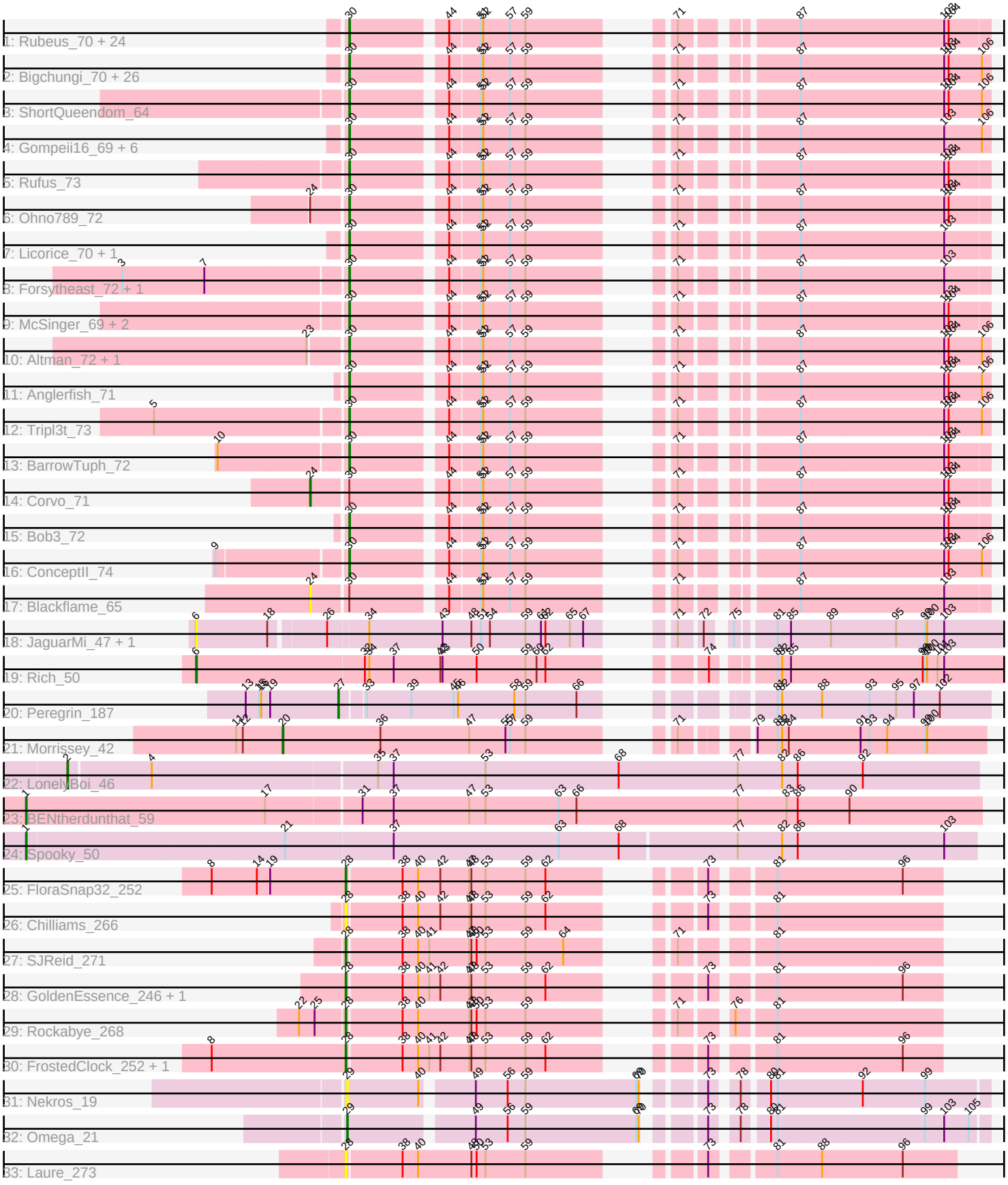
Pham 347469


1: Rubeus_70 + 24
2: Bigchungi_70 + 26
3: ShortQueendom_64
4: Gompeii16_69 + 6
5: Rufus_73
6: Ohno789_72
7: Licorice_70 + 1
8: Forsytheast_72 + 1
9: McSinger_69 + 2
10: Altman_72 + 1
11: Anglerfish_71
12: Tripl3t_73
13: BarrowTuph_72
14: Corvo_71
15: Bob3_72
16: ConceptII_74
17: Blackflame_65
18: JaguarMi_47 + 1
19: Rich_50
20: Peregrin_187
21: Morrissey_42
22: LonelyBoi_46
23: BENtherdunthat_59
24: Spooky_50
25: FloraSnap32_252
26: Chilliams_266
27: SJReid_271
28: GoldenEssence_246 + 1
29: Rockabye_268
30: FrostedClock_252 + 1
31: Nekros_19
32: Omega_21
33: Laure_273

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 347469 Report

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

Pham number 347469 has 97 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Rubeus_70, Acme_73, Lamina13_73, Dulcie_70, Zephyr_72, Arlo_69, HarryOW_70, HermioneGrange_73, Fajezeel_72, KyMonks1A_75, BigMau_73, GageAP_72, Thor_72, Greg_72, Parliament_70, Froghopper_68, Jerm2_72, SarFire_72, GrecoEtereo_73, Watermelon_72, MPlant7149_71, Atkinbua_75, BPBiebs31_74, Rohr_72, Carlyle_70
• Track 2 : Bigchungi_70, Buttons_66, Sumter_66, Dexes_70, Rhynn_66, Pari_74, Smeagol_71, Maroc7_70, Burton_71, AFIS_67, Phlippers_67, Fascinus_66, Jorgensen_75, Bigfoot_64, Pelly_72, Sandaddy_67, Rajelicia_71, Marsha_69, Sorpresa_68, StewieG_63, CactusRose_72, Pinto_70, Snazzy_69, Pippin_70, Scowl_70, Arcanine_73, Barriga_72
• Track 3 : ShortQueendom_64
• Track 4 : Gompeii16_69, PacerPaul_70, Bircsak_69, BigPaolini_67, Francis47_69, Agaliana_65, Chanagan_64
• Track 5 : Rufus_73
• Track 6 : Ohno789_72
• Track 7 : Licorice_70, EnzoK_70
• Track 8 : Forsytheast_72, Moose_72
• Track 9 : McSinger_69, Euphoria_70, Bethlehem_72
• Track 10 : Altman_72, Kanely_71
• Track 11 : Anglerfish_71
• Track 12 : Tripl3t_73
• Track 13 : BarrowTuph_72
• Track 14 : Corvo_71
• Track 15 : Bob3_72
• Track 16 : ConceptII_74
• Track 17 : Blackflame_65
• Track 18 : JaguarMi_47, Xincheng_46
• Track 19 : Rich_50
• Track 20 : Peregrin_187
• Track 21 : Morrissey_42
• Track 22 : LonelyBoi_46
• Track 23 : BENtherdunthat_59
• Track 24 : Spooky_50
• Track 25 : FloraSnap32_252
• Track 26 : Chilliams_266
• Track 27 : SJReid_271
• Track 28 : GoldenEssence_246, Patbob_253

