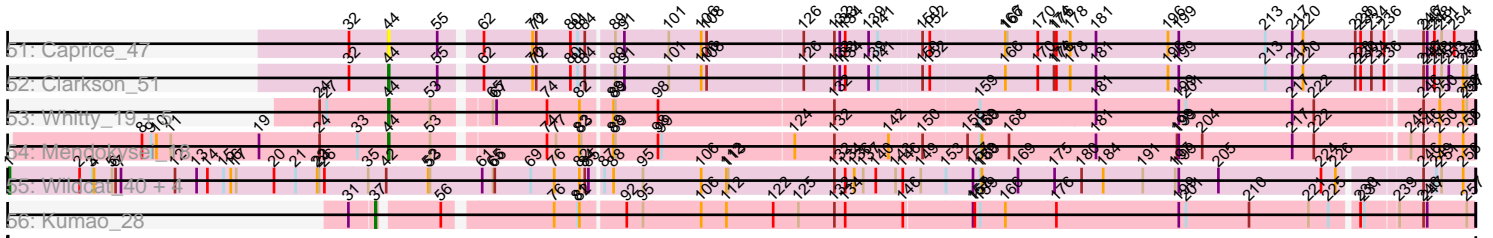




Pham 195463



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 195463 Report

This analysis was run 12/09/24 on database version 580.

Pham number 195463 has 150 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Farewell\_16, Sparky\_16
- Track 2 : Sephiroth\_28, Syleon\_28
- Track 3 : Kudrefre\_27
- Track 4 : Octobien14\_28
- Track 5 : Rabbitrun\_30
- Track 6 : Neville\_28
- Track 7 : Trax\_28
- Track 8 : Wyatt2\_18, Silverleaf\_18, AvadaKedavra\_18, Rose5\_18, Tyson\_18, UPIE\_18, Halena\_18, MAckerman\_18, Acquire49\_18
- Track 9 : Appletree2\_18
- Track 10 : LeBron\_18, CicholasNage\_18, Calm\_18, Wamburggrxpress\_18, Zaria\_18
- Track 11 : Enceladus\_18, JoeDirt\_18, DirkDirk\_18, OhShagHennessy\_18
- Track 12 : Bazzle\_18
- Track 13 : Loadrie\_18, BigCheese\_18, Itos\_18, Faith1\_18, MkaliMitinis3\_18, Miley16\_18, DrSeegs\_18, Wigglewiggle\_18, Kahlid\_18, Hafay\_18, Gabriela\_18, Sarshaun\_18, Nicholasp3\_18, Soap141\_18, Winky\_18, BobsGarage\_18, Breezona\_18, Finemlucis\_18, Gardann\_18, Wilder\_18, Netyap\_18
- Track 14 : DanBing\_17, DHan\_18
- Track 15 : LilDestine\_18, Zakai\_18, Crossroads\_18, Vetrix\_18, Rumpelstiltskin\_18
- Track 16 : Archie\_18
- Track 17 : Lewan\_18
- Track 18 : GuuelaD\_18
- Track 19 : Tourach\_18
- Track 20 : Baoshan\_17, ZhongYanYuan\_17
- Track 21 : Claus\_18
- Track 22 : Jubie\_19, Kingsolomon\_19, Snenia\_19, Nicholas\_19, Jobypre\_19, MsGreen\_19, Clautastrophe\_19, Lumos\_19
- Track 23 : Ellson\_19
- Track 24 : Krypton555\_19
- Track 25 : KirDoubleO7\_17
- Track 26 : BourbonZero\_18, LiyuLake\_19
- Track 27 : Finnry\_19, Moostard\_19, Bellis\_19, Samty\_19
- Track 28 : DuncansLeg\_19
- Track 29 : MiniMac\_19, Lolly9\_19, MiniLon\_19
- Track 30 : Whirlwind\_20
- Track 31 : BrainDrainer\_19, Douzhi\_18, Sheng711\_18, PYPDinur\_18
- Track 32 : Douge\_18, FarmResident\_18, Quby\_18

- Track 33 : Chaser\_18
- Track 34 : DyoEdafos\_19
- Track 35 : Bromden\_19
- Track 36 : Baudelaire\_18, Aegeus\_18
- Track 37 : Auspice\_28
- Track 38 : Reindeer\_26
- Track 39 : TyDawg\_28, IPhane7\_28, LilhomieP\_27, Glaske16\_29, Bongo\_28, Skinny\_29, SlimJimmy\_27, PegLeg\_28, Dulcita\_29, Diminimus\_29
- Track 40 : Bricole\_28
- Track 41 : Rey\_32
- Track 42 : GenevaB15\_32
- Track 43 : Aziz\_32
- Track 44 : MrMagoo\_32, GardenSalsa\_32
- Track 45 : Estes\_33
- Track 46 : Nanosmite\_32
- Track 47 : Corazon\_48, FeliMaine\_50, JoieB\_51, Gattaca\_49, MosMoris\_48, Tesla\_49, RedRaider77\_50
- Track 48 : Pringar\_50, Blackbeetle\_50, Huphlepuuff\_52, VasuNzinga\_50, Beelzebub\_54, Poise\_50, LittleLaf\_50, Lilbit\_51
- Track 49 : Marvin\_48
- Track 50 : Raela\_50
- Track 51 : Caprice\_47
- Track 52 : Clarkson\_51
- Track 53 : Whitty\_19, RonRayGun\_19, Bernal13\_19, Nairb\_19, ZenTime222\_19, Ibrahim\_19
- Track 54 : Mendokysei\_18
- Track 55 : Wildcat\_40, Azrael100\_39, MaryV\_40, Cosmo\_40, EniyanLRS\_37
- Track 56 : Kumao\_28

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

The start number called the most often in the published annotations is 34, it was called in 38 of the 127 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_18, AvadaKedavra\_18, Bellis\_19, BourbonZero\_18, BrainDrainer\_19, Bromden\_19, Calm\_18, Chaser\_18, CicholasNage\_18, Clautastrophe\_19, DirkDirk\_18, Douge\_18, Douzhi\_18, DuncansLeg\_19, DyoEdafos\_19, Ellson\_19, Enceladus\_18, FarmResident\_18, Finnry\_19, Halena\_18, Jobypre\_19, JoeDirt\_18, Jubie\_19, Kingsolomon\_19, KirDoubleO7\_17, Krypton555\_19, LeBron\_18, LiyuLake\_19, Lolly9\_19, Lumos\_19, MAckerman\_18, MiniLon\_19, MiniMac\_19, Moostard\_19, MsGreen\_19, Nicholas\_19, OhShagHennessy\_18, PYPDinur\_18, Quby\_18, Rose5\_18, Samty\_19, Sheng711\_18, Silverleaf\_18, Snenia\_19, Tyson\_18, UPIE\_18, Wamburgxpress\_18, Whirlwind\_20, Wyatt2\_18, Zaria\_18,

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

- Appletree2\_18,

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

- Aegeus\_18, Archie\_18, Auspice\_28, Aziz\_32, Azrael100\_39, Baoshan\_17, Baudelaire\_18, Bazzle\_18, Beelzebub\_54, Bernal13\_19, BigCheese\_18, Blackbeetle\_50, BobsGarage\_18, Bongo\_28, Breezona\_18, Bricole\_28, Caprice\_47, Clarkson\_51, Claus\_18, Corazon\_48, Cosmo\_40, Crossroads\_18, DHan\_18, DanBing\_17, Diminimus\_29, DrSeegs\_18, Dulcita\_29, EniyanLRS\_37, Estes\_33, Faith1\_18, Farewell\_16, FeliMaine\_50, Finemlucis\_18, Gabriela\_18, Gardann\_18, GardenSalsa\_32, Gattaca\_49, GenevaB15\_32, Glaske16\_29, GuuelaD\_18, Hafay\_18, Huphlepuuff\_52, IPhane7\_28, Ibrahim\_19, Itos\_18, JoieB\_51, Kahlid\_18, Kudrefre\_27, Kumao\_28, Lewan\_18, LilDestine\_18, Lilbit\_51, LilhomieP\_27, LittleLaf\_50, Loadrie\_18, Marvin\_48, MaryV\_40, Mendokysei\_18, Miley16\_18, MkaliMitinis3\_18, MosMoris\_48, MrMagoo\_32, Nairb\_19, Nanosmite\_32, Netyap\_18, Neville\_28, Nicholasp3\_18, Octobien14\_28, PegLeg\_28, Poise\_50, Pringar\_50, Rabbitrun\_30, Raela\_50, RedRaider77\_50, Reindeer\_26, Rey\_32, RonRayGun\_19, Rumpelstiltskin\_18, Sarshaun\_18, Sephiroth\_28, Skinny\_29, SlimJimmy\_27, Soap141\_18, Sparky\_16, Syleon\_28, Tesla\_49, Tourach\_18, Trax\_28, TyDawg\_28, VasuNzinga\_50, Vetrix\_18, Whitty\_19, Wigglewiggle\_18, Wildcat\_40, Wilder\_18, Winky\_18, Zakai\_18, ZenTime222\_19, ZhongYanYuan\_17,

### Summary by start number:

#### Start 1:

- Found in 5 of 150 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 5 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_39 (V), Cosmo\_40 (V), EniyanLRS\_37 (V), MaryV\_40 (V), Wildcat\_40 (V),

#### Start 25:

- Found in 19 of 150 ( 12.7% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 5.3% of time when present
- Phage (with cluster) where this start called: Appletree2\_18 (L1),

#### Start 31:

- Found in 20 of 150 ( 13.3% ) of genes in pham
- Manual Annotations of this start: 3 of 127
- Called 15.0% of time when present
- Phage (with cluster) where this start called: GardenSalsa\_32 (M2), GenevaB15\_32 (M2), MrMagoo\_32 (M2),

#### Start 33:

- Found in 22 of 150 ( 14.7% ) of genes in pham
- Manual Annotations of this start: 4 of 127
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Aegeus\_18 (L5), Auspice\_28 (M1), Baudelaire\_18 (L5), Rey\_32 (M2),

#### Start 34:

- Found in 51 of 150 ( 34.0% ) of genes in pham
- Manual Annotations of this start: 38 of 127
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_18 (L1), AvadaKedavra\_18 (L1), Bellis\_19 (L3), BourbonZero\_18 (L3), BrainDrainer\_19 (L4), Bromden\_19 (L4),

Calm\_18 (L1), Chaser\_18 (L4), CicholasNage\_18 (L1), Clautastrophe\_19 (L3), DirkDirk\_18 (L1), Douge\_18 (L4), Douzhi\_18 (L4), DuncansLeg\_19 (L3), DyoEdafos\_19 (L4), Ellson\_19 (L3), Enceladus\_18 (L1), FarmResident\_18 (L4), Finnry\_19 (L3), Halena\_18 (L1), Jobypre\_19 (L3), JoeDirt\_18 (L1), Jubie\_19 (L3), Kingsolomon\_19 (L3), KirDoubleO7\_17 (L3), Krypton555\_19 (L3), LeBron\_18 (L1), LiyuLake\_19 (L3), Lolly9\_19 (L3), Lumos\_19 (L3), MAckerman\_18 (L1), MiniLon\_19 (L3), MiniMac\_19 (L3), Moostard\_19 (L3), MsGreen\_19 (L3), Nicholas\_19 (L3), OhShagHennessy\_18 (L1), PYPDinur\_18 (L4), Quby\_18 (L4), Rose5\_18 (L1), Samty\_19 (L3), Sheng711\_18 (L4), Silverleaf\_18 (L1), Snenia\_19 (L3), Tyson\_18 (L1), UPIE\_18 (L1), Wamburgxpress\_18 (L1), Whirlwind\_20 (L3), Wyatt2\_18 (L1), Zaria\_18 (L1),

Start 37:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_28 (singleton),

Start 38:

- Found in 43 of 150 ( 28.7% ) of genes in pham
- Manual Annotations of this start: 14 of 127
- Called 32.6% of time when present
- Phage (with cluster) where this start called: Aziz\_32 (M2), Bongo\_28 (M1), Bricole\_28 (M1), Diminimus\_29 (M1), Dulcita\_29 (M1), Estes\_33 (M2), Glaske16\_29 (M1), IPhone7\_28 (M1), LilhomieP\_27 (M1), Nanosmite\_32 (M3), PegLeg\_28 (M1), Skinny\_29 (M1), SlimJimmy\_27 (M1), TyDawg\_28 (M1),

Start 39:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reindeer\_26 (M1),

Start 40:

- Found in 7 of 150 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 7 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kudrefre\_27 (DU1), Neville\_28 (DU2), Octobien14\_28 (DU1), Rabbitrun\_30 (DU2), Sephiroth\_28 (DU1), Syleon\_28 (DU1), Trax\_28 (DU2),

Start 41:

- Found in 2 of 150 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Farewell\_16 (AF), Sparky\_16 (AF),

Start 43:

- Found in 36 of 150 ( 24.0% ) of genes in pham
- Manual Annotations of this start: 28 of 127
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archie\_18 (L2), Baoshan\_17 (L2), Bazzle\_18 (L2), BigCheese\_18 (L2), BobsGarage\_18 (L2), Breezona\_18 (L2),

Claus\_18 (L2), Crossroads\_18 (L2), DHan\_18 (L2), DanBing\_17 (L2), DrSeegs\_18 (L2), Faith1\_18 (L2), Finemlucis\_18 (L2), Gabriela\_18 (L2), Gardann\_18 (L2), GuuellaD\_18 (L2), Hafay\_18 (L2), Itos\_18 (L2), Kahlid\_18 (L2), Lewan\_18 (L2), LilDestine\_18 (L2), Loadrie\_18 (L2), Miley16\_18 (L2), MkaliMitinis3\_18 (L2), Netyap\_18 (L2), Nicholasp3\_18 (L2), Rumpelstiltskin\_18 (L2), Sarshaun\_18 (L2), Soap141\_18 (L2), Tourach\_18 (L2), Vetrix\_18 (L2), Wigglewiggles\_18 (L2), Wilder\_18 (L2), Winky\_18 (L2), Zakai\_18 (L2), ZhongYanYuan\_17 (L2),

Start 44:

- Found in 40 of 150 ( 26.7% ) of genes in pham
- Manual Annotations of this start: 23 of 127
- Called 65.0% of time when present
- Phage (with cluster) where this start called: Beelzebub\_54 (S), Bernal13\_19 (T), Blackbeetle\_50 (S), Caprice\_47 (S), Clarkson\_51 (S), Corazon\_48 (S), FeliMaine\_50 (S), Gattaca\_49 (S), Huphlepuuff\_52 (S), Ibrahim\_19 (T), JoieB\_51 (S), Lilbit\_51 (S), LittleLaf\_50 (S), Marvin\_48 (S), Mendokysei\_18 (T), MosMoris\_48 (S), Nairb\_19 (T), Poise\_50 (S), Pringar\_50 (S), Raela\_50 (S), RedRaider77\_50 (S), RonRayGun\_19 (T), Tesla\_49 (S), VasuNzinga\_50 (S), Whitty\_19 (T), ZenTime222\_19 (T),

### Summary by clusters:

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

Info for manual annotations of cluster AF:

- Start number 41 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster DU1:

- Start number 40 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 40 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster L1:

- Start number 25 was manually annotated 1 time for cluster L1.
- Start number 34 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 43 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 34 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 34 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 33 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster M1:

- Start number 33 was manually annotated 1 time for cluster M1.
- Start number 38 was manually annotated 11 times for cluster M1.
- Start number 39 was manually annotated 1 time for cluster M1.

Info for manual annotations of cluster M2:

- Start number 31 was manually annotated 3 times for cluster M2.
- Start number 33 was manually annotated 1 time for cluster M2.
- Start number 38 was manually annotated 2 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 38 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster S:

- Start number 44 was manually annotated 16 times for cluster S.

Info for manual annotations of cluster T:

- Start number 44 was manually annotated 7 times for cluster T.

Info for manual annotations of cluster V:

- Start number 1 was manually annotated 5 times for cluster V.

