

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 157757 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157757 has 100 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Sejanus_64
- Track 2 : Mao1_67, Phayonce_47
- Track 3 : Dori_64, Mask_64
- Track 4 : Sanjuju_50, Fitzgerald_50
- Track 5 : Ailee_48, MoontowerMania_51, Affeca_49, Keitabear_51, Shivanishola_51, Love_56
- Track 6 : Charming_52, Tangent_52, Rofo_51
- Track 7 : Galadriel_52, Paries_55
- Track 8 : McKinley_54
- Track 9 : Barsten_52
- Track 10 : Thing3_50, Kamashten_50
- Track 11 : Brandonk123_53
- Track 12 : Geodirt_50
- Track 13 : Nordenberg_47
- Track 14 : Stultus_49
- Track 15 : Kewpiedoll_52
- Track 16 : Jabberwocky_49
- Track 17 : Sedona_51
- Track 18 : BobBob_50
- Track 19 : ChadMasterC_52
- Track 20 : Angelicage_49
- Track 21 : MelBins_50
- Track 22 : Dextert_48
- Track 23 : Zipp_52, Delrey21_51, DoctorFroggo_51, Verity_51
- Track 24 : Zitch_54
- Track 25 : Tardus_53
- Track 26 : Lilbeanie_53
- Track 27 : Island3_49, Brujita_49
- Track 28 : HC_46
- Track 29 : Xula_43, QueenHazel_44
- Track 30 : Babsiella_48
- Track 31 : Sbash_58
- Track 32 : Che9c_61
- Track 33 : Rebel_44, ShrimpFriedEgg_52, Nenae_52, Jamie19_46, Purgamenstris_52, Raymond7_46, Panchino_45, BabeRuth_53, Redi_52, Andies_45, PhancyPhin_52, SpongeBob_46, Snekmaggon_46, Phrann_49
- Track 34 : Philonius_48

- Track 35 : Rubeelu_51, Kevin1_50, Butters_51
- Track 36 : Silvy_48, Aggie_46
- Track 37 : Bosection6_48
- Track 38 : Shweta_46
- Track 39 : MichelleMyBell_48
- Track 40 : Jung_45, Techage_46, Malithi_47, Phegasus_47, Arib1_47, Kari_46, Charlie_48, Vidya_46, Polkaroo_47, Zilizebeth_47, Venti_47, Jebeks_48, Necropolis_46, Fishburne_46, Langerak_47, Journey_50, Mangethe_47, Majeke_47, Bartholomew_46, Dynamo_47, Donovan_47
- Track 41 : FirstPlacePfu_47
- Track 42 : Megiddo_46
- Track 43 : Xavia_54
- Track 44 : Nazo_49, BigNuz_48
- Track 45 : ThulaThula_53
- Track 46 : Purky_52

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

The start number called the most often in the published annotations is 19, it was called in 49 of the 91 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca_49, Ailee_48, Andies_45, Angelicage_49, BabeRuth_53, Barsten_52, Bosection6_48, Brandonk123_53, Brujita_49, Butters_51, ChadMasterC_52, Delrey21_51, Dextert_48, DoctorFroggo_51, Dori_64, Fitzgerald_50, Geodirt_50, Island3_49, Jabberwocky_49, Jamie19_46, Kamashten_50, Keitabear_51, Kevin1_50, Kewpiedoll_52, Lilbeanie_53, Love_56, Mask_64, MelBins_50, MoontowerMania_51, Nенаe_52, Panchino_45, PhancyPhin_52, Phrann_49, Purgamenstris_52, Raymond7_46, Rebel_44, Redi_52, Rubeelu_51, Sanjuju_50, Sedona_51, Shivanishola_51, ShrimpFriedEgg_52, Shweta_46, Snekmaggedon_46, SpongeBob_46, Stultus_49, Tardus_53, Thing3_50, ThulaThula_53, Verity_51, Zipp_52, Zitch_54,

