: 18

Candidate Starts for DanBing\_102:

(Start: 16 @62182 has 1 MA's), (Start: 18 @62194 has 74 MA's), (Start: 21 @62233 has 1 MA's), (29, 62290), (30, 62296), (35, 62347), (39, 62374),

Gene: DirkDirk\_95 Start: 59748, Stop: 59972, Start Num: 18

Candidate Starts for DirkDirk\_95:

(Start: 16 @59736 has 1 MA's), (Start: 18 @59748 has 74 MA's), (20, 59787), (Start: 21 @59790 has 1 MA's), (30, 59853), (31, 59880), (44, 59955),

Gene: DmpstrDiver\_171 Start: 90021, Stop: 90254, Start Num: 17

Candidate Starts for DmpstrDiver\_171:

(Start: 17 @90021 has 25 MA's), (20, 90063), (22, 90069), (24, 90078), (26, 90096), (31, 90156), (33, 90174), (35, 90180), (36, 90198), (40, 90210), (41, 90219), (43, 90228),

Gene: Douge\_104 Start: 61957, Stop: 62178, Start Num: 18

Candidate Starts for Douge\_104:

(Start: 16 @61945 has 1 MA's), (Start: 18 @61957 has 74 MA's), (29, 62056), (35, 62113), (39, 62140),

Gene: Douzhi\_104 Start: 62226, Stop: 62447, Start Num: 18

Candidate Starts for Douzhi\_104:

(Start: 16 @62214 has 1 MA's), (Start: 18 @62226 has 74 MA's), (29, 62325), (35, 62382), (39, 62409),

Gene: Dove\_156 Start: 85689, Stop: 85922, Start Num: 17

Candidate Starts for Dove\_156:

(Start: 17 @85689 has 25 MA's), (20, 85731), (22, 85737), (24, 85746), (26, 85764), (31, 85824), (35, 85848), (36, 85866), (40, 85878), (41, 85887), (43, 85896),

Gene: DrSeegs\_101 Start: 62826, Stop: 63044, Start Num: 18

Candidate Starts for DrSeegs\_101:

(Start: 16 @62814 has 1 MA's), (Start: 18 @62826 has 74 MA's), (Start: 21 @62865 has 1 MA's), (29, 62922), (30, 62928), (35, 62979), (39, 63006),

Gene: Duke13\_172 Start: 90444, Stop: 90677, Start Num: 17

Candidate Starts for Duke13\_172:

(Start: 17 @90444 has 25 MA's), (20, 90486), (22, 90492), (24, 90501), (26, 90519), (31, 90579), (33, 90597), (35, 90603), (36, 90621), (40, 90633), (41, 90642), (43, 90651),

Gene: DuncansLeg\_101 Start: 62215, Stop: 62445, Start Num: 18

Candidate Starts for DuncansLeg\_101:

(Start: 18 @62215 has 74 MA's), (20, 62260), (38, 62401), (41, 62416),

Gene: DyoEdafos\_106 Start: 62535, Stop: 62756, Start Num: 18

Candidate Starts for DyoEdafos\_106:

(Start: 16 @62523 has 1 MA's), (Start: 18 @62535 has 74 MA's), (29, 62634), (34, 62688), (39, 62718),

Gene: Ejimix\_160 Start: 89314, Stop: 89547, Start Num: 17

Candidate Starts for Ejimix\_160:

(Start: 17 @89314 has 25 MA's), (20, 89356), (22, 89362), (24, 89371), (26, 89389), (31, 89449), (33, 89467), (35, 89473), (36, 89491), (40, 89503), (41, 89512), (43, 89521),

Gene: Ellson\_99 Start: 62530, Stop: 62760, Start Num: 18

Candidate Starts for Ellson\_99:

(Start: 18 @62530 has 74 MA's), (20, 62575), (38, 62716), (41, 62731),

Gene: Enceladus\_95 Start: 60046, Stop: 60270, Start Num: 18

Candidate Starts for Enceladus\_95:

(Start: 16 @60034 has 1 MA's), (Start: 18 @60046 has 74 MA's), (20, 60085), (Start: 21 @60088 has 1 MA's), (30, 60151), (31, 60178), (44, 60253),

Gene: EricMillard\_167 Start: 91016, Stop: 91264, Start Num: 15

Candidate Starts for EricMillard\_167:

(Start: 15 @91016 has 17 MA's), (32, 91172), (35, 91181), (37, 91202), (48, 91244),

Gene: Faith1\_101 Start: 62134, Stop: 62352, Start Num: 18

Candidate Starts for Faith1\_101:

(Start: 16 @62122 has 1 MA's), (Start: 18 @62134 has 74 MA's), (Start: 21 @62173 has 1 MA's), (29, 62230), (30, 62236), (35, 62287), (39, 62314),

