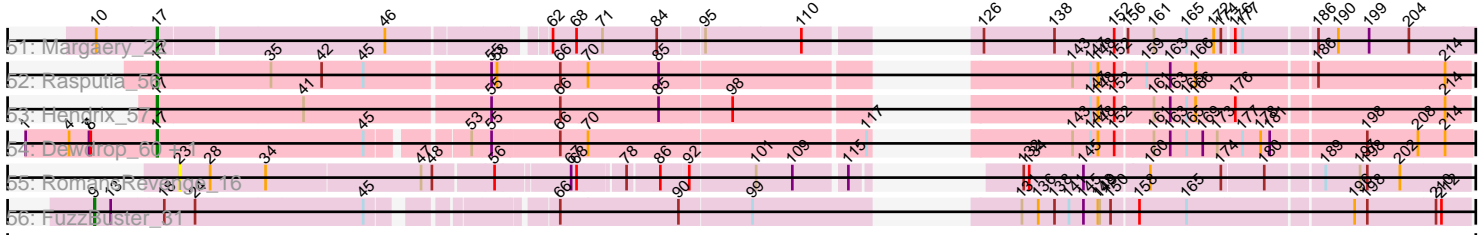


Pham 215948



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 215948 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215948 has 133 members, 25 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_20
- Track 2 : Tank\_20, Wilde\_20
- Track 3 : Rizwana\_19
- Track 4 : Beagle\_27, Pointis\_26, Pureglobe5\_28, Kubulix\_25, DogYard\_25
- Track 5 : RazzB\_21, NyleyClemson\_22
- Track 6 : Odyssey395\_28
- Track 7 : Forrestell\_22, MellowYellow\_23
- Track 8 : Ollypop\_22
- Track 9 : BruhMoment\_21
- Track 10 : SilentRX\_21
- Track 11 : AWGoat\_19
- Track 12 : Shrubaron\_27, RobsFeet\_28
- Track 13 : Ganandorf\_26, Quhwah\_30, Busephilis\_26, Jefe\_27, BrazzalePHS\_26, Yeti\_27, Cranjis\_28, Jollipop\_27, PiperSansNom\_27, Hermeonysus\_26, Onika\_26, Savannah\_26, Pulchra\_28, PhedwardCullen\_25, Selwyn23\_28, PierreOrion\_27, Piperis\_27, Antares\_27, Scumberland\_28, Shotgun\_26, CrazyRich\_26, Phorgeous\_26, Honeyfin\_28
- Track 14 : Paschalis\_26, Ramiel05\_26, Glorp\_28, Kowalski\_26
- Track 15 : LittleFortune\_28
- Track 16 : ClearAsMud\_29
- Track 17 : Jayden\_28
- Track 18 : KaiHaiDragon\_27, EarickHC\_27, Phrancesco\_27, Crisis\_28
- Track 19 : Megan\_21
- Track 20 : Gina\_28, Teamocil\_28
- Track 21 : Merry\_, Sunny\_
- Track 22 : Nicole72\_22
- Track 23 : Smarties\_35, Ariadne\_35
- Track 24 : SirFrank\_26
- Track 25 : Fireman\_27, Tyrumbra\_25
- Track 26 : Metamorphoo\_27
- Track 27 : NoodlelyBoi\_27
- Track 28 : Sillytadpoles\_25, Statler\_27, Phabia\_25, Zagie\_25, Rowlf\_21, Llemily\_25, Zhafia\_28, Wheelie\_24, Casend\_26, Jehoshaphat\_27, Teehee\_26, Nike\_25, DonaldDuck\_25, Viceroy\_24, Squash\_27, Lonelysoil\_24, Quammi\_23, Wayne3\_26, Rudy\_23
- Track 29 : Gazebo\_24, Mentos\_29, Mashley\_23, Hyperion\_24, Tissue\_25
- Track 30 : MorillMayhem\_24, BabyDotz\_24

- Track 31 : Fizzles\_25
- Track 32 : FrankDeliGuy\_23, Judebell\_27
- Track 33 : StrawberryJamm\_27, Kyva\_27, Grassboy\_26, Namago\_25, SallyK\_26
- Track 34 : Tempo\_24, Kelcole\_23, CandC\_23, RobinRose\_26, Romm\_26, Fregley\_25
- Track 35 : BirdInFrench\_24, Wilca\_24
- Track 36 : OneinaGillian\_24
- Track 37 : Pepe25\_23
- Track 38 : RubyRalph\_27, Fransoyer\_27
- Track 39 : Phinky\_31
- Track 40 : Altheas\_27
- Track 41 : Blab\_23
- Track 42 : AluminumJesus\_23
- Track 43 : EverythinBagel\_25
- Track 44 : SadLad\_29
- Track 45 : Marcie\_29
- Track 46 : Terij\_23
- Track 47 : Cressida\_24
- Track 48 : Cinna\_22, Matzah\_23
- Track 49 : Kozie\_23
- Track 50 : MementoMori\_23
- Track 51 : Margaery\_22
- Track 52 : Rasputia\_56
- Track 53 : Hendrix\_57
- Track 54 : Dewdrop\_60, Leaf\_60
- Track 55 : RomansRevenge\_16
- Track 56 : FuzzBuster\_31

***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 53 of the 108 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares\_27, Ariadne\_35, BrazzalePHS\_26, Busephilis\_26, Cinna\_22, ClearAsMud\_29, Cranjis\_28, CrazyRich\_26, Cressida\_24, Crisis\_28, Dewdrop\_60, EarickHC\_27, Fireman\_27, Ganandorf\_26, Gina\_28, Glorp\_28, Hendrix\_57, Hermeonysus\_26, Honeyfin\_28, Jayden\_28, Jefe\_27, Jollipop\_27, KaiHaiDragon\_27, Kowalski\_26, Kozie\_23, Leaf\_60, LittleFortune\_28, Margaery\_22, Matzah\_23, Megan\_21, MementoMori\_23, Metamorphoo\_27, Nicole72\_22, NoodlelyBoi\_27, Onika\_26, Paschalis\_26, PhedwardCullen\_25, Phorgeous\_26, Phrancesco\_27, PierreOrion\_27, PiperSansNom\_27, Piperis\_27, Pulchra\_28, Quhwah\_30, Ramiel05\_26, Rasputia\_56, RobsFeet\_28, Savannah\_26, Scumberland\_28, Selwyn23\_28, Shotgun\_26, Shrubaron\_27, SirFrank\_26, Smarties\_35, Teamocil\_28, Terij\_23, Tyrumbra\_25, Yeti\_27,

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

- Merry\_, Sunny\_

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

- AWGoat\_19, Altheas\_27, AluminumJesus\_23, BabyDotz\_24, Beagle\_27, BirdInFrench\_24, Blab\_23, BruhMoment\_21, CandC\_23, Casend\_26, DogYard\_25, DonaldDuck\_25, EverythinBagel\_25, Fizzles\_25, Forrestell\_22, FrankDeliGuy\_23, Fransoyer\_27, Fregley\_25, FuzzBuster\_31, Gazebo\_24, Grassboy\_26, Hyperion\_24, Jehoshaphat\_27, Judebell\_27, Kelcole\_23, Kubulix\_25, Kyva\_27, Llemily\_25, Lonelysoil\_24, Marcie\_29, Mashley\_23, MellowYellow\_23, Mentos\_29, MorillMayhem\_24, Namago\_25, Nike\_25, NyleyClemson\_22, Odyssey395\_28, Ollypop\_22, OneinaGillian\_24, Pepe25\_23, Phabia\_25, Phinky\_31, Pointis\_26, Pureglobe5\_28, Quammi\_23, Ranunculus\_20, RazzB\_21, Rizwana\_19, RobinRose\_26, RomansRevenge\_16, Romm\_26, Rowlf\_21, RubyRalph\_27, Rudy\_23, SadLad\_29, SallyK\_26, SilentRX\_21, Sillytadpoles\_25, Squash\_27, Statler\_27, StrawberryJamm\_27, Tank\_20, Teehee\_26, Tempo\_24, Tissue\_25, Viceroy\_24, Wayne3\_26, Wheelie\_24, Wilca\_24, Wilde\_20, Zagie\_25, Zhafia\_28,

### Summary by start number:

#### Start 9:

- Found in 1 of 133 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FuzzBuster\_31 (singleton),

#### Start 15:

- Found in 2 of 133 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Merry\_ (EC), Sunny\_ (EC),

#### Start 17:

- Found in 60 of 133 ( 45.1% ) of genes in pham
- Manual Annotations of this start: 53 of 108
- Called 96.7% of time when present
- Phage (with cluster) where this start called: Antares\_27 (EC), Ariadne\_35 (EC), BrazzalePHS\_26 (EC), Busephilis\_26 (EC), Cinna\_22 (EI), ClearAsMud\_29 (EC), Cranjis\_28 (EC), CrazyRich\_26 (EC), Cressida\_24 (EI), Crisis\_28 (EC), Dewdrop\_60 (GC), EarickHC\_27 (EC), Fireman\_27 (EC), Ganandorf\_26 (EC), Gina\_28 (EC), Glorp\_28 (EC), Hendrix\_57 (GC), Hermeonysus\_26 (EC), Honeyfin\_28 (EC), Jayden\_28 (EC), Jefe\_27 (EC), Jollipop\_27 (EC), KaiHaiDragon\_27 (EC), Kowalski\_26 (EC), Kozie\_23 (EI), Leaf\_60 (GC), LittleFortune\_28 (EC), Margaery\_22 (EI), Matzah\_23 (EI), Megan\_21 (EC), MementoMori\_23 (EI), Metamorphoo\_27 (EC), Nicole72\_22 (EC), NoodlelyBoi\_27 (EC), Onika\_26 (EC), Paschalis\_26 (EC), PhedwardCullen\_25 (EC), Phorgeous\_26 (EC), Phrancesco\_27 (EC), PierreOrion\_27 (EC), PiperSansNom\_27 (EC), Piperis\_27 (EC), Pulchra\_28 (EC), Quhwah\_30 (EC), Ramiel05\_26 (EC), Rasputia\_56 (GC), RobsFeet\_28 (EC), Savannah\_26 (EC), Scumberland\_28 (EC), Selwyn23\_28 (EC), Shotgun\_26 (EC), Shrubaron\_27 (EC), SirFrank\_26 (EC), Smarties\_35 (EC), Teamocil\_28 (EC), Terij\_23 (EI), Tyumbra\_25 (EC), Yeti\_27 (EC),

#### Start 23:

- Found in 1 of 133 ( 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: RomansRevenge\_16 (singleton),

Start 25:

- Found in 11 of 133 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 10 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdInFrench\_24 (EG), CandC\_23 (EG), Fregley\_25 (EG), Kelcole\_23 (EG), Marcie\_29 (EG), OneinaGillian\_24 (EG), Pepe25\_23 (EG), RobinRose\_26 (EG), Romm\_26 (EG), Tempo\_24 (EG), Wilca\_24 (EG),

Start 26:

- Found in 5 of 133 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 4 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altheas\_27 (EG), Fransoyer\_27 (EG), Phinky\_31 (EG), RubyRalph\_27 (EG), SadLad\_29 (EG),

Start 27:

- Found in 37 of 133 ( 27.8% ) of genes in pham
- Manual Annotations of this start: 26 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AluminumJesus\_23 (EG), BabyDotz\_24 (EG), Blab\_23 (EG), Casend\_26 (EG), DonaldDuck\_25 (EG), EverythinBagel\_25 (EG), Fizzles\_25 (EG), FrankDeliGuy\_23 (EG), Gazebo\_24 (EG), Grassboy\_26 (EG), Hyperion\_24 (EG), Jehoshaphat\_27 (EG), Judebell\_27 (EG), Kyva\_27 (EG), Llemily\_25 (EG), Lonelysoil\_24 (EG), Mashley\_23 (EG), Mentos\_29 (EG), MorillMayhem\_24 (EG), Namago\_25 (EG), Nike\_25 (EG), Phabia\_25 (EG), Quammi\_23 (EG), Rowlf\_21 (EG), Rudy\_23 (EG), SallyK\_26 (EG), Sillytadpoles\_25 (EG), Squash\_27 (EG), Statler\_27 (EG), StrawberryJamm\_27 (EG), Teehee\_26 (EG), Tissue\_25 (EG), Viceroy\_24 (EG), Wayne3\_26 (EG), Wheelie\_24 (EG), Zagie\_25 (EG), Zhafia\_28 (EG),

Start 28:

- Found in 19 of 133 ( 14.3% ) of genes in pham
- Manual Annotations of this start: 12 of 108
- Called 94.7% of time when present
- Phage (with cluster) where this start called: AWGoat\_19 (AP4), Beagle\_27 (AP2), BruhMoment\_21 (AP3), DogYard\_25 (AP2), Forrestell\_22 (AP2), Kubulix\_25 (AP2), MellowYellow\_23 (AP2), NyleyClemson\_22 (AP2), Odyssey395\_28 (AP2), Ollypop\_22 (AP2), Pointis\_26 (AP2), Pureglobe5\_28 (AP2), Ranunculus\_20 (AP), RazzB\_21 (AP2), Rizwana\_19 (AP1), SilentRX\_21 (AP4), Tank\_20 (AP1), Wilde\_20 (AP1),

**Summary by clusters:**

There are 10 clusters represented in this pham: singleton, EI, AP2, AP3, EG, AP1, EC, AP, GC, AP4,

Info for manual annotations of cluster AP:

- Start number 28 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 28 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 28 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 28 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 28 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster EC:

- Start number 15 was manually annotated 2 times for cluster EC.
- Start number 17 was manually annotated 42 times for cluster EC.

Info for manual annotations of cluster EG:

- Start number 25 was manually annotated 10 times for cluster EG.
- Start number 26 was manually annotated 4 times for cluster EG.
- Start number 27 was manually annotated 26 times for cluster EG.

Info for manual annotations of cluster EI:

- Start number 17 was manually annotated 7 times for cluster EI.

Info for manual annotations of cluster GC:

- Start number 17 was manually annotated 4 times for cluster GC.

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

Gene: AWGoat\_19 Start: 13739, Stop: 15430, Start Num: 28

Candidate Starts for AWGoat\_19:

(19, 13679), (20, 13691), (22, 13694), (Start: 28 @13739 has 12 MA's), (107, 14555), (114, 14609), (115, 14639), (116, 14651), (133, 14735), (134, 14738), (135, 14741), (143, 14810), (153, 14882), (160, 14930), (174, 15047), (180, 15113), (193, 15230), (201, 15317), (202, 15323),

Gene: Altheas\_27 Start: 14496, Stop: 16319, Start Num: 26

Candidate Starts for Altheas\_27:

(Start: 26 @14496 has 4 MA's), (30, 14508), (33, 14568), (36, 14607), (73, 15129), (84, 15204), (91, 15252), (94, 15276), (96, 15282), (105, 15399), (115, 15498), (130, 15579), (144, 15672), (145, 15687), (151, 15735), (155, 15759), (159, 15792), (162, 15807), (163, 15831), (167, 15879), (175, 15921), (185, 16056), (186, 16068), (188, 16077), (197, 16137), (209, 16239),

Gene: AluminumJesus\_23 Start: 13874, Stop: 15679, Start Num: 27

Candidate Starts for AluminumJesus\_23:

(Start: 27 @13874 has 26 MA's), (30, 13883), (36, 13982), (54, 14288), (73, 14489), (76, 14504), (84, 14564), (91, 14612), (96, 14642), (104, 14756), (105, 14759), (106, 14765), (115, 14858), (130, 14939), (144, 15032), (145, 15047), (151, 15095), (155, 15119), (162, 15167), (163, 15191), (167, 15239), (175, 15281), (185, 15416), (186, 15428), (188, 15437), (197, 15497), (203, 15566), (209, 15599),

Gene: Antares\_27 Start: 14003, Stop: 15859, Start Num: 17

Candidate Starts for Antares\_27:

(Start: 17 @14003 has 53 MA's), (62, 14579), (69, 14624), (71, 14660), (81, 14729), (84, 14750), (85, 14753), (89, 14783), (100, 14903), (111, 14984), (126, 15098), (128, 15125), (152, 15314), (166, 15440), (181, 15554), (182, 15569), (189, 15617), (193, 15647), (195, 15659), (197, 15674), (199, 15689), (202, 15740), (205, 15758), (209, 15776),

Gene: Ariadne\_35 Start: 15581, Stop: 17596, Start Num: 17

Candidate Starts for Ariadne\_35:

(Start: 17 @15581 has 53 MA's), (62, 16160), (69, 16205), (71, 16241), (75, 16265), (81, 16310), (84, 16331), (88, 16349), (100, 16484), (124, 16814), (125, 16817), (128, 16874), (129, 16898), (148, 17036), (152, 17063), (165, 17174), (181, 17303), (182, 17318), (183, 17327), (186, 17354), (189, 17366), (193, 17396), (197, 17423), (205, 17507), (209, 17525),

Gene: BabyDotz\_24 Start: 14116, Stop: 15948, Start Num: 27

Candidate Starts for BabyDotz\_24:

(Start: 27 @14116 has 26 MA's), (30, 14125), (36, 14224), (59, 14590), (73, 14758), (76, 14773), (84, 14833), (91, 14881), (92, 14887), (96, 14911), (104, 15025), (105, 15028), (106, 15034), (115, 15127), (130, 15208), (144, 15301), (145, 15316), (151, 15364), (155, 15388), (162, 15436), (163, 15460), (167, 15508), (175, 15550), (185, 15685), (186, 15697), (188, 15706), (197, 15766), (203, 15835), (209, 15868),

Gene: Beagle\_27 Start: 14234, Stop: 15961, Start Num: 28

Candidate Starts for Beagle\_27:

(18, 14171), (Start: 28 @14234 has 12 MA's), (78, 14843), (112, 15131), (114, 15143), (115, 15173), (133, 15269), (134, 15272), (135, 15275), (140, 15335), (163, 15497), (170, 15557), (171, 15563), (174, 15581), (180, 15644), (191, 15755), (202, 15854),

Gene: BirdInFrench\_24 Start: 12993, Stop: 14771, Start Num: 25

Candidate Starts for BirdInFrench\_24:

(Start: 25 @12993 has 10 MA's), (30, 13005), (49, 13350), (60, 13464), (74, 13590), (84, 13656), (91, 13704), (96, 13734), (115, 13947), (130, 14028), (132, 14037), (142, 14115), (144, 14121), (145, 14136), (163, 14280), (166, 14322), (175, 14373), (186, 14520), (188, 14529), (206, 14679), (209, 14691), (216, 14751),

Gene: Blab\_23 Start: 13751, Stop: 15577, Start Num: 27

Candidate Starts for Blab\_23:

(Start: 27 @13751 has 26 MA's), (30, 13760), (36, 13859), (54, 14186), (73, 14387), (76, 14402), (84, 14462), (91, 14510), (96, 14540), (104, 14654), (105, 14657), (106, 14663), (115, 14756), (130, 14837), (144, 14930), (145, 14945), (151, 14993), (155, 15017), (162, 15065), (163, 15089), (167, 15137), (175, 15179), (185, 15314), (188, 15335), (197, 15395), (203, 15464), (209, 15497),

Gene: BrazzalePHS\_26 Start: 13795, Stop: 15654, Start Num: 17

Candidate Starts for BrazzalePHS\_26:

(Start: 17 @13795 has 53 MA's), (62, 14374), (69, 14419), (71, 14455), (81, 14524), (84, 14545), (85, 14548), (89, 14578), (100, 14698), (111, 14779), (126, 14893), (128, 14920), (152, 15109), (166, 15235), (181, 15349), (182, 15364), (189, 15412), (193, 15442), (195, 15454), (197, 15469), (199, 15484), (202, 15535), (205, 15553), (209, 15571),

Gene: BruhMoment\_21 Start: 13658, Stop: 15379, Start Num: 28

Candidate Starts for BruhMoment\_21:

(19, 13598), (Start: 28 @13658 has 12 MA's), (67, 14171), (78, 14249), (80, 14264), (114, 14558), (115, 14588), (133, 14684), (134, 14687), (135, 14690), (143, 14759), (160, 14879), (164, 14936), (168, 14963), (174, 14996), (184, 15116), (190, 15170), (194, 15188), (200, 15254), (202, 15272), (208, 15302),



Gene: Busephilis\_26 Start: 13734, Stop: 15590, Start Num: 17

Candidate Starts for Busephilis\_26:

(Start: 17 @13734 has 53 MA's), (62, 14310), (69, 14355), (71, 14391), (81, 14460), (84, 14481), (85, 14484), (89, 14514), (100, 14634), (111, 14715), (126, 14829), (128, 14856), (152, 15045), (166, 15171), (181, 15285), (182, 15300), (189, 15348), (193, 15378), (195, 15390), (197, 15405), (199, 15420), (202, 15471), (205, 15489), (209, 15507),

Gene: CandC\_23 Start: 12598, Stop: 14376, Start Num: 25

Candidate Starts for CandC\_23:

(Start: 25 @12598 has 10 MA's), (30, 12610), (49, 12952), (60, 13069), (74, 13195), (91, 13309), (96, 13339), (115, 13552), (130, 13633), (132, 13642), (142, 13720), (144, 13726), (145, 13741), (163, 13885), (166, 13927), (175, 13978), (186, 14125), (188, 14134), (206, 14284), (209, 14296),

Gene: Casend\_26 Start: 14462, Stop: 16294, Start Num: 27

Candidate Starts for Casend\_26:

(Start: 27 @14462 has 26 MA's), (30, 14471), (36, 14570), (59, 14936), (73, 15104), (76, 15119), (84, 15179), (91, 15227), (92, 15233), (96, 15257), (105, 15374), (106, 15380), (115, 15473), (130, 15554), (144, 15647), (145, 15662), (151, 15710), (155, 15734), (162, 15782), (163, 15806), (167, 15854), (175, 15896), (185, 16031), (186, 16043), (188, 16052), (197, 16112), (203, 16181), (209, 16214),

Gene: Cinna\_22 Start: 13276, Stop: 15141, Start Num: 17

Candidate Starts for Cinna\_22:

(Start: 17 @13276 has 53 MA's), (46, 13630), (52, 13756), (68, 13894), (71, 13936), (83, 14017), (84, 14026), (93, 14083), (95, 14095), (107, 14227), (110, 14248), (111, 14254), (126, 14368), (137, 14467), (138, 14485), (152, 14584), (156, 14599), (161, 14641), (165, 14695), (166, 14710), (174, 14752), (176, 14767), (177, 14779), (181, 14824), (186, 14887), (190, 14920),

Gene: ClearAsMud\_29 Start: 14527, Stop: 16377, Start Num: 17

Candidate Starts for ClearAsMud\_29:

(Start: 17 @14527 has 53 MA's), (62, 15103), (69, 15148), (71, 15184), (81, 15253), (84, 15274), (85, 15277), (89, 15307), (100, 15427), (128, 15649), (133, 15694), (152, 15838), (172, 15994), (181, 16078), (189, 16141), (193, 16171), (195, 16183), (197, 16198), (199, 16213), (202, 16264), (205, 16282),

Gene: Cranjis\_28 Start: 13958, Stop: 15814, Start Num: 17

Candidate Starts for Cranjis\_28:

(Start: 17 @13958 has 53 MA's), (62, 14534), (69, 14579), (71, 14615), (81, 14684), (84, 14705), (85, 14708), (89, 14738), (100, 14858), (111, 14939), (126, 15053), (128, 15080), (152, 15269), (166, 15395), (181, 15509), (182, 15524), (189, 15572), (193, 15602), (195, 15614), (197, 15629), (199, 15644), (202, 15695), (205, 15713), (209, 15731),

Gene: CrazyRich\_26 Start: 13768, Stop: 15624, Start Num: 17

Candidate Starts for CrazyRich\_26:

(Start: 17 @13768 has 53 MA's), (62, 14344), (69, 14389), (71, 14425), (81, 14494), (84, 14515), (85, 14518), (89, 14548), (100, 14668), (111, 14749), (126, 14863), (128, 14890), (152, 15079), (166, 15205), (181, 15319), (182, 15334), (189, 15382), (193, 15412), (195, 15424), (197, 15439), (199, 15454), (202, 15505), (205, 15523), (209, 15541),

Gene: Cressida\_24 Start: 13311, Stop: 15185, Start Num: 17

Candidate Starts for Cressida\_24:

(Start: 17 @13311 has 53 MA's), (52, 13797), (58, 13836), (68, 13935), (71, 13977), (83, 14058), (84, 14067), (93, 14124), (95, 14136), (107, 14268), (110, 14289), (111, 14295), (126, 14409), (137,

14508), (138, 14526), (152, 14625), (156, 14640), (161, 14682), (165, 14736), (166, 14751), (174, 14793), (176, 14808), (177, 14820), (181, 14865), (186, 14928), (193, 14970), (198, 15009), (199, 15012), (209, 15099),

Gene: Crisis\_28 Start: 13753, Stop: 15609, Start Num: 17

Candidate Starts for Crisis\_28:

(Start: 17 @13753 has 53 MA's), (62, 14329), (69, 14374), (71, 14410), (81, 14479), (84, 14500), (85, 14503), (89, 14533), (100, 14653), (111, 14734), (126, 14848), (128, 14875), (152, 15064), (166, 15190), (171, 15214), (181, 15304), (182, 15319), (189, 15367), (193, 15397), (195, 15409), (197, 15424), (199, 15439), (202, 15490), (205, 15508), (209, 15526),

Gene: Dewdrop\_60 Start: 29654, Stop: 31561, Start Num: 17

Candidate Starts for Dewdrop\_60:

(1, 29438), (4, 29510), (7, 29543), (8, 29546), (Start: 17 @29654 has 53 MA's), (45, 29993), (53, 30131), (55, 30161), (66, 30269), (70, 30314), (117, 30755), (143, 30929), (147, 30959), (148, 30971), (152, 30998), (161, 31055), (163, 31082), (165, 31109), (169, 31136), (173, 31160), (177, 31202), (178, 31232), (181, 31247), (198, 31391), (208, 31475), (214, 31517),

Gene: DogYard\_25 Start: 14304, Stop: 16031, Start Num: 28

Candidate Starts for DogYard\_25:

(18, 14241), (Start: 28 @14304 has 12 MA's), (78, 14913), (112, 15201), (114, 15213), (115, 15243), (133, 15339), (134, 15342), (135, 15345), (140, 15405), (163, 15567), (170, 15627), (171, 15633), (174, 15651), (180, 15714), (191, 15825), (202, 15924),

Gene: DonaldDuck\_25 Start: 13808, Stop: 15640, Start Num: 27

Candidate Starts for DonaldDuck\_25:

(Start: 27 @13808 has 26 MA's), (30, 13817), (36, 13916), (59, 14282), (73, 14450), (76, 14465), (84, 14525), (91, 14573), (92, 14579), (96, 14603), (105, 14720), (106, 14726), (115, 14819), (130, 14900), (144, 14993), (145, 15008), (151, 15056), (155, 15080), (162, 15128), (163, 15152), (167, 15200), (175, 15242), (185, 15377), (186, 15389), (188, 15398), (197, 15458), (203, 15527), (209, 15560),

Gene: EarickHC\_27 Start: 13679, Stop: 15535, Start Num: 17

Candidate Starts for EarickHC\_27:

(Start: 17 @13679 has 53 MA's), (62, 14255), (69, 14300), (71, 14336), (81, 14405), (84, 14426), (85, 14429), (89, 14459), (100, 14579), (111, 14660), (126, 14774), (128, 14801), (152, 14990), (166, 15116), (171, 15140), (181, 15230), (182, 15245), (189, 15293), (193, 15323), (195, 15335), (197, 15350), (199, 15365), (202, 15416), (205, 15434), (209, 15452),

Gene: EverythinBagel\_25 Start: 14211, Stop: 16028, Start Num: 27

Candidate Starts for EverythinBagel\_25:

(Start: 27 @14211 has 26 MA's), (30, 14220), (36, 14319), (54, 14637), (73, 14838), (76, 14853), (84, 14913), (91, 14961), (96, 14991), (104, 15105), (105, 15108), (106, 15114), (113, 15168), (115, 15207), (130, 15288), (144, 15381), (145, 15396), (151, 15444), (155, 15468), (162, 15516), (163, 15540), (167, 15588), (175, 15630), (185, 15765), (188, 15786), (195, 15831), (197, 15846), (203, 15915), (209, 15948),

Gene: Fireman\_27 Start: 13483, Stop: 15504, Start Num: 17

Candidate Starts for Fireman\_27:

(Start: 17 @13483 has 53 MA's), (62, 14068), (71, 14149), (75, 14173), (81, 14218), (84, 14239), (100, 14392), (122, 14650), (124, 14722), (128, 14782), (129, 14806), (148, 14944), (151, 14968), (152, 14971), (165, 15082), (181, 15211), (182, 15226), (183, 15235), (186, 15262), (189, 15274), (193, 15304), (197, 15331), (209, 15433),

Gene: Fizzles\_25 Start: 13768, Stop: 15600, Start Num: 27

Candidate Starts for Fizzles\_25:

(Start: 27 @13768 has 26 MA's), (29, 13774), (30, 13777), (40, 13915), (73, 14410), (79, 14449), (82, 14470), (91, 14533), (94, 14557), (96, 14563), (105, 14680), (115, 14779), (127, 14821), (130, 14860), (144, 14953), (145, 14968), (151, 15016), (154, 15031), (162, 15088), (163, 15112), (167, 15160), (174, 15196), (176, 15211), (185, 15337), (186, 15349), (188, 15358), (209, 15520),

Gene: Forrestell\_22 Start: 12942, Stop: 14669, Start Num: 28

Candidate Starts for Forrestell\_22:

(18, 12879), (Start: 28 @12942 has 12 MA's), (78, 13551), (104, 13779), (112, 13839), (114, 13851), (115, 13881), (133, 13977), (134, 13980), (135, 13983), (140, 14043), (163, 14205), (168, 14256), (170, 14265), (174, 14289), (180, 14352), (186, 14427), (187, 14433), (189, 14439), (190, 14460), (202, 14562),

Gene: FrankDeliGuy\_23 Start: 13770, Stop: 15602, Start Num: 27

Candidate Starts for FrankDeliGuy\_23:

(Start: 27 @13770 has 26 MA's), (30, 13779), (36, 13878), (59, 14244), (73, 14412), (76, 14427), (84, 14487), (91, 14535), (92, 14541), (96, 14565), (104, 14679), (105, 14682), (106, 14688), (115, 14781), (130, 14862), (144, 14955), (145, 14970), (151, 15018), (155, 15042), (162, 15090), (163, 15114), (167, 15162), (175, 15204), (185, 15339), (188, 15360), (197, 15420), (203, 15489), (209, 15522),

Gene: Fransoyer\_27 Start: 13833, Stop: 15662, Start Num: 26

Candidate Starts for Fransoyer\_27:

(Start: 26 @13833 has 4 MA's), (30, 13845), (39, 13974), (49, 14202), (50, 14220), (63, 14379), (73, 14463), (84, 14541), (91, 14589), (96, 14619), (104, 14733), (115, 14835), (127, 14877), (130, 14916), (132, 14925), (144, 15009), (145, 15024), (162, 15144), (163, 15168), (166, 15210), (167, 15216), (175, 15258), (185, 15393), (188, 15414), (190, 15438), (194, 15456), (197, 15474), (209, 15576),

Gene: Fregley\_25 Start: 13171, Stop: 14949, Start Num: 25

Candidate Starts for Fregley\_25:

(Start: 25 @13171 has 10 MA's), (30, 13183), (49, 13525), (60, 13642), (74, 13768), (91, 13882), (96, 13912), (115, 14125), (130, 14206), (132, 14215), (142, 14293), (144, 14299), (145, 14314), (163, 14458), (166, 14500), (175, 14551), (186, 14698), (188, 14707), (206, 14857), (209, 14869),

Gene: FuzzBuster\_31 Start: 13864, Stop: 15825, Start Num: 9

Candidate Starts for FuzzBuster\_31:

(Start: 9 @13864 has 1 MA's), (13, 13891), (18, 13975), (24, 14026), (45, 14296), (66, 14533), (90, 14728), (99, 14842), (131, 15121), (136, 15148), (138, 15175), (141, 15199), (145, 15223), (148, 15247), (149, 15250), (150, 15268), (158, 15307), (165, 15385), (196, 15637), (198, 15658), (210, 15769), (212, 15778),

Gene: Ganandorf\_26 Start: 13815, Stop: 15671, Start Num: 17

Candidate Starts for Ganandorf\_26:

(Start: 17 @13815 has 53 MA's), (62, 14391), (69, 14436), (71, 14472), (81, 14541), (84, 14562), (85, 14565), (89, 14595), (100, 14715), (111, 14796), (126, 14910), (128, 14937), (152, 15126), (166, 15252), (181, 15366), (182, 15381), (189, 15429), (193, 15459), (195, 15471), (197, 15486), (199, 15501), (202, 15552), (205, 15570), (209, 15588),

Gene: Gazebo\_24 Start: 14317, Stop: 16143, Start Num: 27

Candidate Starts for Gazebo\_24:

(Start: 27 @14317 has 26 MA's), (30, 14326), (36, 14425), (54, 14752), (73, 14953), (76, 14968), (84, 15028), (91, 15076), (96, 15106), (105, 15223), (106, 15229), (115, 15322), (130, 15403), (144, 15496), (145, 15511), (151, 15559), (155, 15583), (162, 15631), (163, 15655), (167, 15703), (175,

15745), (185, 15880), (188, 15901), (197, 15961), (203, 16030), (209, 16063),

Gene: Gina\_28 Start: 13149, Stop: 15167, Start Num: 17

Candidate Starts for Gina\_28:

(Start: 17 @13149 has 53 MA's), (51, 13617), (62, 13731), (68, 13770), (71, 13812), (75, 13836), (81, 13881), (84, 13902), (85, 13905), (88, 13920), (94, 13974), (100, 14055), (109, 14115), (118, 14259), (120, 14277), (128, 14445), (129, 14469), (148, 14607), (152, 14634), (165, 14745), (181, 14874), (182, 14889), (186, 14925), (189, 14937), (193, 14967), (197, 14994), (209, 15096),