• Track 29 : Rockabye_268
• Track 30 : FrostedClock_252, Talia1610_255
• Track 31 : Nekros_19
• Track 32 : Omega_21
• Track 33 : Laure_273

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

The start number called the most often in the published annotations is 30, it was called in 73 of the 88 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AFIS_67, Acme_73, Agaliana_65, Altman_72, Anglerfish_71, Arcanine_73, Arlo_69, Atkinbua_75, BPBiebs31_74, Barriga_72, BarrowTuph_72, Bethlehem_72, BigMau_73, BigPaolini_67, Bigchungi_70, Bigfoot_64, Bircsak_69, Bob3_72, Burton_71, Buttons_66, CactusRose_72, Carlyle_70, Chanagan_64, ConceptII_74, Dexes_70, Dulcie_70, EnzoK_70, Euphoria_70, Fajezeel_72, Fascinus_66, Forsytheast_72, Francis47_69, Froghopper_68, GageAP_72, Gompeii16_69, GrecoEtereo_73, Greg_72, HarryOW_70, HermioneGrange_73, Jerm2_72, Jorgensen_75, Kanely_71, KyMonks1A_75, Lamina13_73, Licorice_70, MPlant7149_71, Maroc7_70, Marsha_69, McSinger_69, Moose_72, Ohno789_72, PacerPaul_70, Pari_74, Parliament_70, Pelly_72, Phlippers_67, Pinto_70, Pippin_70, Rajelicia_71, Rhynn_66, Rohr_72, Rubeus_70, Rufus_73, Sandaddy_67, SarFire_72, Scowl_70, ShortQueendom_64, Smeagol_71, Snazzy_69, Sorpresa_68, StewieG_63, Sumter_66, Thor_72, Tripl3t_73, Watermelon_72, Zephyr_72,

Genes that have the "Most Annotated" start but do not call it:
• Blackflame_65, Corvo_71,

Genes that do not have the "Most Annotated" start:
• BENtherdunthat_59, Chilliams_266, FloraSnap32_252, FrostedClock_252, GoldenEssence_246, JaguarMi_47, Laure_273, LonelyBoi_46, Morrissey_42, Nekros_19, Omega_21, Patbob_253, Peregrin_187, Rich_50, Rockabye_268, SJReid_271, Spooky_50, Talia1610_255, Xincheng_46,

Summary by start number:

Start 1:
• Found in 2 of 97 (2.1%) of genes in pham
• Manual Annotations of this start: 2 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BENtherdunthat_59 (DN1), Spooky_50 (DN2),

Start 2:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: LonelyBoi_46 (CY7),

Start 6:
• Found in 3 of 97 (3.1%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: JaguarMi_47 (B4), Rich_50 (B5), Xincheng_46 (B4),

Start 20:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Morrissey_42 (CD),

Start 24:
• Found in 3 of 97 (3.1%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Blackflame_65 (A1), Corvo_71 (A1),

Start 27:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Peregrin_187 (CB),

Start 28:
• Found in 9 of 97 (9.3%) of genes in pham
• Manual Annotations of this start: 7 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Chilliams_266 (FC), FloraSnap32_252 (FC), FrostedClock_252 (FC), GoldenEssence_246 (FC), Laure_273 (UNK), Patbob_253 (FC), Rockabye_268 (FC), SJReid_271 (FC), Talia1610_255 (FC),

Start 29:
• Found in 2 of 97 (2.1%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Nekros_19 (J), Omega_21 (J),

Start 30:
• Found in 78 of 97 (80.4%) of genes in pham
• Manual Annotations of this start: 73 of 88
• Called 97.4% of time when present
• Phage (with cluster) where this start called: AFIS_67 (A1), Acme_73 (A1), Agaliana_65 (A1), Altman_72 (A1), Anglerfish_71 (A1), Arcanine_73 (A1), Arlo_69 (A1), Atkinbua_75 (A1), BPBiebs31_74 (A1), Barriga_72 (A1), BarrowTuph_72 (A1), Bethlehem_72 (A1), BigMau_73 (A1), BigPaolini_67 (A1), Bigchungi_70 (A1), Bigfoot_64 (A1), Bircsak_69 (A1), Bob3_72 (A1), Burton_71 (A1), Buttons_66 (A1), CactusRose_72 (A1), Carlyle_70 (A1), Chanagan_64 (A1), ConceptII_74 (A1), Dexes_70 (A1), Dulcie_70 (A1), EnzoK_70 (A1), Euphoria_70 (A1), Fajezeel_72 (A1), Fascinus_66 (A1), Forsytheast_72 (A1), Francis47_69 (A1), Froghopper_68 (A1), GageAP_72 (A1), Gompeii16_69 (A1), GrecoEtereo_73 (A1), Greg_72 (A1), HarryOW_70 (A1), HermioneGrange_73 (A1), Jerm2_72 (A1), Jorgensen_75 (A1),

