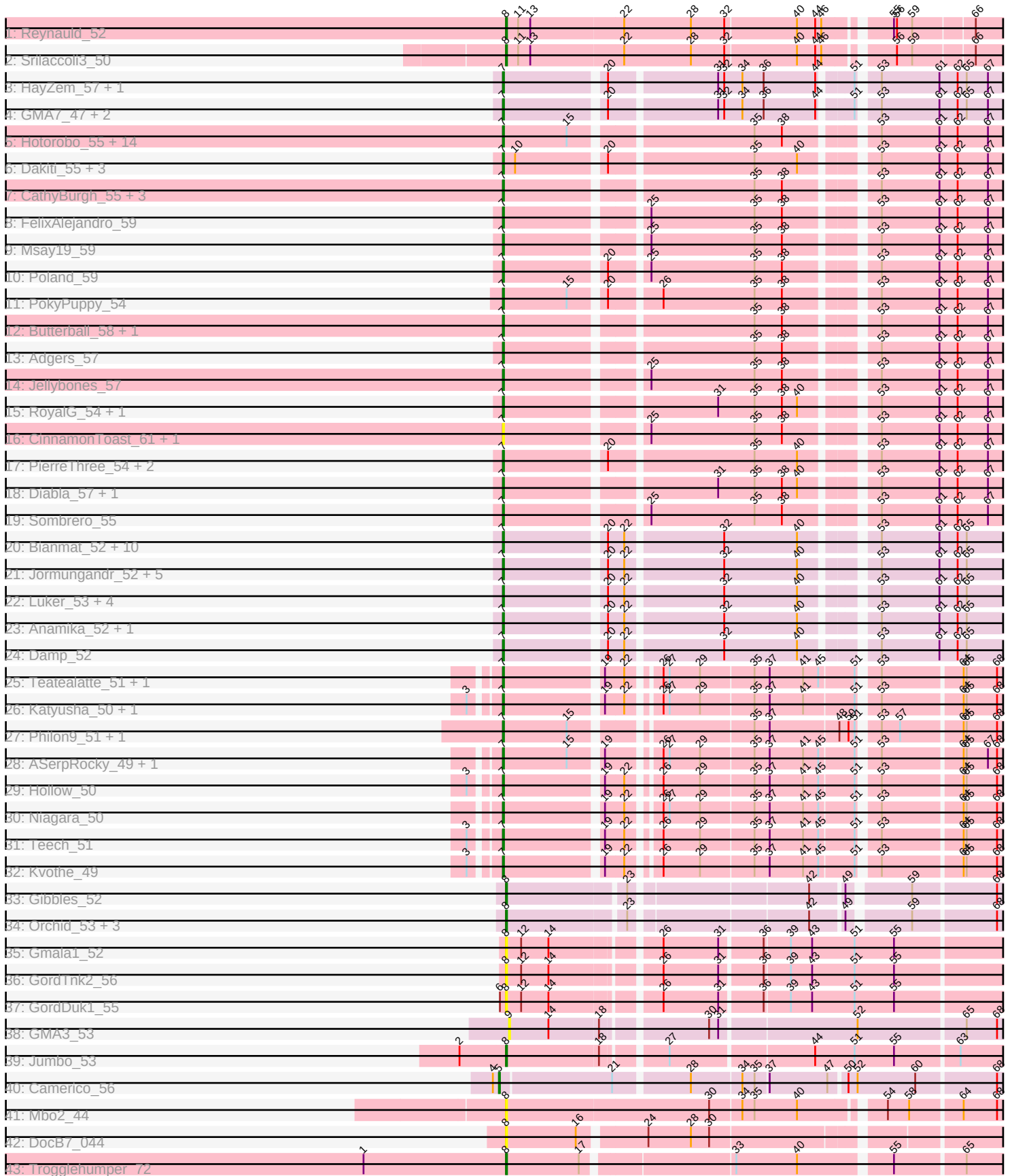


Zoomed Pham 325049



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 325049 Report

This analysis was run 09/05/26 on database version 662.

Pham number 325049 has 99 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Reynauld_52
- Track 2 : Srilaccoli3_50
- Track 3 : HayZem_57, GTE7_46
- Track 4 : GMA7_47, Austin_57, Amore2_58
- Track 5 : Hotorobo_55, Squibbles_54, John316_58, Sam12_54, Kelzog_57, Breezic_55, Worcestershire_54, Monty_54, Barbochs_53, Flakey_54, BirksAndSocks_60, Gorko_54, Ekhein_55, Exiguo_54, Beaver_58
- Track 6 : Dakiti_55, BigShaq_55, Chelms_54, Crete_56
- Track 7 : CathyBurgh_55, RemRem_56, Lizzo_55, GourdThymes_55
- Track 8 : FelixAlejandro_59
- Track 9 : Msay19_59
- Track 10 : Poland_59
- Track 11 : PokyPuppy_54
- Track 12 : Butterball_58, Boneham_59
- Track 13 : Adgers_57
- Track 14 : Jellybones_57
- Track 15 : RoyalG_54, SteveFrench_53
- Track 16 : CinnamonToast_61, BillyBobJr_61
- Track 17 : PierreThree_54, BenoitCattle_55, Linetti_55
- Track 18 : Diabla_57, Eggsie_52
- Track 19 : Sombrero_55
- Track 20 : Bianmat_52, GalacticEye_52, Charianelly_52, Sticker17_52, Shelley_52, MrWormie_52, Kaseim_52, Lidong_52, Berries_52, Jams_52, Minos_53
- Track 21 : Jormungandr_52, Nimi13_52, Harambe_52, Lahirium_52, Hello_52, Guillaume_52
- Track 22 : Luker_53, Newt_53, Neoevie_52, Teal_52, Woes_52
- Track 23 : Anamika_52, Hail2Pitt_51
- Track 24 : Damp_52
- Track 25 : Teatealatte_51, Tredge_51
- Track 26 : Katyusha_50, Benczkowski14_50
- Track 27 : Philon9_51, Vitaenoi_51
- Track 28 : ASerpRocky_49, Demosthenes_49
- Track 29 : Hollow_50
- Track 30 : Niagara_50
- Track 31 : Teech_51
- Track 32 : Kvothe_49
- Track 33 : Gibbles_52

- Track 34 : Orchid_53, PatrickStar_54, Kampe_54, RobinSparkles_57
- Track 35 : Gmala1_52
- Track 36 : GordTnk2_56
- Track 37 : GordDuk1_55
- Track 38 : GMA3_53
- Track 39 : Jumbo_53
- Track 40 : Camerico_56
- Track 41 : Mbo2_44
- Track 42 : DocB7_044
- Track 43 : Trogglehumper_72

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

The start number called the most often in the published annotations is 7, it was called in 78 of the 88 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky_49, Adgers_57, Amore2_58, Anamika_52, Austin_57, Barbochs_53, Beaver_58, Benczkowski14_50, BenoitCattle_55, Berries_52, Bianmat_52, BigShaq_55, BillyBobJr_61, BirksAndSocks_60, Boneham_59, Breezic_55, Butterball_58, CathyBurgh_55, Charianelly_52, Chelms_54, CinnamonToast_61, Crete_56, Dakiti_55, Damp_52, Demosthenes_49, Diabla_57, Eggsie_52, Ekhein_55, Exiguo_54, FelixAlejandro_59, Flakey_54, GMA7_47, GTE7_46, GalacticEye_52, Gorko_54, GourdThymes_55, Guillaume_52, Hail2Pitt_51, Harambe_52, HayZem_57, Hello_52, Hollow_50, Hotorobo_55, Jams_52, Jellybones_57, John316_58, Jormungandr_52, Kaseim_52, Katyusha_50, Kelzog_57, Kvothe_49, Lahirium_52, Lidong_52, Linetti_55, Lizzo_55, Luker_53, Minos_53, Monty_54, MrWormie_52, Msay19_59, Neoevie_52, Newt_53, Niagara_50, Nimi13_52, Philon9_51, PierreThree_54, PokyPuppy_54, Poland_59, RemRem_56, RoyalG_54, Sam12_54, Shelley_52, Sombrero_55, Squibbles_54, SteveFrench_53, Sticker17_52, Teal_52, Teatealatte_51, Teech_51, Tredge_51, Vitaenoi_51, Woes_52, Worcestershire_54,

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

•

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

- Camerico_56, DocB7_044, GMA3_53, Gibbles_52, Gmala1_52, GordDuk1_55, GordTnk2_56, Jumbo_53, Kampe_54, Mbo2_44, Orchid_53, PatrickStar_54, Reynauld_52, RobinSparkles_57, Srilacoli3_50, Trogglehumper_72,

Summary by start number:

Start 5:

- Found in 1 of 99 (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: Camerico_56 (DF4),

Start 7:

