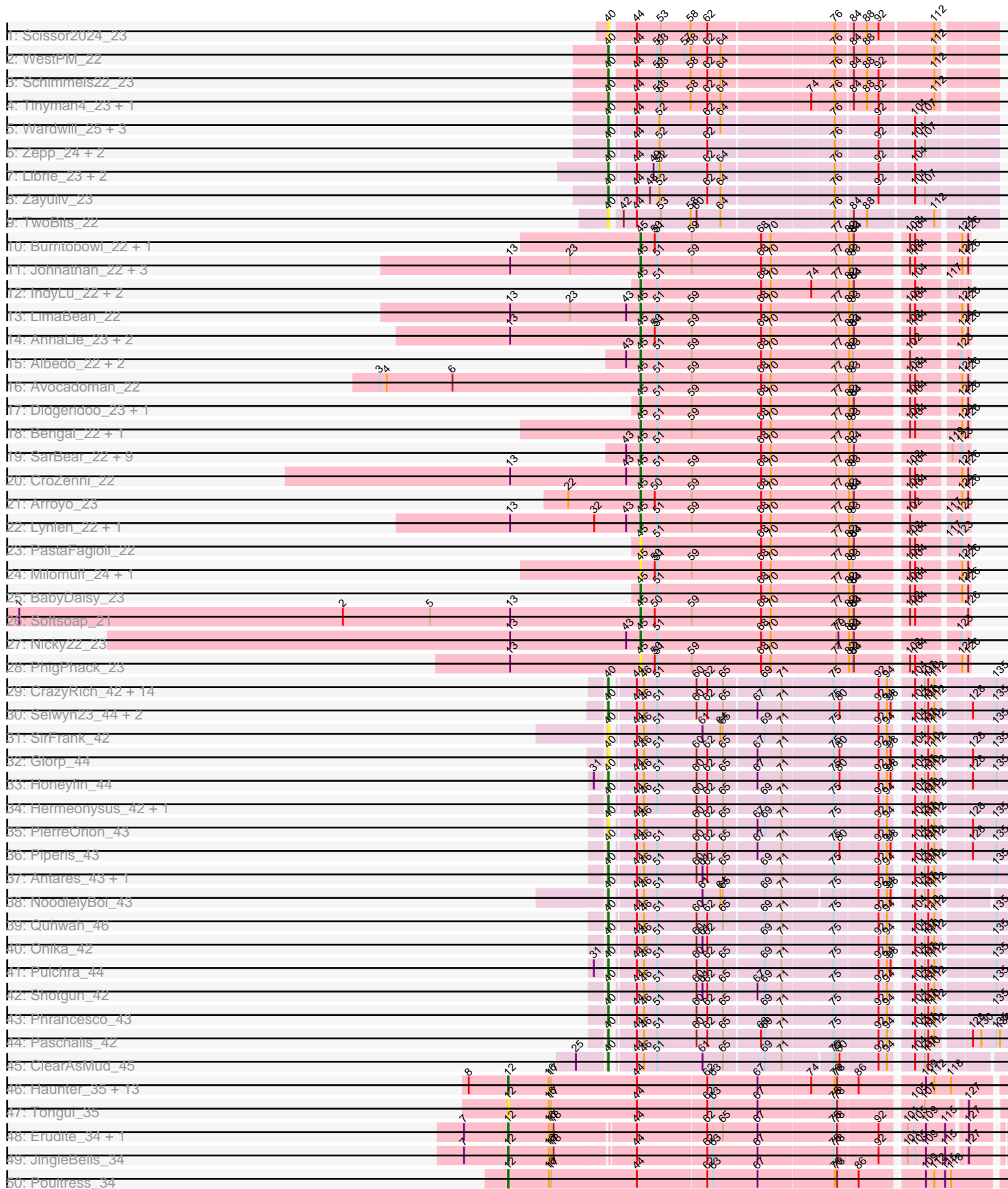
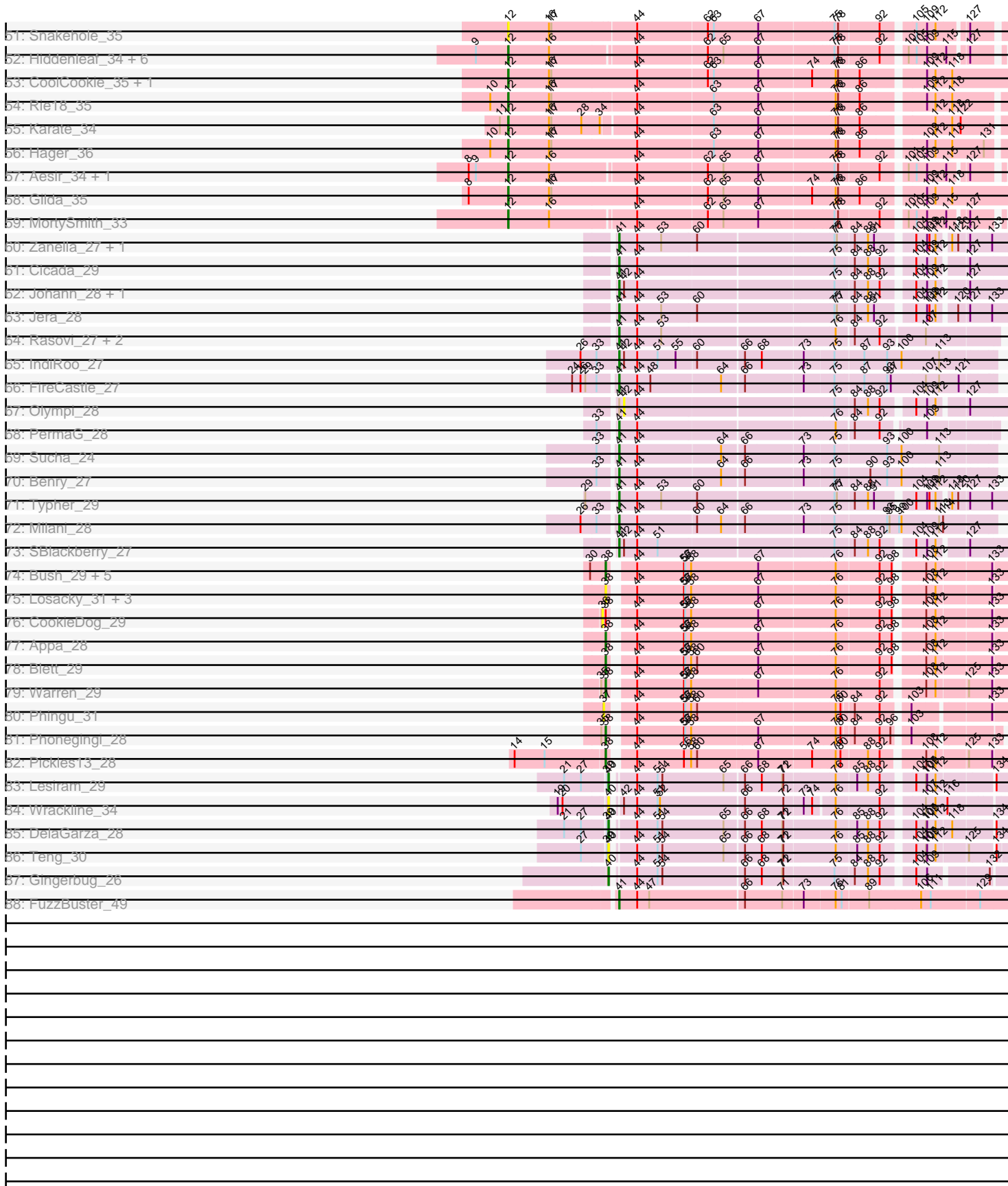


Pham 224327



Pham 224327



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 224327 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224327 has 171 members, 36 are drafts.

Phages represented in each track:

- Track 1 : Scissor2024\_23
- Track 2 : WestPM\_22
- Track 3 : Schimmels22\_23
- Track 4 : Tinyman4\_23, HerculesXL\_23
- Track 5 : Wardwill\_25, LilTerminator\_24, QuadZero\_23, Hasitha\_23
- Track 6 : Zepp\_24, GreenIvy\_23, BaronJohn\_24
- Track 7 : Librie\_23, Fulton\_23, CaptainRex\_23
- Track 8 : Zayuliv\_23
- Track 9 : TwoBits\_22
- Track 10 : Burritobowl\_22, DickRichards\_22
- Track 11 : Johnathan\_22, Albright\_22, Doobus\_22, Cashington\_22
- Track 12 : IndyLu\_22, Finalfrontier\_23, Kate33\_22
- Track 13 : LimaBean\_22
- Track 14 : AnnaLie\_23, BelmontSKP\_23, SansAfet\_22
- Track 15 : Albedo\_22, Phisb\_22, BubbaBear\_22
- Track 16 : Avocadoman\_22
- Track 17 : Didgeridoo\_23, Lahqtemish\_22
- Track 18 : Bengal\_22, Abigail\_22
- Track 19 : SarBear\_22, Swervy\_22, Slay\_22, Jabb\_22, Eula\_22, MsUbiquitous\_22, TukTuk\_22, CupcakePrincess\_22, Jovita\_22, QMacho\_23
- Track 20 : CroZenni\_22
- Track 21 : Arroyo\_23
- Track 22 : Lynlen\_22, Kenzers\_22
- Track 23 : PastaFagioli\_22
- Track 24 : Milomuff\_24, Solea\_24
- Track 25 : BabyDaisy\_23
- Track 26 : Softsoap\_21
- Track 27 : Nicky22\_23
- Track 28 : PhigPhack\_23
- Track 29 : CrazyRich\_42, Ramiel05\_42, Kowalski\_42, Busephilis\_42, Ganandorf\_42, Cranjis\_44, KaiHaiDragon\_43, EarickHC\_43, Crisis\_44, Jollipop\_43, PhedwardCullen\_41, Savannah\_42, Phorgeous\_42, LittleFortune\_44, PiperSansNom\_43
- Track 30 : Selwyn23\_44, Jefe\_43, Yeti\_43
- Track 31 : SirFrank\_42
- Track 32 : Glorp\_44
- Track 33 : Honeyfin\_44

- Track 34 : Hermeonysus\_42, Scumberland\_44
- Track 35 : PierreOrion\_43
- Track 36 : Piperis\_43
- Track 37 : Antares\_43, BrazzalePHS\_42
- Track 38 : NoodlelyBoi\_43
- Track 39 : Quhwah\_46
- Track 40 : Onika\_42
- Track 41 : Pulchra\_44
- Track 42 : Shotgun\_42
- Track 43 : Phrancesco\_43
- Track 44 : Paschalis\_42
- Track 45 : ClearAsMud\_45
- Track 46 : Haunter\_35, Pharpay\_35, NarutoRun\_35, Kate\_35, Anakin\_35, Rachella\_35, OverHedge\_35, AnnaSerena\_35, Potty\_35, Artiphact\_35, Tedro\_35, Cybele\_35, Neptune\_35, Krampus\_35
- Track 47 : Tongui\_35
- Track 48 : Erudite\_34, Dauntless\_34
- Track 49 : JingleBells\_34
- Track 50 : Poultruss\_34
- Track 51 : Snakehole\_35
- Track 52 : Hiddenleaf\_34, Crestdrop\_34, SilentWarrior\_34, FreddieHg\_34, Annapurna\_35, DannyDe\_34, Chivey\_34
- Track 53 : CoolCookie\_35, PhunaPhoke\_35
- Track 54 : Rie18\_35
- Track 55 : Karate\_34
- Track 56 : Hager\_36
- Track 57 : Aesir\_34, JDawG\_34
- Track 58 : Gilda\_35
- Track 59 : MortySmith\_33
- Track 60 : Zanella\_27, TurboVicky\_27
- Track 61 : Cicada\_29
- Track 62 : Johann\_28, Goodman\_28
- Track 63 : Jera\_28
- Track 64 : Rasovi\_27, Linayshia\_27, Htur\_27
- Track 65 : IndiRoo\_27
- Track 66 : FireCastle\_27
- Track 67 : Olympi\_28
- Track 68 : PermaG\_28
- Track 69 : Sucha\_24
- Track 70 : Benry\_27
- Track 71 : Typher\_29
- Track 72 : Milani\_28
- Track 73 : SBlackberry\_27
- Track 74 : Bush\_29, Antuna\_29, Violeta\_30, MenE\_29, Carrillo\_30, Dropshot\_28
- Track 75 : Losacky\_31, Jakelyne\_31, Guzman\_30, PhillyJawn\_29
- Track 76 : CookieDog\_29
- Track 77 : Appa\_28
- Track 78 : Blett\_29
- Track 79 : Warren\_29
- Track 80 : Phingu\_31
- Track 81 : Phonegingi\_28
- Track 82 : Pickles13\_28
- Track 83 : Lesiram\_29