Gene: FarmResident\_105 Start: 62140, Stop: 62361, Start Num: 18

Candidate Starts for FarmResident\_105:

(Start: 16 @62128 has 1 MA's), (Start: 18 @62140 has 74 MA's), (29, 62239), (35, 62296), (39, 62323),

Gene: Finemlucis\_103 Start: 63293, Stop: 63511, Start Num: 18

Candidate Starts for Finemlucis\_103:

(Start: 18 @63293 has 74 MA's), (Start: 21 @63332 has 1 MA's), (29, 63389), (30, 63395), (35, 63446), (39, 63473), (41, 63485),

Gene: Finnry\_100 Start: 62395, Stop: 62625, Start Num: 18

Candidate Starts for Finnry\_100:

(Start: 16 @62383 has 1 MA's), (Start: 18 @62395 has 74 MA's), (20, 62440), (38, 62581), (41, 62596),

Gene: Gabriela\_102 Start: 61480, Stop: 61698, Start Num: 18

Candidate Starts for Gabriela\_102:

(Start: 16 @61468 has 1 MA's), (Start: 18 @61480 has 74 MA's), (Start: 21 @61519 has 1 MA's), (29, 61576), (30, 61582), (35, 61633), (39, 61660),

Gene: Gaia\_137 Start: 75003, Stop: 75254, Start Num: 13

Candidate Starts for Gaia\_137:

(12, 74946), (Start: 13 @75003 has 1 MA's), (24, 75063), (31, 75141), (34, 75162), (35, 75165), (43, 75213), (44, 75216), (45, 75219),

Gene: Gardann\_102 Start: 62332, Stop: 62550, Start Num: 18

Candidate Starts for Gardann\_102:

(Start: 18 @62332 has 74 MA's), (Start: 21 @62371 has 1 MA's), (29, 62428), (30, 62434), (35, 62485), (39, 62512),

Gene: Gonephishing\_163 Start: 88387, Stop: 88635, Start Num: 15

Candidate Starts for Gonephishing\_163:

(Start: 15 @88387 has 17 MA's), (32, 88543), (35, 88552), (37, 88573), (48, 88615),

Gene: GuuelaD\_98 Start: 62093, Stop: 62311, Start Num: 18

Candidate Starts for GuuelaD\_98:

(Start: 16 @62081 has 1 MA's), (Start: 18 @62093 has 74 MA's), (Start: 21 @62132 has 1 MA's), (29, 62189), (30, 62195), (35, 62246), (39, 62273),

Gene: Halena\_97 Start: 59838, Stop: 60062, Start Num: 18

Candidate Starts for Halena\_97:

(Start: 16 @59826 has 1 MA's), (Start: 18 @59838 has 74 MA's), (20, 59877), (Start: 21 @59880 has 1 MA's), (30, 59943), (31, 59970), (44, 60045),

Gene: Halley\_170 Start: 89630, Stop: 89863, Start Num: 17

Candidate Starts for Halley\_170:

(Start: 17 @89630 has 25 MA's), (20, 89672), (22, 89678), (24, 89687), (26, 89705), (31, 89765), (35, 89789), (36, 89807), (40, 89819), (41, 89828), (43, 89837),

Gene: Hannaconda\_162 Start: 90308, Stop: 90556, Start Num: 15

Candidate Starts for Hannaconda\_162:

(Start: 15 @90308 has 17 MA's), (32, 90464), (35, 90473), (37, 90494), (48, 90536),

Gene: Hidrated\_162 Start: 91344, Stop: 91577, Start Num: 17

Candidate Starts for Hidrated\_162:

(Start: 17 @91344 has 25 MA's), (20, 91386), (22, 91392), (24, 91401), (26, 91419), (31, 91479), (33, 91497), (35, 91503), (36, 91521), (40, 91533), (41, 91542), (43, 91551),

Gene: HokkenD\_164 Start: 91411, Stop: 91644, Start Num: 17

Candidate Starts for HokkenD\_164:

(Start: 17 @91411 has 25 MA's), (20, 91453), (22, 91459), (24, 91468), (26, 91486), (31, 91546), (35, 91570), (36, 91588), (40, 91600), (41, 91609), (43, 91618),

Gene: Hughesyang\_168 Start: 90112, Stop: 90345, Start Num: 17

Candidate Starts for Hughesyang\_168:

(Start: 17 @90112 has 25 MA's), (20, 90154), (22, 90160), (24, 90169), (26, 90187), (31, 90247), (33, 90265), (35, 90271), (36, 90289), (40, 90301), (41, 90310), (43, 90319),

Gene: Itos\_102 Start: 61040, Stop: 61258, Start Num: 18

Candidate Starts for Itos\_102:

(Start: 16 @61028 has 1 MA's), (Start: 18 @61040 has 74 MA's), (Start: 21 @61079 has 1 MA's), (29, 61136), (30, 61142), (35, 61193), (39, 61220),

Gene: Jobypre\_99 Start: 62042, Stop: 62272, Start Num: 18

Candidate Starts for Jobypre\_99:

(Start: 16 @62030 has 1 MA's), (Start: 18 @62042 has 74 MA's), (20, 62087), (38, 62228), (41, 62243),

Gene: JoeDirt\_100 Start: 60975, Stop: 61199, Start Num: 18

Candidate Starts for JoeDirt\_100:

(Start: 16 @60963 has 1 MA's), (Start: 18 @60975 has 74 MA's), (20, 61014), (Start: 21 @61017 has 1 MA's), (30, 61080), (31, 61107), (44, 61182),

Gene: Jubie\_99 Start: 62177, Stop: 62407, Start Num: 18

Candidate Starts for Jubie\_99:

(Start: 16 @62165 has 1 MA's), (Start: 18 @62177 has 74 MA's), (20, 62222), (38, 62363), (41, 62378),

Gene: JuicyJay\_164 Start: 91058, Stop: 91291, Start Num: 17

Candidate Starts for JuicyJay\_164:

(Start: 17 @91058 has 25 MA's), (20, 91100), (22, 91106), (24, 91115), (26, 91133), (31, 91193), (35, 91217), (36, 91235), (40, 91247), (41, 91256), (43, 91265),

Gene: Kahlid\_102 Start: 62250, Stop: 62468, Start Num: 18

Candidate Starts for Kahlid\_102:

(Start: 18 @62250 has 74 MA's), (Start: 21 @62289 has 1 MA's), (29, 62346), (30, 62352), (35, 62403), (39, 62430),

Gene: Kalah2\_166 Start: 91396, Stop: 91629, Start Num: 17

Candidate Starts for Kalah2\_166:

(Start: 17 @91396 has 25 MA's), (20, 91438), (22, 91444), (24, 91453), (26, 91471), (31, 91531), (35, 91555), (36, 91573), (40, 91585), (41, 91594), (43, 91603),

Gene: KashFlow\_167 Start: 90121, Stop: 90369, Start Num: 15

Candidate Starts for KashFlow\_167:

(Start: 15 @90121 has 17 MA's), (32, 90277), (35, 90286), (37, 90307), (48, 90349),

Gene: Kingsolomon\_97 Start: 62151, Stop: 62381, Start Num: 18

Candidate Starts for Kingsolomon\_97:

(Start: 16 @62139 has 1 MA's), (Start: 18 @62151 has 74 MA's), (20, 62196), (38, 62337), (41, 62352),

Gene: KirDoubleO7\_98 Start: 62217, Stop: 62447, Start Num: 18

Candidate Starts for KirDoubleO7\_98:

(Start: 18 @62217 has 74 MA's), (20, 62262), (38, 62403), (41, 62418),

Gene: Klein\_173 Start: 89831, Stop: 90079, Start Num: 15

Candidate Starts for Klein\_173:

(Start: 15 @89831 has 17 MA's), (32, 89987), (35, 89996), (37, 90017), (48, 90059),

Gene: Kropertea\_99 Start: 61773, Stop: 61994, Start Num: 18

Candidate Starts for Kropertea\_99:

(Start: 16 @61761 has 1 MA's), (Start: 18 @61773 has 74 MA's), (29, 61872), (34, 61926), (39, 61956),

Gene: Krypton555\_102 Start: 62463, Stop: 62693, Start Num: 18

Candidate Starts for Krypton555\_102:

(Start: 16 @62451 has 1 MA's), (Start: 18 @62463 has 74 MA's), (20, 62508), (Start: 21 @62511 has 1 MA's), (38, 62649), (41, 62664),

Gene: LeBron\_98 Start: 60145, Stop: 60369, Start Num: 18

Candidate Starts for LeBron\_98:

(Start: 16 @60133 has 1 MA's), (Start: 18 @60145 has 74 MA's), (20, 60184), (Start: 21 @60187 has 1 MA's), (30, 60250), (31, 60277), (44, 60352),

Gene: Lewan\_102 Start: 62172, Stop: 62351, Start Num: 21

Candidate Starts for Lewan\_102:

(Start: 16 @62121 has 1 MA's), (Start: 18 @62133 has 74 MA's), (Start: 21 @62172 has 1 MA's), (29, 62229), (30, 62235), (35, 62286), (39, 62313),

Gene: LilDestine\_100 Start: 61804, Stop: 62022, Start Num: 18

Candidate Starts for LilDestine\_100:

(Start: 16 @61792 has 1 MA's), (Start: 18 @61804 has 74 MA's), (Start: 21 @61843 has 1 MA's), (29, 61900), (30, 61906), (35, 61957), (39, 61984),