Kanely_71 (A1), KyMonks1A_75 (A1), Lamina13_73 (A1), Licorice_70 (A1), MPlant7149_71 (A1), Maroc7_70 (A1), Marsha_69 (A1), McSinger_69 (A1), Moose_72 (A1), Ohno789_72 (A1), PacerPaul_70 (A1), Pari_74 (A1), Parliament_70 (A1), Pelly_72 (A1), Phlippers_67 (A1), Pinto_70 (A1), Pippin_70 (A1), Rajelicia_71 (A1), Rhynn_66 (A1), Rohr_72 (A1), Rubeus_70 (A1), Rufus_73 (A1), Sandaddy_67 (A1), SarFire_72 (A1), Scowl_70 (A1), ShortQueendom_64 (A1), Smeagol_71 (A1), Snazzy_69 (A1), Sorpresa_68 (A1), StewieG_63 (A1), Sumter_66 (A1), Thor_72 (A1), Tripl3t_73 (A1), Watermelon_72 (A1), Zephyr_72 (A1),

Summary by clusters:

There are 11 clusters represented in this pham: B4, CY7, CB, J, CD, A1, B5, FC, DN1, DN2, UNK,

Info for manual annotations of cluster A1:
•Start number 24 was manually annotated 1 time for cluster A1.
•Start number 30 was manually annotated 73 times for cluster A1.

Info for manual annotations of cluster B5:
•Start number 6 was manually annotated 1 time for cluster B5.

Info for manual annotations of cluster CB:
•Start number 27 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster CD:
•Start number 20 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CY7:
•Start number 2 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster DN1:
•Start number 1 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:
•Start number 1 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster FC:
•Start number 28 was manually annotated 7 times for cluster FC.

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

Gene Information:

Gene: AFIS_67 Start: 44623, Stop: 43913, Start Num: 30
Candidate Starts for AFIS_67:
(Start: 30 @44623 has 73 MA's), (44, 44509), (51, 44473), (52, 44470), (57, 44434), (59, 44413), (71, 44287), (87, 44164), (103, 43975), (104, 43969), (106, 43924),

Gene: Acme_73 Start: 45963, Stop: 45256, Start Num: 30
Candidate Starts for Acme_73:
(Start: 30 @45963 has 73 MA's), (44, 45849), (51, 45813), (52, 45810), (57, 45774), (59, 45753), (71, 45627), (87, 45504), (103, 45315), (104, 45309),

Gene: Agaliana_65 Start: 42001, Stop: 41291, Start Num: 30
Candidate Starts for Agaliana_65:
(Start: 30 @42001 has 73 MA's), (44, 41887), (51, 41851), (52, 41848), (57, 41812), (59, 41791), (71, 41665), (87, 41542), (103, 41353), (106, 41302),

Gene: Altman_72 Start: 44843, Stop: 44133, Start Num: 30
Candidate Starts for Altman_72:
(23, 44888), (Start: 30 @44843 has 73 MA's), (44, 44729), (51, 44693), (52, 44690), (57, 44654), (59, 44633), (71, 44507), (87, 44384), (103, 44195), (104, 44189), (106, 44144),

Gene: Anglerfish_71 Start: 45173, Stop: 44463, Start Num: 30
Candidate Starts for Anglerfish_71:
(Start: 30 @45173 has 73 MA's), (44, 45059), (51, 45023), (52, 45020), (57, 44984), (59, 44963), (71, 44837), (87, 44714), (103, 44525), (104, 44519), (106, 44474),

Gene: Arcanine_73 Start: 45897, Stop: 45187, Start Num: 30
Candidate Starts for Arcanine_73:
(Start: 30 @45897 has 73 MA's), (44, 45783), (51, 45747), (52, 45744), (57, 45708), (59, 45687), (71, 45561), (87, 45438), (103, 45249), (104, 45243), (106, 45198),

Gene: Arlo_69 Start: 44678, Stop: 43971, Start Num: 30
Candidate Starts for Arlo_69:
(Start: 30 @44678 has 73 MA's), (44, 44564), (51, 44528), (52, 44525), (57, 44489), (59, 44468), (71, 44342), (87, 44219), (103, 44030), (104, 44024),

Gene: Atkinbua_75 Start: 45196, Stop: 44489, Start Num: 30
Candidate Starts for Atkinbua_75:
(Start: 30 @45196 has 73 MA's), (44, 45082), (51, 45046), (52, 45043), (57, 45007), (59, 44986), (71, 44860), (87, 44737), (103, 44548), (104, 44542),

Gene: BENtherdunthat_59 Start: 37414, Stop: 38688, Start Num: 1
Candidate Starts for BENtherdunthat_59:
(Start: 1 @37414 has 2 MA's), (17, 37735), (31, 37858), (37, 37900), (47, 38002), (53, 38023), (63, 38122), (66, 38146), (77, 38362), (83, 38428), (86, 38443), (90, 38512),

Gene: BPBiebs31_74 Start: 45784, Stop: 45077, Start Num: 30
Candidate Starts for BPBiebs31_74:
(Start: 30 @45784 has 73 MA's), (44, 45670), (51, 45634), (52, 45631), (57, 45595), (59, 45574), (71, 45448), (87, 45325), (103, 45136), (104, 45130),

Gene: Barriga_72 Start: 43491, Stop: 42781, Start Num: 30
Candidate Starts for Barriga_72:
(Start: 30 @43491 has 73 MA's), (44, 43377), (51, 43341), (52, 43338), (57, 43302), (59, 43281), (71, 43155), (87, 43032), (103, 42843), (104, 42837), (106, 42792),

Gene: BarrowTuph_72 Start: 44862, Stop: 44155, Start Num: 30
Candidate Starts for BarrowTuph_72:

(10, 45027), (Start: 30 @44862 has 73 MA's), (44, 44748), (51, 44712), (52, 44709), (57, 44673), (59, 44652), (71, 44526), (87, 44403), (103, 44214), (104, 44208),

Gene: Bethlehem_72 Start: 46702, Stop: 45995, Start Num: 30
Candidate Starts for Bethlehem_72:
(Start: 30 @46702 has 73 MA's), (44, 46588), (51, 46552), (52, 46549), (57, 46513), (59, 46492), (71, 46366), (87, 46243), (103, 46054), (104, 46048),

