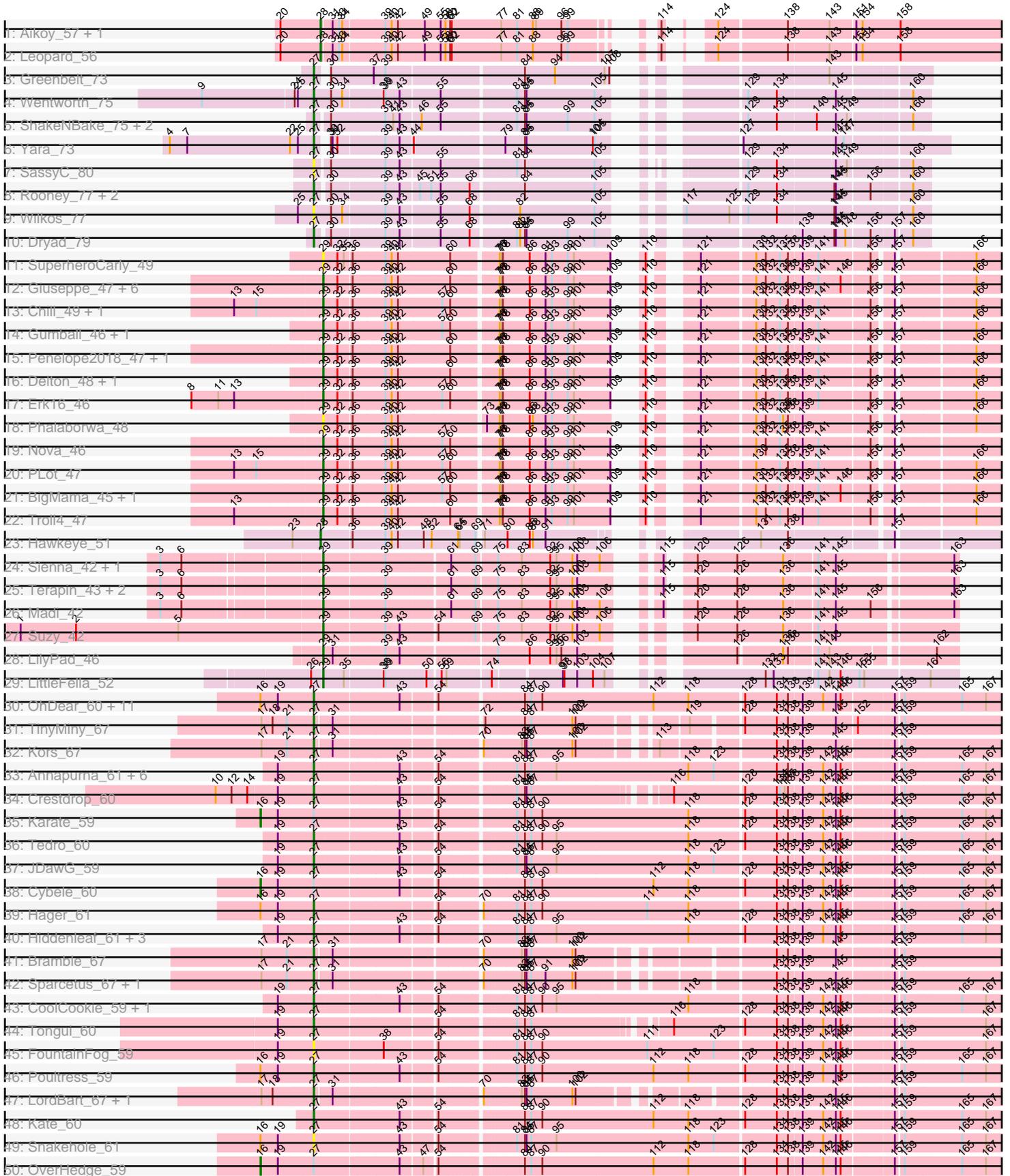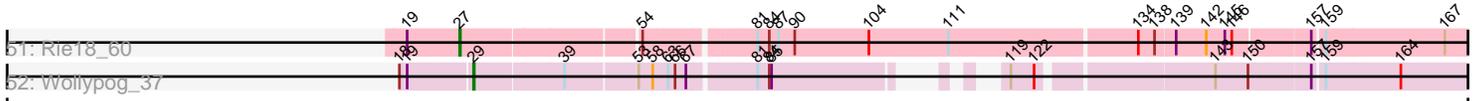# Pham 282128

Pham 282128

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 282128 Report

This analysis was run 02/23/26 on database version 636.

Pham number 282128 has 94 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Aikoy_57, Onyinye_57
• Track 2 : Leopard_56
• Track 3 : Greenbelt_73
• Track 4 : Wentworth_75
• Track 5 : ShakeNBake_75, Lizz_75, PHTowN_75
• Track 6 : Yara_73
• Track 7 : SassyC_80
• Track 8 : Rooney_77, Gibson_77, Virizion_83
• Track 9 : Wilkos_77
• Track 10 : Dryad_79
• Track 11 : SuperheroCarly_49
• Track 12 : Giuseppe_47, Butterscotch_46, Mopey_48, Prager_47, PBI1_45, Adjutor_47, Visconti_48
• Track 13 : Chill_49, WaldoWhy_49
• Track 14 : Gumball_46, SirHarley_48
• Track 15 : Penelope2018_47, KandZ_46
• Track 16 : Delton_48, Helpful_50
• Track 17 : Erk16_46
• Track 18 : Phalaborwa_48
• Track 19 : Nova_46
• Track 20 : PLot_47
• Track 21 : BigMama_45, Thoth_47
• Track 22 : Troll4_47
• Track 23 : Hawkeye_51
• Track 24 : Sienna_42, BiteSize_42
• Track 25 : Terapin_43, Beyoncage_42, Djokovic_42
• Track 26 : Madi_42
• Track 27 : Suzy_42
• Track 28 : LilyPad_46
• Track 29 : LittleFella_52
• Track 30 : OhDear_60, Artiphact_59, NarutoRun_60, Pharpay_59, PhunaPhoke_60, Krampus_60, Neptune_60, Gilda_60, Anakin_60, Rachella_60, Potty_59, AnnaSerena_60
• Track 31 : TinyMiny_67
• Track 32 : Kors_67
• Track 33 : Annapurna_61, SilentWarrior_61, JingleBells_60, MortySmith_58, Dauntless_59, Erudite_59, Aesir_59

- Track 34 : Crestdrop_60
- Track 35 : Karate_59
- Track 36 : Tedro_60
- Track 37 : JDawG_59
- Track 38 : Cybele_60
- Track 39 : Hager_61
- Track 40 : Hiddenleaf_61, Chivey_61, FreddieHg_61, DannyDe_61
- Track 41 : Bramble_67
- Track 42 : Sparcetus_67, RikSengupta_67
- Track 43 : CoolCookie_59, Haunter_60
- Track 44 : Tongui_60
- Track 45 : FountainFog_59
- Track 46 : Poultress_59
- Track 47 : LordBart_67, Ajin_67
- Track 48 : Kate_60
- Track 49 : Snakehole_61
- Track 50 : OverHedge_59
- Track 51 : Rie18_60
- Track 52 : Wollypog_37

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

The start number called the most often in the published annotations is 27, it was called in 47 of the 85 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Aesir_59, Ajin_67, Anakin_60, AnnaSerena_60, Annapurna_61, Artiphact_59, Bramble_67, Chivey_61, CoolCookie_59, Crestdrop_60, DannyDe_61, Dauntless_59, Dryad_79, Erudite_59, FountainFog_59, FreddieHg_61, Gibson_77, Gilda_60, Greenbelt_73, Hager_61, Haunter_60, Hiddenleaf_61, JDawG_59, JingleBells_60, Kate_60, Kors_67, Krampus_60, Lizz_75, LordBart_67, MortySmith_58, NarutoRun_60, Neptune_60, OhDear_60, PHTowN_75, Pharpay_59, PhunaPhoke_60, Potty_59, Poultress_59, Rachella_60, Rie18_60, RikSengupta_67, Rooney_77, SassyC_80, ShakeNBake_75, SilentWarrior_61, Snakehole_61, Sparcetus_67, Tedro_60, TinyMiny_67, Tongui_60, Virizion_83, Wentworth_75, Wilkos_77, Yara_73,

