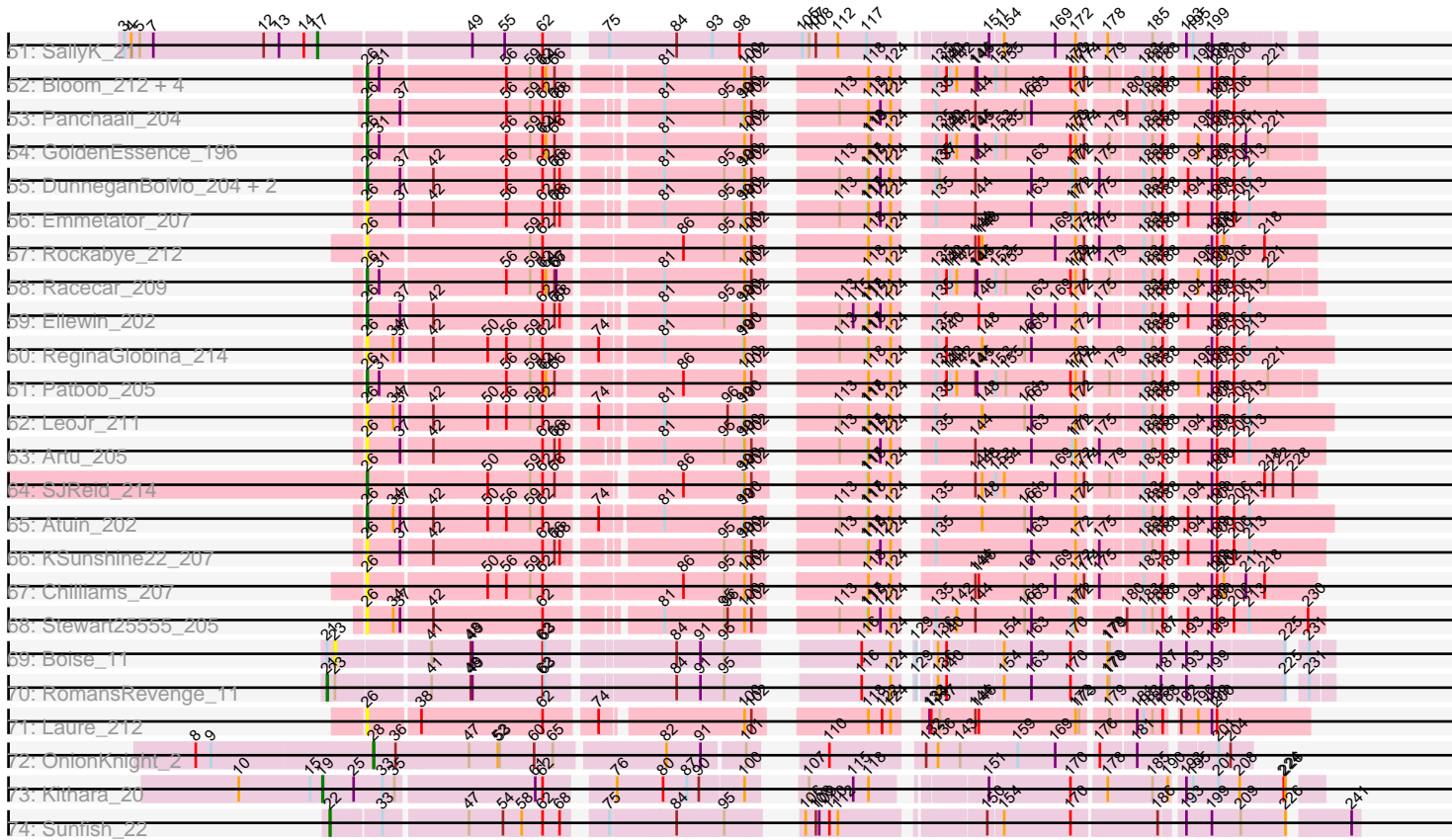




Pham 306276



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 306276 Report

This analysis was run 06/20/26 on database version 651.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 306276 has 120 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_15
- Track 2 : Wilde\_15
- Track 3 : Tank\_15
- Track 4 : Rizwana\_14
- Track 5 : Popstraw\_19
- Track 6 : Hive\_19
- Track 7 : BetaFish\_20, Beagle\_21, Pointis\_20, Odyssey395\_22, DogYard\_20, Pureglobe5\_22, Kubulix\_21
- Track 8 : Nikan\_16
- Track 9 : Ollypop\_18
- Track 10 : Forrestell\_17
- Track 11 : NyleyClemson\_16, MellowYellow\_17
- Track 12 : Ren19\_14
- Track 13 : RIPWilbur\_18
- Track 14 : RazzB\_16
- Track 15 : PhuzzTulsa\_18
- Track 16 : BruhMoment\_16
- Track 17 : AWGoat\_15
- Track 18 : SilentRX\_16
- Track 19 : GodonK\_61
- Track 20 : Phendrix\_60
- Track 21 : Sixama\_62
- Track 22 : GMA2\_1
- Track 23 : Forza\_69, Boopy\_69, Mareelih\_67, BlueNGold\_67
- Track 24 : MorillMayhem\_19, BaconCheese\_22, Mila11\_22
- Track 25 : Tempo\_19, KillerQueen\_20, RobinRose\_20, CandC\_18, Kelcole\_18, Romm\_20, OneinaGillian\_19, Fregley\_20
- Track 26 : Mentos\_24
- Track 27 : Phabia\_20
- Track 28 : Fizzles\_20
- Track 29 : Zagie\_20, Rudy\_18, SlySloth\_22, Quammi\_18, Rowlf\_16, Llemily\_19, Sillytadpoles\_19, Viceroy\_19
- Track 30 : BirdInFrench\_19, Wilca\_19

- Track 31 : Tissue\_19, Zhafia\_22, Namago\_20
- Track 32 : Mashley\_17, Lonelysoil\_19
- Track 33 : StrawberryJamm\_22
- Track 34 : Hyperion\_18
- Track 35 : Gazebo\_19, Statler\_20
- Track 36 : Fransoyer\_21, RubyRalph\_21
- Track 37 : Casend\_21, Jehoshaphat\_22, Wheelie\_19, FrankDeliGuy\_17, Teehee\_21, DonaldDuck\_19, Wayne3\_21
- Track 38 : EverythinBagel\_19
- Track 39 : Nike\_20, Squash\_22
- Track 40 : Pepe25\_18
- Track 41 : Marcie\_24
- Track 42 : AluminumJesus\_17
- Track 43 : Altheas\_21
- Track 44 : WheelerS25\_25
- Track 45 : Phinky\_26
- Track 46 : Kyva\_22, Grassboy\_21
- Track 47 : BabyDotz\_19
- Track 48 : Judebell\_22
- Track 49 : SadLad\_22
- Track 50 : Blab\_17
- Track 51 : SallyK\_21
- Track 52 : Bloom\_212, Talia1610\_209, Mimi\_207, FloraSnap32\_206, FrostedClock\_211
- Track 53 : Panchaali\_204
- Track 54 : GoldenEssence\_196
- Track 55 : DunneganBoMo\_204, WaddleDee\_199, BooTeria\_212
- Track 56 : Emmetator\_207
- Track 57 : Rockabye\_212
- Track 58 : Racecar\_209
- Track 59 : Ellewin\_202
- Track 60 : ReginaGlobina\_214
- Track 61 : Patbob\_205
- Track 62 : LeoJr\_211
- Track 63 : Artu\_205
- Track 64 : SJReid\_214
- Track 65 : Atuin\_202
- Track 66 : KSunshine22\_207
- Track 67 : Chilliams\_207
- Track 68 : Stewart25555\_205
- Track 69 : Boise\_11
- Track 70 : RomansRevenge\_11
- Track 71 : Laure\_212
- Track 72 : OnionKnight\_2
- Track 73 : Kithara\_20
- Track 74 : Sunfish\_22

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

The start number called the most often in the published annotations is 17, it was called in 51 of the 92 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Altheas\_21, AluminumJesus\_17, BabyDotz\_19, BaconCheese\_22, BirdInFrench\_19, Blab\_17, CandC\_18, Casend\_21, DonaldDuck\_19, EverythinBagel\_19, Fizzles\_20, FrankDeliGuy\_17, Fransoyer\_21, Fregley\_20, Gazebo\_19, Grassboy\_21, Hyperion\_18, Jehoshaphat\_22, Judebell\_22, Kelcole\_18, KillerQueen\_20, Kyva\_22, Llemily\_19, Lonelysoil\_19, Marcie\_24, Mashley\_17, Mentos\_24, Mila11\_22, MorillMayhem\_19, Namago\_20, Nike\_20, OneinaGillian\_19, Pepe25\_18, Phabia\_20, Phinky\_26, Quammi\_18, RobinRose\_20, Romm\_20, Rowlf\_16, RubyRalph\_21, Rudy\_18, SadLad\_22, SallyK\_21, Sillytadpoles\_19, SlySloth\_22, Squash\_22, Statler\_20, StrawberryJamm\_22, Teehee\_21, Tempo\_19, Tissue\_19, Viceroy\_19, Wayne3\_21, WheelerS25\_25, Wheelie\_19, Wilca\_19, Zagie\_20, Zhafia\_22,

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

- 

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

- AWGoat\_15, Artu\_205, Atuin\_202, Beagle\_21, BetaFish\_20, Bloom\_212, BlueNGold\_67, Boise\_11, BooTeria\_212, Boopy\_69, BruhMoment\_16, Chilliams\_207, DogYard\_20, DunneganBoMo\_204, Ellewin\_202, Emmetator\_207, FloraSnap32\_206, Forrestell\_17, Forza\_69, FrostedClock\_211, GMA2\_1, GodonK\_61, GoldenEssence\_196, Hive\_19, KSunshine22\_207, Kithara\_20, Kubulix\_21, Laure\_212, LeoJr\_211, Mareelih\_67, MellowYellow\_17, Mimi\_207, Nikan\_16, NyleyClemson\_16, Odyssey395\_22, Ollypop\_18, OnionKnight\_2, Panchaali\_204, Patbob\_205, Phendrix\_60, PhuzzTulsa\_18, Pointis\_20, Popstraw\_19, Pureglobe5\_22, RIPWilbur\_18, Racecar\_209, Ranunculus\_15, RazzB\_16, ReginaGlobina\_214, Ren19\_14, Rizwana\_14, Rockabye\_212, RomansRevenge\_11, SJReid\_214, SilentRX\_16, Sixama\_62, Stewart25555\_205, Sunfish\_22, Talia1610\_209, Tank\_15, WaddleDee\_199, Wilde\_15,

### Summary by start number:

Start 16:

- Found in 5 of 120 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 5 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold\_67 (DS), Boopy\_69 (DS), Forza\_69 (DS), Mareelih\_67 (DS), Sixama\_62 (DS),

Start 17:

- Found in 58 of 120 ( 48.3% ) of genes in pham
- Manual Annotations of this start: 51 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altheas\_21 (EG), AluminumJesus\_17 (EG), BabyDotz\_19 (EG), BaconCheese\_22 (EG), BirdInFrench\_19 (EG), Blab\_17 (EG), CandC\_18 (EG), Casend\_21 (EG), DonaldDuck\_19 (EG), EverythinBagel\_19 (EG), Fizzles\_20 (EG), FrankDeliGuy\_17 (EG), Fransoyer\_21 (EG), Fregley\_20 (EG), Gazebo\_19 (EG), Grassboy\_21 (EG), Hyperion\_18 (EG), Jehoshaphat\_22 (EG), Judebell\_22 (EG), Kelcole\_18 (EG), KillerQueen\_20 (EG), Kyva\_22 (EG), Llemily\_19 (EG), Lonelysoil\_19 (EG), Marcie\_24 (EG), Mashley\_17 (EG), Mentos\_24 (EG),