Gene: Glorp\_28 Start: 13816, Stop: 15672, Start Num: 17

Candidate Starts for Glorp\_28:

(Start: 17 @13816 has 53 MA's), (62, 14392), (69, 14437), (71, 14473), (81, 14542), (84, 14563), (85, 14566), (89, 14596), (100, 14716), (111, 14797), (126, 14911), (128, 14938), (152, 15127), (181, 15367), (182, 15382), (189, 15430), (193, 15460), (195, 15472), (197, 15487), (199, 15502), (202, 15553), (205, 15571), (209, 15589),

Gene: Grassboy\_26 Start: 14484, Stop: 16316, Start Num: 27

Candidate Starts for Grassboy\_26:

(Start: 27 @14484 has 26 MA's), (30, 14493), (36, 14592), (54, 14925), (73, 15126), (76, 15141), (84, 15201), (91, 15249), (96, 15279), (105, 15396), (106, 15402), (115, 15495), (130, 15576), (144, 15669), (145, 15684), (151, 15732), (155, 15756), (162, 15804), (163, 15828), (167, 15876), (175, 15918), (185, 16053), (188, 16074), (195, 16119), (197, 16134), (203, 16203), (209, 16236),

Gene: Hendrix\_57 Start: 29698, Stop: 31632, Start Num: 17

Candidate Starts for Hendrix\_57:

(Start: 17 @29698 has 53 MA's), (41, 29935), (55, 30232), (66, 30343), (85, 30505), (98, 30619), (147, 31033), (148, 31045), (152, 31072), (161, 31129), (163, 31156), (165, 31183), (166, 31198), (176, 31264), (214, 31591),

Gene: Hermeonysus\_26 Start: 13684, Stop: 15543, Start Num: 17

Candidate Starts for Hermeonysus\_26:

(Start: 17 @13684 has 53 MA's), (62, 14263), (69, 14308), (71, 14344), (81, 14413), (84, 14434), (85, 14437), (89, 14467), (100, 14587), (111, 14668), (126, 14782), (128, 14809), (152, 14998), (166, 15124), (181, 15238), (182, 15253), (189, 15301), (193, 15331), (195, 15343), (197, 15358), (199, 15373), (202, 15424), (205, 15442), (209, 15460),

Gene: Honeyfin\_28 Start: 14000, Stop: 15859, Start Num: 17

Candidate Starts for Honeyfin\_28:

(Start: 17 @14000 has 53 MA's), (62, 14579), (69, 14624), (71, 14660), (81, 14729), (84, 14750), (85, 14753), (89, 14783), (100, 14903), (111, 14984), (126, 15098), (128, 15125), (152, 15314), (166, 15440), (181, 15554), (182, 15569), (189, 15617), (193, 15647), (195, 15659), (197, 15674), (199, 15689), (202, 15740), (205, 15758), (209, 15776),

Gene: Hyperion\_24 Start: 14277, Stop: 16103, Start Num: 27

Candidate Starts for Hyperion\_24:

(Start: 27 @14277 has 26 MA's), (30, 14286), (36, 14385), (54, 14712), (73, 14913), (76, 14928), (84, 14988), (91, 15036), (96, 15066), (105, 15183), (106, 15189), (115, 15282), (130, 15363), (144, 15456), (145, 15471), (151, 15519), (155, 15543), (162, 15591), (163, 15615), (167, 15663), (175, 15705), (185, 15840), (188, 15861), (197, 15921), (203, 15990), (209, 16023),

Gene: Jayden\_28 Start: 13519, Stop: 15375, Start Num: 17

Candidate Starts for Jayden\_28:

(Start: 17 @13519 has 53 MA's), (37, 13699), (62, 14092), (68, 14131), (69, 14137), (71, 14173), (81, 14242), (84, 14263), (85, 14266), (100, 14416), (128, 14638), (129, 14662), (148, 14800), (152, 14827), (165, 14938), (166, 14953), (181, 15067), (182, 15082), (183, 15091), (186, 15118), (189, 15130), (192, 15157), (193, 15160), (199, 15202),

Gene: Jefe\_27 Start: 13737, Stop: 15596, Start Num: 17

Candidate Starts for Jefe\_27:

(Start: 17 @13737 has 53 MA's), (62, 14316), (69, 14361), (71, 14397), (81, 14466), (84, 14487), (85, 14490), (89, 14520), (100, 14640), (111, 14721), (126, 14835), (128, 14862), (152, 15051), (166, 15177), (181, 15291), (182, 15306), (189, 15354), (193, 15384), (195, 15396), (197, 15411), (199, 15426), (202, 15477), (205, 15495), (209, 15513),

Gene: Jehoshaphat\_27 Start: 14727, Stop: 16559, Start Num: 27

Candidate Starts for Jehoshaphat\_27:

(Start: 27 @14727 has 26 MA's), (30, 14736), (36, 14835), (59, 15201), (73, 15369), (76, 15384), (84, 15444), (91, 15492), (92, 15498), (96, 15522), (105, 15639), (106, 15645), (115, 15738), (130, 15819), (144, 15912), (145, 15927), (151, 15975), (155, 15999), (162, 16047), (163, 16071), (167, 16119), (175, 16161), (185, 16296), (186, 16308), (188, 16317), (197, 16377), (203, 16446), (209, 16479),

Gene: Jollipop\_27 Start: 14085, Stop: 15941, Start Num: 17

Candidate Starts for Jollipop\_27:

(Start: 17 @14085 has 53 MA's), (62, 14661), (69, 14706), (71, 14742), (81, 14811), (84, 14832), (85, 14835), (89, 14865), (100, 14985), (111, 15066), (126, 15180), (128, 15207), (152, 15396), (166, 15522), (181, 15636), (182, 15651), (189, 15699), (193, 15729), (195, 15741), (197, 15756), (199, 15771), (202, 15822), (205, 15840), (209, 15858),

Gene: Judebell\_27 Start: 14268, Stop: 16100, Start Num: 27

Candidate Starts for Judebell\_27:

(Start: 27 @14268 has 26 MA's), (30, 14277), (36, 14376), (59, 14742), (73, 14910), (76, 14925), (84, 14985), (91, 15033), (92, 15039), (96, 15063), (104, 15177), (105, 15180), (106, 15186), (115, 15279), (130, 15360), (144, 15453), (145, 15468), (151, 15516), (155, 15540), (162, 15588), (163, 15612), (167, 15660), (175, 15702), (185, 15837), (188, 15858), (197, 15918), (203, 15987), (209, 16020),

Gene: KaiHaiDragon\_27 Start: 13679, Stop: 15535, Start Num: 17

Candidate Starts for KaiHaiDragon\_27:

(Start: 17 @13679 has 53 MA's), (62, 14255), (69, 14300), (71, 14336), (81, 14405), (84, 14426), (85, 14429), (89, 14459), (100, 14579), (111, 14660), (126, 14774), (128, 14801), (152, 14990), (166, 15116), (171, 15140), (181, 15230), (182, 15245), (189, 15293), (193, 15323), (195, 15335), (197, 15350), (199, 15365), (202, 15416), (205, 15434), (209, 15452),

Gene: Kelcole\_23 Start: 13023, Stop: 14801, Start Num: 25

Candidate Starts for Kelcole\_23:

(Start: 25 @13023 has 10 MA's), (30, 13035), (49, 13377), (60, 13494), (74, 13620), (91, 13734), (96, 13764), (115, 13977), (130, 14058), (132, 14067), (142, 14145), (144, 14151), (145, 14166), (163, 14310), (166, 14352), (175, 14403), (186, 14550), (188, 14559), (206, 14709), (209, 14721),

Gene: Kowalski\_26 Start: 13795, Stop: 15651, Start Num: 17

Candidate Starts for Kowalski\_26:

(Start: 17 @13795 has 53 MA's), (62, 14371), (69, 14416), (71, 14452), (81, 14521), (84, 14542), (85, 14545), (89, 14575), (100, 14695), (111, 14776), (126, 14890), (128, 14917), (152, 15106), (181, 15346), (182, 15361), (189, 15409), (193, 15439), (195, 15451), (197, 15466), (199, 15481), (202, 15532), (205, 15550), (209, 15568),

Gene: Kozie\_23 Start: 13272, Stop: 15131, Start Num: 17

Candidate Starts for Kozie\_23:

(Start: 17 @13272 has 53 MA's), (54, 13767), (71, 13923), (84, 14013), (109, 14220), (126, 14355), (133, 14427), (138, 14472), (148, 14544), (150, 14565), (152, 14571), (161, 14628), (165, 14682), (171, 14721), (172, 14727), (177, 14766), (179, 14799), (209, 15045),

Gene: Kubulix\_25 Start: 14427, Stop: 16154, Start Num: 28

Candidate Starts for Kubulix\_25:

(18, 14364), (Start: 28 @14427 has 12 MA's), (78, 15036), (112, 15324), (114, 15336), (115, 15366), (133, 15462), (134, 15465), (135, 15468), (140, 15528), (163, 15690), (170, 15750), (171, 15756), (174, 15774), (180, 15837), (191, 15948), (202, 16047),

Gene: Kyva\_27 Start: 14519, Stop: 16351, Start Num: 27

Candidate Starts for Kyva\_27:

(Start: 27 @14519 has 26 MA's), (30, 14528), (36, 14627), (54, 14960), (73, 15161), (76, 15176), (84, 15236), (91, 15284), (96, 15314), (105, 15431), (106, 15437), (115, 15530), (130, 15611), (144, 15704), (145, 15719), (151, 15767), (155, 15791), (162, 15839), (163, 15863), (167, 15911), (175, 15953), (185, 16088), (188, 16109), (195, 16154), (197, 16169), (203, 16238), (209, 16271),

Gene: Leaf\_60 Start: 29654, Stop: 31561, Start Num: 17

Candidate Starts for Leaf\_60:

(1, 29438), (4, 29510), (7, 29543), (8, 29546), (Start: 17 @29654 has 53 MA's), (45, 29993), (53, 30131), (55, 30161), (66, 30269), (70, 30314), (117, 30755), (143, 30929), (147, 30959), (148, 30971), (152, 30998), (161, 31055), (163, 31082), (165, 31109), (169, 31136), (173, 31160), (177, 31202), (178, 31232), (181, 31247), (198, 31391), (208, 31475), (214, 31517),

Gene: LittleFortune\_28 Start: 14042, Stop: 15901, Start Num: 17

Candidate Starts for LittleFortune\_28:

(Start: 17 @14042 has 53 MA's), (62, 14621), (69, 14666), (71, 14702), (81, 14771), (84, 14792), (85, 14795), (89, 14825), (100, 14945), (111, 15026), (126, 15140), (128, 15167), (152, 15356), (166, 15482), (181, 15596), (182, 15611), (189, 15659), (193, 15689), (197, 15716), (199, 15731), (202, 15782), (205, 15800), (209, 15818),

Gene: Llemily\_25 Start: 13503, Stop: 15335, Start Num: 27

Candidate Starts for Llemily\_25:

(Start: 27 @13503 has 26 MA's), (30, 13512), (36, 13611), (59, 13977), (73, 14145), (76, 14160), (84, 14220), (91, 14268), (92, 14274), (96, 14298), (105, 14415), (106, 14421), (115, 14514), (130, 14595), (144, 14688), (145, 14703), (151, 14751), (155, 14775), (162, 14823), (163, 14847), (167, 14895), (175, 14937), (185, 15072), (186, 15084), (188, 15093), (197, 15153), (203, 15222), (209, 15255),