### **Gene Information:**

Gene: Acquire49\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for Acquire49\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: Aegeus\_18 Start: 16306, Stop: 18069, Start Num: 33

Candidate Starts for Aegeus\_18:

(29, 16267), (30, 16282), (Start: 33 @16306 has 4 MA's), (Start: 38 @16327 has 14 MA's), (56, 16429), (59, 16444), (63, 16480), (70, 16555), (72, 16561), (74, 16579), (75, 16585), (76, 16591), (95, 16723), (100, 16756), (102, 16768), (104, 16789), (121, 16927), (128, 16996), (129, 17011), (131, 17023), (132, 17035), (133, 17044), (137, 17083), (138, 17089), (141, 17107), (143, 17137), (150, 17179), (159, 17266), (165, 17302), (169, 17329), (171, 17371), (175, 17389), (176, 17392), (177, 17395), (183, 17467), (184, 17470), (191, 17536), (193, 17548), (199, 17596), (205, 17662), (208, 17680), (211, 17722), (213, 17740), (217, 17785), (219, 17791), (230, 17887), (232, 17896), (234, 17905), (242, 17953), (244, 17956), (246, 17983), (248, 18001), (250, 18010), (252, 18022), (254, 18034), (255, 18043), (257, 18055),

Gene: Appletree2\_18 Start: 16636, Stop: 18468, Start Num: 25

Candidate Starts for Appletree2\_18:

(Start: 25 @16636 has 1 MA's), (29, 16657), (30, 16672), (Start: 34 @16699 has 38 MA's), (50, 16792), (58, 16840), (59, 16846), (61, 16873), (63, 16882), (69, 16954), (72, 16963), (75, 16987), (78, 17002), (81, 17032), (100, 17158), (101, 17167), (103, 17188), (105, 17203), (114, 17272), (120, 17308), (121, 17329), (128, 17398), (132, 17437), (150, 17575), (152, 17587), (159, 17662), (161, 17668), (163, 17686), (169, 17725), (170, 17758), (171, 17767), (173, 17776), (175, 17785), (187, 17908), (193, 17944), (199, 17992), (201, 18004), (205, 18058), (214, 18154), (215, 18172), (216,



18178), (217, 18181), (222, 18214), (225, 18238), (234, 18301), (240, 18343), (246, 18382), (248, 18400), (252, 18421), (255, 18442),

Gene: Archie\_18 Start: 17205, Stop: 18938, Start Num: 43

Candidate Starts for Archie\_18:

(Start: 43 @17205 has 28 MA's), (53, 17274), (69, 17415), (70, 17418), (78, 17463), (82, 17496), (84, 17505), (88, 17541), (96, 17595), (100, 17622), (102, 17634), (106, 17685), (107, 17691), (111, 17724), (129, 17877), (132, 17901), (133, 17910), (138, 17955), (144, 18006), (150, 18048), (164, 18168), (170, 18231), (175, 18258), (180, 18303), (184, 18339), (195, 18438), (197, 18459), (199, 18465), (201, 18477), (206, 18540), (214, 18627), (217, 18654), (226, 18723), (227, 18738), (234, 18774), (246, 18852), (248, 18870),

Gene: Auspice\_28 Start: 22341, Stop: 24104, Start Num: 33

Candidate Starts for Auspice\_28:

(18, 22146), (Start: 31 @22326 has 3 MA's), (Start: 33 @22341 has 4 MA's), (Start: 38 @22368 has 14 MA's), (Start: 44 @22383 has 23 MA's), (49, 22422), (53, 22452), (54, 22458), (56, 22470), (68, 22575), (69, 22590), (76, 22629), (94, 22752), (95, 22761), (106, 22857), (112, 22899), (113, 22902), (132, 23079), (146, 23190), (150, 23217), (156, 23289), (157, 23298), (158, 23301), (160, 23313), (175, 23433), (176, 23436), (180, 23478), (182, 23508), (184, 23514), (197, 23634), (199, 23640), (243, 23994), (246, 24021), (248, 24039), (250, 24048),

Gene: AvadaKedavra\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for AvadaKedavra\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: Aziz\_32 Start: 22957, Stop: 24696, Start Num: 38

Candidate Starts for Aziz\_32:

(Start: 31 @22915 has 3 MA's), (Start: 33 @22930 has 4 MA's), (Start: 38 @22957 has 14 MA's), (51, 23035), (53, 23041), (56, 23059), (76, 23221), (78, 23230), (79, 23245), (93, 23332), (94, 23344), (95, 23353), (106, 23449), (109, 23461), (112, 23491), (113, 23494), (118, 23527), (130, 23656), (132, 23671), (134, 23689), (156, 23881), (157, 23890), (159, 23902), (161, 23908), (171, 24007), (173, 24016), (175, 24025), (181, 24094), (191, 24172), (194, 24187), (197, 24226), (199, 24232), (243, 24586), (246, 24613), (247, 24619),

Gene: Azrael100\_39 Start: 25297, Stop: 27681, Start Num: 1

Candidate Starts for Azrael100\_39:

(Start: 1 @25297 has 5 MA's), (2, 25414), (3, 25435), (4, 25438), (5, 25468), (6, 25474), (7, 25483), (12, 25573), (13, 25609), (14, 25627), (15, 25654), (16, 25666), (17, 25675), (20, 25738), (21, 25774), (22, 25810), (23, 25813), (26, 25819), (35, 25891), (42, 25921), (52, 25990), (53, 25993), (61, 26080), (65, 26098), (66, 26101), (69, 26161), (76, 26200), (82, 26242), (84, 26251), (85, 26257), (87, 26272), (88, 26287), (95, 26335), (106, 26431), (112, 26473), (113, 26476), (132, 26653), (134, 26671), (136, 26686), (137, 26701), (140, 26722), (143, 26755), (146, 26764), (149, 26794), (153, 26833), (157, 26875), (159, 26887), (160, 26890), (169, 26950), (175, 27010), (180, 27055), (184, 27091), (191, 27157), (197, 27211), (199, 27217), (205, 27283), (224, 27454), (226, 27478), (246, 27598), (249, 27619), (251, 27628), (256, 27664),

Gene: Baoshan\_17 Start: 16814, Stop: 18547, Start Num: 43

Candidate Starts for Baoshan\_17:

(Start: 43 @16814 has 28 MA's), (53, 16883), (69, 17024), (70, 17027), (75, 17057), (78, 17072), (82, 17105), (88, 17150), (96, 17204), (100, 17231), (102, 17243), (106, 17294), (107, 17300), (111, 17333), (129, 17486), (132, 17510), (133, 17519), (138, 17564), (144, 17615), (155, 17720), (164, 17777), (170, 17840), (180, 17912), (184, 17948), (195, 18047), (197, 18068), (199, 18074), (201, 18086), (206, 18149), (214, 18236), (217, 18263), (222, 18296), (227, 18347), (229, 18359), (234, 18383), (246, 18461), (248, 18479),

Gene: Baudelaire\_18 Start: 16306, Stop: 18069, Start Num: 33

Candidate Starts for Baudelaire\_18:

(29, 16267), (30, 16282), (Start: 33 @16306 has 4 MA's), (Start: 38 @16327 has 14 MA's), (56, 16429), (59, 16444), (63, 16480), (70, 16555), (72, 16561), (74, 16579), (75, 16585), (76, 16591), (95, 16723), (100, 16756), (102, 16768), (104, 16789), (121, 16927), (128, 16996), (129, 17011), (131, 17023), (132, 17035), (133, 17044), (137, 17083), (138, 17089), (141, 17107), (143, 17137), (150, 17179), (159, 17266), (165, 17302), (169, 17329), (171, 17371), (175, 17389), (176, 17392), (177, 17395), (183, 17467), (184, 17470), (191, 17536), (193, 17548), (199, 17596), (205, 17662), (208, 17680), (211, 17722), (213, 17740), (217, 17785), (219, 17791), (230, 17887), (232, 17896), (234, 17905), (242, 17953), (244, 17956), (246, 17983), (248, 18001), (250, 18010), (252, 18022), (254, 18034), (255, 18043), (257, 18055),

Gene: Bazzle\_18 Start: 16954, Stop: 18687, Start Num: 43

Candidate Starts for Bazzle\_18:

(Start: 43 @16954 has 28 MA's), (53, 17023), (69, 17164), (70, 17167), (78, 17212), (82, 17245), (88, 17290), (96, 17344), (100, 17371), (102, 17383), (106, 17434), (107, 17440), (111, 17473), (129, 17626), (132, 17650), (133, 17659), (136, 17683), (137, 17698), (138, 17704), (144, 17755), (150, 17797), (164, 17917), (170, 17980), (180, 18052), (184, 18088), (193, 18166), (195, 18187), (197, 18208), (199, 18214), (201, 18226), (206, 18289), (214, 18376), (217, 18403), (222, 18436), (226, 18472), (227, 18487), (234, 18523), (246, 18601), (248, 18619),

Gene: Beelzebub\_54 Start: 27672, Stop: 29384, Start Num: 44

Candidate Starts for Beelzebub\_54:

(32, 27609), (Start: 44 @27672 has 23 MA's), (55, 27753), (62, 27810), (70, 27891), (72, 27897), (80, 27954), (81, 27966), (84, 27978), (89, 28017), (91, 28032), (101, 28101), (106, 28155), (108, 28164), (126, 28320), (132, 28368), (133, 28377), (134, 28386), (139, 28425), (141, 28440), (150, 28503), (152, 28515), (166, 28632), (167, 28635), (170, 28686), (174, 28713), (176, 28716), (178, 28737), (181, 28779), (196, 28899), (199, 28917), (213, 29061), (217, 29106), (220, 29124), (228, 29208), (230, 29217), (234, 29235), (236, 29256), (246, 29301), (247, 29307), (248, 29319), (251, 29331), (253, 29343), (256, 29367), (257, 29373),

Gene: Bellis\_19 Start: 17375, Stop: 19138, Start Num: 34

Candidate Starts for Bellis\_19:

(Start: 34 @17375 has 38 MA's), (Start: 38 @17402 has 14 MA's), (50, 17465), (58, 17513), (59, 17519), (63, 17555), (70, 17630), (74, 17654), (75, 17660), (84, 17717), (100, 17831), (102, 17843), (116, 17954), (131, 18098), (132, 18110), (136, 18143), (137, 18158), (159, 18332), (161, 18338), (169, 18395), (171, 18437), (173, 18446), (176, 18458), (183, 18533), (191, 18602), (193, 18614), (199, 18662), (205, 18728), (213, 18806), (217, 18851), (225, 18908), (234, 18971), (237, 19007), (242, 19022), (246, 19052), (247, 19058), (248, 19070), (250, 19079), (252, 19091),

Gene: Bernal13\_19 Start: 16980, Stop: 18686, Start Num: 44

Candidate Starts for Bernal13\_19:

(24, 16872), (27, 16884), (Start: 44 @16980 has 23 MA's), (53, 17046), (65, 17121), (67, 17127), (74, 17211), (82, 17265), (88, 17310), (89, 17313), (98, 17379), (132, 17664), (159, 17886), (181, 18075),

(199, 18213), (201, 18225), (217, 18402), (222, 18438), (246, 18603), (250, 18630), (256, 18669), (257, 18675),

Gene: BigCheese\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for BigCheese\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Blackbeetle\_50 Start: 26718, Stop: 28430, Start Num: 44

Candidate Starts for Blackbeetle\_50:

(32, 26655), (Start: 44 @26718 has 23 MA's), (55, 26799), (62, 26856), (70, 26937), (72, 26943), (80, 27000), (81, 27012), (84, 27024), (89, 27063), (91, 27078), (101, 27147), (106, 27201), (108, 27210), (126, 27366), (132, 27414), (133, 27423), (134, 27432), (139, 27471), (141, 27486), (150, 27549), (152, 27561), (166, 27678), (167, 27681), (170, 27732), (174, 27759), (176, 27762), (178, 27783), (181, 27825), (196, 27945), (199, 27963), (213, 28107), (217, 28152), (220, 28170), (228, 28254), (230, 28263), (234, 28281), (236, 28302), (246, 28347), (247, 28353), (248, 28365), (251, 28377), (253, 28389), (256, 28413), (257, 28419),

Gene: BobsGarage\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for BobsGarage\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Bongo\_28 Start: 22368, Stop: 24104, Start Num: 38

Candidate Starts for Bongo\_28:

(18, 22146), (Start: 31 @22326 has 3 MA's), (Start: 33 @22341 has 4 MA's), (Start: 38 @22368 has 14 MA's), (Start: 44 @22383 has 23 MA's), (49, 22422), (53, 22452), (54, 22458), (56, 22470), (68, 22575), (69, 22590), (76, 22629), (94, 22752), (95, 22761), (106, 22857), (112, 22899), (113, 22902), (132, 23079), (146, 23190), (150, 23217), (156, 23289), (157, 23298), (158, 23301), (160, 23313), (175, 23433), (176, 23436), (180, 23478), (182, 23508), (184, 23514), (197, 23634), (199, 23640), (243, 23994), (246, 24021), (248, 24039), (250, 24048),

Gene: BourbonZero\_18 Start: 17371, Stop: 19134, Start Num: 34

Candidate Starts for BourbonZero\_18:

(Start: 34 @17371 has 38 MA's), (Start: 38 @17398 has 14 MA's), (50, 17461), (58, 17509), (59, 17515), (63, 17551), (70, 17626), (84, 17713), (100, 17827), (102, 17839), (116, 17950), (131, 18094), (132, 18106), (134, 18124), (136, 18139), (159, 18328), (161, 18334), (169, 18391), (171, 18433), (173, 18442), (176, 18454), (183, 18529), (191, 18598), (193, 18610), (199, 18658), (205, 18724), (213, 18802), (217, 18847), (224, 18892), (225, 18904), (234, 18967), (237, 19003), (242, 19018), (246, 19048), (247, 19054), (248, 19066), (250, 19075), (252, 19087),

Gene: BrainDrainer\_19 Start: 16711, Stop: 18474, Start Num: 34

Candidate Starts for BrainDrainer\_19:

(Start: 34 @16711 has 38 MA's), (59, 16852), (69, 16960), (70, 16963), (99, 17161), (100, 17164), (102, 17176), (104, 17197), (118, 17305), (121, 17335), (132, 17443), (136, 17476), (137, 17491),

(140, 17512), (159, 17668), (169, 17731), (171, 17773), (173, 17782), (176, 17794), (180, 17836), (184, 17872), (199, 17998), (203, 18031), (212, 18133), (213, 18142), (214, 18160), (217, 18187), (225, 18244), (229, 18283), (234, 18307), (237, 18343), (242, 18358), (246, 18388), (250, 18415), (252, 18427), (255, 18448),

Gene: Breezona\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Breezona\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Bricole\_28 Start: 22354, Stop: 24090, Start Num: 38

Candidate Starts for Bricole\_28:

(18, 22132), (Start: 31 @22312 has 3 MA's), (Start: 33 @22327 has 4 MA's), (Start: 38 @22354 has 14 MA's), (Start: 44 @22369 has 23 MA's), (49, 22408), (53, 22438), (54, 22444), (56, 22456), (68, 22561), (69, 22576), (76, 22615), (94, 22738), (95, 22747), (106, 22843), (112, 22885), (113, 22888), (115, 22900), (132, 23065), (146, 23176), (150, 23203), (156, 23275), (157, 23284), (158, 23287), (160, 23299), (175, 23419), (176, 23422), (180, 23464), (182, 23494), (184, 23500), (197, 23620), (199, 23626), (243, 23980), (246, 24007), (248, 24025), (250, 24034),

Gene: Bromden\_19 Start: 17040, Stop: 18803, Start Num: 34

Candidate Starts for Bromden\_19:

(Start: 34 @17040 has 38 MA's), (59, 17181), (62, 17211), (69, 17289), (70, 17292), (99, 17490), (100, 17493), (102, 17505), (118, 17634), (121, 17664), (123, 17685), (132, 17772), (133, 17781), (137, 17820), (140, 17841), (159, 17997), (169, 18060), (171, 18102), (173, 18111), (176, 18123), (184, 18201), (199, 18327), (203, 18360), (212, 18462), (213, 18471), (214, 18489), (217, 18516), (225, 18573), (234, 18636), (237, 18672), (242, 18687), (246, 18717), (250, 18744), (252, 18756), (255, 18777),

