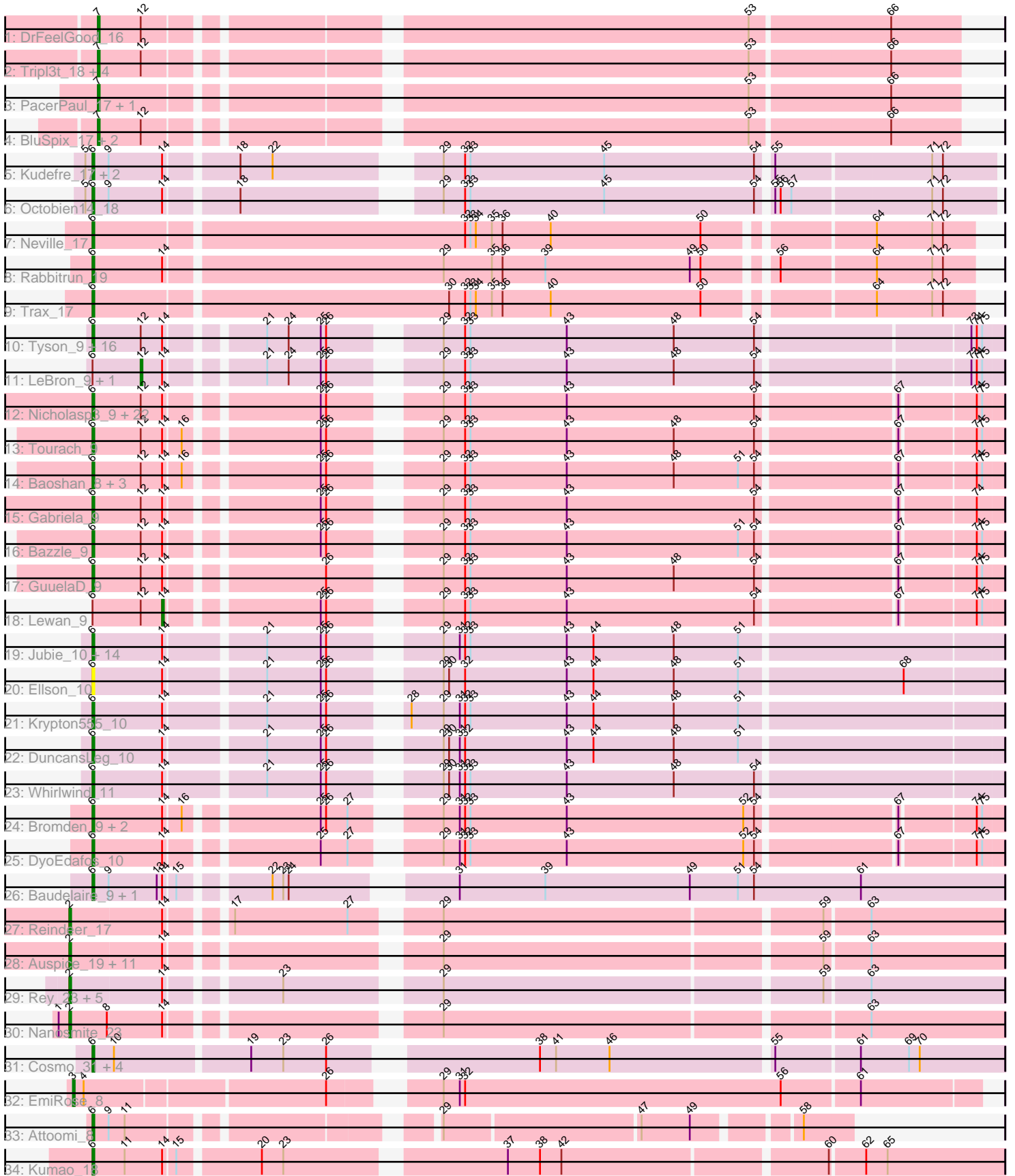


Pham 171301



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 171301 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171301 has 122 members, 10 are drafts.

Phages represented in each track:

- Track 1 : DrFeelGood\_16
- Track 2 : Tripl3t\_18, Gompeii16\_17, StrongArm\_16, Bircsak\_17, Bexan\_16
- Track 3 : PacerPaul\_17, ConceptII\_18
- Track 4 : BluSpix\_17, Graduation\_19, IgnatiusPatJac\_16
- Track 5 : Kudrefre\_17, Syleon\_18, Sephiroth\_18
- Track 6 : Octobien14\_18
- Track 7 : Neville\_17
- Track 8 : Rabbitrun\_19
- Track 9 : Trax\_17
- Track 10 : Tyson\_9, Wyatt2\_9, CicholasNage\_9, AvadaKedavra\_9, JoeDirt\_9, Wamburgrxpress\_9, Appletree2\_9, Zaria\_9, Rose5\_9, MAckerman\_9, Enceladus\_9, Calm\_9, DirkDirk\_9, Silverleaf\_9, Halena\_9, Acquire49\_9, OhShagHennessy\_9
- Track 11 : LeBron\_9, UPIE\_9
- Track 12 : Nicholasp3\_9, Vetric\_9, BobsGarage\_9, Kahlid\_9, Miley16\_9, Netyap\_9, LilDestine\_9, Faith1\_9, Crossroads\_9, Winky\_9, Finemlucis\_9, Zakai\_9, Loadrie\_9, Gardann\_9, DrSeegs\_9, Breezona\_9, Wilder\_9, MkaliMitinis3\_9, BigCheese\_9, Itos\_9, Hafay\_9, Wigglewiggie\_9, Rumpelstiltskin\_9
- Track 13 : Tourach\_9
- Track 14 : Baoshan\_8, Archie\_9, ZhongYanYuan\_8, Claus\_9
- Track 15 : Gabriela\_9
- Track 16 : Bazzle\_9
- Track 17 : GuuelaD\_9
- Track 18 : Lewan\_9
- Track 19 : Jubie\_10, Kingsolomon\_10, Snenia\_10, Finnry\_10, Nicholas\_10, Lumos\_10, Moostard\_10, MiniMac\_10, MsGreen\_10, Jobypre\_10, Bellis\_10, Clautastrophe\_10, MiniLon\_10, Samty\_10, Lolly9\_10
- Track 20 : Ellson\_10
- Track 21 : Krypton555\_10
- Track 22 : DuncansLeg\_10
- Track 23 : Whirlwind\_11
- Track 24 : Bromden\_9, Douge\_9, Chaser\_9
- Track 25 : DyoEdafos\_10
- Track 26 : Baudelaire\_9, Aegeus\_9
- Track 27 : Reindeer\_17
- Track 28 : Auspice\_19, IPhane7\_19, Skinny\_20, Bricole\_19, Glaske16\_20, PegLeg\_19, LilhomieP\_18, TyDawg\_19, Bongo\_19, SlimJimmy\_18, Dulcita\_20, Diminimus\_20