Gene: Lonelysoil\_24 Start: 13748, Stop: 15580, Start Num: 27

Candidate Starts for Lonelysoil\_24:

(Start: 27 @13748 has 26 MA's), (30, 13757), (36, 13856), (59, 14222), (73, 14390), (76, 14405), (84, 14465), (91, 14513), (92, 14519), (96, 14543), (105, 14660), (106, 14666), (115, 14759), (130, 14840), (144, 14933), (145, 14948), (151, 14996), (155, 15020), (162, 15068), (163, 15092), (167, 15140), (175, 15182), (185, 15317), (186, 15329), (188, 15338), (197, 15398), (203, 15467), (209, 15500),

Gene: Marcie\_29 Start: 13698, Stop: 15482, Start Num: 25

Candidate Starts for Marcie\_29:

(Start: 25 @13698 has 10 MA's), (30, 13710), (49, 14058), (60, 14175), (74, 14301), (84, 14367), (91, 14415), (96, 14445), (115, 14658), (130, 14739), (132, 14748), (142, 14826), (144, 14832), (145, 14847), (163, 14991), (166, 15033), (175, 15084), (186, 15231), (188, 15240), (209, 15402),

Gene: Margaery\_22 Start: 13234, Stop: 15096, Start Num: 17

Candidate Starts for Margaery\_22:

(10, 13135), (Start: 17 @13234 has 53 MA's), (46, 13588), (62, 13807), (68, 13846), (71, 13888), (84, 13978), (95, 14047), (110, 14200), (126, 14320), (138, 14437), (152, 14536), (156, 14551), (161, 14593), (165, 14647), (172, 14692), (174, 14704), (176, 14719), (177, 14731), (186, 14839), (190, 14872), (199, 14923), (204, 14989),

Gene: Mashley\_23 Start: 14088, Stop: 15914, Start Num: 27

Candidate Starts for Mashley\_23:

(Start: 27 @14088 has 26 MA's), (30, 14097), (36, 14196), (54, 14523), (73, 14724), (76, 14739), (84, 14799), (91, 14847), (96, 14877), (105, 14994), (106, 15000), (115, 15093), (130, 15174), (144, 15267), (145, 15282), (151, 15330), (155, 15354), (162, 15402), (163, 15426), (167, 15474), (175, 15516), (185, 15651), (188, 15672), (197, 15732), (203, 15801), (209, 15834),

Gene: Matzah\_23 Start: 13253, Stop: 15118, Start Num: 17

Candidate Starts for Matzah\_23:

(Start: 17 @13253 has 53 MA's), (46, 13607), (52, 13733), (68, 13871), (71, 13913), (83, 13994), (84, 14003), (93, 14060), (95, 14072), (107, 14204), (110, 14225), (111, 14231), (126, 14345), (137, 14444), (138, 14462), (152, 14561), (156, 14576), (161, 14618), (165, 14672), (166, 14687), (174, 14729), (176, 14744), (177, 14756), (181, 14801), (186, 14864), (190, 14897),

Gene: Megan\_21 Start: 14855, Stop: 16870, Start Num: 17

Candidate Starts for Megan\_21:

(2, 14651), (3, 14660), (5, 14723), (6, 14741), (16, 14843), (Start: 17 @14855 has 53 MA's), (38, 15056), (62, 15434), (69, 15479), (71, 15515), (81, 15584), (84, 15605), (85, 15608), (88, 15623), (100, 15758), (102, 15773), (121, 16007), (123, 16076), (128, 16148), (148, 16310), (149, 16313), (151, 16334), (160, 16388), (165, 16448), (172, 16493), (174, 16505), (179, 16565), (181, 16577), (189, 16640), (193, 16670), (197, 16697), (207, 16790), (208, 16793), (209, 16799), (215, 16838),

Gene: MellowYellow\_23 Start: 12969, Stop: 14696, Start Num: 28

Candidate Starts for MellowYellow\_23:

(18, 12906), (Start: 28 @12969 has 12 MA's), (78, 13578), (104, 13806), (112, 13866), (114, 13878), (115, 13908), (133, 14004), (134, 14007), (135, 14010), (140, 14070), (163, 14232), (168, 14283), (170, 14292), (174, 14316), (180, 14379), (186, 14454), (187, 14460), (189, 14466), (190, 14487), (202, 14589),

Gene: MementoMori\_23 Start: 12969, Stop: 14840, Start Num: 17

Candidate Starts for MementoMori\_23:

(Start: 17 @12969 has 53 MA's), (52, 13452), (65, 13560), (68, 13590), (71, 13632), (83, 13713), (84, 13722), (93, 13779), (95, 13791), (107, 13923), (110, 13944), (111, 13950), (126, 14064), (137, 14163), (138, 14181), (152, 14280), (156, 14295), (161, 14337), (165, 14391), (166, 14406), (174, 14448), (176, 14463), (177, 14475), (181, 14520), (186, 14583), (190, 14616), (209, 14754),

Gene: Mentos\_29 Start: 15175, Stop: 17001, Start Num: 27

Candidate Starts for Mentos\_29:

(Start: 27 @15175 has 26 MA's), (30, 15184), (36, 15283), (54, 15610), (73, 15811), (76, 15826), (84, 15886), (91, 15934), (96, 15964), (105, 16081), (106, 16087), (115, 16180), (130, 16261), (144, 16354), (145, 16369), (151, 16417), (155, 16441), (162, 16489), (163, 16513), (167, 16561), (175, 16603), (185, 16738), (188, 16759), (197, 16819), (203, 16888), (209, 16921),

Gene: Merry\_ Start: 13998, Stop: 15890, Start Num: 15

Candidate Starts for Merry\_:

(11, 13962), (12, 13968), (14, 13995), (Start: 15 @13998 has 2 MA's), (Start: 17 @14052 has 53 MA's), (45, 14373), (62, 14610), (69, 14655), (71, 14691), (81, 14760), (84, 14781), (85, 14784), (92, 14835), (97, 14868), (100, 14934), (111, 15015), (128, 15156), (149, 15321), (152, 15345), (166, 15471), (181, 15585), (182, 15600), (186, 15636), (189, 15648), (193, 15678), (195, 15690), (197, 15705), (211, 15831),

Gene: Metamorphoo\_27 Start: 13469, Stop: 15490, Start Num: 17

Candidate Starts for Metamorphoo\_27:

(Start: 17 @13469 has 53 MA's), (62, 14054), (71, 14135), (75, 14159), (81, 14204), (84, 14225), (85, 14228), (100, 14378), (119, 14588), (122, 14636), (124, 14708), (128, 14768), (129, 14792), (148, 14930), (151, 14954), (152, 14957), (165, 15068), (181, 15197), (182, 15212), (183, 15221), (186, 15248), (189, 15260), (193, 15290), (197, 15317), (205, 15401), (209, 15419),

Gene: MorillMayhem\_24 Start: 14081, Stop: 15913, Start Num: 27

Candidate Starts for MorillMayhem\_24:

(Start: 27 @14081 has 26 MA's), (30, 14090), (36, 14189), (59, 14555), (73, 14723), (76, 14738), (84, 14798), (91, 14846), (92, 14852), (96, 14876), (104, 14990), (105, 14993), (106, 14999), (115, 15092), (130, 15173), (144, 15266), (145, 15281), (151, 15329), (155, 15353), (162, 15401), (163, 15425), (167, 15473), (175, 15515), (185, 15650), (186, 15662), (188, 15671), (197, 15731), (203, 15800), (209, 15833),

Gene: Namago\_25 Start: 13649, Stop: 15481, Start Num: 27

Candidate Starts for Namago\_25:

(Start: 27 @13649 has 26 MA's), (30, 13658), (36, 13757), (54, 14090), (73, 14291), (76, 14306), (84, 14366), (91, 14414), (96, 14444), (105, 14561), (106, 14567), (115, 14660), (130, 14741), (144, 14834), (145, 14849), (151, 14897), (155, 14921), (162, 14969), (163, 14993), (167, 15041), (175, 15083), (185, 15218), (188, 15239), (195, 15284), (197, 15299), (203, 15368), (209, 15401),

Gene: Nicole72\_22 Start: 15232, Stop: 17253, Start Num: 17

Candidate Starts for Nicole72\_22:

(16, 15220), (Start: 17 @15232 has 53 MA's), (38, 15433), (43, 15505), (62, 15817), (69, 15862), (71, 15898), (81, 15967), (84, 15988), (90, 16024), (100, 16141), (106, 16186), (109, 16201), (128, 16531), (148, 16693), (149, 16696), (151, 16717), (165, 16831), (174, 16888), (179, 16948), (181, 16960), (189, 17023), (193, 17053), (207, 17173), (208, 17176), (209, 17182), (215, 17221),

Gene: Nike\_25 Start: 14547, Stop: 16379, Start Num: 27

Candidate Starts for Nike\_25:

(Start: 27 @14547 has 26 MA's), (30, 14556), (36, 14655), (59, 15021), (73, 15189), (76, 15204), (84, 15264), (91, 15312), (92, 15318), (96, 15342), (105, 15459), (106, 15465), (115, 15558), (130, 15639), (144, 15732), (145, 15747), (151, 15795), (155, 15819), (162, 15867), (163, 15891), (167, 15939), (175, 15981), (185, 16116), (186, 16128), (188, 16137), (197, 16197), (203, 16266), (209, 16299),

Gene: NoodlelyBoi\_27 Start: 14134, Stop: 15984, Start Num: 17

Candidate Starts for NoodlelyBoi\_27:

(Start: 17 @14134 has 53 MA's), (62, 14710), (69, 14755), (71, 14791), (81, 14860), (84, 14881), (85, 14884), (89, 14914), (100, 15034), (126, 15229), (128, 15256), (133, 15301), (152, 15445), (172, 15601), (181, 15685), (189, 15748), (193, 15778), (195, 15790), (197, 15805), (199, 15820), (202, 15871), (205, 15889),

Gene: NyleyClemson\_22 Start: 12914, Stop: 14641, Start Num: 28

Candidate Starts for NyleyClemson\_22:

(18, 12851), (Start: 28 @12914 has 12 MA's), (78, 13523), (112, 13811), (114, 13823), (115, 13853), (133, 13949), (134, 13952), (135, 13955), (140, 14015), (163, 14177), (168, 14228), (170, 14237),



(174, 14261), (180, 14324), (186, 14399), (187, 14405), (189, 14411), (190, 14432), (202, 14534),

Gene: Odyssey395\_28 Start: 14429, Stop: 16156, Start Num: 28

Candidate Starts for Odyssey395\_28:

(18, 14366), (Start: 28 @14429 has 12 MA's), (78, 15038), (106, 15275), (112, 15326), (114, 15338), (115, 15368), (133, 15464), (134, 15467), (135, 15470), (140, 15530), (163, 15692), (170, 15752), (171, 15758), (174, 15776), (180, 15839), (191, 15950), (202, 16049),

Gene: Ollypop\_22 Start: 13443, Stop: 15170, Start Num: 28

Candidate Starts for Ollypop\_22:

(18, 13380), (21, 13395), (Start: 28 @13443 has 12 MA's), (32, 13509), (52, 13833), (65, 13953), (78, 14049), (114, 14352), (115, 14382), (133, 14478), (134, 14481), (135, 14484), (140, 14544), (163, 14706), (168, 14757), (174, 14790), (180, 14853), (189, 14940), (194, 14979), (197, 14997),

