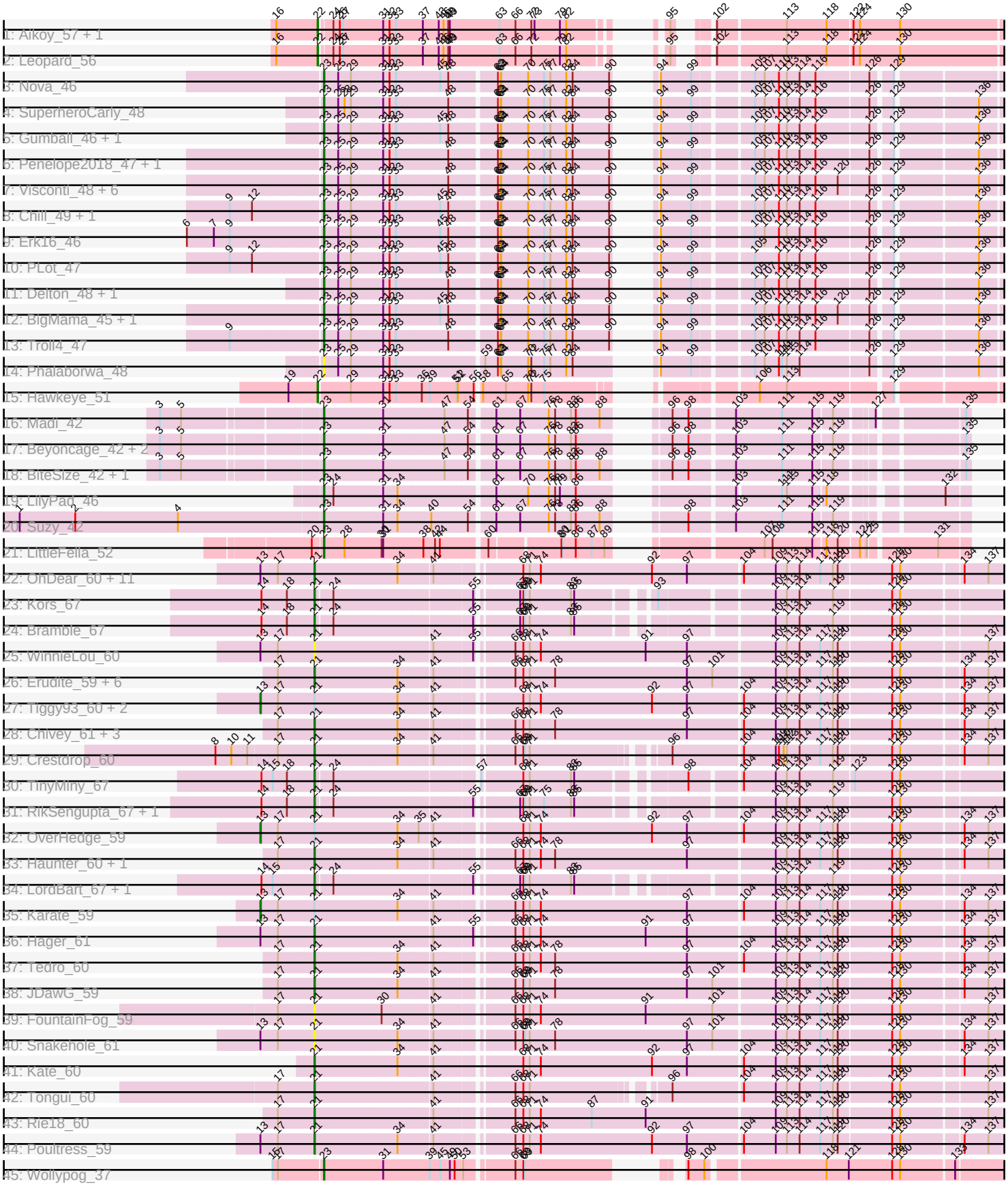
Pham 347510


1: Alkoy_57 + 1
2: Leopard_56
3: Nova_46
4: SuperheroCarly_48
5: Gumball_46 + 1
6: Penelope2018_47 + 1
7: Visconti_48 + 6
8: Chill_49 + 1
9: Erk16_46
10: PLot_47
11: Delton_48 + 1
12: BigMama_45 + 1
13: Troll4_47
14: Phalaborwa_48
15: Hawkeye_51
16: Madi_42
17: Beyoncage_42 + 2
18: BiteSize_42 + 1
19: LilyPad_46
20: Suzy_42
21: LittleFella_52
22: OhDear_60 + 11
23: Kors_67
24: Bramble_67
25: WinnieLou_60
26: Erudite_59 + 6
27: Tiggy93_60 + 2
28: Chivey_61 + 3
29: Crestdrop_60
30: TinyMiny_67
31: RikSengupta_67 + 1
32: OverHedge_59
33: Haunter_60 + 1
34: LordBart_67 + 1
35: Karate_59
36: Hager_61
37: Tedro_60
38: JDawG_59
39: FountainFog_59
40: Snakehole_61
41: Kate_60
42: Tongui_60
43: Rie18_60
44: Poultress_59
45: Wollypog_37

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 347510 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347510 has 85 members, 5 are drafts.

Phages represented in each track:
• Track 1 : Aikoy_57, Onyinye_57
• Track 2 : Leopard_56
• Track 3 : Nova_46
• Track 4 : SuperheroCarly_48
• Track 5 : Gumball_46, SirHarley_48
• Track 6 : Penelope2018_47, KandZ_46
• Track 7 : Visconti_48, Butterscotch_46, Giuseppe_47, Adjutor_47, Mopey_48, Prager_47, PBI1_45
• Track 8 : Chill_49, WaldoWhy_49
• Track 9 : Erk16_46
• Track 10 : PLot_47
• Track 11 : Delton_48, Helpful_50
• Track 12 : BigMama_45, Thoth_47
• Track 13 : Troll4_47
• Track 14 : Phalaborwa_48
• Track 15 : Hawkeye_51
• Track 16 : Madi_42
• Track 17 : Beyoncage_42, Terapin_43, Djokovic_42
• Track 18 : BiteSize_42, Sienna_42
• Track 19 : LilyPad_46
• Track 20 : Suzy_42
• Track 21 : LittleFella_52
• Track 22 : OhDear_60, Krampus_60, Anakin_60, Gilda_60, Rachella_60, NarutoRun_60, Pharpay_59, Potty_59, PhunaPhoke_60, AnnaSerena_60, SafetyGuy_59, Neptune_60
• Track 23 : Kors_67
• Track 24 : Bramble_67
• Track 25 : WinnieLou_60
• Track 26 : Erudite_59, Annapurna_61, SilentWarrior_61, Aesir_59, MortySmith_58, JingleBells_60, Dauntless_59
• Track 27 : Tiggy93_60, Cybele_60, Artiphact_60
• Track 28 : Chivey_61, Hiddenleaf_61, DannyDe_61, FreddieHg_61
• Track 29 : Crestdrop_60
• Track 30 : TinyMiny_67
• Track 31 : RikSengupta_67, Sparcetus_67
• Track 32 : OverHedge_59
• Track 33 : Haunter_60, CoolCookie_59