Gene: LittleE\_177 Start: 91144, Stop: 91392, Start Num: 15

Candidate Starts for LittleE\_177:

(Start: 15 @91144 has 17 MA's), (32, 91300), (35, 91309), (37, 91330), (48, 91372),

Gene: LiyuLake\_99 Start: 62290, Stop: 62520, Start Num: 18

Candidate Starts for LiyuLake\_99:

(Start: 18 @62290 has 74 MA's), (20, 62335), (38, 62476), (41, 62491),

Gene: Loadrie\_100 Start: 62295, Stop: 62513, Start Num: 18

Candidate Starts for Loadrie\_100:

(Start: 16 @62283 has 1 MA's), (Start: 18 @62295 has 74 MA's), (Start: 21 @62334 has 1 MA's), (29, 62391), (30, 62397), (35, 62448), (39, 62475),

Gene: Lolly9\_98 Start: 62136, Stop: 62363, Start Num: 18

Candidate Starts for Lolly9\_98:

(Start: 16 @62124 has 1 MA's), (Start: 18 @62136 has 74 MA's), (38, 62319), (41, 62334),

Gene: Lucky2013\_166 Start: 86641, Stop: 86889, Start Num: 15

Candidate Starts for Lucky2013\_166:

(Start: 15 @86641 has 17 MA's), (32, 86797), (35, 86806), (37, 86827), (48, 86869),

Gene: Lumos\_99 Start: 62039, Stop: 62269, Start Num: 18

Candidate Starts for Lumos\_99:

(Start: 16 @62027 has 1 MA's), (Start: 18 @62039 has 74 MA's), (20, 62084), (38, 62225), (41, 62240),

Gene: Lynnae\_103 Start: 62116, Stop: 62334, Start Num: 18

Candidate Starts for Lynnae\_103:

(Start: 16 @62104 has 1 MA's), (Start: 18 @62116 has 74 MA's), (Start: 21 @62155 has 1 MA's), (29, 62212), (30, 62218), (35, 62269), (39, 62296),

Gene: MAckerman\_98 Start: 59831, Stop: 60055, Start Num: 18

Candidate Starts for MAckerman\_98:

(Start: 16 @59819 has 1 MA's), (Start: 18 @59831 has 74 MA's), (20, 59870), (Start: 21 @59873 has 1 MA's), (30, 59936), (31, 59963), (44, 60038),

Gene: Marleymoo\_156 Start: 88248, Stop: 88481, Start Num: 17

Candidate Starts for Marleymoo\_156:

(Start: 17 @88248 has 25 MA's), (20, 88290), (22, 88296), (24, 88305), (26, 88323), (31, 88383), (33, 88401), (35, 88407), (36, 88425), (40, 88437), (41, 88446), (43, 88455),

Gene: MiaZeal\_173 Start: 87788, Stop: 88036, Start Num: 15

Candidate Starts for MiaZeal\_173:

(Start: 15 @87788 has 17 MA's), (32, 87944), (35, 87953), (37, 87974), (48, 88016),

Gene: Miley16\_102 Start: 62826, Stop: 63044, Start Num: 18

Candidate Starts for Miley16\_102:

(Start: 16 @62814 has 1 MA's), (Start: 18 @62826 has 74 MA's), (Start: 21 @62865 has 1 MA's), (29, 62922), (30, 62928), (35, 62979), (39, 63006),

Gene: Minerva\_169 Start: 89476, Stop: 89709, Start Num: 17

Candidate Starts for Minerva\_169:

(Start: 17 @89476 has 25 MA's), (20, 89518), (22, 89524), (24, 89533), (26, 89551), (31, 89611), (35, 89635), (36, 89653), (40, 89665), (41, 89674), (43, 89683),

Gene: MiniLon\_103 Start: 62137, Stop: 62364, Start Num: 18

Candidate Starts for MiniLon\_103:

(Start: 16 @62125 has 1 MA's), (Start: 18 @62137 has 74 MA's), (38, 62320), (41, 62335),

Gene: MiniMac\_103 Start: 62132, Stop: 62359, Start Num: 18

Candidate Starts for MiniMac\_103:

(Start: 16 @62120 has 1 MA's), (Start: 18 @62132 has 74 MA's), (38, 62315), (41, 62330),

Gene: MkaliMitinis3\_103 Start: 62358, Stop: 62576, Start Num: 18

Candidate Starts for MkaliMitinis3\_103:

(Start: 18 @62358 has 74 MA's), (Start: 21 @62397 has 1 MA's), (29, 62454), (30, 62460), (35, 62511), (39, 62538),

Gene: Moostard\_96 Start: 62146, Stop: 62376, Start Num: 18

Candidate Starts for Moostard\_96:

(Start: 16 @62134 has 1 MA's), (Start: 18 @62146 has 74 MA's), (20, 62191), (38, 62332), (41, 62347),