Genes that have the "Most Annotated" start but do not call it:
- Cybele_60, Karate_59, OverHedge_59,

Genes that do not have the "Most Annotated" start:
- Adjutor_47, Aikoy_57, Beyoncage_42, BigMama_45, BiteSize_42, Butterscotch_46, Chill_49, Delton_48, Djokovic_42, Erk16_46, Giuseppe_47, Gumball_46, Hawkeye_51, Helpful_50, KandZ_46, Leopard_56, LilyPad_46, LittleFella_52, Madi_42, Mopey_48, Nova_46, Onyinye_57, PBI1_45, PLot_47, Penelope2018_47, Phalaborwa_48, Prager_47, Sienna_42, SirHarley_48, SuperheroCarly_49, Suzy_42, Terapin_43, Thoth_47, Troll4_47, Visconti_48, WaldoWhy_49, Wollypog_37,

Summary by start number:

Start 16:
• Found in 18 of 94 (19.1%) of genes in pham
• Manual Annotations of this start: 3 of 85
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Cybele_60 (EF), Karate_59 (EF), OverHedge_59 (EF),

Start 27:
• Found in 57 of 94 (60.6%) of genes in pham
• Manual Annotations of this start: 47 of 85
• Called 94.7% of time when present
• Phage (with cluster) where this start called: Aesir_59 (EF), Ajin_67 (EF), Anakin_60 (EF), AnnaSerena_60 (EF), Annapurna_61 (EF), Artiphact_59 (EF), Bramble_67 (EF), Chivey_61 (EF), CoolCookie_59 (EF), Crestdrop_60 (EF), DannyDe_61 (EF), Dauntless_59 (EF), Dryad_79 (BN), Erudite_59 (EF), FountainFog_59 (EF), FreddieHg_61 (EF), Gibson_77 (BN), Gilda_60 (EF), Greenbelt_73 (BN), Hager_61 (EF), Haunter_60 (EF), Hiddenleaf_61 (EF), JDawG_59 (EF), JingleBells_60 (EF), Kate_60 (EF), Kors_67 (EF), Krampus_60 (EF), Lizz_75 (BN), LordBart_67 (EF), MortySmith_58 (EF), NarutoRun_60 (EF), Neptune_60 (EF), OhDear_60 (EF), PHTowN_75 (BN), Pharpay_59 (EF), PhunaPhoke_60 (EF), Potty_59 (EF), Poultress_59 (EF), Rachella_60 (EF), Rie18_60 (EF), RikSengupta_67 (EF), Rooney_77 (BN), SassyC_80 (BN), ShakeNBake_75 (BN), SilentWarrior_61 (EF), Snakehole_61 (EF), Sparcetus_67 (EF), Tedro_60 (EF), TinyMiny_67 (EF), Tongui_60 (EF), Virizion_83 (BN), Wentworth_75 (BN), Wilkos_77 (BN), Yara_73 (BN),

Start 28:
• Found in 4 of 94 (4.3%) of genes in pham
• Manual Annotations of this start: 4 of 85
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aikoy_57 (AE), Hawkeye_51 (D2), Leopard_56 (AE), Onyinye_57 (AE),

Start 29:
• Found in 33 of 94 (35.1%) of genes in pham
• Manual Annotations of this start: 31 of 85
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Adjutor_47 (D1), Beyoncage_42 (DG1), BigMama_45 (D1), BiteSize_42 (DG1), Butterscotch_46 (D1), Chill_49 (D1), Delton_48 (D1), Djokovic_42 (DG1), Erk16_46 (D1), Giuseppe_47 (D1), Gumball_46 (D1), Helpful_50 (D1), KandZ_46 (D1), LilyPad_46 (DG1), LittleFella_52 (DG2), Madi_42 (DG1), Mopey_48 (D1), Nova_46 (D1), PBI1_45 (D1), PLot_47 (D1), Penelope2018_47 (D1), Phalaborwa_48 (D1), Prager_47 (D1), Sienna_42 (DG1), SirHarley_48 (D1), SuperheroCarly_49 (D1), Suzy_42 (DG1), Terapin_43 (DG1), Thoth_47 (D1), Troll4_47 (D1), Visconti_48 (D1), WaldoWhy_49 (D1), Wollypog_37 (singleton),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, AE, BN, EF, DG2, DG1, D2, D1,

Info for manual annotations of cluster AE:

•Start number 28 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster BN:
•Start number 27 was manually annotated 9 times for cluster BN.

Info for manual annotations of cluster D1:
•Start number 29 was manually annotated 21 times for cluster D1.

Info for manual annotations of cluster D2:
•Start number 28 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:
•Start number 29 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:
•Start number 29 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster EF:
•Start number 16 was manually annotated 3 times for cluster EF.
•Start number 27 was manually annotated 38 times for cluster EF.

Gene Information:

Gene: Adjutor_47 Start: 37040, Stop: 38149, Start Num: 29
Candidate Starts for Adjutor_47:
(Start: 29 @37040 has 31 MA's), (32, 37067), (36, 37091), (39, 37151), (40, 37163), (42, 37175), (60, 37271), (76, 37349), (77, 37352), (78, 37355), (86, 37406), (91, 37436), (93, 37448), (99, 37478), (101, 37490), (109, 37559), (110, 37571), (121, 37625), (130, 37721), (132, 37739), (135, 37766), (138, 37781), (139, 37805), (141, 37835), (146, 37877), (156, 37925), (157, 37958), (166, 38084),

Gene: Aesir_59 Start: 45442, Stop: 46689, Start Num: 27
Candidate Starts for Aesir_59:
(19, 45376), (Start: 27 @45442 has 47 MA's), (43, 45595), (54, 45655), (81, 45781), (84, 45796), (87, 45808), (95, 45856), (118, 46105), (123, 46153), (134, 46264), (138, 46285), (139, 46309), (142, 46348), (145, 46372), (146, 46381), (157, 46471), (159, 46483), (165, 46588), (167, 46633),

Gene: Aikoy_57 Start: 41840, Stop: 42946, Start Num: 28
Candidate Starts for Aikoy_57:
(20, 41768), (Start: 28 @41840 has 4 MA's), (31, 41858), (33, 41870), (34, 41876), (39, 41951), (40, 41963), (42, 41975), (49, 42026), (55, 42056), (58, 42065), (60, 42074), (62, 42077), (77, 42170), (81, 42200), (88, 42230), (89, 42236), (96, 42284), (99, 42296), (114, 42377), (124, 42410), (138, 42530), (143, 42605), (151, 42650), (154, 42662), (158, 42734),

Gene: Ajin_67 Start: 46362, Stop: 47543, Start Num: 27
Candidate Starts for Ajin_67:
(17, 46266), (18, 46287), (Start: 27 @46362 has 47 MA's), (31, 46392), (70, 46641), (83, 46707), (84, 46713), (85, 46716), (87, 46725), (100, 46803), (102, 46809), (134, 47115), (138, 47136), (139, 47160), (145, 47223), (157, 47322), (159, 47334),

Gene: Anakin_60 Start: 45748, Stop: 46998, Start Num: 27
Candidate Starts for Anakin_60:

(Start: 16 @45652 has 3 MA's), (19, 45682), (Start: 27 @45748 has 47 MA's), (43, 45904), (54, 45964), (84, 46105), (87, 46117), (90, 46138), (112, 46348), (118, 46414), (128, 46513), (134, 46573), (138, 46594), (139, 46618), (142, 46657), (145, 46681), (146, 46690), (157, 46780), (159, 46792), (165, 46897), (167, 46942),