- Track 84 : Wrackline\_34
- Track 85 : DelaGarza\_28
- Track 86 : Teng\_30
- Track 87 : Gingerbug\_26
- Track 88 : FuzzBuster\_49

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

The start number called the most often in the published annotations is 40, it was called in 46 of the 135 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares\_43, BaronJohn\_24, BrazzalePHS\_42, Busephilis\_42, CaptainRex\_23, ClearAsMud\_45, Cranjis\_44, CrazyRich\_42, Crisis\_44, DelaGarza\_28, EarickHC\_43, Fulton\_23, Ganandorf\_42, Gingerbug\_26, Glorp\_44, Greenlvy\_23, Hasitha\_23, HerculesXL\_23, Hermeonysus\_42, Honeyfin\_44, Jefe\_43, Jollipop\_43, KaiHaiDragon\_43, Kowalski\_42, Lesiram\_29, Librie\_23, LilTerminator\_24, LittleFortune\_44, NoodlelyBoi\_43, Onika\_42, Paschalis\_42, PhedwardCullen\_41, Phorgeous\_42, Phrancesco\_43, PierreOrion\_43, PiperSansNom\_43, Piperis\_43, Pulchra\_44, QuadZero\_23, Quhwah\_46, Ramiel05\_42, Savannah\_42, Schimmels22\_23, Scissor2024\_23, Scumberland\_44, Selwyn23\_44, Shotgun\_42, SirFrank\_42, Teng\_30, Tinyman4\_23, TwoBits\_22, Wardwill\_25, WestPM\_22, Wrackline\_34, Yeti\_43, Zayuliv\_23, Zepp\_24,

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

- 

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

- Abigail\_22, Aesir\_34, Albedo\_22, Albright\_22, Anakin\_35, AnnaLie\_23, AnnaSerena\_35, Annapurna\_35, Antuna\_29, Appa\_28, Arroyo\_23, Artiphact\_35, Avacadoman\_22, BabyDaisy\_23, BelmontSKP\_23, Bengal\_22, Benry\_27, Blett\_29, BubbaBear\_22, Burritobowl\_22, Bush\_29, Carrillo\_30, Cashington\_22, Chivey\_34, Cicada\_29, CookieDog\_29, CoolCookie\_35, Crestdrop\_34, CroZenni\_22, CupcakePrincess\_22, Cybele\_35, DannyDe\_34, Dauntless\_34, DickRichards\_22, Didgeridoo\_23, Doobus\_22, Dropshot\_28, Erudite\_34, Eula\_22, Finalfrontier\_23, FireCastle\_27, FreddieHg\_34, FuzzBuster\_49, Gilda\_35, Goodman\_28, Guzman\_30, Hager\_36, Haunter\_35, Hiddenleaf\_34, Htur\_27, IndiRoo\_27, IndyLu\_22, JDawG\_34, Jabb\_22, Jakelyne\_31, Jera\_28, JingleBells\_34, Johann\_28, Johnathan\_22, Jovita\_22, Karate\_34, Kate33\_22, Kate\_35, Kenzers\_22, Krampus\_35, Lahqtemish\_22, LimaBean\_22, Linayshia\_27, Losacky\_31, Lynlen\_22, MenE\_29, Milani\_28, Milomuff\_24, MortySmith\_33, MsUbiquitous\_22, NarutoRun\_35, Neptune\_35, Nicky22\_23, Olympi\_28, OverHedge\_35, PastaFagioli\_22, PermaG\_28, Pharpay\_35, PhigPhack\_23, PhillyJawn\_29, Phingu\_31, Phisb\_22, Phonegingi\_28, PhunaPhoke\_35, Pickles13\_28, Potty\_35, Poultruss\_34, QMacho\_23, Rachella\_35, Rasovi\_27, Rie18\_35, SBlackberry\_27, SansAfet\_22, SarBear\_22, SilentWarrior\_34, Slay\_22, Snakehole\_35, Softsoap\_21, Solea\_24, Sucha\_24, Swervy\_22, Tedro\_35, Tongui\_35, TukTuk\_22, TurboVicky\_27, Typher\_29, Violeta\_30, Warren\_29, Zanella\_27,

**Summary by start number:**

Start 12:

- Found in 36 of 171 ( 21.1% ) of genes in pham
- Manual Annotations of this start: 31 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir\_34 (EF), Anakin\_35 (EF), AnnaSerena\_35 (EF), Annapurna\_35 (EF), Artiphact\_35 (EF), Chivey\_34 (EF), CoolCookie\_35 (EF), Crestdrop\_34 (EF), Cybele\_35 (EF), DannyDe\_34 (EF), Dauntless\_34 (EF), Erudite\_34 (EF), FreddieHg\_34 (EF), Gilda\_35 (EF), Hager\_36 (EF), Haunter\_35 (EF), Hiddenleaf\_34 (EF), JDawG\_34 (EF), JingleBells\_34 (EF), Karate\_34 (EF), Kate\_35 (EF), Krampus\_35 (EF), MortySmith\_33 (EF), NarutoRun\_35 (EF), Neptune\_35 (EF), OverHedge\_35 (EF), Pharpay\_35 (EF), PhunaPhoke\_35 (EF), Potty\_35 (EF), Poultruss\_34 (EF), Rachella\_35 (EF), Rie18\_35 (EF), SilentWarrior\_34 (EF), Snakehole\_35 (EF), Tedro\_35 (EF), Tongui\_35 (EF),

Start 36:

- Found in 1 of 171 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CookieDog\_29 (GA),

Start 37:

- Found in 1 of 171 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phingu\_31 (GA),

Start 38:

- Found in 16 of 171 ( 9.4% ) of genes in pham
- Manual Annotations of this start: 9 of 135
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Antuna\_29 (GA), Appa\_28 (GA), Blett\_29 (GA), Bush\_29 (GA), Carrillo\_30 (GA), Dropshot\_28 (GA), Guzman\_30 (GA), Jakelyne\_31 (GA), Losacky\_31 (GA), MenE\_29 (GA), PhillyJawn\_29 (GA), Phoningji\_28 (GA), Pickles13\_28 (GA), Violeta\_30 (GA), Warren\_29 (GA),

Start 40:

- Found in 57 of 171 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 46 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antares\_43 (EC), BaronJohn\_24 (EA5), BrazzalePHS\_42 (EC), Busephilis\_42 (EC), CaptainRex\_23 (EA5), ClearAsMud\_45 (EC), Cranjis\_44 (EC), CrazyRich\_42 (EC), Crisis\_44 (EC), DelaGarza\_28 (GF), EarickHC\_43 (EC), Fulton\_23 (EA5), Ganandorf\_42 (EC), Gingerbug\_26 (GF), Glorp\_44 (EC), Greenlvy\_23 (EA5), Hasitha\_23 (EA5), HerculesXL\_23 (EA11), Hermeonysus\_42 (EC), Honeyfin\_44 (EC), Jefe\_43 (EC), Jollipop\_43 (EC), KaiHaiDragon\_43 (EC), Kowalski\_42 (EC), Lesiram\_29 (GF), Librie\_23 (EA5), LilTerminator\_24 (EA5), LittleFortune\_44 (EC), NoodlelyBoi\_43 (EC), Onika\_42 (EC), Paschalis\_42 (EC), PhedwardCullen\_41 (EC), Phorgeous\_42 (EC), Phrancesco\_43 (EC), PierreOrion\_43 (EC), PiperSansNom\_43 (EC), Piperis\_43 (EC), Pulchra\_44 (EC), QuadZero\_23 (EA5), Quhwah\_46 (EC), Ramiel05\_42 (EC), Savannah\_42 (EC), Schimmels22\_23 (EA11), Scissor2024\_23 (EA11), Scumberland\_44 (EC),

Selwyn23\_44 (EC), Shotgun\_42 (EC), SirFrank\_42 (EC), Teng\_30 (GF), Tinyman4\_23 (EA11), TwoBits\_22 (EA5), Wardwill\_25 (EA5), WestPM\_22 (EA11), Wrackline\_34 (GF), Yeti\_43 (EC), Zayuliv\_23 (EA5), Zepp\_24 (EA5),

Start 41:

- Found in 19 of 171 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 17 of 135
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Benry\_27 (EJ), Cicada\_29 (EJ), FireCastle\_27 (EJ), FuzzBuster\_49 (singleton), Goodman\_28 (EJ), Htur\_27 (EJ), IndiRoo\_27 (EJ), Jera\_28 (EJ), Johann\_28 (EJ), Linayshia\_27 (EJ), Milani\_28 (EJ), PermaG\_28 (EJ), Rasovi\_27 (EJ), SBlackberry\_27 (EJ), Sucha\_24 (EJ), TurboVicky\_27 (EJ), Typher\_29 (EJ), Zanella\_27 (EJ),

Start 42:

- Found in 7 of 171 ( 4.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Olympi\_28 (EJ),

Start 45:

- Found in 42 of 171 ( 24.6% ) of genes in pham
- Manual Annotations of this start: 32 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail\_22 (EB), Albedo\_22 (EB), Albright\_22 (EB), AnnaLie\_23 (EB), Arroyo\_23 (EB), Avocadoman\_22 (EB), BabyDaisy\_23 (EB), BelmontSKP\_23 (EB), Bengal\_22 (EB), BubbaBear\_22 (EB), Burritobowl\_22 (EB), Cashington\_22 (EB), CroZenni\_22 (EB), CupcakePrincess\_22 (EB), DickRichards\_22 (EB), Didgeridoo\_23 (EB), Doobus\_22 (EB), Eula\_22 (EB), Finalfrontier\_23 (EB), IndyLu\_22 (EB), Jabb\_22 (EB), Johnathan\_22 (EB), Jovita\_22 (EB), Kate33\_22 (EB), Kenzers\_22 (EB), Lahqtemish\_22 (EB), LimaBean\_22 (EB), Lynlen\_22 (EB), Milomuff\_24 (EB), MsUbiquitous\_22 (EB), Nicky22\_23 (EB), PastaFagioli\_22 (EB), PhigPhack\_23 (EB), Phisb\_22 (EB), QMacho\_23 (EB), SansAfet\_22 (EB), SarBear\_22 (EB), Slay\_22 (EB), Softsoap\_21 (EB), Solea\_24 (EB), Swervy\_22 (EB), TukTuk\_22 (EB),

### **Summary by clusters:**

There are 9 clusters represented in this pham: singleton, EA11, EJ, EF, EC, EB, GF, GA, EA5,

Info for manual annotations of cluster EA11:

- Start number 40 was manually annotated 4 times for cluster EA11.