Mila11\_22 (EG), MorillMayhem\_19 (EG), Namago\_20 (EG), Nike\_20 (EG), OneinaGillian\_19 (EG), Pepe25\_18 (EG), Phabia\_20 (EG), Phinky\_26 (EG), Quammi\_18 (EG), RobinRose\_20 (EG), Romm\_20 (EG), Rowlf\_16 (EG), RubyRalph\_21 (EG), Rudy\_18 (EG), SadLad\_22 (EG), SallyK\_21 (EG), Sillytadpoles\_19 (EG), SlySloth\_22 (EG), Squash\_22 (EG), Statler\_20 (EG), StrawberryJamm\_22 (EG), Teehee\_21 (EG), Tempo\_19 (EG), Tissue\_19 (EG), Viceroy\_19 (EG), Wayne3\_21 (EG), WheelerS25\_25 (EG), Wheelie\_19 (EG), Wilca\_19 (EG), Zagie\_20 (EG), Zhafia\_22 (EG),

Start 18:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA2\_1 (DS),

Start 19:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kithara\_20 (singleton),

Start 20:

- Found in 3 of 120 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 92
- Called 66.7% of time when present
- Phage (with cluster) where this start called: GodonK\_61 (DK), Phendrix\_60 (DK),

Start 21:

- Found in 2 of 120 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 50.0% of time when present
- Phage (with cluster) where this start called: RomansRevenge\_11 (FT),

Start 22:

- Found in 26 of 120 ( 21.7% ) of genes in pham
- Manual Annotations of this start: 19 of 92
- Called 96.2% of time when present
- Phage (with cluster) where this start called: AWGoat\_15 (AP4), Beagle\_21 (AP2), BetaFish\_20 (AP2), DogYard\_20 (AP2), Forrestell\_17 (AP2), Hive\_19 (AP2), Kubulix\_21 (AP2), MellowYellow\_17 (AP2), Nikan\_16 (AP2), NyleyClemson\_16 (AP2), Odyssey395\_22 (AP2), Ollypop\_18 (AP2), PhuzzTulsa\_18 (AP2), Pointis\_20 (AP2), Popstraw\_19 (AP2), Pureglobe5\_22 (AP2), RIPWilbur\_18 (AP2), Ranunculus\_15 (AP), RazzB\_16 (AP2), Ren19\_14 (AP2), Rizwana\_14 (AP1), SilentRX\_16 (AP4), Sunfish\_22 (singleton), Tank\_15 (AP1), Wilde\_15 (AP1),

Start 23:

- Found in 2 of 120 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Boise\_11 (FT),

Start 26:

- Found in 24 of 120 ( 20.0% ) of genes in pham

- Manual Annotations of this start: 11 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Artu\_205 (FC), Atuin\_202 (FC), Bloom\_212 (FC), BooTeria\_212 (FC), Chilliams\_207 (FC), DunneganBoMo\_204 (FC), Ellewin\_202 (FC), Emmetator\_207 (FC), FloraSnap32\_206 (FC), FrostedClock\_211 (FC), GoldenEssence\_196 (FC), KSunshine22\_207 (FC), Laure\_212 (UNK), LeoJr\_211 (FC), Mimi\_207 (FC), Panchaali\_204 (FC), Patbob\_205 (FC), Racecar\_209 (FC), ReginaGlobina\_214 (FC), Rockabye\_212 (FC), SJReid\_214 (FC), Stewart25555\_205 (FC), Talia1610\_209 (FC), WaddleDee\_199 (FC),

Start 28:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OnionKnight\_2 (singleton),

Start 55:

- Found in 52 of 120 ( 43.3% ) of genes in pham
- Manual Annotations of this start: 1 of 92
- Called 1.9% of time when present
- Phage (with cluster) where this start called: BruhMoment\_16 (AP3),

### Summary by clusters:

There are 12 clusters represented in this pham: singleton, FT, DK, AP2, AP3, EG, AP1, AP4, AP, FC, UNK, DS,

Info for manual annotations of cluster AP:

- Start number 22 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 22 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 22 was manually annotated 12 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 55 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 22 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster DK:

- Start number 20 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster DS:

- Start number 16 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster EG:

- Start number 17 was manually annotated 51 times for cluster EG.

Info for manual annotations of cluster FC:

- Start number 26 was manually annotated 11 times for cluster FC.

Info for manual annotations of cluster FT:

•Start number 21 was manually annotated 1 time for cluster FT.

### **Gene Information:**

Gene: AWGoat\_15 Start: 6667, Stop: 8379, Start Num: 22

Candidate Starts for AWGoat\_15:

(1, 6130), (2, 6289), (Start: 22 @6667 has 19 MA's), (24, 6688), (46, 6883), (Start: 55 @6949 has 1 MA's), (62, 7012), (68, 7042), (69, 7060), (71, 7069), (80, 7222), (89, 7276), (90, 7279), (94, 7309), (95, 7312), (97, 7333), (100, 7348), (109, 7408), (112, 7441), (130, 7582), (136, 7615), (169, 7807), (170, 7834), (177, 7876), (179, 7885), (180, 7906), (185, 7951), (187, 7966), (193, 7990), (195, 8002), (199, 8032), (201, 8044), (217, 8113), (220, 8122), (236, 8209), (238, 8224), (240, 8230), (248, 8281), (253, 8338), (254, 8347), (255, 8365),

Gene: Altheas\_21 Start: 6863, Stop: 8374, Start Num: 17

Candidate Starts for Altheas\_21:

(14, 6839), (Start: 17 @6863 has 51 MA's), (30, 6956), (49, 7106), (Start: 55 @7160 has 1 MA's), (62, 7223), (75, 7298), (84, 7409), (93, 7466), (98, 7511), (105, 7622), (107, 7634), (108, 7646), (112, 7685), (117, 7736), (151, 7895), (169, 8003), (172, 8036), (178, 8078), (193, 8189), (195, 8201), (199, 8234),

Gene: AluminumJesus\_17 Start: 6227, Stop: 7738, Start Num: 17

Candidate Starts for AluminumJesus\_17:

(3, 5888), (6, 5930), (13, 6161), (14, 6203), (Start: 17 @6227 has 51 MA's), (30, 6320), (49, 6470), (52, 6515), (Start: 55 @6524 has 1 MA's), (62, 6587), (63, 6590), (75, 6662), (84, 6773), (93, 6830), (98, 6875), (105, 6986), (107, 6998), (108, 7010), (112, 7049), (117, 7100), (138, 7184), (151, 7259), (154, 7277), (169, 7367), (172, 7400), (178, 7442), (185, 7508), (193, 7553), (195, 7565), (199, 7598),

Gene: Artu\_205 Start: 149723, Stop: 148269, Start Num: 26

Candidate Starts for Artu\_205:

(Start: 26 @149723 has 11 MA's), (37, 149666), (42, 149618), (62, 149432), (66, 149411), (68, 149402), (81, 149270), (95, 149168), (99, 149135), (100, 149132), (102, 149120), (113, 149024), (117, 148976), (118, 148973), (121, 148952), (124, 148934), (135, 148892), (144, 148826), (163, 148727), (171, 148655), (172, 148649), (175, 148622), (183, 148556), (185, 148541), (188, 148523), (194, 148499), (199, 148457), (200, 148448), (206, 148424), (213, 148397),

Gene: Atuin\_202 Start: 142914, Stop: 141436, Start Num: 26

Candidate Starts for Atuin\_202:

(Start: 26 @142914 has 11 MA's), (34, 142869), (37, 142857), (42, 142809), (50, 142719), (56, 142686), (59, 142644), (62, 142623), (74, 142542), (81, 142449), (99, 142314), (100, 142311), (113, 142203), (117, 142155), (118, 142152), (124, 142113), (135, 142071), (148, 141993), (161, 141918), (163, 141906), (172, 141828), (183, 141735), (185, 141720), (188, 141702), (194, 141678), (199, 141636), (200, 141627), (206, 141603), (213, 141576),

Gene: BabyDotz\_19 Start: 6678, Stop: 8189, Start Num: 17

Candidate Starts for BabyDotz\_19:

(3, 6339), (12, 6585), (13, 6612), (14, 6654), (Start: 17 @6678 has 51 MA's), (30, 6771), (49, 6921), (Start: 55 @6975 has 1 MA's), (61, 7026), (62, 7038), (63, 7041), (75, 7113), (84, 7224), (93, 7281), (98, 7326), (105, 7437), (107, 7449), (108, 7461), (112, 7500), (117, 7551), (151, 7710), (154, 7728),

(169, 7818), (172, 7851), (178, 7893), (185, 7959), (193, 8004), (195, 8016), (199, 8049),

Gene: BaconCheese\_22 Start: 7375, Stop: 8886, Start Num: 17

Candidate Starts for BaconCheese\_22:

(3, 7036), (13, 7309), (14, 7351), (Start: 17 @7375 has 51 MA's), (30, 7468), (49, 7618), (52, 7663), (Start: 55 @7672 has 1 MA's), (62, 7735), (63, 7738), (75, 7810), (84, 7921), (93, 7978), (98, 8023), (105, 8134), (107, 8146), (108, 8158), (112, 8197), (117, 8248), (151, 8407), (154, 8425), (169, 8515), (172, 8548), (178, 8590), (185, 8656), (193, 8701), (195, 8713), (199, 8746),

Gene: Beagle\_21 Start: 7242, Stop: 8873, Start Num: 22

Candidate Starts for Beagle\_21:

(Start: 22 @7242 has 19 MA's), (39, 7389), (62, 7590), (68, 7620), (76, 7713), (89, 7845), (100, 7917), (124, 8100), (129, 8130), (136, 8151), (147, 8220), (148, 8223), (149, 8226), (168, 8340), (169, 8343), (170, 8370), (171, 8373), (177, 8412), (179, 8421), (180, 8442), (185, 8487), (193, 8526), (197, 8547), (199, 8568), (214, 8631), (219, 8649), (244, 8769), (250, 8829), (253, 8859),

Gene: BetaFish\_20 Start: 7445, Stop: 9076, Start Num: 22

Candidate Starts for BetaFish\_20:

(Start: 22 @7445 has 19 MA's), (39, 7592), (62, 7793), (68, 7823), (76, 7916), (89, 8048), (100, 8120), (124, 8303), (129, 8333), (136, 8354), (147, 8423), (148, 8426), (149, 8429), (168, 8543), (169, 8546), (170, 8573), (171, 8576), (177, 8615), (179, 8624), (180, 8645), (185, 8690), (193, 8729), (197, 8750), (199, 8771), (214, 8834), (219, 8852), (244, 8972), (250, 9032), (253, 9062),

Gene: BirdInFrench\_19 Start: 5601, Stop: 7064, Start Num: 17

Candidate Starts for BirdInFrench\_19:

(Start: 17 @5601 has 51 MA's), (27, 5685), (44, 5814), (49, 5844), (57, 5919), (62, 5961), (84, 6147), (107, 6300), (108, 6312), (120, 6417), (148, 6549), (162, 6627), (169, 6672), (178, 6762), (184, 6822), (195, 6885), (201, 6930), (205, 6954), (212, 6978),

Gene: Blab\_17 Start: 6003, Stop: 7514, Start Num: 17

Candidate Starts for Blab\_17:

(3, 5664), (5, 5691), (7, 5715), (13, 5937), (14, 5979), (Start: 17 @6003 has 51 MA's), (30, 6096), (49, 6246), (Start: 55 @6300 has 1 MA's), (62, 6363), (63, 6366), (75, 6438), (84, 6549), (93, 6606), (98, 6651), (105, 6762), (107, 6774), (108, 6786), (112, 6825), (117, 6876), (151, 7035), (169, 7143), (172, 7176), (178, 7218), (185, 7284), (193, 7329), (195, 7341), (199, 7374),

Gene: Bloom\_212 Start: 144896, Stop: 143451, Start Num: 26

Candidate Starts for Bloom\_212:

(Start: 26 @144896 has 11 MA's), (31, 144875), (56, 144668), (59, 144626), (62, 144605), (64, 144599), (66, 144584), (81, 144431), (100, 144293), (102, 144281), (118, 144134), (124, 144095), (135, 144053), (140, 144038), (141, 144032), (142, 144020), (144, 143987), (145, 143984), (153, 143951), (155, 143933), (170, 143819), (172, 143810), (174, 143795), (179, 143765), (183, 143717), (185, 143702), (188, 143684), (196, 143642), (199, 143618), (200, 143609), (206, 143585), (221, 143528),

Gene: BlueNGold\_67 Start: 25140, Stop: 26858, Start Num: 16

Candidate Starts for BlueNGold\_67:

(Start: 16 @25140 has 5 MA's), (29, 25239), (38, 25302), (49, 25389), (56, 25449), (64, 25518), (67, 25536), (73, 25590), (77, 25617), (78, 25647), (79, 25656), (88, 25722), (99, 25812), (103, 25833), (158, 26202), (166, 26241), (168, 26265), (170, 26295), (172, 26304), (185, 26412), (198, 26478), (199, 26496), (200, 26505), (203, 26526), (206, 26529), (227, 26625), (235, 26688), (242, 26733), (246, 26766), (249, 26799),

Gene: Boise\_11 Start: 4548, Stop: 6038, Start Num: 23

Candidate Starts for Boise\_11:

(Start: 21 @4536 has 1 MA's), (23, 4548), (41, 4698), (48, 4764), (49, 4767), (62, 4884), (63, 4887), (84, 5082), (91, 5118), (95, 5157), (116, 5328), (124, 5379), (129, 5400), (136, 5421), (140, 5436), (154, 5523), (163, 5571), (170, 5640), (178, 5691), (179, 5694), (187, 5775), (193, 5820), (199, 5862), (225, 5982), (231, 6000),

Gene: BooTeria\_212 Start: 149233, Stop: 147779, Start Num: 26

Candidate Starts for BooTeria\_212:

(Start: 26 @149233 has 11 MA's), (37, 149176), (42, 149128), (56, 149005), (62, 148942), (66, 148921), (68, 148912), (81, 148780), (95, 148678), (99, 148645), (100, 148642), (102, 148630), (113, 148534), (117, 148486), (118, 148483), (121, 148462), (124, 148444), (135, 148402), (137, 148396), (144, 148336), (163, 148237), (171, 148165), (172, 148159), (175, 148132), (183, 148066), (185, 148051), (188, 148033), (194, 148009), (199, 147967), (200, 147958), (206, 147934), (213, 147907),

Gene: Boopy\_69 Start: 25152, Stop: 26870, Start Num: 16

Candidate Starts for Boopy\_69:

(Start: 16 @25152 has 5 MA's), (29, 25251), (38, 25314), (49, 25401), (56, 25461), (64, 25530), (67, 25548), (73, 25602), (77, 25629), (78, 25659), (79, 25668), (88, 25734), (99, 25824), (103, 25845), (158, 26214), (166, 26253), (168, 26277), (170, 26307), (172, 26316), (185, 26424), (198, 26490), (199, 26508), (200, 26517), (203, 26538), (206, 26541), (227, 26637), (235, 26700), (242, 26745), (246, 26778), (249, 26811),

Gene: BruhMoment\_16 Start: 6782, Stop: 8248, Start Num: 55

Candidate Starts for BruhMoment\_16:

(Start: 22 @6500 has 19 MA's), (Start: 55 @6782 has 1 MA's), (61, 6833), (62, 6845), (89, 7103), (90, 7106), (92, 7121), (95, 7139), (100, 7175), (109, 7235), (112, 7268), (118, 7322), (127, 7391), (136, 7445), (141, 7466), (148, 7517), (149, 7520), (167, 7631), (168, 7634), (169, 7637), (170, 7664), (180, 7736), (193, 7820), (199, 7862), (201, 7874), (202, 7883), (214, 7925), (229, 7991), (240, 8063), (253, 8186), (256, 8240),

Gene: CandC\_18 Start: 5287, Stop: 6750, Start Num: 17

Candidate Starts for CandC\_18:

(13, 5227), (Start: 17 @5287 has 51 MA's), (27, 5371), (44, 5500), (49, 5530), (57, 5605), (62, 5647), (84, 5833), (107, 5986), (108, 5998), (156, 6280), (162, 6313), (166, 6328), (169, 6358), (178, 6448), (184, 6508), (195, 6571), (201, 6616),

Gene: Casend\_21 Start: 7002, Stop: 8513, Start Num: 17

Candidate Starts for Casend\_21:

(3, 6663), (7, 6714), (13, 6936), (14, 6978), (Start: 17 @7002 has 51 MA's), (30, 7095), (49, 7245), (Start: 55 @7299 has 1 MA's), (62, 7362), (63, 7365), (75, 7437), (84, 7548), (93, 7605), (98, 7650), (105, 7761), (107, 7773), (108, 7785), (112, 7824), (117, 7875), (151, 8034), (154, 8052), (169, 8142), (172, 8175), (178, 8217), (185, 8283), (193, 8328), (195, 8340), (199, 8373),

Gene: Chilliams\_207 Start: 140757, Stop: 139294, Start Num: 26

Candidate Starts for Chilliams\_207:

(Start: 26 @140757 has 11 MA's), (50, 140562), (56, 140529), (59, 140487), (62, 140466), (86, 140247), (95, 140178), (100, 140142), (102, 140130), (118, 139983), (124, 139944), (144, 139836), (146, 139830), (161, 139749), (169, 139695), (172, 139659), (174, 139644), (175, 139632), (183, 139566), (188, 139533), (199, 139467), (200, 139458), (202, 139446), (211, 139413), (218, 139383),

Gene: DogYard\_20 Start: 7312, Stop: 8943, Start Num: 22

Candidate Starts for DogYard\_20:

(Start: 22 @7312 has 19 MA's), (39, 7459), (62, 7660), (68, 7690), (76, 7783), (89, 7915), (100, 7987), (124, 8170), (129, 8200), (136, 8221), (147, 8290), (148, 8293), (149, 8296), (168, 8410), (169, 8413), (170, 8440), (171, 8443), (177, 8482), (179, 8491), (180, 8512), (185, 8557), (193, 8596), (197, 8617), (199, 8638), (214, 8701), (219, 8719), (244, 8839), (250, 8899), (253, 8929),

Gene: DonaldDuck\_19 Start: 6348, Stop: 7859, Start Num: 17

Candidate Starts for DonaldDuck\_19:

(3, 6009), (7, 6060), (13, 6282), (14, 6324), (Start: 17 @6348 has 51 MA's), (30, 6441), (49, 6591), (Start: 55 @6645 has 1 MA's), (62, 6708), (63, 6711), (75, 6783), (84, 6894), (93, 6951), (98, 6996), (105, 7107), (107, 7119), (108, 7131), (112, 7170), (117, 7221), (151, 7380), (154, 7398), (169, 7488), (172, 7521), (178, 7563), (185, 7629), (193, 7674), (195, 7686), (199, 7719),

Gene: DunneganBoMo\_204 Start: 148697, Stop: 147243, Start Num: 26

Candidate Starts for DunneganBoMo\_204:

(Start: 26 @148697 has 11 MA's), (37, 148640), (42, 148592), (56, 148469), (62, 148406), (66, 148385), (68, 148376), (81, 148244), (95, 148142), (99, 148109), (100, 148106), (102, 148094), (113, 147998), (117, 147950), (118, 147947), (121, 147926), (124, 147908), (135, 147866), (137, 147860), (144, 147800), (163, 147701), (171, 147629), (172, 147623), (175, 147596), (183, 147530), (185, 147515), (188, 147497), (194, 147473), (199, 147431), (200, 147422), (206, 147398), (213, 147371),

Gene: Ellewin\_202 Start: 147964, Stop: 146510, Start Num: 26

Candidate Starts for Ellewin\_202:

(Start: 26 @147964 has 11 MA's), (37, 147907), (42, 147859), (62, 147673), (66, 147652), (68, 147643), (81, 147511), (95, 147409), (99, 147376), (100, 147373), (102, 147361), (113, 147265), (115, 147241), (117, 147217), (118, 147214), (121, 147193), (124, 147175), (135, 147133), (146, 147061), (163, 146968), (169, 146926), (172, 146890), (175, 146863), (183, 146797), (185, 146782), (188, 146764), (194, 146740), (199, 146698), (200, 146689), (206, 146665), (213, 146638),

Gene: Emmetator\_207 Start: 148093, Stop: 146639, Start Num: 26

Candidate Starts for Emmetator\_207:

(Start: 26 @148093 has 11 MA's), (37, 148036), (42, 147988), (56, 147865), (62, 147802), (66, 147781), (68, 147772), (81, 147640), (95, 147538), (99, 147505), (100, 147502), (102, 147490), (113, 147394), (117, 147346), (118, 147343), (121, 147322), (124, 147304), (135, 147262), (144, 147196), (163, 147097), (171, 147025), (172, 147019), (175, 146992), (183, 146926), (185, 146911), (188, 146893), (194, 146869), (199, 146827), (200, 146818), (206, 146794), (213, 146767),

Gene: EverythinBagel\_19 Start: 6749, Stop: 8260, Start Num: 17

Candidate Starts for EverythinBagel\_19:

(3, 6410), (5, 6437), (7, 6461), (13, 6683), (14, 6725), (Start: 17 @6749 has 51 MA's), (30, 6842), (49, 6992), (52, 7037), (Start: 55 @7046 has 1 MA's), (62, 7109), (63, 7112), (75, 7184), (84, 7295), (93, 7352), (98, 7397), (105, 7508), (107, 7520), (108, 7532), (112, 7571), (117, 7622), (151, 7781), (154, 7799), (169, 7889), (172, 7922), (178, 7964), (185, 8030), (193, 8075), (195, 8087), (199, 8120),

Gene: Fizzles\_20 Start: 6291, Stop: 7814, Start Num: 17

Candidate Starts for Fizzles\_20:

(Start: 17 @6291 has 51 MA's), (Start: 20 @6303 has 2 MA's), (41, 6480), (45, 6525), (49, 6549), (Start: 55 @6603 has 1 MA's), (62, 6666), (63, 6669), (75, 6741), (84, 6852), (93, 6909), (98, 6954), (107, 7077), (108, 7089), (112, 7128), (117, 7179), (122, 7206), (132, 7239), (136, 7254), (160, 7386), (169, 7443), (193, 7629), (195, 7641),

Gene: FloraSnap32\_206 Start: 143499, Stop: 142054, Start Num: 26

Candidate Starts for FloraSnap32\_206:

(Start: 26 @143499 has 11 MA's), (31, 143478), (56, 143271), (59, 143229), (62, 143208), (64, 143202), (66, 143187), (81, 143034), (100, 142896), (102, 142884), (118, 142737), (124, 142698), (135, 142656), (140, 142641), (141, 142635), (142, 142623), (144, 142590), (145, 142587), (153, 142554), (155, 142536), (170, 142422), (172, 142413), (174, 142398), (179, 142368), (183, 142320), (185, 142305), (188, 142287), (196, 142245), (199, 142221), (200, 142212), (206, 142188), (221, 142131),

Gene: Forrestell\_17 Start: 5956, Stop: 7587, Start Num: 22

Candidate Starts for Forrestell\_17:

(Start: 22 @5956 has 19 MA's), (39, 6103), (62, 6304), (68, 6334), (76, 6427), (89, 6559), (100, 6631), (124, 6814), (129, 6844), (136, 6865), (147, 6934), (149, 6940), (168, 7054), (169, 7057), (170, 7084), (171, 7087), (177, 7126), (179, 7135), (180, 7156), (185, 7201), (193, 7240), (197, 7261), (214, 7345), (219, 7363), (244, 7483), (250, 7543), (253, 7573),