Gene: AnnaSerena_60 Start: 45782, Stop: 47032, Start Num: 27
Candidate Starts for AnnaSerena_60:
(Start: 16 @45686 has 3 MA's), (19, 45716), (Start: 27 @45782 has 47 MA's), (43, 45938), (54, 45998), (84, 46139), (87, 46151), (90, 46172), (112, 46382), (118, 46448), (128, 46547), (134, 46607), (138, 46628), (139, 46652), (142, 46691), (145, 46715), (146, 46724), (157, 46814), (159, 46826), (165, 46931), (167, 46976),

Gene: Annapurna_61 Start: 45291, Stop: 46538, Start Num: 27
Candidate Starts for Annapurna_61:
(19, 45225), (Start: 27 @45291 has 47 MA's), (43, 45444), (54, 45504), (81, 45630), (84, 45645), (87, 45657), (95, 45705), (118, 45954), (123, 46002), (134, 46113), (138, 46134), (139, 46158), (142, 46197), (145, 46221), (146, 46230), (157, 46320), (159, 46332), (165, 46437), (167, 46482),

Gene: Artiphact_59 Start: 45772, Stop: 47022, Start Num: 27
Candidate Starts for Artiphact_59:
(Start: 16 @45676 has 3 MA's), (19, 45706), (Start: 27 @45772 has 47 MA's), (43, 45928), (54, 45988), (84, 46129), (87, 46141), (90, 46162), (112, 46372), (118, 46438), (128, 46537), (134, 46597), (138, 46618), (139, 46642), (142, 46681), (145, 46705), (146, 46714), (157, 46804), (159, 46816), (165, 46921), (167, 46966),

Gene: Beyoncage_42 Start: 33537, Stop: 34577, Start Num: 29
Candidate Starts for Beyoncage_42:
(3, 33264), (6, 33303), (Start: 29 @33537 has 31 MA's), (39, 33648), (61, 33762), (69, 33804), (75, 33840), (83, 33885), (92, 33939), (95, 33951), (100, 33981), (103, 33990), (115, 34086), (120, 34116), (126, 34191), (136, 34278), (141, 34335), (145, 34368), (163, 34569),

Gene: BigMama_45 Start: 37116, Stop: 38225, Start Num: 29
Candidate Starts for BigMama_45:
(Start: 29 @37116 has 31 MA's), (32, 37143), (36, 37167), (39, 37227), (40, 37239), (42, 37251), (57, 37332), (60, 37347), (76, 37425), (77, 37428), (78, 37431), (86, 37482), (91, 37512), (93, 37524), (99, 37554), (101, 37566), (109, 37635), (110, 37647), (121, 37701), (130, 37797), (132, 37815), (135, 37842), (138, 37857), (139, 37881), (141, 37911), (146, 37953), (156, 38001), (157, 38034), (166, 38160),

Gene: BiteSize_42 Start: 33623, Stop: 34663, Start Num: 29
Candidate Starts for BiteSize_42:
(3, 33350), (6, 33389), (Start: 29 @33623 has 31 MA's), (39, 33734), (61, 33848), (69, 33890), (75, 33926), (83, 33971), (92, 34025), (95, 34037), (100, 34067), (103, 34076), (106, 34118), (115, 34172), (120, 34202), (126, 34277), (136, 34364), (141, 34421), (145, 34454), (163, 34655),

Gene: Bramble_67 Start: 46376, Stop: 47557, Start Num: 27
Candidate Starts for Bramble_67:
(17, 46280), (21, 46328), (Start: 27 @46376 has 47 MA's), (31, 46406), (70, 46655), (83, 46721), (84, 46727), (85, 46730), (87, 46739), (100, 46817), (102, 46823), (134, 47129), (138, 47150), (139, 47174), (145, 47237), (157, 47336), (159, 47348),

Gene: Butterscotch_46 Start: 37100, Stop: 38209, Start Num: 29
Candidate Starts for Butterscotch_46:

(Start: 29 @37100 has 31 MA's), (32, 37127), (36, 37151), (39, 37211), (40, 37223), (42, 37235), (60, 37331), (76, 37409), (77, 37412), (78, 37415), (86, 37466), (91, 37496), (93, 37508), (99, 37538), (101, 37550), (109, 37619), (110, 37631), (121, 37685), (130, 37781), (132, 37799), (135, 37826), (138, 37841), (139, 37865), (141, 37895), (146, 37937), (156, 37985), (157, 38018), (166, 38144),

Gene: Chill_49 Start: 37111, Stop: 38220, Start Num: 29
Candidate Starts for Chill_49:
(13, 36949), (15, 36991), (Start: 29 @37111 has 31 MA's), (32, 37138), (36, 37162), (39, 37222), (40, 37234), (42, 37246), (57, 37327), (60, 37342), (76, 37420), (77, 37423), (78, 37426), (86, 37477), (91, 37507), (93, 37519), (99, 37549), (101, 37561), (109, 37630), (110, 37642), (121, 37696), (130, 37792), (132, 37810), (135, 37837), (138, 37852), (139, 37876), (141, 37906), (156, 37996), (157, 38029), (166, 38155),

Gene: Chivey_61 Start: 45245, Stop: 46492, Start Num: 27
Candidate Starts for Chivey_61:
(19, 45179), (Start: 27 @45245 has 47 MA's), (43, 45398), (54, 45458), (81, 45584), (84, 45599), (87, 45611), (95, 45659), (118, 45908), (128, 46007), (134, 46067), (138, 46088), (139, 46112), (142, 46151), (145, 46175), (146, 46184), (157, 46274), (159, 46286), (165, 46391), (167, 46436),

Gene: CoolCookie_59 Start: 45826, Stop: 47073, Start Num: 27
Candidate Starts for CoolCookie_59:
(19, 45760), (Start: 27 @45826 has 47 MA's), (43, 45979), (54, 46039), (81, 46165), (84, 46180), (87, 46192), (90, 46213), (95, 46240), (118, 46489), (134, 46648), (138, 46669), (139, 46693), (142, 46732), (145, 46756), (146, 46765), (157, 46855), (159, 46867), (165, 46972), (167, 47017),

Gene: Crestdrop_60 Start: 45511, Stop: 46716, Start Num: 27
Candidate Starts for Crestdrop_60:
(10, 45334), (12, 45364), (14, 45394), (19, 45445), (Start: 27 @45511 has 47 MA's), (43, 45664), (54, 45724), (81, 45850), (84, 45865), (85, 45868), (87, 45877), (116, 46105), (128, 46231), (134, 46291), (135, 46297), (137, 46306), (138, 46312), (139, 46336), (142, 46375), (145, 46399), (146, 46408), (157, 46498), (159, 46510), (165, 46615), (167, 46660),

Gene: Cybele_60 Start: 45682, Stop: 47028, Start Num: 16
Candidate Starts for Cybele_60:
(Start: 16 @45682 has 3 MA's), (19, 45712), (Start: 27 @45778 has 47 MA's), (43, 45934), (54, 45994), (84, 46135), (87, 46147), (90, 46168), (112, 46378), (118, 46444), (128, 46543), (134, 46603), (138, 46624), (139, 46648), (142, 46687), (145, 46711), (146, 46720), (157, 46810), (159, 46822), (165, 46927), (167, 46972),

Gene: DannyDe_61 Start: 45246, Stop: 46493, Start Num: 27
Candidate Starts for DannyDe_61:
(19, 45180), (Start: 27 @45246 has 47 MA's), (43, 45399), (54, 45459), (81, 45585), (84, 45600), (87, 45612), (95, 45660), (118, 45909), (128, 46008), (134, 46068), (138, 46089), (139, 46113), (142, 46152), (145, 46176), (146, 46185), (157, 46275), (159, 46287), (165, 46392), (167, 46437),

Gene: Dauntless_59 Start: 45377, Stop: 46624, Start Num: 27
Candidate Starts for Dauntless_59:
(19, 45311), (Start: 27 @45377 has 47 MA's), (43, 45530), (54, 45590), (81, 45716), (84, 45731), (87, 45743), (95, 45791), (118, 46040), (123, 46088), (134, 46199), (138, 46220), (139, 46244), (142, 46283), (145, 46307), (146, 46316), (157, 46406), (159, 46418), (165, 46523), (167, 46568),