Gene: BigMau_73 Start: 45592, Stop: 44885, Start Num: 30
Candidate Starts for BigMau_73:
(Start: 30 @45592 has 73 MA's), (44, 45478), (51, 45442), (52, 45439), (57, 45403), (59, 45382), (71, 45256), (87, 45133), (103, 44944), (104, 44938),

Gene: BigPaolini_67 Start: 42940, Stop: 42230, Start Num: 30
Candidate Starts for BigPaolini_67:
(Start: 30 @42940 has 73 MA's), (44, 42826), (51, 42790), (52, 42787), (57, 42751), (59, 42730), (71, 42604), (87, 42481), (103, 42292), (106, 42241),

Gene: Bigchungi_70 Start: 45376, Stop: 44666, Start Num: 30
Candidate Starts for Bigchungi_70:
(Start: 30 @45376 has 73 MA's), (44, 45262), (51, 45226), (52, 45223), (57, 45187), (59, 45166), (71, 45040), (87, 44917), (103, 44728), (104, 44722), (106, 44677),

Gene: Bigfoot_64 Start: 44023, Stop: 43313, Start Num: 30
Candidate Starts for Bigfoot_64:
(Start: 30 @44023 has 73 MA's), (44, 43909), (51, 43873), (52, 43870), (57, 43834), (59, 43813), (71, 43687), (87, 43564), (103, 43375), (104, 43369), (106, 43324),

Gene: Bircsak_69 Start: 46296, Stop: 45586, Start Num: 30
Candidate Starts for Bircsak_69:
(Start: 30 @46296 has 73 MA's), (44, 46182), (51, 46146), (52, 46143), (57, 46107), (59, 46086), (71, 45960), (87, 45837), (103, 45648), (106, 45597),

Gene: Blackflame_65 Start: 44075, Stop: 43323, Start Num: 24
Candidate Starts for Blackflame_65:
(Start: 24 @44075 has 1 MA's), (Start: 30 @44030 has 73 MA's), (44, 43916), (51, 43880), (52, 43877), (57, 43841), (59, 43820), (71, 43694), (87, 43571), (103, 43382),

Gene: Bob3_72 Start: 44862, Stop: 44155, Start Num: 30
Candidate Starts for Bob3_72:
(Start: 30 @44862 has 73 MA's), (44, 44748), (51, 44712), (52, 44709), (57, 44673), (59, 44652), (71, 44526), (87, 44403), (103, 44214), (104, 44208),

Gene: Burton_71 Start: 46277, Stop: 45567, Start Num: 30
Candidate Starts for Burton_71:
(Start: 30 @46277 has 73 MA's), (44, 46163), (51, 46127), (52, 46124), (57, 46088), (59, 46067), (71, 45941), (87, 45818), (103, 45629), (104, 45623), (106, 45578),

Gene: Buttons_66 Start: 41990, Stop: 41280, Start Num: 30
Candidate Starts for Buttons_66:
(Start: 30 @41990 has 73 MA's), (44, 41876), (51, 41840), (52, 41837), (57, 41801), (59, 41780), (71, 41654), (87, 41531), (103, 41342), (104, 41336), (106, 41291),

Gene: CactusRose_72 Start: 45043, Stop: 44333, Start Num: 30
Candidate Starts for CactusRose_72:
(Start: 30 @45043 has 73 MA's), (44, 44929), (51, 44893), (52, 44890), (57, 44854), (59, 44833), (71, 44707), (87, 44584), (103, 44395), (104, 44389), (106, 44344),

Gene: Carlyle_70 Start: 43385, Stop: 42678, Start Num: 30
Candidate Starts for Carlyle_70:
(Start: 30 @43385 has 73 MA's), (44, 43271), (51, 43235), (52, 43232), (57, 43196), (59, 43175), (71, 43049), (87, 42926), (103, 42737), (104, 42731),

Gene: Chanagan_64 Start: 42260, Stop: 41550, Start Num: 30
Candidate Starts for Chanagan_64:
(Start: 30 @42260 has 73 MA's), (44, 42146), (51, 42110), (52, 42107), (57, 42071), (59, 42050), (71, 41924), (87, 41801), (103, 41612), (106, 41561),

Gene: Chilliams_266 Start: 161365, Stop: 162048, Start Num: 28
Candidate Starts for Chilliams_266:
(Start: 28 @161365 has 7 MA's), (38, 161437), (40, 161458), (42, 161488), (47, 161527), (48, 161530), (53, 161548), (59, 161602), (62, 161629), (73, 161761), (81, 161830),

Gene: ConceptII_74 Start: 46071, Stop: 45361, Start Num: 30
Candidate Starts for ConceptII_74:
(9, 46236), (Start: 30 @46071 has 73 MA's), (44, 45957), (51, 45921), (52, 45918), (57, 45882), (59, 45861), (71, 45735), (87, 45612), (103, 45423), (104, 45417), (106, 45372),

Gene: Corvo_71 Start: 45749, Stop: 44997, Start Num: 24
Candidate Starts for Corvo_71:
(Start: 24 @45749 has 1 MA's), (Start: 30 @45704 has 73 MA's), (44, 45590), (51, 45554), (52, 45551), (57, 45515), (59, 45494), (71, 45368), (87, 45245), (103, 45056), (104, 45050),

Gene: Dexes_70 Start: 46320, Stop: 45610, Start Num: 30
Candidate Starts for Dexes_70:
(Start: 30 @46320 has 73 MA's), (44, 46206), (51, 46170), (52, 46167), (57, 46131), (59, 46110), (71, 45984), (87, 45861), (103, 45672), (104, 45666), (106, 45621),

Gene: Dulcie_70 Start: 46210, Stop: 45503, Start Num: 30
Candidate Starts for Dulcie_70:
(Start: 30 @46210 has 73 MA's), (44, 46096), (51, 46060), (52, 46057), (57, 46021), (59, 46000), (71, 45874), (87, 45751), (103, 45562), (104, 45556),