- Track 29 : Rey\_23, GenevaB15\_23, GardenSalsa\_23, Aziz\_23, MrMagoo\_23, Estes\_24
- Track 30 : Nanosmite\_23
- Track 31 : Cosmo\_31, MaryV\_31, EniyanLRS\_28, Azrael100\_30, Wildcat\_31
- Track 32 : EmiRose\_8
- Track 33 : Attoomi\_8
- Track 34 : Kumao\_18

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

The start number called the most often in the published annotations is 6, it was called in 78 of the 112 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_9, Aegeus\_9, Appletree2\_9, Archie\_9, Attoomi\_8, AvadaKedavra\_9, Azrael100\_30, Baoshan\_8, Baudelaire\_9, Bazzle\_9, Bellis\_10, BigCheese\_9, BobsGarage\_9, Breezona\_9, Bromden\_9, Calm\_9, Chaser\_9, CicholasNage\_9, Claus\_9, Clautastrophe\_10, Cosmo\_31, Crossroads\_9, DirkDirk\_9, Douge\_9, DrSeegs\_9, DuncansLeg\_10, DyoEdafos\_10, Ellson\_10, Enceladus\_9, EniyanLRS\_28, Faith1\_9, Finemlucis\_9, Finnry\_10, Gabriela\_9, Gardann\_9, GuuelaD\_9, Hafay\_9, Halena\_9, Itos\_9, Jobypre\_10, JoeDirt\_9, Jubie\_10, Kahlid\_9, Kingsolomon\_10, Krypton555\_10, Kudrefre\_17, Kumao\_18, LilDestine\_9, Loadrie\_9, Lolly9\_10, Lumos\_10, MAckerman\_9, MaryV\_31, Miley16\_9, MiniLon\_10, MiniMac\_10, MkaliMitinis3\_9, Moostard\_10, MsGreen\_10, Netyap\_9, Neville\_17, Nicholas\_10, Nicholasp3\_9, Octobien14\_18, OhShagHennessy\_9, Rabbitrun\_19, Rose5\_9, Rumpelstiltskin\_9, Samty\_10, Sephiroth\_18, Silverleaf\_9, Snenia\_10, Syleon\_18, Tourach\_9, Trax\_17, Tyson\_9, Vetrix\_9, Wamburggrxpress\_9, Whirlwind\_11, Wigglewiggle\_9, Wildcat\_31, Wilder\_9, Winky\_9, Wyatt2\_9, Zakai\_9, Zaria\_9, ZhongYanYuan\_8,

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

- LeBron\_9, Lewan\_9, UPIE\_9,

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

- Auspice\_19, Aziz\_23, Bexan\_16, Bircsak\_17, BluSpix\_17, Bongo\_19, Bricole\_19, ConceptII\_18, Diminimus\_20, DrFeelGood\_16, Dulcita\_20, EmiRose\_8, Estes\_24, GardenSalsa\_23, GenevaB15\_23, Glaske16\_20, Gompeii16\_17, Graduation\_19, IPhone7\_19, IgnatiusPatJac\_16, LilhomieP\_18, MrMagoo\_23, Nanosmite\_23, PacerPaul\_17, PegLeg\_19, Reindeer\_17, Rey\_23, Skinny\_20, SlimJimmy\_18, StrongArm\_16, Tripl3t\_18, TyDawg\_19,

**Summary by start number:**

Start 2:

- Found in 20 of 122 ( 16.4% ) of genes in pham
- Manual Annotations of this start: 20 of 112
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Auspice\_19 (M1), Aziz\_23 (M2), Bongo\_19 (M1), Bricole\_19 (M1), Diminimus\_20 (M1), Dulcita\_20 (M1), Estes\_24 (M2), GardenSalsa\_23 (M2), GenevaB15\_23 (M2), Glaske16\_20 (M1), IPhone7\_19

(M1), LilhomieP\_18 (M1), MrMagoo\_23 (M2), Nanosmite\_23 (M3), PegLeg\_19 (M1), Reindeer\_17 (M1), Rey\_23 (M2), Skinny\_20 (M1), SlimJimmy\_18 (M1), TyDawg\_19 (M1),

Start 3:

- Found in 1 of 122 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 112
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EmiRose\_8 (singleton),

Start 6:

- Found in 90 of 122 ( 73.8% ) of genes in pham
- Manual Annotations of this start: 78 of 112
- Called 96.7% of time when present
- Phage (with cluster) where this start called: Acquire49\_9 (L1), Aegeus\_9 (L5), Appletree2\_9 (L1), Archie\_9 (L2), Attoomi\_8 (singleton), AvadaKedavra\_9 (L1), Azrael100\_30 (V), Baoshan\_8 (L2), Baudelaire\_9 (L5), Bazzle\_9 (L2), Bellis\_10 (L3), BigCheese\_9 (L2), BobsGarage\_9 (L2), Breezona\_9 (L2), Bromden\_9 (L4), Calm\_9 (L1), Chaser\_9 (L4), CicholasNage\_9 (L1), Claus\_9 (L2), Clautastrophe\_10 (L3), Cosmo\_31 (V), Crossroads\_9 (L2), DirkDirk\_9 (L1), Douge\_9 (L4), DrSeegs\_9 (L2), DuncansLeg\_10 (L3), DyoEdafos\_10 (L4), Ellson\_10 (L3), Enceladus\_9 (L1), EniyanLRS\_28 (V), Faith1\_9 (L2), Finemlucis\_9 (L2), Finnry\_10 (L3), Gabriela\_9 (L2), Gardann\_9 (L2), GuuelaD\_9 (L2), Hafay\_9 (L2), Halena\_9 (L1), Itos\_9 (L2), Jobypre\_10 (L3), JoeDirt\_9 (L1), Jubie\_10 (L3), Kahlid\_9 (L2), Kingsolomon\_10 (L3), Krypton555\_10 (L3), Kudrefre\_17 (DU1), Kumao\_18 (singleton), LilDestine\_9 (L2), Loadrie\_9 (L2), Lolly9\_10 (L3), Lumos\_10 (L3), MAckerman\_9 (L1), MaryV\_31 (V), Miley16\_9 (L2), MiniLon\_10 (L3), MiniMac\_10 (L3), MkaliMitinis3\_9 (L2), Moostard\_10 (L3), MsGreen\_10 (L3), Netyap\_9 (L2), Neville\_17 (DU2), Nicholas\_10 (L3), Nicholasp3\_9 (L2), Octobien14\_18 (DU1), OhShagHennessey\_9 (L1), Rabbitrun\_19 (DU2), Rose5\_9 (L1), Rumpelstiltskin\_9 (L2), Samty\_10 (L3), Sephiroth\_18 (DU1), Silverleaf\_9 (L1), Snenia\_10 (L3), Syleon\_18 (DU1), Tourach\_9 (L2), Trax\_17 (DU2), Tyson\_9 (L1), Vetrrix\_9 (L2), Wamburggrxpress\_9 (L1), Whirlwind\_11 (L3), Wigglewiggle\_9 (L2), Wildcat\_31 (V), Wilder\_9 (L2), Winky\_9 (L2), Wyatt2\_9 (L1), Zakai\_9 (L2), Zaria\_9 (L1), ZhongYanYuan\_8 (L2),

