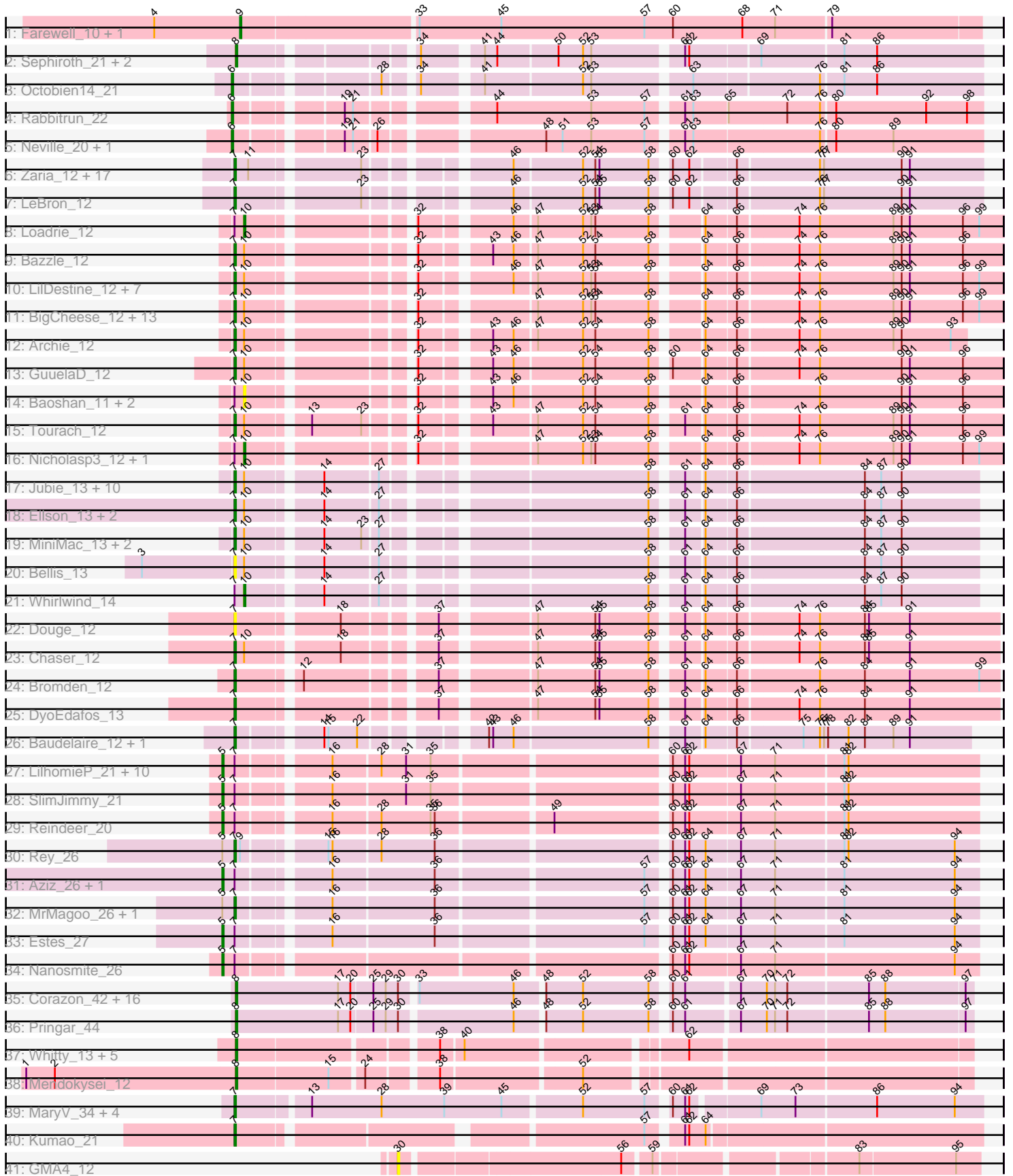


Pham 156198



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 156198 Report

This analysis was run 04/12/24 on database version 558.

Pham number 156198 has 137 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Farewell\_10, Sparky\_10
- Track 2 : Sephiroth\_21, Syleon\_21, Kudrefre\_20
- Track 3 : Octobien14\_21
- Track 4 : Rabbitrun\_22
- Track 5 : Neville\_20, Trax\_20
- Track 6 : Zaria\_12, Wyatt2\_12, Silverleaf\_12, Appletree2\_12, AvadaKedavra\_12, DirkDirk\_12, Rose5\_12, Acquire49\_12, Tyson\_12, JoeDirt\_12, UPIE\_12, Halena\_12, CicholasNage\_12, Enceladus\_12, MAckerman\_12, OhShagHennessy\_12, Wamburgxpress\_12, Calm\_12
- Track 7 : LeBron\_12
- Track 8 : Loadrie\_12
- Track 9 : Bazzle\_12
- Track 10 : LilDestine\_12, Wigglewiggles\_12, Lewan\_12, Hafay\_12, Kahlid\_12, Vatrix\_12, Finemlucis\_12, Wilder\_12
- Track 11 : BigCheese\_12, MkaliMitinis3\_12, Faith1\_12, Miley16\_12, DrSeegs\_12, Zakai\_12, Gabriela\_12, Itos\_12, Winky\_12, Breezona\_12, BobsGarage\_12, Gardann\_12, Rumpelstiltskin\_12, Netyap\_12
- Track 12 : Archie\_12
- Track 13 : GuuelaD\_12
- Track 14 : Baoshan\_11, Claus\_12, ZhongYanYuan\_11
- Track 15 : Tourach\_12
- Track 16 : Nicholasp3\_12, Crossroads\_12
- Track 17 : Jubie\_13, Kingsolomon\_13, Snenia\_13, Finnry\_13, Moostard\_13, MsGreen\_13, Jobypre\_13, Nicholas\_13, Clautastrophe\_13, Samty\_13, Lumos\_13
- Track 18 : Ellson\_13, Krypton555\_13, DuncansLeg\_13
- Track 19 : MiniMac\_13, Lolly9\_13, MiniLon\_13
- Track 20 : Bellis\_13
- Track 21 : Whirlwind\_14
- Track 22 : Douge\_12
- Track 23 : Chaser\_12
- Track 24 : Bromden\_12
- Track 25 : DyoEdafos\_13
- Track 26 : Baudelaire\_12, Aegeus\_12
- Track 27 : LilhomieP\_21, Auspice\_22, TyDawg\_22, IPhane7\_22, Glaske16\_23, Skinny\_23, Bongo\_22, PegLeg\_22, Bricole\_22, Dulcita\_23, Diminimus\_23
- Track 28 : SlimJimmy\_21
- Track 29 : Reindeer\_20

- Track 30 : Rey\_26
- Track 31 : Aziz\_26, GenevaB15\_26
- Track 32 : MrMagoo\_26, GardenSalsa\_26
- Track 33 : Estes\_27
- Track 34 : Nanosmite\_26
- Track 35 : Corazon\_42, Blackbeetle\_44, Clarkson\_45, VasuNzinga\_44, JoieB\_45, Poise\_44, Beelzebub\_48, Marvin\_42, Lilbit\_45, Huphlepuuff\_46, MosMoris\_42, Caprice\_41, Gattaca\_43, Raela\_44, Tesla\_43, RedRaider77\_44, LittleLaf\_44
- Track 36 : Pringar\_44
- Track 37 : Whitty\_13, RonRayGun\_13, Bernal13\_13, ZenTime222\_13, Nairb\_13, Ibrahim\_13
- Track 38 : Mendokysei\_12
- Track 39 : MaryV\_34, Cosmo\_34, Wildcat\_34, Azrael100\_33, EniyanLRS\_31
- Track 40 : Kumao\_21
- Track 41 : GMA4\_12