Info for manual annotations of cluster EA5:

- Start number 40 was manually annotated 8 times for cluster EA5.

Info for manual annotations of cluster EB:

- Start number 45 was manually annotated 32 times for cluster EB.

Info for manual annotations of cluster EC:

- Start number 40 was manually annotated 31 times for cluster EC.

Info for manual annotations of cluster EF:

- Start number 12 was manually annotated 31 times for cluster EF.

Info for manual annotations of cluster EJ:

- Start number 41 was manually annotated 16 times for cluster EJ.

Info for manual annotations of cluster GA:

- Start number 38 was manually annotated 9 times for cluster GA.

Info for manual annotations of cluster GF:

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

### **Gene Information:**

Gene: Abigail\_22 Start: 18166, Stop: 18915, Start Num: 45

Candidate Starts for Abigail\_22:

(Start: 45 @18166 has 32 MA's), (51, 18208), (59, 18292), (68, 18460), (70, 18484), (77, 18640), (82, 18673), (83, 18682), (102, 18799), (104, 18811), (124, 18901), (126, 18910),

Gene: Aesir\_34 Start: 22370, Stop: 23494, Start Num: 12

Candidate Starts for Aesir\_34:

(8, 22271), (9, 22289), (Start: 12 @22370 has 31 MA's), (16, 22472), (44, 22673), (62, 22844), (65, 22883), (67, 22970), (75, 23147), (78, 23153), (92, 23249), (101, 23297), (105, 23315), (109, 23336), (115, 23381), (127, 23420),

Gene: Albedo\_22 Start: 18037, Stop: 18792, Start Num: 45

Candidate Starts for Albedo\_22:

(43, 18001), (Start: 45 @18037 has 32 MA's), (51, 18079), (59, 18163), (68, 18331), (70, 18355), (77, 18514), (82, 18547), (83, 18556), (102, 18673), (123, 18775),

Gene: Albright\_22 Start: 17924, Stop: 18673, Start Num: 45

Candidate Starts for Albright\_22:

(13, 17600), (23, 17750), (Start: 45 @17924 has 32 MA's), (51, 17966), (59, 18050), (68, 18218), (70, 18242), (77, 18398), (82, 18431), (83, 18440), (102, 18557), (104, 18569), (124, 18659), (126, 18668),

Gene: Anakin\_35 Start: 22628, Stop: 23818, Start Num: 12

Candidate Starts for Anakin\_35:

(8, 22529), (Start: 12 @22628 has 31 MA's), (16, 22730), (17, 22736), (44, 22946), (62, 23117), (63, 23132), (67, 23243), (74, 23372), (76, 23429), (78, 23435), (86, 23489), (109, 23630), (112, 23651), (118, 23690),

Gene: AnnaLie\_23 Start: 18353, Stop: 19102, Start Num: 45

Candidate Starts for AnnaLie\_23:

(13, 18029), (Start: 45 @18353 has 32 MA's), (50, 18389), (51, 18395), (59, 18479), (68, 18647), (70, 18671), (77, 18827), (82, 18860), (83, 18869), (84, 18872), (102, 18986), (104, 18998), (124, 19088), (126, 19097),

Gene: AnnaSerena\_35 Start: 22639, Stop: 23853, Start Num: 12

Candidate Starts for AnnaSerena\_35:

(8, 22540), (Start: 12 @22639 has 31 MA's), (16, 22741), (17, 22747), (44, 22957), (62, 23128), (63, 23143), (67, 23254), (74, 23383), (76, 23440), (78, 23446), (86, 23500), (109, 23641), (112, 23662),



(118, 23701),

Gene: Annapurna\_35 Start: 21832, Stop: 22956, Start Num: 12

Candidate Starts for Annapurna\_35:

(9, 21751), (Start: 12 @21832 has 31 MA's), (16, 21934), (44, 22135), (62, 22306), (65, 22345), (67, 22432), (75, 22609), (78, 22615), (92, 22711), (101, 22759), (105, 22777), (109, 22798), (115, 22843), (127, 22882),

Gene: Antares\_43 Start: 30215, Stop: 31120, Start Num: 40

Candidate Starts for Antares\_43:

(Start: 40 @30215 has 46 MA's), (44, 30260), (46, 30278), (51, 30311), (60, 30410), (61, 30425), (62, 30437), (65, 30476), (69, 30572), (71, 30614), (75, 30731), (92, 30833), (94, 30854), (104, 30899), (107, 30917), (110, 30926), (112, 30941), (135, 31067),

Gene: Antuna\_29 Start: 18621, Stop: 19514, Start Num: 38

Candidate Starts for Antuna\_29:

(30, 18588), (Start: 38 @18621 has 9 MA's), (44, 18669), (56, 18786), (57, 18789), (58, 18804), (67, 18972), (76, 19152), (92, 19251), (98, 19281), (108, 19335), (112, 19356), (133, 19482),

Gene: Appa\_28 Start: 18486, Stop: 19379, Start Num: 38

Candidate Starts for Appa\_28:

(Start: 38 @18486 has 9 MA's), (44, 18534), (56, 18651), (57, 18654), (58, 18669), (67, 18837), (76, 19017), (92, 19116), (98, 19146), (108, 19200), (112, 19221), (133, 19347),

Gene: Arroyo\_23 Start: 18553, Stop: 19302, Start Num: 45

Candidate Starts for Arroyo\_23:

(22, 18376), (Start: 45 @18553 has 32 MA's), (50, 18589), (59, 18679), (68, 18847), (70, 18871), (77, 19027), (82, 19060), (83, 19069), (84, 19072), (102, 19186), (104, 19198), (124, 19288), (126, 19297),

Gene: Artiphact\_35 Start: 22629, Stop: 23843, Start Num: 12

Candidate Starts for Artiphact\_35:

(8, 22530), (Start: 12 @22629 has 31 MA's), (16, 22731), (17, 22737), (44, 22947), (62, 23118), (63, 23133), (67, 23244), (74, 23373), (76, 23430), (78, 23436), (86, 23490), (109, 23631), (112, 23652), (118, 23691),

Gene: Avocadoman\_22 Start: 18108, Stop: 18857, Start Num: 45

Candidate Starts for Avocadoman\_22:

(3, 17457), (4, 17475), (6, 17640), (Start: 45 @18108 has 32 MA's), (51, 18150), (59, 18234), (68, 18402), (70, 18426), (77, 18582), (82, 18615), (83, 18624), (102, 18741), (104, 18753), (124, 18843), (126, 18852),

Gene: BabyDaisy\_23 Start: 18169, Stop: 18918, Start Num: 45

Candidate Starts for BabyDaisy\_23:

(Start: 45 @18169 has 32 MA's), (51, 18211), (68, 18463), (70, 18487), (77, 18643), (82, 18676), (83, 18685), (84, 18688), (102, 18802), (104, 18814), (124, 18904), (126, 18913),

Gene: BaronJohn\_24 Start: 17331, Stop: 18200, Start Num: 40

Candidate Starts for BaronJohn\_24:

(Start: 40 @17331 has 46 MA's), (44, 17376), (52, 17433), (62, 17553), (76, 17847), (92, 17943), (104, 18024), (107, 18042),

Gene: BelmontSKP\_23 Start: 18353, Stop: 19102, Start Num: 45

Candidate Starts for BelmontSKP\_23:

(13, 18029), (Start: 45 @18353 has 32 MA's), (50, 18389), (51, 18395), (59, 18479), (68, 18647), (70, 18671), (77, 18827), (82, 18860), (83, 18869), (84, 18872), (102, 18986), (104, 18998), (124, 19088), (126, 19097),

Gene: Bengal\_22 Start: 17941, Stop: 18690, Start Num: 45

Candidate Starts for Bengal\_22:

(Start: 45 @17941 has 32 MA's), (51, 17983), (59, 18067), (68, 18235), (70, 18259), (77, 18415), (82, 18448), (83, 18457), (102, 18574), (104, 18586), (124, 18676), (126, 18685),

Gene: Benry\_27 Start: 19174, Stop: 20046, Start Num: 41

Candidate Starts for Benry\_27:

(33, 19132), (Start: 41 @19174 has 17 MA's), (44, 19219), (64, 19423), (66, 19474), (73, 19609), (75, 19678), (90, 19759), (93, 19801), (100, 19837), (113, 19924),

Gene: Blett\_29 Start: 18633, Stop: 19526, Start Num: 38

Candidate Starts for Blett\_29:

(Start: 38 @18633 has 9 MA's), (44, 18681), (56, 18798), (57, 18801), (58, 18816), (60, 18831), (67, 18984), (76, 19164), (92, 19263), (98, 19293), (108, 19347), (112, 19368), (133, 19494),

Gene: BrazzalePHS\_42 Start: 30010, Stop: 30915, Start Num: 40

Candidate Starts for BrazzalePHS\_42:

(Start: 40 @30010 has 46 MA's), (44, 30055), (46, 30073), (51, 30106), (60, 30205), (61, 30220), (62, 30232), (65, 30271), (69, 30367), (71, 30409), (75, 30526), (92, 30628), (94, 30649), (104, 30694), (107, 30712), (110, 30721), (112, 30736), (135, 30862),

Gene: BubbaBear\_22 Start: 18037, Stop: 18792, Start Num: 45

Candidate Starts for BubbaBear\_22:

(43, 18001), (Start: 45 @18037 has 32 MA's), (51, 18079), (59, 18163), (68, 18331), (70, 18355), (77, 18514), (82, 18547), (83, 18556), (102, 18673), (123, 18775),

Gene: Burritobowl\_22 Start: 18109, Stop: 18858, Start Num: 45

Candidate Starts for Burritobowl\_22:

(Start: 45 @18109 has 32 MA's), (50, 18145), (51, 18151), (59, 18235), (68, 18403), (70, 18427), (77, 18583), (82, 18616), (83, 18625), (84, 18628), (102, 18742), (104, 18754), (124, 18844), (126, 18853),

Gene: Busephilis\_42 Start: 29951, Stop: 30856, Start Num: 40

Candidate Starts for Busephilis\_42:

(Start: 40 @29951 has 46 MA's), (44, 29996), (46, 30014), (51, 30047), (60, 30146), (62, 30173), (65, 30212), (69, 30308), (71, 30350), (75, 30467), (92, 30569), (94, 30590), (104, 30635), (107, 30653), (110, 30662), (112, 30677), (135, 30803),

Gene: Bush\_29 Start: 18611, Stop: 19504, Start Num: 38

Candidate Starts for Bush\_29:

(30, 18578), (Start: 38 @18611 has 9 MA's), (44, 18659), (56, 18776), (57, 18779), (58, 18794), (67, 18962), (76, 19142), (92, 19241), (98, 19271), (108, 19325), (112, 19346), (133, 19472),

Gene: CaptainRex\_23 Start: 16759, Stop: 17634, Start Num: 40

Candidate Starts for CaptainRex\_23:

(Start: 40 @16759 has 46 MA's), (44, 16804), (49, 16846), (51, 16855), (52, 16861), (62, 16981), (64, 17014), (76, 17275), (92, 17371), (104, 17452),

Gene: Carrillo\_30 Start: 18590, Stop: 19483, Start Num: 38

Candidate Starts for Carrillo\_30:

(30, 18557), (Start: 38 @18590 has 9 MA's), (44, 18638), (56, 18755), (57, 18758), (58, 18773), (67, 18941), (76, 19121), (92, 19220), (98, 19250), (108, 19304), (112, 19325), (133, 19451),

Gene: Cashington\_22 Start: 17958, Stop: 18707, Start Num: 45

Candidate Starts for Cashington\_22:

(13, 17634), (23, 17784), (Start: 45 @17958 has 32 MA's), (51, 18000), (59, 18084), (68, 18252), (70, 18276), (77, 18432), (82, 18465), (83, 18474), (102, 18591), (104, 18603), (124, 18693), (126, 18702),

Gene: Chivey\_34 Start: 21781, Stop: 22905, Start Num: 12

Candidate Starts for Chivey\_34:

(9, 21700), (Start: 12 @21781 has 31 MA's), (16, 21883), (44, 22084), (62, 22255), (65, 22294), (67, 22381), (75, 22558), (78, 22564), (92, 22660), (101, 22708), (105, 22726), (109, 22747), (115, 22792), (127, 22831),

Gene: Cicada\_29 Start: 20694, Stop: 21569, Start Num: 41

Candidate Starts for Cicada\_29:

(Start: 41 @20694 has 17 MA's), (44, 20739), (75, 21204), (84, 21246), (88, 21279), (92, 21306), (104, 21372), (109, 21393), (112, 21414), (127, 21477),

Gene: ClearAsMud\_45 Start: 30109, Stop: 30996, Start Num: 40

Candidate Starts for ClearAsMud\_45:

(25, 30037), (Start: 40 @30109 has 46 MA's), (44, 30154), (46, 30172), (51, 30205), (61, 30319), (65, 30370), (69, 30466), (71, 30508), (75, 30619), (77, 30625), (80, 30634), (92, 30721), (94, 30742), (104, 30787), (107, 30805), (110, 30814),

Gene: CookieDog\_29 Start: 18602, Stop: 19501, Start Num: 36

Candidate Starts for CookieDog\_29:

(36, 18602), (Start: 38 @18608 has 9 MA's), (44, 18656), (56, 18773), (57, 18776), (58, 18791), (67, 18959), (76, 19139), (92, 19238), (98, 19268), (108, 19322), (112, 19343), (133, 19469),

Gene: CoolCookie\_35 Start: 22635, Stop: 23849, Start Num: 12

Candidate Starts for CoolCookie\_35:

(Start: 12 @22635 has 31 MA's), (16, 22737), (17, 22743), (44, 22953), (62, 23124), (63, 23139), (67, 23250), (74, 23379), (76, 23436), (78, 23442), (86, 23496), (109, 23637), (112, 23658), (118, 23697),

Gene: Cranjjs\_44 Start: 30170, Stop: 31075, Start Num: 40

Candidate Starts for Cranjjs\_44:

(Start: 40 @30170 has 46 MA's), (44, 30215), (46, 30233), (51, 30266), (60, 30365), (62, 30392), (65, 30431), (69, 30527), (71, 30569), (75, 30686), (92, 30788), (94, 30809), (104, 30854), (107, 30872), (110, 30881), (112, 30896), (135, 31022),

Gene: CrazyRich\_42 Start: 29979, Stop: 30884, Start Num: 40

Candidate Starts for CrazyRich\_42:

(Start: 40 @29979 has 46 MA's), (44, 30024), (46, 30042), (51, 30075), (60, 30174), (62, 30201), (65, 30240), (69, 30336), (71, 30378), (75, 30495), (92, 30597), (94, 30618), (104, 30663), (107, 30681), (110, 30690), (112, 30705), (135, 30831),

Gene: Crestdrop\_34 Start: 21695, Stop: 22819, Start Num: 12

Candidate Starts for Crestdrop\_34:

(9, 21614), (Start: 12 @21695 has 31 MA's), (16, 21797), (44, 21998), (62, 22169), (65, 22208), (67, 22295), (75, 22472), (78, 22478), (92, 22574), (101, 22622), (105, 22640), (109, 22661), (115, 22706), (127, 22745),

Gene: Crisis\_44 Start: 29970, Stop: 30875, Start Num: 40

Candidate Starts for Crisis\_44:

(Start: 40 @29970 has 46 MA's), (44, 30015), (46, 30033), (51, 30066), (60, 30165), (62, 30192), (65, 30231), (69, 30327), (71, 30369), (75, 30486), (92, 30588), (94, 30609), (104, 30654), (107, 30672), (110, 30681), (112, 30696), (135, 30822),

Gene: CroZenni\_22 Start: 17944, Stop: 18696, Start Num: 45

Candidate Starts for CroZenni\_22:

(13, 17620), (43, 17908), (Start: 45 @17944 has 32 MA's), (51, 17986), (59, 18070), (68, 18238), (70, 18262), (77, 18421), (82, 18454), (83, 18463), (102, 18580), (104, 18592), (124, 18682), (126, 18691),

Gene: CupcakePrincess\_22 Start: 18064, Stop: 18816, Start Num: 45

Candidate Starts for CupcakePrincess\_22:

(43, 18028), (Start: 45 @18064 has 32 MA's), (51, 18106), (68, 18358), (70, 18382), (77, 18541), (82, 18574), (84, 18586), (119, 18781), (123, 18799),

Gene: Cybele\_35 Start: 22605, Stop: 23819, Start Num: 12

Candidate Starts for Cybele\_35:

(8, 22506), (Start: 12 @22605 has 31 MA's), (16, 22707), (17, 22713), (44, 22923), (62, 23094), (63, 23109), (67, 23220), (74, 23349), (76, 23406), (78, 23412), (86, 23466), (109, 23607), (112, 23628), (118, 23667),

Gene: DannyDe\_34 Start: 21778, Stop: 22911, Start Num: 12

Candidate Starts for DannyDe\_34:

(9, 21697), (Start: 12 @21778 has 31 MA's), (16, 21880), (44, 22081), (62, 22252), (65, 22291), (67, 22378), (75, 22555), (78, 22561), (92, 22657), (101, 22705), (105, 22723), (109, 22744), (115, 22789), (127, 22828),

Gene: Dauntless\_34 Start: 22338, Stop: 23462, Start Num: 12

Candidate Starts for Dauntless\_34:

(7, 22227), (Start: 12 @22338 has 31 MA's), (16, 22440), (17, 22446), (18, 22452), (44, 22641), (62, 22812), (65, 22851), (67, 22938), (75, 23115), (78, 23121), (92, 23217), (101, 23265), (105, 23283), (109, 23304), (115, 23349), (127, 23388),

Gene: DelaGarza\_28 Start: 19055, Stop: 19942, Start Num: 40

Candidate Starts for DelaGarza\_28:

(21, 18953), (27, 18995), (39, 19052), (Start: 40 @19055 has 46 MA's), (44, 19100), (51, 19151), (54, 19163), (65, 19316), (66, 19361), (68, 19403), (71, 19454), (72, 19457), (76, 19577), (85, 19619), (88, 19646), (92, 19673), (104, 19739), (107, 19757), (109, 19760), (112, 19781), (118, 19817), (134, 19907),

Gene: DickRichards\_22 Start: 18439, Stop: 19188, Start Num: 45

Candidate Starts for DickRichards\_22:

(Start: 45 @18439 has 32 MA's), (50, 18475), (51, 18481), (59, 18565), (68, 18733), (70, 18757), (77, 18913), (82, 18946), (83, 18955), (84, 18958), (102, 19072), (104, 19084), (124, 19174), (126, 19183),

Gene: Didgeridoo\_23 Start: 18171, Stop: 18920, Start Num: 45

Candidate Starts for Didgeridoo\_23:

(Start: 45 @18171 has 32 MA's), (51, 18213), (59, 18297), (68, 18465), (70, 18489), (77, 18645), (82, 18678), (83, 18687), (84, 18690), (102, 18804), (104, 18816), (124, 18906), (126, 18915),

Gene: Doobus\_22 Start: 18275, Stop: 19024, Start Num: 45

Candidate Starts for Doobus\_22:

(13, 17951), (23, 18101), (Start: 45 @18275 has 32 MA's), (51, 18317), (59, 18401), (68, 18569), (70, 18593), (77, 18749), (82, 18782), (83, 18791), (102, 18908), (104, 18920), (124, 19010), (126, 19019),

Gene: Dropshot\_28 Start: 18483, Stop: 19376, Start Num: 38

Candidate Starts for Dropshot\_28:

(30, 18450), (Start: 38 @18483 has 9 MA's), (44, 18531), (56, 18648), (57, 18651), (58, 18666), (67, 18834), (76, 19014), (92, 19113), (98, 19143), (108, 19197), (112, 19218), (133, 19344),

Gene: EarickHC\_43 Start: 29893, Stop: 30798, Start Num: 40

Candidate Starts for EarickHC\_43:

(Start: 40 @29893 has 46 MA's), (44, 29938), (46, 29956), (51, 29989), (60, 30088), (62, 30115), (65, 30154), (69, 30250), (71, 30292), (75, 30409), (92, 30511), (94, 30532), (104, 30577), (107, 30595), (110, 30604), (112, 30619), (135, 30745),

Gene: Erudite\_34 Start: 22338, Stop: 23462, Start Num: 12

Candidate Starts for Erudite\_34:

(7, 22227), (Start: 12 @22338 has 31 MA's), (16, 22440), (17, 22446), (18, 22452), (44, 22641), (62, 22812), (65, 22851), (67, 22938), (75, 23115), (78, 23121), (92, 23217), (101, 23265), (105, 23283), (109, 23304), (115, 23349), (127, 23388),

Gene: Eula\_22 Start: 18025, Stop: 18777, Start Num: 45

Candidate Starts for Eula\_22:

(43, 17989), (Start: 45 @18025 has 32 MA's), (51, 18067), (68, 18319), (70, 18343), (77, 18502), (82, 18535), (84, 18547), (119, 18742), (123, 18760),

Gene: Finalfrontier\_23 Start: 18538, Stop: 19284, Start Num: 45

Candidate Starts for Finalfrontier\_23:

(Start: 45 @18538 has 32 MA's), (51, 18580), (68, 18832), (70, 18856), (74, 18955), (77, 19012), (82, 19045), (83, 19054), (84, 19057), (104, 19183), (117, 19246),

Gene: FireCastle\_27 Start: 20765, Stop: 21634, Start Num: 41

Candidate Starts for FireCastle\_27:

(24, 20663), (26, 20684), (29, 20696), (33, 20723), (Start: 41 @20765 has 17 MA's), (44, 20810), (48, 20843), (64, 21014), (66, 21065), (73, 21200), (75, 21269), (87, 21335), (93, 21392), (97, 21401), (107, 21482), (113, 21515), (121, 21557),

Gene: FreddieHg\_34 Start: 21797, Stop: 22921, Start Num: 12

Candidate Starts for FreddieHg\_34:

(9, 21716), (Start: 12 @21797 has 31 MA's), (16, 21899), (44, 22100), (62, 22271), (65, 22310), (67, 22397), (75, 22574), (78, 22580), (92, 22676), (101, 22724), (105, 22742), (109, 22763), (115, 22808), (127, 22847),

Gene: Fulton\_23 Start: 16741, Stop: 17616, Start Num: 40

Candidate Starts for Fulton\_23:

(Start: 40 @16741 has 46 MA's), (44, 16786), (49, 16828), (51, 16837), (52, 16843), (62, 16963), (64, 16996), (76, 17257), (92, 17353), (104, 17434),

Gene: FuzzBuster\_49 Start: 30502, Stop: 31455, Start Num: 41

Candidate Starts for FuzzBuster\_49:

(Start: 41 @30502 has 17 MA's), (44, 30547), (47, 30577), (66, 30808), (71, 30901), (73, 30946), (76, 31021), (81, 31036), (89, 31096), (106, 31219), (111, 31240), (129, 31354),

Gene: Ganandorf\_42 Start: 30032, Stop: 30937, Start Num: 40

Candidate Starts for Ganandorf\_42:

(Start: 40 @30032 has 46 MA's), (44, 30077), (46, 30095), (51, 30128), (60, 30227), (62, 30254), (65, 30293), (69, 30389), (71, 30431), (75, 30548), (92, 30650), (94, 30671), (104, 30716), (107, 30734), (110, 30743), (112, 30758), (135, 30884),