Start 7:

- Found in 11 of 122 ( 9.0% ) of genes in pham
- Manual Annotations of this start: 10 of 112
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bexan\_16 (A1), Bircsak\_17 (A1), BluSpix\_17 (A1), ConceptII\_18 (A1), DrFeelGood\_16 (A1), Gompeii16\_17 (A1), Graduation\_19 (A1), IgnatiusPatJac\_16 (A1), PacerPaul\_17 (A1), StrongArm\_16 (A1), Tripl3t\_18 (A1),

Start 12:

- Found in 60 of 122 ( 49.2% ) of genes in pham
- Manual Annotations of this start: 2 of 112
- Called 3.3% of time when present
- Phage (with cluster) where this start called: LeBron\_9 (L1), UPIE\_9 (L1),

Start 14:

- Found in 102 of 122 ( 83.6% ) of genes in pham
- Manual Annotations of this start: 1 of 112

- Called 1.0% of time when present
- Phage (with cluster) where this start called: Lewan\_9 (L2),

### **Summary by clusters:**

There are 13 clusters represented in this pham: V, M2, M1, singleton, A1, L4, L5, L2, L3, M3, L1, DU1, DU2,

Info for manual annotations of cluster A1:

- Start number 7 was manually annotated 10 times for cluster A1.

Info for manual annotations of cluster DU1:

- Start number 6 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 6 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster L1:

- Start number 6 was manually annotated 16 times for cluster L1.
- Start number 12 was manually annotated 2 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 6 was manually annotated 27 times for cluster L2.
- Start number 14 was manually annotated 1 time for cluster L2.

Info for manual annotations of cluster L3:

- Start number 6 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 6 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 6 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster M1:

- Start number 2 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 2 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 2 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 6 was manually annotated 5 times for cluster V.

### **Gene Information:**

Gene: Acquire49\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for Acquire49\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: Aegeus\_9 Start: 6856, Stop: 7332, Start Num: 6

Candidate Starts for Aegeus\_9:

(Start: 6 @6856 has 78 MA's), (9, 6865), (13, 6892), (Start: 14 @6895 has 1 MA's), (15, 6901), (22, 6943), (23, 6949), (24, 6952), (31, 7027), (39, 7075), (49, 7156), (51, 7183), (54, 7192), (61, 7252),

Gene: Appletree2\_9 Start: 7220, Stop: 7687, Start Num: 6

Candidate Starts for Appletree2\_9:

(Start: 6 @7220 has 78 MA's), (Start: 12 @7247 has 2 MA's), (Start: 14 @7259 has 1 MA's), (21, 7304), (24, 7316), (25, 7334), (26, 7337), (29, 7385), (32, 7397), (33, 7400), (43, 7454), (48, 7514), (54, 7559), (73, 7670), (74, 7673), (75, 7676),

Gene: Archie\_9 Start: 7204, Stop: 7668, Start Num: 6

Candidate Starts for Archie\_9:

(Start: 6 @7204 has 78 MA's), (Start: 12 @7231 has 2 MA's), (Start: 14 @7243 has 1 MA's), (16, 7252), (25, 7318), (26, 7321), (29, 7369), (32, 7381), (33, 7384), (43, 7438), (48, 7498), (51, 7534), (54, 7543), (67, 7615), (74, 7654), (75, 7657),

Gene: Attoomi\_8 Start: 6589, Stop: 6960, Start Num: 6

Candidate Starts for Attoomi\_8:

(Start: 6 @6589 has 78 MA's), (9, 6598), (11, 6607), (29, 6751), (47, 6856), (49, 6883), (58, 6934),

Gene: Auspice\_19 Start: 11031, Stop: 11513, Start Num: 2

Candidate Starts for Auspice\_19:

(Start: 2 @11031 has 20 MA's), (Start: 14 @11082 has 1 MA's), (29, 11211), (59, 11415), (63, 11439),

Gene: AvadaKedavra\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for AvadaKedavra\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: Aziz\_23 Start: 11594, Stop: 12076, Start Num: 2

Candidate Starts for Aziz\_23:

(Start: 2 @11594 has 20 MA's), (Start: 14 @11645 has 1 MA's), (23, 11699), (29, 11774), (59, 11978), (63, 12002),

Gene: Azrael100\_30 Start: 14162, Stop: 14638, Start Num: 6

Candidate Starts for Azrael100\_30:

(Start: 6 @14162 has 78 MA's), (10, 14174), (19, 14246), (23, 14264), (26, 14288), (38, 14387), (41, 14396), (46, 14426), (55, 14513), (61, 14558), (69, 14585), (70, 14591),

Gene: Baoshan\_8 Start: 7059, Stop: 7523, Start Num: 6

Candidate Starts for Baoshan\_8:

(Start: 6 @7059 has 78 MA's), (Start: 12 @7086 has 2 MA's), (Start: 14 @7098 has 1 MA's), (16, 7107), (25, 7173), (26, 7176), (29, 7224), (32, 7236), (33, 7239), (43, 7293), (48, 7353), (51, 7389), (54, 7398), (67, 7470), (74, 7509), (75, 7512),

Gene: Baudelaire\_9 Start: 6856, Stop: 7332, Start Num: 6

Candidate Starts for Baudelaire\_9:

(Start: 6 @6856 has 78 MA's), (9, 6865), (13, 6892), (Start: 14 @6895 has 1 MA's), (15, 6901), (22, 6943), (23, 6949), (24, 6952), (31, 7027), (39, 7075), (49, 7156), (51, 7183), (54, 7192), (61, 7252),

Gene: Bazzle\_9 Start: 7180, Stop: 7644, Start Num: 6

Candidate Starts for Bazzle\_9:

(Start: 6 @7180 has 78 MA's), (Start: 12 @7207 has 2 MA's), (Start: 14 @7219 has 1 MA's), (25, 7294), (26, 7297), (29, 7345), (32, 7357), (33, 7360), (43, 7414), (51, 7510), (54, 7519), (67, 7591), (74, 7630), (75, 7633),

Gene: Bellis\_10 Start: 7367, Stop: 7843, Start Num: 6

Candidate Starts for Bellis\_10:

(Start: 6 @7367 has 78 MA's), (Start: 14 @7406 has 1 MA's), (21, 7457), (25, 7487), (26, 7490), (29, 7538), (31, 7547), (32, 7550), (33, 7553), (43, 7607), (44, 7622), (48, 7667), (51, 7703),

Gene: Bexan\_16 Start: 13900, Stop: 14349, Start Num: 7

Candidate Starts for Bexan\_16:

(Start: 7 @13900 has 10 MA's), (Start: 12 @13924 has 2 MA's), (53, 14236), (66, 14311),

Gene: BigCheese\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for BigCheese\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Bircsak\_17 Start: 13409, Stop: 13858, Start Num: 7

Candidate Starts for Bircsak\_17:

(Start: 7 @13409 has 10 MA's), (Start: 12 @13433 has 2 MA's), (53, 13745), (66, 13820),

Gene: BluSpix\_17 Start: 12911, Stop: 13360, Start Num: 7

Candidate Starts for BluSpix\_17:

(Start: 7 @12911 has 10 MA's), (Start: 12 @12935 has 2 MA's), (53, 13247), (66, 13322),

Gene: BobsGarage\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for BobsGarage\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Bongo\_19 Start: 11031, Stop: 11513, Start Num: 2

Candidate Starts for Bongo\_19:

(Start: 2 @11031 has 20 MA's), (Start: 14 @11082 has 1 MA's), (29, 11211), (59, 11415), (63, 11439),

Gene: Breezona\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Breezona\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Bricole\_19 Start: 11030, Stop: 11512, Start Num: 2

Candidate Starts for Bricole\_19:

(Start: 2 @11030 has 20 MA's), (Start: 14 @11081 has 1 MA's), (29, 11210), (59, 11414), (63, 11438),

Gene: Bromden\_9 Start: 6960, Stop: 7424, Start Num: 6

Candidate Starts for Bromden\_9:

(Start: 6 @6960 has 78 MA's), (Start: 14 @6999 has 1 MA's), (16, 7008), (25, 7074), (26, 7077), (27, 7089), (29, 7125), (31, 7134), (32, 7137), (33, 7140), (43, 7194), (52, 7293), (54, 7299), (67, 7371), (74, 7410), (75, 7413),

Gene: Calm\_9 Start: 7247, Stop: 7714, Start Num: 6

Candidate Starts for Calm\_9:

(Start: 6 @7247 has 78 MA's), (Start: 12 @7274 has 2 MA's), (Start: 14 @7286 has 1 MA's), (21, 7331), (24, 7343), (25, 7361), (26, 7364), (29, 7412), (32, 7424), (33, 7427), (43, 7481), (48, 7541), (54, 7586), (73, 7697), (74, 7700), (75, 7703),

Gene: Chaser\_9 Start: 6965, Stop: 7429, Start Num: 6

Candidate Starts for Chaser\_9:

(Start: 6 @6965 has 78 MA's), (Start: 14 @7004 has 1 MA's), (16, 7013), (25, 7079), (26, 7082), (27, 7094), (29, 7130), (31, 7139), (32, 7142), (33, 7145), (43, 7199), (52, 7298), (54, 7304), (67, 7376), (74, 7415), (75, 7418),

Gene: CicholasNage\_9 Start: 7247, Stop: 7714, Start Num: 6

Candidate Starts for CicholasNage\_9:

(Start: 6 @7247 has 78 MA's), (Start: 12 @7274 has 2 MA's), (Start: 14 @7286 has 1 MA's), (21, 7331), (24, 7343), (25, 7361), (26, 7364), (29, 7412), (32, 7424), (33, 7427), (43, 7481), (48, 7541), (54, 7586), (73, 7697), (74, 7700), (75, 7703),

Gene: Claus\_9 Start: 7239, Stop: 7703, Start Num: 6

Candidate Starts for Claus\_9:

(Start: 6 @7239 has 78 MA's), (Start: 12 @7266 has 2 MA's), (Start: 14 @7278 has 1 MA's), (16, 7287), (25, 7353), (26, 7356), (29, 7404), (32, 7416), (33, 7419), (43, 7473), (48, 7533), (51, 7569), (54, 7578), (67, 7650), (74, 7689), (75, 7692),

Gene: Clautastrophe\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for Clautastrophe\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: ConceptII\_18 Start: 13371, Stop: 13820, Start Num: 7

Candidate Starts for ConceptII\_18:

(Start: 7 @13371 has 10 MA's), (53, 13707), (66, 13782),

Gene: Cosmo\_31 Start: 14169, Stop: 14645, Start Num: 6

Candidate Starts for Cosmo\_31:

(Start: 6 @14169 has 78 MA's), (10, 14181), (19, 14253), (23, 14271), (26, 14295), (38, 14394), (41, 14403), (46, 14433), (55, 14520), (61, 14565), (69, 14592), (70, 14598),

Gene: Crossroads\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Crossroads\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Diminimus\_20 Start: 11030, Stop: 11512, Start Num: 2

Candidate Starts for Diminimus\_20:

(Start: 2 @11030 has 20 MA's), (Start: 14 @11081 has 1 MA's), (29, 11210), (59, 11414), (63, 11438),



Gene: DirkDirk\_9 Start: 7248, Stop: 7715, Start Num: 6

Candidate Starts for DirkDirk\_9:

(Start: 6 @7248 has 78 MA's), (Start: 12 @7275 has 2 MA's), (Start: 14 @7287 has 1 MA's), (21, 7332), (24, 7344), (25, 7362), (26, 7365), (29, 7413), (32, 7425), (33, 7428), (43, 7482), (48, 7542), (54, 7587), (73, 7698), (74, 7701), (75, 7704),