Gene: Calm\_18 Start: 16760, Stop: 18529, Start Num: 34

Candidate Starts for Calm\_18:

(Start: 25 @16697 has 1 MA's), (29, 16718), (30, 16733), (Start: 34 @16760 has 38 MA's), (50, 16853), (58, 16901), (59, 16907), (61, 16934), (62, 16937), (63, 16943), (69, 17015), (72, 17024), (75, 17048), (78, 17063), (81, 17093), (100, 17219), (101, 17228), (103, 17249), (105, 17264), (114, 17333), (120, 17369), (121, 17390), (128, 17459), (132, 17498), (150, 17636), (152, 17648), (159, 17723), (161, 17729), (163, 17747), (169, 17786), (170, 17819), (171, 17828), (173, 17837), (175, 17846), (187, 17969), (193, 18005), (199, 18053), (201, 18065), (205, 18119), (214, 18215), (215, 18233), (216, 18239), (217, 18242), (222, 18275), (225, 18299), (234, 18362), (240, 18404), (246, 18443), (248, 18461), (252, 18482), (255, 18503),

Gene: Caprice\_47 Start: 26788, Stop: 28500, Start Num: 44

Candidate Starts for Caprice\_47:

(32, 26725), (Start: 44 @26788 has 23 MA's), (55, 26869), (62, 26926), (70, 27007), (72, 27013), (80, 27070), (81, 27082), (84, 27094), (89, 27133), (91, 27148), (101, 27217), (106, 27271), (108, 27280), (126, 27436), (132, 27484), (133, 27493), (134, 27502), (139, 27541), (141, 27556), (150, 27619), (152, 27631), (166, 27748), (167, 27751), (170, 27802), (174, 27829), (176, 27832), (178, 27853), (181, 27895), (196, 28015), (199, 28033), (213, 28177), (217, 28222), (220, 28240), (228, 28324), (230, 28333), (234, 28351), (236, 28372), (246, 28417), (247, 28423), (248, 28435), (251, 28447), (254, 28468),

Gene: Chaser\_18 Start: 16640, Stop: 18403, Start Num: 34

Candidate Starts for Chaser\_18:

(Start: 34 @16640 has 38 MA's), (59, 16781), (69, 16889), (70, 16892), (99, 17090), (100, 17093), (102, 17105), (104, 17126), (118, 17234), (121, 17264), (132, 17372), (137, 17420), (140, 17441), (159, 17597), (169, 17660), (171, 17702), (173, 17711), (176, 17723), (180, 17765), (199, 17927), (203, 17960), (212, 18062), (213, 18071), (217, 18116), (225, 18173), (229, 18212), (234, 18236), (237, 18272), (242, 18287), (246, 18317), (250, 18344), (252, 18356), (255, 18377),

Gene: CicholasNage\_18 Start: 16748, Stop: 18517, Start Num: 34

Candidate Starts for CicholasNage\_18:

(Start: 25 @16685 has 1 MA's), (29, 16706), (30, 16721), (Start: 34 @16748 has 38 MA's), (50, 16841), (58, 16889), (59, 16895), (61, 16922), (62, 16925), (63, 16931), (69, 17003), (72, 17012), (75, 17036), (78, 17051), (81, 17081), (100, 17207), (101, 17216), (103, 17237), (105, 17252), (114, 17321), (120, 17357), (121, 17378), (128, 17447), (132, 17486), (150, 17624), (152, 17636), (159, 17711), (161, 17717), (163, 17735), (169, 17774), (170, 17807), (171, 17816), (173, 17825), (175, 17834), (187, 17957), (193, 17993), (199, 18041), (201, 18053), (205, 18107), (214, 18203), (215, 18221), (216, 18227), (217, 18230), (222, 18263), (225, 18287), (234, 18350), (240, 18392), (246, 18431), (248, 18449), (252, 18470), (255, 18491),

Gene: Clarkson\_51 Start: 27400, Stop: 29112, Start Num: 44

Candidate Starts for Clarkson\_51:

(32, 27337), (Start: 44 @27400 has 23 MA's), (55, 27481), (62, 27538), (70, 27619), (72, 27625), (80, 27682), (81, 27694), (84, 27706), (89, 27745), (91, 27760), (101, 27829), (106, 27883), (108, 27892), (126, 28048), (132, 28096), (133, 28105), (134, 28114), (139, 28153), (141, 28168), (150, 28231), (152, 28243), (166, 28360), (170, 28414), (174, 28441), (176, 28444), (178, 28465), (181, 28507), (196, 28627), (199, 28645), (213, 28789), (217, 28834), (220, 28852), (228, 28936), (230, 28945), (234, 28963), (236, 28984), (246, 29029), (247, 29035), (248, 29047), (251, 29059), (253, 29071), (256, 29095), (257, 29101),

Gene: Claus\_18 Start: 16970, Stop: 18703, Start Num: 43

Candidate Starts for Claus\_18:

(Start: 43 @16970 has 28 MA's), (53, 17039), (69, 17180), (70, 17183), (75, 17213), (78, 17228), (82, 17261), (88, 17306), (96, 17360), (100, 17387), (102, 17399), (106, 17450), (107, 17456), (111, 17489), (129, 17642), (132, 17666), (133, 17675), (138, 17720), (144, 17771), (164, 17933), (170, 17996), (180, 18068), (184, 18104), (195, 18203), (197, 18224), (199, 18230), (201, 18242), (206, 18305), (214, 18392), (217, 18419), (222, 18452), (226, 18488), (227, 18503), (229, 18515), (234, 18539), (246, 18617), (248, 18635),

Gene: Clautastrophe\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for Clautastrophe\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (74, 17652), (75, 17658), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (191, 18600), (193, 18612), (199, 18660), (205, 18726), (213, 18804), (217, 18849), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056), (248, 19068), (250, 19077), (252, 19089),

Gene: Corazon\_48 Start: 27353, Stop: 29065, Start Num: 44

Candidate Starts for Corazon\_48:

(32, 27290), (Start: 44 @27353 has 23 MA's), (55, 27434), (62, 27491), (70, 27572), (72, 27578), (80, 27635), (81, 27647), (84, 27659), (89, 27698), (91, 27713), (101, 27782), (106, 27836), (108, 27845), (126, 28001), (132, 28049), (133, 28058), (134, 28067), (139, 28106), (141, 28121), (150, 28184), (152, 28196), (166, 28313), (167, 28316), (170, 28367), (174, 28394), (176, 28397), (178, 28418),

(181, 28460), (196, 28580), (199, 28598), (213, 28742), (217, 28787), (220, 28805), (228, 28889), (230, 28898), (234, 28916), (236, 28937), (246, 28982), (247, 28988), (248, 29000), (251, 29012), (254, 29033), (256, 29048), (257, 29054),

Gene: Cosmo\_40 Start: 25304, Stop: 27688, Start Num: 1

Candidate Starts for Cosmo\_40:

(Start: 1 @25304 has 5 MA's), (2, 25421), (3, 25442), (4, 25445), (5, 25475), (6, 25481), (7, 25490), (12, 25580), (13, 25616), (14, 25634), (15, 25661), (16, 25673), (17, 25682), (20, 25745), (21, 25781), (22, 25817), (23, 25820), (26, 25826), (35, 25898), (42, 25928), (52, 25997), (53, 26000), (61, 26087), (65, 26105), (66, 26108), (69, 26168), (76, 26207), (82, 26249), (84, 26258), (85, 26264), (87, 26279), (88, 26294), (95, 26342), (106, 26438), (112, 26480), (113, 26483), (132, 26660), (134, 26678), (136, 26693), (137, 26708), (140, 26729), (143, 26762), (146, 26771), (149, 26801), (153, 26840), (157, 26882), (159, 26894), (160, 26897), (169, 26957), (175, 27017), (180, 27062), (184, 27098), (191, 27164), (197, 27218), (199, 27224), (205, 27290), (224, 27461), (226, 27485), (246, 27605), (249, 27626), (251, 27635), (256, 27671),

Gene: Crossroads\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Crossroads\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (211, 18375), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: DHan\_18 Start: 16906, Stop: 18639, Start Num: 43

Candidate Starts for DHan\_18:

(Start: 43 @16906 has 28 MA's), (53, 16975), (69, 17116), (70, 17119), (75, 17149), (78, 17164), (82, 17197), (88, 17242), (96, 17296), (100, 17323), (102, 17335), (106, 17386), (107, 17392), (111, 17425), (129, 17578), (132, 17602), (133, 17611), (138, 17656), (144, 17707), (155, 17812), (164, 17869), (170, 17932), (180, 18004), (184, 18040), (195, 18139), (197, 18160), (199, 18166), (201, 18178), (206, 18241), (214, 18328), (217, 18355), (222, 18388), (226, 18424), (227, 18439), (229, 18451), (234, 18475), (246, 18553), (248, 18571),

Gene: DanBing\_17 Start: 16810, Stop: 18543, Start Num: 43

Candidate Starts for DanBing\_17:

(Start: 43 @16810 has 28 MA's), (53, 16879), (69, 17020), (70, 17023), (75, 17053), (78, 17068), (82, 17101), (88, 17146), (96, 17200), (100, 17227), (102, 17239), (106, 17290), (107, 17296), (111, 17329), (129, 17482), (132, 17506), (133, 17515), (138, 17560), (144, 17611), (155, 17716), (164, 17773), (170, 17836), (180, 17908), (184, 17944), (195, 18043), (197, 18064), (199, 18070), (201, 18082), (206, 18145), (214, 18232), (217, 18259), (222, 18292), (226, 18328), (227, 18343), (229, 18355), (234, 18379), (246, 18457), (248, 18475),

Gene: Diminimus\_29 Start: 22367, Stop: 24103, Start Num: 38

Candidate Starts for Diminimus\_29:

(18, 22145), (Start: 31 @22325 has 3 MA's), (Start: 33 @22340 has 4 MA's), (Start: 38 @22367 has 14 MA's), (Start: 44 @22382 has 23 MA's), (49, 22421), (53, 22451), (54, 22457), (56, 22469), (68, 22574), (69, 22589), (76, 22628), (94, 22751), (95, 22760), (106, 22856), (112, 22898), (113, 22901), (132, 23078), (146, 23189), (150, 23216), (156, 23288), (157, 23297), (158, 23300), (160, 23312), (175, 23432), (176, 23435), (180, 23477), (182, 23507), (184, 23513), (197, 23633), (199, 23639), (243, 23993), (246, 24020), (248, 24038), (250, 24047),

Gene: DirkDirk\_18 Start: 16739, Stop: 18508, Start Num: 34

Candidate Starts for DirkDirk\_18:

(Start: 25 @16676 has 1 MA's), (29, 16697), (30, 16712), (Start: 34 @16739 has 38 MA's), (50, 16832), (58, 16880), (59, 16886), (61, 16913), (63, 16922), (69, 16994), (72, 17003), (75, 17027), (78, 17042), (81, 17072), (100, 17198), (101, 17207), (103, 17228), (105, 17243), (114, 17312), (120, 17348), (121, 17369), (128, 17438), (132, 17477), (150, 17615), (152, 17627), (159, 17702), (161, 17708), (163, 17726), (169, 17765), (170, 17798), (171, 17807), (173, 17816), (175, 17825), (187, 17948), (193, 17984), (199, 18032), (201, 18044), (205, 18098), (214, 18194), (215, 18212), (216, 18218), (217, 18221), (222, 18254), (225, 18278), (234, 18341), (240, 18383), (246, 18422), (248, 18440), (252, 18461), (255, 18482),

Gene: Douge\_18 Start: 16581, Stop: 18344, Start Num: 34

Candidate Starts for Douge\_18:

(Start: 34 @16581 has 38 MA's), (59, 16722), (69, 16830), (70, 16833), (99, 17031), (100, 17034), (102, 17046), (104, 17067), (118, 17175), (121, 17205), (132, 17313), (136, 17346), (137, 17361), (140, 17382), (159, 17538), (169, 17601), (171, 17643), (173, 17652), (180, 17706), (184, 17742), (199, 17868), (203, 17901), (212, 18003), (213, 18012), (214, 18030), (217, 18057), (225, 18114), (229, 18153), (234, 18177), (237, 18213), (242, 18228), (246, 18258), (250, 18285), (252, 18297), (255, 18318),

Gene: Douzhi\_18 Start: 16572, Stop: 18335, Start Num: 34

Candidate Starts for Douzhi\_18:

(Start: 34 @16572 has 38 MA's), (59, 16713), (69, 16821), (70, 16824), (99, 17022), (100, 17025), (102, 17037), (104, 17058), (118, 17166), (121, 17196), (132, 17304), (136, 17337), (137, 17352), (140, 17373), (159, 17529), (169, 17592), (171, 17634), (173, 17643), (176, 17655), (180, 17697), (184, 17733), (199, 17859), (203, 17892), (212, 17994), (213, 18003), (214, 18021), (217, 18048), (225, 18105), (229, 18144), (234, 18168), (237, 18204), (242, 18219), (246, 18249), (250, 18276), (252, 18288), (255, 18309),

Gene: DrSeegs\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for DrSeegs\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Dulcita\_29 Start: 22367, Stop: 24103, Start Num: 38

Candidate Starts for Dulcita\_29:

(18, 22145), (Start: 31 @22325 has 3 MA's), (Start: 33 @22340 has 4 MA's), (Start: 38 @22367 has 14 MA's), (Start: 44 @22382 has 23 MA's), (49, 22421), (53, 22451), (54, 22457), (56, 22469), (68, 22574), (69, 22589), (76, 22628), (94, 22751), (95, 22760), (106, 22856), (112, 22898), (113, 22901), (132, 23078), (146, 23189), (150, 23216), (156, 23288), (157, 23297), (158, 23300), (160, 23312), (175, 23432), (176, 23435), (180, 23477), (182, 23507), (184, 23513), (197, 23633), (199, 23639), (243, 23993), (246, 24020), (248, 24038), (250, 24047),

Gene: DuncansLeg\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for DuncansLeg\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (190, 18597), (193, 18612), (199, 18660), (213, 18804), (217, 18849), (224, 18894), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056),

(248, 19068), (250, 19077), (252, 19089),

Gene: DyoEdafos\_19 Start: 16789, Stop: 18552, Start Num: 34

Candidate Starts for DyoEdafos\_19:

(Start: 34 @16789 has 38 MA's), (59, 16930), (62, 16960), (69, 17038), (70, 17041), (99, 17239), (100, 17242), (102, 17254), (104, 17275), (118, 17383), (121, 17413), (132, 17521), (133, 17530), (136, 17554), (137, 17569), (140, 17590), (159, 17746), (169, 17809), (171, 17851), (173, 17860), (176, 17872), (184, 17950), (199, 18076), (200, 18085), (203, 18109), (212, 18211), (213, 18220), (214, 18238), (217, 18265), (225, 18322), (234, 18385), (237, 18421), (242, 18436), (246, 18466), (250, 18493), (252, 18505), (255, 18526),

Gene: Ellson\_19 Start: 17381, Stop: 19144, Start Num: 34

Candidate Starts for Ellson\_19:

(Start: 34 @17381 has 38 MA's), (Start: 38 @17408 has 14 MA's), (50, 17471), (58, 17519), (59, 17525), (63, 17561), (70, 17636), (84, 17723), (100, 17837), (102, 17849), (116, 17960), (131, 18104), (132, 18116), (134, 18134), (136, 18149), (159, 18338), (169, 18401), (171, 18443), (173, 18452), (176, 18464), (183, 18539), (191, 18608), (193, 18620), (199, 18668), (205, 18734), (213, 18812), (217, 18857), (224, 18902), (225, 18914), (234, 18977), (237, 19013), (242, 19028), (246, 19058), (247, 19064), (248, 19076), (250, 19085), (252, 19097),

Gene: Enceladus\_18 Start: 16740, Stop: 18509, Start Num: 34

Candidate Starts for Enceladus\_18:

(Start: 25 @16677 has 1 MA's), (29, 16698), (30, 16713), (Start: 34 @16740 has 38 MA's), (50, 16833), (58, 16881), (59, 16887), (61, 16914), (63, 16923), (69, 16995), (72, 17004), (75, 17028), (78, 17043), (81, 17073), (100, 17199), (101, 17208), (103, 17229), (105, 17244), (114, 17313), (120, 17349), (121, 17370), (128, 17439), (132, 17478), (150, 17616), (152, 17628), (159, 17703), (161, 17709), (163, 17727), (169, 17766), (170, 17799), (171, 17808), (173, 17817), (175, 17826), (187, 17949), (193, 17985), (199, 18033), (201, 18045), (205, 18099), (214, 18195), (215, 18213), (216, 18219), (217, 18222), (222, 18255), (225, 18279), (234, 18342), (240, 18384), (246, 18423), (248, 18441), (252, 18462), (255, 18483),

Gene: EniyanLRS\_37 Start: 25002, Stop: 27386, Start Num: 1

Candidate Starts for EniyanLRS\_37:

(Start: 1 @25002 has 5 MA's), (2, 25119), (3, 25140), (4, 25143), (5, 25173), (6, 25179), (7, 25188), (12, 25278), (13, 25314), (14, 25332), (15, 25359), (16, 25371), (17, 25380), (20, 25443), (21, 25479), (22, 25515), (23, 25518), (26, 25524), (35, 25596), (42, 25626), (52, 25695), (53, 25698), (61, 25785), (65, 25803), (66, 25806), (69, 25866), (76, 25905), (82, 25947), (84, 25956), (85, 25962), (87, 25977), (88, 25992), (95, 26040), (106, 26136), (112, 26178), (113, 26181), (132, 26358), (134, 26376), (136, 26391), (137, 26406), (140, 26427), (143, 26460), (146, 26469), (149, 26499), (153, 26538), (157, 26580), (159, 26592), (160, 26595), (169, 26655), (175, 26715), (180, 26760), (184, 26796), (191, 26862), (197, 26916), (199, 26922), (205, 26988), (224, 27159), (226, 27183), (246, 27303), (249, 27324), (251, 27333), (256, 27369),

Gene: Estes\_33 Start: 23088, Stop: 24827, Start Num: 38

Candidate Starts for Estes\_33:

(Start: 31 @23046 has 3 MA's), (Start: 33 @23061 has 4 MA's), (Start: 38 @23088 has 14 MA's), (51, 23166), (53, 23172), (56, 23190), (76, 23352), (78, 23361), (79, 23376), (93, 23463), (94, 23475), (95, 23484), (101, 23526), (106, 23580), (109, 23592), (112, 23622), (113, 23625), (118, 23658), (130, 23787), (132, 23802), (134, 23820), (156, 24012), (157, 24021), (159, 24033), (161, 24039), (171, 24138), (173, 24147), (175, 24156), (179, 24186), (181, 24225), (191, 24303), (194, 24318), (197, 24357), (199, 24363), (243, 24717), (246, 24744), (247, 24750), (254, 24795),

Gene: Faith1\_18 Start: 16989, Stop: 18722, Start Num: 43



Candidate Starts for Faith1\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Farewell\_16 Start: 16143, Stop: 17858, Start Num: 41

Candidate Starts for Farewell\_16:

(Start: 41 @16143 has 2 MA's), (45, 16152), (62, 16278), (69, 16356), (71, 16362), (72, 16365), (77, 16398), (84, 16446), (85, 16452), (94, 16518), (98, 16551), (101, 16569), (112, 16665), (125, 16779), (132, 16836), (134, 16854), (138, 16890), (150, 16971), (151, 16980), (159, 17058), (165, 17094), (176, 17184), (184, 17259), (199, 17385), (209, 17475), (218, 17577), (234, 17706), (244, 17748), (246, 17775), (250, 17802), (252, 17814), (253, 17817), (256, 17841),

Gene: FarmResident\_18 Start: 16625, Stop: 18388, Start Num: 34

Candidate Starts for FarmResident\_18:

(Start: 34 @16625 has 38 MA's), (59, 16766), (69, 16874), (70, 16877), (99, 17075), (100, 17078), (102, 17090), (104, 17111), (118, 17219), (121, 17249), (132, 17357), (136, 17390), (137, 17405), (140, 17426), (159, 17582), (169, 17645), (171, 17687), (173, 17696), (180, 17750), (184, 17786), (199, 17912), (203, 17945), (212, 18047), (213, 18056), (214, 18074), (217, 18101), (225, 18158), (229, 18197), (234, 18221), (237, 18257), (242, 18272), (246, 18302), (250, 18329), (252, 18341), (255, 18362),

Gene: FeliMaine\_50 Start: 27401, Stop: 29113, Start Num: 44

Candidate Starts for FeliMaine\_50:

(32, 27338), (Start: 44 @27401 has 23 MA's), (55, 27482), (62, 27539), (70, 27620), (72, 27626), (80, 27683), (81, 27695), (84, 27707), (89, 27746), (91, 27761), (101, 27830), (106, 27884), (108, 27893), (126, 28049), (132, 28097), (133, 28106), (134, 28115), (139, 28154), (141, 28169), (150, 28232), (152, 28244), (166, 28361), (167, 28364), (170, 28415), (174, 28442), (176, 28445), (178, 28466), (181, 28508), (196, 28628), (199, 28646), (213, 28790), (217, 28835), (220, 28853), (228, 28937), (230, 28946), (234, 28964), (236, 28985), (246, 29030), (247, 29036), (248, 29048), (251, 29060), (254, 29081), (256, 29096), (257, 29102),

Gene: Finemlucis\_18 Start: 16995, Stop: 18728, Start Num: 43

Candidate Starts for Finemlucis\_18:

(Start: 43 @16995 has 28 MA's), (53, 17064), (69, 17205), (70, 17208), (78, 17253), (82, 17286), (84, 17295), (88, 17331), (96, 17385), (100, 17412), (102, 17424), (106, 17475), (107, 17481), (111, 17514), (129, 17667), (132, 17691), (133, 17700), (138, 17745), (140, 17760), (150, 17838), (164, 17958), (170, 18021), (180, 18093), (184, 18129), (197, 18249), (199, 18255), (201, 18267), (206, 18330), (214, 18417), (217, 18444), (226, 18513), (227, 18528), (229, 18540), (234, 18564), (246, 18642),

Gene: Finnry\_19 Start: 17377, Stop: 19140, Start Num: 34

Candidate Starts for Finnry\_19:

(Start: 34 @17377 has 38 MA's), (Start: 38 @17404 has 14 MA's), (50, 17467), (58, 17515), (59, 17521), (63, 17557), (70, 17632), (74, 17656), (75, 17662), (84, 17719), (100, 17833), (102, 17845), (116, 17956), (131, 18100), (132, 18112), (136, 18145), (137, 18160), (159, 18334), (161, 18340), (169, 18397), (171, 18439), (173, 18448), (176, 18460), (183, 18535), (191, 18604), (193, 18616), (199, 18664), (205, 18730), (213, 18808), (217, 18853), (225, 18910), (234, 18973), (237, 19009), (242, 19024), (246, 19054), (247, 19060), (248, 19072), (250, 19081), (252, 19093),

Gene: Gabriela\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Gabriela\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Gardann\_18 Start: 16994, Stop: 18727, Start Num: 43

Candidate Starts for Gardann\_18:

(Start: 43 @16994 has 28 MA's), (53, 17063), (69, 17204), (70, 17207), (78, 17252), (82, 17285), (84, 17294), (88, 17330), (96, 17384), (100, 17411), (102, 17423), (106, 17474), (107, 17480), (111, 17513), (129, 17666), (132, 17690), (133, 17699), (138, 17744), (140, 17759), (150, 17837), (164, 17957), (170, 18020), (180, 18092), (184, 18128), (197, 18248), (199, 18254), (201, 18266), (206, 18329), (214, 18416), (217, 18443), (226, 18512), (227, 18527), (229, 18539), (234, 18563), (246, 18641),

Gene: GardenSalsa\_32 Start: 22870, Stop: 24651, Start Num: 31

Candidate Starts for GardenSalsa\_32:

(Start: 31 @22870 has 3 MA's), (Start: 33 @22885 has 4 MA's), (Start: 38 @22912 has 14 MA's), (51, 22990), (53, 22996), (56, 23014), (76, 23176), (78, 23185), (79, 23200), (93, 23287), (94, 23299), (95, 23308), (106, 23404), (109, 23416), (112, 23446), (113, 23449), (118, 23482), (130, 23611), (132, 23626), (134, 23644), (137, 23674), (156, 23836), (157, 23845), (159, 23857), (161, 23863), (171, 23962), (173, 23971), (175, 23980), (181, 24049), (194, 24142), (197, 24181), (199, 24187), (200, 24196), (243, 24541), (246, 24568), (247, 24574), (254, 24619),

Gene: Gattaca\_49 Start: 26580, Stop: 28292, Start Num: 44

Candidate Starts for Gattaca\_49:

(32, 26517), (Start: 44 @26580 has 23 MA's), (55, 26661), (62, 26718), (70, 26799), (72, 26805), (80, 26862), (81, 26874), (84, 26886), (89, 26925), (91, 26940), (101, 27009), (106, 27063), (108, 27072), (126, 27228), (132, 27276), (133, 27285), (134, 27294), (139, 27333), (141, 27348), (150, 27411), (152, 27423), (166, 27540), (167, 27543), (170, 27594), (174, 27621), (176, 27624), (178, 27645), (181, 27687), (196, 27807), (199, 27825), (213, 27969), (217, 28014), (220, 28032), (228, 28116), (230, 28125), (234, 28143), (236, 28164), (246, 28209), (247, 28215), (248, 28227), (251, 28239), (254, 28260), (256, 28275), (257, 28281),

Gene: GenevaB15\_32 Start: 22915, Stop: 24696, Start Num: 31

Candidate Starts for GenevaB15\_32:

(Start: 31 @22915 has 3 MA's), (Start: 33 @22930 has 4 MA's), (Start: 38 @22957 has 14 MA's), (51, 23035), (53, 23041), (56, 23059), (76, 23221), (78, 23230), (79, 23245), (93, 23332), (94, 23344), (95, 23353), (106, 23449), (109, 23461), (112, 23491), (113, 23494), (118, 23527), (130, 23656), (132, 23671), (134, 23689), (156, 23881), (157, 23890), (159, 23902), (161, 23908), (171, 24007), (173, 24016), (175, 24025), (181, 24094), (191, 24172), (194, 24187), (197, 24226), (199, 24232), (243, 24586), (246, 24613), (247, 24619),

Gene: Glaske16\_29 Start: 22367, Stop: 24103, Start Num: 38

Candidate Starts for Glaske16\_29:

(18, 22145), (Start: 31 @22325 has 3 MA's), (Start: 33 @22340 has 4 MA's), (Start: 38 @22367 has 14 MA's), (Start: 44 @22382 has 23 MA's), (49, 22421), (53, 22451), (54, 22457), (56, 22469), (68, 22574), (69, 22589), (76, 22628), (94, 22751), (95, 22760), (106, 22856), (112, 22898), (113, 22901), (132, 23078), (146, 23189), (150, 23216), (156, 23288), (157, 23297), (158, 23300), (160, 23312), (175, 23432), (176, 23435), (180, 23477), (182, 23507), (184, 23513), (197, 23633), (199, 23639),

(243, 23993), (246, 24020), (248, 24038), (250, 24047),

Gene: GuuelaD\_18 Start: 17023, Stop: 18756, Start Num: 43

Candidate Starts for GuuelaD\_18:

(Start: 43 @17023 has 28 MA's), (53, 17092), (69, 17233), (70, 17236), (75, 17266), (78, 17281), (82, 17314), (84, 17323), (88, 17359), (96, 17413), (100, 17440), (106, 17503), (107, 17509), (111, 17542), (120, 17590), (129, 17695), (132, 17719), (133, 17728), (138, 17773), (141, 17791), (144, 17824), (150, 17866), (164, 17986), (170, 18049), (180, 18121), (183, 18154), (184, 18157), (194, 18238), (195, 18256), (197, 18277), (199, 18283), (201, 18295), (206, 18358), (214, 18445), (217, 18472), (222, 18505), (226, 18541), (227, 18556), (234, 18592), (246, 18670), (248, 18688),

Gene: Hafay\_18 Start: 17022, Stop: 18755, Start Num: 43

Candidate Starts for Hafay\_18:

(Start: 43 @17022 has 28 MA's), (53, 17091), (69, 17232), (70, 17235), (78, 17280), (82, 17313), (84, 17322), (88, 17358), (96, 17412), (100, 17439), (102, 17451), (106, 17502), (107, 17508), (111, 17541), (129, 17694), (132, 17718), (133, 17727), (138, 17772), (140, 17787), (150, 17865), (164, 17985), (170, 18048), (180, 18120), (184, 18156), (197, 18276), (199, 18282), (201, 18294), (206, 18357), (214, 18444), (217, 18471), (226, 18540), (227, 18555), (229, 18567), (234, 18591), (246, 18669),

Gene: Halena\_18 Start: 16747, Stop: 18516, Start Num: 34

Candidate Starts for Halena\_18:

(Start: 25 @16684 has 1 MA's), (29, 16705), (30, 16720), (Start: 34 @16747 has 38 MA's), (50, 16840), (58, 16888), (59, 16894), (61, 16921), (62, 16924), (63, 16930), (69, 17002), (72, 17011), (75, 17035), (78, 17050), (81, 17080), (100, 17206), (101, 17215), (103, 17236), (105, 17251), (114, 17320), (120, 17356), (121, 17377), (128, 17446), (132, 17485), (150, 17623), (152, 17635), (159, 17710), (161, 17716), (163, 17734), (169, 17773), (170, 17806), (171, 17815), (173, 17824), (175, 17833), (176, 17836), (187, 17956), (193, 17992), (199, 18040), (201, 18052), (205, 18106), (214, 18202), (215, 18220), (216, 18226), (217, 18229), (222, 18262), (225, 18286), (234, 18349), (240, 18391), (246, 18430), (248, 18448), (252, 18469), (255, 18490),

Gene: Huphlepuuff\_52 Start: 27205, Stop: 28917, Start Num: 44

Candidate Starts for Huphlepuuff\_52:

(32, 27142), (Start: 44 @27205 has 23 MA's), (55, 27286), (62, 27343), (70, 27424), (72, 27430), (80, 27487), (81, 27499), (84, 27511), (89, 27550), (91, 27565), (101, 27634), (106, 27688), (108, 27697), (126, 27853), (132, 27901), (133, 27910), (134, 27919), (139, 27958), (141, 27973), (150, 28036), (152, 28048), (166, 28165), (167, 28168), (170, 28219), (174, 28246), (176, 28249), (178, 28270), (181, 28312), (196, 28432), (199, 28450), (213, 28594), (217, 28639), (220, 28657), (228, 28741), (230, 28750), (234, 28768), (236, 28789), (246, 28834), (247, 28840), (248, 28852), (251, 28864), (253, 28876), (256, 28900), (257, 28906),

Gene: IPhane7\_28 Start: 22368, Stop: 24104, Start Num: 38

Candidate Starts for IPhane7\_28:

(18, 22146), (Start: 31 @22326 has 3 MA's), (Start: 33 @22341 has 4 MA's), (Start: 38 @22368 has 14 MA's), (Start: 44 @22383 has 23 MA's), (49, 22422), (53, 22452), (54, 22458), (56, 22470), (68, 22575), (69, 22590), (76, 22629), (94, 22752), (95, 22761), (106, 22857), (112, 22899), (113, 22902), (132, 23079), (146, 23190), (150, 23217), (156, 23289), (157, 23298), (158, 23301), (160, 23313), (175, 23433), (176, 23436), (180, 23478), (182, 23508), (184, 23514), (197, 23634), (199, 23640), (243, 23994), (246, 24021), (248, 24039), (250, 24048),

Gene: Ibrahim\_19 Start: 16980, Stop: 18686, Start Num: 44

Candidate Starts for Ibrahim\_19:

(24, 16872), (27, 16884), (Start: 44 @16980 has 23 MA's), (53, 17046), (65, 17121), (67, 17127), (74, 17211), (82, 17265), (88, 17310), (89, 17313), (98, 17379), (132, 17664), (159, 17886), (181, 18075), (199, 18213), (201, 18225), (217, 18402), (222, 18438), (246, 18603), (250, 18630), (256, 18669), (257, 18675),

