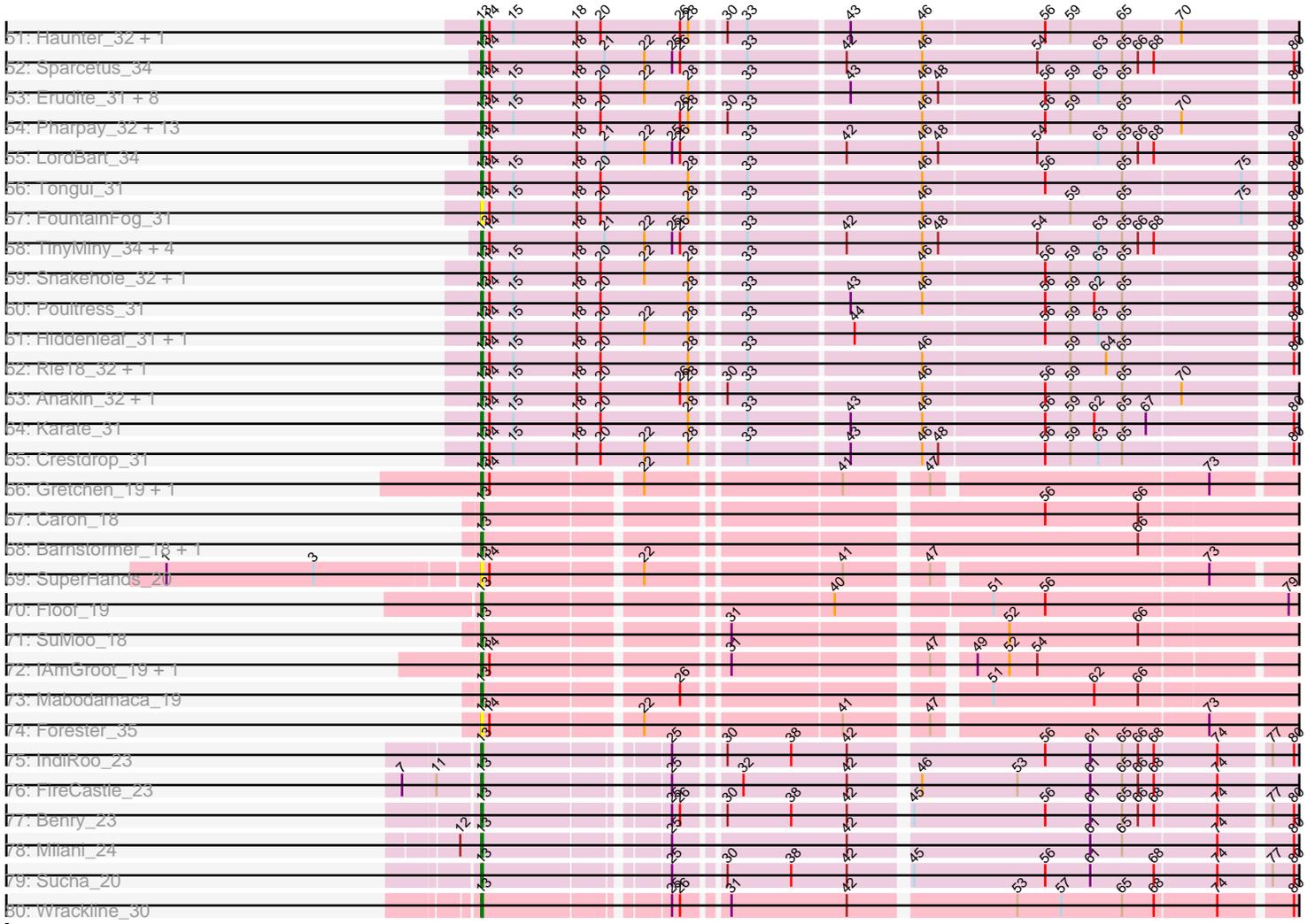




# Zoomed Pham 290910



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 290910 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290910 has 151 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Burritobowl\_20
- Track 2 : Armstrong\_18, Coltrane\_18, Clayda5\_18, Brahms\_18, Skylord\_18
- Track 3 : DirtyBubble\_19
- Track 4 : DickRichards\_20, PhigPhack\_21, CroZenni\_20
- Track 5 : Rollins\_18, Vitas\_18, Bernstein\_18
- Track 6 : SirBeanington\_20, Albedo\_20, BubbaBear\_20
- Track 7 : Johnathan\_20
- Track 8 : Celaena\_18
- Track 9 : IndyLu\_20, Didgeridoo\_21, Finalfrontier\_21, Kate33\_20
- Track 10 : PastaFagioli\_20
- Track 11 : LimaBean\_20, Cashington\_20
- Track 12 : FlameThrower\_18
- Track 13 : Avocadoman\_20
- Track 14 : Pecas\_20, AylexOG\_21, Swervy\_20, Slay\_20, Jabb\_20, Eula\_20, MsUbiquitous\_20, CupcakePrincess\_20, SarBear\_20, Jovita\_20, QMacho\_21
- Track 15 : Dismas\_18, Kieran\_18, Rona\_18, ChiliPepper\_18, Kamdara\_18
- Track 16 : PondAmelia\_23
- Track 17 : Bengal\_20
- Track 18 : Akino08\_18, Stoor\_19, SanaSana\_20, Loviatar\_19
- Track 19 : Gack\_18, Franklin22\_19
- Track 20 : AvGardian\_20
- Track 21 : Stromboli\_19, BabyYoda\_19
- Track 22 : Quenya\_19
- Track 23 : Icarian\_20
- Track 24 : CliffHanger\_19
- Track 25 : Squircle\_18, Olliecat\_18
- Track 26 : Albright\_20
- Track 27 : Abigail\_20
- Track 28 : SansAfet\_20
- Track 29 : Lynlen\_20, Kenzers\_20
- Track 30 : Eden\_18
- Track 31 : Softsoap\_19
- Track 32 : Doobus\_20
- Track 33 : Katzastrophic\_18
- Track 34 : AnnaLie\_21, BelmontSKP\_21
- Track 35 : Buldak\_18
- Track 36 : BAjuniper\_19

- Track 37 : Phisb\_20
- Track 38 : Bachaco\_18
- Track 39 : Sharkboy\_18
- Track 40 : Teagster\_19
- Track 41 : WalkingDead\_19
- Track 42 : TukTuk\_20
- Track 43 : Lahqtemish\_20
- Track 44 : Milomuff\_21, Solea\_22
- Track 45 : Lilo27\_20
- Track 46 : BabyDaisy\_21
- Track 47 : Shayna\_18, SunnyD\_18
- Track 48 : Nicky22\_21
- Track 49 : Elva\_20
- Track 50 : Arroyo\_21
- Track 51 : Haunter\_32, Rachella\_32
- Track 52 : Sparcetus\_34
- Track 53 : Erudite\_31, JingleBells\_31, DannyDe\_31, SilentWarrior\_31, Aesir\_31, Annapurna\_31, MortySmith\_30, JDawG\_31, Dauntless\_31
- Track 54 : Pharpay\_32, Gilda\_32, CoolCookie\_32, Krampus\_32, AnnaSerena\_32, OhDear\_32, OverHedge\_32, PhunaPhoke\_32, Potty\_32, Artiphact\_32, Tedro\_32, Cybele\_32, Kate\_32, Neptune\_32
- Track 55 : LordBart\_34
- Track 56 : Tongui\_31
- Track 57 : FountainFog\_31
- Track 58 : TinyMiny\_34, Ajin\_34, Kors\_34, Bramble\_34, RikSengupta\_34
- Track 59 : Snakehole\_32, FreddieHg\_31
- Track 60 : Poultruss\_31
- Track 61 : Hiddenleaf\_31, Chivey\_31
- Track 62 : Rie18\_32, Hager\_33
- Track 63 : Anakin\_32, NarutoRun\_32
- Track 64 : Karate\_31
- Track 65 : Crestdrop\_31
- Track 66 : Gretchen\_19, Percival\_19
- Track 67 : Caron\_18
- Track 68 : Barnstormer\_18, UtzChips\_18
- Track 69 : SuperHands\_20
- Track 70 : Floof\_19
- Track 71 : SuMoo\_18
- Track 72 : IAmGroot\_19, GardenState\_19
- Track 73 : Mabodamaca\_19
- Track 74 : Forester\_35
- Track 75 : IndiRoo\_23
- Track 76 : FireCastle\_23
- Track 77 : Benry\_23
- Track 78 : Milani\_24
- Track 79 : Sucha\_20
- Track 80 : Wrackline\_30