Gene: Douge\_9 Start: 6911, Stop: 7375, Start Num: 6

Candidate Starts for Douge\_9:

(Start: 6 @6911 has 78 MA's), (Start: 14 @6950 has 1 MA's), (16, 6959), (25, 7025), (26, 7028), (27, 7040), (29, 7076), (31, 7085), (32, 7088), (33, 7091), (43, 7145), (52, 7244), (54, 7250), (67, 7322), (74, 7361), (75, 7364),

Gene: DrFeelGood\_16 Start: 12986, Stop: 13435, Start Num: 7

Candidate Starts for DrFeelGood\_16:

(Start: 7 @12986 has 10 MA's), (Start: 12 @13010 has 2 MA's), (53, 13322), (66, 13397),

Gene: DrSeegs\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for DrSeegs\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Dulcita\_20 Start: 11030, Stop: 11512, Start Num: 2

Candidate Starts for Dulcita\_20:

(Start: 2 @11030 has 20 MA's), (Start: 14 @11081 has 1 MA's), (29, 11210), (59, 11414), (63, 11438),

Gene: DuncansLeg\_10 Start: 7375, Stop: 7851, Start Num: 6

Candidate Starts for DuncansLeg\_10:

(Start: 6 @7375 has 78 MA's), (Start: 14 @7414 has 1 MA's), (21, 7465), (25, 7495), (26, 7498), (29, 7546), (30, 7549), (31, 7555), (32, 7558), (43, 7615), (44, 7630), (48, 7675), (51, 7711),

Gene: DyoEdafos\_10 Start: 7121, Stop: 7585, Start Num: 6

Candidate Starts for DyoEdafos\_10:

(Start: 6 @7121 has 78 MA's), (Start: 14 @7160 has 1 MA's), (25, 7235), (27, 7250), (29, 7286), (31, 7295), (32, 7298), (33, 7301), (43, 7355), (52, 7454), (54, 7460), (67, 7532), (74, 7571), (75, 7574),

Gene: Ellson\_10 Start: 7383, Stop: 7859, Start Num: 6

Candidate Starts for Ellson\_10:

(Start: 6 @7383 has 78 MA's), (Start: 14 @7422 has 1 MA's), (21, 7473), (25, 7503), (26, 7506), (29, 7554), (30, 7557), (32, 7566), (43, 7623), (44, 7638), (48, 7683), (51, 7719), (68, 7806),

Gene: EmiRose\_8 Start: 7240, Stop: 7716, Start Num: 3

Candidate Starts for EmiRose\_8:

(Start: 3 @7240 has 1 MA's), (4, 7246), (26, 7375), (29, 7420), (31, 7429), (32, 7432), (56, 7609), (61, 7651),

Gene: Enceladus\_9 Start: 7248, Stop: 7715, Start Num: 6

Candidate Starts for Enceladus\_9:

(Start: 6 @7248 has 78 MA's), (Start: 12 @7275 has 2 MA's), (Start: 14 @7287 has 1 MA's), (21, 7332), (24, 7344), (25, 7362), (26, 7365), (29, 7413), (32, 7425), (33, 7428), (43, 7482), (48, 7542), (54, 7587), (73, 7698), (74, 7701), (75, 7704),

Gene: EniyanLRS\_28 Start: 13863, Stop: 14339, Start Num: 6

Candidate Starts for EniyanLRS\_28:

(Start: 6 @13863 has 78 MA's), (10, 13875), (19, 13947), (23, 13965), (26, 13989), (38, 14088), (41, 14097), (46, 14127), (55, 14214), (61, 14259), (69, 14286), (70, 14292),

Gene: Estes\_24 Start: 11731, Stop: 12213, Start Num: 2

Candidate Starts for Estes\_24:

(Start: 2 @11731 has 20 MA's), (Start: 14 @11782 has 1 MA's), (23, 11836), (29, 11911), (59, 12115), (63, 12139),

Gene: Faith1\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Faith1\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Finemlucis\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Finemlucis\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Finnry\_10 Start: 7368, Stop: 7844, Start Num: 6

Candidate Starts for Finnry\_10:

(Start: 6 @7368 has 78 MA's), (Start: 14 @7407 has 1 MA's), (21, 7458), (25, 7488), (26, 7491), (29, 7539), (31, 7548), (32, 7551), (33, 7554), (43, 7608), (44, 7623), (48, 7668), (51, 7704),

Gene: Gabriela\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Gabriela\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681),

Gene: Gardann\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Gardann\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: GardenSalsa\_23 Start: 11567, Stop: 12049, Start Num: 2

Candidate Starts for GardenSalsa\_23:

(Start: 2 @11567 has 20 MA's), (Start: 14 @11618 has 1 MA's), (23, 11672), (29, 11747), (59, 11951), (63, 11975),

Gene: GenevaB15\_23 Start: 11594, Stop: 12076, Start Num: 2

Candidate Starts for GenevaB15\_23:

(Start: 2 @11594 has 20 MA's), (Start: 14 @11645 has 1 MA's), (23, 11699), (29, 11774), (59, 11978), (63, 12002),

Gene: Glaske16\_20 Start: 11030, Stop: 11512, Start Num: 2

Candidate Starts for Glaske16\_20:

(Start: 2 @11030 has 20 MA's), (Start: 14 @11081 has 1 MA's), (29, 11210), (59, 11414), (63, 11438),

Gene: Gompeii16\_17 Start: 13410, Stop: 13859, Start Num: 7

Candidate Starts for Gompeii16\_17:

(Start: 7 @13410 has 10 MA's), (Start: 12 @13434 has 2 MA's), (53, 13746), (66, 13821),

Gene: Graduation\_19 Start: 13675, Stop: 14124, Start Num: 7

Candidate Starts for Graduation\_19:

(Start: 7 @13675 has 10 MA's), (Start: 12 @13699 has 2 MA's), (53, 14011), (66, 14086),

Gene: GuuelaD\_9 Start: 7264, Stop: 7728, Start Num: 6

Candidate Starts for GuuelaD\_9:

(Start: 6 @7264 has 78 MA's), (Start: 12 @7291 has 2 MA's), (Start: 14 @7303 has 1 MA's), (26, 7381), (29, 7429), (32, 7441), (33, 7444), (43, 7498), (48, 7558), (54, 7603), (67, 7675), (74, 7714), (75, 7717),

Gene: Hafay\_9 Start: 7264, Stop: 7728, Start Num: 6

Candidate Starts for Hafay\_9:

(Start: 6 @7264 has 78 MA's), (Start: 12 @7291 has 2 MA's), (Start: 14 @7303 has 1 MA's), (25, 7378), (26, 7381), (29, 7429), (32, 7441), (33, 7444), (43, 7498), (54, 7603), (67, 7675), (74, 7714), (75, 7717),

Gene: Halena\_9 Start: 7247, Stop: 7714, Start Num: 6

Candidate Starts for Halena\_9:

(Start: 6 @7247 has 78 MA's), (Start: 12 @7274 has 2 MA's), (Start: 14 @7286 has 1 MA's), (21, 7331), (24, 7343), (25, 7361), (26, 7364), (29, 7412), (32, 7424), (33, 7427), (43, 7481), (48, 7541), (54, 7586), (73, 7697), (74, 7700), (75, 7703),

Gene: IPHane7\_19 Start: 11031, Stop: 11513, Start Num: 2

Candidate Starts for IPHane7\_19:

(Start: 2 @11031 has 20 MA's), (Start: 14 @11082 has 1 MA's), (29, 11211), (59, 11415), (63, 11439),

Gene: IgnatiusPatJac\_16 Start: 12912, Stop: 13361, Start Num: 7

Candidate Starts for IgnatiusPatJac\_16:

(Start: 7 @12912 has 10 MA's), (Start: 12 @12936 has 2 MA's), (53, 13248), (66, 13323),

Gene: Itos\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Itos\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Jobypre\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for Jobypre\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: JoeDirt\_9 Start: 7247, Stop: 7714, Start Num: 6

Candidate Starts for JoeDirt\_9:

(Start: 6 @7247 has 78 MA's), (Start: 12 @7274 has 2 MA's), (Start: 14 @7286 has 1 MA's), (21, 7331), (24, 7343), (25, 7361), (26, 7364), (29, 7412), (32, 7424), (33, 7427), (43, 7481), (48, 7541), (54, 7586), (73, 7697), (74, 7700), (75, 7703),

Gene: Jubie\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for Jubie\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: Kahlid\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Kahlid\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Kingsolomon\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for Kingsolomon\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: Krypton555\_10 Start: 7360, Stop: 7836, Start Num: 6

Candidate Starts for Krypton555\_10:

(Start: 6 @7360 has 78 MA's), (Start: 14 @7399 has 1 MA's), (21, 7450), (25, 7480), (26, 7483), (28, 7513), (29, 7531), (31, 7540), (32, 7543), (33, 7546), (43, 7600), (44, 7615), (48, 7660), (51, 7696),

Gene: Kudrefre\_17 Start: 10644, Stop: 11111, Start Num: 6

Candidate Starts for Kudrefre\_17:

(5, 10641), (Start: 6 @10644 has 78 MA's), (9, 10653), (Start: 14 @10683 has 1 MA's), (18, 10719), (22, 10737), (29, 10812), (32, 10824), (33, 10827), (45, 10902), (54, 10986), (55, 10992), (71, 11076), (72, 11082),

Gene: Kumao\_18 Start: 10373, Stop: 10849, Start Num: 6

Candidate Starts for Kumao\_18:

(Start: 6 @10373 has 78 MA's), (11, 10391), (Start: 14 @10412 has 1 MA's), (15, 10418), (20, 10460), (23, 10472), (37, 10583), (38, 10601), (42, 10613), (60, 10754), (62, 10772), (65, 10784),

Gene: LeBron\_9 Start: 7274, Stop: 7714, Start Num: 12

Candidate Starts for LeBron\_9:

(Start: 6 @7247 has 78 MA's), (Start: 12 @7274 has 2 MA's), (Start: 14 @7286 has 1 MA's), (21, 7331), (24, 7343), (25, 7361), (26, 7364), (29, 7412), (32, 7424), (33, 7427), (43, 7481), (48, 7541), (54, 7586), (73, 7697), (74, 7700), (75, 7703),

Gene: Lewan\_9 Start: 7270, Stop: 7695, Start Num: 14

Candidate Starts for Lewan\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: LilDestine\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for LilDestine\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: LilhomieP\_18 Start: 11031, Stop: 11513, Start Num: 2

Candidate Starts for LilhomieP\_18:

(Start: 2 @11031 has 20 MA's), (Start: 14 @11082 has 1 MA's), (29, 11211), (59, 11415), (63, 11439),

Gene: Loadrie\_9 Start: 7264, Stop: 7728, Start Num: 6

Candidate Starts for Loadrie\_9:

(Start: 6 @7264 has 78 MA's), (Start: 12 @7291 has 2 MA's), (Start: 14 @7303 has 1 MA's), (25, 7378), (26, 7381), (29, 7429), (32, 7441), (33, 7444), (43, 7498), (54, 7603), (67, 7675), (74, 7714), (75, 7717),

Gene: Lolly9\_10 Start: 7378, Stop: 7854, Start Num: 6

Candidate Starts for Lolly9\_10:

(Start: 6 @7378 has 78 MA's), (Start: 14 @7417 has 1 MA's), (21, 7468), (25, 7498), (26, 7501), (29, 7549), (31, 7558), (32, 7561), (33, 7564), (43, 7618), (44, 7633), (48, 7678), (51, 7714),

Gene: Lumos\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for Lumos\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: MAckerman\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for MAckerman\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: MaryV\_31 Start: 14135, Stop: 14611, Start Num: 6

Candidate Starts for MaryV\_31:

(Start: 6 @14135 has 78 MA's), (10, 14147), (19, 14219), (23, 14237), (26, 14261), (38, 14360), (41, 14369), (46, 14399), (55, 14486), (61, 14531), (69, 14558), (70, 14564),

Gene: Miley16\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Miley16\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: MiniLon\_10 Start: 7378, Stop: 7854, Start Num: 6

Candidate Starts for MiniLon\_10:

(Start: 6 @7378 has 78 MA's), (Start: 14 @7417 has 1 MA's), (21, 7468), (25, 7498), (26, 7501), (29, 7549), (31, 7558), (32, 7561), (33, 7564), (43, 7618), (44, 7633), (48, 7678), (51, 7714),

Gene: MiniMac\_10 Start: 7379, Stop: 7855, Start Num: 6

Candidate Starts for MiniMac\_10:

(Start: 6 @7379 has 78 MA's), (Start: 14 @7418 has 1 MA's), (21, 7469), (25, 7499), (26, 7502), (29, 7550), (31, 7559), (32, 7562), (33, 7565), (43, 7619), (44, 7634), (48, 7679), (51, 7715),