Gene: EnzoK_70 Start: 42239, Stop: 41532, Start Num: 30
Candidate Starts for EnzoK_70:
(Start: 30 @42239 has 73 MA's), (44, 42125), (51, 42089), (52, 42086), (57, 42050), (59, 42029), (71, 41903), (87, 41780), (103, 41591),

Gene: Euphoria_70 Start: 44720, Stop: 44013, Start Num: 30
Candidate Starts for Euphoria_70:
(Start: 30 @44720 has 73 MA's), (44, 44606), (51, 44570), (52, 44567), (57, 44531), (59, 44510), (71, 44384), (87, 44261), (103, 44072), (104, 44066),

Gene: Fajezeel_72 Start: 45253, Stop: 44546, Start Num: 30
Candidate Starts for Fajezeel_72:

(Start: 30 @45253 has 73 MA's), (44, 45139), (51, 45103), (52, 45100), (57, 45064), (59, 45043), (71, 44917), (87, 44794), (103, 44605), (104, 44599),

Gene: Fascinus_66 Start: 44537, Stop: 43827, Start Num: 30
Candidate Starts for Fascinus_66:
(Start: 30 @44537 has 73 MA's), (44, 44423), (51, 44387), (52, 44384), (57, 44348), (59, 44327), (71, 44201), (87, 44078), (103, 43889), (104, 43883), (106, 43838),

Gene: FloraSnap32_252 Start: 161719, Stop: 162402, Start Num: 28
Candidate Starts for FloraSnap32_252:
(8, 161545), (14, 161605), (19, 161623), (Start: 28 @161719 has 7 MA's), (38, 161791), (40, 161812), (42, 161842), (47, 161881), (48, 161884), (53, 161902), (59, 161956), (62, 161983), (73, 162115), (81, 162184), (96, 162352),

Gene: Forsytheast_72 Start: 44800, Stop: 44093, Start Num: 30
Candidate Starts for Forsytheast_72:
(3, 45094), (7, 44983), (Start: 30 @44800 has 73 MA's), (44, 44686), (51, 44650), (52, 44647), (57, 44611), (59, 44590), (71, 44464), (87, 44341), (103, 44152),

Gene: Francis47_69 Start: 45845, Stop: 45135, Start Num: 30
Candidate Starts for Francis47_69:
(Start: 30 @45845 has 73 MA's), (44, 45731), (51, 45695), (52, 45692), (57, 45656), (59, 45635), (71, 45509), (87, 45386), (103, 45197), (106, 45146),

Gene: Froghopper_68 Start: 43859, Stop: 43152, Start Num: 30
Candidate Starts for Froghopper_68:
(Start: 30 @43859 has 73 MA's), (44, 43745), (51, 43709), (52, 43706), (57, 43670), (59, 43649), (71, 43523), (87, 43400), (103, 43211), (104, 43205),

Gene: FrostedClock_252 Start: 161678, Stop: 162361, Start Num: 28
Candidate Starts for FrostedClock_252:
(8, 161501), (Start: 28 @161678 has 7 MA's), (38, 161750), (40, 161771), (41, 161786), (42, 161801), (47, 161840), (48, 161843), (53, 161861), (59, 161915), (62, 161942), (73, 162074), (81, 162143), (96, 162311),

Gene: GageAP_72 Start: 46033, Stop: 45326, Start Num: 30
Candidate Starts for GageAP_72:
(Start: 30 @46033 has 73 MA's), (44, 45919), (51, 45883), (52, 45880), (57, 45844), (59, 45823), (71, 45697), (87, 45574), (103, 45385), (104, 45379),

Gene: GoldenEssence_246 Start: 156953, Stop: 157636, Start Num: 28
Candidate Starts for GoldenEssence_246:
(Start: 28 @156953 has 7 MA's), (38, 157025), (40, 157046), (41, 157061), (42, 157076), (47, 157115), (48, 157118), (53, 157136), (59, 157190), (62, 157217), (73, 157349), (81, 157418), (96, 157586),

Gene: Gompeii16_69 Start: 46297, Stop: 45587, Start Num: 30
Candidate Starts for Gompeii16_69:
(Start: 30 @46297 has 73 MA's), (44, 46183), (51, 46147), (52, 46144), (57, 46108), (59, 46087), (71, 45961), (87, 45838), (103, 45649), (106, 45598),

Gene: GrecoEtereo_73 Start: 45729, Stop: 45022, Start Num: 30
Candidate Starts for GrecoEtereo_73:

(Start: 30 @45729 has 73 MA's), (44, 45615), (51, 45579), (52, 45576), (57, 45540), (59, 45519), (71, 45393), (87, 45270), (103, 45081), (104, 45075),

Gene: Greg_72 Start: 45253, Stop: 44546, Start Num: 30
Candidate Starts for Greg_72:
(Start: 30 @45253 has 73 MA's), (44, 45139), (51, 45103), (52, 45100), (57, 45064), (59, 45043), (71, 44917), (87, 44794), (103, 44605), (104, 44599),

Gene: HarryOW_70 Start: 45658, Stop: 44951, Start Num: 30
Candidate Starts for HarryOW_70:
(Start: 30 @45658 has 73 MA's), (44, 45544), (51, 45508), (52, 45505), (57, 45469), (59, 45448), (71, 45322), (87, 45199), (103, 45010), (104, 45004),

Gene: HermioneGrange_73 Start: 46086, Stop: 45379, Start Num: 30
Candidate Starts for HermioneGrange_73:
(Start: 30 @46086 has 73 MA's), (44, 45972), (51, 45936), (52, 45933), (57, 45897), (59, 45876), (71, 45750), (87, 45627), (103, 45438), (104, 45432),

Gene: JaguarMi_47 Start: 46146, Stop: 45184, Start Num: 6
Candidate Starts for JaguarMi_47:
(Start: 6 @46146 has 1 MA's), (18, 46050), (26, 45981), (34, 45930), (43, 45831), (48, 45792), (51, 45780), (54, 45768), (59, 45720), (61, 45699), (62, 45693), (65, 45660), (67, 45642), (71, 45594), (72, 45567), (75, 45546), (81, 45501), (85, 45483), (89, 45429), (95, 45342), (99, 45303), (100, 45300), (103, 45279),