Gene: Delton_48 Start: 37324, Stop: 38433, Start Num: 29
Candidate Starts for Delton_48:

(Start: 29 @37324 has 31 MA's), (32, 37351), (36, 37375), (39, 37435), (40, 37447), (42, 37459), (60, 37555), (76, 37633), (77, 37636), (78, 37639), (86, 37690), (91, 37720), (93, 37732), (99, 37762), (101, 37774), (109, 37843), (110, 37855), (121, 37909), (130, 38005), (132, 38023), (135, 38050), (138, 38065), (139, 38089), (141, 38119), (156, 38209), (157, 38242), (166, 38368),

Gene: Djokovic_42 Start: 33536, Stop: 34576, Start Num: 29
Candidate Starts for Djokovic_42:
(3, 33263), (6, 33302), (Start: 29 @33536 has 31 MA's), (39, 33647), (61, 33761), (69, 33803), (75, 33839), (83, 33884), (92, 33938), (95, 33950), (100, 33980), (103, 33989), (115, 34085), (120, 34115), (126, 34190), (136, 34277), (141, 34334), (145, 34367), (163, 34568),

Gene: Dryad_79 Start: 53594, Stop: 52629, Start Num: 27
Candidate Starts for Dryad_79:
(Start: 27 @53594 has 47 MA's), (30, 53573), (39, 53480), (43, 53453), (55, 53384), (68, 53333), (81, 53258), (82, 53252), (84, 53243), (85, 53240), (99, 53162), (105, 53111), (139, 52844), (144, 52784), (145, 52781), (148, 52763), (156, 52721), (157, 52682), (160, 52658),

Gene: Erk16_46 Start: 37105, Stop: 38214, Start Num: 29
Candidate Starts for Erk16_46:
(8, 36862), (11, 36913), (13, 36943), (Start: 29 @37105 has 31 MA's), (32, 37132), (36, 37156), (39, 37216), (40, 37228), (42, 37240), (57, 37321), (60, 37336), (76, 37414), (77, 37417), (78, 37420), (86, 37471), (91, 37501), (93, 37513), (99, 37543), (101, 37555), (109, 37624), (110, 37636), (121, 37690), (130, 37786), (132, 37804), (135, 37831), (138, 37846), (139, 37870), (141, 37900), (156, 37990), (157, 38023), (166, 38149),

Gene: Erudite_59 Start: 45377, Stop: 46624, Start Num: 27
Candidate Starts for Erudite_59:
(19, 45311), (Start: 27 @45377 has 47 MA's), (43, 45530), (54, 45590), (81, 45716), (84, 45731), (87, 45743), (95, 45791), (118, 46040), (123, 46088), (134, 46199), (138, 46220), (139, 46244), (142, 46283), (145, 46307), (146, 46316), (157, 46406), (159, 46418), (165, 46523), (167, 46568),

Gene: FountainFog_59 Start: 45008, Stop: 46258, Start Num: 27
Candidate Starts for FountainFog_59:
(19, 44942), (Start: 27 @45008 has 47 MA's), (38, 45134), (54, 45224), (81, 45350), (84, 45365), (87, 45377), (90, 45398), (111, 45596), (123, 45722), (134, 45833), (138, 45854), (139, 45878), (142, 45917), (145, 45941), (146, 45950), (157, 46040), (159, 46052), (167, 46202),

Gene: FreddieHg_61 Start: 45262, Stop: 46509, Start Num: 27
Candidate Starts for FreddieHg_61:
(19, 45196), (Start: 27 @45262 has 47 MA's), (43, 45415), (54, 45475), (81, 45601), (84, 45616), (87, 45628), (95, 45676), (118, 45925), (128, 46024), (134, 46084), (138, 46105), (139, 46129), (142, 46168), (145, 46192), (146, 46201), (157, 46291), (159, 46303), (165, 46408), (167, 46453),

Gene: Gibson_77 Start: 53215, Stop: 52250, Start Num: 27
Candidate Starts for Gibson_77:
(Start: 27 @53215 has 47 MA's), (30, 53194), (39, 53101), (43, 53074), (45, 53041), (51, 53020), (55, 53005), (68, 52954), (84, 52864), (105, 52732), (129, 52564), (134, 52510), (144, 52405), (145, 52402), (156, 52342), (160, 52279),

Gene: Gilda_60 Start: 45770, Stop: 47020, Start Num: 27
Candidate Starts for Gilda_60:
(Start: 16 @45674 has 3 MA's), (19, 45704), (Start: 27 @45770 has 47 MA's), (43, 45926), (54, 45986), (84, 46127), (87, 46139), (90, 46160), (112, 46370), (118, 46436), (128, 46535), (134, 46595), (138,

46616), (139, 46640), (142, 46679), (145, 46703), (146, 46712), (157, 46802), (159, 46814), (165, 46919), (167, 46964),

Gene: Giuseppe_47 Start: 37089, Stop: 38198, Start Num: 29
Candidate Starts for Giuseppe_47:
(Start: 29 @37089 has 31 MA's), (32, 37116), (36, 37140), (39, 37200), (40, 37212), (42, 37224), (60, 37320), (76, 37398), (77, 37401), (78, 37404), (86, 37455), (91, 37485), (93, 37497), (99, 37527), (101, 37539), (109, 37608), (110, 37620), (121, 37674), (130, 37770), (132, 37788), (135, 37815), (138, 37830), (139, 37854), (141, 37884), (146, 37926), (156, 37974), (157, 38007), (166, 38133),

Gene: Greenbelt_73 Start: 49034, Stop: 48066, Start Num: 27
Candidate Starts for Greenbelt_73:
(Start: 27 @49034 has 47 MA's), (30, 49022), (37, 48941), (39, 48920), (84, 48683), (94, 48626), (107, 48536), (108, 48527), (143, 48233),

Gene: Gumball_46 Start: 37264, Stop: 38373, Start Num: 29
Candidate Starts for Gumball_46:
(Start: 29 @37264 has 31 MA's), (32, 37291), (36, 37315), (39, 37375), (40, 37387), (42, 37399), (57, 37480), (60, 37495), (76, 37573), (77, 37576), (78, 37579), (86, 37630), (91, 37660), (93, 37672), (99, 37702), (101, 37714), (109, 37783), (110, 37795), (121, 37849), (130, 37945), (132, 37963), (135, 37990), (138, 38005), (139, 38029), (141, 38059), (156, 38149), (157, 38182), (166, 38308),

Gene: Hager_61 Start: 45161, Stop: 46411, Start Num: 27
Candidate Starts for Hager_61:
(Start: 16 @45065 has 3 MA's), (19, 45095), (Start: 27 @45161 has 47 MA's), (54, 45377), (70, 45446), (81, 45503), (84, 45518), (87, 45530), (90, 45551), (111, 45749), (118, 45827), (134, 45986), (138, 46007), (139, 46031), (142, 46070), (145, 46094), (146, 46103), (157, 46193), (159, 46205), (165, 46310), (167, 46355),

Gene: Haunter_60 Start: 45015, Stop: 46262, Start Num: 27
Candidate Starts for Haunter_60:
(19, 44949), (Start: 27 @45015 has 47 MA's), (43, 45168), (54, 45228), (81, 45354), (84, 45369), (87, 45381), (90, 45402), (95, 45429), (118, 45678), (134, 45837), (138, 45858), (139, 45882), (142, 45921), (145, 45945), (146, 45954), (157, 46044), (159, 46056), (165, 46161), (167, 46206),

Gene: Hawkeye_51 Start: 37216, Stop: 38304, Start Num: 28
Candidate Starts for Hawkeye_51:
(23, 37168), (Start: 28 @37216 has 4 MA's), (36, 37270), (39, 37330), (40, 37342), (42, 37354), (48, 37402), (52, 37417), (64, 37465), (65, 37468), (69, 37492), (71, 37498), (80, 37540), (86, 37582), (88, 37588), (91, 37612), (131, 37885), (138, 37936), (157, 38113),