Gene: MkaliMitinis3\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for MkaliMitinis3\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Moostard\_10 Start: 7367, Stop: 7843, Start Num: 6

Candidate Starts for Moostard\_10:

(Start: 6 @7367 has 78 MA's), (Start: 14 @7406 has 1 MA's), (21, 7457), (25, 7487), (26, 7490), (29, 7538), (31, 7547), (32, 7550), (33, 7553), (43, 7607), (44, 7622), (48, 7667), (51, 7703),

Gene: MrMagoo\_23 Start: 11567, Stop: 12049, Start Num: 2

Candidate Starts for MrMagoo\_23:

(Start: 2 @11567 has 20 MA's), (Start: 14 @11618 has 1 MA's), (23, 11672), (29, 11747), (59, 11951), (63, 11975),

Gene: MsGreen\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for MsGreen\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: Nanosmite\_23 Start: 11785, Stop: 12267, Start Num: 2

Candidate Starts for Nanosmite\_23:

(1, 11779), (Start: 2 @11785 has 20 MA's), (8, 11806), (Start: 14 @11836 has 1 MA's), (29, 11965), (63, 12193),

Gene: Netyap\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Netyap\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Neville\_17 Start: 10452, Stop: 10922, Start Num: 6

Candidate Starts for Neville\_17:

(Start: 6 @10452 has 78 MA's), (32, 10653), (33, 10656), (34, 10659), (35, 10668), (36, 10674), (40, 10701), (50, 10785), (64, 10869), (71, 10899), (72, 10905),

Gene: Nicholas\_10 Start: 7371, Stop: 7847, Start Num: 6

Candidate Starts for Nicholas\_10:

(Start: 6 @7371 has 78 MA's), (Start: 14 @7410 has 1 MA's), (21, 7461), (25, 7491), (26, 7494), (29, 7542), (31, 7551), (32, 7554), (33, 7557), (43, 7611), (44, 7626), (48, 7671), (51, 7707),

Gene: Nicholasp3\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Nicholasp3\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Octobien14\_18 Start: 11707, Stop: 12174, Start Num: 6

Candidate Starts for Octobien14\_18:

(5, 11704), (Start: 6 @11707 has 78 MA's), (9, 11716), (Start: 14 @11746 has 1 MA's), (18, 11782), (29, 11875), (32, 11887), (33, 11890), (45, 11965), (54, 12049), (55, 12055), (56, 12058), (57, 12064), (71, 12139), (72, 12145),

Gene: OhShagHennessy\_9 Start: 7220, Stop: 7687, Start Num: 6

Candidate Starts for OhShagHennessy\_9:

(Start: 6 @7220 has 78 MA's), (Start: 12 @7247 has 2 MA's), (Start: 14 @7259 has 1 MA's), (21, 7304), (24, 7316), (25, 7334), (26, 7337), (29, 7385), (32, 7397), (33, 7400), (43, 7454), (48, 7514), (54, 7559), (73, 7670), (74, 7673), (75, 7676),

Gene: PacerPaul\_17 Start: 13148, Stop: 13597, Start Num: 7

Candidate Starts for PacerPaul\_17:

(Start: 7 @13148 has 10 MA's), (53, 13484), (66, 13559),

Gene: PegLeg\_19 Start: 11030, Stop: 11512, Start Num: 2

Candidate Starts for PegLeg\_19:

(Start: 2 @11030 has 20 MA's), (Start: 14 @11081 has 1 MA's), (29, 11210), (59, 11414), (63, 11438),

Gene: Rabbitrun\_19 Start: 10976, Stop: 11446, Start Num: 6

Candidate Starts for Rabbitrun\_19:

(Start: 6 @10976 has 78 MA's), (Start: 14 @11015 has 1 MA's), (29, 11165), (35, 11192), (36, 11198), (39, 11222), (49, 11303), (50, 11309), (56, 11342), (64, 11393), (71, 11423), (72, 11429),

Gene: Reindeer\_17 Start: 10883, Stop: 11365, Start Num: 2

Candidate Starts for Reindeer\_17:

(Start: 2 @10883 has 20 MA's), (Start: 14 @10934 has 1 MA's), (17, 10961), (27, 11024), (29, 11063), (59, 11267), (63, 11291),

Gene: Rey\_23 Start: 11802, Stop: 12284, Start Num: 2

Candidate Starts for Rey\_23:

(Start: 2 @11802 has 20 MA's), (Start: 14 @11853 has 1 MA's), (23, 11907), (29, 11982), (59, 12186), (63, 12210),

Gene: Rose5\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for Rose5\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: Rumpelstiltskin\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Rumpelstiltskin\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Samty\_10 Start: 7367, Stop: 7843, Start Num: 6

Candidate Starts for Samty\_10:

(Start: 6 @7367 has 78 MA's), (Start: 14 @7406 has 1 MA's), (21, 7457), (25, 7487), (26, 7490), (29, 7538), (31, 7547), (32, 7550), (33, 7553), (43, 7607), (44, 7622), (48, 7667), (51, 7703),

Gene: Sephiroth\_18 Start: 10815, Stop: 11282, Start Num: 6

Candidate Starts for Sephiroth\_18:

(5, 10812), (Start: 6 @10815 has 78 MA's), (9, 10824), (Start: 14 @10854 has 1 MA's), (18, 10890), (22, 10908), (29, 10983), (32, 10995), (33, 10998), (45, 11073), (54, 11157), (55, 11163), (71, 11247), (72, 11253),

Gene: Silverleaf\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for Silverleaf\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: Skinny\_20 Start: 11031, Stop: 11513, Start Num: 2

Candidate Starts for Skinny\_20:

(Start: 2 @11031 has 20 MA's), (Start: 14 @11082 has 1 MA's), (29, 11211), (59, 11415), (63, 11439),

Gene: SlimJimmy\_18 Start: 11030, Stop: 11512, Start Num: 2

Candidate Starts for SlimJimmy\_18:

(Start: 2 @11030 has 20 MA's), (Start: 14 @11081 has 1 MA's), (29, 11210), (59, 11414), (63, 11438),

Gene: Snenia\_10 Start: 7372, Stop: 7848, Start Num: 6

Candidate Starts for Snenia\_10:

(Start: 6 @7372 has 78 MA's), (Start: 14 @7411 has 1 MA's), (21, 7462), (25, 7492), (26, 7495), (29, 7543), (31, 7552), (32, 7555), (33, 7558), (43, 7612), (44, 7627), (48, 7672), (51, 7708),