• Track 34 : LordBart_67, Ajin_67
• Track 35 : Karate_59
• Track 36 : Hager_61
• Track 37 : Tedro_60
• Track 38 : JDawG_59
• Track 39 : FountainFog_59
• Track 40 : Snakehole_61
• Track 41 : Kate_60
• Track 42 : Tongui_60
• Track 43 : Rie18_60
• Track 44 : Poultress_59
• Track 45 : 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 21, it was called in 39 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aesir_59, Ajin_67, Anakin_60, AnnaSerena_60, Annapurna_61, Bramble_67, Chivey_61, CoolCookie_59, Crestdrop_60, DannyDe_61, Dauntless_59, Erudite_59, FountainFog_59, FreddieHg_61, Gilda_60, Hager_61, Haunter_60, Hiddenleaf_61, JDawG_59, JingleBells_60, Kate_60, Kors_67, Krampus_60, LordBart_67, MortySmith_58, NarutoRun_60, Neptune_60, OhDear_60, Pharpay_59, PhunaPhoke_60, Potty_59, Poultress_59, Rachella_60, Rie18_60, RikSengupta_67, SafetyGuy_59, SilentWarrior_61, Snakehole_61, Sparcetus_67, Tedro_60, TinyMiny_67, Tongui_60, WinnieLou_60,

Genes that have the "Most Annotated" start but do not call it:
• Artiphact_60, Cybele_60, Karate_59, OverHedge_59, Tiggy93_60,

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_48, Suzy_42, Terapin_43, Thoth_47, Troll4_47, Visconti_48, WaldoWhy_49, Wollypog_37,

Summary by start number:

Start 13:
• Found in 21 of 85 (24.7%) of genes in pham
• Manual Annotations of this start: 5 of 80
• Called 23.8% of time when present
• Phage (with cluster) where this start called: Artiphact_60 (EF), Cybele_60 (EF), Karate_59 (EF), OverHedge_59 (EF), Tiggy93_60 (EF),

Start 21:
• Found in 48 of 85 (56.5%) of genes in pham

• Manual Annotations of this start: 39 of 80
• Called 89.6% 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), Bramble_67 (EF), Chivey_61 (EF), CoolCookie_59 (EF), Crestdrop_60 (EF), DannyDe_61 (EF), Dauntless_59 (EF), Erudite_59 (EF), FountainFog_59 (EF), FreddieHg_61 (EF), Gilda_60 (EF), Hager_61 (EF), Haunter_60 (EF), Hiddenleaf_61 (EF), JDawG_59 (EF), JingleBells_60 (EF), Kate_60 (EF), Kors_67 (EF), Krampus_60 (EF), LordBart_67 (EF), MortySmith_58 (EF), NarutoRun_60 (EF), Neptune_60 (EF), OhDear_60 (EF), Pharpay_59 (EF), PhunaPhoke_60 (EF), Potty_59 (EF), Poultress_59 (EF), Rachella_60 (EF), Rie18_60 (EF), RikSengupta_67 (EF), SafetyGuy_59 (EF), SilentWarrior_61 (EF), Snakehole_61 (EF), Sparcetus_67 (EF), Tedro_60 (EF), TinyMiny_67 (EF), Tongui_60 (EF), WinnieLou_60 (EF),

Start 22:
• Found in 4 of 85 (4.7%) of genes in pham
• Manual Annotations of this start: 4 of 80
• 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 23:
• Found in 33 of 85 (38.8%) of genes in pham
• Manual Annotations of this start: 32 of 80
• 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_48 (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 7 clusters represented in this pham: singleton, AE, EF, DG2, DG1, D2, D1,

Info for manual annotations of cluster AE:
•Start number 22 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster D1:
•Start number 23 was manually annotated 22 times for cluster D1.

Info for manual annotations of cluster D2:
•Start number 22 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:
•Start number 23 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:
•Start number 23 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster EF:
•Start number 13 was manually annotated 5 times for cluster EF.
•Start number 21 was manually annotated 39 times for cluster EF.

Gene Information:

Gene: Adjutor_47 Start: 37040, Stop: 38149, Start Num: 23
Candidate Starts for Adjutor_47:
(Start: 23 @37040 has 32 MA's), (25, 37067), (29, 37091), (31, 37151), (32, 37163), (33, 37175), (48, 37271), (62, 37349), (63, 37352), (64, 37355), (70, 37406), (75, 37436), (77, 37448), (82, 37478), (84, 37490), (90, 37559), (94, 37571), (99, 37625), (105, 37721), (107, 37739), (110, 37766), (113, 37781), (114, 37805), (116, 37835), (120, 37877), (126, 37925), (129, 37958), (136, 38084),

Gene: Aesir_59 Start: 45442, Stop: 46689, Start Num: 21
Candidate Starts for Aesir_59:
(17, 45376), (Start: 21 @45442 has 39 MA's), (34, 45595), (41, 45655), (66, 45781), (68, 45796), (71, 45808), (78, 45856), (97, 46105), (101, 46153), (109, 46264), (113, 46285), (114, 46309), (117, 46348), (119, 46372), (120, 46381), (128, 46471), (130, 46483), (134, 46588), (137, 46633),

Gene: Aikoy_57 Start: 41840, Stop: 42946, Start Num: 22
Candidate Starts for Aikoy_57:
(16, 41768), (Start: 22 @41840 has 4 MA's), (24, 41858), (26, 41870), (27, 41876), (31, 41951), (32, 41963), (33, 41975), (37, 42026), (43, 42056), (46, 42065), (48, 42074), (49, 42077), (63, 42170), (66, 42200), (72, 42230), (73, 42236), (79, 42284), (82, 42296), (95, 42377), (102, 42410), (113, 42530), (118, 42605), (122, 42650), (124, 42662), (130, 42734),

Gene: Ajin_67 Start: 46362, Stop: 47543, Start Num: 21
Candidate Starts for Ajin_67:
(14, 46266), (15, 46287), (Start: 21 @46362 has 39 MA's), (24, 46392), (55, 46641), (67, 46707), (68, 46713), (69, 46716), (71, 46725), (83, 46803), (85, 46809), (109, 47115), (113, 47136), (114, 47160), (119, 47223), (128, 47322), (130, 47334),

Gene: Anakin_60 Start: 45748, Stop: 46998, Start Num: 21
Candidate Starts for Anakin_60:
(Start: 13 @45652 has 5 MA's), (17, 45682), (Start: 21 @45748 has 39 MA's), (34, 45904), (41, 45964), (68, 46105), (71, 46117), (74, 46138), (92, 46348), (97, 46414), (104, 46513), (109, 46573), (113, 46594), (114, 46618), (117, 46657), (119, 46681), (120, 46690), (128, 46780), (130, 46792), (134, 46897), (137, 46942),

Gene: AnnaSerena_60 Start: 45782, Stop: 47032, Start Num: 21
Candidate Starts for AnnaSerena_60:
(Start: 13 @45686 has 5 MA's), (17, 45716), (Start: 21 @45782 has 39 MA's), (34, 45938), (41, 45998), (68, 46139), (71, 46151), (74, 46172), (92, 46382), (97, 46448), (104, 46547), (109, 46607), (113, 46628), (114, 46652), (117, 46691), (119, 46715), (120, 46724), (128, 46814), (130, 46826), (134, 46931), (137, 46976),