- Found in 83 of 99 (83.8%) of genes in pham
- Manual Annotations of this start: 78 of 88
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky_49 (CS4), Adgers_57 (CS2), Amore2_58 (CS1), Anamika_52 (CS3), Austin_57 (CS1), Barbochs_53 (CS2), Beaver_58 (CS2), Benczkowski14_50 (CS4), BenoitCattle_55 (CS2), Berries_52 (CS3), Bianmat_52 (CS3), BigShaq_55 (CS2), BillyBobJr_61 (CS2), BirksAndSocks_60 (CS2), Boneham_59 (CS2), Breezic_55 (CS2), Butterball_58 (CS2), CathyBurgh_55 (CS2), Charianelly_52 (CS3), Chelms_54 (CS2), CinnamonToast_61 (CS2), Crete_56 (CS2), Dakiti_55 (CS2), Damp_52 (CS3), Demosthenes_49 (CS4), Diabla_57 (CS2), Eggsie_52 (CS2), Ekhein_55 (CS2), Exiguo_54 (CS2), FelixAlejandro_59 (CS2), Flakey_54 (CS2), GMA7_47 (CS1), GTE7_46 (CS1), GalacticEye_52 (CS3), Gorko_54 (CS2), GourdThymes_55 (CS2), Guillaume_52 (CS3), Hail2Pitt_51 (CS3), Harambe_52 (CS3), HayZem_57 (CS1), Hello_52 (CS3), Hollow_50 (CS4), Hotorobo_55 (CS2), Jams_52 (CS3), Jellybones_57 (CS2), John316_58 (CS2), Jormungandr_52 (CS3), Kaseim_52 (CS3), Katyusha_50 (CS4), Kelzog_57 (CS2), Kvothe_49 (CS4), Lahirium_52 (CS3), Lidong_52 (CS3), Linetti_55 (CS2), Lizzo_55 (CS2), Luker_53 (CS3), Minos_53 (CS3), Monty_54 (CS2), MrWormie_52 (CS3), Msay19_59 (CS2), Neoevie_52 (CS3), Newt_53 (CS3), Niagara_50 (CS4), Nimi13_52 (CS3), Philon9_51 (CS4), PierreThree_54 (CS2), PokyPuppy_54 (CS2), Poland_59 (CS2), RemRem_56 (CS2), RoyalG_54 (CS2), Sam12_54 (CS2), Shelley_52 (CS3), Sombrero_55 (CS2), Squibbles_54 (CS2), SteveFrench_53 (CS2), Sticker17_52 (CS3), Teal_52 (CS3), Teatealatte_51 (CS4), Teech_51 (CS4), Tredge_51 (CS4), Vitaenoi_51 (CS4), Woes_52 (CS3), Worcestershire_54 (CS2),

Start 8:

- Found in 14 of 99 (14.1%) of genes in pham
- Manual Annotations of this start: 9 of 88
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DocB7_044 (singleton), Gibbles_52 (CX), Gmala1_52 (DF1), GordDuk1_55 (DF1), GordTnk2_56 (DF1), Jumbo_53 (DF3), Kampe_54 (CX), Mbo2_44 (singleton), Orchid_53 (CX), PatrickStar_54 (CX), Reynauld_52 (CH), RobinSparkles_57 (CX), Srilacoli3_50 (CH), Trogglehumper_72 (singleton),

Start 9:

- Found in 1 of 99 (1.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA3_53 (DF2),

Summary by clusters:

There are 11 clusters represented in this pham: singleton, CH, DF4, DF1, DF3, DF2, CX, CS4, CS1, CS3, CS2,

Info for manual annotations of cluster CH:

- Start number 8 was manually annotated 2 times for cluster CH.

Info for manual annotations of cluster CS1:

- Start number 7 was manually annotated 3 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 7 was manually annotated 38 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 7 was manually annotated 25 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 7 was manually annotated 12 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 8 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF3:

- Start number 8 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DF4:

- Start number 5 was manually annotated 1 time for cluster DF4.

Gene Information:

Gene: ASerpRocky_49 Start: 49585, Stop: 48473, Start Num: 7

Candidate Starts for ASerpRocky_49:

(Start: 7 @49585 has 78 MA's), (15, 49522), (19, 49495), (26, 49453), (27, 49447), (29, 49417), (35, 49366), (37, 49351), (41, 49318), (45, 49303), (51, 49270), (53, 49255), (64, 49180), (65, 49177), (67, 49156), (68, 49147), (73, 49102), (81, 49048), (86, 49003), (87, 49000), (91, 48976), (95, 48949), (100, 48904), (109, 48853), (115, 48799), (117, 48790), (118, 48781), (124, 48745), (129, 48721), (134, 48679), (137, 48661), (138, 48658), (148, 48595), (151, 48565), (158, 48493),

Gene: Adgers_57 Start: 49096, Stop: 47963, Start Num: 7

Candidate Starts for Adgers_57:

(Start: 7 @49096 has 78 MA's), (35, 48868), (38, 48841), (53, 48766), (61, 48709), (62, 48691), (67, 48661), (69, 48640), (75, 48601), (79, 48559), (81, 48553), (86, 48511), (96, 48451), (103, 48394), (109, 48361), (110, 48358), (118, 48292), (125, 48250), (129, 48232), (136, 48175), (142, 48145), (155, 48046), (158, 48004),

Gene: Amore2_58 Start: 49549, Stop: 48410, Start Num: 7

Candidate Starts for Amore2_58:

(Start: 7 @49549 has 78 MA's), (20, 49456), (31, 49357), (32, 49351), (34, 49333), (36, 49312), (44, 49261), (51, 49234), (53, 49219), (61, 49162), (62, 49144), (65, 49135), (67, 49114), (70, 49078), (75, 49054), (81, 49006), (90, 48946), (95, 48910), (96, 48904), (99, 48883), (103, 48847), (106, 48823), (110, 48811), (125, 48703), (128, 48694), (129, 48685), (130, 48682), (151, 48526), (158, 48454), (161, 48439),

Gene: Anamika_52 Start: 49892, Stop: 48759, Start Num: 7

Candidate Starts for Anamika_52:

(Start: 7 @49892 has 78 MA's), (20, 49799), (22, 49784), (32, 49694), (40, 49622), (53, 49562), (61, 49505), (62, 49487), (65, 49478), (69, 49436), (73, 49403), (75, 49397), (81, 49349), (85, 49310), (86, 49307), (87, 49304), (106, 49166), (109, 49157), (110, 49154), (115, 49106), (118, 49088), (129, 49028), (130, 49025), (136, 48971), (141, 48941), (151, 48869), (152, 48866), (155, 48839), (156,

48836), (158, 48797),

Gene: Austin_57 Start: 49547, Stop: 48408, Start Num: 7

Candidate Starts for Austin_57:

(Start: 7 @49547 has 78 MA's), (20, 49454), (31, 49355), (32, 49349), (34, 49331), (36, 49310), (44, 49259), (51, 49232), (53, 49217), (61, 49160), (62, 49142), (65, 49133), (67, 49112), (70, 49076), (75, 49052), (81, 49004), (90, 48944), (95, 48908), (96, 48902), (99, 48881), (103, 48845), (106, 48821), (110, 48809), (125, 48701), (128, 48692), (129, 48683), (130, 48680), (151, 48524), (158, 48452), (161, 48437),

Gene: Barbochs_53 Start: 48840, Stop: 47707, Start Num: 7

Candidate Starts for Barbochs_53:

(Start: 7 @48840 has 78 MA's), (15, 48777), (35, 48612), (38, 48585), (53, 48510), (61, 48453), (62, 48435), (67, 48405), (69, 48384), (75, 48345), (79, 48303), (81, 48297), (86, 48255), (96, 48195), (103, 48138), (109, 48105), (110, 48102), (118, 48036), (125, 47994), (129, 47976), (136, 47919), (142, 47889), (155, 47790), (158, 47748),

Gene: Beaver_58 Start: 50610, Stop: 49477, Start Num: 7

Candidate Starts for Beaver_58:

(Start: 7 @50610 has 78 MA's), (15, 50547), (35, 50382), (38, 50355), (53, 50280), (61, 50223), (62, 50205), (67, 50175), (69, 50154), (75, 50115), (79, 50073), (81, 50067), (86, 50025), (96, 49965), (103, 49908), (109, 49875), (110, 49872), (118, 49806), (125, 49764), (129, 49746), (136, 49689), (142, 49659), (155, 49560), (158, 49518),

Gene: Benczkowski14_50 Start: 49856, Stop: 48744, Start Num: 7

Candidate Starts for Benczkowski14_50:

(3, 49880), (Start: 7 @49856 has 78 MA's), (19, 49766), (22, 49748), (26, 49724), (27, 49718), (29, 49688), (35, 49637), (37, 49622), (41, 49589), (51, 49541), (53, 49526), (64, 49451), (65, 49448), (68, 49418), (73, 49373), (81, 49319), (86, 49274), (87, 49271), (89, 49259), (91, 49247), (95, 49220), (100, 49175), (102, 49160), (109, 49124), (115, 49070), (117, 49061), (118, 49052), (124, 49016), (129, 48992), (134, 48950), (137, 48932), (138, 48929), (148, 48866), (151, 48836), (158, 48764),

Gene: BenoitCattle_55 Start: 49203, Stop: 48070, Start Num: 7

Candidate Starts for BenoitCattle_55:

(Start: 7 @49203 has 78 MA's), (20, 49110), (35, 48975), (40, 48933), (53, 48873), (61, 48816), (62, 48798), (67, 48768), (69, 48747), (73, 48714), (75, 48708), (79, 48666), (81, 48660), (85, 48621), (86, 48618), (91, 48591), (103, 48501), (106, 48477), (109, 48468), (110, 48465), (118, 48399), (125, 48357), (129, 48339), (130, 48336), (135, 48285), (136, 48282), (142, 48252), (151, 48183), (155, 48153), (158, 48111), (160, 48102),

Gene: Berries_52 Start: 49864, Stop: 48731, Start Num: 7

Candidate Starts for Berries_52:

(Start: 7 @49864 has 78 MA's), (20, 49771), (22, 49756), (32, 49666), (40, 49594), (53, 49534), (61, 49477), (62, 49459), (65, 49450), (69, 49408), (73, 49375), (75, 49369), (81, 49321), (85, 49282), (86, 49279), (87, 49276), (96, 49219), (106, 49138), (109, 49129), (110, 49126), (115, 49078), (118, 49060), (129, 49000), (130, 48997), (136, 48943), (141, 48913), (148, 48871), (151, 48841), (152, 48838), (155, 48811), (156, 48808), (158, 48769),

Gene: Bianmat_52 Start: 49904, Stop: 48771, Start Num: 7

Candidate Starts for Bianmat_52:

(Start: 7 @49904 has 78 MA's), (20, 49811), (22, 49796), (32, 49706), (40, 49634), (53, 49574), (61, 49517), (62, 49499), (65, 49490), (69, 49448), (73, 49415), (75, 49409), (81, 49361), (85, 49322), (86, 49319), (87, 49316), (96, 49259), (106, 49178), (109, 49169), (110, 49166), (115, 49118), (118,

49100), (129, 49040), (130, 49037), (136, 48983), (141, 48953), (148, 48911), (151, 48881), (152, 48878), (155, 48851), (156, 48848), (158, 48809),

Gene: BigShaq_55 Start: 49208, Stop: 48075, Start Num: 7

Candidate Starts for BigShaq_55:

(Start: 7 @49208 has 78 MA's), (10, 49196), (20, 49115), (35, 48980), (40, 48938), (53, 48878), (61, 48821), (62, 48803), (67, 48773), (69, 48752), (75, 48713), (79, 48671), (81, 48665), (85, 48626), (86, 48623), (91, 48596), (103, 48506), (106, 48482), (109, 48473), (110, 48470), (118, 48404), (125, 48362), (129, 48344), (130, 48341), (135, 48290), (136, 48287), (142, 48257), (151, 48188), (155, 48158), (158, 48116), (160, 48107),

Gene: BillyBobJr_61 Start: 50920, Stop: 49787, Start Num: 7

Candidate Starts for BillyBobJr_61:

(Start: 7 @50920 has 78 MA's), (25, 50794), (35, 50692), (38, 50665), (53, 50590), (61, 50533), (62, 50515), (67, 50485), (69, 50464), (75, 50425), (79, 50383), (81, 50377), (85, 50338), (86, 50335), (96, 50275), (109, 50185), (110, 50182), (118, 50116), (125, 50074), (129, 50056), (136, 49999), (142, 49969), (151, 49900), (155, 49870), (158, 49828),

Gene: BirksAndSocks_60 Start: 50960, Stop: 49827, Start Num: 7

Candidate Starts for BirksAndSocks_60:

(Start: 7 @50960 has 78 MA's), (15, 50897), (35, 50732), (38, 50705), (53, 50630), (61, 50573), (62, 50555), (67, 50525), (69, 50504), (75, 50465), (79, 50423), (81, 50417), (86, 50375), (96, 50315), (103, 50258), (109, 50225), (110, 50222), (118, 50156), (125, 50114), (129, 50096), (136, 50039), (142, 50009), (155, 49910), (158, 49868),

Gene: Boneham_59 Start: 50861, Stop: 49728, Start Num: 7

Candidate Starts for Boneham_59:

(Start: 7 @50861 has 78 MA's), (35, 50633), (38, 50606), (53, 50531), (61, 50474), (62, 50456), (67, 50426), (69, 50405), (75, 50366), (79, 50324), (81, 50318), (86, 50276), (96, 50216), (109, 50126), (110, 50123), (118, 50057), (125, 50015), (129, 49997), (136, 49940), (142, 49910), (151, 49841), (155, 49811), (158, 49769),

Gene: Breezic_55 Start: 48853, Stop: 47720, Start Num: 7

Candidate Starts for Breezic_55:

(Start: 7 @48853 has 78 MA's), (15, 48790), (35, 48625), (38, 48598), (53, 48523), (61, 48466), (62, 48448), (67, 48418), (69, 48397), (75, 48358), (79, 48316), (81, 48310), (86, 48268), (96, 48208), (103, 48151), (109, 48118), (110, 48115), (118, 48049), (125, 48007), (129, 47989), (136, 47932), (142, 47902), (155, 47803), (158, 47761),

Gene: Butterball_58 Start: 50866, Stop: 49733, Start Num: 7

Candidate Starts for Butterball_58:

(Start: 7 @50866 has 78 MA's), (35, 50638), (38, 50611), (53, 50536), (61, 50479), (62, 50461), (67, 50431), (69, 50410), (75, 50371), (79, 50329), (81, 50323), (86, 50281), (96, 50221), (109, 50131), (110, 50128), (118, 50062), (125, 50020), (129, 50002), (136, 49945), (142, 49915), (151, 49846), (155, 49816), (158, 49774),

Gene: Camerico_56 Start: 51455, Stop: 50304, Start Num: 5

Candidate Starts for Camerico_56:

(4, 51461), (Start: 5 @51455 has 1 MA's), (21, 51347), (28, 51278), (34, 51230), (35, 51218), (37, 51206), (47, 51149), (50, 51134), (52, 51125), (60, 51068), (68, 50993), (72, 50954), (77, 50903), (84, 50867), (88, 50843), (90, 50834), (106, 50708), (111, 50666), (126, 50579), (130, 50561), (131, 50549), (133, 50537), (143, 50477), (157, 50366),

Gene: CathyBurgh_55 Start: 49430, Stop: 48297, Start Num: 7

Candidate Starts for CathyBurgh_55:

(Start: 7 @49430 has 78 MA's), (35, 49202), (38, 49175), (53, 49100), (61, 49043), (62, 49025), (67, 48995), (69, 48974), (75, 48935), (79, 48893), (81, 48887), (86, 48845), (96, 48785), (103, 48728), (109, 48695), (110, 48692), (118, 48626), (125, 48584), (129, 48566), (136, 48509), (142, 48479), (155, 48380), (158, 48338),

Gene: Charianelly_52 Start: 49614, Stop: 48481, Start Num: 7

Candidate Starts for Charianelly_52:

(Start: 7 @49614 has 78 MA's), (20, 49521), (22, 49506), (32, 49416), (40, 49344), (53, 49284), (61, 49227), (62, 49209), (65, 49200), (69, 49158), (73, 49125), (75, 49119), (81, 49071), (85, 49032), (86, 49029), (87, 49026), (96, 48969), (106, 48888), (109, 48879), (110, 48876), (115, 48828), (118, 48810), (129, 48750), (130, 48747), (136, 48693), (141, 48663), (148, 48621), (151, 48591), (152, 48588), (155, 48561), (156, 48558), (158, 48519),

Gene: Chelms_54 Start: 49196, Stop: 48063, Start Num: 7

Candidate Starts for Chelms_54:

(Start: 7 @49196 has 78 MA's), (10, 49184), (20, 49103), (35, 48968), (40, 48926), (53, 48866), (61, 48809), (62, 48791), (67, 48761), (69, 48740), (75, 48701), (79, 48659), (81, 48653), (85, 48614), (86, 48611), (91, 48584), (103, 48494), (106, 48470), (109, 48461), (110, 48458), (118, 48392), (125, 48350), (129, 48332), (130, 48329), (135, 48278), (136, 48275), (142, 48245), (151, 48176), (155, 48146), (158, 48104), (160, 48095),

Gene: CinnamonToast_61 Start: 50920, Stop: 49787, Start Num: 7

Candidate Starts for CinnamonToast_61:

(Start: 7 @50920 has 78 MA's), (25, 50794), (35, 50692), (38, 50665), (53, 50590), (61, 50533), (62, 50515), (67, 50485), (69, 50464), (75, 50425), (79, 50383), (81, 50377), (85, 50338), (86, 50335), (96, 50275), (109, 50185), (110, 50182), (118, 50116), (125, 50074), (129, 50056), (136, 49999), (142, 49969), (151, 49900), (155, 49870), (158, 49828),

Gene: Crete_56 Start: 49474, Stop: 48341, Start Num: 7

Candidate Starts for Crete_56:

(Start: 7 @49474 has 78 MA's), (10, 49462), (20, 49381), (35, 49246), (40, 49204), (53, 49144), (61, 49087), (62, 49069), (67, 49039), (69, 49018), (75, 48979), (79, 48937), (81, 48931), (85, 48892), (86, 48889), (91, 48862), (103, 48772), (106, 48748), (109, 48739), (110, 48736), (118, 48670), (125, 48628), (129, 48610), (130, 48607), (135, 48556), (136, 48553), (142, 48523), (151, 48454), (155, 48424), (158, 48382), (160, 48373),

Gene: Dakiti_55 Start: 50064, Stop: 48931, Start Num: 7

Candidate Starts for Dakiti_55:

(Start: 7 @50064 has 78 MA's), (10, 50052), (20, 49971), (35, 49836), (40, 49794), (53, 49734), (61, 49677), (62, 49659), (67, 49629), (69, 49608), (75, 49569), (79, 49527), (81, 49521), (85, 49482), (86, 49479), (91, 49452), (103, 49362), (106, 49338), (109, 49329), (110, 49326), (118, 49260), (125, 49218), (129, 49200), (130, 49197), (135, 49146), (136, 49143), (142, 49113), (151, 49044), (155, 49014), (158, 48972), (160, 48963),

Gene: Damp_52 Start: 48778, Stop: 47645, Start Num: 7

Candidate Starts for Damp_52:

(Start: 7 @48778 has 78 MA's), (20, 48685), (22, 48670), (32, 48580), (40, 48508), (53, 48448), (61, 48391), (62, 48373), (65, 48364), (69, 48322), (73, 48289), (75, 48283), (81, 48235), (85, 48196), (86, 48193), (87, 48190), (106, 48052), (109, 48043), (110, 48040), (118, 47974), (129, 47914), (130, 47911), (136, 47857), (141, 47827), (148, 47785), (151, 47755), (152, 47752), (155, 47725), (156, 47722), (158, 47683),

Gene: Demosthenes_49 Start: 49561, Stop: 48449, Start Num: 7

Candidate Starts for Demosthenes_49:

(Start: 7 @49561 has 78 MA's), (15, 49498), (19, 49471), (26, 49429), (27, 49423), (29, 49393), (35, 49342), (37, 49327), (41, 49294), (45, 49279), (51, 49246), (53, 49231), (64, 49156), (65, 49153), (67, 49132), (68, 49123), (73, 49078), (81, 49024), (86, 48979), (87, 48976), (91, 48952), (95, 48925), (100, 48880), (109, 48829), (115, 48775), (117, 48766), (118, 48757), (124, 48721), (129, 48697), (134, 48655), (137, 48637), (138, 48634), (148, 48571), (151, 48541), (158, 48469),

Gene: Diabla_57 Start: 50534, Stop: 49401, Start Num: 7

Candidate Starts for Diabla_57:

(Start: 7 @50534 has 78 MA's), (31, 50342), (35, 50306), (38, 50279), (40, 50264), (53, 50204), (61, 50147), (62, 50129), (67, 50099), (75, 50039), (79, 49997), (81, 49991), (85, 49952), (86, 49949), (95, 49895), (103, 49832), (109, 49799), (110, 49796), (118, 49730), (129, 49670), (130, 49667), (136, 49613), (139, 49604), (142, 49583), (151, 49514), (155, 49484), (158, 49442),

Gene: DocB7_044 Start: 41300, Stop: 40185, Start Num: 8

Candidate Starts for DocB7_044:

(Start: 8 @41300 has 9 MA's), (16, 41231), (24, 41171), (28, 41129), (30, 41111), (76, 40787), (83, 40739), (88, 40712), (89, 40706), (91, 40694), (92, 40682), (114, 40523), (119, 40499), (135, 40388), (137, 40382), (147, 40325), (150, 40295),

Gene: Eggsie_52 Start: 48496, Stop: 47363, Start Num: 7

Candidate Starts for Eggsie_52:

(Start: 7 @48496 has 78 MA's), (31, 48304), (35, 48268), (38, 48241), (40, 48226), (53, 48166), (61, 48109), (62, 48091), (67, 48061), (75, 48001), (79, 47959), (81, 47953), (85, 47914), (86, 47911), (95, 47857), (103, 47794), (109, 47761), (110, 47758), (118, 47692), (129, 47632), (130, 47629), (136, 47575), (139, 47566), (142, 47545), (151, 47476), (155, 47446), (158, 47404),

Gene: Ekhein_55 Start: 48558, Stop: 47425, Start Num: 7

Candidate Starts for Ekhein_55:

(Start: 7 @48558 has 78 MA's), (15, 48495), (35, 48330), (38, 48303), (53, 48228), (61, 48171), (62, 48153), (67, 48123), (69, 48102), (75, 48063), (79, 48021), (81, 48015), (86, 47973), (96, 47913), (103, 47856), (109, 47823), (110, 47820), (118, 47754), (125, 47712), (129, 47694), (136, 47637), (142, 47607), (155, 47508), (158, 47466),

Gene: Exiguo_54 Start: 48570, Stop: 47437, Start Num: 7

Candidate Starts for Exiguo_54:

(Start: 7 @48570 has 78 MA's), (15, 48507), (35, 48342), (38, 48315), (53, 48240), (61, 48183), (62, 48165), (67, 48135), (69, 48114), (75, 48075), (79, 48033), (81, 48027), (86, 47985), (96, 47925), (103, 47868), (109, 47835), (110, 47832), (118, 47766), (125, 47724), (129, 47706), (136, 47649), (142, 47619), (155, 47520), (158, 47478),

Gene: FelixAlejandro_59 Start: 51064, Stop: 49931, Start Num: 7

Candidate Starts for FelixAlejandro_59:

(Start: 7 @51064 has 78 MA's), (25, 50938), (35, 50836), (38, 50809), (53, 50734), (61, 50677), (62, 50659), (67, 50629), (69, 50608), (75, 50569), (79, 50527), (81, 50521), (86, 50479), (96, 50419), (103, 50362), (109, 50329), (110, 50326), (118, 50260), (125, 50218), (129, 50200), (136, 50143), (142, 50113), (151, 50044), (155, 50014), (158, 49972),

Gene: Flakey_54 Start: 49434, Stop: 48301, Start Num: 7

Candidate Starts for Flakey_54:

(Start: 7 @49434 has 78 MA's), (15, 49371), (35, 49206), (38, 49179), (53, 49104), (61, 49047), (62, 49029), (67, 48999), (69, 48978), (75, 48939), (79, 48897), (81, 48891), (86, 48849), (96, 48789), (103, 48732), (109, 48699), (110, 48696), (118, 48630), (125, 48588), (129, 48570), (136, 48513), (142, 48483), (155, 48384), (158, 48342),

Gene: GMA3_53 Start: 47669, Stop: 46542, Start Num: 9

Candidate Starts for GMA3_53:

(9, 47669), (14, 47630), (18, 47582), (30, 47489), (31, 47480), (52, 47351), (65, 47249), (68, 47219), (75, 47165), (76, 47147), (82, 47108), (84, 47093), (94, 47027), (107, 46922), (124, 46814), (125, 46808), (146, 46688), (160, 46553),

Gene: GMA7_47 Start: 43763, Stop: 42624, Start Num: 7

Candidate Starts for GMA7_47:

(Start: 7 @43763 has 78 MA's), (20, 43670), (31, 43571), (32, 43565), (34, 43547), (36, 43526), (44, 43475), (51, 43448), (53, 43433), (61, 43376), (62, 43358), (65, 43349), (67, 43328), (70, 43292), (75, 43268), (81, 43220), (90, 43160), (95, 43124), (96, 43118), (99, 43097), (103, 43061), (106, 43037), (110, 43025), (125, 42917), (128, 42908), (129, 42899), (130, 42896), (151, 42740), (158, 42668), (161, 42653),

Gene: GTE7_46 Start: 43794, Stop: 42655, Start Num: 7

Candidate Starts for GTE7_46:

(Start: 7 @43794 has 78 MA's), (20, 43701), (31, 43602), (32, 43596), (34, 43578), (36, 43557), (44, 43506), (51, 43479), (53, 43464), (61, 43407), (62, 43389), (65, 43380), (67, 43359), (70, 43323), (75, 43299), (78, 43260), (81, 43251), (90, 43191), (95, 43155), (96, 43149), (99, 43128), (103, 43092), (106, 43068), (110, 43056), (125, 42948), (128, 42939), (129, 42930), (130, 42927), (151, 42771), (158, 42699), (161, 42684),

Gene: GalacticEye_52 Start: 49575, Stop: 48442, Start Num: 7

Candidate Starts for GalacticEye_52:

(Start: 7 @49575 has 78 MA's), (20, 49482), (22, 49467), (32, 49377), (40, 49305), (53, 49245), (61, 49188), (62, 49170), (65, 49161), (69, 49119), (73, 49086), (75, 49080), (81, 49032), (85, 48993), (86, 48990), (87, 48987), (96, 48930), (106, 48849), (109, 48840), (110, 48837), (115, 48789), (118, 48771), (129, 48711), (130, 48708), (136, 48654), (141, 48624), (148, 48582), (151, 48552), (152, 48549), (155, 48522), (156, 48519), (158, 48480),

Gene: Gibbles_52 Start: 47883, Stop: 46774, Start Num: 8

Candidate Starts for Gibbles_52:

(Start: 8 @47883 has 9 MA's), (23, 47772), (42, 47610), (49, 47580), (59, 47526), (68, 47448), (69, 47430), (80, 47343), (91, 47274), (93, 47253), (95, 47247), (110, 47148), (114, 47103), (117, 47091), (118, 47082), (126, 47037), (127, 47034), (131, 47007),

Gene: Gmala1_52 Start: 46138, Stop: 45002, Start Num: 8

Candidate Starts for Gmala1_52:

(Start: 8 @46138 has 9 MA's), (12, 46123), (14, 46096), (26, 46000), (31, 45946), (36, 45907), (39, 45883), (43, 45862), (51, 45820), (55, 45781), (76, 45610), (81, 45580), (82, 45571), (85, 45544), (94, 45490), (97, 45466), (105, 45400), (112, 45349), (116, 45331), (125, 45277), (148, 45139),

Gene: GordDuk1_55 Start: 46649, Stop: 45513, Start Num: 8

Candidate Starts for GordDuk1_55:

(6, 46655), (Start: 8 @46649 has 9 MA's), (12, 46634), (14, 46607), (26, 46511), (31, 46457), (36, 46418), (39, 46394), (43, 46373), (51, 46331), (55, 46292), (76, 46121), (81, 46091), (82, 46082), (85, 46055), (94, 46001), (97, 45977), (112, 45860), (116, 45842), (125, 45788), (148, 45650),

Gene: GordTnk2_56 Start: 46803, Stop: 45667, Start Num: 8

Candidate Starts for GordTnk2_56:

(Start: 8 @46803 has 9 MA's), (12, 46788), (14, 46761), (26, 46665), (31, 46611), (36, 46572), (39, 46548), (43, 46527), (51, 46485), (55, 46446), (76, 46275), (81, 46245), (82, 46236), (85, 46209), (94, 46155), (97, 46131), (112, 46014), (116, 45996), (125, 45942), (148, 45804),