Gene: MsGreen\_100 Start: 62029, Stop: 62271, Start Num: 16

Candidate Starts for MsGreen\_100:

(Start: 16 @62029 has 1 MA's), (Start: 18 @62041 has 74 MA's), (20, 62086), (38, 62227), (41, 62242),

Gene: Nebkiss\_134 Start: 71009, Stop: 71254, Start Num: 15

Candidate Starts for Nebkiss\_134:

(Start: 15 @71009 has 17 MA's), (23, 71057), (25, 71066), (27, 71099), (36, 71183), (37, 71186), (43, 71213), (44, 71216), (45, 71219),

Gene: Nekros\_169 Start: 90783, Stop: 91034, Start Num: 14

Candidate Starts for Nekros\_169:

(6, 90582), (7, 90588), (11, 90717), (12, 90723), (14, 90783), (32, 90942), (35, 90951), (37, 90972), (48, 91014),

Gene: Netyap\_100 Start: 62540, Stop: 62758, Start Num: 18

Candidate Starts for Netyap\_100:

(Start: 18 @62540 has 74 MA's), (Start: 21 @62579 has 1 MA's), (29, 62636), (30, 62642), (35, 62693), (39, 62720),

Gene: Nibley\_163 Start: 86749, Stop: 86997, Start Num: 15

Candidate Starts for Nibley\_163:

(Start: 15 @86749 has 17 MA's), (32, 86905), (35, 86914), (37, 86935), (48, 86977),

Gene: Nicholas\_97 Start: 62151, Stop: 62381, Start Num: 18

Candidate Starts for Nicholas\_97:

(Start: 16 @62139 has 1 MA's), (Start: 18 @62151 has 74 MA's), (20, 62196), (38, 62337), (41, 62352),

Gene: Nicholasp3\_103 Start: 62332, Stop: 62550, Start Num: 18  
Candidate Starts for Nicholasp3\_103:  
(Start: 18 @62332 has 74 MA's), (Start: 21 @62371 has 1 MA's), (29, 62428), (30, 62434), (35, 62485),  
(39, 62512),

Gene: NihilNomen\_171 Start: 89184, Stop: 89417, Start Num: 17  
Candidate Starts for NihilNomen\_171:  
(Start: 17 @89184 has 25 MA's), (20, 89226), (22, 89232), (24, 89241), (26, 89259), (31, 89319), (35,  
89343), (36, 89361), (40, 89373), (41, 89382), (43, 89391),

Gene: Odette\_173 Start: 91865, Stop: 92098, Start Num: 17  
Candidate Starts for Odette\_173:  
(Start: 17 @91865 has 25 MA's), (20, 91907), (22, 91913), (24, 91922), (26, 91940), (31, 92000), (33,  
92018), (35, 92024), (36, 92042), (40, 92054), (41, 92063), (43, 92072),

Gene: OhShagHennessy\_94 Start: 59550, Stop: 59774, Start Num: 18  
Candidate Starts for OhShagHennessy\_94:  
(Start: 16 @59538 has 1 MA's), (Start: 18 @59550 has 74 MA's), (20, 59589), (Start: 21 @59592 has 1  
MA's), (30, 59655), (31, 59682), (44, 59757),

Gene: Omega\_179 Start: 92502, Stop: 92750, Start Num: 15  
Candidate Starts for Omega\_179:  
(Start: 15 @92502 has 17 MA's), (32, 92658), (35, 92667), (37, 92688), (48, 92730),

Gene: Optimus\_168 Start: 90391, Stop: 90624, Start Num: 17  
Candidate Starts for Optimus\_168:  
(Start: 17 @90391 has 25 MA's), (20, 90433), (22, 90439), (24, 90448), (26, 90466), (31, 90526), (33,  
90544), (35, 90550), (36, 90568), (40, 90580), (41, 90589), (43, 90598),

Gene: OverPar\_104 Start: 62295, Stop: 62513, Start Num: 18  
Candidate Starts for OverPar\_104:  
(Start: 16 @62283 has 1 MA's), (Start: 18 @62295 has 74 MA's), (Start: 21 @62334 has 1 MA's), (29,  
62391), (30, 62397), (35, 62448), (39, 62475),

Gene: PYPDinur\_104 Start: 62789, Stop: 63010, Start Num: 18  
Candidate Starts for PYPDinur\_104:  
(Start: 16 @62777 has 1 MA's), (Start: 18 @62789 has 74 MA's), (29, 62888), (35, 62945), (39, 62972),

Gene: Phoebus\_170 Start: 92871, Stop: 93104, Start Num: 17  
Candidate Starts for Phoebus\_170:  
(Start: 17 @92871 has 25 MA's), (20, 92913), (22, 92919), (24, 92928), (26, 92946), (31, 93006), (35,  
93030), (36, 93048), (40, 93060), (41, 93069), (43, 93078),