Gene: Annapurna_61 Start: 45291, Stop: 46538, Start Num: 21
Candidate Starts for Annapurna_61:
(17, 45225), (Start: 21 @45291 has 39 MA's), (34, 45444), (41, 45504), (66, 45630), (68, 45645), (71, 45657), (78, 45705), (97, 45954), (101, 46002), (109, 46113), (113, 46134), (114, 46158), (117,

46197), (119, 46221), (120, 46230), (128, 46320), (130, 46332), (134, 46437), (137, 46482),

Gene: Artiphact_60 Start: 45676, Stop: 47022, Start Num: 13
Candidate Starts for Artiphact_60:
(Start: 13 @45676 has 5 MA's), (17, 45706), (Start: 21 @45772 has 39 MA's), (34, 45928), (41, 45988), (68, 46129), (71, 46141), (74, 46162), (92, 46372), (97, 46438), (104, 46537), (109, 46597), (113, 46618), (114, 46642), (117, 46681), (119, 46705), (120, 46714), (128, 46804), (130, 46816), (134, 46921), (137, 46966),

Gene: Beyoncage_42 Start: 33537, Stop: 34577, Start Num: 23
Candidate Starts for Beyoncage_42:
(3, 33264), (5, 33303), (Start: 23 @33537 has 32 MA's), (31, 33648), (47, 33762), (54, 33804), (61, 33840), (67, 33885), (76, 33939), (78, 33951), (83, 33981), (86, 33990), (96, 34086), (98, 34116), (103, 34191), (111, 34278), (115, 34335), (119, 34368), (135, 34569),

Gene: BigMama_45 Start: 37116, Stop: 38225, Start Num: 23
Candidate Starts for BigMama_45:
(Start: 23 @37116 has 32 MA's), (25, 37143), (29, 37167), (31, 37227), (32, 37239), (33, 37251), (45, 37332), (48, 37347), (62, 37425), (63, 37428), (64, 37431), (70, 37482), (75, 37512), (77, 37524), (82, 37554), (84, 37566), (90, 37635), (94, 37647), (99, 37701), (105, 37797), (107, 37815), (110, 37842), (113, 37857), (114, 37881), (116, 37911), (120, 37953), (126, 38001), (129, 38034), (136, 38160),

Gene: BiteSize_42 Start: 33623, Stop: 34663, Start Num: 23
Candidate Starts for BiteSize_42:
(3, 33350), (5, 33389), (Start: 23 @33623 has 32 MA's), (31, 33734), (47, 33848), (54, 33890), (61, 33926), (67, 33971), (76, 34025), (78, 34037), (83, 34067), (86, 34076), (88, 34118), (96, 34172), (98, 34202), (103, 34277), (111, 34364), (115, 34421), (119, 34454), (135, 34655),

Gene: Bramble_67 Start: 46376, Stop: 47557, Start Num: 21
Candidate Starts for Bramble_67:
(14, 46280), (18, 46328), (Start: 21 @46376 has 39 MA's), (24, 46406), (55, 46655), (67, 46721), (68, 46727), (69, 46730), (71, 46739), (83, 46817), (85, 46823), (109, 47129), (113, 47150), (114, 47174), (119, 47237), (128, 47336), (130, 47348),

Gene: Butterscotch_46 Start: 37100, Stop: 38209, Start Num: 23
Candidate Starts for Butterscotch_46:
(Start: 23 @37100 has 32 MA's), (25, 37127), (29, 37151), (31, 37211), (32, 37223), (33, 37235), (48, 37331), (62, 37409), (63, 37412), (64, 37415), (70, 37466), (75, 37496), (77, 37508), (82, 37538), (84, 37550), (90, 37619), (94, 37631), (99, 37685), (105, 37781), (107, 37799), (110, 37826), (113, 37841), (114, 37865), (116, 37895), (120, 37937), (126, 37985), (129, 38018), (136, 38144),

Gene: Chill_49 Start: 37111, Stop: 38220, Start Num: 23
Candidate Starts for Chill_49:
(9, 36949), (12, 36991), (Start: 23 @37111 has 32 MA's), (25, 37138), (29, 37162), (31, 37222), (32, 37234), (33, 37246), (45, 37327), (48, 37342), (62, 37420), (63, 37423), (64, 37426), (70, 37477), (75, 37507), (77, 37519), (82, 37549), (84, 37561), (90, 37630), (94, 37642), (99, 37696), (105, 37792), (107, 37810), (110, 37837), (113, 37852), (114, 37876), (116, 37906), (126, 37996), (129, 38029), (136, 38155),

Gene: Chivey_61 Start: 45245, Stop: 46492, Start Num: 21
Candidate Starts for Chivey_61:
(17, 45179), (Start: 21 @45245 has 39 MA's), (34, 45398), (41, 45458), (66, 45584), (68, 45599), (71, 45611), (78, 45659), (97, 45908), (104, 46007), (109, 46067), (113, 46088), (114, 46112), (117,

46151), (119, 46175), (120, 46184), (128, 46274), (130, 46286), (134, 46391), (137, 46436),

Gene: CoolCookie_59 Start: 45826, Stop: 47073, Start Num: 21
Candidate Starts for CoolCookie_59:
(17, 45760), (Start: 21 @45826 has 39 MA's), (34, 45979), (41, 46039), (66, 46165), (68, 46180), (71, 46192), (74, 46213), (78, 46240), (97, 46489), (109, 46648), (113, 46669), (114, 46693), (117, 46732), (119, 46756), (120, 46765), (128, 46855), (130, 46867), (134, 46972), (137, 47017),

Gene: Crestdrop_60 Start: 45511, Stop: 46716, Start Num: 21
Candidate Starts for Crestdrop_60:
(8, 45334), (10, 45364), (11, 45394), (17, 45445), (Start: 21 @45511 has 39 MA's), (34, 45664), (41, 45724), (66, 45850), (68, 45865), (69, 45868), (71, 45877), (96, 46105), (104, 46231), (109, 46291), (110, 46297), (112, 46306), (113, 46312), (114, 46336), (117, 46375), (119, 46399), (120, 46408), (128, 46498), (130, 46510), (134, 46615), (137, 46660),

Gene: Cybele_60 Start: 45682, Stop: 47028, Start Num: 13
Candidate Starts for Cybele_60:
(Start: 13 @45682 has 5 MA's), (17, 45712), (Start: 21 @45778 has 39 MA's), (34, 45934), (41, 45994), (68, 46135), (71, 46147), (74, 46168), (92, 46378), (97, 46444), (104, 46543), (109, 46603), (113, 46624), (114, 46648), (117, 46687), (119, 46711), (120, 46720), (128, 46810), (130, 46822), (134, 46927), (137, 46972),

Gene: DannyDe_61 Start: 45246, Stop: 46493, Start Num: 21
Candidate Starts for DannyDe_61:
(17, 45180), (Start: 21 @45246 has 39 MA's), (34, 45399), (41, 45459), (66, 45585), (68, 45600), (71, 45612), (78, 45660), (97, 45909), (104, 46008), (109, 46068), (113, 46089), (114, 46113), (117, 46152), (119, 46176), (120, 46185), (128, 46275), (130, 46287), (134, 46392), (137, 46437),

Gene: Dauntless_59 Start: 45377, Stop: 46624, Start Num: 21
Candidate Starts for Dauntless_59:
(17, 45311), (Start: 21 @45377 has 39 MA's), (34, 45530), (41, 45590), (66, 45716), (68, 45731), (71, 45743), (78, 45791), (97, 46040), (101, 46088), (109, 46199), (113, 46220), (114, 46244), (117, 46283), (119, 46307), (120, 46316), (128, 46406), (130, 46418), (134, 46523), (137, 46568),