Gene: Helpful_50 Start: 37299, Stop: 38408, Start Num: 29
Candidate Starts for Helpful_50:
(Start: 29 @37299 has 31 MA's), (32, 37326), (36, 37350), (39, 37410), (40, 37422), (42, 37434), (60, 37530), (76, 37608), (77, 37611), (78, 37614), (86, 37665), (91, 37695), (93, 37707), (99, 37737), (101, 37749), (109, 37818), (110, 37830), (121, 37884), (130, 37980), (132, 37998), (135, 38025), (138, 38040), (139, 38064), (141, 38094), (156, 38184), (157, 38217), (166, 38343),

Gene: Hiddenleaf_61 Start: 45245, Stop: 46492, Start Num: 27
Candidate Starts for Hiddenleaf_61:
(19, 45179), (Start: 27 @45245 has 47 MA's), (43, 45398), (54, 45458), (81, 45584), (84, 45599), (87, 45611), (95, 45659), (118, 45908), (128, 46007), (134, 46067), (138, 46088), (139, 46112), (142, 46151), (145, 46175), (146, 46184), (157, 46274), (159, 46286), (165, 46391), (167, 46436),

Gene: JDawG_59 Start: 45437, Stop: 46684, Start Num: 27
Candidate Starts for JDawG_59:
(19, 45371), (Start: 27 @45437 has 47 MA's), (43, 45590), (54, 45650), (81, 45776), (84, 45791), (85, 45794), (87, 45803), (95, 45851), (118, 46100), (123, 46148), (134, 46259), (138, 46280), (139, 46304), (142, 46343), (145, 46367), (146, 46376), (157, 46466), (159, 46478), (165, 46583), (167, 46628),

Gene: JingleBells_60 Start: 45351, Stop: 46598, Start Num: 27
Candidate Starts for JingleBells_60:
(19, 45285), (Start: 27 @45351 has 47 MA's), (43, 45504), (54, 45564), (81, 45690), (84, 45705), (87, 45717), (95, 45765), (118, 46014), (123, 46062), (134, 46173), (138, 46194), (139, 46218), (142, 46257), (145, 46281), (146, 46290), (157, 46380), (159, 46392), (165, 46497), (167, 46542),

Gene: KandZ_46 Start: 37198, Stop: 38307, Start Num: 29
Candidate Starts for KandZ_46:
(Start: 29 @37198 has 31 MA's), (32, 37225), (36, 37249), (39, 37309), (40, 37321), (42, 37333), (60, 37429), (76, 37507), (77, 37510), (78, 37513), (86, 37564), (91, 37594), (93, 37606), (99, 37636), (101, 37648), (109, 37717), (110, 37729), (121, 37783), (130, 37879), (132, 37897), (135, 37924), (138, 37939), (139, 37963), (141, 37993), (156, 38083), (157, 38116), (166, 38242),

Gene: Karate_59 Start: 45490, Stop: 46836, Start Num: 16
Candidate Starts for Karate_59:
(Start: 16 @45490 has 3 MA's), (19, 45520), (Start: 27 @45586 has 47 MA's), (43, 45742), (54, 45802), (81, 45928), (84, 45943), (87, 45955), (90, 45976), (118, 46252), (128, 46351), (134, 46411), (138, 46432), (139, 46456), (142, 46495), (145, 46519), (146, 46528), (157, 46618), (159, 46630), (165, 46735), (167, 46780),

Gene: Kate_60 Start: 45687, Stop: 46937, Start Num: 27
Candidate Starts for Kate_60:
(Start: 27 @45687 has 47 MA's), (43, 45843), (54, 45903), (84, 46044), (87, 46056), (90, 46077), (112, 46287), (118, 46353), (128, 46452), (134, 46512), (138, 46533), (139, 46557), (142, 46596), (145, 46620), (146, 46629), (157, 46719), (159, 46731), (165, 46836), (167, 46881),

Gene: Kors_67 Start: 46449, Stop: 47630, Start Num: 27
Candidate Starts for Kors_67:
(17, 46353), (21, 46401), (Start: 27 @46449 has 47 MA's), (31, 46479), (70, 46728), (83, 46794), (84, 46800), (85, 46803), (87, 46812), (100, 46890), (102, 46896), (113, 47013), (134, 47202), (138, 47223), (139, 47247), (145, 47310), (157, 47409), (159, 47421),

Gene: Krampus_60 Start: 45783, Stop: 47033, Start Num: 27
Candidate Starts for Krampus_60:
(Start: 16 @45687 has 3 MA's), (19, 45717), (Start: 27 @45783 has 47 MA's), (43, 45939), (54, 45999), (84, 46140), (87, 46152), (90, 46173), (112, 46383), (118, 46449), (128, 46548), (134, 46608), (138, 46629), (139, 46653), (142, 46692), (145, 46716), (146, 46725), (157, 46815), (159, 46827), (165, 46932), (167, 46977),

Gene: Leopard_56 Start: 42125, Stop: 43231, Start Num: 28
Candidate Starts for Leopard_56:
(20, 42053), (Start: 28 @42125 has 4 MA's), (31, 42143), (33, 42155), (34, 42161), (39, 42236), (40, 42248), (42, 42260), (49, 42311), (55, 42341), (58, 42350), (60, 42359), (62, 42362), (77, 42455), (81, 42485), (88, 42515), (96, 42569), (99, 42581), (114, 42662), (124, 42695), (138, 42815), (143, 42890), (151, 42935), (154, 42947), (158, 43019),

Gene: LilyPad_46 Start: 35050, Stop: 36075, Start Num: 29
Candidate Starts for LilyPad_46:
(Start: 29 @35050 has 31 MA's), (31, 35068), (39, 35161), (43, 35188), (75, 35353), (86, 35413), (92, 35452), (95, 35464), (96, 35473), (103, 35503), (126, 35704), (136, 35782), (138, 35791), (141, 35839), (143, 35860), (162, 36034),

Gene: LittleFella_52 Start: 36883, Stop: 37914, Start Num: 29
Candidate Starts for LittleFella_52:
(26, 36865), (Start: 29 @36883 has 31 MA's), (35, 36922), (38, 36991), (39, 36994), (50, 37069), (56, 37090), (59, 37099), (74, 37174), (97, 37291), (98, 37294), (103, 37318), (104, 37348), (107, 37369), (132, 37567), (133, 37582), (141, 37657), (143, 37678), (146, 37699), (153, 37735), (155, 37744), (161, 37861),

Gene: Lizz_75 Start: 52769, Stop: 51798, Start Num: 27
Candidate Starts for Lizz_75:
(Start: 27 @52769 has 47 MA's), (30, 52748), (39, 52649), (41, 52634), (43, 52622), (46, 52586), (55, 52553), (81, 52427), (84, 52412), (85, 52409), (99, 52331), (105, 52280), (129, 52112), (134, 52058), (140, 51986), (145, 51950), (149, 51929), (160, 51827),

Gene: LordBart_67 Start: 46344, Stop: 47525, Start Num: 27
Candidate Starts for LordBart_67:
(17, 46248), (18, 46269), (Start: 27 @46344 has 47 MA's), (31, 46374), (70, 46623), (83, 46689), (84, 46695), (85, 46698), (87, 46707), (100, 46785), (102, 46791), (134, 47097), (138, 47118), (139, 47142), (145, 47205), (157, 47304), (159, 47316),

Gene: Madi_42 Start: 33614, Stop: 34654, Start Num: 29
Candidate Starts for Madi_42:
(3, 33341), (6, 33380), (Start: 29 @33614 has 31 MA's), (39, 33725), (61, 33839), (69, 33881), (75, 33917), (83, 33962), (92, 34016), (95, 34028), (100, 34058), (103, 34067), (106, 34109), (115, 34163), (120, 34193), (126, 34268), (136, 34355), (141, 34412), (145, 34445), (156, 34508), (163, 34646),