Gene: Forza\_69 Start: 25068, Stop: 26786, Start Num: 16

Candidate Starts for Forza\_69:

(Start: 16 @25068 has 5 MA's), (29, 25167), (38, 25230), (49, 25317), (56, 25377), (64, 25446), (67, 25464), (73, 25518), (77, 25545), (78, 25575), (79, 25584), (88, 25650), (99, 25740), (103, 25761), (158, 26130), (166, 26169), (168, 26193), (170, 26223), (172, 26232), (185, 26340), (198, 26406), (199, 26424), (200, 26433), (203, 26454), (206, 26457), (227, 26553), (235, 26616), (242, 26661), (246, 26694), (249, 26727),

Gene: FrankDeliGuy\_17 Start: 6207, Stop: 7718, Start Num: 17

Candidate Starts for FrankDeliGuy\_17:

(3, 5868), (7, 5919), (13, 6141), (14, 6183), (Start: 17 @6207 has 51 MA's), (30, 6300), (49, 6450), (Start: 55 @6504 has 1 MA's), (62, 6567), (63, 6570), (75, 6642), (84, 6753), (93, 6810), (98, 6855), (105, 6966), (107, 6978), (108, 6990), (112, 7029), (117, 7080), (151, 7239), (154, 7257), (169, 7347), (172, 7380), (178, 7422), (185, 7488), (193, 7533), (195, 7545), (199, 7578),

Gene: Fransoyer\_21 Start: 6468, Stop: 8003, Start Num: 17

Candidate Starts for Fransoyer\_21:

(Start: 17 @6468 has 51 MA's), (27, 6552), (42, 6645), (46, 6699), (49, 6711), (54, 6762), (Start: 55 @6765 has 1 MA's), (62, 6828), (75, 6903), (84, 7014), (93, 7071), (105, 7227), (107, 7239), (108, 7251), (112, 7290), (117, 7341), (136, 7416), (139, 7428), (141, 7437), (165, 7572), (169, 7608), (172, 7641), (178, 7698), (193, 7809), (195, 7821), (201, 7866), (210, 7908),

Gene: Fregley\_20 Start: 5825, Stop: 7288, Start Num: 17

Candidate Starts for Fregley\_20:

(13, 5765), (Start: 17 @5825 has 51 MA's), (27, 5909), (44, 6038), (49, 6068), (57, 6143), (62, 6185), (84, 6371), (107, 6524), (108, 6536), (156, 6818), (162, 6851), (166, 6866), (169, 6896), (178, 6986), (184, 7046), (195, 7109), (201, 7154),

Gene: FrostedClock\_211 Start: 144816, Stop: 143371, Start Num: 26

Candidate Starts for FrostedClock\_211:

(Start: 26 @144816 has 11 MA's), (31, 144795), (56, 144588), (59, 144546), (62, 144525), (64, 144519), (66, 144504), (81, 144351), (100, 144213), (102, 144201), (118, 144054), (124, 144015), (135, 143973), (140, 143958), (141, 143952), (142, 143940), (144, 143907), (145, 143904), (153, 143871), (155, 143853), (170, 143739), (172, 143730), (174, 143715), (179, 143685), (183, 143637), (185, 143622), (188, 143604), (196, 143562), (199, 143538), (200, 143529), (206, 143505), (221, 143448),

Gene: GMA2\_1 Start: 138, Stop: 1817, Start Num: 18

Candidate Starts for GMA2\_1:

(18, 138), (32, 237), (38, 288), (46, 363), (49, 375), (52, 420), (56, 435), (57, 456), (66, 519), (72, 567), (77, 603), (85, 687), (88, 708), (99, 798), (103, 819), (104, 843), (118, 960), (144, 1116), (146, 1122), (152, 1146), (166, 1227), (168, 1251), (170, 1281), (172, 1290), (178, 1332), (193, 1437), (198, 1464), (199, 1482), (200, 1491), (202, 1503), (206, 1515), (215, 1548), (249, 1776), (250, 1791),

Gene: Gazebo\_19 Start: 6569, Stop: 8080, Start Num: 17

Candidate Starts for Gazebo\_19:

(3, 6230), (5, 6257), (7, 6281), (13, 6503), (14, 6545), (Start: 17 @6569 has 51 MA's), (30, 6662), (49, 6812), (Start: 55 @6866 has 1 MA's), (62, 6929), (63, 6932), (75, 7004), (84, 7115), (93, 7172), (98, 7217), (105, 7328), (107, 7340), (108, 7352), (112, 7391), (117, 7442), (151, 7601), (154, 7619), (169, 7709), (172, 7742), (178, 7784), (185, 7850), (193, 7895), (195, 7907), (199, 7940),

Gene: GodonK\_61 Start: 20550, Stop: 22244, Start Num: 20

Candidate Starts for GodonK\_61:

(Start: 20 @20550 has 2 MA's), (27, 20613), (38, 20682), (46, 20757), (48, 20766), (51, 20802), (52, 20814), (56, 20829), (66, 20913), (67, 20916), (72, 20961), (77, 20997), (78, 21027), (88, 21102), (99, 21192), (102, 21207), (103, 21213), (114, 21309), (123, 21381), (128, 21411), (142, 21477), (152, 21540), (157, 21579), (161, 21597), (166, 21621), (170, 21675), (171, 21678), (172, 21684), (175, 21711), (186, 21801), (189, 21816), (198, 21858), (201, 21888), (207, 21915), (215, 21942),

Gene: GoldenEssence\_196 Start: 138872, Stop: 137427, Start Num: 26

Candidate Starts for GoldenEssence\_196:

(Start: 26 @138872 has 11 MA's), (31, 138851), (56, 138644), (59, 138602), (62, 138581), (64, 138575), (66, 138560), (81, 138407), (100, 138269), (102, 138257), (118, 138110), (119, 138107), (124, 138071), (135, 138029), (140, 138014), (141, 138008), (142, 137996), (144, 137963), (145, 137960), (153, 137927), (155, 137909), (170, 137795), (172, 137786), (174, 137771), (179, 137741), (183, 137693), (185, 137678), (188, 137660), (196, 137618), (199, 137594), (200, 137585), (206, 137561), (211, 137540), (221, 137504),

Gene: Grassboy\_21 Start: 7024, Stop: 8535, Start Num: 17

Candidate Starts for Grassboy\_21:

(3, 6685), (7, 6736), (12, 6931), (13, 6958), (14, 7000), (Start: 17 @7024 has 51 MA's), (49, 7267), (Start: 55 @7321 has 1 MA's), (62, 7384), (75, 7459), (84, 7570), (93, 7627), (98, 7672), (105, 7783), (107, 7795), (108, 7807), (112, 7846), (117, 7897), (151, 8056), (154, 8074), (169, 8164), (172, 8197), (178, 8239), (185, 8305), (193, 8350), (195, 8362), (199, 8395),

Gene: Hive\_19 Start: 7326, Stop: 8957, Start Num: 22

Candidate Starts for Hive\_19:

(Start: 22 @7326 has 19 MA's), (31, 7407), (39, 7473), (62, 7674), (68, 7704), (76, 7797), (89, 7929), (100, 8001), (124, 8184), (129, 8214), (136, 8235), (148, 8307), (149, 8310), (168, 8424), (169, 8427), (170, 8454), (171, 8457), (177, 8496), (179, 8505), (180, 8526), (185, 8571), (193, 8610), (197, 8631), (199, 8652), (214, 8715), (219, 8733), (244, 8853), (250, 8913), (253, 8943),

Gene: Hyperion\_18 Start: 6272, Stop: 7783, Start Num: 17

Candidate Starts for Hyperion\_18:

(3, 5933), (6, 5975), (13, 6206), (14, 6248), (Start: 17 @6272 has 51 MA's), (49, 6515), (Start: 55 @6569 has 1 MA's), (62, 6632), (75, 6707), (84, 6818), (93, 6875), (98, 6920), (105, 7031), (107, 7043), (108, 7055), (112, 7094), (117, 7145), (151, 7304), (154, 7322), (169, 7412), (172, 7445), (178, 7487), (185, 7553), (193, 7598), (195, 7610), (199, 7643),

Gene: Jehoshaphat\_22 Start: 7267, Stop: 8778, Start Num: 17

Candidate Starts for Jehoshaphat\_22:

(3, 6928), (7, 6979), (13, 7201), (14, 7243), (Start: 17 @7267 has 51 MA's), (30, 7360), (49, 7510), (Start: 55 @7564 has 1 MA's), (62, 7627), (63, 7630), (75, 7702), (84, 7813), (93, 7870), (98, 7915), (105, 8026), (107, 8038), (108, 8050), (112, 8089), (117, 8140), (151, 8299), (154, 8317), (169, 8407), (172, 8440), (178, 8482), (185, 8548), (193, 8593), (195, 8605), (199, 8638),

Gene: Judebell\_22 Start: 6808, Stop: 8319, Start Num: 17

Candidate Starts for Judebell\_22:

(3, 6469), (5, 6496), (12, 6715), (13, 6742), (14, 6784), (Start: 17 @6808 has 51 MA's), (49, 7051), (Start: 55 @7105 has 1 MA's), (62, 7168), (63, 7171), (75, 7243), (84, 7354), (93, 7411), (98, 7456), (105, 7567), (107, 7579), (108, 7591), (112, 7630), (117, 7681), (151, 7840), (154, 7858), (169, 7948), (172, 7981), (178, 8023), (185, 8089), (193, 8134), (195, 8146), (199, 8179),

Gene: KSunshine22\_207 Start: 147375, Stop: 145921, Start Num: 26

Candidate Starts for KSunshine22\_207:

(Start: 26 @147375 has 11 MA's), (37, 147318), (42, 147270), (62, 147084), (66, 147063), (68, 147054), (95, 146820), (99, 146787), (100, 146784), (102, 146772), (113, 146676), (117, 146628), (118, 146625), (121, 146604), (124, 146586), (135, 146544), (163, 146379), (172, 146301), (175, 146274), (183, 146208), (185, 146193), (188, 146175), (194, 146151), (199, 146109), (200, 146100), (206, 146076), (213, 146049),

Gene: Kelcole\_18 Start: 5678, Stop: 7141, Start Num: 17

Candidate Starts for Kelcole\_18:

(13, 5618), (Start: 17 @5678 has 51 MA's), (27, 5762), (44, 5891), (49, 5921), (57, 5996), (62, 6038), (84, 6224), (107, 6377), (108, 6389), (156, 6671), (162, 6704), (166, 6719), (169, 6749), (178, 6839), (184, 6899), (195, 6962), (201, 7007),

Gene: KillerQueen\_20 Start: 5494, Stop: 6957, Start Num: 17

Candidate Starts for KillerQueen\_20:

(13, 5434), (Start: 17 @5494 has 51 MA's), (27, 5578), (44, 5707), (49, 5737), (57, 5812), (62, 5854), (84, 6040), (107, 6193), (108, 6205), (156, 6487), (162, 6520), (166, 6535), (169, 6565), (178, 6655), (184, 6715), (195, 6778), (201, 6823),

Gene: Kithara\_20 Start: 7908, Stop: 9383, Start Num: 19

Candidate Starts for Kithara\_20:

(10, 7761), (15, 7887), (Start: 19 @7908 has 1 MA's), (25, 7962), (33, 8013), (35, 8034), (61, 8259), (62, 8271), (76, 8355), (80, 8433), (87, 8475), (90, 8490), (100, 8565), (107, 8607), (115, 8685), (118, 8712), (151, 8868), (170, 9003), (178, 9057), (185, 9132), (190, 9159), (193, 9177), (195, 9189), (201, 9231), (208, 9267), (224, 9336), (226, 9339),

Gene: Kubulix\_21 Start: 7441, Stop: 9072, Start Num: 22

Candidate Starts for Kubulix\_21:

(Start: 22 @7441 has 19 MA's), (39, 7588), (62, 7789), (68, 7819), (76, 7912), (89, 8044), (100, 8116), (124, 8299), (129, 8329), (136, 8350), (147, 8419), (148, 8422), (149, 8425), (168, 8539), (169, 8542), (170, 8569), (171, 8572), (177, 8611), (179, 8620), (180, 8641), (185, 8686), (193, 8725), (197, 8746), (199, 8767), (214, 8830), (219, 8848), (244, 8968), (250, 9028), (253, 9058),

Gene: Kyva\_22 Start: 7059, Stop: 8570, Start Num: 17

Candidate Starts for Kyva\_22:

(3, 6720), (7, 6771), (12, 6966), (13, 6993), (14, 7035), (Start: 17 @7059 has 51 MA's), (49, 7302), (Start: 55 @7356 has 1 MA's), (62, 7419), (75, 7494), (84, 7605), (93, 7662), (98, 7707), (105, 7818), (107, 7830), (108, 7842), (112, 7881), (117, 7932), (151, 8091), (154, 8109), (169, 8199), (172, 8232), (178, 8274), (185, 8340), (193, 8385), (195, 8397), (199, 8430),

Gene: Laure\_212 Start: 133219, Stop: 131792, Start Num: 26

Candidate Starts for Laure\_212:

(Start: 26 @133219 has 11 MA's), (38, 133135), (62, 132928), (74, 132847), (100, 132628), (102, 132616), (118, 132469), (122, 132445), (124, 132430), (133, 132400), (134, 132397), (137, 132382), (144, 132322), (146, 132316), (172, 132145), (173, 132139), (179, 132100), (181, 132064), (183, 132052), (185, 132037), (188, 132019), (192, 132007), (196, 131977), (199, 131953), (200, 131944),

Gene: LeoJr\_211 Start: 143085, Stop: 141607, Start Num: 26

Candidate Starts for LeoJr\_211:

(Start: 26 @143085 has 11 MA's), (34, 143040), (37, 143028), (42, 142980), (50, 142890), (56, 142857), (59, 142815), (62, 142794), (74, 142713), (81, 142620), (96, 142512), (99, 142485), (100, 142482), (113, 142374), (117, 142326), (118, 142323), (124, 142284), (135, 142242), (148, 142164), (161, 142089), (163, 142077), (172, 141999), (183, 141906), (185, 141891), (188, 141873), (199, 141807), (200, 141798), (206, 141774), (213, 141747),

Gene: Llemily\_19 Start: 6043, Stop: 7554, Start Num: 17

Candidate Starts for Llemily\_19:

(3, 5704), (5, 5731), (7, 5755), (13, 5977), (14, 6019), (Start: 17 @6043 has 51 MA's), (49, 6286), (Start: 55 @6340 has 1 MA's), (62, 6403), (63, 6406), (75, 6478), (84, 6589), (93, 6646), (98, 6691), (105, 6802), (107, 6814), (108, 6826), (112, 6865), (117, 6916), (151, 7075), (154, 7093), (169, 7183), (172, 7216), (178, 7258), (185, 7324), (193, 7369), (195, 7381), (199, 7414),

Gene: Lonelysoil\_19 Start: 6288, Stop: 7799, Start Num: 17

Candidate Starts for Lonelysoil\_19:

(3, 5949), (13, 6222), (14, 6264), (Start: 17 @6288 has 51 MA's), (49, 6531), (Start: 55 @6585 has 1 MA's), (62, 6648), (75, 6723), (84, 6834), (93, 6891), (98, 6936), (105, 7047), (107, 7059), (108, 7071), (112, 7110), (117, 7161), (151, 7320), (154, 7338), (169, 7428), (172, 7461), (178, 7503), (185, 7569), (193, 7614), (195, 7626), (199, 7659),

Gene: Marcie\_24 Start: 6383, Stop: 7846, Start Num: 17

Candidate Starts for Marcie\_24:

(13, 6323), (Start: 17 @6383 has 51 MA's), (27, 6467), (44, 6596), (49, 6626), (57, 6701), (62, 6743), (84, 6929), (87, 6947), (107, 7082), (108, 7094), (162, 7409), (166, 7424), (169, 7454), (178, 7544), (184, 7604), (195, 7667), (201, 7712), (212, 7760),

Gene: Mareelih\_67 Start: 24570, Stop: 26288, Start Num: 16

Candidate Starts for Mareelih\_67:

(Start: 16 @24570 has 5 MA's), (29, 24669), (38, 24732), (49, 24819), (56, 24879), (64, 24948), (67, 24966), (73, 25020), (77, 25047), (78, 25077), (79, 25086), (88, 25152), (99, 25242), (103, 25263), (158, 25632), (166, 25671), (168, 25695), (170, 25725), (172, 25734), (185, 25842), (198, 25908), (199, 25926), (200, 25935), (203, 25956), (206, 25959), (227, 26055), (235, 26118), (242, 26163), (246, 26196), (249, 26229),

Gene: Mashley\_17 Start: 6083, Stop: 7594, Start Num: 17

Candidate Starts for Mashley\_17:

(3, 5744), (13, 6017), (14, 6059), (Start: 17 @6083 has 51 MA's), (49, 6326), (Start: 55 @6380 has 1 MA's), (62, 6443), (75, 6518), (84, 6629), (93, 6686), (98, 6731), (105, 6842), (107, 6854), (108, 6866), (112, 6905), (117, 6956), (151, 7115), (154, 7133), (169, 7223), (172, 7256), (178, 7298), (185, 7364), (193, 7409), (195, 7421), (199, 7454),

Gene: MellowYellow\_17 Start: 5986, Stop: 7617, Start Num: 22

Candidate Starts for MellowYellow\_17:

(Start: 22 @5986 has 19 MA's), (39, 6133), (62, 6334), (68, 6364), (76, 6457), (89, 6589), (100, 6661), (124, 6844), (129, 6874), (136, 6895), (147, 6964), (149, 6970), (168, 7084), (169, 7087), (170, 7114), (171, 7117), (177, 7156), (179, 7165), (180, 7186), (185, 7231), (193, 7270), (197, 7291), (199, 7312), (214, 7375), (219, 7393), (244, 7513), (250, 7573), (253, 7603),

Gene: Mentos\_24 Start: 7622, Stop: 9133, Start Num: 17

Candidate Starts for Mentos\_24:

(3, 7283), (7, 7334), (13, 7556), (14, 7598), (Start: 17 @7622 has 51 MA's), (49, 7865), (Start: 55 @7919 has 1 MA's), (62, 7982), (75, 8057), (84, 8168), (93, 8225), (98, 8270), (105, 8381), (107, 8393), (108, 8405), (112, 8444), (117, 8495), (151, 8654), (154, 8672), (169, 8762), (172, 8795), (178, 8837), (185, 8903), (193, 8948), (195, 8960), (199, 8993),

Gene: Mila11\_22 Start: 7158, Stop: 8669, Start Num: 17

Candidate Starts for Mila11\_22:

(3, 6819), (13, 7092), (14, 7134), (Start: 17 @7158 has 51 MA's), (30, 7251), (49, 7401), (52, 7446), (Start: 55 @7455 has 1 MA's), (62, 7518), (63, 7521), (75, 7593), (84, 7704), (93, 7761), (98, 7806), (105, 7917), (107, 7929), (108, 7941), (112, 7980), (117, 8031), (151, 8190), (154, 8208), (169, 8298), (172, 8331), (178, 8373), (185, 8439), (193, 8484), (195, 8496), (199, 8529),

Gene: Mimi\_207 Start: 144271, Stop: 142826, Start Num: 26

Candidate Starts for Mimi\_207:

(Start: 26 @144271 has 11 MA's), (31, 144250), (56, 144043), (59, 144001), (62, 143980), (64, 143974), (66, 143959), (81, 143806), (100, 143668), (102, 143656), (118, 143509), (124, 143470), (135, 143428), (140, 143413), (141, 143407), (142, 143395), (144, 143362), (145, 143359), (153, 143326), (155, 143308), (170, 143194), (172, 143185), (174, 143170), (179, 143140), (183, 143092), (185, 143077), (188, 143059), (196, 143017), (199, 142993), (200, 142984), (206, 142960), (221, 142903),

Gene: MorillMayhem\_19 Start: 6091, Stop: 7602, Start Num: 17

Candidate Starts for MorillMayhem\_19:

(3, 5752), (13, 6025), (14, 6067), (Start: 17 @6091 has 51 MA's), (30, 6184), (49, 6334), (52, 6379), (Start: 55 @6388 has 1 MA's), (62, 6451), (63, 6454), (75, 6526), (84, 6637), (93, 6694), (98, 6739), (105, 6850), (107, 6862), (108, 6874), (112, 6913), (117, 6964), (151, 7123), (154, 7141), (169, 7231), (172, 7264), (178, 7306), (185, 7372), (193, 7417), (195, 7429), (199, 7462),

Gene: Namago\_20 Start: 6103, Stop: 7614, Start Num: 17

Candidate Starts for Namago\_20:

(3, 5764), (5, 5791), (13, 6037), (14, 6079), (Start: 17 @6103 has 51 MA's), (49, 6346), (Start: 55 @6400 has 1 MA's), (61, 6451), (62, 6463), (75, 6538), (84, 6649), (93, 6706), (98, 6751), (105, 6862), (107, 6874), (108, 6886), (112, 6925), (117, 6976), (151, 7135), (154, 7153), (169, 7243), (172, 7276), (178, 7318), (185, 7384), (193, 7429), (195, 7441), (199, 7474),

Gene: Nikan\_16 Start: 6441, Stop: 8090, Start Num: 22

Candidate Starts for Nikan\_16:

(Start: 22 @6441 has 19 MA's), (39, 6588), (62, 6789), (68, 6819), (89, 7044), (100, 7116), (107, 7158), (124, 7299), (129, 7329), (136, 7350), (147, 7419), (148, 7422), (149, 7425), (168, 7539), (169, 7542), (170, 7569), (171, 7572), (177, 7611), (179, 7620), (180, 7641), (185, 7686), (193, 7725), (197, 7746), (199, 7767), (201, 7779), (218, 7854), (244, 7986), (251, 8049), (253, 8076),

Gene: Nike\_20 Start: 7009, Stop: 8520, Start Num: 17

Candidate Starts for Nike\_20:

(3, 6670), (5, 6697), (11, 6913), (12, 6916), (13, 6943), (14, 6985), (Start: 17 @7009 has 51 MA's), (30, 7102), (49, 7252), (Start: 55 @7306 has 1 MA's), (62, 7369), (75, 7444), (84, 7555), (93, 7612), (98,

7657), (105, 7768), (107, 7780), (108, 7792), (112, 7831), (117, 7882), (151, 8041), (154, 8059), (169, 8149), (172, 8182), (178, 8224), (185, 8290), (193, 8335), (195, 8347), (199, 8380),

Gene: NyleyClemson\_16 Start: 5928, Stop: 7559, Start Num: 22

Candidate Starts for NyleyClemson\_16:

(Start: 22 @5928 has 19 MA's), (39, 6075), (62, 6276), (68, 6306), (76, 6399), (89, 6531), (100, 6603), (124, 6786), (129, 6816), (136, 6837), (147, 6906), (149, 6912), (168, 7026), (169, 7029), (170, 7056), (171, 7059), (177, 7098), (179, 7107), (180, 7128), (185, 7173), (193, 7212), (197, 7233), (199, 7254), (214, 7317), (219, 7335), (244, 7455), (250, 7515), (253, 7545),

Gene: Odyssey395\_22 Start: 7443, Stop: 9074, Start Num: 22

Candidate Starts for Odyssey395\_22:

(Start: 22 @7443 has 19 MA's), (39, 7590), (62, 7791), (68, 7821), (76, 7914), (89, 8046), (100, 8118), (124, 8301), (129, 8331), (136, 8352), (147, 8421), (148, 8424), (149, 8427), (168, 8541), (169, 8544), (170, 8571), (171, 8574), (177, 8613), (179, 8622), (180, 8643), (185, 8688), (193, 8727), (197, 8748), (199, 8769), (214, 8832), (219, 8850), (244, 8970), (250, 9030), (253, 9060),

Gene: Ollypop\_18 Start: 6406, Stop: 8055, Start Num: 22

Candidate Starts for Ollypop\_18:

(Start: 22 @6406 has 19 MA's), (39, 6553), (52, 6682), (62, 6754), (68, 6784), (89, 7009), (100, 7081), (107, 7123), (124, 7264), (129, 7294), (136, 7315), (147, 7384), (148, 7387), (149, 7390), (154, 7417), (168, 7504), (170, 7534), (171, 7537), (177, 7576), (179, 7585), (180, 7606), (182, 7627), (185, 7651), (193, 7690), (197, 7711), (199, 7732), (201, 7744), (216, 7810), (218, 7819), (244, 7951), (250, 8011), (251, 8014), (253, 8041),

Gene: OneinaGillian\_19 Start: 5360, Stop: 6823, Start Num: 17

Candidate Starts for OneinaGillian\_19:

(13, 5300), (Start: 17 @5360 has 51 MA's), (27, 5444), (44, 5573), (49, 5603), (57, 5678), (62, 5720), (84, 5906), (107, 6059), (108, 6071), (156, 6353), (162, 6386), (166, 6401), (169, 6431), (178, 6521), (184, 6581), (195, 6644), (201, 6689),

Gene: OnionKnight\_2 Start: 417, Stop: 1766, Start Num: 28

Candidate Starts for OnionKnight\_2:

(8, 111), (9, 138), (Start: 28 @417 has 1 MA's), (36, 456), (47, 585), (52, 636), (53, 639), (60, 693), (65, 726), (82, 909), (91, 963), (101, 1032), (110, 1107), (132, 1248), (136, 1269), (143, 1308), (159, 1407), (169, 1473), (176, 1536), (181, 1590), (201, 1707), (204, 1728),

Gene: Panchaali\_204 Start: 149306, Stop: 147852, Start Num: 26

Candidate Starts for Panchaali\_204:

(Start: 26 @149306 has 11 MA's), (37, 149249), (56, 149078), (59, 149036), (62, 149015), (66, 148994), (68, 148985), (81, 148853), (95, 148751), (99, 148718), (100, 148715), (102, 148703), (113, 148607), (118, 148556), (121, 148535), (124, 148517), (135, 148475), (144, 148409), (161, 148322), (163, 148310), (172, 148232), (180, 148169), (183, 148139), (185, 148124), (188, 148106), (199, 148040), (200, 148031), (206, 148007),

Gene: Patbob\_205 Start: 144669, Stop: 143224, Start Num: 26

Candidate Starts for Patbob\_205:

(Start: 26 @144669 has 11 MA's), (31, 144648), (56, 144441), (59, 144399), (62, 144378), (64, 144372), (66, 144357), (86, 144171), (100, 144066), (102, 144054), (118, 143907), (124, 143868), (135, 143826), (140, 143811), (141, 143805), (142, 143793), (144, 143760), (145, 143757), (153, 143724), (155, 143706), (170, 143592), (172, 143583), (174, 143568), (179, 143538), (183, 143490), (185, 143475), (188, 143457), (196, 143415), (199, 143391), (200, 143382), (206, 143358), (221, 143301),

Gene: Pepe25\_18 Start: 5618, Stop: 7081, Start Num: 17

Candidate Starts for Pepe25\_18:

(Start: 17 @5618 has 51 MA's), (27, 5702), (44, 5831), (49, 5861), (57, 5936), (62, 5978), (84, 6164), (107, 6317), (108, 6329), (120, 6434), (148, 6566), (162, 6644), (169, 6689), (178, 6779), (184, 6839), (195, 6902), (201, 6947), (212, 6995),

Gene: Phabia\_20 Start: 6461, Stop: 7972, Start Num: 17

Candidate Starts for Phabia\_20:

(3, 6122), (5, 6149), (7, 6173), (12, 6368), (13, 6395), (14, 6437), (Start: 17 @6461 has 51 MA's), (49, 6704), (Start: 55 @6758 has 1 MA's), (61, 6809), (62, 6821), (75, 6896), (84, 7007), (93, 7064), (98, 7109), (105, 7220), (107, 7232), (108, 7244), (112, 7283), (117, 7334), (151, 7493), (154, 7511), (169, 7601), (172, 7634), (178, 7676), (185, 7742), (193, 7787), (195, 7799), (199, 7832),

Gene: Phendrix\_60 Start: 20398, Stop: 22092, Start Num: 20

Candidate Starts for Phendrix\_60:

(Start: 20 @20398 has 2 MA's), (27, 20461), (38, 20530), (46, 20605), (48, 20614), (52, 20662), (56, 20677), (66, 20761), (67, 20764), (72, 20809), (77, 20845), (78, 20875), (85, 20929), (88, 20950), (99, 21040), (102, 21055), (103, 21061), (123, 21229), (128, 21259), (142, 21325), (152, 21388), (157, 21427), (161, 21445), (166, 21469), (170, 21523), (171, 21526), (172, 21532), (175, 21559), (186, 21649), (189, 21664), (198, 21706), (201, 21736), (207, 21763), (215, 21790),

Gene: Phinky\_26 Start: 7321, Stop: 8835, Start Num: 17

Candidate Starts for Phinky\_26:

(Start: 17 @7321 has 51 MA's), (42, 7498), (49, 7564), (54, 7615), (Start: 55 @7618 has 1 MA's), (62, 7681), (75, 7756), (84, 7867), (93, 7924), (98, 7969), (105, 8080), (106, 8086), (107, 8092), (108, 8104), (112, 8143), (117, 8194), (136, 8269), (158, 8392), (169, 8461), (178, 8536), (193, 8647), (195, 8659),

Gene: PhuzzTulsa\_18 Start: 7230, Stop: 8861, Start Num: 22

Candidate Starts for PhuzzTulsa\_18:

(Start: 22 @7230 has 19 MA's), (39, 7377), (62, 7578), (68, 7608), (71, 7635), (76, 7701), (89, 7833), (100, 7905), (124, 8088), (129, 8118), (136, 8139), (147, 8208), (148, 8211), (149, 8214), (168, 8328), (169, 8331), (170, 8358), (171, 8361), (177, 8400), (179, 8409), (180, 8430), (193, 8514), (197, 8535), (199, 8556), (214, 8619), (219, 8637), (244, 8757), (250, 8817), (253, 8847),

Gene: Pointis\_20 Start: 7441, Stop: 9072, Start Num: 22

Candidate Starts for Pointis\_20:

(Start: 22 @7441 has 19 MA's), (39, 7588), (62, 7789), (68, 7819), (76, 7912), (89, 8044), (100, 8116), (124, 8299), (129, 8329), (136, 8350), (147, 8419), (148, 8422), (149, 8425), (168, 8539), (169, 8542), (170, 8569), (171, 8572), (177, 8611), (179, 8620), (180, 8641), (185, 8686), (193, 8725), (197, 8746), (199, 8767), (214, 8830), (219, 8848), (244, 8968), (250, 9028), (253, 9058),

Gene: Popstraw\_19 Start: 7230, Stop: 8861, Start Num: 22

Candidate Starts for Popstraw\_19:

(Start: 22 @7230 has 19 MA's), (39, 7377), (62, 7578), (68, 7608), (71, 7635), (76, 7701), (89, 7833), (100, 7905), (124, 8088), (129, 8118), (136, 8139), (147, 8208), (148, 8211), (149, 8214), (168, 8328), (169, 8331), (170, 8358), (171, 8361), (177, 8400), (179, 8409), (185, 8475), (193, 8514), (197, 8535), (199, 8556), (214, 8619), (219, 8637), (244, 8757), (250, 8817), (253, 8847),

Gene: Pureglobe5\_22 Start: 7457, Stop: 9088, Start Num: 22

Candidate Starts for Pureglobe5\_22:

(Start: 22 @7457 has 19 MA's), (39, 7604), (62, 7805), (68, 7835), (76, 7928), (89, 8060), (100, 8132), (124, 8315), (129, 8345), (136, 8366), (147, 8435), (148, 8438), (149, 8441), (168, 8555), (169, 8558), (170, 8585), (171, 8588), (177, 8627), (179, 8636), (180, 8657), (185, 8702), (193, 8741), (197, 8762), (199, 8783), (214, 8846), (219, 8864), (244, 8984), (250, 9044), (253, 9074),

Gene: Quammi\_18 Start: 6032, Stop: 7543, Start Num: 17

Candidate Starts for Quammi\_18:

(3, 5693), (5, 5720), (7, 5744), (13, 5966), (14, 6008), (Start: 17 @6032 has 51 MA's), (49, 6275), (Start: 55 @6329 has 1 MA's), (62, 6392), (63, 6395), (75, 6467), (84, 6578), (93, 6635), (98, 6680), (105, 6791), (107, 6803), (108, 6815), (112, 6854), (117, 6905), (151, 7064), (154, 7082), (169, 7172), (172, 7205), (178, 7247), (185, 7313), (193, 7358), (195, 7370), (199, 7403),

Gene: RIPWilbur\_18 Start: 6593, Stop: 8224, Start Num: 22

Candidate Starts for RIPWilbur\_18:

(Start: 22 @6593 has 19 MA's), (39, 6740), (62, 6941), (68, 6971), (76, 7064), (87, 7184), (89, 7196), (100, 7268), (124, 7451), (129, 7481), (136, 7502), (147, 7571), (148, 7574), (149, 7577), (168, 7691), (169, 7694), (170, 7721), (171, 7724), (177, 7763), (179, 7772), (180, 7793), (185, 7838), (193, 7877), (197, 7898), (199, 7919), (214, 7982), (219, 8000), (244, 8120), (250, 8180), (253, 8210),

Gene: Racecar\_209 Start: 144651, Stop: 143206, Start Num: 26

Candidate Starts for Racecar\_209:

(Start: 26 @144651 has 11 MA's), (31, 144630), (56, 144423), (59, 144381), (62, 144360), (64, 144354), (66, 144339), (67, 144336), (81, 144186), (100, 144048), (102, 144036), (118, 143889), (124, 143850), (135, 143808), (140, 143793), (141, 143787), (142, 143775), (144, 143742), (145, 143739), (153, 143706), (155, 143688), (170, 143574), (172, 143565), (174, 143550), (179, 143520), (183, 143472), (185, 143457), (188, 143439), (196, 143397), (199, 143373), (200, 143364), (206, 143340), (221, 143283),

Gene: Ranunculus\_15 Start: 6341, Stop: 8053, Start Num: 22

Candidate Starts for Ranunculus\_15:

(Start: 22 @6341 has 19 MA's), (39, 6485), (46, 6557), (62, 6686), (68, 6716), (69, 6734), (89, 6941), (100, 7013), (111, 7094), (124, 7196), (148, 7331), (169, 7451), (170, 7478), (171, 7481), (174, 7502), (177, 7520), (179, 7529), (182, 7571), (185, 7595), (191, 7622), (193, 7634), (195, 7646), (197, 7655), (199, 7676), (201, 7688), (232, 7826), (237, 7868), (239, 7877), (243, 7901), (245, 7922), (250, 7970), (253, 8000),

Gene: RazzB\_16 Start: 5756, Stop: 7387, Start Num: 22

Candidate Starts for RazzB\_16:

(Start: 22 @5756 has 19 MA's), (39, 5903), (62, 6104), (68, 6134), (76, 6227), (89, 6359), (100, 6431), (124, 6614), (129, 6644), (136, 6665), (147, 6734), (148, 6737), (149, 6740), (168, 6854), (169, 6857), (170, 6884), (171, 6887), (177, 6926), (179, 6935), (180, 6956), (185, 7001), (193, 7040), (197, 7061), (199, 7082), (214, 7145), (219, 7163), (244, 7283), (250, 7343), (253, 7373),