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

The start number called the most often in the published annotations is 13, it was called in 137 of the 137 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abigail\_20, Aesir\_31, Ajin\_34, Akino08\_18, Albedo\_20, Albright\_20, Anakin\_32, AnnaLie\_21, AnnaSerena\_32, Annapurna\_31, Armstrong\_18, Arroyo\_21, Artiphact\_32, AvGardian\_20, Avocadoman\_20, AylexOG\_21, BAjuniper\_19, BabyDaisy\_21, BabyYoda\_19, Bachaco\_18, Barnstormer\_18, BelmontSKP\_21, Bengal\_20, Benry\_23, Bernstein\_18, Brahms\_18, Bramble\_34, BubbaBear\_20, Buldak\_18, Burritobowl\_20, Caron\_18, Cashington\_20, Celaena\_18, ChiliPepper\_18, Chivey\_31, Clayda5\_18, CliffHanger\_19, Coltrane\_18, CoolCookie\_32, Crestdrop\_31, CroZenni\_20, CupcakePrincess\_20, Cybele\_32, DannyDe\_31, Dauntless\_31, DickRichards\_20, Didgeridoo\_21, DirtyBubble\_19, Dismas\_18, Doobus\_20, Eden\_18, Elva\_20, Erudite\_31, Eula\_20, Finalfrontier\_21, FireCastle\_23, FlameThrower\_18, Floof\_19, Forester\_35, FountainFog\_31, Franklin22\_19, FreddieHg\_31, Gack\_18, GardenState\_19, Gilda\_32, Gretchen\_19, Hager\_33, Haunter\_32, Hiddenleaf\_31, IAmGroot\_19, Icarian\_20, IndiRoo\_23, IndyLu\_20, JDawG\_31, Jabb\_20, JingleBells\_31, Johnathan\_20, Jovita\_20, Kamdara\_18, Karate\_31, Kate33\_20, Kate\_32, Katzastrophic\_18, Kenzers\_20, Kieran\_18, Kors\_34, Krampus\_32, Lahqtemish\_20, Lilo27\_20, LimaBean\_20, LordBart\_34, Loviatar\_19, Lynlen\_20, Mabodamaca\_19, Milani\_24, Milomuff\_21, MortySmith\_30, MsUbiquitous\_20, NarutoRun\_32, Neptune\_32, Nicky22\_21, OhDear\_32, Olliecat\_18, OverHedge\_32, PastaFagioli\_20, Pecas\_20, Percival\_19, Pharpay\_32, PhigPhack\_21, Phisb\_20, PhunaPhoke\_32, PondAmelia\_23, Potty\_32, Poultruss\_31, QMacho\_21, Quenya\_19, Rachella\_32, Rie18\_32, RikSengupta\_34, Rollins\_18, Rona\_18, SanaSana\_20, SansAfet\_20, SarBear\_20, Sharkboy\_18, Shayna\_18, SilentWarrior\_31, SirBeanington\_20, Skylord\_18, Slay\_20, Snakehole\_32, Softsoap\_19, Solea\_22, Sparcetus\_34, Squircle\_18, Stoor\_19, Stromboli\_19, SuMoo\_18, Sucha\_20, SunnyD\_18, SuperHands\_20, Swervy\_20, Teagster\_19, Tedro\_32, TinyMiny\_34, Tongui\_31, TukTuk\_20, UtzChips\_18, Vitas\_18, WalkingDead\_19, Wrackline\_30,

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

- 

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

- 

### Summary by start number:

Start 13:

- Found in 151 of 151 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 137 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail\_20 (EB), Aesir\_31 (EF), Ajin\_34 (EF), Akino08\_18 (EB), Albedo\_20 (EB), Albright\_20 (EB), Anakin\_32 (EF), AnnaLie\_21 (EB), AnnaSerena\_32 (EF), Annapurna\_31 (EF), Armstrong\_18 (EB), Arroyo\_21 (EB), Artiphact\_32 (EF), AvGardian\_20 (EB), Avocadoman\_20 (EB), AylexOG\_21 (EB), BAjuniper\_19 (EB), BabyDaisy\_21 (EB), BabyYoda\_19 (EB), Bachaco\_18 (EB), Barnstormer\_18 (EH), BelmontSKP\_21 (EB), Bengal\_20 (EB), Benry\_23 (EJ), Bernstein\_18 (EB), Brahms\_18 (EB), Bramble\_34 (EF), BubbaBear\_20 (EB), Buldak\_18 (EB), Burritobowl\_20 (EB), Caron\_18 (EH), Cashington\_20 (EB), Celaena\_18 (EB), ChiliPepper\_18 (EB), Chivey\_31 (EF),

Clayda5\_18 (EB), CliffHanger\_19 (EB), Coltrane\_18 (EB), CoolCookie\_32 (EF), Crestdrop\_31 (EF), CroZenni\_20 (EB), CupcakePrincess\_20 (EB), Cybele\_32 (EF), DannyDe\_31 (EF), Dauntless\_31 (EF), DickRichards\_20 (EB), Didgeridoo\_21 (EB), DirtyBubble\_19 (EB), Dismas\_18 (EB), Doobus\_20 (EB), Eden\_18 (EB), Elva\_20 (EB), Erudite\_31 (EF), Eula\_20 (EB), Finalfrontier\_21 (EB), FireCastle\_23 (EJ), FlameThrower\_18 (EB), Floof\_19 (EH), Forester\_35 (EH), FountainFog\_31 (EF), Franklin22\_19 (EB), FreddieHg\_31 (EF), Gack\_18 (EB), GardenState\_19 (EH), Gilda\_32 (EF), Gretchen\_19 (EH), Hager\_33 (EF), Haunter\_32 (EF), Hiddenleaf\_31 (EF), IAmGroot\_19 (EH), Icarian\_20 (EB), IndiRoo\_23 (EJ), IndyLu\_20 (EB), JDawG\_31 (EF), Jabb\_20 (EB), JingleBells\_31 (EF), Johnathan\_20 (EB), Jovita\_20 (EB), Kamdara\_18 (EB), Karate\_31 (EF), Kate33\_20 (EB), Kate\_32 (EF), Katzastrophic\_18 (EB), Kenzers\_20 (EB), Kieran\_18 (EB), Kors\_34 (EF), Krampus\_32 (EF), Lahqtemish\_20 (EB), Lilo27\_20 (EB), LimaBean\_20 (EB), LordBart\_34 (EF), Loviatar\_19 (EB), Lynlen\_20 (EB), Mabodamaca\_19 (EH), Milani\_24 (EJ), Milomuff\_21 (EB), MortySmith\_30 (EF), MsUbiquitous\_20 (EB), NarutoRun\_32 (EF), Neptune\_32 (EF), Nicky22\_21 (EB), OhDear\_32 (EF), Olliecat\_18 (EB), OverHedge\_32 (EF), PastaFagioli\_20 (EB), Pecas\_20 (EB), Percival\_19 (EH), Pharpay\_32 (EF), PhigPhack\_21 (EB), Phisb\_20 (EB), PhunaPhoke\_32 (EF), PondAmelia\_23 (EB), Potty\_32 (EF), Poultruss\_31 (EF), QMacho\_21 (EB), Quenya\_19 (EB), Rachella\_32 (EF), Rie18\_32 (EF), RikSengupta\_34 (EF), Rollins\_18 (EB), Rona\_18 (EB), SanaSana\_20 (EB), SansAfet\_20 (EB), SarBear\_20 (EB), Sharkboy\_18 (EB), Shayna\_18 (EB), SilentWarrior\_31 (EF), SirBeanington\_20 (EB), Skylord\_18 (EB), Slay\_20 (EB), Snakehole\_32 (EF), Softsoap\_19 (EB), Solea\_22 (EB), Sparcetus\_34 (EF), Squirrel\_18 (EB), Stoor\_19 (EB), Stromboli\_19 (EB), SuMoo\_18 (EH), Sucha\_20 (EJ), SunnyD\_18 (EB), SuperHands\_20 (EH), Swervy\_20 (EB), Teagster\_19 (EB), Tedro\_32 (EF), TinyMiny\_34 (EF), Tongui\_31 (EF), TukTuk\_20 (EB), UtzChips\_18 (EH), Vitas\_18 (EB), WalkingDead\_19 (EB), Wrackline\_30 (GF),

### **Summary by clusters:**

There are 5 clusters represented in this pham: GF, EF, EH, EJ, EB,

Info for manual annotations of cluster EB:

- Start number 13 was manually annotated 80 times for cluster EB.

Info for manual annotations of cluster EF:

- Start number 13 was manually annotated 41 times for cluster EF.

Info for manual annotations of cluster EH:

- Start number 13 was manually annotated 10 times for cluster EH.

Info for manual annotations of cluster EJ:

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

Info for manual annotations of cluster GF:

- Start number 13 was manually annotated 1 time for cluster GF.

### **Gene Information:**

Gene: Abigail\_20 Start: 16253, Stop: 17341, Start Num: 13

Candidate Starts for Abigail\_20:

(Start: 13 @16253 has 137 MA's), (25, 16394), (28, 16406), (35, 16460), (37, 16478), (42, 16520), (50, 16607), (57, 16667), (62, 16691), (112, 17204),

Gene: Aesir\_31 Start: 20242, Stop: 21186, Start Num: 13

Candidate Starts for Aesir\_31:

(Start: 13 @20242 has 137 MA's), (14, 20248), (15, 20266), (18, 20314), (20, 20332), (22, 20365), (28, 20398), (33, 20431), (43, 20503), (46, 20557), (48, 20569), (56, 20647), (59, 20665), (63, 20686), (65, 20704), (80, 20821), (84, 20836), (93, 20941), (95, 20950),

Gene: Ajin\_34 Start: 20730, Stop: 21491, Start Num: 13

Candidate Starts for Ajin\_34:

(Start: 13 @20730 has 137 MA's), (14, 20736), (18, 20802), (21, 20823), (22, 20853), (25, 20874), (26, 20880), (33, 20919), (42, 20988), (46, 21045), (48, 21057), (54, 21132), (63, 21177), (65, 21195), (66, 21207), (68, 21219), (80, 21315), (82, 21324), (87, 21360), (89, 21399), (93, 21432),

Gene: Akino08\_18 Start: 16044, Stop: 16880, Start Num: 13

Candidate Starts for Akino08\_18:

(Start: 13 @16044 has 137 MA's), (16, 16080), (19, 16116), (25, 16185), (28, 16197), (34, 16245), (35, 16251), (37, 16269), (42, 16311), (55, 16443), (56, 16446), (57, 16458), (89, 16701), (91, 16710), (99, 16794), (101, 16809),

Gene: Albedo\_20 Start: 16124, Stop: 17212, Start Num: 13

Candidate Starts for Albedo\_20:

(4, 16004), (6, 16064), (Start: 13 @16124 has 137 MA's), (25, 16265), (35, 16331), (37, 16349), (42, 16391), (50, 16478), (56, 16526), (57, 16538), (62, 16562),