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

The start number called the most often in the published annotations is 7, it was called in 72 of the 124 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_12, Aegeus\_12, Appletree2\_12, Archie\_12, AvadaKedavra\_12, Azrael100\_33, Baudelaire\_12, Bazzle\_12, Bellis\_13, BigCheese\_12, BobsGarage\_12, Breezona\_12, Bromden\_12, Calm\_12, Chaser\_12, CicholasNage\_12, Clautastrophe\_13, Cosmo\_34, DirkDirk\_12, Douge\_12, DrSeegs\_12, DuncansLeg\_13, DyoEdafos\_13, Ellson\_13, Enceladus\_12, EniyanLRS\_31, Faith1\_12, Finemlucis\_12, Finnry\_13, Gabriela\_12, Gardann\_12, GardenSalsa\_26, GuuelaD\_12, Hafay\_12, Halena\_12, Itos\_12, Jobypre\_13, JoeDirt\_12, Jubie\_13, Kahlid\_12, Kingsolomon\_13, Krypton555\_13, Kumao\_21, LeBron\_12, Lewan\_12, LilDestine\_12, Lolly9\_13, Lumos\_13, MAckerman\_12, MaryV\_34, Miley16\_12, MiniLon\_13, MiniMac\_13, MkaliMitinis3\_12, Moostard\_13, MrMagoo\_26, MsGreen\_13, Netyap\_12, Nicholas\_13, OhShagHennessy\_12, Rey\_26, Rose5\_12, Rumpelstiltskin\_12, Samty\_13, Silverleaf\_12, Snenia\_13, Tourach\_12, Tyson\_12, UPIE\_12, Vetrrix\_12, Wamburggrxpress\_12, Wigglewiggles\_12, Wildcat\_34, Wilder\_12, Winky\_12, Wyatt2\_12, Zakai\_12, Zaria\_12,

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

- Auspice\_22, Aziz\_26, Baoshan\_11, Bongo\_22, Bricole\_22, Claus\_12, Crossroads\_12, Diminimus\_23, Dulcita\_23, Estes\_27, GenevaB15\_26, Glaske16\_23, IPHane7\_22, LilhomieP\_21, Loadrie\_12, Nanosmite\_26, Nicholasp3\_12, PegLeg\_22, Reindeer\_20, Skinny\_23, SlimJimmy\_21, TyDawg\_22, Whirlwind\_14, ZhongYanYuan\_11,

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

- Beelzebub\_48, Bernal13\_13, Blackbeetle\_44, Caprice\_41, Clarkson\_45, Corazon\_42, Farewell\_10, GMA4\_12, Gattaca\_43, Huphlepuuff\_46, Ibrahim\_13, JoieB\_45, Kudrefre\_20, Lilbit\_45, LittleLaf\_44, Marvin\_42, Mendokysei\_12, MosMoris\_42, Nairb\_13, Neville\_20, Octobien14\_21, Poise\_44, Pringar\_44, Rabbitrun\_22, Raela\_44, RedRaider77\_44, RonRayGun\_13, Sephiroth\_21,

Sparky\_10, Syleon\_21, Tesla\_43, Trax\_20, VasuNzinga\_44, Whitty\_13, ZenTime222\_13,

### Summary by start number:

#### Start 5:

- Found in 20 of 137 ( 14.6% ) of genes in pham
- Manual Annotations of this start: 17 of 124
- Called 85.0% of time when present
- Phage (with cluster) where this start called: Auspice\_22 (M1), Aziz\_26 (M2), Bongo\_22 (M1), Bricole\_22 (M1), Diminimus\_23 (M1), Dulcita\_23 (M1), Estes\_27 (M2), GenevaB15\_26 (M2), Glaske16\_23 (M1), IPhane7\_22 (M1), LilhomieP\_21 (M1), Nanosmite\_26 (M3), PegLeg\_22 (M1), Reindeer\_20 (M1), Skinny\_23 (M1), SlimJimmy\_21 (M1), TyDawg\_22 (M1),

#### Start 6:

- Found in 4 of 137 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 4 of 124
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Neville\_20 (DU2), Octobien14\_21 (DU1), Rabbitrun\_22 (DU2), Trax\_20 (DU2),

#### Start 7:

- Found in 102 of 137 ( 74.5% ) of genes in pham
- Manual Annotations of this start: 72 of 124
- Called 76.5% of time when present
- Phage (with cluster) where this start called: Acquire49\_12 (L1), Aegeus\_12 (L5), Appletree2\_12 (L1), Archie\_12 (L2), AvadaKedavra\_12 (L1), Azrael100\_33 (V), Baudelaire\_12 (L5), Bazzle\_12 (L2), Bellis\_13 (L3), BigCheese\_12 (L2), BobsGarage\_12 (L2), Breezona\_12 (L2), Bromden\_12 (L4), Calm\_12 (L1), Chaser\_12 (L4), CicholasNage\_12 (L1), Clautastrophe\_13 (L3), Cosmo\_34 (V), DirkDirk\_12 (L1), Douge\_12 (L4), DrSeegs\_12 (L2), DuncansLeg\_13 (L3), DyoEdafos\_13 (L4), Ellson\_13 (L3), Enceladus\_12 (L1), EniyanLRS\_31 (V), Faith1\_12 (L2), Finemlucis\_12 (L2), Finnry\_13 (L3), Gabriela\_12 (L2), Gardann\_12 (L2), GardenSalsa\_26 (M2), GuuelaD\_12 (L2), Hafay\_12 (L2), Halena\_12 (L1), Itos\_12 (L2), Jobypre\_13 (L3), JoeDirt\_12 (L1), Jubie\_13 (L3), Kahlid\_12 (L2), Kingsolomon\_13 (L3), Krypton555\_13 (L3), Kumao\_21 (singleton), LeBron\_12 (L1), Lewan\_12 (L2), LilDestine\_12 (L2), Lolly9\_13 (L3), Lumos\_13 (L3), MAckerman\_12 (L1), MaryV\_34 (V), Miley16\_12 (L2), MiniLon\_13 (L3), MiniMac\_13 (L3), MkaliMitinis3\_12 (L2), Moostard\_13 (L3), MrMagoo\_26 (M2), MsGreen\_13 (L3), Netyap\_12 (L2), Nicholas\_13 (L3), OhShagHennessy\_12 (L1), Rey\_26 (M2), Rose5\_12 (L1), Rumpelstiltskin\_12 (L2), Samty\_13 (L3), Silverleaf\_12 (L1), Snenia\_13 (L3), Tourach\_12 (L2), Tyson\_12 (L1), UPIE\_12 (L1), Vetrrix\_12 (L2), Wamburgexpress\_12 (L1), Wigglewiggle\_12 (L2), Wildcat\_34 (V), Wilder\_12 (L2), Winky\_12 (L2), Wyatt2\_12 (L1), Zakai\_12 (L2), Zaria\_12 (L1),

#### Start 8:

- Found in 28 of 137 ( 20.4% ) of genes in pham
- Manual Annotations of this start: 26 of 124
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beelzebub\_48 (S), Bernal13\_13 (T), Blackbeetle\_44 (S), Caprice\_41 (S), Clarkson\_45 (S), Corazon\_42 (S), Gattaca\_43 (S), Huphlepuuff\_46 (S), Ibrahim\_13 (T), JoieB\_45 (S), Kudrefre\_20 (DU1), Lilbit\_45

(S), LittleLaf\_44 (S), Marvin\_42 (S), Mendokysei\_12 (T), MosMoris\_42 (S), Nairb\_13 (T), Poise\_44 (S), Pringar\_44 (S), Raela\_44 (S), RedRaider77\_44 (S), RonRayGun\_13 (T), Sephiroth\_21 (DU1), Syleon\_21 (DU1), Tesla\_43 (S), VasuNzinga\_44 (S), Whitty\_13 (T), ZenTime222\_13 (T),

Start 9:

- Found in 3 of 137 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 1 of 124
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Farewell\_10 (AF), Sparky\_10 (AF),

Start 10:

- Found in 52 of 137 ( 38.0% ) of genes in pham
- Manual Annotations of this start: 4 of 124
- Called 13.5% of time when present
- Phage (with cluster) where this start called: Baoshan\_11 (L2), Claus\_12 (L2), Crossroads\_12 (L2), Loadrie\_12 (L2), Nicholasp3\_12 (L2), Whirlwind\_14 (L3), ZhongYanYuan\_11 (L2),

Start 30:

- Found in 19 of 137 ( 13.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.3% of time when present
- Phage (with cluster) where this start called: GMA4\_12 (singleton),

### **Summary by clusters:**

There are 15 clusters represented in this pham: V, AF, M1, L1, singleton, L4, S, L5, L2, L3, M3, M2, DU1, DU2, T,

Info for manual annotations of cluster AF:

- Start number 9 was manually annotated 1 time for cluster AF.