Gene: Gorko_54 Start: 48562, Stop: 47429, Start Num: 7

Candidate Starts for Gorko_54:

(Start: 7 @48562 has 78 MA's), (15, 48499), (35, 48334), (38, 48307), (53, 48232), (61, 48175), (62, 48157), (67, 48127), (69, 48106), (75, 48067), (79, 48025), (81, 48019), (86, 47977), (96, 47917), (103, 47860), (109, 47827), (110, 47824), (118, 47758), (125, 47716), (129, 47698), (136, 47641), (142, 47611), (155, 47512), (158, 47470),

Gene: GourdThymes_55 Start: 49436, Stop: 48303, Start Num: 7

Candidate Starts for GourdThymes_55:

(Start: 7 @49436 has 78 MA's), (35, 49208), (38, 49181), (53, 49106), (61, 49049), (62, 49031), (67, 49001), (69, 48980), (75, 48941), (79, 48899), (81, 48893), (86, 48851), (96, 48791), (103, 48734), (109, 48701), (110, 48698), (118, 48632), (125, 48590), (129, 48572), (136, 48515), (142, 48485), (155, 48386), (158, 48344),

Gene: Guillaume_52 Start: 49625, Stop: 48492, Start Num: 7

Candidate Starts for Guillaume_52:

(Start: 7 @49625 has 78 MA's), (20, 49532), (22, 49517), (32, 49427), (40, 49355), (53, 49295), (61, 49238), (62, 49220), (65, 49211), (69, 49169), (73, 49136), (75, 49130), (81, 49082), (85, 49043), (86, 49040), (87, 49037), (106, 48899), (109, 48890), (110, 48887), (118, 48821), (129, 48761), (130, 48758), (136, 48704), (141, 48674), (151, 48602), (152, 48599), (155, 48572), (156, 48569), (158, 48530),

Gene: Hail2Pitt_51 Start: 50101, Stop: 48968, Start Num: 7

Candidate Starts for Hail2Pitt_51:

(Start: 7 @50101 has 78 MA's), (20, 50008), (22, 49993), (32, 49903), (40, 49831), (53, 49771), (61, 49714), (62, 49696), (65, 49687), (69, 49645), (73, 49612), (75, 49606), (81, 49558), (85, 49519), (86, 49516), (87, 49513), (106, 49375), (109, 49366), (110, 49363), (115, 49315), (118, 49297), (129, 49237), (130, 49234), (136, 49180), (141, 49150), (151, 49078), (152, 49075), (155, 49048), (156, 49045), (158, 49006),

Gene: Harambe_52 Start: 49892, Stop: 48759, Start Num: 7

Candidate Starts for Harambe_52:

(Start: 7 @49892 has 78 MA's), (20, 49799), (22, 49784), (32, 49694), (40, 49622), (53, 49562), (61, 49505), (62, 49487), (65, 49478), (69, 49436), (73, 49403), (75, 49397), (81, 49349), (85, 49310), (86, 49307), (87, 49304), (106, 49166), (109, 49157), (110, 49154), (118, 49088), (129, 49028), (130, 49025), (136, 48971), (141, 48941), (151, 48869), (152, 48866), (155, 48839), (156, 48836), (158, 48797),

Gene: HayZem_57 Start: 49546, Stop: 48407, Start Num: 7

Candidate Starts for HayZem_57:

(Start: 7 @49546 has 78 MA's), (20, 49453), (31, 49354), (32, 49348), (34, 49330), (36, 49309), (44, 49258), (51, 49231), (53, 49216), (61, 49159), (62, 49141), (65, 49132), (67, 49111), (70, 49075), (75, 49051), (78, 49012), (81, 49003), (90, 48943), (95, 48907), (96, 48901), (99, 48880), (103, 48844), (106, 48820), (110, 48808), (125, 48700), (128, 48691), (129, 48682), (130, 48679), (151, 48523), (158, 48451), (161, 48436),

Gene: Hello_52 Start: 49854, Stop: 48721, Start Num: 7

Candidate Starts for Hello_52:

(Start: 7 @49854 has 78 MA's), (20, 49761), (22, 49746), (32, 49656), (40, 49584), (53, 49524), (61, 49467), (62, 49449), (65, 49440), (69, 49398), (73, 49365), (75, 49359), (81, 49311), (85, 49272), (86, 49269), (87, 49266), (106, 49128), (109, 49119), (110, 49116), (118, 49050), (129, 48990), (130, 48987), (136, 48933), (141, 48903), (151, 48831), (152, 48828), (155, 48801), (156, 48798), (158, 48759),

Gene: Hollow_50 Start: 50037, Stop: 48925, Start Num: 7

Candidate Starts for Hollow_50:

(3, 50061), (Start: 7 @50037 has 78 MA's), (19, 49947), (22, 49929), (26, 49905), (29, 49869), (35, 49818), (37, 49803), (41, 49770), (45, 49755), (51, 49722), (53, 49707), (64, 49632), (65, 49629), (68, 49599), (73, 49554), (81, 49500), (86, 49455), (87, 49452), (89, 49440), (91, 49428), (100, 49356), (102, 49341), (109, 49305), (115, 49251), (118, 49233), (124, 49197), (129, 49173), (134, 49131), (137, 49113), (138, 49110), (148, 49047), (151, 49017), (158, 48945),

Gene: Hotorobo_55 Start: 49441, Stop: 48308, Start Num: 7

Candidate Starts for Hotorobo_55:

(Start: 7 @49441 has 78 MA's), (15, 49378), (35, 49213), (38, 49186), (53, 49111), (61, 49054), (62, 49036), (67, 49006), (69, 48985), (75, 48946), (79, 48904), (81, 48898), (86, 48856), (96, 48796), (103, 48739), (109, 48706), (110, 48703), (118, 48637), (125, 48595), (129, 48577), (136, 48520), (142, 48490), (155, 48391), (158, 48349),

Gene: Jams_52 Start: 49064, Stop: 47931, Start Num: 7

Candidate Starts for Jams_52:

(Start: 7 @49064 has 78 MA's), (20, 48971), (22, 48956), (32, 48866), (40, 48794), (53, 48734), (61, 48677), (62, 48659), (65, 48650), (69, 48608), (73, 48575), (75, 48569), (81, 48521), (85, 48482), (86, 48479), (87, 48476), (96, 48419), (106, 48338), (109, 48329), (110, 48326), (115, 48278), (118, 48260), (129, 48200), (130, 48197), (136, 48143), (141, 48113), (148, 48071), (151, 48041), (152, 48038), (155, 48011), (156, 48008), (158, 47969),

Gene: Jellybones_57 Start: 50536, Stop: 49403, Start Num: 7

Candidate Starts for Jellybones_57:

(Start: 7 @50536 has 78 MA's), (25, 50410), (35, 50308), (38, 50281), (53, 50206), (61, 50149), (62, 50131), (67, 50101), (69, 50080), (75, 50041), (79, 49999), (81, 49993), (85, 49954), (86, 49951), (96, 49891), (103, 49834), (109, 49801), (110, 49798), (118, 49732), (125, 49690), (129, 49672), (136, 49615), (142, 49585), (151, 49516), (155, 49486), (158, 49444),

Gene: John316_58 Start: 50599, Stop: 49466, Start Num: 7

Candidate Starts for John316_58:

(Start: 7 @50599 has 78 MA's), (15, 50536), (35, 50371), (38, 50344), (53, 50269), (61, 50212), (62, 50194), (67, 50164), (69, 50143), (75, 50104), (79, 50062), (81, 50056), (86, 50014), (96, 49954), (103, 49897), (109, 49864), (110, 49861), (118, 49795), (125, 49753), (129, 49735), (136, 49678), (142, 49648), (155, 49549), (158, 49507),

Gene: Jormungandr_52 Start: 49607, Stop: 48474, Start Num: 7

Candidate Starts for Jormungandr_52:

(Start: 7 @49607 has 78 MA's), (20, 49514), (22, 49499), (32, 49409), (40, 49337), (53, 49277), (61, 49220), (62, 49202), (65, 49193), (69, 49151), (73, 49118), (75, 49112), (81, 49064), (85, 49025), (86, 49022), (87, 49019), (106, 48881), (109, 48872), (110, 48869), (118, 48803), (129, 48743), (130, 48740), (136, 48686), (141, 48656), (151, 48584), (152, 48581), (155, 48554), (156, 48551), (158, 48512),

Gene: Jumbo_53 Start: 50756, Stop: 49626, Start Num: 8

Candidate Starts for Jumbo_53:

(2, 50801), (Start: 8 @50756 has 9 MA's), (18, 50666), (27, 50612), (44, 50477), (51, 50438), (55, 50399), (63, 50339), (81, 50198), (85, 50162), (87, 50156), (88, 50150), (91, 50132), (94, 50108), (95, 50105), (101, 50048), (116, 49949), (121, 49925), (125, 49895), (131, 49862), (145, 49784), (148, 49757),

Gene: Kampe_54 Start: 47861, Stop: 46752, Start Num: 8

Candidate Starts for Kampe_54:

(Start: 8 @47861 has 9 MA's), (23, 47750), (42, 47588), (49, 47558), (59, 47504), (68, 47426), (69, 47408), (80, 47321), (91, 47252), (95, 47225), (110, 47126), (114, 47081), (117, 47069), (118, 47060), (126, 47015), (127, 47012), (131, 46985),