Gene: Jerm2_72 Start: 46156, Stop: 45449, Start Num: 30
Candidate Starts for Jerm2_72:
(Start: 30 @46156 has 73 MA's), (44, 46042), (51, 46006), (52, 46003), (57, 45967), (59, 45946), (71, 45820), (87, 45697), (103, 45508), (104, 45502),

Gene: Jorgensen_75 Start: 45374, Stop: 44664, Start Num: 30
Candidate Starts for Jorgensen_75:
(Start: 30 @45374 has 73 MA's), (44, 45260), (51, 45224), (52, 45221), (57, 45185), (59, 45164), (71, 45038), (87, 44915), (103, 44726), (104, 44720), (106, 44675),

Gene: Kanely_71 Start: 44620, Stop: 43910, Start Num: 30
Candidate Starts for Kanely_71:
(23, 44665), (Start: 30 @44620 has 73 MA's), (44, 44506), (51, 44470), (52, 44467), (57, 44431), (59, 44410), (71, 44284), (87, 44161), (103, 43972), (104, 43966), (106, 43921),

Gene: KyMonks1A_75 Start: 45252, Stop: 44545, Start Num: 30
Candidate Starts for KyMonks1A_75:
(Start: 30 @45252 has 73 MA's), (44, 45138), (51, 45102), (52, 45099), (57, 45063), (59, 45042), (71, 44916), (87, 44793), (103, 44604), (104, 44598),

Gene: Lamina13_73 Start: 46395, Stop: 45688, Start Num: 30
Candidate Starts for Lamina13_73:
(Start: 30 @46395 has 73 MA's), (44, 46281), (51, 46245), (52, 46242), (57, 46206), (59, 46185), (71, 46059), (87, 45936), (103, 45747), (104, 45741),

Gene: Laure_273 Start: 151899, Stop: 152603, Start Num: 28
Candidate Starts for Laure_273:

(Start: 28 @151899 has 7 MA's), (38, 151971), (40, 151992), (48, 152064), (50, 152070), (53, 152082), (59, 152136), (73, 152295), (81, 152364), (88, 152424), (96, 152532),

Gene: Licorice_70 Start: 45944, Stop: 45237, Start Num: 30
Candidate Starts for Licorice_70:
(Start: 30 @45944 has 73 MA's), (44, 45830), (51, 45794), (52, 45791), (57, 45755), (59, 45734), (71, 45608), (87, 45485), (103, 45296),

Gene: LonelyBoi_46 Start: 37460, Stop: 38659, Start Num: 2
Candidate Starts for LonelyBoi_46:
(Start: 2 @37460 has 1 MA's), (4, 37565), (35, 37856), (37, 37877), (53, 38000), (68, 38180), (77, 38339), (82, 38399), (86, 38420), (92, 38507),

Gene: MPlant7149_71 Start: 43974, Stop: 43267, Start Num: 30
Candidate Starts for MPlant7149_71:
(Start: 30 @43974 has 73 MA's), (44, 43860), (51, 43824), (52, 43821), (57, 43785), (59, 43764), (71, 43638), (87, 43515), (103, 43326), (104, 43320),

Gene: Maroc7_70 Start: 45527, Stop: 44817, Start Num: 30
Candidate Starts for Maroc7_70:
(Start: 30 @45527 has 73 MA's), (44, 45413), (51, 45377), (52, 45374), (57, 45338), (59, 45317), (71, 45191), (87, 45068), (103, 44879), (104, 44873), (106, 44828),

Gene: Marsha_69 Start: 45612, Stop: 44902, Start Num: 30
Candidate Starts for Marsha_69:
(Start: 30 @45612 has 73 MA's), (44, 45498), (51, 45462), (52, 45459), (57, 45423), (59, 45402), (71, 45276), (87, 45153), (103, 44964), (104, 44958), (106, 44913),

Gene: McSinger_69 Start: 44338, Stop: 43631, Start Num: 30
Candidate Starts for McSinger_69:
(Start: 30 @44338 has 73 MA's), (44, 44224), (51, 44188), (52, 44185), (57, 44149), (59, 44128), (71, 44002), (87, 43879), (103, 43690), (104, 43684),

Gene: Moose_72 Start: 44800, Stop: 44093, Start Num: 30
Candidate Starts for Moose_72:
(3, 45094), (7, 44983), (Start: 30 @44800 has 73 MA's), (44, 44686), (51, 44650), (52, 44647), (57, 44611), (59, 44590), (71, 44464), (87, 44341), (103, 44152),

Gene: Morrissey_42 Start: 33249, Stop: 32419, Start Num: 20
Candidate Starts for Morrissey_42:
(11, 33312), (12, 33303), (Start: 20 @33249 has 1 MA's), (36, 33117), (47, 32997), (55, 32949), (57, 32943), (59, 32922), (71, 32796), (79, 32724), (81, 32697), (82, 32691), (84, 32682), (91, 32586), (93, 32574), (94, 32550), (99, 32499), (100, 32496),

Gene: Nekros_19 Start: 13875, Stop: 13102, Start Num: 29
Candidate Starts for Nekros_19:
(Start: 29 @13875 has 1 MA's), (40, 13779), (49, 13719), (56, 13677), (59, 13653), (69, 13503), (70, 13500), (73, 13443), (78, 13416), (80, 13386), (81, 13377), (92, 13266), (99, 13182),

Gene: Ohno789_72 Start: 45661, Stop: 44954, Start Num: 30
Candidate Starts for Ohno789_72:
(Start: 24 @45706 has 1 MA's), (Start: 30 @45661 has 73 MA's), (44, 45547), (51, 45511), (52, 45508), (57, 45472), (59, 45451), (71, 45325), (87, 45202), (103, 45013), (104, 45007),

Gene: Omega_21 Start: 15554, Stop: 14781, Start Num: 29
Candidate Starts for Omega_21:
(Start: 29 @15554 has 1 MA's), (49, 15398), (56, 15356), (59, 15332), (69, 15182), (70, 15179), (73, 15122), (78, 15095), (80, 15065), (81, 15056), (99, 14861), (103, 14837), (105, 14804),