Info for manual annotations of cluster DU1:

- Start number 6 was manually annotated 1 time for cluster DU1.
- Start number 8 was manually annotated 3 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 7 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 7 was manually annotated 25 times for cluster L2.
- Start number 10 was manually annotated 3 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 7 was manually annotated 15 times for cluster L3.
- Start number 10 was manually annotated 1 time for cluster L3.

Info for manual annotations of cluster L4:

- Start number 7 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 7 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster M1:

- Start number 5 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 5 was manually annotated 3 times for cluster M2.
- Start number 7 was manually annotated 3 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 5 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster S:

- Start number 8 was manually annotated 16 times for cluster S.

Info for manual annotations of cluster T:

- Start number 8 was manually annotated 7 times for cluster T.

Info for manual annotations of cluster V:

- Start number 7 was manually annotated 5 times for cluster V.

### ***Gene Information:***

Gene: Acquire49\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for Acquire49\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Aegeus\_12 Start: 8098, Stop: 8574, Start Num: 7

Candidate Starts for Aegeus\_12:

(Start: 7 @8098 has 72 MA's), (14, 8149), (15, 8152), (22, 8173), (42, 8242), (43, 8245), (46, 8260), (58, 8356), (61, 8374), (64, 8386), (66, 8407), (75, 8452), (76, 8464), (77, 8467), (78, 8470), (82, 8485), (84, 8497), (89, 8518), (91, 8530),

Gene: Appletree2\_12 Start: 8447, Stop: 8935, Start Num: 7

Candidate Starts for Appletree2\_12:

(Start: 7 @8447 has 72 MA's), (11, 8456), (23, 8528), (46, 8612), (52, 8660), (54, 8669), (55, 8672), (58, 8708), (60, 8717), (62, 8729), (66, 8759), (76, 8816), (77, 8819), (90, 8876), (91, 8882),

Gene: Archie\_12 Start: 8444, Stop: 8920, Start Num: 7

Candidate Starts for Archie\_12:

(Start: 7 @8444 has 72 MA's), (Start: 10 @8450 has 4 MA's), (32, 8552), (43, 8594), (46, 8609), (47, 8624), (52, 8657), (54, 8666), (58, 8705), (64, 8735), (66, 8756), (74, 8798), (76, 8813), (89, 8867), (90, 8873), (93, 8909),

Gene: Auspice\_22 Start: 12285, Stop: 12797, Start Num: 5

Candidate Starts for Auspice\_22:

(Start: 5 @12285 has 17 MA's), (Start: 7 @12294 has 72 MA's), (16, 12351), (28, 12384), (31, 12402), (35, 12420), (60, 12579), (61, 12588), (62, 12591), (67, 12627), (71, 12651), (81, 12699), (82, 12702),

Gene: AvadaKedavra\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for AvadaKedavra\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Aziz\_26 Start: 12859, Stop: 13371, Start Num: 5

Candidate Starts for Aziz\_26:

(Start: 5 @12859 has 17 MA's), (Start: 7 @12868 has 72 MA's), (16, 12925), (36, 12997), (57, 13141), (60, 13153), (61, 13162), (62, 13165), (64, 13177), (67, 13201), (71, 13225), (81, 13273), (94, 13354),

Gene: Azrael100\_33 Start: 15365, Stop: 15877, Start Num: 7

Candidate Starts for Azrael100\_33:

(Start: 7 @15365 has 72 MA's), (13, 15413), (28, 15464), (39, 15509), (45, 15551), (52, 15605), (57, 15650), (60, 15662), (61, 15671), (62, 15674), (69, 15719), (73, 15743), (86, 15800), (94, 15857),

Gene: Baoshan\_11 Start: 8305, Stop: 8802, Start Num: 10

Candidate Starts for Baoshan\_11:

(Start: 7 @8299 has 72 MA's), (Start: 10 @8305 has 4 MA's), (32, 8407), (43, 8449), (46, 8464), (52, 8512), (54, 8521), (58, 8560), (64, 8590), (66, 8611), (76, 8668), (90, 8728), (91, 8734), (96, 8773),

Gene: Baudelaire\_12 Start: 8098, Stop: 8574, Start Num: 7

Candidate Starts for Baudelaire\_12:

(Start: 7 @8098 has 72 MA's), (14, 8149), (15, 8152), (22, 8173), (42, 8242), (43, 8245), (46, 8260), (58, 8356), (61, 8374), (64, 8386), (66, 8407), (75, 8452), (76, 8464), (77, 8467), (78, 8470), (82, 8485), (84, 8497), (89, 8518), (91, 8530),

Gene: Bazzle\_12 Start: 8420, Stop: 8923, Start Num: 7

Candidate Starts for Bazzle\_12:

(Start: 7 @8420 has 72 MA's), (Start: 10 @8426 has 4 MA's), (32, 8528), (43, 8570), (46, 8585), (47, 8600), (52, 8633), (54, 8642), (58, 8681), (64, 8711), (66, 8732), (74, 8774), (76, 8789), (89, 8843), (90, 8849), (91, 8855), (96, 8894),

Gene: Beelzebub\_48 Start: 18820, Stop: 19326, Start Num: 8

Candidate Starts for Beelzebub\_48:

(Start: 8 @18820 has 26 MA's), (17, 18895), (20, 18904), (25, 18919), (29, 18928), (30, 18937), (33, 18946), (46, 19015), (48, 19033), (52, 19060), (58, 19108), (60, 19117), (61, 19126), (67, 19162), (70, 19180), (71, 19186), (72, 19195), (85, 19252), (88, 19264), (97, 19321),

Gene: Bellis\_13 Start: 8603, Stop: 9088, Start Num: 7

Candidate Starts for Bellis\_13:

(3, 8537), (Start: 7 @8603 has 72 MA's), (Start: 10 @8609 has 4 MA's), (14, 8657), (27, 8693), (58, 8864), (61, 8882), (64, 8894), (66, 8915), (84, 9005), (87, 9017), (90, 9032),

Gene: Bernal13\_13 Start: 9373, Stop: 9864, Start Num: 8

Candidate Starts for Bernal13\_13:

(Start: 8 @9373 has 26 MA's), (38, 9505), (40, 9520), (62, 9667),

Gene: BigCheese\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for BigCheese\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Blackbeetle\_44 Start: 17839, Stop: 18345, Start Num: 8

Candidate Starts for Blackbeetle\_44:

(Start: 8 @17839 has 26 MA's), (17, 17914), (20, 17923), (25, 17938), (29, 17947), (30, 17956), (33, 17965), (46, 18034), (48, 18052), (52, 18079), (58, 18127), (60, 18136), (61, 18145), (67, 18181), (70, 18199), (71, 18205), (72, 18214), (85, 18271), (88, 18283), (97, 18340),

Gene: BobsGarage\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for BobsGarage\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Bongo\_22 Start: 12285, Stop: 12797, Start Num: 5

Candidate Starts for Bongo\_22:

(Start: 5 @12285 has 17 MA's), (Start: 7 @12294 has 72 MA's), (16, 12351), (28, 12384), (31, 12402), (35, 12420), (60, 12579), (61, 12588), (62, 12591), (67, 12627), (71, 12651), (81, 12699), (82, 12702),

Gene: Breezona\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Breezona\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Bricole\_22 Start: 12284, Stop: 12796, Start Num: 5

Candidate Starts for Bricole\_22:

(Start: 5 @12284 has 17 MA's), (Start: 7 @12293 has 72 MA's), (16, 12350), (28, 12383), (31, 12401), (35, 12419), (60, 12578), (61, 12587), (62, 12590), (67, 12626), (71, 12650), (81, 12698), (82, 12701),

Gene: Bromden\_12 Start: 8191, Stop: 8694, Start Num: 7

Candidate Starts for Bromden\_12:

(Start: 7 @8191 has 72 MA's), (12, 8230), (37, 8314), (47, 8374), (54, 8416), (55, 8419), (58, 8455), (61, 8473), (64, 8485), (66, 8506), (76, 8563), (84, 8596), (91, 8629), (99, 8680),

Gene: Calm\_12 Start: 8474, Stop: 8962, Start Num: 7

Candidate Starts for Calm\_12:

(Start: 7 @8474 has 72 MA's), (11, 8483), (23, 8555), (46, 8639), (52, 8687), (54, 8696), (55, 8699), (58, 8735), (60, 8744), (62, 8756), (66, 8786), (76, 8843), (77, 8846), (90, 8903), (91, 8909),

Gene: Caprice\_41 Start: 17909, Stop: 18415, Start Num: 8

Candidate Starts for Caprice\_41:

(Start: 8 @17909 has 26 MA's), (17, 17984), (20, 17993), (25, 18008), (29, 18017), (30, 18026), (33, 18035), (46, 18104), (48, 18122), (52, 18149), (58, 18197), (60, 18206), (61, 18215), (67, 18251), (70, 18269), (71, 18275), (72, 18284), (85, 18341), (88, 18353), (97, 18410),

Gene: Chaser\_12 Start: 8195, Stop: 8698, Start Num: 7

Candidate Starts for Chaser\_12:

(Start: 7 @8195 has 72 MA's), (Start: 10 @8201 has 4 MA's), (18, 8261), (37, 8318), (47, 8378), (54, 8420), (55, 8423), (58, 8459), (61, 8477), (64, 8489), (66, 8510), (74, 8552), (76, 8567), (84, 8600), (85, 8603), (91, 8633),

Gene: CicholasNage\_12 Start: 8474, Stop: 8962, Start Num: 7

Candidate Starts for CicholasNage\_12:



(Start: 7 @8474 has 72 MA's), (11, 8483), (23, 8555), (46, 8639), (52, 8687), (54, 8696), (55, 8699), (58, 8735), (60, 8744), (62, 8756), (66, 8786), (76, 8843), (77, 8846), (90, 8903), (91, 8909),

Gene: Clarkson\_45 Start: 18521, Stop: 19027, Start Num: 8

Candidate Starts for Clarkson\_45:

(Start: 8 @18521 has 26 MA's), (17, 18596), (20, 18605), (25, 18620), (29, 18629), (30, 18638), (33, 18647), (46, 18716), (48, 18734), (52, 18761), (58, 18809), (60, 18818), (61, 18827), (67, 18863), (70, 18881), (71, 18887), (72, 18896), (85, 18953), (88, 18965), (97, 19022),

Gene: Claus\_12 Start: 8485, Stop: 8982, Start Num: 10

Candidate Starts for Claus\_12:

(Start: 7 @8479 has 72 MA's), (Start: 10 @8485 has 4 MA's), (32, 8587), (43, 8629), (46, 8644), (52, 8692), (54, 8701), (58, 8740), (64, 8770), (66, 8791), (76, 8848), (90, 8908), (91, 8914), (96, 8953),

Gene: Clautastrophe\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for Clautastrophe\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: Corazon\_42 Start: 18474, Stop: 18980, Start Num: 8

Candidate Starts for Corazon\_42:

(Start: 8 @18474 has 26 MA's), (17, 18549), (20, 18558), (25, 18573), (29, 18582), (30, 18591), (33, 18600), (46, 18669), (48, 18687), (52, 18714), (58, 18762), (60, 18771), (61, 18780), (67, 18816), (70, 18834), (71, 18840), (72, 18849), (85, 18906), (88, 18918), (97, 18975),

Gene: Cosmo\_34 Start: 15372, Stop: 15884, Start Num: 7

Candidate Starts for Cosmo\_34:

(Start: 7 @15372 has 72 MA's), (13, 15420), (28, 15471), (39, 15516), (45, 15558), (52, 15612), (57, 15657), (60, 15669), (61, 15678), (62, 15681), (69, 15726), (73, 15750), (86, 15807), (94, 15864),

Gene: Crossroads\_12 Start: 8477, Stop: 8974, Start Num: 10

Candidate Starts for Crossroads\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Diminimus\_23 Start: 12284, Stop: 12796, Start Num: 5

Candidate Starts for Diminimus\_23:

(Start: 5 @12284 has 17 MA's), (Start: 7 @12293 has 72 MA's), (16, 12350), (28, 12383), (31, 12401), (35, 12419), (60, 12578), (61, 12587), (62, 12590), (67, 12626), (71, 12650), (81, 12698), (82, 12701),

Gene: DirkDirk\_12 Start: 8475, Stop: 8963, Start Num: 7

Candidate Starts for DirkDirk\_12:

(Start: 7 @8475 has 72 MA's), (11, 8484), (23, 8556), (46, 8640), (52, 8688), (54, 8697), (55, 8700), (58, 8736), (60, 8745), (62, 8757), (66, 8787), (76, 8844), (77, 8847), (90, 8904), (91, 8910),

Gene: Douge\_12 Start: 8141, Stop: 8644, Start Num: 7

Candidate Starts for Douge\_12:

(Start: 7 @8141 has 72 MA's), (18, 8207), (37, 8264), (47, 8324), (54, 8366), (55, 8369), (58, 8405), (61, 8423), (64, 8435), (66, 8456), (74, 8498), (76, 8513), (84, 8546), (85, 8549), (91, 8579),

Gene: DrSeegs\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for DrSeegs\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Dulcita\_23 Start: 12284, Stop: 12796, Start Num: 5

Candidate Starts for Dulcita\_23:

(Start: 5 @12284 has 17 MA's), (Start: 7 @12293 has 72 MA's), (16, 12350), (28, 12383), (31, 12401), (35, 12419), (60, 12578), (61, 12587), (62, 12590), (67, 12626), (71, 12650), (81, 12698), (82, 12701),

Gene: DuncansLeg\_13 Start: 8612, Stop: 9097, Start Num: 7

Candidate Starts for DuncansLeg\_13:

(Start: 7 @8612 has 72 MA's), (Start: 10 @8618 has 4 MA's), (14, 8666), (27, 8702), (58, 8873), (61, 8891), (64, 8903), (66, 8924), (84, 9014), (87, 9026), (90, 9041),

Gene: DyoEdafos\_13 Start: 8351, Stop: 8854, Start Num: 7

Candidate Starts for DyoEdafos\_13:

(Start: 7 @8351 has 72 MA's), (37, 8474), (47, 8534), (54, 8576), (55, 8579), (58, 8615), (61, 8633), (64, 8645), (66, 8666), (74, 8708), (76, 8723), (84, 8756), (91, 8789),

Gene: Ellson\_13 Start: 8620, Stop: 9105, Start Num: 7

Candidate Starts for Ellson\_13:

(Start: 7 @8620 has 72 MA's), (Start: 10 @8626 has 4 MA's), (14, 8674), (27, 8710), (58, 8881), (61, 8899), (64, 8911), (66, 8932), (84, 9022), (87, 9034), (90, 9049),