Gene: Mopey_48 Start: 37100, Stop: 38209, Start Num: 29
Candidate Starts for Mopey_48:
(Start: 29 @37100 has 31 MA's), (32, 37127), (36, 37151), (39, 37211), (40, 37223), (42, 37235), (60, 37331), (76, 37409), (77, 37412), (78, 37415), (86, 37466), (91, 37496), (93, 37508), (99, 37538), (101, 37550), (109, 37619), (110, 37631), (121, 37685), (130, 37781), (132, 37799), (135, 37826), (138, 37841), (139, 37865), (141, 37895), (146, 37937), (156, 37985), (157, 38018), (166, 38144),

Gene: MortySmith_58 Start: 44851, Stop: 46098, Start Num: 27
Candidate Starts for MortySmith_58:
(19, 44785), (Start: 27 @44851 has 47 MA's), (43, 45004), (54, 45064), (81, 45190), (84, 45205), (87, 45217), (95, 45265), (118, 45514), (123, 45562), (134, 45673), (138, 45694), (139, 45718), (142, 45757), (145, 45781), (146, 45790), (157, 45880), (159, 45892), (165, 45997), (167, 46042),

Gene: NarutoRun_60 Start: 45748, Stop: 46998, Start Num: 27
Candidate Starts for NarutoRun_60:
(Start: 16 @45652 has 3 MA's), (19, 45682), (Start: 27 @45748 has 47 MA's), (43, 45904), (54, 45964), (84, 46105), (87, 46117), (90, 46138), (112, 46348), (118, 46414), (128, 46513), (134, 46573), (138, 46594), (139, 46618), (142, 46657), (145, 46681), (146, 46690), (157, 46780), (159, 46792), (165, 46897), (167, 46942),

Gene: Neptune_60 Start: 45778, Stop: 47028, Start Num: 27

Candidate Starts for Neptune_60:
(Start: 16 @45682 has 3 MA's), (19, 45712), (Start: 27 @45778 has 47 MA's), (43, 45934), (54, 45994), (84, 46135), (87, 46147), (90, 46168), (112, 46378), (118, 46444), (128, 46543), (134, 46603), (138, 46624), (139, 46648), (142, 46687), (145, 46711), (146, 46720), (157, 46810), (159, 46822), (165, 46927), (167, 46972),

Gene: Nova_46 Start: 37524, Stop: 38633, Start Num: 29
Candidate Starts for Nova_46:
(Start: 29 @37524 has 31 MA's), (32, 37551), (36, 37575), (39, 37635), (40, 37647), (42, 37659), (57, 37740), (60, 37755), (76, 37833), (77, 37836), (78, 37839), (86, 37890), (91, 37920), (93, 37932), (99, 37962), (101, 37974), (109, 38043), (110, 38055), (121, 38109), (130, 38205), (132, 38223), (135, 38250), (138, 38265), (139, 38289), (141, 38319), (156, 38409), (157, 38442),

Gene: OhDear_60 Start: 45746, Stop: 46996, Start Num: 27
Candidate Starts for OhDear_60:
(Start: 16 @45650 has 3 MA's), (19, 45680), (Start: 27 @45746 has 47 MA's), (43, 45902), (54, 45962), (84, 46103), (87, 46115), (90, 46136), (112, 46346), (118, 46412), (128, 46511), (134, 46571), (138, 46592), (139, 46616), (142, 46655), (145, 46679), (146, 46688), (157, 46778), (159, 46790), (165, 46895), (167, 46940),

Gene: Onyinye_57 Start: 42007, Stop: 43113, Start Num: 28
Candidate Starts for Onyinye_57:
(20, 41935), (Start: 28 @42007 has 4 MA's), (31, 42025), (33, 42037), (34, 42043), (39, 42118), (40, 42130), (42, 42142), (49, 42193), (55, 42223), (58, 42232), (60, 42241), (62, 42244), (77, 42337), (81, 42367), (88, 42397), (89, 42403), (96, 42451), (99, 42463), (114, 42544), (124, 42577), (138, 42697), (143, 42772), (151, 42817), (154, 42829), (158, 42901),

Gene: OverHedge_59 Start: 45548, Stop: 46894, Start Num: 16
Candidate Starts for OverHedge_59:
(Start: 16 @45548 has 3 MA's), (19, 45578), (Start: 27 @45644 has 47 MA's), (43, 45800), (47, 45839), (54, 45860), (84, 46001), (87, 46013), (90, 46034), (112, 46244), (118, 46310), (128, 46409), (134, 46469), (138, 46490), (139, 46514), (142, 46553), (145, 46577), (146, 46586), (157, 46676), (159, 46688), (165, 46793), (167, 46838),

Gene: PBI1_45 Start: 37031, Stop: 38140, Start Num: 29
Candidate Starts for PBI1_45:
(Start: 29 @37031 has 31 MA's), (32, 37058), (36, 37082), (39, 37142), (40, 37154), (42, 37166), (60, 37262), (76, 37340), (77, 37343), (78, 37346), (86, 37397), (91, 37427), (93, 37439), (99, 37469), (101, 37481), (109, 37550), (110, 37562), (121, 37616), (130, 37712), (132, 37730), (135, 37757), (138, 37772), (139, 37796), (141, 37826), (146, 37868), (156, 37916), (157, 37949), (166, 38075),

Gene: PHTowN_75 Start: 52767, Stop: 51796, Start Num: 27
Candidate Starts for PHTowN_75:
(Start: 27 @52767 has 47 MA's), (30, 52746), (39, 52647), (41, 52632), (43, 52620), (46, 52584), (55, 52551), (81, 52425), (84, 52410), (85, 52407), (99, 52329), (105, 52278), (129, 52110), (134, 52056), (140, 51984), (145, 51948), (149, 51927), (160, 51825),

Gene: PLot_47 Start: 37097, Stop: 38206, Start Num: 29
Candidate Starts for PLot_47:
(13, 36935), (15, 36977), (Start: 29 @37097 has 31 MA's), (32, 37124), (36, 37148), (39, 37208), (40, 37220), (42, 37232), (57, 37313), (60, 37328), (76, 37406), (77, 37409), (78, 37412), (86, 37463), (91, 37493), (93, 37505), (99, 37535), (101, 37547), (109, 37616), (110, 37628), (121, 37682), (130, 37778), (135, 37823), (138, 37838), (139, 37862), (141, 37892), (156, 37982), (157, 38015), (166,

38141),

Gene: Penelope2018_47 Start: 37100, Stop: 38209, Start Num: 29
Candidate Starts for Penelope2018_47:
(Start: 29 @37100 has 31 MA's), (32, 37127), (36, 37151), (39, 37211), (40, 37223), (42, 37235), (60, 37331), (76, 37409), (77, 37412), (78, 37415), (86, 37466), (91, 37496), (93, 37508), (99, 37538), (101, 37550), (109, 37619), (110, 37631), (121, 37685), (130, 37781), (132, 37799), (135, 37826), (138, 37841), (139, 37865), (141, 37895), (156, 37985), (157, 38018), (166, 38144),

Gene: Phalaborwa_48 Start: 37334, Stop: 38443, Start Num: 29
Candidate Starts for Phalaborwa_48:
(Start: 29 @37334 has 31 MA's), (32, 37361), (36, 37385), (39, 37445), (40, 37457), (42, 37469), (73, 37619), (76, 37643), (77, 37646), (78, 37649), (86, 37700), (88, 37706), (91, 37730), (93, 37742), (99, 37772), (101, 37784), (110, 37865), (121, 37919), (130, 38015), (132, 38033), (135, 38060), (136, 38066), (138, 38075), (139, 38099), (156, 38219), (157, 38252), (166, 38378),

Gene: Pharpay_59 Start: 45793, Stop: 47043, Start Num: 27
Candidate Starts for Pharpay_59:
(Start: 16 @45697 has 3 MA's), (19, 45727), (Start: 27 @45793 has 47 MA's), (43, 45949), (54, 46009), (84, 46150), (87, 46162), (90, 46183), (112, 46393), (118, 46459), (128, 46558), (134, 46618), (138, 46639), (139, 46663), (142, 46702), (145, 46726), (146, 46735), (157, 46825), (159, 46837), (165, 46942), (167, 46987),