Gene: ReginaGlobina\_214 Start: 144370, Stop: 142892, Start Num: 26

Candidate Starts for ReginaGlobina\_214:

(Start: 26 @144370 has 11 MA's), (34, 144325), (37, 144313), (42, 144265), (50, 144175), (56, 144142), (59, 144100), (62, 144079), (74, 143998), (81, 143905), (99, 143770), (100, 143767), (113, 143659), (117, 143611), (118, 143608), (124, 143569), (135, 143527), (140, 143512), (148, 143449), (161, 143374), (163, 143362), (172, 143284), (183, 143191), (185, 143176), (188, 143158), (199, 143092), (200, 143083), (206, 143059), (213, 143032),

Gene: Ren19\_14 Start: 6441, Stop: 8090, Start Num: 22

Candidate Starts for Ren19\_14:

(Start: 22 @6441 has 19 MA's), (39, 6588), (62, 6789), (68, 6819), (89, 7044), (100, 7116), (107, 7158), (124, 7299), (129, 7329), (136, 7350), (147, 7419), (148, 7422), (149, 7425), (168, 7539), (169, 7542), (170, 7569), (171, 7572), (177, 7611), (179, 7620), (180, 7641), (185, 7686), (193, 7725), (197, 7746), (199, 7767), (201, 7779), (218, 7854), (244, 7986), (247, 8007), (251, 8049), (253, 8076),

Gene: Rizwana\_14 Start: 6254, Stop: 8020, Start Num: 22

Candidate Starts for Rizwana\_14:

(Start: 22 @6254 has 19 MA's), (47, 6476), (Start: 55 @6536 has 1 MA's), (62, 6599), (68, 6629), (80, 6803), (89, 6857), (90, 6860), (100, 6929), (106, 6965), (109, 6989), (112, 7022), (118, 7076), (124, 7115), (127, 7145), (136, 7199), (138, 7208), (139, 7211), (140, 7214), (147, 7268), (169, 7391), (170, 7418), (180, 7490), (182, 7511), (193, 7574), (195, 7586), (223, 7733), (229, 7766), (233, 7799), (234, 7802), (248, 7916), (251, 7952), (252, 7955), (255, 8006),

Gene: RobinRose\_20 Start: 5513, Stop: 6976, Start Num: 17

Candidate Starts for RobinRose\_20:

(13, 5453), (Start: 17 @5513 has 51 MA's), (27, 5597), (44, 5726), (49, 5756), (57, 5831), (62, 5873), (84, 6059), (107, 6212), (108, 6224), (156, 6506), (162, 6539), (166, 6554), (169, 6584), (178, 6674), (184, 6734), (195, 6797), (201, 6842),

Gene: Rockabye\_212 Start: 139391, Stop: 137928, Start Num: 26

Candidate Starts for Rockabye\_212:

(Start: 26 @139391 has 11 MA's), (59, 139121), (62, 139100), (86, 138881), (95, 138812), (100, 138776), (102, 138764), (118, 138617), (124, 138578), (144, 138470), (146, 138464), (148, 138458), (169, 138329), (172, 138293), (174, 138278), (175, 138266), (183, 138200), (185, 138185), (188, 138167), (199, 138101), (200, 138092), (202, 138080), (218, 138017),

Gene: RomansRevenge\_11 Start: 4536, Stop: 6038, Start Num: 21

Candidate Starts for RomansRevenge\_11:

(Start: 21 @4536 has 1 MA's), (23, 4548), (41, 4698), (48, 4764), (49, 4767), (62, 4884), (63, 4887), (84, 5082), (91, 5118), (95, 5157), (116, 5328), (124, 5379), (129, 5400), (136, 5421), (140, 5436), (154, 5523), (163, 5571), (170, 5640), (178, 5691), (179, 5694), (187, 5775), (193, 5820), (199, 5862), (225, 5982), (231, 6000),

Gene: Romm\_20 Start: 5513, Stop: 6976, Start Num: 17

Candidate Starts for Romm\_20:

(13, 5453), (Start: 17 @5513 has 51 MA's), (27, 5597), (44, 5726), (49, 5756), (57, 5831), (62, 5873), (84, 6059), (107, 6212), (108, 6224), (156, 6506), (162, 6539), (166, 6554), (169, 6584), (178, 6674), (184, 6734), (195, 6797), (201, 6842),

Gene: Rowlf\_16 Start: 5798, Stop: 7309, Start Num: 17

Candidate Starts for Rowlf\_16:

(3, 5459), (5, 5486), (7, 5510), (13, 5732), (14, 5774), (Start: 17 @5798 has 51 MA's), (49, 6041), (Start: 55 @6095 has 1 MA's), (62, 6158), (63, 6161), (75, 6233), (84, 6344), (93, 6401), (98, 6446), (105, 6557), (107, 6569), (108, 6581), (112, 6620), (117, 6671), (151, 6830), (154, 6848), (169, 6938), (172, 6971), (178, 7013), (185, 7079), (193, 7124), (195, 7136), (199, 7169),

Gene: RubyRalph\_21 Start: 6402, Stop: 7937, Start Num: 17

Candidate Starts for RubyRalph\_21:

(Start: 17 @6402 has 51 MA's), (27, 6486), (42, 6579), (46, 6633), (49, 6645), (54, 6696), (Start: 55 @6699 has 1 MA's), (62, 6762), (75, 6837), (84, 6948), (93, 7005), (105, 7161), (107, 7173), (108, 7185), (112, 7224), (117, 7275), (136, 7350), (139, 7362), (141, 7371), (165, 7506), (169, 7542), (172, 7575), (178, 7632), (193, 7743), (195, 7755), (201, 7800), (210, 7842),

Gene: Rudy\_18 Start: 6032, Stop: 7543, Start Num: 17

Candidate Starts for Rudy\_18:

(3, 5693), (5, 5720), (7, 5744), (13, 5966), (14, 6008), (Start: 17 @6032 has 51 MA's), (49, 6275), (Start: 55 @6329 has 1 MA's), (62, 6392), (63, 6395), (75, 6467), (84, 6578), (93, 6635), (98, 6680), (105, 6791), (107, 6803), (108, 6815), (112, 6854), (117, 6905), (151, 7064), (154, 7082), (169, 7172), (172, 7205), (178, 7247), (185, 7313), (193, 7358), (195, 7370), (199, 7403),

Gene: SJReid\_214 Start: 138275, Stop: 136830, Start Num: 26

Candidate Starts for SJReid\_214:

(Start: 26 @138275 has 11 MA's), (50, 138080), (59, 138005), (62, 137984), (66, 137963), (86, 137789), (99, 137687), (100, 137684), (102, 137672), (117, 137522), (118, 137519), (124, 137480), (144, 137372), (148, 137360), (153, 137336), (154, 137321), (169, 137231), (172, 137195), (174, 137180), (179, 137150), (183, 137102), (188, 137069), (199, 137003), (200, 136994), (218, 136919), (222, 136904), (228, 136871),

Gene: SadLad\_22 Start: 6859, Stop: 8394, Start Num: 17

Candidate Starts for SadLad\_22:

(Start: 17 @6859 has 51 MA's), (27, 6943), (42, 7036), (46, 7090), (49, 7102), (54, 7153), (Start: 55 @7156 has 1 MA's), (62, 7219), (75, 7294), (84, 7405), (93, 7462), (107, 7630), (108, 7642), (112, 7681), (117, 7732), (136, 7807), (139, 7819), (169, 7999), (178, 8089), (193, 8200), (195, 8212), (201, 8257),

Gene: SallyK\_21 Start: 7193, Stop: 8704, Start Num: 17

Candidate Starts for SallyK\_21:

(3, 6854), (4, 6866), (5, 6881), (7, 6905), (12, 7100), (13, 7127), (14, 7169), (Start: 17 @7193 has 51 MA's), (49, 7436), (Start: 55 @7490 has 1 MA's), (62, 7553), (75, 7628), (84, 7739), (93, 7796), (98, 7841), (105, 7952), (107, 7964), (108, 7976), (112, 8015), (117, 8066), (151, 8225), (154, 8243), (169, 8333), (172, 8366), (178, 8408), (185, 8474), (193, 8519), (195, 8531), (199, 8564),

Gene: SilentRX\_16 Start: 6460, Stop: 8172, Start Num: 22

Candidate Starts for SilentRX\_16:

(Start: 22 @6460 has 19 MA's), (Start: 55 @6742 has 1 MA's), (62, 6805), (68, 6835), (69, 6853), (70, 6859), (71, 6862), (89, 7069), (90, 7072), (94, 7102), (95, 7105), (100, 7141), (109, 7201), (112, 7234), (126, 7345), (136, 7408), (169, 7600), (170, 7627), (171, 7630), (177, 7669), (179, 7678), (180, 7699), (187, 7759), (193, 7783), (195, 7795), (199, 7825), (217, 7906), (236, 8002), (238, 8017), (240, 8023), (248, 8074), (252, 8107), (253, 8131), (254, 8140), (255, 8158),

Gene: Sillytadpoles\_19 Start: 6030, Stop: 7541, Start Num: 17

Candidate Starts for Sillytadpoles\_19:

(3, 5691), (5, 5718), (7, 5742), (13, 5964), (14, 6006), (Start: 17 @6030 has 51 MA's), (49, 6273), (Start: 55 @6327 has 1 MA's), (62, 6390), (63, 6393), (75, 6465), (84, 6576), (93, 6633), (98, 6678), (105, 6789), (107, 6801), (108, 6813), (112, 6852), (117, 6903), (151, 7062), (154, 7080), (169, 7170), (172, 7203), (178, 7245), (185, 7311), (193, 7356), (195, 7368), (199, 7401),

Gene: Sixama\_62 Start: 23138, Stop: 24844, Start Num: 16

Candidate Starts for Sixama\_62:

(Start: 16 @23138 has 5 MA's), (27, 23231), (38, 23300), (43, 23348), (56, 23447), (77, 23615), (83, 23684), (88, 23720), (99, 23810), (103, 23831), (124, 24011), (125, 24023), (131, 24038), (136, 24062), (144, 24128), (158, 24200), (164, 24230), (166, 24239), (170, 24293), (172, 24302), (175, 24329), (198, 24476), (199, 24494), (203, 24524), (242, 24719), (249, 24785),

Gene: SlySloth\_22 Start: 6984, Stop: 8495, Start Num: 17

Candidate Starts for SlySloth\_22:

(3, 6645), (5, 6672), (7, 6696), (13, 6918), (14, 6960), (Start: 17 @6984 has 51 MA's), (49, 7227), (Start: 55 @7281 has 1 MA's), (62, 7344), (63, 7347), (75, 7419), (84, 7530), (93, 7587), (98, 7632), (105, 7743), (107, 7755), (108, 7767), (112, 7806), (117, 7857), (151, 8016), (154, 8034), (169, 8124), (172, 8157), (178, 8199), (185, 8265), (193, 8310), (195, 8322), (199, 8355),

Gene: Squash\_22 Start: 7064, Stop: 8575, Start Num: 17

Candidate Starts for Squash\_22:

(3, 6725), (5, 6752), (11, 6968), (12, 6971), (13, 6998), (14, 7040), (Start: 17 @7064 has 51 MA's), (30, 7157), (49, 7307), (Start: 55 @7361 has 1 MA's), (62, 7424), (75, 7499), (84, 7610), (93, 7667), (98, 7712), (105, 7823), (107, 7835), (108, 7847), (112, 7886), (117, 7937), (151, 8096), (154, 8114), (169, 8204), (172, 8237), (178, 8279), (185, 8345), (193, 8390), (195, 8402), (199, 8435),