Gene: Albright\_20 Start: 16011, Stop: 17099, Start Num: 13

Candidate Starts for Albright\_20:

(Start: 13 @16011 has 137 MA's), (25, 16152), (28, 16164), (30, 16194), (35, 16218), (42, 16278), (50, 16365), (56, 16413), (57, 16425), (67, 16488), (69, 16500), (93, 16707), (112, 16962),

Gene: Anakin\_32 Start: 20500, Stop: 21444, Start Num: 13

Candidate Starts for Anakin\_32:

(Start: 13 @20500 has 137 MA's), (14, 20506), (15, 20524), (18, 20572), (20, 20590), (26, 20650), (28, 20656), (30, 20674), (33, 20689), (46, 20815), (56, 20905), (59, 20923), (65, 20962), (70, 21004), (84, 21094), (93, 21199), (95, 21208), (108, 21319),

Gene: AnnaLie\_21 Start: 16440, Stop: 17528, Start Num: 13

Candidate Starts for AnnaLie\_21:

(Start: 13 @16440 has 137 MA's), (25, 16581), (35, 16647), (37, 16665), (42, 16707), (50, 16794), (56, 16842), (57, 16854), (62, 16878), (96, 17154), (113, 17409),

Gene: AnnaSerena\_32 Start: 20511, Stop: 21455, Start Num: 13

Candidate Starts for AnnaSerena\_32:

(Start: 13 @20511 has 137 MA's), (14, 20517), (15, 20535), (18, 20583), (20, 20601), (26, 20661), (28, 20667), (30, 20685), (33, 20700), (46, 20826), (56, 20916), (59, 20934), (65, 20973), (70, 21015), (84, 21105), (93, 21210), (95, 21219),

Gene: Annapurna\_31 Start: 19704, Stop: 20648, Start Num: 13

Candidate Starts for Annapurna\_31:

(Start: 13 @19704 has 137 MA's), (14, 19710), (15, 19728), (18, 19776), (20, 19794), (22, 19827), (28, 19860), (33, 19893), (43, 19965), (46, 20019), (48, 20031), (56, 20109), (59, 20127), (63, 20148), (65,

20166), (80, 20283), (84, 20298), (93, 20403), (95, 20412),

Gene: Armstrong\_18 Start: 14212, Stop: 15048, Start Num: 13

Candidate Starts for Armstrong\_18:

(Start: 13 @14212 has 137 MA's), (16, 14248), (22, 14332), (25, 14353), (35, 14419), (40, 14470), (71, 14716), (84, 14800), (101, 14980),

Gene: Arroyo\_21 Start: 16641, Stop: 17729, Start Num: 13

Candidate Starts for Arroyo\_21:

(8, 16590), (Start: 13 @16641 has 137 MA's), (19, 16713), (25, 16782), (35, 16848), (37, 16866), (42, 16908), (50, 16995), (56, 17043), (57, 17055), (62, 17079), (96, 17355),

Gene: Artiphact\_32 Start: 20501, Stop: 21445, Start Num: 13

Candidate Starts for Artiphact\_32:

(Start: 13 @20501 has 137 MA's), (14, 20507), (15, 20525), (18, 20573), (20, 20591), (26, 20651), (28, 20657), (30, 20675), (33, 20690), (46, 20816), (56, 20906), (59, 20924), (65, 20963), (70, 21005), (84, 21095), (93, 21200), (95, 21209),

Gene: AvGardian\_20 Start: 15660, Stop: 16493, Start Num: 13

Candidate Starts for AvGardian\_20:

(10, 15621), (Start: 13 @15660 has 137 MA's), (16, 15696), (25, 15801), (28, 15813), (29, 15822), (35, 15867), (37, 15885), (39, 15912), (42, 15927), (56, 16062), (57, 16074), (59, 16080), (63, 16101), (84, 16248),

Gene: Avocadoman\_20 Start: 16196, Stop: 17284, Start Num: 13

Candidate Starts for Avocadoman\_20:

(Start: 13 @16196 has 137 MA's), (25, 16337), (28, 16349), (35, 16403), (37, 16421), (38, 16427), (42, 16463), (50, 16550), (56, 16598), (57, 16610), (67, 16673), (69, 16685),

Gene: AylexOG\_21 Start: 16461, Stop: 17549, Start Num: 13

Candidate Starts for AylexOG\_21:

(4, 16341), (6, 16401), (Start: 13 @16461 has 137 MA's), (25, 16602), (28, 16614), (29, 16623), (35, 16668), (37, 16686), (40, 16719), (42, 16728), (50, 16815), (57, 16875),

Gene: BAjuniper\_19 Start: 16149, Stop: 16985, Start Num: 13

Candidate Starts for BAjuniper\_19:

(Start: 13 @16149 has 137 MA's), (16, 16185), (25, 16290), (28, 16302), (29, 16311), (35, 16356), (37, 16374), (38, 16380), (42, 16416), (50, 16503), (88, 16776), (92, 16827), (96, 16860), (102, 16920),

Gene: BabyDaisy\_21 Start: 16253, Stop: 17341, Start Num: 13

Candidate Starts for BabyDaisy\_21:

(Start: 13 @16253 has 137 MA's), (25, 16394), (35, 16460), (37, 16478), (38, 16484), (42, 16520), (56, 16655), (57, 16667), (69, 16742), (105, 17051), (113, 17222),

Gene: BabyYoda\_19 Start: 16136, Stop: 16969, Start Num: 13

Candidate Starts for BabyYoda\_19:

(Start: 13 @16136 has 137 MA's), (16, 16172), (19, 16208), (25, 16277), (28, 16289), (29, 16298), (35, 16343), (37, 16361), (46, 16448), (56, 16538), (57, 16550), (84, 16724), (89, 16793), (91, 16802), (99, 16886),

Gene: Bachaco\_18 Start: 16153, Stop: 16986, Start Num: 13

Candidate Starts for Bachaco\_18:

(Start: 13 @16153 has 137 MA's), (22, 16273), (25, 16294), (28, 16306), (29, 16315), (35, 16360), (37, 16378), (43, 16423), (54, 16549), (78, 16720), (84, 16741), (92, 16831), (96, 16864), (107, 16957),

Gene: Barnstormer\_18 Start: 15958, Stop: 16890, Start Num: 13

Candidate Starts for Barnstormer\_18:

(Start: 13 @15958 has 137 MA's), (66, 16414),

Gene: BelmontSKP\_21 Start: 16440, Stop: 17528, Start Num: 13

Candidate Starts for BelmontSKP\_21:

(Start: 13 @16440 has 137 MA's), (25, 16581), (35, 16647), (37, 16665), (42, 16707), (50, 16794), (56, 16842), (57, 16854), (62, 16878), (96, 17154), (113, 17409),

Gene: Bengal\_20 Start: 16028, Stop: 17116, Start Num: 13

Candidate Starts for Bengal\_20:

(Start: 13 @16028 has 137 MA's), (25, 16169), (28, 16181), (35, 16235), (37, 16253), (42, 16295), (50, 16382), (56, 16430), (57, 16442), (62, 16466),

Gene: Benry\_23 Start: 16825, Stop: 17892, Start Num: 13

Candidate Starts for Benry\_23:

(Start: 13 @16825 has 137 MA's), (25, 16948), (26, 16954), (30, 16978), (38, 17026), (42, 17068), (45, 17107), (56, 17206), (61, 17239), (65, 17263), (66, 17275), (68, 17287), (74, 17332), (77, 17365), (80, 17380), (82, 17389), (100, 17563), (105, 17590), (110, 17659), (114, 17785), (116, 17824),

Gene: Bernstein\_18 Start: 14243, Stop: 15079, Start Num: 13

Candidate Starts for Bernstein\_18:

(Start: 13 @14243 has 137 MA's), (16, 14279), (22, 14363), (25, 14384), (35, 14450), (40, 14501), (71, 14747), (84, 14831), (101, 15011),

Gene: Brahms\_18 Start: 14188, Stop: 15024, Start Num: 13

Candidate Starts for Brahms\_18:

(Start: 13 @14188 has 137 MA's), (16, 14224), (22, 14308), (25, 14329), (35, 14395), (40, 14446), (71, 14692), (84, 14776), (101, 14956),

Gene: Bramble\_34 Start: 20696, Stop: 21457, Start Num: 13

Candidate Starts for Bramble\_34:

(Start: 13 @20696 has 137 MA's), (14, 20702), (18, 20768), (21, 20789), (22, 20819), (25, 20840), (26, 20846), (33, 20885), (42, 20954), (46, 21011), (48, 21023), (54, 21098), (63, 21143), (65, 21161), (66, 21173), (68, 21185), (80, 21281), (82, 21290), (87, 21326), (89, 21365), (93, 21398),

Gene: BubbaBear\_20 Start: 16124, Stop: 17212, Start Num: 13

Candidate Starts for BubbaBear\_20:

(4, 16004), (6, 16064), (Start: 13 @16124 has 137 MA's), (25, 16265), (35, 16331), (37, 16349), (42, 16391), (50, 16478), (56, 16526), (57, 16538), (62, 16562),

Gene: Buldak\_18 Start: 15602, Stop: 16342, Start Num: 13

Candidate Starts for Buldak\_18:

(Start: 13 @15602 has 137 MA's), (17, 15665), (20, 15689), (22, 15722), (23, 15725), (25, 15740), (27, 15749), (34, 15800), (35, 15806), (38, 15830), (43, 15869), (56, 16001), (58, 16016), (75, 16139),

Gene: Burritobowl\_20 Start: 16196, Stop: 17284, Start Num: 13

Candidate Starts for Burritobowl\_20:

(Start: 13 @16196 has 137 MA's), (25, 16337), (28, 16349), (35, 16403), (37, 16421), (42, 16463), (50, 16550), (56, 16598), (57, 16610), (62, 16634), (106, 17000),

Gene: Caron\_18 Start: 15341, Stop: 16273, Start Num: 13  
Candidate Starts for Caron\_18:  
(Start: 13 @15341 has 137 MA's), (56, 15728), (66, 15797),

Gene: Cashington\_20 Start: 16045, Stop: 17133, Start Num: 13  
Candidate Starts for Cashington\_20:  
(Start: 13 @16045 has 137 MA's), (25, 16186), (28, 16198), (35, 16252), (37, 16270), (42, 16312), (50, 16399), (56, 16447), (57, 16459), (62, 16483), (96, 16759),

Gene: Celaena\_18 Start: 16101, Stop: 16934, Start Num: 13  
Candidate Starts for Celaena\_18:  
(9, 16056), (Start: 13 @16101 has 137 MA's), (22, 16221), (25, 16242), (28, 16254), (29, 16263), (35, 16308), (37, 16326), (43, 16371), (54, 16497), (78, 16668), (92, 16779),

Gene: ChiliPepper\_18 Start: 15687, Stop: 16520, Start Num: 13  
Candidate Starts for ChiliPepper\_18:  
(Start: 13 @15687 has 137 MA's), (16, 15723), (22, 15807), (25, 15828), (28, 15840), (29, 15849), (31, 15873), (34, 15888), (35, 15894), (38, 15918), (39, 15939), (56, 16089), (57, 16101), (63, 16128), (84, 16275), (93, 16380), (101, 16452), (103, 16464),

Gene: Chivey\_31 Start: 19653, Stop: 20597, Start Num: 13  
Candidate Starts for Chivey\_31:  
(Start: 13 @19653 has 137 MA's), (14, 19659), (15, 19677), (18, 19725), (20, 19743), (22, 19776), (28, 19809), (33, 19842), (44, 19917), (56, 20058), (59, 20076), (63, 20097), (65, 20115), (80, 20232), (84, 20247), (87, 20277), (93, 20352), (95, 20361),

Gene: Clayda5\_18 Start: 14218, Stop: 15054, Start Num: 13  
Candidate Starts for Clayda5\_18:  
(Start: 13 @14218 has 137 MA's), (16, 14254), (22, 14338), (25, 14359), (35, 14425), (40, 14476), (71, 14722), (84, 14806), (101, 14986),

Gene: CliffHanger\_19 Start: 15208, Stop: 15954, Start Num: 13  
Candidate Starts for CliffHanger\_19:  
(Start: 13 @15208 has 137 MA's), (22, 15328), (24, 15334), (25, 15346), (28, 15358), (35, 15412), (42, 15472), (49, 15556), (88, 15832),

Gene: Coltrane\_18 Start: 14188, Stop: 15024, Start Num: 13  
Candidate Starts for Coltrane\_18:  
(Start: 13 @14188 has 137 MA's), (16, 14224), (22, 14308), (25, 14329), (35, 14395), (40, 14446), (71, 14692), (84, 14776), (101, 14956),

Gene: CoolCookie\_32 Start: 20507, Stop: 21451, Start Num: 13  
Candidate Starts for CoolCookie\_32:  
(Start: 13 @20507 has 137 MA's), (14, 20513), (15, 20531), (18, 20579), (20, 20597), (26, 20657), (28, 20663), (30, 20681), (33, 20696), (46, 20822), (56, 20912), (59, 20930), (65, 20969), (70, 21011), (84, 21101), (93, 21206), (95, 21215),

Gene: Crestdrop\_31 Start: 19567, Stop: 20511, Start Num: 13  
Candidate Starts for Crestdrop\_31:  
(Start: 13 @19567 has 137 MA's), (14, 19573), (15, 19591), (18, 19639), (20, 19657), (22, 19690), (28, 19723), (33, 19756), (43, 19828), (46, 19882), (48, 19894), (56, 19972), (59, 19990), (63, 20011), (65, 20029), (80, 20146), (93, 20266), (95, 20275),

Gene: CroZenni\_20 Start: 16031, Stop: 17119, Start Num: 13

Candidate Starts for CroZenni\_20:

(8, 15980), (Start: 13 @16031 has 137 MA's), (19, 16103), (25, 16172), (35, 16238), (37, 16256), (42, 16298), (50, 16385), (56, 16433), (57, 16445), (62, 16469),

Gene: CupcakePrincess\_20 Start: 16151, Stop: 17239, Start Num: 13

Candidate Starts for CupcakePrincess\_20:

(4, 16031), (6, 16091), (Start: 13 @16151 has 137 MA's), (25, 16292), (28, 16304), (29, 16313), (35, 16358), (37, 16376), (40, 16409), (42, 16418), (50, 16505), (57, 16565),

Gene: Cybele\_32 Start: 20477, Stop: 21421, Start Num: 13

Candidate Starts for Cybele\_32:

(Start: 13 @20477 has 137 MA's), (14, 20483), (15, 20501), (18, 20549), (20, 20567), (26, 20627), (28, 20633), (30, 20651), (33, 20666), (46, 20792), (56, 20882), (59, 20900), (65, 20939), (70, 20981), (84, 21071), (93, 21176), (95, 21185),

Gene: DannyDe\_31 Start: 19650, Stop: 20594, Start Num: 13

Candidate Starts for DannyDe\_31:

(Start: 13 @19650 has 137 MA's), (14, 19656), (15, 19674), (18, 19722), (20, 19740), (22, 19773), (28, 19806), (33, 19839), (43, 19911), (46, 19965), (48, 19977), (56, 20055), (59, 20073), (63, 20094), (65, 20112), (80, 20229), (84, 20244), (93, 20349), (95, 20358),

Gene: Dauntless\_31 Start: 20210, Stop: 21154, Start Num: 13

Candidate Starts for Dauntless\_31:

(Start: 13 @20210 has 137 MA's), (14, 20216), (15, 20234), (18, 20282), (20, 20300), (22, 20333), (28, 20366), (33, 20399), (43, 20471), (46, 20525), (48, 20537), (56, 20615), (59, 20633), (63, 20654), (65, 20672), (80, 20789), (84, 20804), (93, 20909), (95, 20918),

Gene: DickRichards\_20 Start: 16526, Stop: 17614, Start Num: 13

Candidate Starts for DickRichards\_20:

(8, 16475), (Start: 13 @16526 has 137 MA's), (19, 16598), (25, 16667), (35, 16733), (37, 16751), (42, 16793), (50, 16880), (56, 16928), (57, 16940), (62, 16964),

Gene: Didgeridoo\_21 Start: 16255, Stop: 17343, Start Num: 13

Candidate Starts for Didgeridoo\_21:

(Start: 13 @16255 has 137 MA's), (25, 16396), (35, 16462), (37, 16480), (38, 16486), (42, 16522), (56, 16657), (57, 16669), (69, 16744), (96, 16969), (105, 17053), (113, 17224),

Gene: DirtyBubble\_19 Start: 16094, Stop: 16927, Start Num: 13

Candidate Starts for DirtyBubble\_19:

(Start: 13 @16094 has 137 MA's), (16, 16130), (19, 16166), (25, 16235), (28, 16247), (35, 16301), (37, 16319), (42, 16361), (56, 16496), (57, 16508), (84, 16682), (89, 16751), (91, 16760), (99, 16844), (103, 16871),

Gene: Dismas\_18 Start: 15687, Stop: 16520, Start Num: 13

Candidate Starts for Dismas\_18:

(Start: 13 @15687 has 137 MA's), (16, 15723), (22, 15807), (25, 15828), (28, 15840), (29, 15849), (31, 15873), (34, 15888), (35, 15894), (38, 15918), (39, 15939), (56, 16089), (57, 16101), (63, 16128), (84, 16275), (93, 16380), (101, 16452), (103, 16464),

Gene: Doobus\_20 Start: 16362, Stop: 17450, Start Num: 13

Candidate Starts for Doobus\_20:

(Start: 13 @16362 has 137 MA's), (25, 16503), (28, 16515), (30, 16545), (35, 16569), (42, 16629), (50, 16716), (56, 16764), (57, 16776), (67, 16839), (69, 16851), (112, 17313),

Gene: Eden\_18 Start: 14590, Stop: 15423, Start Num: 13

Candidate Starts for Eden\_18:

(2, 14392), (Start: 13 @14590 has 137 MA's), (16, 14626), (25, 14731), (28, 14743), (29, 14752), (34, 14791), (35, 14797), (38, 14821), (40, 14848), (42, 14857), (54, 14986), (84, 15178), (88, 15217), (99, 15340), (101, 15355), (102, 15361),

Gene: Elva\_20 Start: 16052, Stop: 16888, Start Num: 13

Candidate Starts for Elva\_20:

(Start: 13 @16052 has 137 MA's), (25, 16193), (28, 16205), (34, 16253), (35, 16259), (36, 16274), (37, 16277), (39, 16304), (42, 16319), (46, 16364), (56, 16454), (57, 16466), (84, 16640), (98, 16793), (99, 16802),

Gene: Erudite\_31 Start: 20210, Stop: 21154, Start Num: 13

Candidate Starts for Erudite\_31:

(Start: 13 @20210 has 137 MA's), (14, 20216), (15, 20234), (18, 20282), (20, 20300), (22, 20333), (28, 20366), (33, 20399), (43, 20471), (46, 20525), (48, 20537), (56, 20615), (59, 20633), (63, 20654), (65, 20672), (80, 20789), (84, 20804), (93, 20909), (95, 20918),

Gene: Eula\_20 Start: 16112, Stop: 17200, Start Num: 13

Candidate Starts for Eula\_20:

(4, 15992), (6, 16052), (Start: 13 @16112 has 137 MA's), (25, 16253), (28, 16265), (29, 16274), (35, 16319), (37, 16337), (40, 16370), (42, 16379), (50, 16466), (57, 16526),

Gene: Finalfrontier\_21 Start: 16622, Stop: 17710, Start Num: 13

Candidate Starts for Finalfrontier\_21:

(Start: 13 @16622 has 137 MA's), (25, 16763), (35, 16829), (37, 16847), (38, 16853), (42, 16889), (56, 17024), (57, 17036), (69, 17111), (96, 17336), (105, 17420), (113, 17591),

Gene: FireCastle\_23 Start: 18399, Stop: 19472, Start Num: 13

Candidate Starts for FireCastle\_23:

(7, 18345), (11, 18369), (Start: 13 @18399 has 137 MA's), (25, 18522), (32, 18564), (42, 18642), (46, 18687), (53, 18759), (61, 18813), (65, 18837), (66, 18849), (68, 18861), (74, 18906), (85, 18969), (88, 18996), (105, 19173), (114, 19365), (115, 19395),

Gene: FlameThrower\_18 Start: 15673, Stop: 16506, Start Num: 13

Candidate Starts for FlameThrower\_18:

(Start: 13 @15673 has 137 MA's), (22, 15793), (25, 15814), (28, 15826), (29, 15835), (35, 15880), (36, 15895), (37, 15898), (43, 15943), (46, 15985), (56, 16075), (81, 16252), (84, 16261),

Gene: Floof\_19 Start: 15888, Stop: 17012, Start Num: 13

Candidate Starts for Floof\_19:

(Start: 13 @15888 has 137 MA's), (40, 16128), (51, 16233), (56, 16272), (79, 16449), (115, 16944),

Gene: Forester\_35 Start: 17869, Stop: 18762, Start Num: 13

Candidate Starts for Forester\_35:

(Start: 13 @17869 has 137 MA's), (14, 17875), (22, 17980), (41, 18115), (47, 18169), (73, 18364),

Gene: FountainFog\_31 Start: 19810, Stop: 20754, Start Num: 13

Candidate Starts for FountainFog\_31:

(Start: 13 @19810 has 137 MA's), (14, 19816), (15, 19834), (18, 19882), (20, 19900), (28, 19966), (33, 19999), (46, 20125), (59, 20233), (65, 20272), (75, 20359), (80, 20389), (84, 20404), (93, 20509), (95, 20518),

Gene: Franklin22\_19 Start: 14773, Stop: 15609, Start Num: 13

Candidate Starts for Franklin22\_19:

(Start: 13 @14773 has 137 MA's), (16, 14809), (25, 14914), (28, 14926), (29, 14935), (35, 14980), (38, 15004), (40, 15031), (42, 15040), (54, 15169), (56, 15175), (57, 15187), (84, 15361), (102, 15547),

Gene: FreddieHg\_31 Start: 19669, Stop: 20613, Start Num: 13

Candidate Starts for FreddieHg\_31:

(Start: 13 @19669 has 137 MA's), (14, 19675), (15, 19693), (18, 19741), (20, 19759), (22, 19792), (28, 19825), (33, 19858), (46, 19984), (56, 20074), (59, 20092), (63, 20113), (65, 20131), (80, 20248), (84, 20263), (87, 20293), (93, 20368), (95, 20377),

Gene: Gack\_18 Start: 14659, Stop: 15495, Start Num: 13

Candidate Starts for Gack\_18:

(Start: 13 @14659 has 137 MA's), (16, 14695), (25, 14800), (28, 14812), (29, 14821), (35, 14866), (38, 14890), (40, 14917), (42, 14926), (54, 15055), (56, 15061), (57, 15073), (84, 15247), (102, 15433),

Gene: GardenState\_19 Start: 16381, Stop: 17271, Start Num: 13

Candidate Starts for GardenState\_19:

(Start: 13 @16381 has 137 MA's), (14, 16387), (31, 16546), (47, 16681), (49, 16705), (52, 16729), (54, 16750),

Gene: Gilda\_32 Start: 20501, Stop: 21445, Start Num: 13

Candidate Starts for Gilda\_32:

(Start: 13 @20501 has 137 MA's), (14, 20507), (15, 20525), (18, 20573), (20, 20591), (26, 20651), (28, 20657), (30, 20675), (33, 20690), (46, 20816), (56, 20906), (59, 20924), (65, 20963), (70, 21005), (84, 21095), (93, 21200), (95, 21209),

Gene: Gretchen\_19 Start: 17157, Stop: 18050, Start Num: 13

Candidate Starts for Gretchen\_19:

(Start: 13 @17157 has 137 MA's), (14, 17163), (22, 17268), (41, 17403), (47, 17457), (73, 17652),

Gene: Hager\_33 Start: 20063, Stop: 21007, Start Num: 13

Candidate Starts for Hager\_33:

(Start: 13 @20063 has 137 MA's), (14, 20069), (15, 20087), (18, 20135), (20, 20153), (28, 20219), (33, 20252), (46, 20378), (59, 20486), (64, 20513), (65, 20525), (80, 20642), (84, 20657), (93, 20762), (95, 20771),

Gene: Haunter\_32 Start: 19914, Stop: 20858, Start Num: 13

Candidate Starts for Haunter\_32:

(Start: 13 @19914 has 137 MA's), (14, 19920), (15, 19938), (18, 19986), (20, 20004), (26, 20064), (28, 20070), (30, 20088), (33, 20103), (43, 20175), (46, 20229), (56, 20319), (59, 20337), (65, 20376), (70, 20418), (84, 20508), (93, 20613), (95, 20622),

Gene: Hiddenleaf\_31 Start: 19653, Stop: 20597, Start Num: 13

Candidate Starts for Hiddenleaf\_31:

(Start: 13 @19653 has 137 MA's), (14, 19659), (15, 19677), (18, 19725), (20, 19743), (22, 19776), (28, 19809), (33, 19842), (44, 19917), (56, 20058), (59, 20076), (63, 20097), (65, 20115), (80, 20232), (84, 20247), (87, 20277), (93, 20352), (95, 20361),

Gene: IAmGroot\_19 Start: 17043, Stop: 17933, Start Num: 13

Candidate Starts for IAmGroot\_19:

(Start: 13 @17043 has 137 MA's), (14, 17049), (31, 17208), (47, 17343), (49, 17367), (52, 17391), (54, 17412),

Gene: Icarian\_20 Start: 15969, Stop: 16805, Start Num: 13

Candidate Starts for Icarian\_20:

(Start: 13 @15969 has 137 MA's), (16, 16005), (19, 16041), (25, 16110), (28, 16122), (29, 16131), (35, 16176), (37, 16194), (38, 16200), (42, 16236), (50, 16323), (55, 16368), (56, 16371), (57, 16383), (84, 16557), (89, 16626), (91, 16635), (99, 16719),

Gene: IndiRoo\_23 Start: 16835, Stop: 17902, Start Num: 13

Candidate Starts for IndiRoo\_23:

(Start: 13 @16835 has 137 MA's), (25, 16958), (30, 16988), (38, 17036), (42, 17078), (56, 17216), (61, 17249), (65, 17273), (66, 17285), (68, 17297), (74, 17342), (77, 17375), (80, 17390), (82, 17399), (100, 17573), (105, 17600),

Gene: IndyLu\_20 Start: 16077, Stop: 17165, Start Num: 13

Candidate Starts for IndyLu\_20:

(Start: 13 @16077 has 137 MA's), (25, 16218), (35, 16284), (37, 16302), (38, 16308), (42, 16344), (56, 16479), (57, 16491), (69, 16566), (96, 16791), (105, 16875), (113, 17046),

Gene: JDawG\_31 Start: 20237, Stop: 21181, Start Num: 13

Candidate Starts for JDawG\_31:

(Start: 13 @20237 has 137 MA's), (14, 20243), (15, 20261), (18, 20309), (20, 20327), (22, 20360), (28, 20393), (33, 20426), (43, 20498), (46, 20552), (48, 20564), (56, 20642), (59, 20660), (63, 20681), (65, 20699), (80, 20816), (84, 20831), (93, 20936), (95, 20945),

Gene: Jabb\_20 Start: 16151, Stop: 17239, Start Num: 13

Candidate Starts for Jabb\_20:

(4, 16031), (6, 16091), (Start: 13 @16151 has 137 MA's), (25, 16292), (28, 16304), (29, 16313), (35, 16358), (37, 16376), (40, 16409), (42, 16418), (50, 16505), (57, 16565),

Gene: JingleBells\_31 Start: 19774, Stop: 20718, Start Num: 13

Candidate Starts for JingleBells\_31:

(Start: 13 @19774 has 137 MA's), (14, 19780), (15, 19798), (18, 19846), (20, 19864), (22, 19897), (28, 19930), (33, 19963), (43, 20035), (46, 20089), (48, 20101), (56, 20179), (59, 20197), (63, 20218), (65, 20236), (80, 20353), (84, 20368), (93, 20473), (95, 20482),

Gene: Johnathan\_20 Start: 16135, Stop: 17223, Start Num: 13

Candidate Starts for Johnathan\_20:

(Start: 13 @16135 has 137 MA's), (25, 16276), (28, 16288), (35, 16342), (37, 16360), (42, 16402), (56, 16537), (57, 16549), (62, 16573), (96, 16849), (112, 17086),

Gene: Jovita\_20 Start: 16216, Stop: 17304, Start Num: 13

Candidate Starts for Jovita\_20:

(4, 16096), (6, 16156), (Start: 13 @16216 has 137 MA's), (25, 16357), (28, 16369), (29, 16378), (35, 16423), (37, 16441), (40, 16474), (42, 16483), (50, 16570), (57, 16630),

Gene: Kamdara\_18 Start: 15686, Stop: 16519, Start Num: 13

Candidate Starts for Kamdara\_18:

(Start: 13 @15686 has 137 MA's), (16, 15722), (22, 15806), (25, 15827), (28, 15839), (29, 15848), (31, 15872), (34, 15887), (35, 15893), (38, 15917), (39, 15938), (56, 16088), (57, 16100), (63, 16127), (84,

16274), (93, 16379), (101, 16451), (103, 16463),

Gene: Karate\_31 Start: 20530, Stop: 21474, Start Num: 13

Candidate Starts for Karate\_31:

(Start: 13 @20530 has 137 MA's), (14, 20536), (15, 20554), (18, 20602), (20, 20620), (28, 20686), (33, 20719), (43, 20791), (46, 20845), (56, 20935), (59, 20953), (62, 20971), (65, 20992), (67, 21010), (80, 21109), (84, 21124), (93, 21229), (95, 21238),

Gene: Kate\_32 Start: 20509, Stop: 21453, Start Num: 13

Candidate Starts for Kate\_32:

(Start: 13 @20509 has 137 MA's), (14, 20515), (15, 20533), (18, 20581), (20, 20599), (26, 20659), (28, 20665), (30, 20683), (33, 20698), (46, 20824), (56, 20914), (59, 20932), (65, 20971), (70, 21013), (84, 21103), (93, 21208), (95, 21217),

Gene: Kate33\_20 Start: 16079, Stop: 17167, Start Num: 13

Candidate Starts for Kate33\_20:

(Start: 13 @16079 has 137 MA's), (25, 16220), (35, 16286), (37, 16304), (38, 16310), (42, 16346), (56, 16481), (57, 16493), (69, 16568), (96, 16793), (105, 16877), (113, 17048),

Gene: Katzastrophic\_18 Start: 15815, Stop: 16648, Start Num: 13

Candidate Starts for Katzastrophic\_18:

(Start: 13 @15815 has 137 MA's), (22, 15935), (25, 15956), (28, 15968), (29, 15977), (35, 16022), (36, 16037), (37, 16040), (43, 16085), (46, 16127), (54, 16211), (56, 16217),

Gene: Kenzers\_20 Start: 16099, Stop: 17187, Start Num: 13

Candidate Starts for Kenzers\_20:

(Start: 13 @16099 has 137 MA's), (25, 16240), (35, 16306), (37, 16324), (42, 16366), (56, 16501), (57, 16513), (67, 16576), (69, 16588), (88, 16729), (96, 16813), (113, 17068),

Gene: Kieran\_18 Start: 15690, Stop: 16523, Start Num: 13

Candidate Starts for Kieran\_18:

(Start: 13 @15690 has 137 MA's), (16, 15726), (22, 15810), (25, 15831), (28, 15843), (29, 15852), (31, 15876), (34, 15891), (35, 15897), (38, 15921), (39, 15942), (56, 16092), (57, 16104), (63, 16131), (84, 16278), (93, 16383), (101, 16455), (103, 16467),

Gene: Kors\_34 Start: 20776, Stop: 21537, Start Num: 13

Candidate Starts for Kors\_34:

(Start: 13 @20776 has 137 MA's), (14, 20782), (18, 20848), (21, 20869), (22, 20899), (25, 20920), (26, 20926), (33, 20965), (42, 21034), (46, 21091), (48, 21103), (54, 21178), (63, 21223), (65, 21241), (66, 21253), (68, 21265), (80, 21361), (82, 21370), (87, 21406), (89, 21445), (93, 21478),

Gene: Krampus\_32 Start: 20509, Stop: 21453, Start Num: 13

Candidate Starts for Krampus\_32:

(Start: 13 @20509 has 137 MA's), (14, 20515), (15, 20533), (18, 20581), (20, 20599), (26, 20659), (28, 20665), (30, 20683), (33, 20698), (46, 20824), (56, 20914), (59, 20932), (65, 20971), (70, 21013), (84, 21103), (93, 21208), (95, 21217),

Gene: Lahqtemish\_20 Start: 16125, Stop: 17213, Start Num: 13

Candidate Starts for Lahqtemish\_20:

(Start: 13 @16125 has 137 MA's), (25, 16266), (35, 16332), (37, 16350), (38, 16356), (42, 16392), (50, 16479), (56, 16527), (57, 16539), (69, 16614), (105, 16923), (109, 16944),

Gene: Lilo27\_20 Start: 16088, Stop: 17176, Start Num: 13

Candidate Starts for Lilo27\_20:

(Start: 13 @16088 has 137 MA's), (25, 16229), (28, 16241), (35, 16295), (40, 16346), (42, 16355), (50, 16442), (56, 16490), (57, 16502),

Gene: LimaBean\_20 Start: 16131, Stop: 17219, Start Num: 13

Candidate Starts for LimaBean\_20:

(Start: 13 @16131 has 137 MA's), (25, 16272), (28, 16284), (35, 16338), (37, 16356), (42, 16398), (50, 16485), (56, 16533), (57, 16545), (62, 16569), (96, 16845),

Gene: LordBart\_34 Start: 20692, Stop: 21453, Start Num: 13

Candidate Starts for LordBart\_34:

(Start: 13 @20692 has 137 MA's), (14, 20698), (18, 20764), (21, 20785), (22, 20815), (25, 20836), (26, 20842), (33, 20881), (42, 20950), (46, 21007), (48, 21019), (54, 21094), (63, 21139), (65, 21157), (66, 21169), (68, 21181), (80, 21277), (82, 21286), (87, 21322), (89, 21361),

Gene: Loviatar\_19 Start: 16059, Stop: 16895, Start Num: 13

Candidate Starts for Loviatar\_19:

(Start: 13 @16059 has 137 MA's), (16, 16095), (19, 16131), (25, 16200), (28, 16212), (34, 16260), (35, 16266), (37, 16284), (42, 16326), (55, 16458), (56, 16461), (57, 16473), (89, 16716), (91, 16725), (99, 16809), (101, 16824),

Gene: Lynlen\_20 Start: 16099, Stop: 17187, Start Num: 13

Candidate Starts for Lynlen\_20:

(Start: 13 @16099 has 137 MA's), (25, 16240), (35, 16306), (37, 16324), (42, 16366), (56, 16501), (57, 16513), (67, 16576), (69, 16588), (88, 16729), (96, 16813), (113, 17068),

Gene: Mabodamaca\_19 Start: 16389, Stop: 17288, Start Num: 13

Candidate Starts for Mabodamaca\_19:

(Start: 13 @16389 has 137 MA's), (26, 16527), (51, 16725), (62, 16800), (66, 16833), (97, 17088), (109, 17190),

Gene: Milani\_24 Start: 17465, Stop: 18532, Start Num: 13

Candidate Starts for Milani\_24:

(12, 17450), (Start: 13 @17465 has 137 MA's), (25, 17588), (42, 17708), (61, 17879), (65, 17903), (74, 17972), (80, 18020), (82, 18029), (85, 18035), (100, 18203), (104, 18221),

Gene: Milomuff\_21 Start: 16495, Stop: 17583, Start Num: 13

Candidate Starts for Milomuff\_21:

(Start: 13 @16495 has 137 MA's), (21, 16585), (25, 16636), (35, 16702), (37, 16720), (42, 16762), (50, 16849), (56, 16897), (57, 16909), (67, 16972),

Gene: MortySmith\_30 Start: 19625, Stop: 20569, Start Num: 13

Candidate Starts for MortySmith\_30:

(Start: 13 @19625 has 137 MA's), (14, 19631), (15, 19649), (18, 19697), (20, 19715), (22, 19748), (28, 19781), (33, 19814), (43, 19886), (46, 19940), (48, 19952), (56, 20030), (59, 20048), (63, 20069), (65, 20087), (80, 20204), (84, 20219), (93, 20324), (95, 20333),

Gene: MsUbiquitous\_20 Start: 16151, Stop: 17239, Start Num: 13

Candidate Starts for MsUbiquitous\_20:

(4, 16031), (6, 16091), (Start: 13 @16151 has 137 MA's), (25, 16292), (28, 16304), (29, 16313), (35, 16358), (37, 16376), (40, 16409), (42, 16418), (50, 16505), (57, 16565),

Gene: NarutoRun\_32 Start: 20500, Stop: 21444, Start Num: 13

Candidate Starts for NarutoRun\_32:

(Start: 13 @20500 has 137 MA's), (14, 20506), (15, 20524), (18, 20572), (20, 20590), (26, 20650), (28, 20656), (30, 20674), (33, 20689), (46, 20815), (56, 20905), (59, 20923), (65, 20962), (70, 21004), (84, 21094), (93, 21199), (95, 21208), (108, 21319),

Gene: Neptune\_32 Start: 20477, Stop: 21421, Start Num: 13

Candidate Starts for Neptune\_32:

(Start: 13 @20477 has 137 MA's), (14, 20483), (15, 20501), (18, 20549), (20, 20567), (26, 20627), (28, 20633), (30, 20651), (33, 20666), (46, 20792), (56, 20882), (59, 20900), (65, 20939), (70, 20981), (84, 21071), (93, 21176), (95, 21185),

Gene: Nicky22\_21 Start: 16559, Stop: 17647, Start Num: 13

Candidate Starts for Nicky22\_21:

(Start: 13 @16559 has 137 MA's), (25, 16700), (28, 16712), (29, 16721), (35, 16766), (37, 16784), (40, 16817), (42, 16826), (50, 16913), (57, 16973), (96, 17273),

Gene: OhDear\_32 Start: 20506, Stop: 21450, Start Num: 13

Candidate Starts for OhDear\_32:

(Start: 13 @20506 has 137 MA's), (14, 20512), (15, 20530), (18, 20578), (20, 20596), (26, 20656), (28, 20662), (30, 20680), (33, 20695), (46, 20821), (56, 20911), (59, 20929), (65, 20968), (70, 21010), (84, 21100), (93, 21205), (95, 21214),