Gene: Pochiewood\_96 Start: 60947, Stop: 61171, Start Num: 18  
Candidate Starts for Pochiewood\_96:  
(Start: 16 @60935 has 1 MA's), (Start: 18 @60947 has 74 MA's), (20, 60986), (Start: 21 @60989 has 1  
MA's), (30, 61052), (31, 61079), (44, 61154),

Gene: Porcelain\_170 Start: 87587, Stop: 87835, Start Num: 15  
Candidate Starts for Porcelain\_170:  
(Start: 15 @87587 has 17 MA's), (32, 87743), (35, 87752), (37, 87773), (48, 87815),

Gene: Pound\_163 Start: 88920, Stop: 89153, Start Num: 17

Candidate Starts for Pound\_163:

(Start: 17 @88920 has 25 MA's), (20, 88962), (22, 88968), (24, 88977), (26, 88995), (31, 89055), (33, 89073), (35, 89079), (36, 89097), (40, 89109), (41, 89118), (43, 89127),

Gene: Quby\_104 Start: 62115, Stop: 62336, Start Num: 18

Candidate Starts for Quby\_104:

(Start: 16 @62103 has 1 MA's), (Start: 18 @62115 has 74 MA's), (29, 62214), (35, 62271), (39, 62298),

Gene: Rearden\_169 Start: 88090, Stop: 88338, Start Num: 15

Candidate Starts for Rearden\_169:

(Start: 15 @88090 has 17 MA's), (32, 88246), (35, 88255), (37, 88276), (48, 88318),

Gene: Red305\_100 Start: 62042, Stop: 62272, Start Num: 18

Candidate Starts for Red305\_100:

(Start: 16 @62030 has 1 MA's), (Start: 18 @62042 has 74 MA's), (20, 62087), (38, 62228), (41, 62243),

Gene: Redno2\_163 Start: 86984, Stop: 87217, Start Num: 17

Candidate Starts for Redno2\_163:

(Start: 17 @86984 has 25 MA's), (20, 87026), (22, 87032), (24, 87041), (26, 87059), (31, 87119), (35, 87143), (36, 87161), (40, 87173), (41, 87182), (43, 87191),

Gene: Rose5\_100 Start: 60817, Stop: 61041, Start Num: 18

Candidate Starts for Rose5\_100:

(Start: 16 @60805 has 1 MA's), (Start: 18 @60817 has 74 MA's), (20, 60856), (Start: 21 @60859 has 1 MA's), (30, 60922), (31, 60949), (44, 61024),

Gene: Rossetti\_103 Start: 62464, Stop: 62682, Start Num: 18

Candidate Starts for Rossetti\_103:

(Start: 16 @62452 has 1 MA's), (Start: 18 @62464 has 74 MA's), (Start: 21 @62503 has 1 MA's), (29, 62560), (30, 62566), (35, 62617), (39, 62644), (41, 62656),

Gene: Rumpelstiltskin\_99 Start: 62125, Stop: 62343, Start Num: 18

Candidate Starts for Rumpelstiltskin\_99:

(Start: 18 @62125 has 74 MA's), (Start: 21 @62164 has 1 MA's), (29, 62221), (30, 62227), (35, 62278), (39, 62305),

Gene: Samty\_99 Start: 62139, Stop: 62369, Start Num: 18

Candidate Starts for Samty\_99:

(Start: 16 @62127 has 1 MA's), (Start: 18 @62139 has 74 MA's), (20, 62184), (38, 62325), (41, 62340),

Gene: Sarshaun\_102 Start: 62926, Stop: 63105, Start Num: 21

Candidate Starts for Sarshaun\_102:

(Start: 16 @62875 has 1 MA's), (Start: 18 @62887 has 74 MA's), (Start: 21 @62926 has 1 MA's), (29, 62983), (30, 62989), (35, 63040), (39, 63067),

Gene: Schatzie\_164 Start: 89919, Stop: 90152, Start Num: 17

Candidate Starts for Schatzie\_164:

(Start: 17 @89919 has 25 MA's), (20, 89961), (22, 89967), (24, 89976), (26, 89994), (31, 90054), (35, 90078), (36, 90096), (40, 90108), (41, 90117), (43, 90126),

Gene: Shaboozey\_168 Start: 87193, Stop: 87441, Start Num: 15

Candidate Starts for Shaboozey\_168:

(Start: 15 @87193 has 17 MA's), (32, 87349), (35, 87358), (37, 87379), (48, 87421),

Gene: Sheng711\_105 Start: 62313, Stop: 62534, Start Num: 18

Candidate Starts for Sheng711\_105:

(Start: 16 @62301 has 1 MA's), (Start: 18 @62313 has 74 MA's), (29, 62412), (35, 62469), (39, 62496),

Gene: Silverleaf\_97 Start: 59957, Stop: 60181, Start Num: 18

Candidate Starts for Silverleaf\_97:

(Start: 16 @59945 has 1 MA's), (Start: 18 @59957 has 74 MA's), (20, 59996), (Start: 21 @59999 has 1 MA's), (30, 60062), (31, 60089), (44, 60164),

Gene: Snenia\_98 Start: 62043, Stop: 62273, Start Num: 18

Candidate Starts for Snenia\_98:

(Start: 16 @62031 has 1 MA's), (Start: 18 @62043 has 74 MA's), (20, 62088), (38, 62229), (41, 62244),

Gene: SoJulia\_104 Start: 64095, Stop: 64274, Start Num: 21

Candidate Starts for SoJulia\_104:

(Start: 18 @64056 has 74 MA's), (Start: 21 @64095 has 1 MA's), (29, 64152), (30, 64158), (35, 64209), (39, 64236),

Gene: Soap141\_101 Start: 62926, Stop: 63105, Start Num: 21

Candidate Starts for Soap141\_101:

(Start: 16 @62875 has 1 MA's), (Start: 18 @62887 has 74 MA's), (Start: 21 @62926 has 1 MA's), (29, 62983), (30, 62989), (35, 63040), (39, 63067),

Gene: Squint\_165 Start: 88097, Stop: 88345, Start Num: 15

Candidate Starts for Squint\_165:

(Start: 15 @88097 has 17 MA's), (32, 88253), (35, 88262), (37, 88283), (48, 88325),

Gene: Stellammi\_167 Start: 76374, Stop: 76631, Start Num: 15

Candidate Starts for Stellammi\_167:

(Start: 15 @76374 has 17 MA's), (Start: 21 @76422 has 1 MA's), (22, 76425), (23, 76431), (24, 76434), (26, 76452), (33, 76530), (35, 76536), (36, 76554), (41, 76575), (44, 76587), (47, 76599),

Gene: Superphikiman\_168 Start: 87266, Stop: 87514, Start Num: 15

Candidate Starts for Superphikiman\_168:

(Start: 15 @87266 has 17 MA's), (32, 87422), (35, 87431), (37, 87452), (48, 87494),

Gene: Thibault\_153 Start: 86799, Stop: 87032, Start Num: 17

Candidate Starts for Thibault\_153:

(Start: 17 @86799 has 25 MA's), (20, 86841), (22, 86847), (24, 86856), (26, 86874), (31, 86934), (35, 86958), (36, 86976), (40, 86988), (41, 86997), (43, 87006),

Gene: ThreeRngTarjay\_166 Start: 90889, Stop: 91137, Start Num: 15

Candidate Starts for ThreeRngTarjay\_166:

(Start: 15 @90889 has 17 MA's), (32, 91045), (35, 91054), (37, 91075), (48, 91117),

Gene: Tourach\_103 Start: 63186, Stop: 63404, Start Num: 18

Candidate Starts for Tourach\_103:

(Start: 16 @63174 has 1 MA's), (Start: 18 @63186 has 74 MA's), (Start: 21 @63225 has 1 MA's), (29, 63282), (30, 63288), (35, 63339), (39, 63366), (41, 63378),

Gene: TriFive\_100 Start: 62155, Stop: 62385, Start Num: 18

Candidate Starts for TriFive\_100:

(Start: 16 @62143 has 1 MA's), (Start: 18 @62155 has 74 MA's), (20, 62200), (38, 62341), (41, 62356),

Gene: Tyson\_101 Start: 61248, Stop: 61472, Start Num: 18

Candidate Starts for Tyson\_101:

(Start: 16 @61236 has 1 MA's), (Start: 18 @61248 has 74 MA's), (20, 61287), (Start: 21 @61290 has 1 MA's), (30, 61353), (31, 61380), (44, 61455),

Gene: UPIE\_98 Start: 60488, Stop: 60712, Start Num: 18

Candidate Starts for UPIE\_98:

(Start: 16 @60476 has 1 MA's), (Start: 18 @60488 has 74 MA's), (20, 60527), (Start: 21 @60530 has 1 MA's), (30, 60593), (31, 60620), (44, 60695),

Gene: Underpass\_95 Start: 57368, Stop: 57586, Start Num: 18

Candidate Starts for Underpass\_95:

(Start: 18 @57368 has 74 MA's), (Start: 21 @57407 has 1 MA's), (29, 57464), (30, 57470), (35, 57521), (39, 57548),

Gene: Vetrrix\_101 Start: 62366, Stop: 62584, Start Num: 18

Candidate Starts for Vetrrix\_101:

(1, 61985), (2, 62027), (3, 62063), (4, 62132), (6, 62153), (8, 62180), (9, 62192), (10, 62267), (Start: 13 @62351 has 1 MA's), (Start: 18 @62366 has 74 MA's), (Start: 21 @62405 has 1 MA's), (29, 62462), (30, 62468), (35, 62519), (39, 62546),

Gene: Wamburgexpress\_97 Start: 60434, Stop: 60658, Start Num: 18

Candidate Starts for Wamburgexpress\_97:

(Start: 16 @60422 has 1 MA's), (Start: 18 @60434 has 74 MA's), (20, 60473), (Start: 21 @60476 has 1 MA's), (30, 60539), (31, 60566), (44, 60641),

Gene: Wanda\_167 Start: 87480, Stop: 87728, Start Num: 15

Candidate Starts for Wanda\_167:

(Start: 15 @87480 has 17 MA's), (32, 87636), (35, 87645), (37, 87666), (48, 87708),

Gene: Whirlwind\_100 Start: 62291, Stop: 62521, Start Num: 18

Candidate Starts for Whirlwind\_100:

(Start: 16 @62279 has 1 MA's), (Start: 18 @62291 has 74 MA's), (20, 62336), (38, 62477), (41, 62492),

Gene: Wigglewigggle\_101 Start: 62057, Stop: 62275, Start Num: 18

Candidate Starts for Wigglewigggle\_101:

(Start: 16 @62045 has 1 MA's), (Start: 18 @62057 has 74 MA's), (Start: 21 @62096 has 1 MA's), (29, 62153), (30, 62159), (35, 62210), (39, 62237),

Gene: Wilder\_102 Start: 62104, Stop: 62322, Start Num: 18

Candidate Starts for Wilder\_102:

(Start: 16 @62092 has 1 MA's), (Start: 18 @62104 has 74 MA's), (Start: 21 @62143 has 1 MA's), (29, 62200), (30, 62206), (35, 62257), (39, 62284),

Gene: Winky\_102 Start: 62826, Stop: 63044, Start Num: 18

Candidate Starts for Winky\_102:

(Start: 16 @62814 has 1 MA's), (Start: 18 @62826 has 74 MA's), (Start: 21 @62865 has 1 MA's), (29, 62922), (30, 62928), (35, 62979), (39, 63006),

Gene: Wyatt2\_100 Start: 60911, Stop: 61135, Start Num: 18

Candidate Starts for Wyatt2\_100:

(Start: 16 @60899 has 1 MA's), (Start: 18 @60911 has 74 MA's), (20, 60950), (Start: 21 @60953 has 1 MA's), (30, 61016), (31, 61043), (44, 61118),

Gene: Xiaokay\_165 Start: 90819, Stop: 91052, Start Num: 17

Candidate Starts for Xiaokay\_165:

(Start: 17 @90819 has 25 MA's), (20, 90861), (22, 90867), (24, 90876), (26, 90894), (31, 90954), (33, 90972), (35, 90978), (36, 90996), (40, 91008), (41, 91017), (43, 91026),

Gene: Yeet\_161 Start: 88772, Stop: 89005, Start Num: 17

Candidate Starts for Yeet\_161:

(Start: 17 @88772 has 25 MA's), (20, 88814), (22, 88820), (24, 88829), (26, 88847), (31, 88907), (35, 88931), (36, 88949), (40, 88961), (41, 88970), (43, 88979),

Gene: Zakai\_103 Start: 62536, Stop: 62754, Start Num: 18

Candidate Starts for Zakai\_103:

(Start: 16 @62524 has 1 MA's), (Start: 18 @62536 has 74 MA's), (Start: 21 @62575 has 1 MA's), (29, 62632), (30, 62638), (35, 62689), (39, 62716),

Gene: Zaria\_100 Start: 60387, Stop: 60611, Start Num: 18

Candidate Starts for Zaria\_100:

(Start: 16 @60375 has 1 MA's), (Start: 18 @60387 has 74 MA's), (20, 60426), (Start: 21 @60429 has 1 MA's), (30, 60492), (31, 60519), (44, 60594),

Gene: Zelink\_162 Start: 89107, Stop: 89340, Start Num: 17

Candidate Starts for Zelink\_162:

(Start: 17 @89107 has 25 MA's), (20, 89149), (22, 89155), (24, 89164), (26, 89182), (31, 89242), (33, 89260), (35, 89266), (36, 89284), (40, 89296), (41, 89305), (43, 89314),

Gene: ZhongYanYuan\_99 Start: 62250, Stop: 62468, Start Num: 18

Candidate Starts for ZhongYanYuan\_99:

(Start: 16 @62238 has 1 MA's), (Start: 18 @62250 has 74 MA's), (Start: 21 @62289 has 1 MA's), (29, 62346), (30, 62352), (35, 62403), (39, 62430),