Gene: Delton_48 Start: 37324, Stop: 38433, Start Num: 23
Candidate Starts for Delton_48:
(Start: 23 @37324 has 32 MA's), (25, 37351), (29, 37375), (31, 37435), (32, 37447), (33, 37459), (48, 37555), (62, 37633), (63, 37636), (64, 37639), (70, 37690), (75, 37720), (77, 37732), (82, 37762), (84, 37774), (90, 37843), (94, 37855), (99, 37909), (105, 38005), (107, 38023), (110, 38050), (113, 38065), (114, 38089), (116, 38119), (126, 38209), (129, 38242), (136, 38368),

Gene: Djokovic_42 Start: 33536, Stop: 34576, Start Num: 23
Candidate Starts for Djokovic_42:
(3, 33263), (5, 33302), (Start: 23 @33536 has 32 MA's), (31, 33647), (47, 33761), (54, 33803), (61, 33839), (67, 33884), (76, 33938), (78, 33950), (83, 33980), (86, 33989), (96, 34085), (98, 34115), (103, 34190), (111, 34277), (115, 34334), (119, 34367), (135, 34568),

Gene: Erk16_46 Start: 37105, Stop: 38214, Start Num: 23
Candidate Starts for Erk16_46:
(6, 36862), (7, 36913), (9, 36943), (Start: 23 @37105 has 32 MA's), (25, 37132), (29, 37156), (31, 37216), (32, 37228), (33, 37240), (45, 37321), (48, 37336), (62, 37414), (63, 37417), (64, 37420), (70, 37471), (75, 37501), (77, 37513), (82, 37543), (84, 37555), (90, 37624), (94, 37636), (99, 37690), (105, 37786), (107, 37804), (110, 37831), (113, 37846), (114, 37870), (116, 37900), (126, 37990), (129,

38023), (136, 38149),

Gene: Erudite_59 Start: 45377, Stop: 46624, Start Num: 21
Candidate Starts for Erudite_59:
(17, 45311), (Start: 21 @45377 has 39 MA's), (34, 45530), (41, 45590), (66, 45716), (68, 45731), (71, 45743), (78, 45791), (97, 46040), (101, 46088), (109, 46199), (113, 46220), (114, 46244), (117, 46283), (119, 46307), (120, 46316), (128, 46406), (130, 46418), (134, 46523), (137, 46568),

Gene: FountainFog_59 Start: 45008, Stop: 46258, Start Num: 21
Candidate Starts for FountainFog_59:
(17, 44942), (Start: 21 @45008 has 39 MA's), (30, 45134), (41, 45224), (66, 45350), (68, 45365), (71, 45377), (74, 45398), (91, 45596), (101, 45722), (109, 45833), (113, 45854), (114, 45878), (117, 45917), (119, 45941), (120, 45950), (128, 46040), (130, 46052), (137, 46202),

Gene: FreddieHg_61 Start: 45262, Stop: 46509, Start Num: 21
Candidate Starts for FreddieHg_61:
(17, 45196), (Start: 21 @45262 has 39 MA's), (34, 45415), (41, 45475), (66, 45601), (68, 45616), (71, 45628), (78, 45676), (97, 45925), (104, 46024), (109, 46084), (113, 46105), (114, 46129), (117, 46168), (119, 46192), (120, 46201), (128, 46291), (130, 46303), (134, 46408), (137, 46453),

Gene: Gilda_60 Start: 45770, Stop: 47020, Start Num: 21
Candidate Starts for Gilda_60:
(Start: 13 @45674 has 5 MA's), (17, 45704), (Start: 21 @45770 has 39 MA's), (34, 45926), (41, 45986), (68, 46127), (71, 46139), (74, 46160), (92, 46370), (97, 46436), (104, 46535), (109, 46595), (113, 46616), (114, 46640), (117, 46679), (119, 46703), (120, 46712), (128, 46802), (130, 46814), (134, 46919), (137, 46964),

Gene: Giuseppe_47 Start: 37089, Stop: 38198, Start Num: 23
Candidate Starts for Giuseppe_47:
(Start: 23 @37089 has 32 MA's), (25, 37116), (29, 37140), (31, 37200), (32, 37212), (33, 37224), (48, 37320), (62, 37398), (63, 37401), (64, 37404), (70, 37455), (75, 37485), (77, 37497), (82, 37527), (84, 37539), (90, 37608), (94, 37620), (99, 37674), (105, 37770), (107, 37788), (110, 37815), (113, 37830), (114, 37854), (116, 37884), (120, 37926), (126, 37974), (129, 38007), (136, 38133),

Gene: Gumball_46 Start: 37264, Stop: 38373, Start Num: 23
Candidate Starts for Gumball_46:
(Start: 23 @37264 has 32 MA's), (25, 37291), (29, 37315), (31, 37375), (32, 37387), (33, 37399), (45, 37480), (48, 37495), (62, 37573), (63, 37576), (64, 37579), (70, 37630), (75, 37660), (77, 37672), (82, 37702), (84, 37714), (90, 37783), (94, 37795), (99, 37849), (105, 37945), (107, 37963), (110, 37990), (113, 38005), (114, 38029), (116, 38059), (126, 38149), (129, 38182), (136, 38308),

Gene: Hager_61 Start: 45161, Stop: 46411, Start Num: 21
Candidate Starts for Hager_61:
(Start: 13 @45065 has 5 MA's), (17, 45095), (Start: 21 @45161 has 39 MA's), (41, 45377), (55, 45446), (66, 45503), (68, 45518), (71, 45530), (74, 45551), (91, 45749), (97, 45827), (109, 45986), (113, 46007), (114, 46031), (117, 46070), (119, 46094), (120, 46103), (128, 46193), (130, 46205), (134, 46310), (137, 46355),

Gene: Haunter_60 Start: 45015, Stop: 46262, Start Num: 21
Candidate Starts for Haunter_60:
(17, 44949), (Start: 21 @45015 has 39 MA's), (34, 45168), (41, 45228), (66, 45354), (68, 45369), (71, 45381), (74, 45402), (78, 45429), (97, 45678), (109, 45837), (113, 45858), (114, 45882), (117, 45921), (119, 45945), (120, 45954), (128, 46044), (130, 46056), (134, 46161), (137, 46206),

Gene: Hawkeye_51 Start: 37216, Stop: 38304, Start Num: 22
Candidate Starts for Hawkeye_51:
(19, 37168), (Start: 22 @37216 has 4 MA's), (29, 37270), (31, 37330), (32, 37342), (33, 37354), (36, 37402), (39, 37417), (51, 37465), (52, 37468), (56, 37492), (58, 37498), (65, 37540), (70, 37582), (72, 37588), (75, 37612), (106, 37885), (113, 37936), (129, 38113),

Gene: Helpful_50 Start: 37299, Stop: 38408, Start Num: 23
Candidate Starts for Helpful_50:
(Start: 23 @37299 has 32 MA's), (25, 37326), (29, 37350), (31, 37410), (32, 37422), (33, 37434), (48, 37530), (62, 37608), (63, 37611), (64, 37614), (70, 37665), (75, 37695), (77, 37707), (82, 37737), (84, 37749), (90, 37818), (94, 37830), (99, 37884), (105, 37980), (107, 37998), (110, 38025), (113, 38040), (114, 38064), (116, 38094), (126, 38184), (129, 38217), (136, 38343),