Gene: PhunaPhoke_60 Start: 45763, Stop: 47013, Start Num: 27
Candidate Starts for PhunaPhoke_60:
(Start: 16 @45667 has 3 MA's), (19, 45697), (Start: 27 @45763 has 47 MA's), (43, 45919), (54, 45979), (84, 46120), (87, 46132), (90, 46153), (112, 46363), (118, 46429), (128, 46528), (134, 46588), (138, 46609), (139, 46633), (142, 46672), (145, 46696), (146, 46705), (157, 46795), (159, 46807), (165, 46912), (167, 46957),

Gene: Potty_59 Start: 45693, Stop: 46943, Start Num: 27
Candidate Starts for Potty_59:
(Start: 16 @45597 has 3 MA's), (19, 45627), (Start: 27 @45693 has 47 MA's), (43, 45849), (54, 45909), (84, 46050), (87, 46062), (90, 46083), (112, 46293), (118, 46359), (128, 46458), (134, 46518), (138, 46539), (139, 46563), (142, 46602), (145, 46626), (146, 46635), (157, 46725), (159, 46737), (165, 46842), (167, 46887),

Gene: Poultress_59 Start: 45990, Stop: 47240, Start Num: 27
Candidate Starts for Poultress_59:
(Start: 16 @45894 has 3 MA's), (19, 45924), (Start: 27 @45990 has 47 MA's), (43, 46146), (54, 46206), (81, 46332), (84, 46347), (87, 46359), (90, 46380), (112, 46590), (118, 46656), (128, 46755), (134, 46815), (138, 46836), (139, 46860), (142, 46899), (145, 46923), (146, 46932), (157, 47022), (159, 47034), (165, 47139), (167, 47184),

Gene: Prager_47 Start: 37120, Stop: 38229, Start Num: 29
Candidate Starts for Prager_47:
(Start: 29 @37120 has 31 MA's), (32, 37147), (36, 37171), (39, 37231), (40, 37243), (42, 37255), (60, 37351), (76, 37429), (77, 37432), (78, 37435), (86, 37486), (91, 37516), (93, 37528), (99, 37558), (101, 37570), (109, 37639), (110, 37651), (121, 37705), (130, 37801), (132, 37819), (135, 37846), (138, 37861), (139, 37885), (141, 37915), (146, 37957), (156, 38005), (157, 38038), (166, 38164),

Gene: Rachella_60 Start: 45774, Stop: 47024, Start Num: 27
Candidate Starts for Rachella_60:

(Start: 16 @45678 has 3 MA's), (19, 45708), (Start: 27 @45774 has 47 MA's), (43, 45930), (54, 45990), (84, 46131), (87, 46143), (90, 46164), (112, 46374), (118, 46440), (128, 46539), (134, 46599), (138, 46620), (139, 46644), (142, 46683), (145, 46707), (146, 46716), (157, 46806), (159, 46818), (165, 46923), (167, 46968),

Gene: Rie18_60 Start: 45575, Stop: 46825, Start Num: 27
Candidate Starts for Rie18_60:
(19, 45509), (Start: 27 @45575 has 47 MA's), (54, 45791), (81, 45917), (84, 45932), (87, 45944), (90, 45965), (104, 46061), (111, 46163), (134, 46400), (138, 46421), (139, 46445), (142, 46484), (145, 46508), (146, 46517), (157, 46607), (159, 46619), (167, 46769),

Gene: RikSengupta_67 Start: 46477, Stop: 47658, Start Num: 27
Candidate Starts for RikSengupta_67:
(17, 46381), (21, 46429), (Start: 27 @46477 has 47 MA's), (31, 46507), (70, 46756), (83, 46822), (84, 46828), (85, 46831), (87, 46840), (91, 46867), (100, 46918), (102, 46924), (134, 47230), (138, 47251), (139, 47275), (145, 47338), (157, 47437), (159, 47449),

Gene: Rooney_77 Start: 53191, Stop: 52226, Start Num: 27
Candidate Starts for Rooney_77:
(Start: 27 @53191 has 47 MA's), (30, 53170), (39, 53077), (43, 53050), (45, 53017), (51, 52996), (55, 52981), (68, 52930), (84, 52840), (105, 52708), (129, 52540), (134, 52486), (144, 52381), (145, 52378), (156, 52318), (160, 52255),

Gene: SassyC_80 Start: 53760, Stop: 52798, Start Num: 27
Candidate Starts for SassyC_80:
(Start: 27 @53760 has 47 MA's), (30, 53736), (39, 53637), (43, 53610), (55, 53541), (81, 53415), (84, 53400), (105, 53268), (129, 53115), (134, 53061), (145, 52953), (149, 52932), (160, 52830),

Gene: ShakeNBake_75 Start: 52794, Stop: 51823, Start Num: 27
Candidate Starts for ShakeNBake_75:
(Start: 27 @52794 has 47 MA's), (30, 52773), (39, 52674), (41, 52659), (43, 52647), (46, 52611), (55, 52578), (81, 52452), (84, 52437), (85, 52434), (99, 52356), (105, 52305), (129, 52137), (134, 52083), (140, 52011), (145, 51975), (149, 51954), (160, 51852),

Gene: Sienna_42 Start: 33614, Stop: 34654, Start Num: 29
Candidate Starts for Sienna_42:
(3, 33341), (6, 33380), (Start: 29 @33614 has 31 MA's), (39, 33725), (61, 33839), (69, 33881), (75, 33917), (83, 33962), (92, 34016), (95, 34028), (100, 34058), (103, 34067), (106, 34109), (115, 34163), (120, 34193), (126, 34268), (136, 34355), (141, 34412), (145, 34445), (163, 34646),

Gene: SilentWarrior_61 Start: 45212, Stop: 46459, Start Num: 27
Candidate Starts for SilentWarrior_61:
(19, 45146), (Start: 27 @45212 has 47 MA's), (43, 45365), (54, 45425), (81, 45551), (84, 45566), (87, 45578), (95, 45626), (118, 45875), (123, 45923), (134, 46034), (138, 46055), (139, 46079), (142, 46118), (145, 46142), (146, 46151), (157, 46241), (159, 46253), (165, 46358), (167, 46403),

Gene: SirHarley_48 Start: 37246, Stop: 38355, Start Num: 29
Candidate Starts for SirHarley_48:
(Start: 29 @37246 has 31 MA's), (32, 37273), (36, 37297), (39, 37357), (40, 37369), (42, 37381), (57, 37462), (60, 37477), (76, 37555), (77, 37558), (78, 37561), (86, 37612), (91, 37642), (93, 37654), (99, 37684), (101, 37696), (109, 37765), (110, 37777), (121, 37831), (130, 37927), (132, 37945), (135, 37972), (138, 37987), (139, 38011), (141, 38041), (156, 38131), (157, 38164), (166, 38290),

Gene: Snakehole_61 Start: 45188, Stop: 46438, Start Num: 27
Candidate Starts for Snakehole_61:
(Start: 16 @45092 has 3 MA's), (19, 45122), (Start: 27 @45188 has 47 MA's), (43, 45344), (54, 45404), (81, 45530), (84, 45545), (85, 45548), (87, 45557), (95, 45605), (118, 45854), (123, 45902), (134, 46013), (138, 46034), (139, 46058), (142, 46097), (145, 46121), (146, 46130), (157, 46220), (159, 46232), (165, 46337), (167, 46382),

Gene: Sparcetus_67 Start: 46354, Stop: 47535, Start Num: 27
Candidate Starts for Sparcetus_67:
(17, 46258), (21, 46306), (Start: 27 @46354 has 47 MA's), (31, 46384), (70, 46633), (83, 46699), (84, 46705), (85, 46708), (87, 46717), (91, 46744), (100, 46795), (102, 46801), (134, 47107), (138, 47128), (139, 47152), (145, 47215), (157, 47314), (159, 47326),