Gene: PacerPaul_70 Start: 45212, Stop: 44502, Start Num: 30
Candidate Starts for PacerPaul_70:
(Start: 30 @45212 has 73 MA's), (44, 45098), (51, 45062), (52, 45059), (57, 45023), (59, 45002), (71, 44876), (87, 44753), (103, 44564), (106, 44513),

Gene: Pari_74 Start: 44407, Stop: 43697, Start Num: 30
Candidate Starts for Pari_74:
(Start: 30 @44407 has 73 MA's), (44, 44293), (51, 44257), (52, 44254), (57, 44218), (59, 44197), (71, 44071), (87, 43948), (103, 43759), (104, 43753), (106, 43708),

Gene: Parliament_70 Start: 46702, Stop: 45995, Start Num: 30
Candidate Starts for Parliament_70:
(Start: 30 @46702 has 73 MA's), (44, 46588), (51, 46552), (52, 46549), (57, 46513), (59, 46492), (71, 46366), (87, 46243), (103, 46054), (104, 46048),

Gene: Patbob_253 Start: 162530, Stop: 163213, Start Num: 28
Candidate Starts for Patbob_253:
(Start: 28 @162530 has 7 MA's), (38, 162602), (40, 162623), (41, 162638), (42, 162653), (47, 162692), (48, 162695), (53, 162713), (59, 162767), (62, 162794), (73, 162926), (81, 162995), (96, 163163),

Gene: Pelly_72 Start: 46865, Stop: 46155, Start Num: 30
Candidate Starts for Pelly_72:
(Start: 30 @46865 has 73 MA's), (44, 46751), (51, 46715), (52, 46712), (57, 46676), (59, 46655), (71, 46529), (87, 46406), (103, 46217), (104, 46211), (106, 46166),

Gene: Peregrin_187 Start: 99174, Stop: 99926, Start Num: 27
Candidate Starts for Peregrin_187:
(13, 99054), (15, 99072), (16, 99075), (19, 99087), (Start: 27 @99174 has 1 MA's), (33, 99204), (39, 99264), (45, 99321), (46, 99327), (58, 99402), (59, 99417), (66, 99486), (81, 99642), (82, 99648), (88, 99702), (93, 99765), (95, 99801), (97, 99825), (102, 99858),

Gene: Phlippers_67 Start: 45431, Stop: 44721, Start Num: 30
Candidate Starts for Phlippers_67:
(Start: 30 @45431 has 73 MA's), (44, 45317), (51, 45281), (52, 45278), (57, 45242), (59, 45221), (71, 45095), (87, 44972), (103, 44783), (104, 44777), (106, 44732),

Gene: Pinto_70 Start: 44629, Stop: 43919, Start Num: 30
Candidate Starts for Pinto_70:
(Start: 30 @44629 has 73 MA's), (44, 44515), (51, 44479), (52, 44476), (57, 44440), (59, 44419), (71, 44293), (87, 44170), (103, 43981), (104, 43975), (106, 43930),

Gene: Pippin_70 Start: 44002, Stop: 43292, Start Num: 30
Candidate Starts for Pippin_70:
(Start: 30 @44002 has 73 MA's), (44, 43888), (51, 43852), (52, 43849), (57, 43813), (59, 43792), (71, 43666), (87, 43543), (103, 43354), (104, 43348), (106, 43303),

Gene: Rajelicia_71 Start: 46405, Stop: 45695, Start Num: 30

Candidate Starts for Rajelicia_71:
(Start: 30 @46405 has 73 MA's), (44, 46291), (51, 46255), (52, 46252), (57, 46216), (59, 46195), (71, 46069), (87, 45946), (103, 45757), (104, 45751), (106, 45706),

Gene: Rhynn_66 Start: 43990, Stop: 43280, Start Num: 30
Candidate Starts for Rhynn_66:
(Start: 30 @43990 has 73 MA's), (44, 43876), (51, 43840), (52, 43837), (57, 43801), (59, 43780), (71, 43654), (87, 43531), (103, 43342), (104, 43336), (106, 43291),

Gene: Rich_50 Start: 47033, Stop: 46050, Start Num: 6
Candidate Starts for Rich_50:
(Start: 6 @47033 has 1 MA's), (32, 46808), (34, 46802), (37, 46769), (42, 46706), (43, 46703), (50, 46658), (59, 46592), (60, 46577), (62, 46565), (74, 46433), (81, 46367), (82, 46361), (85, 46349), (98, 46172), (99, 46169), (100, 46166), (101, 46154), (103, 46145),

Gene: Rockabye_268 Start: 161200, Stop: 161883, Start Num: 28
Candidate Starts for Rockabye_268:
(22, 161143), (25, 161164), (Start: 28 @161200 has 7 MA's), (38, 161272), (40, 161293), (47, 161362), (48, 161365), (50, 161371), (53, 161383), (59, 161437), (71, 161563), (76, 161617), (81, 161665),

Gene: Rohr_72 Start: 46232, Stop: 45525, Start Num: 30
Candidate Starts for Rohr_72:
(Start: 30 @46232 has 73 MA's), (44, 46118), (51, 46082), (52, 46079), (57, 46043), (59, 46022), (71, 45896), (87, 45773), (103, 45584), (104, 45578),

Gene: Rubeus_70 Start: 42734, Stop: 42027, Start Num: 30
Candidate Starts for Rubeus_70:
(Start: 30 @42734 has 73 MA's), (44, 42620), (51, 42584), (52, 42581), (57, 42545), (59, 42524), (71, 42398), (87, 42275), (103, 42086), (104, 42080),

Gene: Rufus_73 Start: 45418, Stop: 44711, Start Num: 30
Candidate Starts for Rufus_73:
(Start: 30 @45418 has 73 MA's), (44, 45304), (51, 45268), (52, 45265), (57, 45229), (59, 45208), (71, 45082), (87, 44959), (103, 44770), (104, 44764),