Gene: Enceladus\_12 Start: 8475, Stop: 8963, Start Num: 7

Candidate Starts for Enceladus\_12:

(Start: 7 @8475 has 72 MA's), (11, 8484), (23, 8556), (46, 8640), (52, 8688), (54, 8697), (55, 8700), (58, 8736), (60, 8745), (62, 8757), (66, 8787), (76, 8844), (77, 8847), (90, 8904), (91, 8910),

Gene: EniyanLRS\_31 Start: 15066, Stop: 15578, Start Num: 7

Candidate Starts for EniyanLRS\_31:

(Start: 7 @15066 has 72 MA's), (13, 15114), (28, 15165), (39, 15210), (45, 15252), (52, 15306), (57, 15351), (60, 15363), (61, 15372), (62, 15375), (69, 15420), (73, 15444), (86, 15501), (94, 15558),

Gene: Estes\_27 Start: 12996, Stop: 13508, Start Num: 5

Candidate Starts for Estes\_27:

(Start: 5 @12996 has 17 MA's), (Start: 7 @13005 has 72 MA's), (16, 13062), (36, 13134), (57, 13278), (60, 13290), (61, 13299), (62, 13302), (64, 13314), (67, 13338), (71, 13362), (81, 13410), (94, 13491),

Gene: Faith1\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Faith1\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Farewell\_10 Start: 7492, Stop: 8022, Start Num: 9

Candidate Starts for Farewell\_10:

(4, 7429), (Start: 9 @7492 has 1 MA's), (33, 7615), (45, 7675), (57, 7780), (60, 7801), (68, 7852), (71, 7876), (79, 7915),

Gene: Finemlucis\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Finemlucis\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (46, 8636), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Finnry\_13 Start: 8605, Stop: 9090, Start Num: 7

Candidate Starts for Finnry\_13:

(Start: 7 @8605 has 72 MA's), (Start: 10 @8611 has 4 MA's), (14, 8659), (27, 8695), (58, 8866), (61, 8884), (64, 8896), (66, 8917), (84, 9007), (87, 9019), (90, 9034),

Gene: GMA4\_12 Start: 8487, Stop: 8873, Start Num: 30

Candidate Starts for GMA4\_12:

(30, 8487), (56, 8637), (59, 8655), (83, 8787), (95, 8856),

Gene: Gabriela\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Gabriela\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Gardann\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Gardann\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: GardenSalsa\_26 Start: 12841, Stop: 13344, Start Num: 7

Candidate Starts for GardenSalsa\_26:

(Start: 5 @12832 has 17 MA's), (Start: 7 @12841 has 72 MA's), (16, 12898), (36, 12970), (57, 13114), (60, 13126), (61, 13135), (62, 13138), (64, 13150), (67, 13174), (71, 13198), (81, 13246), (94, 13327),

Gene: Gattaca\_43 Start: 17701, Stop: 18207, Start Num: 8

Candidate Starts for Gattaca\_43:

(Start: 8 @17701 has 26 MA's), (17, 17776), (20, 17785), (25, 17800), (29, 17809), (30, 17818), (33, 17827), (46, 17896), (48, 17914), (52, 17941), (58, 17989), (60, 17998), (61, 18007), (67, 18043), (70, 18061), (71, 18067), (72, 18076), (85, 18133), (88, 18145), (97, 18202),

Gene: GenevaB15\_26 Start: 12859, Stop: 13371, Start Num: 5

Candidate Starts for GenevaB15\_26:

(Start: 5 @12859 has 17 MA's), (Start: 7 @12868 has 72 MA's), (16, 12925), (36, 12997), (57, 13141), (60, 13153), (61, 13162), (62, 13165), (64, 13177), (67, 13201), (71, 13225), (81, 13273), (94, 13354),

Gene: Glaske16\_23 Start: 12284, Stop: 12796, Start Num: 5

Candidate Starts for Glaske16\_23:

(Start: 5 @12284 has 17 MA's), (Start: 7 @12293 has 72 MA's), (16, 12350), (28, 12383), (31, 12401), (35, 12419), (60, 12578), (61, 12587), (62, 12590), (67, 12626), (71, 12650), (81, 12698), (82, 12701),

Gene: GuuelaD\_12 Start: 8503, Stop: 9006, Start Num: 7

Candidate Starts for GuuelaD\_12:

(Start: 7 @8503 has 72 MA's), (Start: 10 @8509 has 4 MA's), (32, 8611), (43, 8653), (46, 8668), (52, 8716), (54, 8725), (58, 8764), (60, 8773), (64, 8794), (66, 8815), (74, 8857), (76, 8872), (90, 8932), (91, 8938), (96, 8977),

Gene: Hafay\_12 Start: 8504, Stop: 9007, Start Num: 7

Candidate Starts for Hafay\_12:

(Start: 7 @8504 has 72 MA's), (Start: 10 @8510 has 4 MA's), (32, 8612), (46, 8669), (47, 8684), (52, 8717), (53, 8723), (54, 8726), (58, 8765), (64, 8795), (66, 8816), (74, 8858), (76, 8873), (89, 8927), (90, 8933), (91, 8939), (96, 8978), (99, 8990),

Gene: Halena\_12 Start: 8474, Stop: 8962, Start Num: 7

Candidate Starts for Halena\_12:

(Start: 7 @8474 has 72 MA's), (11, 8483), (23, 8555), (46, 8639), (52, 8687), (54, 8696), (55, 8699), (58, 8735), (60, 8744), (62, 8756), (66, 8786), (76, 8843), (77, 8846), (90, 8903), (91, 8909),

Gene: Huphleuff\_46 Start: 18326, Stop: 18832, Start Num: 8

Candidate Starts for Huphleuff\_46:

(Start: 8 @18326 has 26 MA's), (17, 18401), (20, 18410), (25, 18425), (29, 18434), (30, 18443), (33, 18452), (46, 18521), (48, 18539), (52, 18566), (58, 18614), (60, 18623), (61, 18632), (67, 18668), (70, 18686), (71, 18692), (72, 18701), (85, 18758), (88, 18770), (97, 18827),

Gene: IPhane7\_22 Start: 12285, Stop: 12797, Start Num: 5

Candidate Starts for IPhane7\_22:

(Start: 5 @12285 has 17 MA's), (Start: 7 @12294 has 72 MA's), (16, 12351), (28, 12384), (31, 12402), (35, 12420), (60, 12579), (61, 12588), (62, 12591), (67, 12627), (71, 12651), (81, 12699), (82, 12702),

Gene: Ibrahim\_13 Start: 9373, Stop: 9864, Start Num: 8

Candidate Starts for Ibrahim\_13:

(Start: 8 @9373 has 26 MA's), (38, 9505), (40, 9520), (62, 9667),

Gene: Itos\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Itos\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Jobypre\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for Jobypre\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: JoeDirt\_12 Start: 8474, Stop: 8962, Start Num: 7

Candidate Starts for JoeDirt\_12:

(Start: 7 @8474 has 72 MA's), (11, 8483), (23, 8555), (46, 8639), (52, 8687), (54, 8696), (55, 8699), (58, 8735), (60, 8744), (62, 8756), (66, 8786), (76, 8843), (77, 8846), (90, 8903), (91, 8909),

Gene: JoieB\_45 Start: 18545, Stop: 19051, Start Num: 8

Candidate Starts for JoieB\_45:

(Start: 8 @18545 has 26 MA's), (17, 18620), (20, 18629), (25, 18644), (29, 18653), (30, 18662), (33, 18671), (46, 18740), (48, 18758), (52, 18785), (58, 18833), (60, 18842), (61, 18851), (67, 18887), (70, 18905), (71, 18911), (72, 18920), (85, 18977), (88, 18989), (97, 19046),

Gene: Jubie\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for Jubie\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: Kahlid\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Kahlid\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (46, 8636), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Kingsolomon\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for Kingsolomon\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: Krypton555\_13 Start: 8597, Stop: 9082, Start Num: 7