Gene: Gilda\_35 Start: 22629, Stop: 23843, Start Num: 12

Candidate Starts for Gilda\_35:

(8, 22530), (Start: 12 @22629 has 31 MA's), (16, 22731), (17, 22737), (44, 22947), (62, 23118), (65, 23157), (67, 23244), (74, 23373), (76, 23430), (78, 23436), (86, 23490), (109, 23631), (112, 23652), (118, 23691),

Gene: Gingerbug\_26 Start: 19185, Stop: 20060, Start Num: 40

Candidate Starts for Gingerbug\_26:

(Start: 40 @19185 has 46 MA's), (44, 19230), (51, 19281), (54, 19293), (66, 19491), (68, 19533), (71, 19584), (72, 19587), (75, 19701), (84, 19743), (88, 19776), (92, 19803), (104, 19869), (109, 19890), (132, 20016),

Gene: Glorp\_44 Start: 30033, Stop: 30938, Start Num: 40

Candidate Starts for Glorp\_44:

(Start: 40 @30033 has 46 MA's), (44, 30078), (46, 30096), (51, 30129), (60, 30228), (62, 30255), (65, 30294), (67, 30372), (71, 30432), (75, 30549), (80, 30564), (92, 30651), (94, 30672), (98, 30681), (104, 30717), (110, 30744), (112, 30759), (128, 30828), (135, 30885),

Gene: Goodman\_28 Start: 20607, Stop: 21482, Start Num: 41

Candidate Starts for Goodman\_28:

(Start: 41 @20607 has 17 MA's), (42, 20619), (44, 20652), (75, 21117), (84, 21159), (88, 21192), (92, 21219), (104, 21285), (109, 21306), (112, 21327), (127, 21390),

Gene: Greenlvy\_23 Start: 17333, Stop: 18202, Start Num: 40

Candidate Starts for Greenlvy\_23:

(Start: 40 @17333 has 46 MA's), (44, 17378), (52, 17435), (62, 17555), (76, 17849), (92, 17945), (104, 18026), (107, 18044),

Gene: Guzman\_30 Start: 18892, Stop: 19785, Start Num: 38

Candidate Starts for Guzman\_30:

(Start: 38 @18892 has 9 MA's), (44, 18940), (56, 19057), (57, 19060), (58, 19075), (67, 19243), (76, 19423), (92, 19522), (98, 19552), (108, 19606), (112, 19627), (133, 19753),

Gene: Hager\_36 Start: 22192, Stop: 23385, Start Num: 12

Candidate Starts for Hager\_36:

(10, 22147), (Start: 12 @22192 has 31 MA's), (16, 22294), (17, 22300), (44, 22510), (63, 22696), (67, 22807), (76, 22993), (78, 22999), (86, 23053), (109, 23194), (112, 23215), (118, 23254), (131, 23329),

Gene: Hasitha\_23 Start: 16759, Stop: 17628, Start Num: 40

Candidate Starts for Hasitha\_23:

(Start: 40 @16759 has 46 MA's), (44, 16804), (52, 16861), (62, 16981), (64, 17014), (76, 17275), (92, 17371), (104, 17452), (107, 17470),

Gene: Haunter\_35 Start: 22042, Stop: 23235, Start Num: 12

Candidate Starts for Haunter\_35:

(8, 21943), (Start: 12 @22042 has 31 MA's), (16, 22144), (17, 22150), (44, 22360), (62, 22531), (63, 22546), (67, 22657), (74, 22786), (76, 22843), (78, 22849), (86, 22903), (109, 23044), (112, 23065), (118, 23104),

Gene: HerculesXL\_23 Start: 16850, Stop: 17716, Start Num: 40

Candidate Starts for HerculesXL\_23:

(Start: 40 @16850 has 46 MA's), (44, 16904), (51, 16955), (53, 16964), (58, 17039), (62, 17081), (64, 17114), (74, 17324), (76, 17375), (84, 17411), (88, 17444), (92, 17471), (112, 17591),

Gene: Hermeonysus\_42 Start: 29899, Stop: 30804, Start Num: 40

Candidate Starts for Hermeonysus\_42:

(Start: 40 @29899 has 46 MA's), (44, 29944), (46, 29962), (51, 29995), (60, 30094), (62, 30121), (65, 30160), (69, 30256), (71, 30298), (75, 30415), (92, 30517), (94, 30538), (104, 30583), (107, 30601), (110, 30610), (112, 30625),

Gene: Hiddenleaf\_34 Start: 21781, Stop: 22905, Start Num: 12

Candidate Starts for Hiddenleaf\_34:

(9, 21700), (Start: 12 @21781 has 31 MA's), (16, 21883), (44, 22084), (62, 22255), (65, 22294), (67, 22381), (75, 22558), (78, 22564), (92, 22660), (101, 22708), (105, 22726), (109, 22747), (115, 22792), (127, 22831),

Gene: Honeyfin\_44 Start: 30220, Stop: 31125, Start Num: 40

Candidate Starts for Honeyfin\_44:

(31, 30193), (Start: 40 @30220 has 46 MA's), (44, 30265), (46, 30283), (51, 30316), (60, 30415), (62, 30442), (65, 30481), (67, 30559), (71, 30619), (75, 30736), (80, 30751), (92, 30838), (94, 30859), (98, 30868), (104, 30904), (107, 30922), (110, 30931), (112, 30946), (128, 31015), (135, 31072),

Gene: Htur\_27 Start: 20662, Stop: 21537, Start Num: 41

Candidate Starts for Htur\_27:

(Start: 41 @20662 has 17 MA's), (44, 20707), (53, 20767), (76, 21178), (84, 21214), (92, 21274), (107, 21373),

Gene: IndiRoo\_27 Start: 19199, Stop: 20071, Start Num: 41

Candidate Starts for IndiRoo\_27:

(26, 19103), (33, 19142), (Start: 41 @19199 has 17 MA's), (42, 19211), (44, 19244), (51, 19295), (55, 19340), (60, 19388), (66, 19499), (68, 19538), (73, 19634), (75, 19703), (87, 19769), (93, 19826), (100, 19862), (113, 19949),

Gene: IndyLu\_22 Start: 17993, Stop: 18739, Start Num: 45

Candidate Starts for IndyLu\_22:

(Start: 45 @17993 has 32 MA's), (51, 18035), (68, 18287), (70, 18311), (74, 18410), (77, 18467), (82, 18500), (83, 18509), (84, 18512), (104, 18638), (117, 18701),

Gene: JDawG\_34 Start: 22365, Stop: 23489, Start Num: 12

Candidate Starts for JDawG\_34:

(8, 22266), (9, 22284), (Start: 12 @22365 has 31 MA's), (16, 22467), (44, 22668), (62, 22839), (65, 22878), (67, 22965), (75, 23142), (78, 23148), (92, 23244), (101, 23292), (105, 23310), (109, 23331), (115, 23376), (127, 23415),

Gene: Jabb\_22 Start: 18064, Stop: 18816, Start Num: 45

Candidate Starts for Jabb\_22:

(43, 18028), (Start: 45 @18064 has 32 MA's), (51, 18106), (68, 18358), (70, 18382), (77, 18541), (82, 18574), (84, 18586), (119, 18781), (123, 18799),

Gene: Jakelyne\_31 Start: 18699, Stop: 19592, Start Num: 38

Candidate Starts for Jakelyne\_31:

(Start: 38 @18699 has 9 MA's), (44, 18747), (56, 18864), (57, 18867), (58, 18882), (67, 19050), (76, 19230), (92, 19329), (98, 19359), (108, 19413), (112, 19434), (133, 19560),

Gene: Jefe\_43 Start: 29957, Stop: 30862, Start Num: 40

Candidate Starts for Jefe\_43:

(Start: 40 @29957 has 46 MA's), (44, 30002), (46, 30020), (51, 30053), (60, 30152), (62, 30179), (65, 30218), (67, 30296), (71, 30356), (75, 30473), (80, 30488), (92, 30575), (94, 30596), (98, 30605), (104, 30641), (107, 30659), (110, 30668), (112, 30683), (128, 30752), (135, 30809),

Gene: Jera\_28 Start: 19719, Stop: 20600, Start Num: 41

Candidate Starts for Jera\_28:

(Start: 41 @19719 has 17 MA's), (44, 19764), (53, 19824), (60, 19908), (75, 20232), (77, 20238), (84, 20274), (88, 20307), (91, 20322), (104, 20400), (109, 20421), (110, 20427), (112, 20442), (120, 20481), (127, 20505), (133, 20556),

Gene: JingleBells\_34 Start: 21902, Stop: 23026, Start Num: 12

Candidate Starts for JingleBells\_34:

(7, 21791), (Start: 12 @21902 has 31 MA's), (16, 22004), (17, 22010), (18, 22016), (44, 22205), (62, 22376), (63, 22391), (67, 22502), (75, 22679), (78, 22685), (92, 22781), (101, 22829), (105, 22847), (109, 22868), (115, 22913), (127, 22952),

Gene: Johann\_28 Start: 20607, Stop: 21482, Start Num: 41

Candidate Starts for Johann\_28:

(Start: 41 @20607 has 17 MA's), (42, 20619), (44, 20652), (75, 21117), (84, 21159), (88, 21192), (92, 21219), (104, 21285), (109, 21306), (112, 21327), (127, 21390),

Gene: Johnathan\_22 Start: 18048, Stop: 18797, Start Num: 45

Candidate Starts for Johnathan\_22:

(13, 17724), (23, 17874), (Start: 45 @18048 has 32 MA's), (51, 18090), (59, 18174), (68, 18342), (70, 18366), (77, 18522), (82, 18555), (83, 18564), (102, 18681), (104, 18693), (124, 18783), (126, 18792),

Gene: Jollipop\_43 Start: 30296, Stop: 31201, Start Num: 40

Candidate Starts for Jollipop\_43:

(Start: 40 @30296 has 46 MA's), (44, 30341), (46, 30359), (51, 30392), (60, 30491), (62, 30518), (65, 30557), (69, 30653), (71, 30695), (75, 30812), (92, 30914), (94, 30935), (104, 30980), (107, 30998), (110, 31007), (112, 31022), (135, 31148),

Gene: Jovita\_22 Start: 18129, Stop: 18881, Start Num: 45

Candidate Starts for Jovita\_22:

(43, 18093), (Start: 45 @18129 has 32 MA's), (51, 18171), (68, 18423), (70, 18447), (77, 18606), (82, 18639), (84, 18651), (119, 18846), (123, 18864),

Gene: KaiHaiDragon\_43 Start: 29893, Stop: 30798, Start Num: 40

Candidate Starts for KaiHaiDragon\_43:

(Start: 40 @29893 has 46 MA's), (44, 29938), (46, 29956), (51, 29989), (60, 30088), (62, 30115), (65, 30154), (69, 30250), (71, 30292), (75, 30409), (92, 30511), (94, 30532), (104, 30577), (107, 30595), (110, 30604), (112, 30619), (135, 30745),

Gene: Karate\_34 Start: 22660, Stop: 23841, Start Num: 12

Candidate Starts for Karate\_34:

(11, 22639), (Start: 12 @22660 has 31 MA's), (16, 22762), (17, 22768), (28, 22843), (34, 22888), (44, 22966), (63, 23152), (67, 23263), (76, 23449), (78, 23455), (86, 23509), (112, 23671), (118, 23710), (122, 23731),



Gene: Kate\_35 Start: 22637, Stop: 23851, Start Num: 12

Candidate Starts for Kate\_35:

(8, 22538), (Start: 12 @22637 has 31 MA's), (16, 22739), (17, 22745), (44, 22955), (62, 23126), (63, 23141), (67, 23252), (74, 23381), (76, 23438), (78, 23444), (86, 23498), (109, 23639), (112, 23660), (118, 23699),

Gene: Kate33\_22 Start: 17995, Stop: 18741, Start Num: 45

Candidate Starts for Kate33\_22:

(Start: 45 @17995 has 32 MA's), (51, 18037), (68, 18289), (70, 18313), (74, 18412), (77, 18469), (82, 18502), (83, 18511), (84, 18514), (104, 18640), (117, 18703),

Gene: Kenzers\_22 Start: 18012, Stop: 18767, Start Num: 45

Candidate Starts for Kenzers\_22:

(13, 17688), (32, 17898), (43, 17976), (Start: 45 @18012 has 32 MA's), (51, 18054), (59, 18138), (68, 18306), (70, 18330), (77, 18489), (82, 18522), (83, 18531), (102, 18648), (117, 18723), (123, 18750),

Gene: Kowalski\_42 Start: 30006, Stop: 30911, Start Num: 40

Candidate Starts for Kowalski\_42:

(Start: 40 @30006 has 46 MA's), (44, 30051), (46, 30069), (51, 30102), (60, 30201), (62, 30228), (65, 30267), (69, 30363), (71, 30405), (75, 30522), (92, 30624), (94, 30645), (104, 30690), (107, 30708), (110, 30717), (112, 30732), (135, 30858),

Gene: Krampus\_35 Start: 22637, Stop: 23851, Start Num: 12

Candidate Starts for Krampus\_35:

(8, 22538), (Start: 12 @22637 has 31 MA's), (16, 22739), (17, 22745), (44, 22955), (62, 23126), (63, 23141), (67, 23252), (74, 23381), (76, 23438), (78, 23444), (86, 23498), (109, 23639), (112, 23660), (118, 23699),

Gene: Lahqtemish\_22 Start: 18041, Stop: 18790, Start Num: 45

Candidate Starts for Lahqtemish\_22:

(Start: 45 @18041 has 32 MA's), (51, 18083), (59, 18167), (68, 18335), (70, 18359), (77, 18515), (82, 18548), (83, 18557), (84, 18560), (102, 18674), (104, 18686), (124, 18776), (126, 18785),

Gene: Lesiram\_29 Start: 19024, Stop: 19914, Start Num: 40

Candidate Starts for Lesiram\_29:

(21, 18922), (27, 18964), (39, 19021), (Start: 40 @19024 has 46 MA's), (44, 19069), (51, 19120), (54, 19132), (65, 19285), (66, 19330), (68, 19372), (71, 19423), (72, 19426), (76, 19546), (85, 19588), (88, 19615), (92, 19642), (104, 19708), (107, 19726), (109, 19729), (112, 19750), (134, 19876),

Gene: Librie\_23 Start: 16759, Stop: 17634, Start Num: 40

Candidate Starts for Librie\_23:

(Start: 40 @16759 has 46 MA's), (44, 16804), (49, 16846), (51, 16855), (52, 16861), (62, 16981), (64, 17014), (76, 17275), (92, 17371), (104, 17452),

Gene: LilTerminator\_24 Start: 16765, Stop: 17634, Start Num: 40

Candidate Starts for LilTerminator\_24:

(Start: 40 @16765 has 46 MA's), (44, 16810), (52, 16867), (62, 16987), (64, 17020), (76, 17281), (92, 17377), (104, 17458), (107, 17476),

Gene: LimaBean\_22 Start: 18044, Stop: 18793, Start Num: 45

Candidate Starts for LimaBean\_22:

(13, 17720), (23, 17870), (43, 18008), (Start: 45 @18044 has 32 MA's), (51, 18086), (59, 18170), (68, 18338), (70, 18362), (77, 18518), (82, 18551), (83, 18560), (102, 18677), (104, 18689), (124, 18779), (126, 18788),

Gene: Linayshia\_27 Start: 20654, Stop: 21529, Start Num: 41

Candidate Starts for Linayshia\_27:

(Start: 41 @20654 has 17 MA's), (44, 20699), (53, 20759), (76, 21170), (84, 21206), (92, 21266), (107, 21365),

Gene: LittleFortune\_44 Start: 30262, Stop: 31167, Start Num: 40

Candidate Starts for LittleFortune\_44:

(Start: 40 @30262 has 46 MA's), (44, 30307), (46, 30325), (51, 30358), (60, 30457), (62, 30484), (65, 30523), (69, 30619), (71, 30661), (75, 30778), (92, 30880), (94, 30901), (104, 30946), (107, 30964), (110, 30973), (112, 30988), (135, 31114),

Gene: Losacky\_31 Start: 18763, Stop: 19656, Start Num: 38

Candidate Starts for Losacky\_31:

(Start: 38 @18763 has 9 MA's), (44, 18811), (56, 18928), (57, 18931), (58, 18946), (67, 19114), (76, 19294), (92, 19393), (98, 19423), (108, 19477), (112, 19498), (133, 19624),

Gene: Lynlen\_22 Start: 18012, Stop: 18767, Start Num: 45

Candidate Starts for Lynlen\_22:

(13, 17688), (32, 17898), (43, 17976), (Start: 45 @18012 has 32 MA's), (51, 18054), (59, 18138), (68, 18306), (70, 18330), (77, 18489), (82, 18522), (83, 18531), (102, 18648), (117, 18723), (123, 18750),

Gene: MenE\_29 Start: 18751, Stop: 19644, Start Num: 38

Candidate Starts for MenE\_29:

(30, 18718), (Start: 38 @18751 has 9 MA's), (44, 18799), (56, 18916), (57, 18919), (58, 18934), (67, 19102), (76, 19282), (92, 19381), (98, 19411), (108, 19465), (112, 19486), (133, 19612),

Gene: Milani\_28 Start: 19814, Stop: 20680, Start Num: 41

Candidate Starts for Milani\_28:

(26, 19733), (33, 19772), (Start: 41 @19814 has 17 MA's), (44, 19859), (60, 20003), (64, 20063), (66, 20114), (73, 20249), (75, 20315), (93, 20435), (95, 20441), (99, 20465), (100, 20471), (113, 20558), (114, 20564),

Gene: Milomuff\_24 Start: 18408, Stop: 19157, Start Num: 45

Candidate Starts for Milomuff\_24:

(Start: 45 @18408 has 32 MA's), (50, 18444), (51, 18450), (59, 18534), (68, 18702), (70, 18726), (77, 18882), (82, 18915), (83, 18924), (102, 19041), (104, 19053), (124, 19143), (126, 19152),

Gene: MortySmith\_33 Start: 21753, Stop: 22877, Start Num: 12

Candidate Starts for MortySmith\_33:

(Start: 12 @21753 has 31 MA's), (16, 21855), (44, 22056), (62, 22227), (65, 22266), (67, 22353), (75, 22530), (78, 22536), (92, 22632), (101, 22680), (105, 22698), (109, 22719), (115, 22764), (127, 22803),

Gene: MsUbiquitous\_22 Start: 18064, Stop: 18816, Start Num: 45

Candidate Starts for MsUbiquitous\_22:

(43, 18028), (Start: 45 @18064 has 32 MA's), (51, 18106), (68, 18358), (70, 18382), (77, 18541), (82, 18574), (84, 18586), (119, 18781), (123, 18799),

Gene: NarutoRun\_35 Start: 22628, Stop: 23818, Start Num: 12

Candidate Starts for NarutoRun\_35:

(8, 22529), (Start: 12 @22628 has 31 MA's), (16, 22730), (17, 22736), (44, 22946), (62, 23117), (63, 23132), (67, 23243), (74, 23372), (76, 23429), (78, 23435), (86, 23489), (109, 23630), (112, 23651), (118, 23690),

Gene: Neptune\_35 Start: 22605, Stop: 23819, Start Num: 12

Candidate Starts for Neptune\_35:

(8, 22506), (Start: 12 @22605 has 31 MA's), (16, 22707), (17, 22713), (44, 22923), (62, 23094), (63, 23109), (67, 23220), (74, 23349), (76, 23406), (78, 23412), (86, 23466), (109, 23607), (112, 23628), (118, 23667),

Gene: Nicky22\_23 Start: 18472, Stop: 19227, Start Num: 45

Candidate Starts for Nicky22\_23:

(13, 18148), (43, 18436), (Start: 45 @18472 has 32 MA's), (51, 18514), (68, 18766), (70, 18790), (77, 18949), (79, 18955), (82, 18982), (83, 18991), (84, 18994), (123, 19210),

Gene: NoodlelyBoi\_43 Start: 30319, Stop: 31206, Start Num: 40

Candidate Starts for NoodlelyBoi\_43:

(Start: 40 @30319 has 46 MA's), (44, 30364), (46, 30382), (51, 30415), (61, 30529), (64, 30574), (65, 30580), (69, 30676), (71, 30718), (75, 30829), (92, 30931), (94, 30952), (98, 30961), (104, 30997), (107, 31015), (110, 31024), (112, 31039),

Gene: Olympi\_28 Start: 20606, Stop: 21469, Start Num: 42

Candidate Starts for Olympi\_28:

(Start: 41 @20594 has 17 MA's), (42, 20606), (44, 20639), (75, 21104), (84, 21146), (88, 21179), (92, 21206), (104, 21272), (109, 21293), (112, 21314), (127, 21377),

Gene: Onika\_42 Start: 29981, Stop: 30886, Start Num: 40

Candidate Starts for Onika\_42:

(Start: 40 @29981 has 46 MA's), (44, 30026), (46, 30044), (51, 30077), (60, 30176), (61, 30191), (62, 30203), (69, 30338), (71, 30380), (75, 30497), (92, 30599), (94, 30620), (104, 30665), (107, 30683), (110, 30692), (112, 30707), (135, 30833),

Gene: OverHedge\_35 Start: 22595, Stop: 23809, Start Num: 12

Candidate Starts for OverHedge\_35:

(8, 22496), (Start: 12 @22595 has 31 MA's), (16, 22697), (17, 22703), (44, 22913), (62, 23084), (63, 23099), (67, 23210), (74, 23339), (76, 23396), (78, 23402), (86, 23456), (109, 23597), (112, 23618), (118, 23657),

Gene: Paschalis\_42 Start: 29988, Stop: 30893, Start Num: 40

Candidate Starts for Paschalis\_42:

(Start: 40 @29988 has 46 MA's), (44, 30033), (46, 30051), (51, 30084), (60, 30183), (62, 30210), (65, 30249), (68, 30336), (69, 30345), (71, 30387), (75, 30504), (92, 30606), (94, 30627), (104, 30672), (107, 30690), (110, 30699), (112, 30714), (128, 30783), (130, 30804), (135, 30840), (136, 30849),

Gene: PastaFagioli\_22 Start: 18029, Stop: 18781, Start Num: 45

Candidate Starts for PastaFagioli\_22:

(Start: 45 @18029 has 32 MA's), (51, 18071), (68, 18323), (70, 18347), (77, 18503), (82, 18536), (83, 18545), (84, 18548), (102, 18662), (104, 18674), (117, 18737), (123, 18764),

Gene: PermaG\_28 Start: 20672, Stop: 21523, Start Num: 41

Candidate Starts for PermaG\_28:

(33, 20633), (Start: 41 @20672 has 17 MA's), (44, 20717), (76, 21185), (84, 21221), (92, 21281), (109, 21368),

Gene: Pharpay\_35 Start: 22650, Stop: 23864, Start Num: 12

Candidate Starts for Pharpay\_35:

(8, 22551), (Start: 12 @22650 has 31 MA's), (16, 22752), (17, 22758), (44, 22968), (62, 23139), (63, 23154), (67, 23265), (74, 23394), (76, 23451), (78, 23457), (86, 23511), (109, 23652), (112, 23673), (118, 23712),

Gene: PhedwardCullen\_41 Start: 29739, Stop: 30644, Start Num: 40

Candidate Starts for PhedwardCullen\_41:

(Start: 40 @29739 has 46 MA's), (44, 29784), (46, 29802), (51, 29835), (60, 29934), (62, 29961), (65, 30000), (69, 30096), (71, 30138), (75, 30255), (92, 30357), (94, 30378), (104, 30423), (107, 30441), (110, 30450), (112, 30465), (135, 30591),

Gene: PhigPhack\_23 Start: 18021, Stop: 18770, Start Num: 45

Candidate Starts for PhigPhack\_23:

(13, 17697), (Start: 45 @18021 has 32 MA's), (50, 18057), (51, 18063), (59, 18147), (68, 18315), (70, 18339), (77, 18495), (82, 18528), (83, 18537), (84, 18540), (102, 18654), (104, 18666), (124, 18756), (126, 18765),

Gene: PhillyJawn\_29 Start: 18483, Stop: 19376, Start Num: 38

Candidate Starts for PhillyJawn\_29:

(Start: 38 @18483 has 9 MA's), (44, 18531), (56, 18648), (57, 18651), (58, 18666), (67, 18834), (76, 19014), (92, 19113), (98, 19143), (108, 19197), (112, 19218), (133, 19344),

Gene: Phingu\_31 Start: 18696, Stop: 19577, Start Num: 37

Candidate Starts for Phingu\_31:

(37, 18696), (44, 18744), (56, 18861), (57, 18864), (58, 18879), (60, 18894), (76, 19224), (80, 19236), (84, 19260), (92, 19320), (103, 19377), (133, 19545),

Gene: Phisb\_22 Start: 18038, Stop: 18793, Start Num: 45

Candidate Starts for Phisb\_22:

(43, 18002), (Start: 45 @18038 has 32 MA's), (51, 18080), (59, 18164), (68, 18332), (70, 18356), (77, 18515), (82, 18548), (83, 18557), (102, 18674), (123, 18776),

Gene: Phonegingi\_28 Start: 18526, Stop: 19389, Start Num: 38

Candidate Starts for Phonegingi\_28:

(35, 18517), (Start: 38 @18526 has 9 MA's), (44, 18574), (56, 18691), (57, 18694), (58, 18709), (67, 18871), (76, 19051), (80, 19063), (84, 19087), (92, 19147), (96, 19174), (103, 19204),

Gene: Phorgeous\_42 Start: 29851, Stop: 30756, Start Num: 40

Candidate Starts for Phorgeous\_42:

(Start: 40 @29851 has 46 MA's), (44, 29896), (46, 29914), (51, 29947), (60, 30046), (62, 30073), (65, 30112), (69, 30208), (71, 30250), (75, 30367), (92, 30469), (94, 30490), (104, 30535), (107, 30553), (110, 30562), (112, 30577), (135, 30703),

Gene: Phrancesco\_43 Start: 30141, Stop: 31046, Start Num: 40

Candidate Starts for Phrancesco\_43:

(Start: 40 @30141 has 46 MA's), (44, 30186), (46, 30204), (51, 30237), (60, 30336), (62, 30363), (65, 30402), (69, 30498), (71, 30540), (75, 30657), (92, 30759), (94, 30780), (104, 30825), (107, 30843), (110, 30852), (112, 30867), (135, 30993),

Gene: PhunaPhoke\_35 Start: 22623, Stop: 23837, Start Num: 12

Candidate Starts for PhunaPhoke\_35:

(Start: 12 @22623 has 31 MA's), (16, 22725), (17, 22731), (44, 22941), (62, 23112), (63, 23127), (67, 23238), (74, 23367), (76, 23424), (78, 23430), (86, 23484), (109, 23625), (112, 23646), (118, 23685),

Gene: Pickles13\_28 Start: 18911, Stop: 19798, Start Num: 38

Candidate Starts for Pickles13\_28:

(14, 18692), (15, 18767), (Start: 38 @18911 has 9 MA's), (44, 18959), (56, 19076), (58, 19094), (60, 19109), (67, 19256), (74, 19385), (76, 19436), (80, 19448), (88, 19508), (92, 19535), (108, 19619), (112, 19640), (125, 19712), (133, 19766),

Gene: PierreOrion\_43 Start: 30155, Stop: 31060, Start Num: 40

Candidate Starts for PierreOrion\_43:

(Start: 40 @30155 has 46 MA's), (44, 30200), (46, 30218), (60, 30350), (62, 30377), (65, 30416), (67, 30494), (69, 30512), (71, 30554), (75, 30671), (92, 30773), (94, 30794), (104, 30839), (107, 30857), (110, 30866), (112, 30881), (128, 30950), (135, 31007),

Gene: PiperSansNom\_43 Start: 30295, Stop: 31200, Start Num: 40

Candidate Starts for PiperSansNom\_43:

(Start: 40 @30295 has 46 MA's), (44, 30340), (46, 30358), (51, 30391), (60, 30490), (62, 30517), (65, 30556), (69, 30652), (71, 30694), (75, 30811), (92, 30913), (94, 30934), (104, 30979), (107, 30997), (110, 31006), (112, 31021), (135, 31147),

Gene: Piperis\_43 Start: 29974, Stop: 30879, Start Num: 40

Candidate Starts for Piperis\_43:

(Start: 40 @29974 has 46 MA's), (44, 30019), (46, 30037), (51, 30070), (60, 30169), (62, 30196), (65, 30235), (67, 30313), (71, 30373), (75, 30490), (80, 30505), (92, 30592), (94, 30613), (98, 30622), (104, 30658), (107, 30676), (110, 30685), (112, 30700), (128, 30769), (135, 30826),

Gene: Potty\_35 Start: 22628, Stop: 23842, Start Num: 12

Candidate Starts for Potty\_35:

(8, 22529), (Start: 12 @22628 has 31 MA's), (16, 22730), (17, 22736), (44, 22946), (62, 23117), (63, 23132), (67, 23243), (74, 23372), (76, 23429), (78, 23435), (86, 23489), (109, 23630), (112, 23651), (118, 23690),

Gene: Poultruss\_34 Start: 22999, Stop: 24189, Start Num: 12

Candidate Starts for Poultruss\_34:

(Start: 12 @22999 has 31 MA's), (16, 23101), (17, 23107), (44, 23317), (62, 23488), (63, 23503), (67, 23614), (76, 23800), (78, 23806), (86, 23860), (109, 24001), (112, 24022), (115, 24046), (118, 24061),

Gene: Pulchra\_44 Start: 30371, Stop: 31276, Start Num: 40

Candidate Starts for Pulchra\_44:

(31, 30344), (Start: 40 @30371 has 46 MA's), (44, 30416), (46, 30434), (51, 30467), (60, 30566), (62, 30593), (65, 30632), (69, 30728), (71, 30770), (75, 30887), (92, 30989), (94, 31010), (98, 31019), (104, 31055), (107, 31073), (110, 31082), (112, 31097), (135, 31223),

Gene: QMacho\_23 Start: 18508, Stop: 19260, Start Num: 45

Candidate Starts for QMacho\_23:

(43, 18472), (Start: 45 @18508 has 32 MA's), (51, 18550), (68, 18802), (70, 18826), (77, 18985), (82, 19018), (84, 19030), (119, 19225), (123, 19243),

Gene: QuadZero\_23 Start: 16769, Stop: 17638, Start Num: 40

Candidate Starts for QuadZero\_23:

(Start: 40 @16769 has 46 MA's), (44, 16814), (52, 16871), (62, 16991), (64, 17024), (76, 17285), (92, 17381), (104, 17462), (107, 17480),

Gene: Quhwah\_46 Start: 30603, Stop: 31508, Start Num: 40

Candidate Starts for Quhwah\_46:

(Start: 40 @30603 has 46 MA's), (44, 30648), (46, 30666), (51, 30699), (60, 30798), (62, 30825), (65, 30864), (69, 30960), (71, 31002), (75, 31119), (92, 31221), (94, 31242), (104, 31287), (110, 31314), (112, 31329), (135, 31455),

Gene: Rachella\_35 Start: 22631, Stop: 23845, Start Num: 12

Candidate Starts for Rachella\_35:

(8, 22532), (Start: 12 @22631 has 31 MA's), (16, 22733), (17, 22739), (44, 22949), (62, 23120), (63, 23135), (67, 23246), (74, 23375), (76, 23432), (78, 23438), (86, 23492), (109, 23633), (112, 23654), (118, 23693),

Gene: Ramiel05\_42 Start: 30006, Stop: 30911, Start Num: 40

Candidate Starts for Ramiel05\_42:

(Start: 40 @30006 has 46 MA's), (44, 30051), (46, 30069), (51, 30102), (60, 30201), (62, 30228), (65, 30267), (69, 30363), (71, 30405), (75, 30522), (92, 30624), (94, 30645), (104, 30690), (107, 30708), (110, 30717), (112, 30732), (135, 30858),

Gene: Rasovi\_27 Start: 20662, Stop: 21537, Start Num: 41

Candidate Starts for Rasovi\_27:

(Start: 41 @20662 has 17 MA's), (44, 20707), (53, 20767), (76, 21178), (84, 21214), (92, 21274), (107, 21373),

Gene: Rie18\_35 Start: 22145, Stop: 23332, Start Num: 12

Candidate Starts for Rie18\_35:

(10, 22100), (Start: 12 @22145 has 31 MA's), (16, 22247), (17, 22253), (44, 22457), (63, 22643), (67, 22754), (76, 22940), (78, 22946), (86, 23000), (109, 23141), (112, 23162), (118, 23201),

Gene: SBlackberry\_27 Start: 20472, Stop: 21347, Start Num: 41

Candidate Starts for SBlackberry\_27:

(Start: 41 @20472 has 17 MA's), (42, 20484), (44, 20517), (51, 20568), (75, 20982), (84, 21024), (88, 21057), (92, 21084), (104, 21150), (109, 21171), (112, 21192), (127, 21255),

Gene: SansAfet\_22 Start: 17955, Stop: 18704, Start Num: 45

Candidate Starts for SansAfet\_22:

(13, 17631), (Start: 45 @17955 has 32 MA's), (50, 17991), (51, 17997), (59, 18081), (68, 18249), (70, 18273), (77, 18429), (82, 18462), (83, 18471), (84, 18474), (102, 18588), (104, 18600), (124, 18690), (126, 18699),

Gene: SarBear\_22 Start: 18006, Stop: 18758, Start Num: 45

Candidate Starts for SarBear\_22:

(43, 17970), (Start: 45 @18006 has 32 MA's), (51, 18048), (68, 18300), (70, 18324), (77, 18483), (82, 18516), (84, 18528), (119, 18723), (123, 18741),

Gene: Savannah\_42 Start: 30033, Stop: 30938, Start Num: 40

Candidate Starts for Savannah\_42:

(Start: 40 @30033 has 46 MA's), (44, 30078), (46, 30096), (51, 30129), (60, 30228), (62, 30255), (65, 30294), (69, 30390), (71, 30432), (75, 30549), (92, 30651), (94, 30672), (104, 30717), (107, 30735), (110, 30744), (112, 30759), (135, 30885),

Gene: Schimmels22\_23 Start: 17213, Stop: 18079, Start Num: 40

Candidate Starts for Schimmels22\_23:

(Start: 40 @17213 has 46 MA's), (44, 17267), (51, 17318), (53, 17327), (58, 17402), (62, 17444), (64, 17477), (76, 17738), (84, 17774), (88, 17807), (92, 17834), (112, 17954),