Gene: Olliecat\_18 Start: 15566, Stop: 16315, Start Num: 13

Candidate Starts for Olliecat\_18:

(Start: 13 @15566 has 137 MA's), (20, 15653), (25, 15704), (27, 15713), (35, 15770), (38, 15794), (40, 15821), (42, 15830), (43, 15833), (60, 15989), (81, 16142), (83, 16148), (90, 16223),

Gene: OverHedge\_32 Start: 20467, Stop: 21411, Start Num: 13

Candidate Starts for OverHedge\_32:

(Start: 13 @20467 has 137 MA's), (14, 20473), (15, 20491), (18, 20539), (20, 20557), (26, 20617), (28, 20623), (30, 20641), (33, 20656), (46, 20782), (56, 20872), (59, 20890), (65, 20929), (70, 20971), (84, 21061), (93, 21166), (95, 21175),

Gene: PastaFagioli\_20 Start: 16113, Stop: 17201, Start Num: 13

Candidate Starts for PastaFagioli\_20:

(Start: 13 @16113 has 137 MA's), (25, 16254), (35, 16320), (37, 16338), (38, 16344), (42, 16380), (56, 16515), (57, 16527), (69, 16602), (105, 16911), (109, 16932),

Gene: Pecas\_20 Start: 16112, Stop: 17200, Start Num: 13

Candidate Starts for Pecas\_20:

(4, 15992), (6, 16052), (Start: 13 @16112 has 137 MA's), (25, 16253), (28, 16265), (29, 16274), (35, 16319), (37, 16337), (40, 16370), (42, 16379), (50, 16466), (57, 16526),

Gene: Percival\_19 Start: 16991, Stop: 17884, Start Num: 13

Candidate Starts for Percival\_19:

(Start: 13 @16991 has 137 MA's), (14, 16997), (22, 17102), (41, 17237), (47, 17291), (73, 17486),

Gene: Pharpay\_32 Start: 20522, Stop: 21466, Start Num: 13

Candidate Starts for Pharpay\_32:

(Start: 13 @20522 has 137 MA's), (14, 20528), (15, 20546), (18, 20594), (20, 20612), (26, 20672), (28, 20678), (30, 20696), (33, 20711), (46, 20837), (56, 20927), (59, 20945), (65, 20984), (70, 21026), (84, 21116), (93, 21221), (95, 21230),

Gene: PhigPhack\_21 Start: 16108, Stop: 17196, Start Num: 13

Candidate Starts for PhigPhack\_21:

(8, 16057), (Start: 13 @16108 has 137 MA's), (19, 16180), (25, 16249), (35, 16315), (37, 16333), (42, 16375), (50, 16462), (56, 16510), (57, 16522), (62, 16546),

Gene: Phisb\_20 Start: 16125, Stop: 17213, Start Num: 13

Candidate Starts for Phisb\_20:

(4, 16005), (6, 16065), (Start: 13 @16125 has 137 MA's), (25, 16266), (28, 16278), (35, 16332), (37, 16350), (42, 16392), (50, 16479), (56, 16527), (57, 16539), (62, 16563),

Gene: PhunaPhoke\_32 Start: 20495, Stop: 21439, Start Num: 13

Candidate Starts for PhunaPhoke\_32:

(Start: 13 @20495 has 137 MA's), (14, 20501), (15, 20519), (18, 20567), (20, 20585), (26, 20645), (28, 20651), (30, 20669), (33, 20684), (46, 20810), (56, 20900), (59, 20918), (65, 20957), (70, 20999), (84, 21089), (93, 21194), (95, 21203),

Gene: PondAmelia\_23 Start: 16111, Stop: 16947, Start Num: 13

Candidate Starts for PondAmelia\_23:

(5, 16051), (Start: 13 @16111 has 137 MA's), (16, 16147), (19, 16183), (25, 16252), (28, 16264), (34, 16312), (35, 16318), (37, 16336), (42, 16378), (55, 16510), (56, 16513), (57, 16525), (89, 16768), (91, 16777), (99, 16861), (101, 16876),

Gene: Potty\_32 Start: 20500, Stop: 21444, Start Num: 13

Candidate Starts for Potty\_32:

(Start: 13 @20500 has 137 MA's), (14, 20506), (15, 20524), (18, 20572), (20, 20590), (26, 20650), (28, 20656), (30, 20674), (33, 20689), (46, 20815), (56, 20905), (59, 20923), (65, 20962), (70, 21004), (84, 21094), (93, 21199), (95, 21208),

Gene: Poultruss\_31 Start: 20869, Stop: 21813, Start Num: 13

Candidate Starts for Poultruss\_31:

(Start: 13 @20869 has 137 MA's), (14, 20875), (15, 20893), (18, 20941), (20, 20959), (28, 21025), (33, 21058), (43, 21130), (46, 21184), (56, 21274), (59, 21292), (62, 21310), (65, 21331), (80, 21448), (84, 21463), (93, 21568), (95, 21577),

Gene: QMacho\_21 Start: 16595, Stop: 17683, Start Num: 13

Candidate Starts for QMacho\_21:

(4, 16475), (6, 16535), (Start: 13 @16595 has 137 MA's), (25, 16736), (28, 16748), (29, 16757), (35, 16802), (37, 16820), (40, 16853), (42, 16862), (50, 16949), (57, 17009),

Gene: Quenya\_19 Start: 15646, Stop: 16479, Start Num: 13

Candidate Starts for Quenya\_19:

(Start: 13 @15646 has 137 MA's), (16, 15682), (25, 15787), (28, 15799), (35, 15853), (37, 15871), (38, 15877), (40, 15904), (42, 15913), (84, 16234), (86, 16255), (101, 16411),

Gene: Rachella\_32 Start: 20503, Stop: 21447, Start Num: 13

Candidate Starts for Rachella\_32:

(Start: 13 @20503 has 137 MA's), (14, 20509), (15, 20527), (18, 20575), (20, 20593), (26, 20653), (28, 20659), (30, 20677), (33, 20692), (43, 20764), (46, 20818), (56, 20908), (59, 20926), (65, 20965), (70, 21007), (84, 21097), (93, 21202), (95, 21211),

Gene: Rie18\_32 Start: 20016, Stop: 20960, Start Num: 13

Candidate Starts for Rie18\_32:

(Start: 13 @20016 has 137 MA's), (14, 20022), (15, 20040), (18, 20088), (20, 20106), (28, 20172), (33, 20205), (46, 20331), (59, 20439), (64, 20466), (65, 20478), (80, 20595), (84, 20610), (93, 20715), (95, 20724),

Gene: RikSengupta\_34 Start: 20813, Stop: 21574, Start Num: 13

Candidate Starts for RikSengupta\_34:

(Start: 13 @20813 has 137 MA's), (14, 20819), (18, 20885), (21, 20906), (22, 20936), (25, 20957), (26, 20963), (33, 21002), (42, 21071), (46, 21128), (48, 21140), (54, 21215), (63, 21260), (65, 21278), (66, 21290), (68, 21302), (80, 21398), (82, 21407), (87, 21443), (89, 21482), (93, 21515),

Gene: Rollins\_18 Start: 14243, Stop: 15079, Start Num: 13

Candidate Starts for Rollins\_18:

(Start: 13 @14243 has 137 MA's), (16, 14279), (22, 14363), (25, 14384), (35, 14450), (40, 14501), (71, 14747), (84, 14831), (101, 15011),

Gene: Rona\_18 Start: 15687, Stop: 16520, Start Num: 13

Candidate Starts for Rona\_18:

(Start: 13 @15687 has 137 MA's), (16, 15723), (22, 15807), (25, 15828), (28, 15840), (29, 15849), (31, 15873), (34, 15888), (35, 15894), (38, 15918), (39, 15939), (56, 16089), (57, 16101), (63, 16128), (84, 16275), (93, 16380), (101, 16452), (103, 16464),

Gene: SanaSana\_20 Start: 15998, Stop: 16834, Start Num: 13

Candidate Starts for SanaSana\_20:

(Start: 13 @15998 has 137 MA's), (16, 16034), (19, 16070), (25, 16139), (28, 16151), (34, 16199), (35, 16205), (37, 16223), (42, 16265), (55, 16397), (56, 16400), (57, 16412), (89, 16655), (91, 16664), (99, 16748), (101, 16763),

Gene: SansAfet\_20 Start: 16042, Stop: 17130, Start Num: 13

Candidate Starts for SansAfet\_20:

(8, 15991), (Start: 13 @16042 has 137 MA's), (25, 16183), (35, 16249), (37, 16267), (42, 16309), (56, 16444), (57, 16456), (62, 16480), (96, 16756), (113, 17011),

Gene: SarBear\_20 Start: 16093, Stop: 17181, Start Num: 13

Candidate Starts for SarBear\_20:

(4, 15973), (6, 16033), (Start: 13 @16093 has 137 MA's), (25, 16234), (28, 16246), (29, 16255), (35, 16300), (37, 16318), (40, 16351), (42, 16360), (50, 16447), (57, 16507),

Gene: Sharkboy\_18 Start: 15674, Stop: 16507, Start Num: 13

Candidate Starts for Sharkboy\_18:

(Start: 13 @15674 has 137 MA's), (16, 15710), (22, 15794), (25, 15815), (28, 15827), (29, 15836), (31, 15860), (34, 15875), (35, 15881), (38, 15905), (39, 15926), (56, 16076), (57, 16088), (63, 16115), (84, 16262), (93, 16367), (101, 16439), (103, 16451),

Gene: Shayna\_18 Start: 15456, Stop: 16196, Start Num: 13

Candidate Starts for Shayna\_18:

(Start: 13 @15456 has 137 MA's), (21, 15546), (35, 15660), (42, 15720),

Gene: SilentWarrior\_31 Start: 19666, Stop: 20610, Start Num: 13

Candidate Starts for SilentWarrior\_31:

(Start: 13 @19666 has 137 MA's), (14, 19672), (15, 19690), (18, 19738), (20, 19756), (22, 19789), (28, 19822), (33, 19855), (43, 19927), (46, 19981), (48, 19993), (56, 20071), (59, 20089), (63, 20110), (65, 20128), (80, 20245), (84, 20260), (93, 20365), (95, 20374),

Gene: SirBeanington\_20 Start: 16132, Stop: 17220, Start Num: 13

Candidate Starts for SirBeanington\_20:

(4, 16012), (6, 16072), (Start: 13 @16132 has 137 MA's), (25, 16273), (35, 16339), (37, 16357), (42, 16399), (50, 16486), (56, 16534), (57, 16546), (62, 16570),

Gene: Skylord\_18 Start: 14188, Stop: 15024, Start Num: 13

Candidate Starts for Skylord\_18:

(Start: 13 @14188 has 137 MA's), (16, 14224), (22, 14308), (25, 14329), (35, 14395), (40, 14446), (71, 14692), (84, 14776), (101, 14956),

Gene: Slay\_20 Start: 16635, Stop: 17723, Start Num: 13

Candidate Starts for Slay\_20:

(4, 16515), (6, 16575), (Start: 13 @16635 has 137 MA's), (25, 16776), (28, 16788), (29, 16797), (35, 16842), (37, 16860), (40, 16893), (42, 16902), (50, 16989), (57, 17049),

Gene: Snakehole\_32 Start: 19750, Stop: 20694, Start Num: 13

Candidate Starts for Snakehole\_32:

(Start: 13 @19750 has 137 MA's), (14, 19756), (15, 19774), (18, 19822), (20, 19840), (22, 19873), (28, 19906), (33, 19939), (46, 20065), (56, 20155), (59, 20173), (63, 20194), (65, 20212), (80, 20329), (84, 20344), (87, 20374), (93, 20449), (95, 20458),

Gene: Softsoap\_19 Start: 15866, Stop: 16954, Start Num: 13

Candidate Starts for Softsoap\_19:

(4, 15746), (6, 15806), (Start: 13 @15866 has 137 MA's), (25, 16007), (28, 16019), (35, 16073), (37, 16091), (42, 16133), (50, 16220), (57, 16280), (62, 16304),

Gene: Solea\_22 Start: 16495, Stop: 17583, Start Num: 13

Candidate Starts for Solea\_22:

(Start: 13 @16495 has 137 MA's), (21, 16585), (25, 16636), (35, 16702), (37, 16720), (42, 16762), (50, 16849), (56, 16897), (57, 16909), (67, 16972),

Gene: Sparcetus\_34 Start: 20692, Stop: 21453, Start Num: 13

Candidate Starts for Sparcetus\_34:

(Start: 13 @20692 has 137 MA's), (14, 20698), (18, 20764), (21, 20785), (22, 20815), (25, 20836), (26, 20842), (33, 20881), (42, 20950), (46, 21007), (54, 21094), (63, 21139), (65, 21157), (66, 21169), (68, 21181), (80, 21277), (82, 21286), (87, 21322), (89, 21361), (93, 21394),

Gene: Squirle\_18 Start: 15565, Stop: 16314, Start Num: 13

Candidate Starts for Squirle\_18:

(Start: 13 @15565 has 137 MA's), (20, 15652), (25, 15703), (27, 15712), (35, 15769), (38, 15793), (40, 15820), (42, 15829), (43, 15832), (60, 15988), (81, 16141), (83, 16147), (90, 16222),

Gene: Stoor\_19 Start: 15995, Stop: 16831, Start Num: 13

Candidate Starts for Stoor\_19:

(Start: 13 @15995 has 137 MA's), (16, 16031), (19, 16067), (25, 16136), (28, 16148), (34, 16196), (35, 16202), (37, 16220), (42, 16262), (55, 16394), (56, 16397), (57, 16409), (89, 16652), (91, 16661), (99, 16745), (101, 16760),

Gene: Stromboli\_19 Start: 16134, Stop: 16967, Start Num: 13

Candidate Starts for Stromboli\_19:

(Start: 13 @16134 has 137 MA's), (16, 16170), (19, 16206), (25, 16275), (28, 16287), (29, 16296), (35, 16341), (37, 16359), (46, 16446), (56, 16536), (57, 16548), (84, 16722), (89, 16791), (91, 16800), (99, 16884),

Gene: SuMoo\_18 Start: 15340, Stop: 16239, Start Num: 13

Candidate Starts for SuMoo\_18:

(Start: 13 @15340 has 137 MA's), (31, 15505), (52, 15688), (66, 15784), (82, 15904), (97, 16039), (109, 16141),

Gene: Sucha\_20 Start: 15822, Stop: 16889, Start Num: 13

Candidate Starts for Sucha\_20:

(Start: 13 @15822 has 137 MA's), (25, 15945), (30, 15975), (38, 16023), (42, 16065), (45, 16104), (56, 16203), (61, 16236), (68, 16284), (74, 16329), (77, 16362), (80, 16377), (82, 16386), (100, 16560), (105, 16587), (110, 16656), (114, 16782), (116, 16821),

Gene: SunnyD\_18 Start: 15456, Stop: 16196, Start Num: 13

Candidate Starts for SunnyD\_18:

(Start: 13 @15456 has 137 MA's), (21, 15546), (35, 15660), (42, 15720),

Gene: SuperHands\_20 Start: 17876, Stop: 18769, Start Num: 13

Candidate Starts for SuperHands\_20:

(1, 17648), (3, 17759), (Start: 13 @17876 has 137 MA's), (14, 17882), (22, 17987), (41, 18122), (47, 18176), (73, 18371),

Gene: Swervy\_20 Start: 16093, Stop: 17181, Start Num: 13

Candidate Starts for Swervy\_20:

(4, 15973), (6, 16033), (Start: 13 @16093 has 137 MA's), (25, 16234), (28, 16246), (29, 16255), (35, 16300), (37, 16318), (40, 16351), (42, 16360), (50, 16447), (57, 16507),

Gene: Teagster\_19 Start: 16531, Stop: 17271, Start Num: 13

Candidate Starts for Teagster\_19:

(Start: 13 @16531 has 137 MA's), (21, 16621), (25, 16669), (28, 16681), (31, 16714), (35, 16735), (37, 16753), (72, 17044), (76, 17083),

Gene: Tedro\_32 Start: 19973, Stop: 20917, Start Num: 13

Candidate Starts for Tedro\_32:

(Start: 13 @19973 has 137 MA's), (14, 19979), (15, 19997), (18, 20045), (20, 20063), (26, 20123), (28, 20129), (30, 20147), (33, 20162), (46, 20288), (56, 20378), (59, 20396), (65, 20435), (70, 20477), (84, 20567), (93, 20672), (95, 20681),

Gene: TinyMiny\_34 Start: 20711, Stop: 21472, Start Num: 13

Candidate Starts for TinyMiny\_34:

(Start: 13 @20711 has 137 MA's), (14, 20717), (18, 20783), (21, 20804), (22, 20834), (25, 20855), (26, 20861), (33, 20900), (42, 20969), (46, 21026), (48, 21038), (54, 21113), (63, 21158), (65, 21176), (66, 21188), (68, 21200), (80, 21296), (82, 21305), (87, 21341), (89, 21380), (93, 21413),

Gene: Tongui\_31 Start: 19999, Stop: 20943, Start Num: 13

Candidate Starts for Tongui\_31:

(Start: 13 @19999 has 137 MA's), (14, 20005), (15, 20023), (18, 20071), (20, 20089), (28, 20155), (33, 20188), (46, 20314), (56, 20404), (65, 20461), (75, 20548), (80, 20578), (84, 20593), (93, 20698), (95, 20707),

Gene: TukTuk\_20 Start: 16151, Stop: 17239, Start Num: 13

Candidate Starts for TukTuk\_20:

(4, 16031), (6, 16091), (Start: 13 @16151 has 137 MA's), (25, 16292), (28, 16304), (29, 16313), (35, 16358), (37, 16376), (40, 16409), (42, 16418), (50, 16505), (57, 16565), (96, 16865),

Gene: UtzChips\_18 Start: 15946, Stop: 16878, Start Num: 13

Candidate Starts for UtzChips\_18:

(Start: 13 @15946 has 137 MA's), (66, 16402),

Gene: Vitas\_18 Start: 14183, Stop: 15019, Start Num: 13

Candidate Starts for Vitas\_18:

(Start: 13 @14183 has 137 MA's), (16, 14219), (22, 14303), (25, 14324), (35, 14390), (40, 14441), (71, 14687), (84, 14771), (101, 14951),

Gene: WalkingDead\_19 Start: 16126, Stop: 16959, Start Num: 13

Candidate Starts for WalkingDead\_19:

(Start: 13 @16126 has 137 MA's), (16, 16162), (19, 16198), (25, 16267), (28, 16279), (34, 16327), (35, 16333), (37, 16351), (42, 16393), (46, 16438), (55, 16525), (56, 16528), (57, 16540), (84, 16714), (89, 16783), (91, 16792), (99, 16876), (103, 16903),

Gene: Wrackline\_30 Start: 18090, Stop: 19166, Start Num: 13

Candidate Starts for Wrackline\_30:

(Start: 13 @18090 has 137 MA's), (25, 18213), (26, 18219), (31, 18246), (42, 18333), (53, 18450), (57, 18483), (65, 18528), (68, 18552), (74, 18597), (80, 18645), (82, 18654), (94, 18762), (111, 18990), (117, 19101), (118, 19155),