Candidate Starts for Krypton555\_13:

(Start: 7 @8597 has 72 MA's), (Start: 10 @8603 has 4 MA's), (14, 8651), (27, 8687), (58, 8858), (61, 8876), (64, 8888), (66, 8909), (84, 8999), (87, 9011), (90, 9026),

Gene: Kudrefre\_20 Start: 11817, Stop: 12305, Start Num: 8

Candidate Starts for Kudrefre\_20:

(Start: 8 @11817 has 26 MA's), (34, 11925), (41, 11961), (44, 11970), (50, 12012), (52, 12030), (53, 12036), (61, 12096), (62, 12099), (69, 12147), (81, 12204), (86, 12228),

Gene: Kumao\_21 Start: 11563, Stop: 12060, Start Num: 7

Candidate Starts for Kumao\_21:

(Start: 7 @11563 has 72 MA's), (57, 11830), (61, 11851), (62, 11854), (64, 11866),

Gene: LeBron\_12 Start: 8474, Stop: 8962, Start Num: 7

Candidate Starts for LeBron\_12:

(Start: 7 @8474 has 72 MA's), (23, 8555), (46, 8639), (52, 8687), (54, 8696), (55, 8699), (58, 8735), (60, 8744), (62, 8756), (66, 8786), (76, 8843), (77, 8846), (90, 8903), (91, 8909),

Gene: Lewan\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Lewan\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (46, 8636), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: LilDestine\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for LilDestine\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (46, 8636), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Lilbit\_45 Start: 18522, Stop: 19028, Start Num: 8

Candidate Starts for Lilbit\_45:

(Start: 8 @18522 has 26 MA's), (17, 18597), (20, 18606), (25, 18621), (29, 18630), (30, 18639), (33, 18648), (46, 18717), (48, 18735), (52, 18762), (58, 18810), (60, 18819), (61, 18828), (67, 18864), (70, 18882), (71, 18888), (72, 18897), (85, 18954), (88, 18966), (97, 19023),

Gene: LilhomieP\_21 Start: 12285, Stop: 12797, Start Num: 5

Candidate Starts for LilhomieP\_21:

(Start: 5 @12285 has 17 MA's), (Start: 7 @12294 has 72 MA's), (16, 12351), (28, 12384), (31, 12402), (35, 12420), (60, 12579), (61, 12588), (62, 12591), (67, 12627), (71, 12651), (81, 12699), (82, 12702),

Gene: LittleLaf\_44 Start: 18251, Stop: 18757, Start Num: 8

Candidate Starts for LittleLaf\_44:

(Start: 8 @18251 has 26 MA's), (17, 18326), (20, 18335), (25, 18350), (29, 18359), (30, 18368), (33, 18377), (46, 18446), (48, 18464), (52, 18491), (58, 18539), (60, 18548), (61, 18557), (67, 18593), (70, 18611), (71, 18617), (72, 18626), (85, 18683), (88, 18695), (97, 18752),

Gene: Loadrie\_12 Start: 8510, Stop: 9007, Start Num: 10

Candidate Starts for Loadrie\_12:

(Start: 7 @8504 has 72 MA's), (Start: 10 @8510 has 4 MA's), (32, 8612), (46, 8669), (47, 8684), (52, 8717), (53, 8723), (54, 8726), (58, 8765), (64, 8795), (66, 8816), (74, 8858), (76, 8873), (89, 8927), (90, 8933), (91, 8939), (96, 8978), (99, 8990),

Gene: Lolly9\_13 Start: 8615, Stop: 9100, Start Num: 7

Candidate Starts for Lolly9\_13:

(Start: 7 @8615 has 72 MA's), (Start: 10 @8621 has 4 MA's), (14, 8669), (23, 8696), (27, 8705), (58, 8876), (61, 8894), (64, 8906), (66, 8927), (84, 9017), (87, 9029), (90, 9044),

Gene: Lumos\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for Lumos\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: MAckerman\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for MAckerman\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Marvin\_42 Start: 18521, Stop: 19027, Start Num: 8

Candidate Starts for Marvin\_42:

(Start: 8 @18521 has 26 MA's), (17, 18596), (20, 18605), (25, 18620), (29, 18629), (30, 18638), (33, 18647), (46, 18716), (48, 18734), (52, 18761), (58, 18809), (60, 18818), (61, 18827), (67, 18863), (70, 18881), (71, 18887), (72, 18896), (85, 18953), (88, 18965), (97, 19022),

Gene: MaryV\_34 Start: 15338, Stop: 15850, Start Num: 7

Candidate Starts for MaryV\_34:

(Start: 7 @15338 has 72 MA's), (13, 15386), (28, 15437), (39, 15482), (45, 15524), (52, 15578), (57, 15623), (60, 15635), (61, 15644), (62, 15647), (69, 15692), (73, 15716), (86, 15773), (94, 15830),

Gene: Mendokysei\_12 Start: 9351, Stop: 9842, Start Num: 8

Candidate Starts for Mendokysei\_12:

(1, 9198), (2, 9219), (Start: 8 @9351 has 26 MA's), (15, 9417), (24, 9438), (38, 9483), (52, 9579),

Gene: Miley16\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Miley16\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: MiniLon\_13 Start: 8615, Stop: 9100, Start Num: 7

Candidate Starts for MiniLon\_13:

(Start: 7 @8615 has 72 MA's), (Start: 10 @8621 has 4 MA's), (14, 8669), (23, 8696), (27, 8705), (58, 8876), (61, 8894), (64, 8906), (66, 8927), (84, 9017), (87, 9029), (90, 9044),

Gene: MiniMac\_13 Start: 8616, Stop: 9101, Start Num: 7

Candidate Starts for MiniMac\_13:

(Start: 7 @8616 has 72 MA's), (Start: 10 @8622 has 4 MA's), (14, 8670), (23, 8697), (27, 8706), (58, 8877), (61, 8895), (64, 8907), (66, 8928), (84, 9018), (87, 9030), (90, 9045),

Gene: MkaliMitinis3\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for MkaliMitinis3\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Moostard\_13 Start: 8604, Stop: 9089, Start Num: 7

Candidate Starts for Moostard\_13:

(Start: 7 @8604 has 72 MA's), (Start: 10 @8610 has 4 MA's), (14, 8658), (27, 8694), (58, 8865), (61, 8883), (64, 8895), (66, 8916), (84, 9006), (87, 9018), (90, 9033),

Gene: MosMoris\_42 Start: 17701, Stop: 18207, Start Num: 8

Candidate Starts for MosMoris\_42:

(Start: 8 @17701 has 26 MA's), (17, 17776), (20, 17785), (25, 17800), (29, 17809), (30, 17818), (33, 17827), (46, 17896), (48, 17914), (52, 17941), (58, 17989), (60, 17998), (61, 18007), (67, 18043), (70, 18061), (71, 18067), (72, 18076), (85, 18133), (88, 18145), (97, 18202),

Gene: MrMagoo\_26 Start: 12841, Stop: 13344, Start Num: 7

Candidate Starts for MrMagoo\_26:

(Start: 5 @12832 has 17 MA's), (Start: 7 @12841 has 72 MA's), (16, 12898), (36, 12970), (57, 13114), (60, 13126), (61, 13135), (62, 13138), (64, 13150), (67, 13174), (71, 13198), (81, 13246), (94, 13327),

Gene: MsGreen\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for MsGreen\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: Nairb\_13 Start: 9373, Stop: 9864, Start Num: 8

Candidate Starts for Nairb\_13:

(Start: 8 @9373 has 26 MA's), (38, 9505), (40, 9520), (62, 9667),

Gene: Nanosmite\_26 Start: 13051, Stop: 13563, Start Num: 5

Candidate Starts for Nanosmite\_26:

(Start: 5 @13051 has 17 MA's), (Start: 7 @13060 has 72 MA's), (60, 13345), (61, 13354), (62, 13357), (67, 13393), (71, 13417), (94, 13546),

Gene: Netyap\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Netyap\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Neville\_20 Start: 11648, Stop: 12142, Start Num: 6

Candidate Starts for Neville\_20:

(Start: 6 @11648 has 4 MA's), (19, 11714), (21, 11720), (26, 11735), (48, 11837), (51, 11849), (53, 11870), (57, 11909), (61, 11930), (63, 11936), (76, 12026), (80, 12035), (89, 12077),

Gene: Nicholas\_13 Start: 8608, Stop: 9093, Start Num: 7

Candidate Starts for Nicholas\_13:

(Start: 7 @8608 has 72 MA's), (Start: 10 @8614 has 4 MA's), (14, 8662), (27, 8698), (58, 8869), (61, 8887), (64, 8899), (66, 8920), (84, 9010), (87, 9022), (90, 9037),

Gene: Nicholasp3\_12 Start: 8477, Stop: 8974, Start Num: 10

Candidate Starts for Nicholasp3\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Octobien14\_21 Start: 12862, Stop: 13350, Start Num: 6

Candidate Starts for Octobien14\_21:

(Start: 6 @12862 has 4 MA's), (28, 12952), (34, 12970), (41, 13006), (52, 13075), (53, 13081), (63, 13147), (76, 13234), (81, 13249), (86, 13273),

Gene: OhShagHennessy\_12 Start: 8447, Stop: 8935, Start Num: 7

Candidate Starts for OhShagHennessy\_12:

(Start: 7 @8447 has 72 MA's), (11, 8456), (23, 8528), (46, 8612), (52, 8660), (54, 8669), (55, 8672), (58, 8708), (60, 8717), (62, 8729), (66, 8759), (76, 8816), (77, 8819), (90, 8876), (91, 8882),

Gene: PegLeg\_22 Start: 12284, Stop: 12796, Start Num: 5

Candidate Starts for PegLeg\_22:

(Start: 5 @12284 has 17 MA's), (Start: 7 @12293 has 72 MA's), (16, 12350), (28, 12383), (31, 12401), (35, 12419), (60, 12578), (61, 12587), (62, 12590), (67, 12626), (71, 12650), (81, 12698), (82, 12701),

Gene: Poise\_44 Start: 17839, Stop: 18345, Start Num: 8

Candidate Starts for Poise\_44:

(Start: 8 @17839 has 26 MA's), (17, 17914), (20, 17923), (25, 17938), (29, 17947), (30, 17956), (33, 17965), (46, 18034), (48, 18052), (52, 18079), (58, 18127), (60, 18136), (61, 18145), (67, 18181), (70, 18199), (71, 18205), (72, 18214), (85, 18271), (88, 18283), (97, 18340),

Gene: Pringar\_44 Start: 18151, Stop: 18657, Start Num: 8

Candidate Starts for Pringar\_44:

(Start: 8 @18151 has 26 MA's), (17, 18226), (20, 18235), (25, 18250), (29, 18259), (30, 18268), (46, 18346), (48, 18364), (52, 18391), (58, 18439), (60, 18448), (61, 18457), (67, 18493), (70, 18511), (71, 18517), (72, 18526), (85, 18583), (88, 18595), (97, 18652),

Gene: Rabbitrun\_22 Start: 12210, Stop: 12704, Start Num: 6

Candidate Starts for Rabbitrun\_22:

(Start: 6 @12210 has 4 MA's), (19, 12276), (21, 12282), (44, 12363), (53, 12432), (57, 12471), (61, 12492), (63, 12498), (65, 12522), (72, 12564), (76, 12588), (80, 12597), (92, 12663), (98, 12693),

Gene: Raela\_44 Start: 18394, Stop: 18900, Start Num: 8

Candidate Starts for Raela\_44:

(Start: 8 @18394 has 26 MA's), (17, 18469), (20, 18478), (25, 18493), (29, 18502), (30, 18511), (33, 18520), (46, 18589), (48, 18607), (52, 18634), (58, 18682), (60, 18691), (61, 18700), (67, 18736), (70, 18754), (71, 18760), (72, 18769), (85, 18826), (88, 18838), (97, 18895),

Gene: RedRaider77\_44 Start: 18295, Stop: 18801, Start Num: 8

Candidate Starts for RedRaider77\_44:

(Start: 8 @18295 has 26 MA's), (17, 18370), (20, 18379), (25, 18394), (29, 18403), (30, 18412), (33, 18421), (46, 18490), (48, 18508), (52, 18535), (58, 18583), (60, 18592), (61, 18601), (67, 18637), (70, 18655), (71, 18661), (72, 18670), (85, 18727), (88, 18739), (97, 18796),



Gene: Reindeer\_20 Start: 12137, Stop: 12649, Start Num: 5

Candidate Starts for Reindeer\_20:

(Start: 5 @12137 has 17 MA's), (Start: 7 @12146 has 72 MA's), (16, 12203), (28, 12236), (35, 12272), (36, 12275), (49, 12353), (60, 12431), (61, 12440), (62, 12443), (67, 12479), (71, 12503), (81, 12551), (82, 12554),

Gene: Rey\_26 Start: 13073, Stop: 13576, Start Num: 7

Candidate Starts for Rey\_26:

(Start: 5 @13064 has 17 MA's), (Start: 7 @13073 has 72 MA's), (Start: 9 @13076 has 1 MA's), (15, 13127), (16, 13130), (28, 13163), (36, 13202), (60, 13358), (61, 13367), (62, 13370), (64, 13382), (67, 13406), (71, 13430), (81, 13478), (82, 13481), (94, 13559),

Gene: RonRayGun\_13 Start: 9373, Stop: 9864, Start Num: 8

Candidate Starts for RonRayGun\_13:

(Start: 8 @9373 has 26 MA's), (38, 9505), (40, 9520), (62, 9667),

Gene: Rose5\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for Rose5\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Rumpelstiltskin\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Rumpelstiltskin\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Samty\_13 Start: 8604, Stop: 9089, Start Num: 7

Candidate Starts for Samty\_13:

(Start: 7 @8604 has 72 MA's), (Start: 10 @8610 has 4 MA's), (14, 8658), (27, 8694), (58, 8865), (61, 8883), (64, 8895), (66, 8916), (84, 9006), (87, 9018), (90, 9033),

Gene: Sephiroth\_21 Start: 11988, Stop: 12476, Start Num: 8

Candidate Starts for Sephiroth\_21:

(Start: 8 @11988 has 26 MA's), (34, 12096), (41, 12132), (44, 12141), (50, 12183), (52, 12201), (53, 12207), (61, 12267), (62, 12270), (69, 12318), (81, 12375), (86, 12399),

Gene: Silverleaf\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for Silverleaf\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Skinny\_23 Start: 12285, Stop: 12797, Start Num: 5

Candidate Starts for Skinny\_23:

(Start: 5 @12285 has 17 MA's), (Start: 7 @12294 has 72 MA's), (16, 12351), (28, 12384), (31, 12402), (35, 12420), (60, 12579), (61, 12588), (62, 12591), (67, 12627), (71, 12651), (81, 12699), (82, 12702),

Gene: SlimJimmy\_21 Start: 12284, Stop: 12796, Start Num: 5

Candidate Starts for SlimJimmy\_21:

(Start: 5 @12284 has 17 MA's), (Start: 7 @12293 has 72 MA's), (16, 12350), (31, 12401), (35, 12419), (60, 12578), (61, 12587), (62, 12590), (67, 12626), (71, 12650), (81, 12698), (82, 12701),

Gene: Snenia\_13 Start: 8609, Stop: 9094, Start Num: 7

Candidate Starts for Snenia\_13:

(Start: 7 @8609 has 72 MA's), (Start: 10 @8615 has 4 MA's), (14, 8663), (27, 8699), (58, 8870), (61, 8888), (64, 8900), (66, 8921), (84, 9011), (87, 9023), (90, 9038),

Gene: Sparky\_10 Start: 7493, Stop: 8023, Start Num: 9

Candidate Starts for Sparky\_10:

(4, 7430), (Start: 9 @7493 has 1 MA's), (33, 7616), (45, 7676), (57, 7781), (60, 7802), (68, 7853), (71, 7877), (79, 7916),

Gene: Syleon\_21 Start: 11910, Stop: 12395, Start Num: 8

Candidate Starts for Syleon\_21:

(Start: 8 @11910 has 26 MA's), (34, 12018), (41, 12054), (44, 12063), (50, 12105), (52, 12123), (53, 12129), (61, 12189), (62, 12192), (69, 12240), (81, 12297), (86, 12321),

Gene: Tesla\_43 Start: 18144, Stop: 18650, Start Num: 8

Candidate Starts for Tesla\_43:

(Start: 8 @18144 has 26 MA's), (17, 18219), (20, 18228), (25, 18243), (29, 18252), (30, 18261), (33, 18270), (46, 18339), (48, 18357), (52, 18384), (58, 18432), (60, 18441), (61, 18450), (67, 18486), (70, 18504), (71, 18510), (72, 18519), (85, 18576), (88, 18588), (97, 18645),

Gene: Tourach\_12 Start: 8484, Stop: 8987, Start Num: 7

Candidate Starts for Tourach\_12:

(Start: 7 @8484 has 72 MA's), (Start: 10 @8490 has 4 MA's), (13, 8529), (23, 8565), (32, 8592), (43, 8634), (47, 8664), (52, 8697), (54, 8706), (58, 8745), (61, 8763), (64, 8775), (66, 8796), (74, 8838), (76, 8853), (89, 8907), (90, 8913), (91, 8919), (96, 8958),

Gene: Trax\_20 Start: 11648, Stop: 12142, Start Num: 6

Candidate Starts for Trax\_20:

(Start: 6 @11648 has 4 MA's), (19, 11714), (21, 11720), (26, 11735), (48, 11837), (51, 11849), (53, 11870), (57, 11909), (61, 11930), (63, 11936), (76, 12026), (80, 12035), (89, 12077),

Gene: TyDawg\_22 Start: 12285, Stop: 12797, Start Num: 5

Candidate Starts for TyDawg\_22:

(Start: 5 @12285 has 17 MA's), (Start: 7 @12294 has 72 MA's), (16, 12351), (28, 12384), (31, 12402), (35, 12420), (60, 12579), (61, 12588), (62, 12591), (67, 12627), (71, 12651), (81, 12699), (82, 12702),

Gene: Tyson\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for Tyson\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: UPIE\_12 Start: 8471, Stop: 8959, Start Num: 7

Candidate Starts for UPIE\_12:

(Start: 7 @8471 has 72 MA's), (11, 8480), (23, 8552), (46, 8636), (52, 8684), (54, 8693), (55, 8696), (58, 8732), (60, 8741), (62, 8753), (66, 8783), (76, 8840), (77, 8843), (90, 8900), (91, 8906),

Gene: VasuNzinga\_44 Start: 17728, Stop: 18234, Start Num: 8

Candidate Starts for VasuNzinga\_44:

(Start: 8 @17728 has 26 MA's), (17, 17803), (20, 17812), (25, 17827), (29, 17836), (30, 17845), (33, 17854), (46, 17923), (48, 17941), (52, 17968), (58, 18016), (60, 18025), (61, 18034), (67, 18070), (70, 18088), (71, 18094), (72, 18103), (85, 18160), (88, 18172), (97, 18229),

Gene: Vetric\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Vetrax\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (46, 8636), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Wamburgexpress\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for Wamburgexpress\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Whirlwind\_14 Start: 8608, Stop: 9087, Start Num: 10

Candidate Starts for Whirlwind\_14:

(Start: 7 @8602 has 72 MA's), (Start: 10 @8608 has 4 MA's), (14, 8656), (27, 8692), (58, 8863), (61, 8881), (64, 8893), (66, 8914), (84, 9004), (87, 9016), (90, 9031),

Gene: Whitty\_13 Start: 9373, Stop: 9864, Start Num: 8

Candidate Starts for Whitty\_13:

(Start: 8 @9373 has 26 MA's), (38, 9505), (40, 9520), (62, 9667),

Gene: Wigglewobble\_12 Start: 8504, Stop: 9007, Start Num: 7

Candidate Starts for Wigglewobble\_12:

(Start: 7 @8504 has 72 MA's), (Start: 10 @8510 has 4 MA's), (32, 8612), (46, 8669), (47, 8684), (52, 8717), (53, 8723), (54, 8726), (58, 8765), (64, 8795), (66, 8816), (74, 8858), (76, 8873), (89, 8927), (90, 8933), (91, 8939), (96, 8978), (99, 8990),

Gene: Wildcat\_34 Start: 15348, Stop: 15860, Start Num: 7

Candidate Starts for Wildcat\_34:

(Start: 7 @15348 has 72 MA's), (13, 15396), (28, 15447), (39, 15492), (45, 15534), (52, 15588), (57, 15633), (60, 15645), (61, 15654), (62, 15657), (69, 15702), (73, 15726), (86, 15783), (94, 15840),

Gene: Wilder\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Wilder\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (46, 8636), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Winky\_12 Start: 8471, Stop: 8974, Start Num: 7

Candidate Starts for Winky\_12:

(Start: 7 @8471 has 72 MA's), (Start: 10 @8477 has 4 MA's), (32, 8579), (47, 8651), (52, 8684), (53, 8690), (54, 8693), (58, 8732), (64, 8762), (66, 8783), (74, 8825), (76, 8840), (89, 8894), (90, 8900), (91, 8906), (96, 8945), (99, 8957),

Gene: Wyatt2\_12 Start: 8473, Stop: 8961, Start Num: 7

Candidate Starts for Wyatt2\_12:

(Start: 7 @8473 has 72 MA's), (11, 8482), (23, 8554), (46, 8638), (52, 8686), (54, 8695), (55, 8698), (58, 8734), (60, 8743), (62, 8755), (66, 8785), (76, 8842), (77, 8845), (90, 8902), (91, 8908),

Gene: Zakai\_12 Start: 8459, Stop: 8962, Start Num: 7

Candidate Starts for Zakai\_12:

(Start: 7 @8459 has 72 MA's), (Start: 10 @8465 has 4 MA's), (32, 8567), (47, 8639), (52, 8672), (53, 8678), (54, 8681), (58, 8720), (64, 8750), (66, 8771), (74, 8813), (76, 8828), (89, 8882), (90, 8888), (91, 8894), (96, 8933), (99, 8945),

Gene: Zaria\_12 Start: 8474, Stop: 8962, Start Num: 7

Candidate Starts for Zaria\_12:

(Start: 7 @8474 has 72 MA's), (11, 8483), (23, 8555), (46, 8639), (52, 8687), (54, 8696), (55, 8699), (58, 8735), (60, 8744), (62, 8756), (66, 8786), (76, 8843), (77, 8846), (90, 8903), (91, 8909),

Gene: ZenTime222\_13 Start: 9373, Stop: 9864, Start Num: 8

Candidate Starts for ZenTime222\_13:

(Start: 8 @9373 has 26 MA's), (38, 9505), (40, 9520), (62, 9667),

Gene: ZhongYanYuan\_11 Start: 8305, Stop: 8802, Start Num: 10

Candidate Starts for ZhongYanYuan\_11:

(Start: 7 @8299 has 72 MA's), (Start: 10 @8305 has 4 MA's), (32, 8407), (43, 8449), (46, 8464), (52, 8512), (54, 8521), (58, 8560), (64, 8590), (66, 8611), (76, 8668), (90, 8728), (91, 8734), (96, 8773),