Gene: SuperheroCarly_49 Start: 37185, Stop: 38294, Start Num: 29
Candidate Starts for SuperheroCarly_49:
(Start: 29 @37185 has 31 MA's), (32, 37212), (35, 37224), (36, 37236), (39, 37296), (40, 37308), (42, 37320), (60, 37416), (76, 37494), (77, 37497), (78, 37500), (86, 37551), (91, 37581), (93, 37593), (99, 37623), (101, 37635), (109, 37704), (110, 37716), (121, 37770), (130, 37866), (132, 37884), (135, 37911), (138, 37926), (139, 37950), (141, 37980), (156, 38070), (157, 38103), (166, 38229),

Gene: Suzy_42 Start: 34129, Stop: 35169, Start Num: 29
Candidate Starts for Suzy_42:
(1, 33565), (2, 33670), (5, 33862), (Start: 29 @34129 has 31 MA's), (39, 34240), (43, 34267), (54, 34330), (69, 34396), (75, 34432), (83, 34477), (92, 34531), (95, 34543), (100, 34573), (103, 34582), (106, 34624), (120, 34708), (126, 34783), (136, 34870), (141, 34927), (145, 34960),

Gene: Tedro_60 Start: 45233, Stop: 46480, Start Num: 27
Candidate Starts for Tedro_60:
(19, 45167), (Start: 27 @45233 has 47 MA's), (43, 45386), (54, 45446), (81, 45572), (84, 45587), (87, 45599), (90, 45620), (95, 45647), (118, 45896), (128, 45995), (134, 46055), (138, 46076), (139, 46100), (142, 46139), (145, 46163), (146, 46172), (157, 46262), (159, 46274), (165, 46379), (167, 46424),

Gene: Terapin_43 Start: 33538, Stop: 34578, Start Num: 29
Candidate Starts for Terapin_43:
(3, 33265), (6, 33304), (Start: 29 @33538 has 31 MA's), (39, 33649), (61, 33763), (69, 33805), (75, 33841), (83, 33886), (92, 33940), (95, 33952), (100, 33982), (103, 33991), (115, 34087), (120, 34117), (126, 34192), (136, 34279), (141, 34336), (145, 34369), (163, 34570),

Gene: Thoth_47 Start: 37098, Stop: 38207, Start Num: 29
Candidate Starts for Thoth_47:
(Start: 29 @37098 has 31 MA's), (32, 37125), (36, 37149), (39, 37209), (40, 37221), (42, 37233), (57, 37314), (60, 37329), (76, 37407), (77, 37410), (78, 37413), (86, 37464), (91, 37494), (93, 37506), (99, 37536), (101, 37548), (109, 37617), (110, 37629), (121, 37683), (130, 37779), (132, 37797), (135, 37824), (138, 37839), (139, 37863), (141, 37893), (146, 37935), (156, 37983), (157, 38016), (166, 38142),

Gene: TinyMiny_67 Start: 46380, Stop: 47561, Start Num: 27
Candidate Starts for TinyMiny_67:
(17, 46284), (18, 46305), (21, 46332), (Start: 27 @46380 has 47 MA's), (31, 46410), (72, 46662), (84, 46731), (87, 46743), (100, 46821), (102, 46827), (119, 46992), (128, 47073), (134, 47133), (138, 47154), (139, 47178), (145, 47241), (152, 47277), (157, 47340), (159, 47352),

Gene: Tongui_60 Start: 45485, Stop: 46693, Start Num: 27
Candidate Starts for Tongui_60:
(19, 45419), (Start: 27 @45485 has 47 MA's), (54, 45701), (81, 45827), (84, 45842), (87, 45854), (116, 46082), (128, 46208), (134, 46268), (138, 46289), (139, 46313), (142, 46352), (145, 46376), (146, 46385), (157, 46475), (159, 46487), (167, 46637),

Gene: Troll4_47 Start: 37101, Stop: 38210, Start Num: 29
Candidate Starts for Troll4_47:
(13, 36939), (Start: 29 @37101 has 31 MA's), (32, 37128), (36, 37152), (39, 37212), (40, 37224), (42, 37236), (60, 37332), (76, 37410), (77, 37413), (78, 37416), (86, 37467), (91, 37497), (93, 37509), (99, 37539), (101, 37551), (109, 37620), (110, 37632), (121, 37686), (130, 37782), (132, 37800), (135, 37827), (138, 37842), (139, 37866), (141, 37896), (156, 37986), (157, 38019), (166, 38145),

Gene: Virizion_83 Start: 53411, Stop: 52446, Start Num: 27
Candidate Starts for Virizion_83:
(Start: 27 @53411 has 47 MA's), (30, 53390), (39, 53297), (43, 53270), (45, 53237), (51, 53216), (55, 53201), (68, 53150), (84, 53060), (105, 52928), (129, 52760), (134, 52706), (144, 52601), (145, 52598), (156, 52538), (160, 52475),

Gene: Visconti_48 Start: 37110, Stop: 38219, Start Num: 29
Candidate Starts for Visconti_48:
(Start: 29 @37110 has 31 MA's), (32, 37137), (36, 37161), (39, 37221), (40, 37233), (42, 37245), (60, 37341), (76, 37419), (77, 37422), (78, 37425), (86, 37476), (91, 37506), (93, 37518), (99, 37548), (101, 37560), (109, 37629), (110, 37641), (121, 37695), (130, 37791), (132, 37809), (135, 37836), (138, 37851), (139, 37875), (141, 37905), (146, 37947), (156, 37995), (157, 38028), (166, 38154),

Gene: WaldoWhy_49 Start: 37111, Stop: 38220, Start Num: 29
Candidate Starts for WaldoWhy_49:
(13, 36949), (15, 36991), (Start: 29 @37111 has 31 MA's), (32, 37138), (36, 37162), (39, 37222), (40, 37234), (42, 37246), (57, 37327), (60, 37342), (76, 37420), (77, 37423), (78, 37426), (86, 37477), (91, 37507), (93, 37519), (99, 37549), (101, 37561), (109, 37630), (110, 37642), (121, 37696), (130, 37792), (132, 37810), (135, 37837), (138, 37852), (139, 37876), (141, 37906), (156, 37996), (157, 38029), (166, 38155),

Gene: Wentworth_75 Start: 52818, Stop: 51838, Start Num: 27
Candidate Starts for Wentworth_75:
(9, 53025), (24, 52854), (25, 52848), (Start: 27 @52818 has 47 MA's), (30, 52785), (34, 52764), (38, 52695), (39, 52692), (43, 52665), (55, 52596), (81, 52470), (84, 52455), (85, 52452), (105, 52323), (129, 52155), (134, 52101), (145, 51993), (160, 51870),

Gene: Wilkos_77 Start: 52984, Stop: 52007, Start Num: 27
Candidate Starts for Wilkos_77:
(25, 53014), (Start: 27 @52984 has 47 MA's), (30, 52951), (34, 52930), (39, 52858), (43, 52831), (55, 52762), (68, 52711), (82, 52630), (105, 52489), (117, 52426), (125, 52345), (129, 52321), (134, 52267), (144, 52162), (145, 52159), (160, 52036),

Gene: Wollypog_37 Start: 28129, Stop: 29247, Start Num: 29
Candidate Starts for Wollypog_37:
(18, 28045), (19, 28051), (Start: 29 @28129 has 31 MA's), (39, 28240), (53, 28327), (58, 28345), (63, 28363), (66, 28372), (67, 28384), (81, 28465), (84, 28480), (85, 28483), (119, 28669), (122, 28699), (143, 28906), (150, 28948), (157, 29026), (159, 29038), (164, 29134),

Gene: Yara_73 Start: 52131, Stop: 51136, Start Num: 27

Candidate Starts for Yara_73:
(4, 52404), (7, 52371), (22, 52176), (25, 52161), (Start: 27 @52131 has 47 MA's), (30, 52119), (31, 52116), (32, 52107), (39, 52026), (43, 51999), (44, 51981), (79, 51828), (84, 51792), (85, 51789), (104, 51663), (105, 51660), (127, 51504), (145, 51333), (147, 51318),