Gene: Itos\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Itos\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Jobypre\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for Jobypre\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (74, 17652), (75, 17658), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (191, 18600), (193, 18612), (199, 18660), (205, 18726), (213, 18804), (217, 18849), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056), (248, 19068), (250, 19077), (252, 19089),

Gene: JoeDirt\_18 Start: 16738, Stop: 18507, Start Num: 34

Candidate Starts for JoeDirt\_18:

(Start: 25 @16675 has 1 MA's), (29, 16696), (30, 16711), (Start: 34 @16738 has 38 MA's), (50, 16831), (58, 16879), (59, 16885), (61, 16912), (63, 16921), (69, 16993), (72, 17002), (75, 17026), (78, 17041), (81, 17071), (100, 17197), (101, 17206), (103, 17227), (105, 17242), (114, 17311), (120, 17347), (121, 17368), (128, 17437), (132, 17476), (150, 17614), (152, 17626), (159, 17701), (161, 17707), (163, 17725), (169, 17764), (170, 17797), (171, 17806), (173, 17815), (175, 17824), (187, 17947), (193, 17983), (199, 18031), (201, 18043), (205, 18097), (214, 18193), (215, 18211), (216, 18217), (217, 18220), (222, 18253), (225, 18277), (234, 18340), (240, 18382), (246, 18421), (248, 18439), (252, 18460), (255, 18481),

Gene: JoieB\_51 Start: 27397, Stop: 29109, Start Num: 44

Candidate Starts for JoieB\_51:

(32, 27334), (Start: 44 @27397 has 23 MA's), (55, 27478), (62, 27535), (70, 27616), (72, 27622), (80, 27679), (81, 27691), (84, 27703), (89, 27742), (91, 27757), (101, 27826), (106, 27880), (108, 27889), (126, 28045), (132, 28093), (133, 28102), (134, 28111), (139, 28150), (141, 28165), (150, 28228), (152, 28240), (166, 28357), (167, 28360), (170, 28411), (174, 28438), (176, 28441), (178, 28462), (181, 28504), (196, 28624), (199, 28642), (213, 28786), (217, 28831), (220, 28849), (228, 28933), (230, 28942), (234, 28960), (236, 28981), (246, 29026), (247, 29032), (248, 29044), (251, 29056), (254, 29077), (256, 29092), (257, 29098),

Gene: Jubie\_19 Start: 17374, Stop: 19137, Start Num: 34

Candidate Starts for Jubie\_19:

(Start: 34 @17374 has 38 MA's), (Start: 38 @17401 has 14 MA's), (50, 17464), (58, 17512), (59, 17518), (63, 17554), (70, 17629), (74, 17653), (75, 17659), (84, 17716), (100, 17830), (102, 17842), (116, 17953), (131, 18097), (132, 18109), (136, 18142), (159, 18331), (161, 18337), (169, 18394), (171, 18436), (173, 18445), (176, 18457), (183, 18532), (191, 18601), (193, 18613), (199, 18661), (205, 18727), (213, 18805), (217, 18850), (225, 18907), (234, 18970), (237, 19006), (242, 19021), (246, 19051), (247, 19057), (248, 19069), (250, 19078), (252, 19090),

Gene: Kahlid\_18 Start: 16994, Stop: 18727, Start Num: 43

Candidate Starts for Kahlid\_18:

(Start: 43 @16994 has 28 MA's), (53, 17063), (69, 17204), (70, 17207), (78, 17252), (82, 17285), (84, 17294), (88, 17330), (96, 17384), (100, 17411), (102, 17423), (106, 17474), (107, 17480), (111, 17513), (129, 17666), (132, 17690), (133, 17699), (138, 17744), (140, 17759), (150, 17837), (164, 17957), (170, 18020), (180, 18092), (184, 18128), (197, 18248), (199, 18254), (201, 18266), (206, 18329), (214, 18416), (217, 18443), (226, 18512), (227, 18527), (229, 18539), (234, 18563), (246, 18641),

Gene: Kingsolomon\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for Kingsolomon\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (74, 17652), (75, 17658), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (191, 18600), (193, 18612), (199, 18660), (205, 18726), (213, 18804), (217, 18849), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056), (248, 19068), (250, 19077), (252, 19089),

Gene: KirDoubleO7\_17 Start: 17382, Stop: 19145, Start Num: 34

Candidate Starts for KirDoubleO7\_17:

(Start: 34 @17382 has 38 MA's), (Start: 38 @17409 has 14 MA's), (50, 17472), (58, 17520), (59, 17526), (63, 17562), (70, 17637), (84, 17724), (100, 17838), (102, 17850), (116, 17961), (131, 18105), (132, 18117), (134, 18135), (136, 18150), (159, 18339), (169, 18402), (170, 18435), (171, 18444), (173, 18453), (176, 18465), (183, 18540), (191, 18609), (193, 18621), (199, 18669), (205, 18735), (213, 18813), (214, 18831), (217, 18858), (224, 18903), (225, 18915), (234, 18978), (237, 19014), (242, 19029), (246, 19059), (247, 19065), (248, 19077), (250, 19086), (252, 19098),

Gene: Krypton555\_19 Start: 17311, Stop: 19074, Start Num: 34

Candidate Starts for Krypton555\_19:

(Start: 34 @17311 has 38 MA's), (Start: 38 @17338 has 14 MA's), (50, 17401), (59, 17455), (63, 17491), (70, 17566), (74, 17590), (75, 17596), (84, 17653), (100, 17767), (102, 17779), (116, 17890), (131, 18034), (132, 18046), (159, 18268), (161, 18274), (169, 18331), (171, 18373), (173, 18382), (176, 18394), (183, 18469), (190, 18535), (193, 18550), (199, 18598), (205, 18664), (213, 18742), (217, 18787), (225, 18844), (234, 18907), (237, 18943), (242, 18958), (246, 18988), (247, 18994), (248, 19006), (250, 19015), (252, 19027),

Gene: Kudrefre\_27 Start: 21780, Stop: 23531, Start Num: 40

Candidate Starts for Kudrefre\_27:

(28, 21702), (36, 21765), (Start: 40 @21780 has 7 MA's), (47, 21804), (53, 21861), (58, 21888), (60, 21915), (64, 21933), (66, 21942), (67, 21945), (70, 22005), (81, 22080), (86, 22101), (88, 22140), (101, 22230), (104, 22254), (106, 22284), (115, 22341), (119, 22365), (127, 22458), (129, 22473), (130, 22482), (132, 22497), (133, 22506), (136, 22530), (138, 22551), (145, 22605), (148, 22623), (155, 22704), (157, 22716), (162, 22740), (176, 22854), (185, 22962), (189, 22986), (194, 23013), (199, 23058), (202, 23082), (206, 23133), (211, 23181), (213, 23199), (219, 23250), (223, 23286), (229, 23337), (230, 23343), (235, 23367), (238, 23406), (244, 23421), (246, 23448), (251, 23478), (253, 23490), (257, 23520),

Gene: Kumao\_28 Start: 21466, Stop: 23190, Start Num: 37

Candidate Starts for Kumao\_28:

(Start: 31 @21427 has 3 MA's), (Start: 37 @21466 has 1 MA's), (56, 21556), (76, 21718), (81, 21757), (82, 21760), (92, 21823), (95, 21850), (106, 21946), (112, 21988), (122, 22066), (125, 22108), (132, 22168), (134, 22186), (146, 22279), (157, 22384), (158, 22387), (159, 22396), (166, 22438), (176, 22522), (199, 22726), (201, 22738), (210, 22843), (221, 22942), (225, 22975), (230, 23014), (231,

23020), (239, 23068), (246, 23107), (247, 23113), (257, 23179),

Gene: LeBron\_18 Start: 16772, Stop: 18541, Start Num: 34

Candidate Starts for LeBron\_18:

(Start: 25 @16709 has 1 MA's), (29, 16730), (30, 16745), (Start: 34 @16772 has 38 MA's), (50, 16865), (58, 16913), (59, 16919), (61, 16946), (62, 16949), (63, 16955), (69, 17027), (72, 17036), (75, 17060), (78, 17075), (81, 17105), (100, 17231), (101, 17240), (103, 17261), (105, 17276), (114, 17345), (120, 17381), (121, 17402), (128, 17471), (132, 17510), (150, 17648), (152, 17660), (159, 17735), (161, 17741), (163, 17759), (169, 17798), (170, 17831), (171, 17840), (173, 17849), (175, 17858), (187, 17981), (193, 18017), (199, 18065), (201, 18077), (205, 18131), (214, 18227), (215, 18245), (216, 18251), (217, 18254), (222, 18287), (225, 18311), (234, 18374), (240, 18416), (246, 18455), (248, 18473), (252, 18494), (255, 18515),

Gene: Lewan\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Lewan\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: LilDestine\_18 Start: 16988, Stop: 18721, Start Num: 43

Candidate Starts for LilDestine\_18:

(Start: 43 @16988 has 28 MA's), (53, 17057), (69, 17198), (70, 17201), (78, 17246), (82, 17279), (84, 17288), (88, 17324), (96, 17378), (100, 17405), (102, 17417), (106, 17468), (107, 17474), (111, 17507), (129, 17660), (132, 17684), (133, 17693), (138, 17738), (140, 17753), (150, 17831), (164, 17951), (170, 18014), (180, 18086), (184, 18122), (197, 18242), (199, 18248), (201, 18260), (206, 18323), (211, 18374), (214, 18410), (217, 18437), (226, 18506), (227, 18521), (229, 18533), (234, 18557), (246, 18635),

Gene: Lilbit\_51 Start: 27401, Stop: 29113, Start Num: 44

Candidate Starts for Lilbit\_51:

(32, 27338), (Start: 44 @27401 has 23 MA's), (55, 27482), (62, 27539), (70, 27620), (72, 27626), (80, 27683), (81, 27695), (84, 27707), (89, 27746), (91, 27761), (101, 27830), (106, 27884), (108, 27893), (126, 28049), (132, 28097), (133, 28106), (134, 28115), (139, 28154), (141, 28169), (150, 28232), (152, 28244), (166, 28361), (167, 28364), (170, 28415), (174, 28442), (176, 28445), (178, 28466), (181, 28508), (196, 28628), (199, 28646), (213, 28790), (217, 28835), (220, 28853), (228, 28937), (230, 28946), (234, 28964), (236, 28985), (246, 29030), (247, 29036), (248, 29048), (251, 29060), (253, 29072), (256, 29096), (257, 29102),

Gene: LilhomieP\_27 Start: 22368, Stop: 24104, Start Num: 38

Candidate Starts for LilhomieP\_27:

(18, 22146), (Start: 31 @22326 has 3 MA's), (Start: 33 @22341 has 4 MA's), (Start: 38 @22368 has 14 MA's), (Start: 44 @22383 has 23 MA's), (49, 22422), (53, 22452), (54, 22458), (56, 22470), (68, 22575), (69, 22590), (76, 22629), (94, 22752), (95, 22761), (106, 22857), (112, 22899), (113, 22902), (132, 23079), (146, 23190), (150, 23217), (156, 23289), (157, 23298), (158, 23301), (160, 23313), (175, 23433), (176, 23436), (180, 23478), (182, 23508), (184, 23514), (197, 23634), (199, 23640), (243, 23994), (246, 24021), (248, 24039), (250, 24048),

Gene: LittleLaf\_50 Start: 27130, Stop: 28842, Start Num: 44

Candidate Starts for LittleLaf\_50:

(32, 27067), (Start: 44 @27130 has 23 MA's), (55, 27211), (62, 27268), (70, 27349), (72, 27355), (80, 27412), (81, 27424), (84, 27436), (89, 27475), (91, 27490), (101, 27559), (106, 27613), (108, 27622),

(126, 27778), (132, 27826), (133, 27835), (134, 27844), (139, 27883), (141, 27898), (150, 27961), (152, 27973), (166, 28090), (167, 28093), (170, 28144), (174, 28171), (176, 28174), (178, 28195), (181, 28237), (196, 28357), (199, 28375), (213, 28519), (217, 28564), (220, 28582), (228, 28666), (230, 28675), (234, 28693), (236, 28714), (246, 28759), (247, 28765), (248, 28777), (251, 28789), (253, 28801), (256, 28825), (257, 28831),

Gene: LiyuLake\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for LiyuLake\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (134, 18126), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (191, 18600), (193, 18612), (199, 18660), (205, 18726), (213, 18804), (217, 18849), (224, 18894), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056), (248, 19068), (250, 19077), (252, 19089),

Gene: Loadrie\_18 Start: 17021, Stop: 18754, Start Num: 43

Candidate Starts for Loadrie\_18:

(Start: 43 @17021 has 28 MA's), (53, 17090), (69, 17231), (70, 17234), (78, 17279), (82, 17312), (84, 17321), (88, 17357), (96, 17411), (100, 17438), (102, 17450), (106, 17501), (107, 17507), (111, 17540), (129, 17693), (132, 17717), (133, 17726), (138, 17771), (140, 17786), (150, 17864), (164, 17984), (170, 18047), (180, 18119), (184, 18155), (197, 18275), (199, 18281), (201, 18293), (206, 18356), (214, 18443), (217, 18470), (226, 18539), (227, 18554), (229, 18566), (234, 18590), (246, 18668),

Gene: Lolly9\_19 Start: 17191, Stop: 18954, Start Num: 34

Candidate Starts for Lolly9\_19:

(Start: 34 @17191 has 38 MA's), (Start: 38 @17218 has 14 MA's), (50, 17281), (58, 17329), (59, 17335), (63, 17371), (70, 17446), (74, 17470), (75, 17476), (84, 17533), (100, 17647), (102, 17659), (116, 17770), (131, 17914), (132, 17926), (159, 18148), (161, 18154), (169, 18211), (171, 18253), (173, 18262), (176, 18274), (183, 18349), (190, 18415), (192, 18427), (193, 18430), (199, 18478), (205, 18544), (213, 18622), (217, 18667), (224, 18712), (225, 18724), (234, 18787), (237, 18823), (242, 18838), (246, 18868), (247, 18874), (248, 18886), (250, 18895), (252, 18907),

Gene: Lumos\_19 Start: 17370, Stop: 19133, Start Num: 34

Candidate Starts for Lumos\_19:

(Start: 34 @17370 has 38 MA's), (Start: 38 @17397 has 14 MA's), (50, 17460), (58, 17508), (59, 17514), (63, 17550), (70, 17625), (74, 17649), (75, 17655), (84, 17712), (100, 17826), (102, 17838), (116, 17949), (131, 18093), (132, 18105), (136, 18138), (159, 18327), (161, 18333), (169, 18390), (171, 18432), (173, 18441), (176, 18453), (183, 18528), (191, 18597), (193, 18609), (199, 18657), (205, 18723), (213, 18801), (217, 18846), (225, 18903), (234, 18966), (237, 19002), (242, 19017), (246, 19047), (247, 19053), (248, 19065), (250, 19074), (252, 19086),

Gene: MAckerman\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for MAckerman\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: Marvin\_48 Start: 27400, Stop: 29112, Start Num: 44

Candidate Starts for Marvin\_48:

(32, 27337), (Start: 44 @27400 has 23 MA's), (55, 27481), (62, 27538), (70, 27619), (72, 27625), (80, 27682), (81, 27694), (84, 27706), (89, 27745), (91, 27760), (101, 27829), (106, 27883), (108, 27892), (126, 28048), (132, 28096), (133, 28105), (134, 28114), (139, 28153), (141, 28168), (150, 28231), (152, 28243), (166, 28360), (167, 28363), (170, 28414), (174, 28441), (176, 28444), (178, 28465), (181, 28507), (196, 28627), (199, 28645), (213, 28789), (217, 28834), (220, 28852), (228, 28936), (234, 28963), (236, 28984), (246, 29029), (247, 29035), (248, 29047), (251, 29059), (254, 29080), (256, 29095), (257, 29101),

Gene: MaryV\_40 Start: 25250, Stop: 27634, Start Num: 1

Candidate Starts for MaryV\_40:

(Start: 1 @25250 has 5 MA's), (2, 25367), (3, 25388), (4, 25391), (5, 25421), (6, 25427), (7, 25436), (12, 25526), (13, 25562), (14, 25580), (15, 25607), (16, 25619), (17, 25628), (20, 25691), (21, 25727), (22, 25763), (23, 25766), (26, 25772), (35, 25844), (42, 25874), (52, 25943), (53, 25946), (61, 26033), (65, 26051), (66, 26054), (69, 26114), (76, 26153), (82, 26195), (84, 26204), (85, 26210), (87, 26225), (88, 26240), (95, 26288), (106, 26384), (112, 26426), (113, 26429), (132, 26606), (134, 26624), (136, 26639), (137, 26654), (140, 26675), (143, 26708), (146, 26717), (149, 26747), (153, 26786), (157, 26828), (159, 26840), (160, 26843), (169, 26903), (175, 26963), (180, 27008), (184, 27044), (191, 27110), (197, 27164), (199, 27170), (205, 27236), (224, 27407), (226, 27431), (246, 27551), (249, 27572), (251, 27581), (256, 27617),

Gene: Mendokysei\_18 Start: 16790, Stop: 18496, Start Num: 44

Candidate Starts for Mendokysei\_18:

(8, 16388), (9, 16403), (10, 16412), (11, 16436), (19, 16583), (24, 16682), (Start: 33 @16745 has 4 MA's), (Start: 44 @16790 has 23 MA's), (53, 16856), (74, 17021), (77, 17036), (82, 17075), (83, 17078), (88, 17120), (89, 17123), (98, 17189), (99, 17195), (124, 17411), (132, 17474), (142, 17564), (150, 17609), (156, 17675), (159, 17696), (160, 17699), (168, 17744), (181, 17885), (198, 18020), (199, 18023), (204, 18062), (217, 18212), (222, 18248), (245, 18392), (246, 18413), (250, 18440), (256, 18479),

Gene: Miley16\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Miley16\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: MiniLon\_19 Start: 17191, Stop: 18954, Start Num: 34

Candidate Starts for MiniLon\_19:

(Start: 34 @17191 has 38 MA's), (Start: 38 @17218 has 14 MA's), (50, 17281), (58, 17329), (59, 17335), (63, 17371), (70, 17446), (74, 17470), (75, 17476), (84, 17533), (100, 17647), (102, 17659), (116, 17770), (131, 17914), (132, 17926), (159, 18148), (161, 18154), (169, 18211), (171, 18253), (173, 18262), (176, 18274), (183, 18349), (190, 18415), (192, 18427), (193, 18430), (199, 18478), (205, 18544), (213, 18622), (217, 18667), (224, 18712), (225, 18724), (234, 18787), (237, 18823), (242, 18838), (246, 18868), (247, 18874), (248, 18886), (250, 18895), (252, 18907),

Gene: MiniMac\_19 Start: 17192, Stop: 18955, Start Num: 34

Candidate Starts for MiniMac\_19:

(Start: 34 @17192 has 38 MA's), (Start: 38 @17219 has 14 MA's), (50, 17282), (58, 17330), (59, 17336), (63, 17372), (70, 17447), (74, 17471), (75, 17477), (84, 17534), (100, 17648), (102, 17660),



(116, 17771), (131, 17915), (132, 17927), (159, 18149), (161, 18155), (169, 18212), (171, 18254), (173, 18263), (176, 18275), (183, 18350), (190, 18416), (192, 18428), (193, 18431), (199, 18479), (205, 18545), (213, 18623), (217, 18668), (224, 18713), (225, 18725), (234, 18788), (237, 18824), (242, 18839), (246, 18869), (247, 18875), (248, 18887), (250, 18896), (252, 18908),

Gene: MkaliMitinis3\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for MkaliMitinis3\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Moostard\_19 Start: 17376, Stop: 19139, Start Num: 34

Candidate Starts for Moostard\_19:

(Start: 34 @17376 has 38 MA's), (Start: 38 @17403 has 14 MA's), (50, 17466), (58, 17514), (59, 17520), (63, 17556), (70, 17631), (74, 17655), (75, 17661), (84, 17718), (100, 17832), (102, 17844), (116, 17955), (131, 18099), (132, 18111), (136, 18144), (137, 18159), (159, 18333), (161, 18339), (169, 18396), (171, 18438), (173, 18447), (176, 18459), (183, 18534), (191, 18603), (193, 18615), (199, 18663), (205, 18729), (213, 18807), (217, 18852), (225, 18909), (234, 18972), (237, 19008), (242, 19023), (246, 19053), (247, 19059), (248, 19071), (250, 19080), (252, 19092),

Gene: MosMoris\_48 Start: 26580, Stop: 28292, Start Num: 44

Candidate Starts for MosMoris\_48:

(32, 26517), (Start: 44 @26580 has 23 MA's), (55, 26661), (62, 26718), (70, 26799), (72, 26805), (80, 26862), (81, 26874), (84, 26886), (89, 26925), (91, 26940), (101, 27009), (106, 27063), (108, 27072), (126, 27228), (132, 27276), (133, 27285), (134, 27294), (139, 27333), (141, 27348), (150, 27411), (152, 27423), (166, 27540), (167, 27543), (170, 27594), (174, 27621), (176, 27624), (178, 27645), (181, 27687), (196, 27807), (199, 27825), (213, 27969), (217, 28014), (220, 28032), (228, 28116), (230, 28125), (234, 28143), (236, 28164), (246, 28209), (247, 28215), (248, 28227), (251, 28239), (254, 28260), (256, 28275), (257, 28281),

Gene: MrMagoo\_32 Start: 22870, Stop: 24651, Start Num: 31

Candidate Starts for MrMagoo\_32:

(Start: 31 @22870 has 3 MA's), (Start: 33 @22885 has 4 MA's), (Start: 38 @22912 has 14 MA's), (51, 22990), (53, 22996), (56, 23014), (76, 23176), (78, 23185), (79, 23200), (93, 23287), (94, 23299), (95, 23308), (106, 23404), (109, 23416), (112, 23446), (113, 23449), (118, 23482), (130, 23611), (132, 23626), (134, 23644), (137, 23674), (156, 23836), (157, 23845), (159, 23857), (161, 23863), (171, 23962), (173, 23971), (175, 23980), (181, 24049), (194, 24142), (197, 24181), (199, 24187), (200, 24196), (243, 24541), (246, 24568), (247, 24574), (254, 24619),

Gene: MsGreen\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for MsGreen\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (74, 17652), (75, 17658), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (191, 18600), (193, 18612), (199, 18660), (205, 18726), (213, 18804), (217, 18849), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056), (248, 19068), (250, 19077), (252, 19089),

Gene: Nairb\_19 Start: 16980, Stop: 18686, Start Num: 44

Candidate Starts for Nairb\_19:

(24, 16872), (27, 16884), (Start: 44 @16980 has 23 MA's), (53, 17046), (65, 17121), (67, 17127), (74, 17211), (82, 17265), (88, 17310), (89, 17313), (98, 17379), (132, 17664), (159, 17886), (181, 18075), (199, 18213), (201, 18225), (217, 18402), (222, 18438), (246, 18603), (250, 18630), (256, 18669), (257, 18675),

Gene: Nanosmite\_32 Start: 22784, Stop: 24520, Start Num: 38

Candidate Starts for Nanosmite\_32:

(Start: 31 @22742 has 3 MA's), (Start: 33 @22757 has 4 MA's), (Start: 38 @22784 has 14 MA's), (Start: 44 @22799 has 23 MA's), (49, 22838), (53, 22868), (54, 22874), (56, 22886), (76, 23045), (90, 23144), (93, 23156), (94, 23168), (95, 23177), (101, 23219), (106, 23273), (112, 23315), (113, 23318), (129, 23471), (132, 23495), (140, 23564), (146, 23606), (154, 23675), (156, 23705), (157, 23714), (160, 23729), (166, 23768), (171, 23831), (173, 23840), (175, 23849), (181, 23918), (182, 23924), (184, 23930), (197, 24050), (199, 24056), (243, 24410), (246, 24437), (248, 24455), (250, 24464),

Gene: Netyap\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Netyap\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Neville\_28 Start: 23300, Stop: 25042, Start Num: 40

Candidate Starts for Neville\_28:

(28, 23222), (36, 23285), (Start: 40 @23300 has 7 MA's), (46, 23312), (48, 23330), (53, 23372), (58, 23399), (67, 23456), (70, 23516), (81, 23591), (82, 23594), (84, 23603), (86, 23612), (88, 23651), (89, 23654), (97, 23708), (99, 23729), (104, 23765), (106, 23795), (110, 23828), (116, 23855), (122, 23915), (129, 23984), (130, 23993), (132, 24008), (135, 24038), (147, 24122), (162, 24248), (172, 24341), (176, 24362), (177, 24365), (183, 24437), (185, 24470), (188, 24491), (197, 24560), (199, 24566), (200, 24575), (211, 24692), (212, 24701), (219, 24761), (223, 24797), (225, 24812), (229, 24848), (230, 24854), (238, 24917), (246, 24959), (250, 24986), (253, 25001), (257, 25031),

Gene: Nicholas\_19 Start: 17373, Stop: 19136, Start Num: 34

Candidate Starts for Nicholas\_19:

(Start: 34 @17373 has 38 MA's), (Start: 38 @17400 has 14 MA's), (50, 17463), (58, 17511), (59, 17517), (63, 17553), (70, 17628), (74, 17652), (75, 17658), (84, 17715), (100, 17829), (102, 17841), (116, 17952), (131, 18096), (132, 18108), (136, 18141), (159, 18330), (161, 18336), (169, 18393), (171, 18435), (173, 18444), (176, 18456), (183, 18531), (191, 18600), (193, 18612), (199, 18660), (205, 18726), (213, 18804), (217, 18849), (225, 18906), (234, 18969), (237, 19005), (242, 19020), (246, 19050), (247, 19056), (248, 19068), (250, 19077), (252, 19089),

Gene: Nicholasp3\_18 Start: 16994, Stop: 18727, Start Num: 43

Candidate Starts for Nicholasp3\_18:

(Start: 43 @16994 has 28 MA's), (53, 17063), (69, 17204), (70, 17207), (78, 17252), (82, 17285), (84, 17294), (88, 17330), (96, 17384), (100, 17411), (102, 17423), (106, 17474), (107, 17480), (111, 17513), (129, 17666), (132, 17690), (133, 17699), (138, 17744), (140, 17759), (150, 17837), (164, 17957), (170, 18020), (180, 18092), (184, 18128), (197, 18248), (199, 18254), (201, 18266), (206, 18329), (214, 18416), (217, 18443), (226, 18512), (227, 18527), (229, 18539), (234, 18563), (246, 18641),

Gene: Octobien14\_28 Start: 22738, Stop: 24489, Start Num: 40

Candidate Starts for Octobien14\_28:

(36, 22723), (Start: 40 @22738 has 7 MA's), (46, 22759), (47, 22762), (53, 22819), (57, 22840), (58, 22846), (60, 22873), (64, 22891), (66, 22900), (67, 22903), (72, 22969), (73, 22975), (74, 22987), (81, 23038), (82, 23041), (86, 23059), (100, 23179), (105, 23224), (106, 23242), (116, 23302), (117, 23308), (119, 23323), (122, 23362), (127, 23416), (129, 23431), (130, 23440), (132, 23455), (133, 23464), (136, 23488), (138, 23509), (145, 23563), (148, 23581), (149, 23596), (150, 23599), (155, 23662), (157, 23674), (162, 23698), (167, 23731), (176, 23812), (185, 23920), (186, 23929), (189, 23944), (194, 23971), (199, 24016), (207, 24097), (213, 24157), (219, 24208), (223, 24244), (229, 24295), (230, 24301), (233, 24316), (235, 24325), (238, 24364), (244, 24379), (246, 24406), (251, 24436), (253, 24448), (257, 24478),

Gene: OhShagHennessy\_18 Start: 16711, Stop: 18480, Start Num: 34

Candidate Starts for OhShagHennessy\_18:

(Start: 25 @16648 has 1 MA's), (29, 16669), (30, 16684), (Start: 34 @16711 has 38 MA's), (50, 16804), (58, 16852), (59, 16858), (61, 16885), (63, 16894), (69, 16966), (72, 16975), (75, 16999), (78, 17014), (81, 17044), (100, 17170), (101, 17179), (103, 17200), (105, 17215), (114, 17284), (120, 17320), (121, 17341), (128, 17410), (132, 17449), (150, 17587), (152, 17599), (159, 17674), (161, 17680), (163, 17698), (169, 17737), (170, 17770), (171, 17779), (173, 17788), (175, 17797), (187, 17920), (193, 17956), (199, 18004), (201, 18016), (205, 18070), (214, 18166), (215, 18184), (216, 18190), (217, 18193), (222, 18226), (225, 18250), (234, 18313), (240, 18355), (246, 18394), (248, 18412), (252, 18433), (255, 18454),

Gene: PYPDinur\_18 Start: 16572, Stop: 18335, Start Num: 34

Candidate Starts for PYPDinur\_18:

(Start: 34 @16572 has 38 MA's), (59, 16713), (69, 16821), (70, 16824), (99, 17022), (100, 17025), (102, 17037), (104, 17058), (118, 17166), (121, 17196), (132, 17304), (136, 17337), (137, 17352), (140, 17373), (159, 17529), (169, 17592), (171, 17634), (173, 17643), (176, 17655), (180, 17697), (184, 17733), (199, 17859), (203, 17892), (212, 17994), (213, 18003), (214, 18021), (217, 18048), (225, 18105), (229, 18144), (234, 18168), (237, 18204), (242, 18219), (246, 18249), (250, 18276), (252, 18288), (255, 18309),

Gene: PegLeg\_28 Start: 22367, Stop: 24103, Start Num: 38

Candidate Starts for PegLeg\_28:

(18, 22145), (Start: 31 @22325 has 3 MA's), (Start: 33 @22340 has 4 MA's), (Start: 38 @22367 has 14 MA's), (Start: 44 @22382 has 23 MA's), (49, 22421), (53, 22451), (54, 22457), (56, 22469), (68, 22574), (69, 22589), (76, 22628), (94, 22751), (95, 22760), (106, 22856), (112, 22898), (113, 22901), (132, 23078), (146, 23189), (150, 23216), (156, 23288), (157, 23297), (158, 23300), (160, 23312), (175, 23432), (176, 23435), (180, 23477), (182, 23507), (184, 23513), (197, 23633), (199, 23639), (243, 23993), (246, 24020), (248, 24038), (250, 24047),

Gene: Poise\_50 Start: 26718, Stop: 28430, Start Num: 44

Candidate Starts for Poise\_50:

(32, 26655), (Start: 44 @26718 has 23 MA's), (55, 26799), (62, 26856), (70, 26937), (72, 26943), (80, 27000), (81, 27012), (84, 27024), (89, 27063), (91, 27078), (101, 27147), (106, 27201), (108, 27210), (126, 27366), (132, 27414), (133, 27423), (134, 27432), (139, 27471), (141, 27486), (150, 27549), (152, 27561), (166, 27678), (167, 27681), (170, 27732), (174, 27759), (176, 27762), (178, 27783), (181, 27825), (196, 27945), (199, 27963), (213, 28107), (217, 28152), (220, 28170), (228, 28254), (230, 28263), (234, 28281), (236, 28302), (246, 28347), (247, 28353), (248, 28365), (251, 28377), (253, 28389), (256, 28413), (257, 28419),

Gene: Pringar\_50 Start: 27006, Stop: 28718, Start Num: 44

Candidate Starts for Pringar\_50:

(32, 26943), (Start: 44 @27006 has 23 MA's), (55, 27087), (62, 27144), (70, 27225), (72, 27231), (80, 27288), (81, 27300), (84, 27312), (89, 27351), (91, 27366), (101, 27435), (106, 27489), (108, 27498),

(126, 27654), (132, 27702), (133, 27711), (134, 27720), (139, 27759), (141, 27774), (150, 27837), (152, 27849), (166, 27966), (167, 27969), (170, 28020), (174, 28047), (176, 28050), (178, 28071), (181, 28113), (196, 28233), (199, 28251), (213, 28395), (217, 28440), (220, 28458), (228, 28542), (230, 28551), (234, 28569), (236, 28590), (246, 28635), (247, 28641), (248, 28653), (251, 28665), (253, 28677), (256, 28701), (257, 28707),