Gene: Hiddenleaf_61 Start: 45245, Stop: 46492, Start Num: 21
Candidate Starts for Hiddenleaf_61:
(17, 45179), (Start: 21 @45245 has 39 MA's), (34, 45398), (41, 45458), (66, 45584), (68, 45599), (71, 45611), (78, 45659), (97, 45908), (104, 46007), (109, 46067), (113, 46088), (114, 46112), (117, 46151), (119, 46175), (120, 46184), (128, 46274), (130, 46286), (134, 46391), (137, 46436),

Gene: JDawG_59 Start: 45437, Stop: 46684, Start Num: 21
Candidate Starts for JDawG_59:
(17, 45371), (Start: 21 @45437 has 39 MA's), (34, 45590), (41, 45650), (66, 45776), (68, 45791), (69, 45794), (71, 45803), (78, 45851), (97, 46100), (101, 46148), (109, 46259), (113, 46280), (114, 46304), (117, 46343), (119, 46367), (120, 46376), (128, 46466), (130, 46478), (134, 46583), (137, 46628),

Gene: JingleBells_60 Start: 45351, Stop: 46598, Start Num: 21
Candidate Starts for JingleBells_60:
(17, 45285), (Start: 21 @45351 has 39 MA's), (34, 45504), (41, 45564), (66, 45690), (68, 45705), (71, 45717), (78, 45765), (97, 46014), (101, 46062), (109, 46173), (113, 46194), (114, 46218), (117, 46257), (119, 46281), (120, 46290), (128, 46380), (130, 46392), (134, 46497), (137, 46542),

Gene: KandZ_46 Start: 37198, Stop: 38307, Start Num: 23
Candidate Starts for KandZ_46:
(Start: 23 @37198 has 32 MA's), (25, 37225), (29, 37249), (31, 37309), (32, 37321), (33, 37333), (48, 37429), (62, 37507), (63, 37510), (64, 37513), (70, 37564), (75, 37594), (77, 37606), (82, 37636), (84, 37648), (90, 37717), (94, 37729), (99, 37783), (105, 37879), (107, 37897), (110, 37924), (113, 37939), (114, 37963), (116, 37993), (126, 38083), (129, 38116), (136, 38242),

Gene: Karate_59 Start: 45490, Stop: 46836, Start Num: 13
Candidate Starts for Karate_59:
(Start: 13 @45490 has 5 MA's), (17, 45520), (Start: 21 @45586 has 39 MA's), (34, 45742), (41, 45802), (66, 45928), (68, 45943), (71, 45955), (74, 45976), (97, 46252), (104, 46351), (109, 46411), (113, 46432), (114, 46456), (117, 46495), (119, 46519), (120, 46528), (128, 46618), (130, 46630), (134, 46735), (137, 46780),

Gene: Kate_60 Start: 45687, Stop: 46937, Start Num: 21
Candidate Starts for Kate_60:
(Start: 21 @45687 has 39 MA's), (34, 45843), (41, 45903), (68, 46044), (71, 46056), (74, 46077), (92, 46287), (97, 46353), (104, 46452), (109, 46512), (113, 46533), (114, 46557), (117, 46596), (119, 46620), (120, 46629), (128, 46719), (130, 46731), (134, 46836), (137, 46881),

Gene: Kors_67 Start: 46449, Stop: 47630, Start Num: 21

Candidate Starts for Kors_67:
(14, 46353), (18, 46401), (Start: 21 @46449 has 39 MA's), (24, 46479), (55, 46728), (67, 46794), (68, 46800), (69, 46803), (71, 46812), (83, 46890), (85, 46896), (93, 47013), (109, 47202), (113, 47223), (114, 47247), (119, 47310), (128, 47409), (130, 47421),

Gene: Krampus_60 Start: 45783, Stop: 47033, Start Num: 21
Candidate Starts for Krampus_60:
(Start: 13 @45687 has 5 MA's), (17, 45717), (Start: 21 @45783 has 39 MA's), (34, 45939), (41, 45999), (68, 46140), (71, 46152), (74, 46173), (92, 46383), (97, 46449), (104, 46548), (109, 46608), (113, 46629), (114, 46653), (117, 46692), (119, 46716), (120, 46725), (128, 46815), (130, 46827), (134, 46932), (137, 46977),

Gene: Leopard_56 Start: 42125, Stop: 43231, Start Num: 22
Candidate Starts for Leopard_56:
(16, 42053), (Start: 22 @42125 has 4 MA's), (24, 42143), (26, 42155), (27, 42161), (31, 42236), (32, 42248), (33, 42260), (37, 42311), (43, 42341), (46, 42350), (48, 42359), (49, 42362), (63, 42455), (66, 42485), (72, 42515), (79, 42569), (82, 42581), (95, 42662), (102, 42695), (113, 42815), (118, 42890), (122, 42935), (124, 42947), (130, 43019),

Gene: LilyPad_46 Start: 35050, Stop: 36075, Start Num: 23
Candidate Starts for LilyPad_46:
(Start: 23 @35050 has 32 MA's), (24, 35068), (31, 35161), (34, 35188), (61, 35353), (70, 35413), (76, 35452), (78, 35464), (79, 35473), (86, 35503), (103, 35704), (111, 35782), (113, 35791), (115, 35839), (118, 35860), (132, 36034),

Gene: LittleFella_52 Start: 36883, Stop: 37914, Start Num: 23
Candidate Starts for LittleFella_52:
(20, 36865), (Start: 23 @36883 has 32 MA's), (28, 36922), (30, 36991), (31, 36994), (38, 37069), (42, 37090), (44, 37099), (60, 37174), (80, 37291), (81, 37294), (86, 37318), (87, 37348), (89, 37369), (107, 37567), (108, 37582), (115, 37657), (118, 37678), (120, 37699), (124, 37735), (125, 37744), (131, 37861),

Gene: LordBart_67 Start: 46344, Stop: 47525, Start Num: 21
Candidate Starts for LordBart_67:
(14, 46248), (15, 46269), (Start: 21 @46344 has 39 MA's), (24, 46374), (55, 46623), (67, 46689), (68, 46695), (69, 46698), (71, 46707), (83, 46785), (85, 46791), (109, 47097), (113, 47118), (114, 47142), (119, 47205), (128, 47304), (130, 47316),

Gene: Madi_42 Start: 33614, Stop: 34654, Start Num: 23
Candidate Starts for Madi_42:
(3, 33341), (5, 33380), (Start: 23 @33614 has 32 MA's), (31, 33725), (47, 33839), (54, 33881), (61, 33917), (67, 33962), (76, 34016), (78, 34028), (83, 34058), (86, 34067), (88, 34109), (96, 34163), (98, 34193), (103, 34268), (111, 34355), (115, 34412), (119, 34445), (127, 34508), (135, 34646),