Gene: Scissor2024\_23 Start: 16849, Stop: 17715, Start Num: 40

Candidate Starts for Scissor2024\_23:

(Start: 40 @16849 has 46 MA's), (44, 16903), (53, 16963), (58, 17038), (62, 17080), (76, 17374), (84, 17410), (88, 17443), (92, 17470), (112, 17590),

Gene: Scumberland\_44 Start: 30228, Stop: 31133, Start Num: 40

Candidate Starts for Scumberland\_44:

(Start: 40 @30228 has 46 MA's), (44, 30273), (46, 30291), (51, 30324), (60, 30423), (62, 30450), (65, 30489), (69, 30585), (71, 30627), (75, 30744), (92, 30846), (94, 30867), (104, 30912), (107, 30930), (110, 30939), (112, 30954),

Gene: Selwyn23\_44 Start: 30205, Stop: 31110, Start Num: 40

Candidate Starts for Selwyn23\_44:

(Start: 40 @30205 has 46 MA's), (44, 30250), (46, 30268), (51, 30301), (60, 30400), (62, 30427), (65, 30466), (67, 30544), (71, 30604), (75, 30721), (80, 30736), (92, 30823), (94, 30844), (98, 30853), (104, 30889), (107, 30907), (110, 30916), (112, 30931), (128, 31000), (135, 31057),

Gene: Shotgun\_42 Start: 29832, Stop: 30737, Start Num: 40

Candidate Starts for Shotgun\_42:

(Start: 40 @29832 has 46 MA's), (44, 29877), (46, 29895), (51, 29928), (60, 30027), (61, 30042), (62, 30054), (65, 30093), (67, 30171), (69, 30189), (71, 30231), (75, 30348), (92, 30450), (94, 30471), (104, 30516), (107, 30534), (110, 30543), (112, 30558), (135, 30684),

Gene: SilentWarrior\_34 Start: 21794, Stop: 22918, Start Num: 12

Candidate Starts for SilentWarrior\_34:

(9, 21713), (Start: 12 @21794 has 31 MA's), (16, 21896), (44, 22097), (62, 22268), (65, 22307), (67, 22394), (75, 22571), (78, 22577), (92, 22673), (101, 22721), (105, 22739), (109, 22760), (115, 22805), (127, 22844),

Gene: SirFrank\_42 Start: 29874, Stop: 30779, Start Num: 40

Candidate Starts for SirFrank\_42:

(Start: 40 @29874 has 46 MA's), (44, 29919), (46, 29937), (51, 29970), (61, 30084), (64, 30129), (65, 30135), (69, 30231), (71, 30273), (75, 30390), (92, 30492), (94, 30513), (104, 30558), (107, 30576), (110, 30585), (112, 30600), (135, 30726),

Gene: Slay\_22 Start: 18548, Stop: 19300, Start Num: 45

Candidate Starts for Slay\_22:

(43, 18512), (Start: 45 @18548 has 32 MA's), (51, 18590), (68, 18842), (70, 18866), (77, 19025), (82, 19058), (84, 19070), (119, 19265), (123, 19283),

Gene: Snakehole\_35 Start: 21878, Stop: 23020, Start Num: 12

Candidate Starts for Snakehole\_35:

(Start: 12 @21878 has 31 MA's), (16, 21980), (17, 21986), (44, 22190), (62, 22361), (63, 22376), (67, 22487), (75, 22664), (78, 22670), (92, 22766), (105, 22832), (109, 22853), (112, 22874), (127, 22937),

Gene: Softsoap\_21 Start: 17779, Stop: 18528, Start Num: 45

Candidate Starts for Softsoap\_21:

(1, 16222), (2, 17035), (5, 17254), (13, 17455), (Start: 45 @17779 has 32 MA's), (50, 17815), (59, 17905), (68, 18073), (70, 18097), (77, 18253), (82, 18286), (83, 18295), (84, 18298), (102, 18412), (104, 18424), (126, 18523),

Gene: Solea\_24 Start: 18408, Stop: 19157, Start Num: 45

Candidate Starts for Solea\_24:

(Start: 45 @18408 has 32 MA's), (50, 18444), (51, 18450), (59, 18534), (68, 18702), (70, 18726), (77, 18882), (82, 18915), (83, 18924), (102, 19041), (104, 19053), (124, 19143), (126, 19152),

Gene: Sucha\_24 Start: 18171, Stop: 19043, Start Num: 41

Candidate Starts for Sucha\_24:

(33, 18129), (Start: 41 @18171 has 17 MA's), (44, 18216), (64, 18420), (66, 18471), (73, 18606), (75, 18675), (93, 18798), (100, 18834), (113, 18921),

Gene: Swervy\_22 Start: 18006, Stop: 18758, Start Num: 45

Candidate Starts for Swervy\_22:

(43, 17970), (Start: 45 @18006 has 32 MA's), (51, 18048), (68, 18300), (70, 18324), (77, 18483), (82, 18516), (84, 18528), (119, 18723), (123, 18741),

Gene: Tedro\_35 Start: 22101, Stop: 23315, Start Num: 12

Candidate Starts for Tedro\_35:

(8, 22002), (Start: 12 @22101 has 31 MA's), (16, 22203), (17, 22209), (44, 22419), (62, 22590), (63, 22605), (67, 22716), (74, 22845), (76, 22902), (78, 22908), (86, 22962), (109, 23103), (112, 23124), (118, 23163),

Gene: Teng\_30 Start: 19074, Stop: 19958, Start Num: 40

Candidate Starts for Teng\_30:

(27, 19014), (39, 19071), (Start: 40 @19074 has 46 MA's), (44, 19119), (51, 19170), (54, 19182), (65, 19335), (66, 19380), (68, 19422), (71, 19473), (72, 19476), (76, 19596), (85, 19638), (88, 19665), (92, 19692), (104, 19758), (107, 19776), (109, 19779), (112, 19800), (125, 19872), (134, 19926),

Gene: Tinyman4\_23 Start: 16850, Stop: 17716, Start Num: 40

Candidate Starts for Tinyman4\_23:

(Start: 40 @16850 has 46 MA's), (44, 16904), (51, 16955), (53, 16964), (58, 17039), (62, 17081), (64, 17114), (74, 17324), (76, 17375), (84, 17411), (88, 17444), (92, 17471), (112, 17591),

Gene: Tongui\_35 Start: 22129, Stop: 23271, Start Num: 12

Candidate Starts for Tongui\_35:

(Start: 12 @22129 has 31 MA's), (16, 22231), (17, 22237), (44, 22447), (62, 22618), (63, 22633), (67, 22744), (75, 22918), (78, 22924), (105, 23086), (107, 23104), (127, 23191),

Gene: TukTuk\_22 Start: 18064, Stop: 18816, Start Num: 45

Candidate Starts for TukTuk\_22:

(43, 18028), (Start: 45 @18064 has 32 MA's), (51, 18106), (68, 18358), (70, 18382), (77, 18541), (82, 18574), (84, 18586), (119, 18781), (123, 18799),

Gene: TurboVicky\_27 Start: 20471, Stop: 21352, Start Num: 41

Candidate Starts for TurboVicky\_27:

(Start: 41 @20471 has 17 MA's), (44, 20516), (53, 20576), (60, 20660), (75, 20984), (77, 20990), (84, 21026), (88, 21059), (91, 21074), (104, 21152), (109, 21173), (110, 21179), (112, 21194), (118, 21218), (120, 21233), (127, 21257), (133, 21308),

Gene: TwoBits\_22 Start: 17147, Stop: 18016, Start Num: 40



Candidate Starts for TwoBits\_22:

(Start: 40 @17147 has 46 MA's), (42, 17168), (44, 17201), (53, 17261), (58, 17336), (60, 17351), (64, 17411), (76, 17672), (84, 17708), (88, 17741), (112, 17888),

Gene: Typher\_29 Start: 20600, Stop: 21481, Start Num: 41

Candidate Starts for Typher\_29:

(29, 20534), (Start: 41 @20600 has 17 MA's), (44, 20645), (53, 20705), (60, 20789), (75, 21113), (77, 21119), (84, 21155), (88, 21188), (91, 21203), (104, 21281), (109, 21302), (110, 21308), (112, 21323), (118, 21347), (120, 21362), (127, 21386), (133, 21437),

Gene: Violeta\_30 Start: 18581, Stop: 19474, Start Num: 38

Candidate Starts for Violeta\_30:

(30, 18548), (Start: 38 @18581 has 9 MA's), (44, 18629), (56, 18746), (57, 18749), (58, 18764), (67, 18932), (76, 19112), (92, 19211), (98, 19241), (108, 19295), (112, 19316), (133, 19442),

Gene: Wardwill\_25 Start: 16927, Stop: 17796, Start Num: 40

Candidate Starts for Wardwill\_25:

(Start: 40 @16927 has 46 MA's), (44, 16972), (52, 17029), (62, 17149), (64, 17182), (76, 17443), (92, 17539), (104, 17620), (107, 17638),

Gene: Warren\_29 Start: 18684, Stop: 19574, Start Num: 38

Candidate Starts for Warren\_29:

(35, 18675), (Start: 38 @18684 has 9 MA's), (44, 18732), (56, 18849), (57, 18852), (58, 18867), (67, 19029), (76, 19212), (92, 19311), (108, 19395), (112, 19416), (125, 19488), (133, 19542),

Gene: WestPM\_22 Start: 16694, Stop: 17560, Start Num: 40

Candidate Starts for WestPM\_22:

(Start: 40 @16694 has 46 MA's), (44, 16748), (51, 16799), (53, 16808), (57, 16868), (58, 16883), (62, 16925), (64, 16958), (76, 17219), (84, 17255), (88, 17288), (112, 17435),

Gene: Wrackline\_34 Start: 20389, Stop: 21276, Start Num: 40

Candidate Starts for Wrackline\_34:

(19, 20272), (20, 20284), (Start: 40 @20389 has 46 MA's), (42, 20401), (44, 20434), (51, 20485), (52, 20491), (66, 20695), (72, 20791), (73, 20833), (74, 20854), (76, 20899), (92, 20998), (107, 21082), (112, 21106), (116, 21136),

Gene: Yeti\_43 Start: 30007, Stop: 30912, Start Num: 40

Candidate Starts for Yeti\_43:

(Start: 40 @30007 has 46 MA's), (44, 30052), (46, 30070), (51, 30103), (60, 30202), (62, 30229), (65, 30268), (67, 30346), (71, 30406), (75, 30523), (80, 30538), (92, 30625), (94, 30646), (98, 30655), (104, 30691), (107, 30709), (110, 30718), (112, 30733), (128, 30802), (135, 30859),

Gene: Zanella\_27 Start: 20474, Stop: 21355, Start Num: 41

Candidate Starts for Zanella\_27:

(Start: 41 @20474 has 17 MA's), (44, 20519), (53, 20579), (60, 20663), (75, 20987), (77, 20993), (84, 21029), (88, 21062), (91, 21077), (104, 21155), (109, 21176), (110, 21182), (112, 21197), (118, 21221), (120, 21236), (127, 21260), (133, 21311),

Gene: Zayuliv\_23 Start: 17355, Stop: 18224, Start Num: 40

Candidate Starts for Zayuliv\_23:

(Start: 40 @17355 has 46 MA's), (44, 17400), (48, 17433), (52, 17457), (62, 17577), (64, 17610), (76, 17871), (92, 17967), (104, 18048), (107, 18066),

Gene: Zepp\_24 Start: 16753, Stop: 17622, Start Num: 40

Candidate Starts for Zepp\_24:

(Start: 40 @16753 has 46 MA's), (44, 16798), (52, 16855), (62, 16975), (76, 17269), (92, 17365), (104, 17446), (107, 17464),