Gene: Kaseim_52 Start: 49049, Stop: 47916, Start Num: 7

Candidate Starts for Kaseim_52:

(Start: 7 @49049 has 78 MA's), (20, 48956), (22, 48941), (32, 48851), (40, 48779), (53, 48719), (61, 48662), (62, 48644), (65, 48635), (69, 48593), (73, 48560), (75, 48554), (81, 48506), (85, 48467), (86, 48464), (87, 48461), (96, 48404), (106, 48323), (109, 48314), (110, 48311), (115, 48263), (118, 48245), (129, 48185), (130, 48182), (136, 48128), (141, 48098), (148, 48056), (151, 48026), (152, 48023), (155, 47996), (156, 47993), (158, 47954),

Gene: Katyusha_50 Start: 49856, Stop: 48744, Start Num: 7

Candidate Starts for Katyusha_50:

(3, 49880), (Start: 7 @49856 has 78 MA's), (19, 49766), (22, 49748), (26, 49724), (27, 49718), (29, 49688), (35, 49637), (37, 49622), (41, 49589), (51, 49541), (53, 49526), (64, 49451), (65, 49448), (68, 49418), (73, 49373), (81, 49319), (86, 49274), (87, 49271), (89, 49259), (91, 49247), (95, 49220), (100, 49175), (102, 49160), (109, 49124), (115, 49070), (117, 49061), (118, 49052), (124, 49016), (129, 48992), (134, 48950), (137, 48932), (138, 48929), (148, 48866), (151, 48836), (158, 48764),

Gene: Kelzog_57 Start: 49448, Stop: 48315, Start Num: 7

Candidate Starts for Kelzog_57:

(Start: 7 @49448 has 78 MA's), (15, 49385), (35, 49220), (38, 49193), (53, 49118), (61, 49061), (62, 49043), (67, 49013), (69, 48992), (75, 48953), (79, 48911), (81, 48905), (86, 48863), (96, 48803), (103, 48746), (109, 48713), (110, 48710), (118, 48644), (125, 48602), (129, 48584), (136, 48527), (142, 48497), (155, 48398), (158, 48356),

Gene: Kvothe_49 Start: 49755, Stop: 48643, Start Num: 7

Candidate Starts for Kvothe_49:

(3, 49779), (Start: 7 @49755 has 78 MA's), (19, 49665), (22, 49647), (26, 49623), (29, 49587), (35, 49536), (37, 49521), (41, 49488), (45, 49473), (51, 49440), (53, 49425), (64, 49350), (65, 49347), (68, 49317), (73, 49272), (81, 49218), (86, 49173), (87, 49170), (89, 49158), (91, 49146), (95, 49119), (100, 49074), (102, 49059), (109, 49023), (115, 48969), (117, 48960), (118, 48951), (124, 48915), (129, 48891), (134, 48849), (137, 48831), (138, 48828), (148, 48765), (151, 48735), (158, 48663),

Gene: Lahirium_52 Start: 50129, Stop: 48996, Start Num: 7

Candidate Starts for Lahirium_52:

(Start: 7 @50129 has 78 MA's), (20, 50036), (22, 50021), (32, 49931), (40, 49859), (53, 49799), (61, 49742), (62, 49724), (65, 49715), (69, 49673), (73, 49640), (75, 49634), (81, 49586), (85, 49547), (86, 49544), (87, 49541), (106, 49403), (109, 49394), (110, 49391), (118, 49325), (129, 49265), (130, 49262), (136, 49208), (141, 49178), (151, 49106), (152, 49103), (155, 49076), (156, 49073), (158, 49034),

Gene: Lidong_52 Start: 49864, Stop: 48731, Start Num: 7

Candidate Starts for Lidong_52:

(Start: 7 @49864 has 78 MA's), (20, 49771), (22, 49756), (32, 49666), (40, 49594), (53, 49534), (61, 49477), (62, 49459), (65, 49450), (69, 49408), (73, 49375), (75, 49369), (81, 49321), (85, 49282), (86, 49279), (87, 49276), (96, 49219), (106, 49138), (109, 49129), (110, 49126), (115, 49078), (118, 49060), (129, 49000), (130, 48997), (136, 48943), (141, 48913), (148, 48871), (151, 48841), (152, 48838), (155, 48811), (156, 48808), (158, 48769),

Gene: Linetti_55 Start: 50205, Stop: 49072, Start Num: 7

Candidate Starts for Linetti_55:

(Start: 7 @50205 has 78 MA's), (20, 50112), (35, 49977), (40, 49935), (53, 49875), (61, 49818), (62, 49800), (67, 49770), (69, 49749), (73, 49716), (75, 49710), (79, 49668), (81, 49662), (85, 49623), (86, 49620), (91, 49593), (103, 49503), (106, 49479), (109, 49470), (110, 49467), (118, 49401), (125, 49359), (129, 49341), (130, 49338), (135, 49287), (136, 49284), (142, 49254), (151, 49185), (155, 49155), (158, 49113), (160, 49104),

Gene: Lizzo_55 Start: 49430, Stop: 48297, Start Num: 7

Candidate Starts for Lizzo_55:

(Start: 7 @49430 has 78 MA's), (35, 49202), (38, 49175), (53, 49100), (61, 49043), (62, 49025), (67, 48995), (69, 48974), (75, 48935), (79, 48893), (81, 48887), (86, 48845), (96, 48785), (103, 48728), (109, 48695), (110, 48692), (118, 48626), (125, 48584), (129, 48566), (136, 48509), (142, 48479), (155, 48380), (158, 48338),

Gene: Luker_53 Start: 50082, Stop: 48949, Start Num: 7

Candidate Starts for Luker_53:

(Start: 7 @50082 has 78 MA's), (20, 49989), (22, 49974), (32, 49884), (40, 49812), (53, 49752), (61, 49695), (62, 49677), (65, 49668), (69, 49626), (73, 49593), (75, 49587), (81, 49539), (85, 49500), (86, 49497), (87, 49494), (106, 49356), (109, 49347), (110, 49344), (115, 49296), (118, 49278), (129, 49218), (130, 49215), (136, 49161), (141, 49131), (148, 49089), (151, 49059), (152, 49056), (155, 49029), (156, 49026), (158, 48987),

Gene: Mbo2_44 Start: 38967, Stop: 37825, Start Num: 8

Candidate Starts for Mbo2_44:

(Start: 8 @38967 has 9 MA's), (30, 38769), (34, 38739), (35, 38727), (40, 38685), (54, 38613), (58, 38592), (64, 38544), (68, 38511), (71, 38481), (73, 38469), (76, 38445), (77, 38427), (80, 38418), (81, 38415), (87, 38376), (89, 38364), (91, 38352), (93, 38331), (96, 38319), (103, 38262), (108, 38232), (111, 38202), (113, 38184), (117, 38169), (120, 38151), (125, 38118), (130, 38097), (132, 38073), (135, 38046), (143, 38007), (160, 37866),

Gene: Minos_53 Start: 49606, Stop: 48473, Start Num: 7

Candidate Starts for Minos_53:

(Start: 7 @49606 has 78 MA's), (20, 49513), (22, 49498), (32, 49408), (40, 49336), (53, 49276), (61, 49219), (62, 49201), (65, 49192), (69, 49150), (73, 49117), (75, 49111), (81, 49063), (85, 49024), (86, 49021), (87, 49018), (96, 48961), (106, 48880), (109, 48871), (110, 48868), (115, 48820), (118, 48802), (129, 48742), (130, 48739), (136, 48685), (141, 48655), (148, 48613), (151, 48583), (152, 48580), (155, 48553), (156, 48550), (158, 48511),

Gene: Monty_54 Start: 48580, Stop: 47447, Start Num: 7

Candidate Starts for Monty_54:

(Start: 7 @48580 has 78 MA's), (15, 48517), (35, 48352), (38, 48325), (53, 48250), (61, 48193), (62, 48175), (67, 48145), (69, 48124), (75, 48085), (79, 48043), (81, 48037), (86, 47995), (96, 47935), (103, 47878), (109, 47845), (110, 47842), (118, 47776), (125, 47734), (129, 47716), (136, 47659), (142, 47629), (155, 47530), (158, 47488),

Gene: MrWormie_52 Start: 48767, Stop: 47634, Start Num: 7

Candidate Starts for MrWormie_52:

(Start: 7 @48767 has 78 MA's), (20, 48674), (22, 48659), (32, 48569), (40, 48497), (53, 48437), (61, 48380), (62, 48362), (65, 48353), (69, 48311), (73, 48278), (75, 48272), (81, 48224), (85, 48185), (86, 48182), (87, 48179), (96, 48122), (106, 48041), (109, 48032), (110, 48029), (115, 47981), (118, 47963), (129, 47903), (130, 47900), (136, 47846), (141, 47816), (148, 47774), (151, 47744), (152, 47741), (155, 47714), (156, 47711), (158, 47672),

Gene: Msay19_59 Start: 50950, Stop: 49817, Start Num: 7

Candidate Starts for Msay19_59:

(Start: 7 @50950 has 78 MA's), (25, 50824), (35, 50722), (38, 50695), (53, 50620), (61, 50563), (62, 50545), (67, 50515), (75, 50455), (79, 50413), (81, 50407), (86, 50365), (96, 50305), (103, 50248), (109, 50215), (110, 50212), (118, 50146), (125, 50104), (129, 50086), (136, 50029), (142, 49999), (151, 49930), (155, 49900), (158, 49858),

Gene: Neoevie_52 Start: 49868, Stop: 48735, Start Num: 7

Candidate Starts for Neoevie_52:

(Start: 7 @49868 has 78 MA's), (20, 49775), (22, 49760), (32, 49670), (40, 49598), (53, 49538), (61, 49481), (62, 49463), (65, 49454), (69, 49412), (73, 49379), (75, 49373), (81, 49325), (85, 49286), (86, 49283), (87, 49280), (106, 49142), (109, 49133), (110, 49130), (115, 49082), (118, 49064), (129, 49004), (130, 49001), (136, 48947), (141, 48917), (148, 48875), (151, 48845), (152, 48842), (155, 48815), (156, 48812), (158, 48773),

Gene: Newt_53 Start: 50096, Stop: 48963, Start Num: 7

Candidate Starts for Newt_53:

(Start: 7 @50096 has 78 MA's), (20, 50003), (22, 49988), (32, 49898), (40, 49826), (53, 49766), (61, 49709), (62, 49691), (65, 49682), (69, 49640), (73, 49607), (75, 49601), (81, 49553), (85, 49514), (86, 49511), (87, 49508), (106, 49370), (109, 49361), (110, 49358), (115, 49310), (118, 49292), (129, 49232), (130, 49229), (136, 49175), (141, 49145), (148, 49103), (151, 49073), (152, 49070), (155, 49043), (156, 49040), (158, 49001),

Gene: Niagara_50 Start: 49846, Stop: 48734, Start Num: 7

Candidate Starts for Niagara_50:

(Start: 7 @49846 has 78 MA's), (19, 49756), (22, 49738), (26, 49714), (27, 49708), (29, 49678), (35, 49627), (37, 49612), (41, 49579), (45, 49564), (51, 49531), (53, 49516), (64, 49441), (65, 49438), (68, 49408), (73, 49363), (81, 49309), (86, 49264), (87, 49261), (89, 49249), (91, 49237), (95, 49210), (100, 49165), (102, 49150), (109, 49114), (115, 49060), (117, 49051), (118, 49042), (124, 49006), (129, 48982), (134, 48940), (137, 48922), (138, 48919), (148, 48856), (151, 48826), (158, 48754),

Gene: Nimi13_52 Start: 49615, Stop: 48482, Start Num: 7

Candidate Starts for Nimi13_52:

(Start: 7 @49615 has 78 MA's), (20, 49522), (22, 49507), (32, 49417), (40, 49345), (53, 49285), (61, 49228), (62, 49210), (65, 49201), (69, 49159), (73, 49126), (75, 49120), (81, 49072), (85, 49033), (86, 49030), (87, 49027), (106, 48889), (109, 48880), (110, 48877), (118, 48811), (129, 48751), (130, 48748), (136, 48694), (141, 48664), (151, 48592), (152, 48589), (155, 48562), (156, 48559), (158, 48520),

Gene: Orchid_53 Start: 47862, Stop: 46753, Start Num: 8

Candidate Starts for Orchid_53:

(Start: 8 @47862 has 9 MA's), (23, 47751), (42, 47589), (49, 47559), (59, 47505), (68, 47427), (69, 47409), (80, 47322), (91, 47253), (95, 47226), (110, 47127), (114, 47082), (117, 47070), (118, 47061), (126, 47016), (127, 47013), (131, 46986),

Gene: PatrickStar_54 Start: 47861, Stop: 46752, Start Num: 8

Candidate Starts for PatrickStar_54:

(Start: 8 @47861 has 9 MA's), (23, 47750), (42, 47588), (49, 47558), (59, 47504), (68, 47426), (69, 47408), (80, 47321), (91, 47252), (95, 47225), (110, 47126), (114, 47081), (117, 47069), (118, 47060), (126, 47015), (127, 47012), (131, 46985),

Gene: Philon9_51 Start: 50722, Stop: 49610, Start Num: 7

Candidate Starts for Philon9_51:

(Start: 7 @50722 has 78 MA's), (15, 50659), (35, 50503), (37, 50488), (48, 50422), (50, 50413), (51, 50407), (53, 50392), (57, 50374), (64, 50317), (65, 50314), (68, 50284), (73, 50239), (75, 50233), (81, 50185), (86, 50140), (88, 50131), (91, 50113), (100, 50041), (104, 50005), (109, 49990), (111, 49963), (117, 49927), (122, 49888), (124, 49882), (129, 49858), (131, 49843), (134, 49816), (151, 49702), (154, 49675), (158, 49630),

Gene: PierreThree_54 Start: 49851, Stop: 48718, Start Num: 7

Candidate Starts for PierreThree_54:

(Start: 7 @49851 has 78 MA's), (20, 49758), (35, 49623), (40, 49581), (53, 49521), (61, 49464), (62, 49446), (67, 49416), (69, 49395), (73, 49362), (75, 49356), (79, 49314), (81, 49308), (85, 49269), (86, 49266), (91, 49239), (103, 49149), (106, 49125), (109, 49116), (110, 49113), (118, 49047), (125, 49005), (129, 48987), (130, 48984), (135, 48933), (136, 48930), (142, 48900), (151, 48831), (155, 48801), (158, 48759), (160, 48750),

Gene: PokyPuppy_54 Start: 49888, Stop: 48755, Start Num: 7

Candidate Starts for PokyPuppy_54:

(Start: 7 @49888 has 78 MA's), (15, 49825), (20, 49795), (26, 49750), (35, 49660), (38, 49633), (53, 49558), (61, 49501), (62, 49483), (67, 49453), (69, 49432), (75, 49393), (79, 49351), (81, 49345), (85, 49306), (86, 49303), (98, 49225), (106, 49162), (109, 49153), (110, 49150), (118, 49084), (125, 49042), (129, 49024), (130, 49021), (136, 48967), (142, 48937), (144, 48928), (151, 48868), (155, 48838), (158, 48796), (161, 48781),

Gene: Poland_59 Start: 50929, Stop: 49796, Start Num: 7

Candidate Starts for Poland_59:

(Start: 7 @50929 has 78 MA's), (20, 50836), (25, 50803), (35, 50701), (38, 50674), (53, 50599), (61, 50542), (62, 50524), (67, 50494), (75, 50434), (79, 50392), (81, 50386), (86, 50344), (96, 50284), (103, 50227), (109, 50194), (110, 50191), (118, 50125), (125, 50083), (129, 50065), (136, 50008), (142, 49978), (151, 49909), (155, 49879), (158, 49837),

Gene: RemRem_56 Start: 48570, Stop: 47437, Start Num: 7

Candidate Starts for RemRem_56:

(Start: 7 @48570 has 78 MA's), (35, 48342), (38, 48315), (53, 48240), (61, 48183), (62, 48165), (67, 48135), (69, 48114), (75, 48075), (79, 48033), (81, 48027), (86, 47985), (96, 47925), (103, 47868), (109, 47835), (110, 47832), (118, 47766), (125, 47724), (129, 47706), (136, 47649), (142, 47619), (155, 47520), (158, 47478),

Gene: Reynauld_52 Start: 47820, Stop: 46675, Start Num: 8

Candidate Starts for Reynauld_52:

(Start: 8 @47820 has 9 MA's), (11, 47808), (13, 47796), (22, 47706), (28, 47640), (32, 47607), (40, 47538), (44, 47520), (46, 47514), (55, 47460), (56, 47457), (59, 47442), (66, 47385), (70, 47340), (76, 47298), (80, 47271), (81, 47268), (87, 47229), (89, 47217), (91, 47205), (96, 47172), (103, 47115), (110, 47079), (111, 47055), (113, 47037), (118, 47013), (119, 47010), (123, 46980), (124, 46977), (125, 46968), (126, 46965), (130, 46947), (131, 46935), (140, 46875), (142, 46863), (149, 46815), (160, 46704),

Gene: RobinSparkles_57 Start: 48414, Stop: 47305, Start Num: 8

Candidate Starts for RobinSparkles_57:

(Start: 8 @48414 has 9 MA's), (23, 48303), (42, 48141), (49, 48111), (59, 48057), (68, 47979), (69, 47961), (80, 47874), (91, 47805), (95, 47778), (110, 47679), (114, 47634), (117, 47622), (118, 47613), (126, 47568), (127, 47565), (131, 47538),

Gene: RoyalG_54 Start: 49145, Stop: 48012, Start Num: 7

Candidate Starts for RoyalG_54:

(Start: 7 @49145 has 78 MA's), (31, 48953), (35, 48917), (38, 48890), (40, 48875), (53, 48815), (61, 48758), (62, 48740), (67, 48710), (75, 48650), (79, 48608), (81, 48602), (85, 48563), (86, 48560), (95, 48506), (103, 48443), (109, 48410), (110, 48407), (118, 48341), (125, 48299), (129, 48281), (130, 48278), (136, 48224), (139, 48215), (142, 48194), (151, 48125), (155, 48095), (158, 48053), (161, 48038),

Gene: Sam12_54 Start: 48570, Stop: 47437, Start Num: 7

Candidate Starts for Sam12_54:

(Start: 7 @48570 has 78 MA's), (15, 48507), (35, 48342), (38, 48315), (53, 48240), (61, 48183), (62, 48165), (67, 48135), (69, 48114), (75, 48075), (79, 48033), (81, 48027), (86, 47985), (96, 47925), (103, 47868), (109, 47835), (110, 47832), (118, 47766), (125, 47724), (129, 47706), (136, 47649), (142, 47619), (155, 47520), (158, 47478),

Gene: Shelley_52 Start: 49091, Stop: 47958, Start Num: 7

Candidate Starts for Shelley_52:

(Start: 7 @49091 has 78 MA's), (20, 48998), (22, 48983), (32, 48893), (40, 48821), (53, 48761), (61, 48704), (62, 48686), (65, 48677), (69, 48635), (73, 48602), (75, 48596), (81, 48548), (85, 48509), (86, 48506), (87, 48503), (96, 48446), (106, 48365), (109, 48356), (110, 48353), (115, 48305), (118, 48287), (129, 48227), (130, 48224), (136, 48170), (141, 48140), (148, 48098), (151, 48068), (152, 48065), (155, 48038), (156, 48035), (158, 47996),

Gene: Sombrero_55 Start: 48937, Stop: 47804, Start Num: 7

Candidate Starts for Sombrero_55:

(Start: 7 @48937 has 78 MA's), (25, 48811), (35, 48709), (38, 48682), (53, 48607), (61, 48550), (62, 48532), (67, 48502), (69, 48481), (75, 48442), (79, 48400), (81, 48394), (85, 48355), (86, 48352), (96, 48292), (109, 48202), (110, 48199), (118, 48133), (125, 48091), (129, 48073), (136, 48016), (142, 47986), (155, 47887), (158, 47845),

Gene: Squibbles_54 Start: 49433, Stop: 48300, Start Num: 7

Candidate Starts for Squibbles_54:

(Start: 7 @49433 has 78 MA's), (15, 49370), (35, 49205), (38, 49178), (53, 49103), (61, 49046), (62, 49028), (67, 48998), (69, 48977), (75, 48938), (79, 48896), (81, 48890), (86, 48848), (96, 48788), (103, 48731), (109, 48698), (110, 48695), (118, 48629), (125, 48587), (129, 48569), (136, 48512), (142, 48482), (155, 48383), (158, 48341),

Gene: Srilaccoli3_50 Start: 46623, Stop: 45478, Start Num: 8

Candidate Starts for Srilaccoli3_50:

(Start: 8 @46623 has 9 MA's), (11, 46611), (13, 46599), (22, 46509), (28, 46443), (32, 46410), (40, 46341), (44, 46323), (46, 46317), (56, 46260), (59, 46245), (66, 46188), (70, 46143), (76, 46101), (80, 46074), (81, 46071), (87, 46032), (89, 46020), (91, 46008), (96, 45975), (103, 45918), (110, 45882), (113, 45840), (118, 45816), (119, 45813), (123, 45783), (125, 45771), (126, 45768), (130, 45750), (131, 45738), (140, 45678), (142, 45666), (149, 45618), (156, 45564), (160, 45507),

Gene: SteveFrench_53 Start: 49385, Stop: 48252, Start Num: 7

Candidate Starts for SteveFrench_53:

(Start: 7 @49385 has 78 MA's), (31, 49193), (35, 49157), (38, 49130), (40, 49115), (53, 49055), (61, 48998), (62, 48980), (67, 48950), (75, 48890), (79, 48848), (81, 48842), (85, 48803), (86, 48800), (95, 48746), (103, 48683), (109, 48650), (110, 48647), (118, 48581), (125, 48539), (129, 48521), (130, 48518), (136, 48464), (139, 48455), (142, 48434), (151, 48365), (155, 48335), (158, 48293), (161, 48278),

Gene: Sticker17_52 Start: 49606, Stop: 48473, Start Num: 7

Candidate Starts for Sticker17_52:

(Start: 7 @49606 has 78 MA's), (20, 49513), (22, 49498), (32, 49408), (40, 49336), (53, 49276), (61, 49219), (62, 49201), (65, 49192), (69, 49150), (73, 49117), (75, 49111), (81, 49063), (85, 49024), (86, 49021), (87, 49018), (96, 48961), (106, 48880), (109, 48871), (110, 48868), (115, 48820), (118, 48802), (129, 48742), (130, 48739), (136, 48685), (141, 48655), (148, 48613), (151, 48583), (152, 48580), (155, 48553), (156, 48550), (158, 48511),

Gene: Teal_52 Start: 50073, Stop: 48940, Start Num: 7

Candidate Starts for Teal_52:

(Start: 7 @50073 has 78 MA's), (20, 49980), (22, 49965), (32, 49875), (40, 49803), (53, 49743), (61, 49686), (62, 49668), (65, 49659), (69, 49617), (73, 49584), (75, 49578), (81, 49530), (85, 49491), (86, 49488), (87, 49485), (106, 49347), (109, 49338), (110, 49335), (115, 49287), (118, 49269), (129, 49209), (130, 49206), (136, 49152), (141, 49122), (148, 49080), (151, 49050), (152, 49047), (155, 49020), (156, 49017), (158, 48978),

Gene: Teatealatte_51 Start: 49758, Stop: 48646, Start Num: 7

Candidate Starts for Teatealatte_51:

(Start: 7 @49758 has 78 MA's), (19, 49668), (22, 49650), (26, 49626), (27, 49620), (29, 49590), (35, 49539), (37, 49524), (41, 49491), (45, 49476), (51, 49443), (53, 49428), (64, 49353), (65, 49350), (68, 49320), (73, 49275), (81, 49221), (86, 49176), (87, 49173), (89, 49161), (91, 49149), (95, 49122), (100, 49077), (102, 49062), (109, 49026), (115, 48972), (117, 48963), (118, 48954), (124, 48918), (125, 48912), (129, 48894), (134, 48852), (137, 48834), (138, 48831), (148, 48768), (151, 48738), (158, 48666),

Gene: Teech_51 Start: 49559, Stop: 48447, Start Num: 7

Candidate Starts for Teech_51:

(3, 49583), (Start: 7 @49559 has 78 MA's), (19, 49469), (22, 49451), (26, 49427), (29, 49391), (35, 49340), (37, 49325), (41, 49292), (45, 49277), (51, 49244), (53, 49229), (64, 49154), (65, 49151), (68, 49121), (73, 49076), (81, 49022), (86, 48977), (87, 48974), (89, 48962), (91, 48950), (95, 48923), (100, 48878), (102, 48863), (109, 48827), (115, 48773), (117, 48764), (118, 48755), (124, 48719), (125, 48713), (129, 48695), (134, 48653), (137, 48635), (138, 48632), (148, 48569), (151, 48539), (158, 48467),

Gene: Tredge_51 Start: 49758, Stop: 48646, Start Num: 7

Candidate Starts for Tredge_51:

(Start: 7 @49758 has 78 MA's), (19, 49668), (22, 49650), (26, 49626), (27, 49620), (29, 49590), (35, 49539), (37, 49524), (41, 49491), (45, 49476), (51, 49443), (53, 49428), (64, 49353), (65, 49350), (68, 49320), (73, 49275), (81, 49221), (86, 49176), (87, 49173), (89, 49161), (91, 49149), (95, 49122), (100, 49077), (102, 49062), (109, 49026), (115, 48972), (117, 48963), (118, 48954), (124, 48918), (125, 48912), (129, 48894), (134, 48852), (137, 48834), (138, 48831), (148, 48768), (151, 48738), (158, 48666),

Gene: Trogglehumper_72 Start: 57053, Stop: 55920, Start Num: 8

Candidate Starts for Trogglehumper_72:

(1, 57194), (Start: 8 @57053 has 9 MA's), (17, 56981), (33, 56843), (40, 56783), (55, 56699), (65, 56633), (70, 56573), (73, 56555), (74, 56552), (78, 56510), (80, 56504), (81, 56501), (85, 56471), (86,

56468), (88, 56459), (96, 56408), (97, 56393), (109, 56318), (110, 56315), (124, 56213), (130, 56186), (131, 56174), (142, 56102), (143, 56096), (150, 56042), (153, 56012), (159, 55952),

Gene: Vitaenoi_51 Start: 50721, Stop: 49609, Start Num: 7

Candidate Starts for Vitaenoi_51:

(Start: 7 @50721 has 78 MA's), (15, 50658), (35, 50502), (37, 50487), (48, 50421), (50, 50412), (51, 50406), (53, 50391), (57, 50373), (64, 50316), (65, 50313), (68, 50283), (73, 50238), (75, 50232), (81, 50184), (86, 50139), (88, 50130), (91, 50112), (100, 50040), (104, 50004), (109, 49989), (111, 49962), (117, 49926), (122, 49887), (124, 49881), (129, 49857), (131, 49842), (134, 49815), (151, 49701), (154, 49674), (158, 49629),

Gene: Woes_52 Start: 50124, Stop: 48991, Start Num: 7

Candidate Starts for Woes_52:

(Start: 7 @50124 has 78 MA's), (20, 50031), (22, 50016), (32, 49926), (40, 49854), (53, 49794), (61, 49737), (62, 49719), (65, 49710), (69, 49668), (73, 49635), (75, 49629), (81, 49581), (85, 49542), (86, 49539), (87, 49536), (106, 49398), (109, 49389), (110, 49386), (115, 49338), (118, 49320), (129, 49260), (130, 49257), (136, 49203), (141, 49173), (148, 49131), (151, 49101), (152, 49098), (155, 49071), (156, 49068), (158, 49029),

Gene: Worcestershire_54 Start: 48572, Stop: 47439, Start Num: 7

Candidate Starts for Worcestershire_54:

(Start: 7 @48572 has 78 MA's), (15, 48509), (35, 48344), (38, 48317), (53, 48242), (61, 48185), (62, 48167), (67, 48137), (69, 48116), (75, 48077), (79, 48035), (81, 48029), (86, 47987), (96, 47927), (103, 47870), (109, 47837), (110, 47834), (118, 47768), (125, 47726), (129, 47708), (136, 47651), (142, 47621), (155, 47522), (158, 47480),