Gene: StrongArm\_16 Start: 13900, Stop: 14349, Start Num: 7

Candidate Starts for StrongArm\_16:

(Start: 7 @13900 has 10 MA's), (Start: 12 @13924 has 2 MA's), (53, 14236), (66, 14311),

Gene: Syleon\_18 Start: 10737, Stop: 11204, Start Num: 6

Candidate Starts for Syleon\_18:

(5, 10734), (Start: 6 @10737 has 78 MA's), (9, 10746), (Start: 14 @10776 has 1 MA's), (18, 10812), (22, 10830), (29, 10905), (32, 10917), (33, 10920), (45, 10995), (54, 11079), (55, 11085), (71, 11169), (72, 11175),

Gene: Tourach\_9 Start: 7244, Stop: 7708, Start Num: 6

Candidate Starts for Tourach\_9:

(Start: 6 @7244 has 78 MA's), (Start: 12 @7271 has 2 MA's), (Start: 14 @7283 has 1 MA's), (16, 7292), (25, 7358), (26, 7361), (29, 7409), (32, 7421), (33, 7424), (43, 7478), (48, 7538), (54, 7583), (67, 7655), (74, 7694), (75, 7697),

Gene: Trax\_17 Start: 10452, Stop: 10922, Start Num: 6

Candidate Starts for Trax\_17:

(Start: 6 @10452 has 78 MA's), (30, 10644), (32, 10653), (33, 10656), (34, 10659), (35, 10668), (36, 10674), (40, 10701), (50, 10785), (64, 10869), (71, 10899), (72, 10905),

Gene: Tripl3t\_18 Start: 13860, Stop: 14309, Start Num: 7

Candidate Starts for Tripl3t\_18:

(Start: 7 @13860 has 10 MA's), (Start: 12 @13884 has 2 MA's), (53, 14196), (66, 14271),

Gene: TyDawg\_19 Start: 11031, Stop: 11513, Start Num: 2

Candidate Starts for TyDawg\_19:

(Start: 2 @11031 has 20 MA's), (Start: 14 @11082 has 1 MA's), (29, 11211), (59, 11415), (63, 11439),

Gene: Tyson\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for Tyson\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: UPIE\_9 Start: 7271, Stop: 7711, Start Num: 12

Candidate Starts for UPIE\_9:

(Start: 6 @7244 has 78 MA's), (Start: 12 @7271 has 2 MA's), (Start: 14 @7283 has 1 MA's), (21, 7328), (24, 7340), (25, 7358), (26, 7361), (29, 7409), (32, 7421), (33, 7424), (43, 7478), (48, 7538), (54, 7583), (73, 7694), (74, 7697), (75, 7700),

Gene: Vetrix\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Vetrix\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),



Gene: Wamburgexpress\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for Wamburgexpress\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: Whirlwind\_11 Start: 7365, Stop: 7841, Start Num: 6

Candidate Starts for Whirlwind\_11:

(Start: 6 @7365 has 78 MA's), (Start: 14 @7404 has 1 MA's), (21, 7455), (25, 7485), (26, 7488), (29, 7536), (30, 7539), (31, 7545), (32, 7548), (33, 7551), (43, 7605), (48, 7665), (54, 7710),

Gene: Wigglewiggles\_9 Start: 7264, Stop: 7728, Start Num: 6

Candidate Starts for Wigglewiggles\_9:

(Start: 6 @7264 has 78 MA's), (Start: 12 @7291 has 2 MA's), (Start: 14 @7303 has 1 MA's), (25, 7378), (26, 7381), (29, 7429), (32, 7441), (33, 7444), (43, 7498), (54, 7603), (67, 7675), (74, 7714), (75, 7717),

Gene: Wildcat\_31 Start: 14145, Stop: 14621, Start Num: 6

Candidate Starts for Wildcat\_31:

(Start: 6 @14145 has 78 MA's), (10, 14157), (19, 14229), (23, 14247), (26, 14271), (38, 14370), (41, 14379), (46, 14409), (55, 14496), (61, 14541), (69, 14568), (70, 14574),

Gene: Wilder\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Wilder\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Winky\_9 Start: 7231, Stop: 7695, Start Num: 6

Candidate Starts for Winky\_9:

(Start: 6 @7231 has 78 MA's), (Start: 12 @7258 has 2 MA's), (Start: 14 @7270 has 1 MA's), (25, 7345), (26, 7348), (29, 7396), (32, 7408), (33, 7411), (43, 7465), (54, 7570), (67, 7642), (74, 7681), (75, 7684),

Gene: Wyatt2\_9 Start: 7246, Stop: 7713, Start Num: 6

Candidate Starts for Wyatt2\_9:

(Start: 6 @7246 has 78 MA's), (Start: 12 @7273 has 2 MA's), (Start: 14 @7285 has 1 MA's), (21, 7330), (24, 7342), (25, 7360), (26, 7363), (29, 7411), (32, 7423), (33, 7426), (43, 7480), (48, 7540), (54, 7585), (73, 7696), (74, 7699), (75, 7702),

Gene: Zakai\_9 Start: 7219, Stop: 7683, Start Num: 6

Candidate Starts for Zakai\_9:

(Start: 6 @7219 has 78 MA's), (Start: 12 @7246 has 2 MA's), (Start: 14 @7258 has 1 MA's), (25, 7333), (26, 7336), (29, 7384), (32, 7396), (33, 7399), (43, 7453), (54, 7558), (67, 7630), (74, 7669), (75, 7672),

Gene: Zaria\_9 Start: 7247, Stop: 7714, Start Num: 6

Candidate Starts for Zaria\_9:

(Start: 6 @7247 has 78 MA's), (Start: 12 @7274 has 2 MA's), (Start: 14 @7286 has 1 MA's), (21, 7331), (24, 7343), (25, 7361), (26, 7364), (29, 7412), (32, 7424), (33, 7427), (43, 7481), (48, 7541), (54, 7586), (73, 7697), (74, 7700), (75, 7703),

Gene: ZhongYanYuan\_8 Start: 7059, Stop: 7523, Start Num: 6

Candidate Starts for ZhongYanYuan\_8:

(Start: 6 @7059 has 78 MA's), (Start: 12 @7086 has 2 MA's), (Start: 14 @7098 has 1 MA's), (16, 7107), (25, 7173), (26, 7176), (29, 7224), (32, 7236), (33, 7239), (43, 7293), (48, 7353), (51, 7389), (54, 7398), (67, 7470), (74, 7509), (75, 7512),