Gene: OneinaGillian\_24 Start: 12673, Stop: 14451, Start Num: 25

Candidate Starts for OneinaGillian\_24:

(Start: 25 @12673 has 10 MA's), (30, 12685), (49, 13027), (60, 13144), (74, 13270), (91, 13384), (96, 13414), (115, 13627), (130, 13708), (132, 13717), (142, 13795), (144, 13801), (145, 13816), (163, 13960), (166, 14002), (175, 14053), (186, 14200), (188, 14209), (206, 14359), (209, 14371), (216, 14431),

Gene: Onika\_26 Start: 13769, Stop: 15625, Start Num: 17

Candidate Starts for Onika\_26:

(Start: 17 @13769 has 53 MA's), (62, 14345), (69, 14390), (71, 14426), (81, 14495), (84, 14516), (85, 14519), (89, 14549), (100, 14669), (111, 14750), (126, 14864), (128, 14891), (152, 15080), (166, 15206), (181, 15320), (182, 15335), (189, 15383), (193, 15413), (195, 15425), (197, 15440), (199, 15455), (202, 15506), (205, 15524), (209, 15542),

Gene: Paschalis\_26 Start: 13783, Stop: 15639, Start Num: 17

Candidate Starts for Paschalis\_26:

(Start: 17 @13783 has 53 MA's), (62, 14359), (69, 14404), (71, 14440), (81, 14509), (84, 14530), (85, 14533), (89, 14563), (100, 14683), (111, 14764), (126, 14878), (128, 14905), (152, 15094), (181, 15334), (182, 15349), (189, 15397), (193, 15427), (195, 15439), (197, 15454), (199, 15469), (202, 15520), (205, 15538), (209, 15556),

Gene: Pepe25\_23 Start: 13010, Stop: 14788, Start Num: 25

Candidate Starts for Pepe25\_23:

(Start: 25 @13010 has 10 MA's), (30, 13022), (49, 13367), (60, 13481), (74, 13607), (84, 13673), (91, 13721), (96, 13751), (115, 13964), (130, 14045), (132, 14054), (142, 14132), (144, 14138), (145, 14153), (163, 14297), (166, 14339), (175, 14390), (186, 14537), (188, 14546), (206, 14696), (209, 14708),

Gene: Phabia\_25 Start: 13921, Stop: 15753, Start Num: 27

Candidate Starts for Phabia\_25:

(Start: 27 @13921 has 26 MA's), (30, 13930), (36, 14029), (59, 14395), (73, 14563), (76, 14578), (84, 14638), (91, 14686), (92, 14692), (96, 14716), (105, 14833), (106, 14839), (115, 14932), (130, 15013), (144, 15106), (145, 15121), (151, 15169), (155, 15193), (162, 15241), (163, 15265), (167, 15313), (175, 15355), (185, 15490), (186, 15502), (188, 15511), (197, 15571), (203, 15640), (209, 15673),

Gene: PhedwardCullen\_25 Start: 13528, Stop: 15384, Start Num: 17

Candidate Starts for PhedwardCullen\_25:

(Start: 17 @13528 has 53 MA's), (62, 14104), (69, 14149), (71, 14185), (81, 14254), (84, 14275), (85, 14278), (89, 14308), (100, 14428), (111, 14509), (126, 14623), (128, 14650), (152, 14839), (166,

14965), (181, 15079), (182, 15094), (189, 15142), (193, 15172), (195, 15184), (197, 15199), (199, 15214), (202, 15265), (205, 15283), (209, 15301),

Gene: Phinky\_31 Start: 14788, Stop: 16635, Start Num: 26

Candidate Starts for Phinky\_31:

(Start: 26 @14788 has 4 MA's), (30, 14797), (31, 14833), (44, 15022), (73, 15442), (77, 15469), (91, 15565), (96, 15595), (115, 15811), (127, 15853), (129, 15886), (130, 15892), (132, 15901), (138, 15952), (144, 15985), (145, 16000), (163, 16144), (166, 16186), (167, 16192), (175, 16237), (181, 16303), (185, 16372), (186, 16384), (188, 16393), (197, 16453), (208, 16549), (209, 16555),

Gene: Phorgeous\_26 Start: 13636, Stop: 15492, Start Num: 17

Candidate Starts for Phorgeous\_26:

(Start: 17 @13636 has 53 MA's), (62, 14212), (69, 14257), (71, 14293), (81, 14362), (84, 14383), (85, 14386), (89, 14416), (100, 14536), (111, 14617), (126, 14731), (128, 14758), (152, 14947), (166, 15073), (181, 15187), (182, 15202), (189, 15250), (193, 15280), (195, 15292), (197, 15307), (199, 15322), (202, 15373), (205, 15391), (209, 15409),

Gene: Phrancesco\_27 Start: 13914, Stop: 15770, Start Num: 17

Candidate Starts for Phrancesco\_27:

(Start: 17 @13914 has 53 MA's), (62, 14490), (69, 14535), (71, 14571), (81, 14640), (84, 14661), (85, 14664), (89, 14694), (100, 14814), (111, 14895), (126, 15009), (128, 15036), (152, 15225), (166, 15351), (171, 15375), (181, 15465), (182, 15480), (189, 15528), (193, 15558), (195, 15570), (197, 15585), (199, 15600), (202, 15651), (205, 15669), (209, 15687),

Gene: PierreOrion\_27 Start: 13938, Stop: 15794, Start Num: 17

Candidate Starts for PierreOrion\_27:

(Start: 17 @13938 has 53 MA's), (62, 14514), (69, 14559), (71, 14595), (81, 14664), (84, 14685), (85, 14688), (89, 14718), (100, 14838), (111, 14919), (126, 15033), (128, 15060), (152, 15249), (166, 15375), (181, 15489), (182, 15504), (189, 15552), (193, 15582), (195, 15594), (197, 15609), (199, 15624), (202, 15675), (205, 15693), (209, 15711),

Gene: PiperSansNom\_27 Start: 14090, Stop: 15946, Start Num: 17

Candidate Starts for PiperSansNom\_27:

(Start: 17 @14090 has 53 MA's), (62, 14666), (69, 14711), (71, 14747), (81, 14816), (84, 14837), (85, 14840), (89, 14870), (100, 14990), (111, 15071), (126, 15185), (128, 15212), (152, 15401), (166, 15527), (181, 15641), (182, 15656), (189, 15704), (193, 15734), (195, 15746), (197, 15761), (199, 15776), (202, 15827), (205, 15845), (209, 15863),

Gene: Piperis\_27 Start: 13760, Stop: 15616, Start Num: 17

Candidate Starts for Piperis\_27:

(Start: 17 @13760 has 53 MA's), (62, 14336), (69, 14381), (71, 14417), (81, 14486), (84, 14507), (85, 14510), (89, 14540), (100, 14660), (111, 14741), (126, 14855), (128, 14882), (152, 15071), (166, 15197), (181, 15311), (182, 15326), (189, 15374), (193, 15404), (195, 15416), (197, 15431), (199, 15446), (202, 15497), (205, 15515), (209, 15533),

Gene: Pointis\_26 Start: 14433, Stop: 16160, Start Num: 28

Candidate Starts for Pointis\_26:

(18, 14370), (Start: 28 @14433 has 12 MA's), (78, 15042), (112, 15330), (114, 15342), (115, 15372), (133, 15468), (134, 15471), (135, 15474), (140, 15534), (163, 15696), (170, 15756), (171, 15762), (174, 15780), (180, 15843), (191, 15954), (202, 16053),

Gene: Pulchra\_28 Start: 14160, Stop: 16016, Start Num: 17

Candidate Starts for Pulchra\_28:

(Start: 17 @14160 has 53 MA's), (62, 14736), (69, 14781), (71, 14817), (81, 14886), (84, 14907), (85, 14910), (89, 14940), (100, 15060), (111, 15141), (126, 15255), (128, 15282), (152, 15471), (166, 15597), (181, 15711), (182, 15726), (189, 15774), (193, 15804), (195, 15816), (197, 15831), (199, 15846), (202, 15897), (205, 15915), (209, 15933),

Gene: Pureglobe5\_28 Start: 14443, Stop: 16170, Start Num: 28

Candidate Starts for Pureglobe5\_28:

(18, 14380), (Start: 28 @14443 has 12 MA's), (78, 15052), (112, 15340), (114, 15352), (115, 15382), (133, 15478), (134, 15481), (135, 15484), (140, 15544), (163, 15706), (170, 15766), (171, 15772), (174, 15790), (180, 15853), (191, 15964), (202, 16063),

Gene: Quammi\_23 Start: 13492, Stop: 15324, Start Num: 27

Candidate Starts for Quammi\_23:

(Start: 27 @13492 has 26 MA's), (30, 13501), (36, 13600), (59, 13966), (73, 14134), (76, 14149), (84, 14209), (91, 14257), (92, 14263), (96, 14287), (105, 14404), (106, 14410), (115, 14503), (130, 14584), (144, 14677), (145, 14692), (151, 14740), (155, 14764), (162, 14812), (163, 14836), (167, 14884), (175, 14926), (185, 15061), (186, 15073), (188, 15082), (197, 15142), (203, 15211), (209, 15244),

Gene: Quhwah\_30 Start: 14383, Stop: 16242, Start Num: 17

Candidate Starts for Quhwah\_30:

(Start: 17 @14383 has 53 MA's), (62, 14962), (69, 15007), (71, 15043), (81, 15112), (84, 15133), (85, 15136), (89, 15166), (100, 15286), (111, 15367), (126, 15481), (128, 15508), (152, 15697), (166, 15823), (181, 15937), (182, 15952), (189, 16000), (193, 16030), (195, 16042), (197, 16057), (199, 16072), (202, 16123), (205, 16141), (209, 16159),

Gene: Ramiel05\_26 Start: 13795, Stop: 15651, Start Num: 17

Candidate Starts for Ramiel05\_26:

(Start: 17 @13795 has 53 MA's), (62, 14371), (69, 14416), (71, 14452), (81, 14521), (84, 14542), (85, 14545), (89, 14575), (100, 14695), (111, 14776), (126, 14890), (128, 14917), (152, 15106), (181, 15346), (182, 15361), (189, 15409), (193, 15439), (195, 15451), (197, 15466), (199, 15481), (202, 15532), (205, 15550), (209, 15568),

Gene: Ranunculus\_20 Start: 13327, Stop: 15048, Start Num: 28

Candidate Starts for Ranunculus\_20:

(19, 13264), (Start: 28 @13327 has 12 MA's), (78, 13921), (81, 13942), (96, 14044), (112, 14218), (114, 14230), (115, 14260), (134, 14359), (135, 14362), (157, 14527), (163, 14584), (166, 14626), (168, 14635), (170, 14644), (174, 14668), (180, 14731), (189, 14818), (194, 14857), (197, 14875),

Gene: Rasputia\_56 Start: 29361, Stop: 31292, Start Num: 17

Candidate Starts for Rasputia\_56:

(Start: 17 @29361 has 53 MA's), (35, 29544), (42, 29628), (45, 29697), (55, 29895), (58, 29904), (66, 30003), (70, 30048), (85, 30165), (143, 30663), (147, 30693), (148, 30705), (152, 30732), (159, 30777), (163, 30816), (166, 30858), (186, 31044), (214, 31251),

Gene: RazzB\_21 Start: 12742, Stop: 14469, Start Num: 28

Candidate Starts for RazzB\_21:

(18, 12679), (Start: 28 @12742 has 12 MA's), (78, 13351), (112, 13639), (114, 13651), (115, 13681), (133, 13777), (134, 13780), (135, 13783), (140, 13843), (163, 14005), (168, 14056), (170, 14065), (174, 14089), (180, 14152), (186, 14227), (187, 14233), (189, 14239), (190, 14260), (202, 14362),

Gene: Rizwana\_19 Start: 13218, Stop: 14954, Start Num: 28

Candidate Starts for Rizwana\_19:

(18, 13155), (Start: 28 @13218 has 12 MA's), (52, 13608), (57, 13644), (87, 13878), (98, 13986), (103, 14049), (104, 14058), (108, 14079), (115, 14160), (134, 14259), (135, 14262), (139, 14304), (142, 14328), (145, 14349), (146, 14355), (163, 14484), (170, 14544), (176, 14583), (178, 14625), (189, 14718), (202, 14841), (208, 14871),

Gene: RobinRose\_26 Start: 13174, Stop: 14952, Start Num: 25

Candidate Starts for RobinRose\_26:

(Start: 25 @13174 has 10 MA's), (30, 13186), (49, 13528), (60, 13645), (74, 13771), (91, 13885), (96, 13915), (115, 14128), (130, 14209), (132, 14218), (142, 14296), (144, 14302), (145, 14317), (163, 14461), (166, 14503), (175, 14554), (186, 14701), (188, 14710), (206, 14860), (209, 14872),

Gene: RobsFeet\_28 Start: 13750, Stop: 15771, Start Num: 17

Candidate Starts for RobsFeet\_28:

(Start: 17 @13750 has 53 MA's), (62, 14335), (71, 14416), (75, 14440), (81, 14485), (84, 14506), (85, 14509), (100, 14659), (122, 14917), (124, 14989), (128, 15049), (129, 15073), (148, 15211), (151, 15235), (152, 15238), (165, 15349), (181, 15478), (182, 15493), (183, 15502), (186, 15529), (189, 15541), (193, 15571), (197, 15598), (209, 15700),

Gene: RomansRevenge\_16 Start: 11444, Stop: 13249, Start Num: 23

Candidate Starts for RomansRevenge\_16:

(23, 11444), (Start: 28 @11492 has 12 MA's), (34, 11582), (47, 11834), (48, 11849), (56, 11942), (67, 12053), (68, 12062), (78, 12131), (86, 12176), (92, 12218), (101, 12323), (109, 12380), (115, 12458), (132, 12548), (134, 12557), (145, 12647), (160, 12749), (174, 12866), (180, 12929), (189, 13013), (197, 13070), (198, 13082), (202, 13136),

Gene: Romm\_26 Start: 13174, Stop: 14952, Start Num: 25

Candidate Starts for Romm\_26:

(Start: 25 @13174 has 10 MA's), (30, 13186), (49, 13528), (60, 13645), (74, 13771), (91, 13885), (96, 13915), (115, 14128), (130, 14209), (132, 14218), (142, 14296), (144, 14302), (145, 14317), (163, 14461), (166, 14503), (175, 14554), (186, 14701), (188, 14710), (206, 14860), (209, 14872),

Gene: Rowlf\_21 Start: 13250, Stop: 15082, Start Num: 27

Candidate Starts for Rowlf\_21:

(Start: 27 @13250 has 26 MA's), (30, 13259), (36, 13358), (59, 13724), (73, 13892), (76, 13907), (84, 13967), (91, 14015), (92, 14021), (96, 14045), (105, 14162), (106, 14168), (115, 14261), (130, 14342), (144, 14435), (145, 14450), (151, 14498), (155, 14522), (162, 14570), (163, 14594), (167, 14642), (175, 14684), (185, 14819), (186, 14831), (188, 14840), (197, 14900), (203, 14969), (209, 15002),

Gene: RubyRalph\_27 Start: 13767, Stop: 15596, Start Num: 26

Candidate Starts for RubyRalph\_27:

(Start: 26 @13767 has 4 MA's), (30, 13779), (39, 13908), (49, 14136), (50, 14154), (63, 14313), (73, 14397), (84, 14475), (91, 14523), (96, 14553), (104, 14667), (115, 14769), (127, 14811), (130, 14850), (132, 14859), (144, 14943), (145, 14958), (162, 15078), (163, 15102), (166, 15144), (167, 15150), (175, 15192), (185, 15327), (188, 15348), (190, 15372), (194, 15390), (197, 15408), (209, 15510),

Gene: Rudy\_23 Start: 13492, Stop: 15324, Start Num: 27

Candidate Starts for Rudy\_23:

(Start: 27 @13492 has 26 MA's), (30, 13501), (36, 13600), (59, 13966), (73, 14134), (76, 14149), (84, 14209), (91, 14257), (92, 14263), (96, 14287), (105, 14404), (106, 14410), (115, 14503), (130, 14584), (144, 14677), (145, 14692), (151, 14740), (155, 14764), (162, 14812), (163, 14836), (167, 14884), (175, 14926), (185, 15061), (186, 15073), (188, 15082), (197, 15142), (203, 15211), (209, 15244),

Gene: SadLad\_29 Start: 14704, Stop: 16533, Start Num: 26

Candidate Starts for SadLad\_29:

(Start: 26 @14704 has 4 MA's), (30, 14716), (39, 14845), (49, 15073), (50, 15091), (63, 15250), (73, 15334), (84, 15412), (91, 15460), (96, 15490), (104, 15604), (115, 15706), (127, 15748), (130, 15787), (144, 15880), (145, 15895), (162, 16015), (163, 16039), (166, 16081), (167, 16087), (175, 16129), (185, 16264), (188, 16285), (190, 16309), (194, 16327), (197, 16345), (209, 16447),

Gene: SallyK\_26 Start: 14644, Stop: 16470, Start Num: 27

Candidate Starts for SallyK\_26:

(Start: 27 @14644 has 26 MA's), (30, 14653), (36, 14752), (54, 15079), (73, 15280), (76, 15295), (84, 15355), (91, 15403), (96, 15433), (105, 15550), (106, 15556), (115, 15649), (130, 15730), (144, 15823), (145, 15838), (151, 15886), (155, 15910), (162, 15958), (163, 15982), (167, 16030), (175, 16072), (185, 16207), (188, 16228), (195, 16273), (197, 16288), (203, 16357), (209, 16390),

Gene: Savannah\_26 Start: 13819, Stop: 15678, Start Num: 17

Candidate Starts for Savannah\_26:

(Start: 17 @13819 has 53 MA's), (62, 14398), (69, 14443), (71, 14479), (81, 14548), (84, 14569), (85, 14572), (89, 14602), (100, 14722), (111, 14803), (126, 14917), (128, 14944), (152, 15133), (166, 15259), (181, 15373), (182, 15388), (189, 15436), (193, 15466), (195, 15478), (197, 15493), (199, 15508), (202, 15559), (205, 15577), (209, 15595),

Gene: Scumberland\_28 Start: 14010, Stop: 15866, Start Num: 17

Candidate Starts for Scumberland\_28:

(Start: 17 @14010 has 53 MA's), (62, 14586), (69, 14631), (71, 14667), (81, 14736), (84, 14757), (85, 14760), (89, 14790), (100, 14910), (111, 14991), (126, 15105), (128, 15132), (152, 15321), (166, 15447), (181, 15561), (182, 15576), (189, 15624), (193, 15654), (195, 15666), (197, 15681), (199, 15696), (202, 15747), (205, 15765), (209, 15783),

Gene: Selwyn23\_28 Start: 13988, Stop: 15844, Start Num: 17

Candidate Starts for Selwyn23\_28:

(Start: 17 @13988 has 53 MA's), (62, 14564), (69, 14609), (71, 14645), (81, 14714), (84, 14735), (85, 14738), (89, 14768), (100, 14888), (111, 14969), (126, 15083), (128, 15110), (152, 15299), (166, 15425), (181, 15539), (182, 15554), (189, 15602), (193, 15632), (195, 15644), (197, 15659), (199, 15674), (202, 15725), (205, 15743), (209, 15761),

Gene: Shotgun\_26 Start: 13617, Stop: 15476, Start Num: 17

Candidate Starts for Shotgun\_26:

(Start: 17 @13617 has 53 MA's), (62, 14196), (69, 14241), (71, 14277), (81, 14346), (84, 14367), (85, 14370), (89, 14400), (100, 14520), (111, 14601), (126, 14715), (128, 14742), (152, 14931), (166, 15057), (181, 15171), (182, 15186), (189, 15234), (193, 15264), (195, 15276), (197, 15291), (199, 15306), (202, 15357), (205, 15375), (209, 15393),

Gene: Shrubaron\_27 Start: 13384, Stop: 15405, Start Num: 17

Candidate Starts for Shrubaron\_27:

(Start: 17 @13384 has 53 MA's), (62, 13969), (71, 14050), (75, 14074), (81, 14119), (84, 14140), (85, 14143), (100, 14293), (122, 14551), (124, 14623), (128, 14683), (129, 14707), (148, 14845), (151, 14869), (152, 14872), (165, 14983), (181, 15112), (182, 15127), (183, 15136), (186, 15163), (189, 15175), (193, 15205), (197, 15232), (209, 15334),

Gene: SilentRX\_21 Start: 13505, Stop: 15193, Start Num: 28

Candidate Starts for SilentRX\_21:

(19, 13445), (20, 13457), (22, 13460), (Start: 28 @13505 has 12 MA's), (114, 14372), (115, 14402), (116, 14414), (133, 14498), (134, 14501), (135, 14504), (143, 14573), (153, 14645), (160, 14693), (174, 14810), (180, 14876), (193, 14993), (201, 15080), (202, 15086),

Gene: Sillytadpoles\_25 Start: 13490, Stop: 15322, Start Num: 27

Candidate Starts for Sillytadpoles\_25:

(Start: 27 @13490 has 26 MA's), (30, 13499), (36, 13598), (59, 13964), (73, 14132), (76, 14147), (84, 14207), (91, 14255), (92, 14261), (96, 14285), (105, 14402), (106, 14408), (115, 14501), (130, 14582), (144, 14675), (145, 14690), (151, 14738), (155, 14762), (162, 14810), (163, 14834), (167, 14882), (175, 14924), (185, 15059), (186, 15071), (188, 15080), (197, 15140), (203, 15209), (209, 15242),

Gene: SirFrank\_26 Start: 13737, Stop: 15587, Start Num: 17

Candidate Starts for SirFrank\_26:

(Start: 17 @13737 has 53 MA's), (62, 14313), (69, 14358), (71, 14394), (81, 14463), (84, 14484), (85, 14487), (89, 14517), (100, 14637), (126, 14832), (128, 14859), (133, 14904), (152, 15048), (171, 15198), (172, 15204), (181, 15288), (189, 15351), (193, 15381), (195, 15393), (197, 15408), (199, 15423), (202, 15474), (205, 15492),

Gene: Smarties\_35 Start: 15581, Stop: 17596, Start Num: 17

Candidate Starts for Smarties\_35:

(Start: 17 @15581 has 53 MA's), (62, 16160), (69, 16205), (71, 16241), (75, 16265), (81, 16310), (84, 16331), (88, 16349), (100, 16484), (124, 16814), (125, 16817), (128, 16874), (129, 16898), (148, 17036), (152, 17063), (165, 17174), (181, 17303), (182, 17318), (183, 17327), (186, 17354), (189, 17366), (193, 17396), (197, 17423), (205, 17507), (209, 17525),

Gene: Squash\_27 Start: 14560, Stop: 16392, Start Num: 27

Candidate Starts for Squash\_27:

(Start: 27 @14560 has 26 MA's), (30, 14569), (36, 14668), (59, 15034), (73, 15202), (76, 15217), (84, 15277), (91, 15325), (92, 15331), (96, 15355), (105, 15472), (106, 15478), (115, 15571), (130, 15652), (144, 15745), (145, 15760), (151, 15808), (155, 15832), (162, 15880), (163, 15904), (167, 15952), (175, 15994), (185, 16129), (186, 16141), (188, 16150), (197, 16210), (203, 16279), (209, 16312),

Gene: Statler\_27 Start: 14472, Stop: 16304, Start Num: 27

Candidate Starts for Statler\_27:

(Start: 27 @14472 has 26 MA's), (30, 14481), (36, 14580), (59, 14946), (73, 15114), (76, 15129), (84, 15189), (91, 15237), (92, 15243), (96, 15267), (105, 15384), (106, 15390), (115, 15483), (130, 15564), (144, 15657), (145, 15672), (151, 15720), (155, 15744), (162, 15792), (163, 15816), (167, 15864), (175, 15906), (185, 16041), (186, 16053), (188, 16062), (197, 16122), (203, 16191), (209, 16224),

Gene: StrawberryJamm\_27 Start: 13792, Stop: 15624, Start Num: 27

Candidate Starts for StrawberryJamm\_27:

(Start: 27 @13792 has 26 MA's), (30, 13801), (36, 13900), (54, 14233), (73, 14434), (76, 14449), (84, 14509), (91, 14557), (96, 14587), (105, 14704), (106, 14710), (115, 14803), (130, 14884), (144, 14977), (145, 14992), (151, 15040), (155, 15064), (162, 15112), (163, 15136), (167, 15184), (175, 15226), (185, 15361), (188, 15382), (195, 15427), (197, 15442), (203, 15511), (209, 15544),

Gene: Sunny\_ Start: 13998, Stop: 15890, Start Num: 15

Candidate Starts for Sunny\_:

(11, 13962), (12, 13968), (14, 13995), (Start: 15 @13998 has 2 MA's), (Start: 17 @14052 has 53 MA's), (45, 14373), (62, 14610), (69, 14655), (71, 14691), (81, 14760), (84, 14781), (85, 14784), (92, 14835), (97, 14868), (100, 14934), (111, 15015), (128, 15156), (149, 15321), (152, 15345), (166, 15471), (181, 15585), (182, 15600), (186, 15636), (189, 15648), (193, 15678), (195, 15690), (197, 15705), (211, 15831),

Gene: Tank\_20 Start: 13083, Stop: 14846, Start Num: 28

Candidate Starts for Tank\_20:

(18, 13017), (Start: 28 @13083 has 12 MA's), (57, 13521), (61, 13590), (64, 13614), (72, 13683), (87, 13764), (98, 13872), (102, 13923), (103, 13935), (104, 13944), (132, 14136), (134, 14145), (135, 14148), (142, 14214), (145, 14235), (146, 14241), (148, 14259), (163, 14370), (170, 14430), (176, 14469), (178, 14511), (189, 14604), (194, 14643), (213, 14796),

Gene: Teamocil\_28 Start: 13248, Stop: 15266, Start Num: 17

Candidate Starts for Teamocil\_28:

(Start: 17 @13248 has 53 MA's), (51, 13716), (62, 13830), (68, 13869), (71, 13911), (75, 13935), (81, 13980), (84, 14001), (85, 14004), (88, 14019), (94, 14073), (100, 14154), (109, 14214), (118, 14358), (120, 14376), (128, 14544), (129, 14568), (148, 14706), (152, 14733), (165, 14844), (181, 14973), (182, 14988), (186, 15024), (189, 15036), (193, 15066), (197, 15093), (209, 15195),

Gene: Teehee\_26 Start: 14727, Stop: 16559, Start Num: 27

Candidate Starts for Teehee\_26:

(Start: 27 @14727 has 26 MA's), (30, 14736), (36, 14835), (59, 15201), (73, 15369), (76, 15384), (84, 15444), (91, 15492), (92, 15498), (96, 15522), (105, 15639), (106, 15645), (115, 15738), (130, 15819), (144, 15912), (145, 15927), (151, 15975), (155, 15999), (162, 16047), (163, 16071), (167, 16119), (175, 16161), (185, 16296), (186, 16308), (188, 16317), (197, 16377), (203, 16446), (209, 16479),

Gene: Tempo\_24 Start: 13050, Stop: 14828, Start Num: 25

Candidate Starts for Tempo\_24:

(Start: 25 @13050 has 10 MA's), (30, 13062), (49, 13404), (60, 13521), (74, 13647), (91, 13761), (96, 13791), (115, 14004), (130, 14085), (132, 14094), (142, 14172), (144, 14178), (145, 14193), (163, 14337), (166, 14379), (175, 14430), (186, 14577), (188, 14586), (206, 14736), (209, 14748),

Gene: Terij\_23 Start: 13292, Stop: 15169, Start Num: 17

Candidate Starts for Terij\_23:

(Start: 17 @13292 has 53 MA's), (62, 13889), (68, 13928), (71, 13970), (84, 14060), (95, 14129), (110, 14282), (126, 14402), (138, 14519), (152, 14618), (156, 14633), (160, 14669), (161, 14675), (165, 14729), (174, 14786), (176, 14801), (177, 14813), (181, 14858), (186, 14921), (193, 14963), (204, 15071),

Gene: Tissue\_25 Start: 14292, Stop: 16115, Start Num: 27

Candidate Starts for Tissue\_25:

(Start: 27 @14292 has 26 MA's), (30, 14301), (36, 14400), (54, 14724), (73, 14925), (76, 14940), (84, 15000), (91, 15048), (96, 15078), (105, 15195), (106, 15201), (115, 15294), (130, 15375), (144, 15468), (145, 15483), (151, 15531), (155, 15555), (162, 15603), (163, 15627), (167, 15675), (175, 15717), (185, 15852), (188, 15873), (197, 15933), (203, 16002), (209, 16035),

Gene: Tyrumbra\_25 Start: 12826, Stop: 14847, Start Num: 17

Candidate Starts for Tyrumbra\_25:

(Start: 17 @12826 has 53 MA's), (62, 13411), (71, 13492), (75, 13516), (81, 13561), (84, 13582), (100, 13735), (122, 13993), (124, 14065), (128, 14125), (129, 14149), (148, 14287), (151, 14311), (152, 14314), (165, 14425), (181, 14554), (182, 14569), (183, 14578), (186, 14605), (189, 14617), (193, 14647), (197, 14674), (209, 14776),

Gene: Viceroy\_24 Start: 13492, Stop: 15324, Start Num: 27

Candidate Starts for Viceroy\_24:

(Start: 27 @13492 has 26 MA's), (30, 13501), (36, 13600), (59, 13966), (73, 14134), (76, 14149), (84, 14209), (91, 14257), (92, 14263), (96, 14287), (105, 14404), (106, 14410), (115, 14503), (130, 14584), (144, 14677), (145, 14692), (151, 14740), (155, 14764), (162, 14812), (163, 14836), (167, 14884), (175, 14926), (185, 15061), (186, 15073), (188, 15082), (197, 15142), (203, 15211), (209, 15244),

Gene: Wayne3\_26 Start: 14457, Stop: 16289, Start Num: 27

Candidate Starts for Wayne3\_26:

(Start: 27 @14457 has 26 MA's), (30, 14466), (36, 14565), (59, 14931), (73, 15099), (76, 15114), (84, 15174), (91, 15222), (92, 15228), (96, 15252), (105, 15369), (106, 15375), (115, 15468), (130, 15549), (144, 15642), (145, 15657), (151, 15705), (155, 15729), (162, 15777), (163, 15801), (167, 15849), (175, 15891), (185, 16026), (186, 16038), (188, 16047), (197, 16107), (203, 16176), (209, 16209),

Gene: Wheelie\_24 Start: 13808, Stop: 15640, Start Num: 27

Candidate Starts for Wheelie\_24:

(Start: 27 @13808 has 26 MA's), (30, 13817), (36, 13916), (59, 14282), (73, 14450), (76, 14465), (84, 14525), (91, 14573), (92, 14579), (96, 14603), (105, 14720), (106, 14726), (115, 14819), (130, 14900), (144, 14993), (145, 15008), (151, 15056), (155, 15080), (162, 15128), (163, 15152), (167, 15200), (175, 15242), (185, 15377), (186, 15389), (188, 15398), (197, 15458), (203, 15527), (209, 15560),

Gene: Wilca\_24 Start: 12993, Stop: 14771, Start Num: 25

Candidate Starts for Wilca\_24:

(Start: 25 @12993 has 10 MA's), (30, 13005), (49, 13350), (60, 13464), (74, 13590), (84, 13656), (91, 13704), (96, 13734), (115, 13947), (130, 14028), (132, 14037), (142, 14115), (144, 14121), (145, 14136), (163, 14280), (166, 14322), (175, 14373), (186, 14520), (188, 14529), (206, 14679), (209, 14691), (216, 14751),

Gene: Wilde\_20 Start: 13011, Stop: 14774, Start Num: 28

Candidate Starts for Wilde\_20:

(18, 12945), (Start: 28 @13011 has 12 MA's), (57, 13449), (61, 13518), (64, 13542), (72, 13611), (87, 13692), (98, 13800), (102, 13851), (103, 13863), (104, 13872), (132, 14064), (134, 14073), (135, 14076), (142, 14142), (145, 14163), (146, 14169), (148, 14187), (163, 14298), (170, 14358), (176, 14397), (178, 14439), (189, 14532), (194, 14571), (213, 14724),

Gene: Yeti\_27 Start: 13790, Stop: 15646, Start Num: 17

Candidate Starts for Yeti\_27:

(Start: 17 @13790 has 53 MA's), (62, 14366), (69, 14411), (71, 14447), (81, 14516), (84, 14537), (85, 14540), (89, 14570), (100, 14690), (111, 14771), (126, 14885), (128, 14912), (152, 15101), (166, 15227), (181, 15341), (182, 15356), (189, 15404), (193, 15434), (195, 15446), (197, 15461), (199, 15476), (202, 15527), (205, 15545), (209, 15563),

Gene: Zagie\_25 Start: 13996, Stop: 15828, Start Num: 27

Candidate Starts for Zagie\_25:

(Start: 27 @13996 has 26 MA's), (30, 14005), (36, 14104), (59, 14470), (73, 14638), (76, 14653), (84, 14713), (91, 14761), (92, 14767), (96, 14791), (105, 14908), (106, 14914), (115, 15007), (130, 15088), (144, 15181), (145, 15196), (151, 15244), (155, 15268), (162, 15316), (163, 15340), (167, 15388), (175, 15430), (185, 15565), (186, 15577), (188, 15586), (197, 15646), (203, 15715), (209, 15748),

Gene: Zhafia\_28 Start: 14319, Stop: 16151, Start Num: 27

Candidate Starts for Zhafia\_28:

(Start: 27 @14319 has 26 MA's), (30, 14328), (36, 14427), (59, 14793), (73, 14961), (76, 14976), (84, 15036), (91, 15084), (92, 15090), (96, 15114), (105, 15231), (106, 15237), (115, 15330), (130, 15411), (144, 15504), (145, 15519), (151, 15567), (155, 15591), (162, 15639), (163, 15663), (167, 15711), (175, 15753), (185, 15888), (186, 15900), (188, 15909), (197, 15969), (203, 16038), (209, 16071),