Gene: Statler\_20 Start: 6569, Stop: 8080, Start Num: 17

Candidate Starts for Statler\_20:

(3, 6230), (5, 6257), (7, 6281), (13, 6503), (14, 6545), (Start: 17 @6569 has 51 MA's), (30, 6662), (49, 6812), (Start: 55 @6866 has 1 MA's), (62, 6929), (63, 6932), (75, 7004), (84, 7115), (93, 7172), (98, 7217), (105, 7328), (107, 7340), (108, 7352), (112, 7391), (117, 7442), (151, 7601), (154, 7619), (169, 7709), (172, 7742), (178, 7784), (185, 7850), (193, 7895), (195, 7907), (199, 7940),

Gene: Stewart25555\_205 Start: 146615, Stop: 145161, Start Num: 26

Candidate Starts for Stewart25555\_205:

(Start: 26 @146615 has 11 MA's), (34, 146570), (37, 146558), (42, 146510), (62, 146324), (81, 146162), (95, 146060), (96, 146054), (100, 146024), (102, 146012), (113, 145916), (117, 145868), (118, 145865), (121, 145844), (124, 145826), (135, 145784), (142, 145751), (144, 145718), (161, 145631), (163, 145619), (171, 145547), (172, 145541), (180, 145478), (183, 145448), (185, 145433), (188, 145415), (194, 145391), (199, 145349), (200, 145340), (206, 145316), (213, 145289), (230, 145190),

Gene: StrawberryJamm\_22 Start: 6332, Stop: 7843, Start Num: 17

Candidate Starts for StrawberryJamm\_22:

(3, 5993), (7, 6044), (13, 6266), (14, 6308), (Start: 17 @6332 has 51 MA's), (30, 6425), (49, 6575), (Start: 55 @6629 has 1 MA's), (62, 6692), (63, 6695), (75, 6767), (84, 6878), (93, 6935), (105, 7091), (107, 7103), (108, 7115), (112, 7154), (117, 7205), (151, 7364), (154, 7382), (169, 7472), (172, 7505), (178, 7547), (185, 7613), (193, 7658), (195, 7670), (199, 7703),

Gene: Sunfish\_22 Start: 7434, Stop: 8969, Start Num: 22

Candidate Starts for Sunfish\_22:

(Start: 22 @7434 has 19 MA's), (33, 7518), (47, 7653), (54, 7710), (58, 7740), (62, 7776), (68, 7806), (75, 7851), (84, 7962), (95, 8037), (106, 8109), (108, 8127), (109, 8133), (110, 8151), (112, 8166), (150, 8385), (154, 8406), (170, 8523), (186, 8667), (193, 8697), (199, 8739), (209, 8787), (226, 8862), (241, 8955),

Gene: Talia1610\_209 Start: 144680, Stop: 143235, Start Num: 26

Candidate Starts for Talia1610\_209:

(Start: 26 @144680 has 11 MA's), (31, 144659), (56, 144452), (59, 144410), (62, 144389), (64, 144383), (66, 144368), (81, 144215), (100, 144077), (102, 144065), (118, 143918), (124, 143879), (135, 143837), (140, 143822), (141, 143816), (142, 143804), (144, 143771), (145, 143768), (153, 143735), (155, 143717), (170, 143603), (172, 143594), (174, 143579), (179, 143549), (183, 143501), (185, 143486), (188, 143468), (196, 143426), (199, 143402), (200, 143393), (206, 143369), (221, 143312),

Gene: Tank\_15 Start: 6269, Stop: 8035, Start Num: 22

Candidate Starts for Tank\_15:

(Start: 22 @6269 has 19 MA's), (Start: 55 @6551 has 1 MA's), (61, 6602), (62, 6614), (63, 6617), (89, 6872), (90, 6875), (94, 6905), (100, 6944), (106, 6980), (107, 6986), (112, 7037), (118, 7091), (124, 7130), (136, 7214), (139, 7226), (140, 7229), (147, 7283), (148, 7286), (154, 7316), (168, 7403), (169, 7406), (170, 7433), (180, 7505), (193, 7589), (195, 7601), (233, 7814), (234, 7817), (251, 7967), (252, 7970), (255, 8021),

Gene: Teehee\_21 Start: 7267, Stop: 8778, Start Num: 17

Candidate Starts for Teehee\_21:

(3, 6928), (7, 6979), (13, 7201), (14, 7243), (Start: 17 @7267 has 51 MA's), (30, 7360), (49, 7510), (Start: 55 @7564 has 1 MA's), (62, 7627), (63, 7630), (75, 7702), (84, 7813), (93, 7870), (98, 7915), (105, 8026), (107, 8038), (108, 8050), (112, 8089), (117, 8140), (151, 8299), (154, 8317), (169, 8407), (172, 8440), (178, 8482), (185, 8548), (193, 8593), (195, 8605), (199, 8638),

Gene: Tempo\_19 Start: 5705, Stop: 7168, Start Num: 17

Candidate Starts for Tempo\_19:

(13, 5645), (Start: 17 @5705 has 51 MA's), (27, 5789), (44, 5918), (49, 5948), (57, 6023), (62, 6065), (84, 6251), (107, 6404), (108, 6416), (156, 6698), (162, 6731), (166, 6746), (169, 6776), (178, 6866), (184, 6926), (195, 6989), (201, 7034),

Gene: Tissue\_19 Start: 6401, Stop: 7912, Start Num: 17

Candidate Starts for Tissue\_19:

(3, 6062), (5, 6089), (13, 6335), (14, 6377), (Start: 17 @6401 has 51 MA's), (49, 6644), (Start: 55 @6698 has 1 MA's), (61, 6749), (62, 6761), (75, 6836), (84, 6947), (93, 7004), (98, 7049), (105, 7160), (107, 7172), (108, 7184), (112, 7223), (117, 7274), (151, 7433), (154, 7451), (169, 7541), (172, 7574), (178, 7616), (185, 7682), (193, 7727), (195, 7739), (199, 7772),

Gene: Viceroy\_19 Start: 6032, Stop: 7543, Start Num: 17

Candidate Starts for Viceroy\_19:

(3, 5693), (5, 5720), (7, 5744), (13, 5966), (14, 6008), (Start: 17 @6032 has 51 MA's), (49, 6275), (Start: 55 @6329 has 1 MA's), (62, 6392), (63, 6395), (75, 6467), (84, 6578), (93, 6635), (98, 6680), (105, 6791), (107, 6803), (108, 6815), (112, 6854), (117, 6905), (151, 7064), (154, 7082), (169, 7172), (172, 7205), (178, 7247), (185, 7313), (193, 7358), (195, 7370), (199, 7403),

Gene: WaddleDee\_199 Start: 147158, Stop: 145704, Start Num: 26

Candidate Starts for WaddleDee\_199:

(Start: 26 @147158 has 11 MA's), (37, 147101), (42, 147053), (56, 146930), (62, 146867), (66, 146846), (68, 146837), (81, 146705), (95, 146603), (99, 146570), (100, 146567), (102, 146555), (113, 146459), (117, 146411), (118, 146408), (121, 146387), (124, 146369), (135, 146327), (137, 146321), (144, 146261), (163, 146162), (171, 146090), (172, 146084), (175, 146057), (183, 145991), (185, 145976), (188, 145958), (194, 145934), (199, 145892), (200, 145883), (206, 145859), (213, 145832),

Gene: Wayne3\_21 Start: 6997, Stop: 8508, Start Num: 17

Candidate Starts for Wayne3\_21:

(3, 6658), (7, 6709), (13, 6931), (14, 6973), (Start: 17 @6997 has 51 MA's), (30, 7090), (49, 7240), (Start: 55 @7294 has 1 MA's), (62, 7357), (63, 7360), (75, 7432), (84, 7543), (93, 7600), (98, 7645), (105, 7756), (107, 7768), (108, 7780), (112, 7819), (117, 7870), (151, 8029), (154, 8047), (169, 8137), (172, 8170), (178, 8212), (185, 8278), (193, 8323), (195, 8335), (199, 8368),

Gene: WheelerS25\_25 Start: 7780, Stop: 9291, Start Num: 17

Candidate Starts for WheelerS25\_25:

(3, 7441), (5, 7468), (6, 7483), (13, 7714), (14, 7756), (Start: 17 @7780 has 51 MA's), (30, 7873), (40, 7948), (49, 8023), (Start: 55 @8077 has 1 MA's), (62, 8140), (75, 8215), (84, 8326), (93, 8383), (98, 8428), (105, 8539), (107, 8551), (108, 8563), (112, 8602), (117, 8653), (151, 8812), (154, 8830), (169,

8920), (172, 8953), (178, 8995), (185, 9061), (193, 9106), (195, 9118), (199, 9151),

Gene: Wheelie\_19 Start: 6348, Stop: 7859, Start Num: 17

Candidate Starts for Wheelie\_19:

(3, 6009), (7, 6060), (13, 6282), (14, 6324), (Start: 17 @6348 has 51 MA's), (30, 6441), (49, 6591), (Start: 55 @6645 has 1 MA's), (62, 6708), (63, 6711), (75, 6783), (84, 6894), (93, 6951), (98, 6996), (105, 7107), (107, 7119), (108, 7131), (112, 7170), (117, 7221), (151, 7380), (154, 7398), (169, 7488), (172, 7521), (178, 7563), (185, 7629), (193, 7674), (195, 7686), (199, 7719),

Gene: Wilca\_19 Start: 5601, Stop: 7064, Start Num: 17

Candidate Starts for Wilca\_19:

(Start: 17 @5601 has 51 MA's), (27, 5685), (44, 5814), (49, 5844), (57, 5919), (62, 5961), (84, 6147), (107, 6300), (108, 6312), (120, 6417), (148, 6549), (162, 6627), (169, 6672), (178, 6762), (184, 6822), (195, 6885), (201, 6930), (205, 6954), (212, 6978),

Gene: Wilde\_15 Start: 6197, Stop: 7963, Start Num: 22

Candidate Starts for Wilde\_15:

(Start: 22 @6197 has 19 MA's), (Start: 55 @6479 has 1 MA's), (61, 6530), (62, 6542), (63, 6545), (89, 6800), (90, 6803), (94, 6833), (95, 6836), (100, 6872), (106, 6908), (107, 6914), (112, 6965), (118, 7019), (124, 7058), (136, 7142), (139, 7154), (140, 7157), (147, 7211), (148, 7214), (154, 7244), (168, 7331), (169, 7334), (170, 7361), (180, 7433), (193, 7517), (195, 7529), (233, 7742), (234, 7745), (251, 7895), (252, 7898), (255, 7949),

Gene: Zagie\_20 Start: 6535, Stop: 8046, Start Num: 17

Candidate Starts for Zagie\_20:

(3, 6196), (5, 6223), (7, 6247), (13, 6469), (14, 6511), (Start: 17 @6535 has 51 MA's), (49, 6778), (Start: 55 @6832 has 1 MA's), (62, 6895), (63, 6898), (75, 6970), (84, 7081), (93, 7138), (98, 7183), (105, 7294), (107, 7306), (108, 7318), (112, 7357), (117, 7408), (151, 7567), (154, 7585), (169, 7675), (172, 7708), (178, 7750), (185, 7816), (193, 7861), (195, 7873), (199, 7906),

Gene: Zhafia\_22 Start: 6773, Stop: 8284, Start Num: 17

Candidate Starts for Zhafia\_22:

(3, 6434), (5, 6461), (13, 6707), (14, 6749), (Start: 17 @6773 has 51 MA's), (49, 7016), (Start: 55 @7070 has 1 MA's), (61, 7121), (62, 7133), (75, 7208), (84, 7319), (93, 7376), (98, 7421), (105, 7532), (107, 7544), (108, 7556), (112, 7595), (117, 7646), (151, 7805), (154, 7823), (169, 7913), (172, 7946), (178, 7988), (185, 8054), (193, 8099), (195, 8111), (199, 8144),