Gene: Mopey_48 Start: 37100, Stop: 38209, Start Num: 23
Candidate Starts for Mopey_48:
(Start: 23 @37100 has 32 MA's), (25, 37127), (29, 37151), (31, 37211), (32, 37223), (33, 37235), (48, 37331), (62, 37409), (63, 37412), (64, 37415), (70, 37466), (75, 37496), (77, 37508), (82, 37538), (84, 37550), (90, 37619), (94, 37631), (99, 37685), (105, 37781), (107, 37799), (110, 37826), (113, 37841), (114, 37865), (116, 37895), (120, 37937), (126, 37985), (129, 38018), (136, 38144),

Gene: MortySmith_58 Start: 44851, Stop: 46098, Start Num: 21
Candidate Starts for MortySmith_58:

(17, 44785), (Start: 21 @44851 has 39 MA's), (34, 45004), (41, 45064), (66, 45190), (68, 45205), (71, 45217), (78, 45265), (97, 45514), (101, 45562), (109, 45673), (113, 45694), (114, 45718), (117, 45757), (119, 45781), (120, 45790), (128, 45880), (130, 45892), (134, 45997), (137, 46042),

Gene: NarutoRun_60 Start: 45748, Stop: 46998, Start Num: 21
Candidate Starts for NarutoRun_60:
(Start: 13 @45652 has 5 MA's), (17, 45682), (Start: 21 @45748 has 39 MA's), (34, 45904), (41, 45964), (68, 46105), (71, 46117), (74, 46138), (92, 46348), (97, 46414), (104, 46513), (109, 46573), (113, 46594), (114, 46618), (117, 46657), (119, 46681), (120, 46690), (128, 46780), (130, 46792), (134, 46897), (137, 46942),

Gene: Neptune_60 Start: 45778, Stop: 47028, Start Num: 21
Candidate Starts for Neptune_60:
(Start: 13 @45682 has 5 MA's), (17, 45712), (Start: 21 @45778 has 39 MA's), (34, 45934), (41, 45994), (68, 46135), (71, 46147), (74, 46168), (92, 46378), (97, 46444), (104, 46543), (109, 46603), (113, 46624), (114, 46648), (117, 46687), (119, 46711), (120, 46720), (128, 46810), (130, 46822), (134, 46927), (137, 46972),

Gene: Nova_46 Start: 37524, Stop: 38633, Start Num: 23
Candidate Starts for Nova_46:
(Start: 23 @37524 has 32 MA's), (25, 37551), (29, 37575), (31, 37635), (32, 37647), (33, 37659), (45, 37740), (48, 37755), (62, 37833), (63, 37836), (64, 37839), (70, 37890), (75, 37920), (77, 37932), (82, 37962), (84, 37974), (90, 38043), (94, 38055), (99, 38109), (105, 38205), (107, 38223), (110, 38250), (113, 38265), (114, 38289), (116, 38319), (126, 38409), (129, 38442),

Gene: OhDear_60 Start: 45746, Stop: 46996, Start Num: 21
Candidate Starts for OhDear_60:
(Start: 13 @45650 has 5 MA's), (17, 45680), (Start: 21 @45746 has 39 MA's), (34, 45902), (41, 45962), (68, 46103), (71, 46115), (74, 46136), (92, 46346), (97, 46412), (104, 46511), (109, 46571), (113, 46592), (114, 46616), (117, 46655), (119, 46679), (120, 46688), (128, 46778), (130, 46790), (134, 46895), (137, 46940),

Gene: Onyinye_57 Start: 42007, Stop: 43113, Start Num: 22
Candidate Starts for Onyinye_57:
(16, 41935), (Start: 22 @42007 has 4 MA's), (24, 42025), (26, 42037), (27, 42043), (31, 42118), (32, 42130), (33, 42142), (37, 42193), (43, 42223), (46, 42232), (48, 42241), (49, 42244), (63, 42337), (66, 42367), (72, 42397), (73, 42403), (79, 42451), (82, 42463), (95, 42544), (102, 42577), (113, 42697), (118, 42772), (122, 42817), (124, 42829), (130, 42901),

Gene: OverHedge_59 Start: 45548, Stop: 46894, Start Num: 13
Candidate Starts for OverHedge_59:
(Start: 13 @45548 has 5 MA's), (17, 45578), (Start: 21 @45644 has 39 MA's), (34, 45800), (35, 45839), (41, 45860), (68, 46001), (71, 46013), (74, 46034), (92, 46244), (97, 46310), (104, 46409), (109, 46469), (113, 46490), (114, 46514), (117, 46553), (119, 46577), (120, 46586), (128, 46676), (130, 46688), (134, 46793), (137, 46838),

Gene: PBI1_45 Start: 37031, Stop: 38140, Start Num: 23
Candidate Starts for PBI1_45:
(Start: 23 @37031 has 32 MA's), (25, 37058), (29, 37082), (31, 37142), (32, 37154), (33, 37166), (48, 37262), (62, 37340), (63, 37343), (64, 37346), (70, 37397), (75, 37427), (77, 37439), (82, 37469), (84, 37481), (90, 37550), (94, 37562), (99, 37616), (105, 37712), (107, 37730), (110, 37757), (113, 37772), (114, 37796), (116, 37826), (120, 37868), (126, 37916), (129, 37949), (136, 38075),

Gene: PLot_47 Start: 37097, Stop: 38206, Start Num: 23
Candidate Starts for PLot_47:
(9, 36935), (12, 36977), (Start: 23 @37097 has 32 MA's), (25, 37124), (29, 37148), (31, 37208), (32, 37220), (33, 37232), (45, 37313), (48, 37328), (62, 37406), (63, 37409), (64, 37412), (70, 37463), (75, 37493), (77, 37505), (82, 37535), (84, 37547), (90, 37616), (94, 37628), (99, 37682), (105, 37778), (110, 37823), (113, 37838), (114, 37862), (116, 37892), (126, 37982), (129, 38015), (136, 38141),

Gene: Penelope2018_47 Start: 37100, Stop: 38209, Start Num: 23
Candidate Starts for Penelope2018_47:
(Start: 23 @37100 has 32 MA's), (25, 37127), (29, 37151), (31, 37211), (32, 37223), (33, 37235), (48, 37331), (62, 37409), (63, 37412), (64, 37415), (70, 37466), (75, 37496), (77, 37508), (82, 37538), (84, 37550), (90, 37619), (94, 37631), (99, 37685), (105, 37781), (107, 37799), (110, 37826), (113, 37841), (114, 37865), (116, 37895), (126, 37985), (129, 38018), (136, 38144),

Gene: Phalaborwa_48 Start: 37334, Stop: 38443, Start Num: 23
Candidate Starts for Phalaborwa_48:
(Start: 23 @37334 has 32 MA's), (25, 37361), (29, 37385), (31, 37445), (32, 37457), (33, 37469), (59, 37619), (62, 37643), (63, 37646), (64, 37649), (70, 37700), (72, 37706), (75, 37730), (77, 37742), (82, 37772), (84, 37784), (94, 37865), (99, 37919), (105, 38015), (107, 38033), (110, 38060), (111, 38066), (113, 38075), (114, 38099), (126, 38219), (129, 38252), (136, 38378),

Gene: Pharpay_59 Start: 45793, Stop: 47043, Start Num: 21
Candidate Starts for Pharpay_59:
(Start: 13 @45697 has 5 MA's), (17, 45727), (Start: 21 @45793 has 39 MA's), (34, 45949), (41, 46009), (68, 46150), (71, 46162), (74, 46183), (92, 46393), (97, 46459), (104, 46558), (109, 46618), (113, 46639), (114, 46663), (117, 46702), (119, 46726), (120, 46735), (128, 46825), (130, 46837), (134, 46942), (137, 46987),