Gene: SJReid_271 Start: 158434, Stop: 159117, Start Num: 28
Candidate Starts for SJReid_271:
(Start: 28 @158434 has 7 MA's), (38, 158506), (40, 158527), (41, 158542), (47, 158596), (48, 158599), (50, 158605), (53, 158617), (59, 158671), (64, 158722), (71, 158797), (81, 158899),

Gene: Sandaddy_67 Start: 44367, Stop: 43657, Start Num: 30
Candidate Starts for Sandaddy_67:
(Start: 30 @44367 has 73 MA's), (44, 44253), (51, 44217), (52, 44214), (57, 44178), (59, 44157), (71, 44031), (87, 43908), (103, 43719), (104, 43713), (106, 43668),

Gene: SarFire_72 Start: 45694, Stop: 44987, Start Num: 30
Candidate Starts for SarFire_72:
(Start: 30 @45694 has 73 MA's), (44, 45580), (51, 45544), (52, 45541), (57, 45505), (59, 45484), (71, 45358), (87, 45235), (103, 45046), (104, 45040),

Gene: Scowl_70 Start: 44222, Stop: 43512, Start Num: 30
Candidate Starts for Scowl_70:

(Start: 30 @44222 has 73 MA's), (44, 44108), (51, 44072), (52, 44069), (57, 44033), (59, 44012), (71, 43886), (87, 43763), (103, 43574), (104, 43568), (106, 43523),

Gene: ShortQueendom_64 Start: 42111, Stop: 41401, Start Num: 30
Candidate Starts for ShortQueendom_64:
(Start: 30 @42111 has 73 MA's), (44, 41997), (51, 41961), (52, 41958), (57, 41922), (59, 41901), (71, 41775), (87, 41652), (103, 41463), (104, 41457), (106, 41412),

Gene: Smeagol_71 Start: 46076, Stop: 45366, Start Num: 30
Candidate Starts for Smeagol_71:
(Start: 30 @46076 has 73 MA's), (44, 45962), (51, 45926), (52, 45923), (57, 45887), (59, 45866), (71, 45740), (87, 45617), (103, 45428), (104, 45422), (106, 45377),

Gene: Snazzy_69 Start: 44638, Stop: 43928, Start Num: 30
Candidate Starts for Snazzy_69:
(Start: 30 @44638 has 73 MA's), (44, 44524), (51, 44488), (52, 44485), (57, 44449), (59, 44428), (71, 44302), (87, 44179), (103, 43990), (104, 43984), (106, 43939),

Gene: Sorpresa_68 Start: 44369, Stop: 43659, Start Num: 30
Candidate Starts for Sorpresa_68:
(Start: 30 @44369 has 73 MA's), (44, 44255), (51, 44219), (52, 44216), (57, 44180), (59, 44159), (71, 44033), (87, 43910), (103, 43721), (104, 43715), (106, 43670),

Gene: Spooky_50 Start: 35771, Stop: 37027, Start Num: 1
Candidate Starts for Spooky_50:
(Start: 1 @35771 has 2 MA's), (21, 36110), (37, 36254), (63, 36476), (68, 36557), (77, 36710), (82, 36770), (86, 36791), (103, 36986),

Gene: StewieG_63 Start: 41127, Stop: 40417, Start Num: 30
Candidate Starts for StewieG_63:
(Start: 30 @41127 has 73 MA's), (44, 41013), (51, 40977), (52, 40974), (57, 40938), (59, 40917), (71, 40791), (87, 40668), (103, 40479), (104, 40473), (106, 40428),

Gene: Sumter_66 Start: 44733, Stop: 44023, Start Num: 30
Candidate Starts for Sumter_66:
(Start: 30 @44733 has 73 MA's), (44, 44619), (51, 44583), (52, 44580), (57, 44544), (59, 44523), (71, 44397), (87, 44274), (103, 44085), (104, 44079), (106, 44034),

Gene: Talia1610_255 Start: 162657, Stop: 163340, Start Num: 28
Candidate Starts for Talia1610_255:
(8, 162480), (Start: 28 @162657 has 7 MA's), (38, 162729), (40, 162750), (41, 162765), (42, 162780), (47, 162819), (48, 162822), (53, 162840), (59, 162894), (62, 162921), (73, 163053), (81, 163122), (96, 163290),

Gene: Thor_72 Start: 45052, Stop: 44345, Start Num: 30
Candidate Starts for Thor_72:
(Start: 30 @45052 has 73 MA's), (44, 44938), (51, 44902), (52, 44899), (57, 44863), (59, 44842), (71, 44716), (87, 44593), (103, 44404), (104, 44398),

Gene: Tripl3t_73 Start: 47002, Stop: 46292, Start Num: 30
Candidate Starts for Tripl3t_73:
(5, 47254), (Start: 30 @47002 has 73 MA's), (44, 46888), (51, 46852), (52, 46849), (57, 46813), (59, 46792), (71, 46666), (87, 46543), (103, 46354), (104, 46348), (106, 46303),

Gene: Watermelon_72 Start: 45356, Stop: 44649, Start Num: 30
Candidate Starts for Watermelon_72:
(Start: 30 @45356 has 73 MA's), (44, 45242), (51, 45206), (52, 45203), (57, 45167), (59, 45146), (71, 45020), (87, 44897), (103, 44708), (104, 44702),

Gene: Xincheng_46 Start: 46122, Stop: 45160, Start Num: 6
Candidate Starts for Xincheng_46:
(Start: 6 @46122 has 1 MA's), (18, 46026), (26, 45957), (34, 45906), (43, 45807), (48, 45768), (51, 45756), (54, 45744), (59, 45696), (61, 45675), (62, 45669), (65, 45636), (67, 45618), (71, 45570), (72, 45543), (75, 45522), (81, 45477), (85, 45459), (89, 45405), (95, 45318), (99, 45279), (100, 45276), (103, 45255),

Gene: Zephyr_72 Start: 44616, Stop: 43909, Start Num: 30
Candidate Starts for Zephyr_72:
(Start: 30 @44616 has 73 MA's), (44, 44502), (51, 44466), (52, 44463), (57, 44427), (59, 44406), (71, 44280), (87, 44157), (103, 43968), (104, 43962),