Gene: Quby\_18 Start: 16580, Stop: 18343, Start Num: 34

Candidate Starts for Quby\_18:

(Start: 34 @16580 has 38 MA's), (59, 16721), (69, 16829), (70, 16832), (99, 17030), (100, 17033), (102, 17045), (104, 17066), (118, 17174), (121, 17204), (132, 17312), (136, 17345), (137, 17360), (140, 17381), (159, 17537), (169, 17600), (171, 17642), (173, 17651), (180, 17705), (184, 17741), (199, 17867), (203, 17900), (212, 18002), (213, 18011), (214, 18029), (217, 18056), (225, 18113), (229, 18152), (234, 18176), (237, 18212), (242, 18227), (246, 18257), (250, 18284), (252, 18296), (255, 18317),

Gene: Rabbitrun\_30 Start: 23608, Stop: 25353, Start Num: 40

Candidate Starts for Rabbitrun\_30:

(28, 23530), (36, 23593), (Start: 40 @23608 has 7 MA's), (48, 23638), (53, 23680), (70, 23824), (73, 23836), (76, 23860), (81, 23899), (82, 23902), (86, 23920), (97, 24016), (99, 24037), (104, 24073), (106, 24103), (110, 24136), (116, 24163), (122, 24223), (129, 24292), (130, 24301), (132, 24316), (135, 24346), (149, 24454), (156, 24526), (157, 24535), (176, 24673), (177, 24676), (180, 24715), (183, 24748), (185, 24781), (186, 24790), (188, 24802), (194, 24832), (197, 24871), (199, 24877), (200, 24886), (212, 25012), (219, 25072), (223, 25108), (225, 25123), (229, 25159), (230, 25165), (232, 25174), (238, 25228), (246, 25270), (250, 25297), (253, 25312), (255, 25330), (257, 25342),

Gene: Raela\_50 Start: 27273, Stop: 28985, Start Num: 44

Candidate Starts for Raela\_50:

(32, 27210), (Start: 44 @27273 has 23 MA's), (55, 27354), (62, 27411), (70, 27492), (72, 27498), (80, 27555), (81, 27567), (84, 27579), (89, 27618), (91, 27633), (101, 27702), (106, 27756), (108, 27765), (126, 27921), (132, 27969), (134, 27987), (139, 28026), (141, 28041), (150, 28104), (152, 28116), (166, 28233), (167, 28236), (170, 28287), (174, 28314), (176, 28317), (178, 28338), (181, 28380), (196, 28500), (199, 28518), (213, 28662), (217, 28707), (220, 28725), (228, 28809), (234, 28836), (236, 28857), (246, 28902), (247, 28908), (248, 28920), (251, 28932), (253, 28944), (256, 28968), (257, 28974),

Gene: RedRaider77\_50 Start: 27174, Stop: 28886, Start Num: 44

Candidate Starts for RedRaider77\_50:

(32, 27111), (Start: 44 @27174 has 23 MA's), (55, 27255), (62, 27312), (70, 27393), (72, 27399), (80, 27456), (81, 27468), (84, 27480), (89, 27519), (91, 27534), (101, 27603), (106, 27657), (108, 27666), (126, 27822), (132, 27870), (133, 27879), (134, 27888), (139, 27927), (141, 27942), (150, 28005), (152, 28017), (166, 28134), (167, 28137), (170, 28188), (174, 28215), (176, 28218), (178, 28239), (181, 28281), (196, 28401), (199, 28419), (213, 28563), (217, 28608), (220, 28626), (228, 28710), (230, 28719), (234, 28737), (236, 28758), (246, 28803), (247, 28809), (248, 28821), (251, 28833), (254, 28854), (256, 28869), (257, 28875),

Gene: Reindeer\_26 Start: 22192, Stop: 23928, Start Num: 39

Candidate Starts for Reindeer\_26:

(Start: 39 @22192 has 1 MA's), (Start: 44 @22207 has 23 MA's), (53, 22276), (56, 22294), (61, 22333), (68, 22399), (69, 22414), (76, 22453), (84, 22504), (87, 22525), (94, 22576), (95, 22585), (102, 22630), (105, 22663), (106, 22681), (112, 22723), (113, 22726), (124, 22837), (132, 22903), (146, 23014), (150, 23041), (154, 23083), (156, 23113), (157, 23122), (158, 23125), (159, 23134), (160, 23137), (168, 23182), (173, 23248), (175, 23257), (176, 23260), (180, 23302), (182, 23332), (184, 23338), (191, 23404), (197, 23458), (199, 23464), (205, 23530), (243, 23818), (246, 23845),

(248, 23863), (250, 23872), (252, 23884), (256, 23911),

Gene: Rey\_32 Start: 23117, Stop: 24883, Start Num: 33

Candidate Starts for Rey\_32:

(Start: 31 @23102 has 3 MA's), (Start: 33 @23117 has 4 MA's), (Start: 38 @23144 has 14 MA's), (51, 23222), (53, 23228), (54, 23234), (56, 23246), (69, 23369), (76, 23408), (78, 23417), (79, 23432), (93, 23519), (94, 23531), (95, 23540), (102, 23585), (106, 23636), (112, 23678), (113, 23681), (118, 23714), (122, 23756), (123, 23765), (130, 23843), (132, 23858), (134, 23876), (156, 24068), (157, 24077), (159, 24089), (161, 24095), (171, 24194), (173, 24203), (175, 24212), (179, 24242), (181, 24281), (194, 24374), (197, 24413), (199, 24419), (200, 24428), (241, 24767), (243, 24773), (246, 24800), (254, 24851),

Gene: RonRayGun\_19 Start: 16980, Stop: 18686, Start Num: 44

Candidate Starts for RonRayGun\_19:

(24, 16872), (27, 16884), (Start: 44 @16980 has 23 MA's), (53, 17046), (65, 17121), (67, 17127), (74, 17211), (82, 17265), (88, 17310), (89, 17313), (98, 17379), (132, 17664), (159, 17886), (181, 18075), (199, 18213), (201, 18225), (217, 18402), (222, 18438), (246, 18603), (250, 18630), (256, 18669), (257, 18675),

Gene: Rose5\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for Rose5\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: Rumpelstiltskin\_18 Start: 16995, Stop: 18728, Start Num: 43

Candidate Starts for Rumpelstiltskin\_18:

(Start: 43 @16995 has 28 MA's), (53, 17064), (69, 17205), (70, 17208), (78, 17253), (82, 17286), (84, 17295), (88, 17331), (96, 17385), (100, 17412), (102, 17424), (106, 17475), (107, 17481), (111, 17514), (129, 17667), (132, 17691), (133, 17700), (138, 17745), (140, 17760), (150, 17838), (164, 17958), (170, 18021), (180, 18093), (184, 18129), (197, 18249), (199, 18255), (201, 18267), (206, 18330), (211, 18381), (214, 18417), (217, 18444), (226, 18513), (227, 18528), (229, 18540), (234, 18564), (246, 18642),

Gene: Samty\_19 Start: 17376, Stop: 19139, Start Num: 34

Candidate Starts for Samty\_19:

(Start: 34 @17376 has 38 MA's), (Start: 38 @17403 has 14 MA's), (50, 17466), (58, 17514), (59, 17520), (63, 17556), (70, 17631), (74, 17655), (75, 17661), (84, 17718), (100, 17832), (102, 17844), (116, 17955), (131, 18099), (132, 18111), (136, 18144), (137, 18159), (159, 18333), (161, 18339), (169, 18396), (171, 18438), (173, 18447), (176, 18459), (183, 18534), (191, 18603), (193, 18615), (199, 18663), (205, 18729), (213, 18807), (217, 18852), (225, 18909), (234, 18972), (237, 19008), (242, 19023), (246, 19053), (247, 19059), (248, 19071), (250, 19080), (252, 19092),

Gene: Sarshaun\_18 Start: 17022, Stop: 18755, Start Num: 43

Candidate Starts for Sarshaun\_18:

(Start: 43 @17022 has 28 MA's), (53, 17091), (69, 17232), (70, 17235), (78, 17280), (82, 17313), (84, 17322), (88, 17358), (96, 17412), (100, 17439), (102, 17451), (106, 17502), (107, 17508), (111, 17541), (129, 17694), (132, 17718), (133, 17727), (138, 17772), (140, 17787), (150, 17865), (164,

17985), (170, 18048), (180, 18120), (184, 18156), (197, 18276), (199, 18282), (201, 18294), (206, 18357), (214, 18444), (217, 18471), (226, 18540), (227, 18555), (229, 18567), (234, 18591), (246, 18669),

Gene: Sephiroth\_28 Start: 21951, Stop: 23702, Start Num: 40

Candidate Starts for Sephiroth\_28:

(36, 21936), (Start: 40 @21951 has 7 MA's), (46, 21972), (47, 21975), (53, 22032), (57, 22053), (58, 22059), (60, 22086), (64, 22104), (66, 22113), (67, 22116), (70, 22176), (81, 22251), (86, 22272), (88, 22311), (106, 22455), (116, 22515), (117, 22521), (119, 22536), (122, 22575), (129, 22644), (130, 22653), (132, 22668), (133, 22677), (136, 22701), (138, 22722), (145, 22776), (148, 22794), (155, 22875), (157, 22887), (162, 22911), (176, 23025), (185, 23133), (189, 23157), (194, 23184), (199, 23229), (206, 23304), (207, 23310), (213, 23370), (219, 23421), (223, 23457), (229, 23508), (230, 23514), (235, 23538), (238, 23577), (244, 23592), (246, 23619), (251, 23649), (253, 23661), (257, 23691),

Gene: Sheng711\_18 Start: 16572, Stop: 18335, Start Num: 34

Candidate Starts for Sheng711\_18:

(Start: 34 @16572 has 38 MA's), (59, 16713), (69, 16821), (70, 16824), (99, 17022), (100, 17025), (102, 17037), (104, 17058), (118, 17166), (121, 17196), (132, 17304), (136, 17337), (137, 17352), (140, 17373), (159, 17529), (169, 17592), (171, 17634), (173, 17643), (176, 17655), (180, 17697), (184, 17733), (199, 17859), (203, 17892), (212, 17994), (213, 18003), (214, 18021), (217, 18048), (225, 18105), (229, 18144), (234, 18168), (237, 18204), (242, 18219), (246, 18249), (250, 18276), (252, 18288), (255, 18309),

Gene: Silverleaf\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for Silverleaf\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: Skinny\_29 Start: 22368, Stop: 24104, Start Num: 38

Candidate Starts for Skinny\_29:

(18, 22146), (Start: 31 @22326 has 3 MA's), (Start: 33 @22341 has 4 MA's), (Start: 38 @22368 has 14 MA's), (Start: 44 @22383 has 23 MA's), (49, 22422), (53, 22452), (54, 22458), (56, 22470), (68, 22575), (69, 22590), (76, 22629), (94, 22752), (95, 22761), (106, 22857), (112, 22899), (113, 22902), (132, 23079), (146, 23190), (150, 23217), (156, 23289), (157, 23298), (158, 23301), (160, 23313), (175, 23433), (176, 23436), (180, 23478), (182, 23508), (184, 23514), (197, 23634), (199, 23640), (243, 23994), (246, 24021), (248, 24039), (250, 24048),

Gene: SlimJimmy\_27 Start: 22354, Stop: 24090, Start Num: 38

Candidate Starts for SlimJimmy\_27:

(18, 22132), (Start: 31 @22312 has 3 MA's), (Start: 33 @22327 has 4 MA's), (Start: 38 @22354 has 14 MA's), (Start: 44 @22369 has 23 MA's), (49, 22408), (53, 22438), (54, 22444), (56, 22456), (68, 22561), (69, 22576), (76, 22615), (94, 22738), (95, 22747), (106, 22843), (112, 22885), (113, 22888), (132, 23065), (146, 23176), (150, 23203), (156, 23275), (157, 23284), (158, 23287), (160, 23299), (175, 23419), (176, 23422), (180, 23464), (182, 23494), (184, 23500), (197, 23620), (199, 23626), (243, 23980), (246, 24007), (248, 24025), (250, 24034),

Gene: Snenia\_19 Start: 17374, Stop: 19137, Start Num: 34

Candidate Starts for Snenia\_19:

(Start: 34 @17374 has 38 MA's), (Start: 38 @17401 has 14 MA's), (50, 17464), (58, 17512), (59, 17518), (63, 17554), (70, 17629), (74, 17653), (75, 17659), (84, 17716), (100, 17830), (102, 17842), (116, 17953), (131, 18097), (132, 18109), (136, 18142), (159, 18331), (161, 18337), (169, 18394), (171, 18436), (173, 18445), (176, 18457), (183, 18532), (191, 18601), (193, 18613), (199, 18661), (205, 18727), (213, 18805), (217, 18850), (225, 18907), (234, 18970), (237, 19006), (242, 19021), (246, 19051), (247, 19057), (248, 19069), (250, 19078), (252, 19090),

Gene: Soap141\_18 Start: 17022, Stop: 18755, Start Num: 43

Candidate Starts for Soap141\_18:

(Start: 43 @17022 has 28 MA's), (53, 17091), (69, 17232), (70, 17235), (78, 17280), (82, 17313), (84, 17322), (88, 17358), (96, 17412), (100, 17439), (102, 17451), (106, 17502), (107, 17508), (111, 17541), (129, 17694), (132, 17718), (133, 17727), (138, 17772), (140, 17787), (150, 17865), (164, 17985), (170, 18048), (180, 18120), (184, 18156), (197, 18276), (199, 18282), (201, 18294), (206, 18357), (214, 18444), (217, 18471), (226, 18540), (227, 18555), (229, 18567), (234, 18591), (246, 18669),

Gene: Sparky\_16 Start: 16144, Stop: 17859, Start Num: 41

Candidate Starts for Sparky\_16:

(Start: 41 @16144 has 2 MA's), (45, 16153), (62, 16279), (69, 16357), (71, 16363), (72, 16366), (77, 16399), (84, 16447), (85, 16453), (94, 16519), (98, 16552), (101, 16570), (112, 16666), (125, 16780), (132, 16837), (134, 16855), (138, 16891), (150, 16972), (151, 16981), (159, 17059), (165, 17095), (176, 17185), (184, 17260), (199, 17386), (209, 17476), (218, 17578), (234, 17707), (244, 17749), (246, 17776), (250, 17803), (252, 17815), (253, 17818), (256, 17842),

Gene: Syleon\_28 Start: 21873, Stop: 23624, Start Num: 40

Candidate Starts for Syleon\_28:

(36, 21858), (Start: 40 @21873 has 7 MA's), (46, 21894), (47, 21897), (53, 21954), (57, 21975), (58, 21981), (60, 22008), (64, 22026), (66, 22035), (67, 22038), (70, 22098), (81, 22173), (86, 22194), (88, 22233), (106, 22377), (116, 22437), (117, 22443), (119, 22458), (122, 22497), (129, 22566), (130, 22575), (132, 22590), (133, 22599), (136, 22623), (138, 22644), (145, 22698), (148, 22716), (155, 22797), (157, 22809), (162, 22833), (176, 22947), (185, 23055), (189, 23079), (194, 23106), (199, 23151), (206, 23226), (207, 23232), (213, 23292), (219, 23343), (223, 23379), (229, 23430), (230, 23436), (235, 23460), (238, 23499), (244, 23514), (246, 23541), (251, 23571), (253, 23583), (257, 23613),

Gene: Tesla\_49 Start: 27023, Stop: 28735, Start Num: 44

Candidate Starts for Tesla\_49:

(32, 26960), (Start: 44 @27023 has 23 MA's), (55, 27104), (62, 27161), (70, 27242), (72, 27248), (80, 27305), (81, 27317), (84, 27329), (89, 27368), (91, 27383), (101, 27452), (106, 27506), (108, 27515), (126, 27671), (132, 27719), (133, 27728), (134, 27737), (139, 27776), (141, 27791), (150, 27854), (152, 27866), (166, 27983), (167, 27986), (170, 28037), (174, 28064), (176, 28067), (178, 28088), (181, 28130), (196, 28250), (199, 28268), (213, 28412), (217, 28457), (220, 28475), (228, 28559), (230, 28568), (234, 28586), (236, 28607), (246, 28652), (247, 28658), (248, 28670), (251, 28682), (254, 28703), (256, 28718), (257, 28724),

Gene: Tourach\_18 Start: 16987, Stop: 18720, Start Num: 43

Candidate Starts for Tourach\_18:

(Start: 43 @16987 has 28 MA's), (53, 17056), (69, 17197), (70, 17200), (75, 17230), (78, 17245), (82, 17278), (88, 17323), (96, 17377), (100, 17404), (102, 17416), (106, 17467), (107, 17473), (111, 17506), (129, 17659), (132, 17683), (133, 17692), (138, 17737), (144, 17788), (164, 17950), (170, 18013), (180, 18085), (184, 18121), (195, 18220), (197, 18241), (199, 18247), (201, 18259), (206,

18322), (214, 18409), (217, 18436), (219, 18442), (222, 18469), (224, 18481), (226, 18505), (227, 18520), (234, 18556), (246, 18634), (248, 18652),

Gene: Trax\_28 Start: 23606, Stop: 25348, Start Num: 40

Candidate Starts for Trax\_28:

(28, 23528), (36, 23591), (Start: 40 @23606 has 7 MA's), (46, 23618), (48, 23636), (53, 23678), (58, 23705), (67, 23762), (70, 23822), (81, 23897), (82, 23900), (84, 23909), (86, 23918), (88, 23957), (89, 23960), (97, 24014), (99, 24035), (104, 24071), (106, 24101), (116, 24161), (117, 24167), (122, 24221), (129, 24290), (130, 24299), (132, 24314), (145, 24422), (147, 24428), (162, 24554), (172, 24647), (176, 24668), (177, 24671), (183, 24743), (185, 24776), (188, 24797), (197, 24866), (199, 24872), (200, 24881), (211, 24998), (212, 25007), (219, 25067), (223, 25103), (225, 25118), (229, 25154), (230, 25160), (238, 25223), (246, 25265), (250, 25292), (253, 25307), (257, 25337),

Gene: TyDawg\_28 Start: 22368, Stop: 24104, Start Num: 38

Candidate Starts for TyDawg\_28:

(18, 22146), (Start: 31 @22326 has 3 MA's), (Start: 33 @22341 has 4 MA's), (Start: 38 @22368 has 14 MA's), (Start: 44 @22383 has 23 MA's), (49, 22422), (53, 22452), (54, 22458), (56, 22470), (68, 22575), (69, 22590), (76, 22629), (94, 22752), (95, 22761), (106, 22857), (112, 22899), (113, 22902), (132, 23079), (146, 23190), (150, 23217), (156, 23289), (157, 23298), (158, 23301), (160, 23313), (175, 23433), (176, 23436), (180, 23478), (182, 23508), (184, 23514), (197, 23634), (199, 23640), (243, 23994), (246, 24021), (248, 24039), (250, 24048),

Gene: Tyson\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for Tyson\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: UPIE\_18 Start: 16744, Stop: 18513, Start Num: 34

Candidate Starts for UPIE\_18:

(Start: 25 @16681 has 1 MA's), (29, 16702), (30, 16717), (Start: 34 @16744 has 38 MA's), (50, 16837), (58, 16885), (59, 16891), (61, 16918), (62, 16921), (63, 16927), (69, 16999), (72, 17008), (75, 17032), (78, 17047), (81, 17077), (100, 17203), (101, 17212), (103, 17233), (105, 17248), (114, 17317), (120, 17353), (121, 17374), (128, 17443), (132, 17482), (150, 17620), (152, 17632), (159, 17707), (161, 17713), (163, 17731), (169, 17770), (170, 17803), (171, 17812), (173, 17821), (175, 17830), (176, 17833), (187, 17953), (193, 17989), (199, 18037), (201, 18049), (205, 18103), (214, 18199), (215, 18217), (216, 18223), (217, 18226), (222, 18259), (225, 18283), (234, 18346), (240, 18388), (246, 18427), (248, 18445), (252, 18466), (255, 18487),

Gene: VasuNzinga\_50 Start: 26580, Stop: 28292, Start Num: 44

Candidate Starts for VasuNzinga\_50:

(32, 26517), (Start: 44 @26580 has 23 MA's), (55, 26661), (62, 26718), (70, 26799), (72, 26805), (80, 26862), (81, 26874), (84, 26886), (89, 26925), (91, 26940), (101, 27009), (106, 27063), (108, 27072), (126, 27228), (132, 27276), (133, 27285), (134, 27294), (139, 27333), (141, 27348), (150, 27411), (152, 27423), (166, 27540), (167, 27543), (170, 27594), (174, 27621), (176, 27624), (178, 27645), (181, 27687), (196, 27807), (199, 27825), (213, 27969), (217, 28014), (220, 28032), (228, 28116), (230, 28125), (234, 28143), (236, 28164), (246, 28209), (247, 28215), (248, 28227), (251, 28239), (253, 28251), (256, 28275), (257, 28281),



Gene: Vetrin\_18 Start: 16995, Stop: 18728, Start Num: 43

Candidate Starts for Vetrin\_18:

(Start: 43 @16995 has 28 MA's), (53, 17064), (69, 17205), (70, 17208), (78, 17253), (82, 17286), (84, 17295), (88, 17331), (96, 17385), (100, 17412), (102, 17424), (106, 17475), (107, 17481), (111, 17514), (129, 17667), (132, 17691), (133, 17700), (138, 17745), (140, 17760), (150, 17838), (164, 17958), (170, 18021), (180, 18093), (184, 18129), (197, 18249), (199, 18255), (201, 18267), (206, 18330), (211, 18381), (214, 18417), (217, 18444), (226, 18513), (227, 18528), (229, 18540), (234, 18564), (246, 18642),

Gene: Wamburgxpress\_18 Start: 16759, Stop: 18528, Start Num: 34

Candidate Starts for Wamburgxpress\_18:

(Start: 25 @16696 has 1 MA's), (29, 16717), (30, 16732), (Start: 34 @16759 has 38 MA's), (50, 16852), (58, 16900), (59, 16906), (61, 16933), (62, 16936), (63, 16942), (69, 17014), (72, 17023), (75, 17047), (78, 17062), (81, 17092), (100, 17218), (101, 17227), (103, 17248), (105, 17263), (114, 17332), (120, 17368), (121, 17389), (128, 17458), (132, 17497), (150, 17635), (152, 17647), (159, 17722), (161, 17728), (163, 17746), (169, 17785), (170, 17818), (171, 17827), (173, 17836), (175, 17845), (187, 17968), (193, 18004), (199, 18052), (201, 18064), (205, 18118), (214, 18214), (215, 18232), (216, 18238), (217, 18241), (222, 18274), (225, 18298), (234, 18361), (240, 18403), (246, 18442), (248, 18460), (252, 18481), (255, 18502),

Gene: Whirlwind\_20 Start: 17130, Stop: 18893, Start Num: 34

Candidate Starts for Whirlwind\_20:

(Start: 34 @17130 has 38 MA's), (Start: 38 @17157 has 14 MA's), (50, 17220), (59, 17274), (63, 17310), (70, 17385), (75, 17415), (78, 17430), (84, 17472), (100, 17586), (102, 17598), (116, 17709), (131, 17853), (132, 17865), (159, 18087), (161, 18093), (169, 18150), (171, 18192), (173, 18201), (176, 18213), (183, 18288), (190, 18354), (193, 18369), (199, 18417), (205, 18483), (213, 18561), (217, 18606), (225, 18663), (234, 18726), (237, 18762), (242, 18777), (246, 18807), (247, 18813), (248, 18825), (250, 18834), (252, 18846),

Gene: Whitty\_19 Start: 16980, Stop: 18686, Start Num: 44

Candidate Starts for Whitty\_19:

(24, 16872), (27, 16884), (Start: 44 @16980 has 23 MA's), (53, 17046), (65, 17121), (67, 17127), (74, 17211), (82, 17265), (88, 17310), (89, 17313), (98, 17379), (132, 17664), (159, 17886), (181, 18075), (199, 18213), (201, 18225), (217, 18402), (222, 18438), (246, 18603), (250, 18630), (256, 18669), (257, 18675),

Gene: Wigglewobble\_18 Start: 17021, Stop: 18754, Start Num: 43

Candidate Starts for Wigglewobble\_18:

(Start: 43 @17021 has 28 MA's), (53, 17090), (69, 17231), (70, 17234), (78, 17279), (82, 17312), (84, 17321), (88, 17357), (96, 17411), (100, 17438), (102, 17450), (106, 17501), (107, 17507), (111, 17540), (129, 17693), (132, 17717), (133, 17726), (138, 17771), (140, 17786), (150, 17864), (164, 17984), (170, 18047), (180, 18119), (184, 18155), (197, 18275), (199, 18281), (201, 18293), (206, 18356), (214, 18443), (217, 18470), (226, 18539), (227, 18554), (229, 18566), (234, 18590), (246, 18668),

Gene: Wildcat\_40 Start: 25260, Stop: 27644, Start Num: 1

Candidate Starts for Wildcat\_40:

(Start: 1 @25260 has 5 MA's), (2, 25377), (3, 25398), (4, 25401), (5, 25431), (6, 25437), (7, 25446), (12, 25536), (13, 25572), (14, 25590), (15, 25617), (16, 25629), (17, 25638), (20, 25701), (21, 25737), (22, 25773), (23, 25776), (26, 25782), (35, 25854), (42, 25884), (52, 25953), (53, 25956), (61, 26043), (65, 26061), (66, 26064), (69, 26124), (76, 26163), (82, 26205), (84, 26214), (85, 26220), (87, 26235), (88, 26250), (95, 26298), (106, 26394), (112, 26436), (113, 26439), (132, 26616), (134, 26634), (136,

26649), (137, 26664), (140, 26685), (143, 26718), (146, 26727), (149, 26757), (153, 26796), (157, 26838), (159, 26850), (160, 26853), (169, 26913), (175, 26973), (180, 27018), (184, 27054), (191, 27120), (197, 27174), (199, 27180), (205, 27246), (224, 27417), (226, 27441), (246, 27561), (249, 27582), (251, 27591), (256, 27627),

Gene: Wilder\_18 Start: 16994, Stop: 18727, Start Num: 43

Candidate Starts for Wilder\_18:

(Start: 43 @16994 has 28 MA's), (53, 17063), (69, 17204), (70, 17207), (78, 17252), (82, 17285), (84, 17294), (88, 17330), (96, 17384), (100, 17411), (102, 17423), (106, 17474), (107, 17480), (111, 17513), (129, 17666), (132, 17690), (133, 17699), (138, 17744), (140, 17759), (150, 17837), (164, 17957), (170, 18020), (180, 18092), (184, 18128), (197, 18248), (199, 18254), (201, 18266), (206, 18329), (214, 18416), (217, 18443), (226, 18512), (227, 18527), (229, 18539), (234, 18563), (246, 18641),

Gene: Winky\_18 Start: 16989, Stop: 18722, Start Num: 43

Candidate Starts for Winky\_18:

(Start: 43 @16989 has 28 MA's), (53, 17058), (69, 17199), (70, 17202), (78, 17247), (82, 17280), (84, 17289), (88, 17325), (96, 17379), (100, 17406), (102, 17418), (106, 17469), (107, 17475), (111, 17508), (129, 17661), (132, 17685), (133, 17694), (138, 17739), (140, 17754), (150, 17832), (164, 17952), (170, 18015), (180, 18087), (184, 18123), (197, 18243), (199, 18249), (201, 18261), (206, 18324), (214, 18411), (217, 18438), (226, 18507), (227, 18522), (229, 18534), (234, 18558), (246, 18636),

Gene: Wyatt2\_18 Start: 16746, Stop: 18515, Start Num: 34

Candidate Starts for Wyatt2\_18:

(Start: 25 @16683 has 1 MA's), (29, 16704), (30, 16719), (Start: 34 @16746 has 38 MA's), (50, 16839), (58, 16887), (59, 16893), (61, 16920), (62, 16923), (63, 16929), (69, 17001), (72, 17010), (75, 17034), (78, 17049), (81, 17079), (100, 17205), (101, 17214), (103, 17235), (105, 17250), (114, 17319), (120, 17355), (121, 17376), (128, 17445), (132, 17484), (150, 17622), (152, 17634), (159, 17709), (161, 17715), (163, 17733), (169, 17772), (170, 17805), (171, 17814), (173, 17823), (175, 17832), (176, 17835), (187, 17955), (193, 17991), (199, 18039), (201, 18051), (205, 18105), (214, 18201), (215, 18219), (216, 18225), (217, 18228), (222, 18261), (225, 18285), (234, 18348), (240, 18390), (246, 18429), (248, 18447), (252, 18468), (255, 18489),

Gene: Zakai\_18 Start: 16983, Stop: 18716, Start Num: 43

Candidate Starts for Zakai\_18:

(Start: 43 @16983 has 28 MA's), (53, 17052), (69, 17193), (70, 17196), (78, 17241), (82, 17274), (84, 17283), (88, 17319), (96, 17373), (100, 17400), (102, 17412), (106, 17463), (107, 17469), (111, 17502), (129, 17655), (132, 17679), (133, 17688), (138, 17733), (140, 17748), (150, 17826), (164, 17946), (170, 18009), (180, 18081), (184, 18117), (197, 18237), (199, 18243), (201, 18255), (206, 18318), (211, 18369), (214, 18405), (217, 18432), (226, 18501), (227, 18516), (229, 18528), (234, 18552), (246, 18630),

Gene: Zaria\_18 Start: 16760, Stop: 18529, Start Num: 34

Candidate Starts for Zaria\_18:

(Start: 25 @16697 has 1 MA's), (29, 16718), (30, 16733), (Start: 34 @16760 has 38 MA's), (50, 16853), (58, 16901), (59, 16907), (61, 16934), (62, 16937), (63, 16943), (69, 17015), (72, 17024), (75, 17048), (78, 17063), (81, 17093), (100, 17219), (101, 17228), (103, 17249), (105, 17264), (114, 17333), (120, 17369), (121, 17390), (128, 17459), (132, 17498), (150, 17636), (152, 17648), (159, 17723), (161, 17729), (163, 17747), (169, 17786), (170, 17819), (171, 17828), (173, 17837), (175, 17846), (187, 17969), (193, 18005), (199, 18053), (201, 18065), (205, 18119), (214, 18215), (215, 18233), (216, 18239), (217, 18242), (222, 18275), (225, 18299), (234, 18362), (240, 18404), (246, 18443), (248, 18461), (252, 18482), (255, 18503),

Gene: ZenTime222\_19 Start: 16980, Stop: 18686, Start Num: 44

Candidate Starts for ZenTime222\_19:

(24, 16872), (27, 16884), (Start: 44 @16980 has 23 MA's), (53, 17046), (65, 17121), (67, 17127), (74, 17211), (82, 17265), (88, 17310), (89, 17313), (98, 17379), (132, 17664), (159, 17886), (181, 18075), (199, 18213), (201, 18225), (217, 18402), (222, 18438), (246, 18603), (250, 18630), (256, 18669), (257, 18675),

Gene: ZhongYanYuan\_17 Start: 16814, Stop: 18547, Start Num: 43

Candidate Starts for ZhongYanYuan\_17:

(Start: 43 @16814 has 28 MA's), (53, 16883), (69, 17024), (70, 17027), (75, 17057), (78, 17072), (82, 17105), (88, 17150), (96, 17204), (100, 17231), (102, 17243), (106, 17294), (107, 17300), (111, 17333), (129, 17486), (132, 17510), (133, 17519), (138, 17564), (144, 17615), (155, 17720), (164, 17777), (170, 17840), (180, 17912), (184, 17948), (195, 18047), (197, 18068), (199, 18074), (201, 18086), (206, 18149), (214, 18236), (217, 18263), (222, 18296), (227, 18347), (229, 18359), (234, 18383), (246, 18461), (248, 18479),