Gene: PhunaPhoke_60 Start: 45763, Stop: 47013, Start Num: 21
Candidate Starts for PhunaPhoke_60:
(Start: 13 @45667 has 5 MA's), (17, 45697), (Start: 21 @45763 has 39 MA's), (34, 45919), (41, 45979), (68, 46120), (71, 46132), (74, 46153), (92, 46363), (97, 46429), (104, 46528), (109, 46588), (113, 46609), (114, 46633), (117, 46672), (119, 46696), (120, 46705), (128, 46795), (130, 46807), (134, 46912), (137, 46957),

Gene: Potty_59 Start: 45693, Stop: 46943, Start Num: 21
Candidate Starts for Potty_59:
(Start: 13 @45597 has 5 MA's), (17, 45627), (Start: 21 @45693 has 39 MA's), (34, 45849), (41, 45909), (68, 46050), (71, 46062), (74, 46083), (92, 46293), (97, 46359), (104, 46458), (109, 46518), (113, 46539), (114, 46563), (117, 46602), (119, 46626), (120, 46635), (128, 46725), (130, 46737), (134, 46842), (137, 46887),

Gene: Poultress_59 Start: 45990, Stop: 47240, Start Num: 21
Candidate Starts for Poultress_59:
(Start: 13 @45894 has 5 MA's), (17, 45924), (Start: 21 @45990 has 39 MA's), (34, 46146), (41, 46206), (66, 46332), (68, 46347), (71, 46359), (74, 46380), (92, 46590), (97, 46656), (104, 46755), (109, 46815), (113, 46836), (114, 46860), (117, 46899), (119, 46923), (120, 46932), (128, 47022), (130, 47034), (134, 47139), (137, 47184),

Gene: Prager_47 Start: 37120, Stop: 38229, Start Num: 23
Candidate Starts for Prager_47:
(Start: 23 @37120 has 32 MA's), (25, 37147), (29, 37171), (31, 37231), (32, 37243), (33, 37255), (48, 37351), (62, 37429), (63, 37432), (64, 37435), (70, 37486), (75, 37516), (77, 37528), (82, 37558), (84,

37570), (90, 37639), (94, 37651), (99, 37705), (105, 37801), (107, 37819), (110, 37846), (113, 37861), (114, 37885), (116, 37915), (120, 37957), (126, 38005), (129, 38038), (136, 38164),

Gene: Rachella_60 Start: 45774, Stop: 47024, Start Num: 21
Candidate Starts for Rachella_60:
(Start: 13 @45678 has 5 MA's), (17, 45708), (Start: 21 @45774 has 39 MA's), (34, 45930), (41, 45990), (68, 46131), (71, 46143), (74, 46164), (92, 46374), (97, 46440), (104, 46539), (109, 46599), (113, 46620), (114, 46644), (117, 46683), (119, 46707), (120, 46716), (128, 46806), (130, 46818), (134, 46923), (137, 46968),

Gene: Rie18_60 Start: 45575, Stop: 46825, Start Num: 21
Candidate Starts for Rie18_60:
(17, 45509), (Start: 21 @45575 has 39 MA's), (41, 45791), (66, 45917), (68, 45932), (71, 45944), (74, 45965), (87, 46061), (91, 46163), (109, 46400), (113, 46421), (114, 46445), (117, 46484), (119, 46508), (120, 46517), (128, 46607), (130, 46619), (137, 46769),

Gene: RikSengupta_67 Start: 46477, Stop: 47658, Start Num: 21
Candidate Starts for RikSengupta_67:
(14, 46381), (18, 46429), (Start: 21 @46477 has 39 MA's), (24, 46507), (55, 46756), (67, 46822), (68, 46828), (69, 46831), (71, 46840), (75, 46867), (83, 46918), (85, 46924), (109, 47230), (113, 47251), (114, 47275), (119, 47338), (128, 47437), (130, 47449),

Gene: SafetyGuy_59 Start: 45754, Stop: 47004, Start Num: 21
Candidate Starts for SafetyGuy_59:
(Start: 13 @45658 has 5 MA's), (17, 45688), (Start: 21 @45754 has 39 MA's), (34, 45910), (41, 45970), (68, 46111), (71, 46123), (74, 46144), (92, 46354), (97, 46420), (104, 46519), (109, 46579), (113, 46600), (114, 46624), (117, 46663), (119, 46687), (120, 46696), (128, 46786), (130, 46798), (134, 46903), (137, 46948),

Gene: Sienna_42 Start: 33614, Stop: 34654, Start Num: 23
Candidate Starts for Sienna_42:
(3, 33341), (5, 33380), (Start: 23 @33614 has 32 MA's), (31, 33725), (47, 33839), (54, 33881), (61, 33917), (67, 33962), (76, 34016), (78, 34028), (83, 34058), (86, 34067), (88, 34109), (96, 34163), (98, 34193), (103, 34268), (111, 34355), (115, 34412), (119, 34445), (135, 34646),

Gene: SilentWarrior_61 Start: 45212, Stop: 46459, Start Num: 21
Candidate Starts for SilentWarrior_61:
(17, 45146), (Start: 21 @45212 has 39 MA's), (34, 45365), (41, 45425), (66, 45551), (68, 45566), (71, 45578), (78, 45626), (97, 45875), (101, 45923), (109, 46034), (113, 46055), (114, 46079), (117, 46118), (119, 46142), (120, 46151), (128, 46241), (130, 46253), (134, 46358), (137, 46403),

Gene: SirHarley_48 Start: 37246, Stop: 38355, Start Num: 23
Candidate Starts for SirHarley_48:
(Start: 23 @37246 has 32 MA's), (25, 37273), (29, 37297), (31, 37357), (32, 37369), (33, 37381), (45, 37462), (48, 37477), (62, 37555), (63, 37558), (64, 37561), (70, 37612), (75, 37642), (77, 37654), (82, 37684), (84, 37696), (90, 37765), (94, 37777), (99, 37831), (105, 37927), (107, 37945), (110, 37972), (113, 37987), (114, 38011), (116, 38041), (126, 38131), (129, 38164), (136, 38290),

Gene: Snakehole_61 Start: 45188, Stop: 46438, Start Num: 21
Candidate Starts for Snakehole_61:
(Start: 13 @45092 has 5 MA's), (17, 45122), (Start: 21 @45188 has 39 MA's), (34, 45344), (41, 45404), (66, 45530), (68, 45545), (69, 45548), (71, 45557), (78, 45605), (97, 45854), (101, 45902), (109, 46013), (113, 46034), (114, 46058), (117, 46097), (119, 46121), (120, 46130), (128, 46220), (130,

46232), (134, 46337), (137, 46382),

Gene: Sparcetus_67 Start: 46354, Stop: 47535, Start Num: 21
Candidate Starts for Sparcetus_67:
(14, 46258), (18, 46306), (Start: 21 @46354 has 39 MA's), (24, 46384), (55, 46633), (67, 46699), (68, 46705), (69, 46708), (71, 46717), (75, 46744), (83, 46795), (85, 46801), (109, 47107), (113, 47128), (114, 47152), (119, 47215), (128, 47314), (130, 47326),

Gene: SuperheroCarly_48 Start: 37185, Stop: 38294, Start Num: 23
Candidate Starts for SuperheroCarly_48:
(Start: 23 @37185 has 32 MA's), (25, 37212), (28, 37224), (29, 37236), (31, 37296), (32, 37308), (33, 37320), (48, 37416), (62, 37494), (63, 37497), (64, 37500), (70, 37551), (75, 37581), (77, 37593), (82, 37623), (84, 37635), (90, 37704), (94, 37716), (99, 37770), (105, 37866), (107, 37884), (110, 37911), (113, 37926), (114, 37950), (116, 37980), (126, 38070), (129, 38103), (136, 38229),

Gene: Suzy_42 Start: 34129, Stop: 35169, Start Num: 23
Candidate Starts for Suzy_42:
(1, 33565), (2, 33670), (4, 33862), (Start: 23 @34129 has 32 MA's), (31, 34240), (34, 34267), (40, 34330), (54, 34396), (61, 34432), (67, 34477), (76, 34531), (78, 34543), (83, 34573), (86, 34582), (88, 34624), (98, 34708), (103, 34783), (111, 34870), (115, 34927), (119, 34960),

Gene: Tedro_60 Start: 45233, Stop: 46480, Start Num: 21
Candidate Starts for Tedro_60:
(17, 45167), (Start: 21 @45233 has 39 MA's), (34, 45386), (41, 45446), (66, 45572), (68, 45587), (71, 45599), (74, 45620), (78, 45647), (97, 45896), (104, 45995), (109, 46055), (113, 46076), (114, 46100), (117, 46139), (119, 46163), (120, 46172), (128, 46262), (130, 46274), (134, 46379), (137, 46424),

Gene: Terapin_43 Start: 33538, Stop: 34578, Start Num: 23
Candidate Starts for Terapin_43:
(3, 33265), (5, 33304), (Start: 23 @33538 has 32 MA's), (31, 33649), (47, 33763), (54, 33805), (61, 33841), (67, 33886), (76, 33940), (78, 33952), (83, 33982), (86, 33991), (96, 34087), (98, 34117), (103, 34192), (111, 34279), (115, 34336), (119, 34369), (135, 34570),

Gene: Thoth_47 Start: 37098, Stop: 38207, Start Num: 23
Candidate Starts for Thoth_47:
(Start: 23 @37098 has 32 MA's), (25, 37125), (29, 37149), (31, 37209), (32, 37221), (33, 37233), (45, 37314), (48, 37329), (62, 37407), (63, 37410), (64, 37413), (70, 37464), (75, 37494), (77, 37506), (82, 37536), (84, 37548), (90, 37617), (94, 37629), (99, 37683), (105, 37779), (107, 37797), (110, 37824), (113, 37839), (114, 37863), (116, 37893), (120, 37935), (126, 37983), (129, 38016), (136, 38142),

Gene: Tiggy93_60 Start: 45696, Stop: 47042, Start Num: 13
Candidate Starts for Tiggy93_60:
(Start: 13 @45696 has 5 MA's), (17, 45726), (Start: 21 @45792 has 39 MA's), (34, 45948), (41, 46008), (68, 46149), (71, 46161), (74, 46182), (92, 46392), (97, 46458), (104, 46557), (109, 46617), (113, 46638), (114, 46662), (117, 46701), (119, 46725), (120, 46734), (128, 46824), (130, 46836), (134, 46941), (137, 46986),

Gene: TinyMiny_67 Start: 46380, Stop: 47561, Start Num: 21
Candidate Starts for TinyMiny_67:
(14, 46284), (15, 46305), (18, 46332), (Start: 21 @46380 has 39 MA's), (24, 46410), (57, 46662), (68, 46731), (71, 46743), (83, 46821), (85, 46827), (98, 46992), (104, 47073), (109, 47133), (113, 47154), (114, 47178), (119, 47241), (123, 47277), (128, 47340), (130, 47352),

Gene: Tongui_60 Start: 45485, Stop: 46693, Start Num: 21
Candidate Starts for Tongui_60:
(17, 45419), (Start: 21 @45485 has 39 MA's), (41, 45701), (66, 45827), (68, 45842), (71, 45854), (96, 46082), (104, 46208), (109, 46268), (113, 46289), (114, 46313), (117, 46352), (119, 46376), (120, 46385), (128, 46475), (130, 46487), (137, 46637),

Gene: Troll4_47 Start: 37101, Stop: 38210, Start Num: 23
Candidate Starts for Troll4_47:
(9, 36939), (Start: 23 @37101 has 32 MA's), (25, 37128), (29, 37152), (31, 37212), (32, 37224), (33, 37236), (48, 37332), (62, 37410), (63, 37413), (64, 37416), (70, 37467), (75, 37497), (77, 37509), (82, 37539), (84, 37551), (90, 37620), (94, 37632), (99, 37686), (105, 37782), (107, 37800), (110, 37827), (113, 37842), (114, 37866), (116, 37896), (126, 37986), (129, 38019), (136, 38145),

Gene: Visconti_48 Start: 37110, Stop: 38219, Start Num: 23
Candidate Starts for Visconti_48:
(Start: 23 @37110 has 32 MA's), (25, 37137), (29, 37161), (31, 37221), (32, 37233), (33, 37245), (48, 37341), (62, 37419), (63, 37422), (64, 37425), (70, 37476), (75, 37506), (77, 37518), (82, 37548), (84, 37560), (90, 37629), (94, 37641), (99, 37695), (105, 37791), (107, 37809), (110, 37836), (113, 37851), (114, 37875), (116, 37905), (120, 37947), (126, 37995), (129, 38028), (136, 38154),

Gene: WaldoWhy_49 Start: 37111, Stop: 38220, Start Num: 23
Candidate Starts for WaldoWhy_49:
(9, 36949), (12, 36991), (Start: 23 @37111 has 32 MA's), (25, 37138), (29, 37162), (31, 37222), (32, 37234), (33, 37246), (45, 37327), (48, 37342), (62, 37420), (63, 37423), (64, 37426), (70, 37477), (75, 37507), (77, 37519), (82, 37549), (84, 37561), (90, 37630), (94, 37642), (99, 37696), (105, 37792), (107, 37810), (110, 37837), (113, 37852), (114, 37876), (116, 37906), (126, 37996), (129, 38029), (136, 38155),

Gene: WinnieLou_60 Start: 45161, Stop: 46411, Start Num: 21
Candidate Starts for WinnieLou_60:
(Start: 13 @45065 has 5 MA's), (17, 45095), (Start: 21 @45161 has 39 MA's), (41, 45377), (55, 45446), (66, 45503), (68, 45518), (71, 45530), (74, 45551), (91, 45749), (97, 45827), (109, 45986), (113, 46007), (114, 46031), (117, 46070), (119, 46094), (120, 46103), (128, 46193), (130, 46205), (137, 46355),

Gene: Wollypog_37 Start: 28129, Stop: 29247, Start Num: 23
Candidate Starts for Wollypog_37:
(15, 28045), (17, 28051), (Start: 23 @28129 has 32 MA's), (31, 28240), (39, 28327), (45, 28345), (49, 28363), (50, 28372), (53, 28384), (66, 28465), (68, 28480), (69, 28483), (98, 28669), (100, 28699), (118, 28906), (121, 28948), (128, 29026), (130, 29038), (133, 29134),