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

-

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

- Aggie_46, Arib1_47, Babsiella_48, Bartholomew_46, BigNuz_48, BobBob_50, Charlie_48, Charming_52, Che9c_61, Donovan_47, Dynamo_47, FirstPlacePfu_47, Fishburne_46, Galadriel_52, HC_46, Jebeks_48, Journey_50, Jung_45, Kari_46, Langerak_47, Majeke_47, Malithi_47, Mangethe_47, Mao1_67, McKinley_54, Megiddo_46, MichelleMyBell_48, Nazo_49, Necropolis_46, Nordenberg_47, Paries_55, Phayonce_47, Phegasus_47, Philonius_48, Polkaroo_47, Purky_52, QueenHazel_44, Rofo_51, Sbash_58, Sejanus_64, Silvy_48, Tangent_52, Techage_46, Venti_47, Vidya_46, Xavia_54, Xula_43, Zilizebeth_47,

Summary by start number:

Start 17:

- Found in 8 of 100 (8.0%) of genes in pham

- Manual Annotations of this start: 8 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BobBob_50 (DE1), Charming_52 (DE1), Galadriel_52 (DE1), McKinley_54 (DE1), Nordenberg_47 (DE1), Paries_55 (DE1), Rofo_51 (DE1), Tangent_52 (DE1),

Start 19:

- Found in 52 of 100 (52.0%) of genes in pham
- Manual Annotations of this start: 49 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca_49 (DE1), Ailee_48 (DE1), Andies_45 (N), Angelicage_49 (DE1), BabeRuth_53 (N), Barsten_52 (DE1), Bosection6_48 (N), Brandonk123_53 (DE1), Brujita_49 (I1), Butters_51 (N), ChadMasterC_52 (DE1), Delrey21_51 (DE4), Dexdert_48 (DE3), DoctorFroggo_51 (DE4), Dori_64 (AD), Fitzgerald_50 (DE1), Geodirt_50 (DE1), Island3_49 (I1), Jabberwocky_49 (DE1), Jamie19_46 (N), Kamashten_50 (DE1), Keitabear_51 (DE1), Kevin1_50 (N), Kewpiedoll_52 (DE1), Lilbeanie_53 (DE5), Love_56 (DE1), Mask_64 (AD), MelBins_50 (DE2), MoontowerMania_51 (DE1), Nenae_52 (N), Panchino_45 (N), PhancyPhin_52 (N), Phrann_49 (N), Purgamenstris_52 (N), Raymond7_46 (N), Rebel_44 (N), Redi_52 (N), Rubeelu_51 (N), Sanjuju_50 (DE1), Sedona_51 (DE1), Shivanishola_51 (DE1), ShrimpFriedEgg_52 (N), Shweta_46 (N), Snekmaggedon_46 (N), SpongeBob_46 (N), Stultus_49 (DE1), Tardus_53 (DE4), Thing3_50 (DE1), ThulaThula_53 (P5), Verity_51 (DE4), Zipp_52 (DE4), Zitch_54 (DE4),

Start 22:

- Found in 38 of 100 (38.0%) of genes in pham
- Manual Annotations of this start: 32 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aggie_46 (N), Arib1_47 (P1), Babsiella_48 (I1), Bartholomew_46 (P1), BigNuz_48 (P4), Charlie_48 (N), Che9c_61 (I2), Donovan_47 (P1), Dynamo_47 (P1), FirstPlacePfu_47 (P1), Fishburne_46 (P1), HC_46 (I1), Jebeks_48 (P1), Journey_50 (N), Jung_45 (P1), Kari_46 (P1), Langerak_47 (P1), Majeke_47 (P1), Malithi_47 (P1), Mangethe_47 (P1), Mao1_67 (AD), Megiddo_46 (P1), Nazo_49 (P4), Necropolis_46 (P1), Phayonce_47 (P5), Phegasus_47 (P1), Philonius_48 (N), Polkaroo_47 (P1), Purky_52 (P6), QueenHazel_44 (I1), Sbash_58 (I2), Sejanus_64 (AD), Silvy_48 (N), Techage_46 (P1), Venti_47 (P1), Vidya_46 (P1), Xula_43 (I1), Zilizebeth_47 (P1),

Start 23:

- Found in 1 of 100 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MichelleMyBell_48 (N),

Start 24:

- Found in 1 of 100 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Xavia_54 (P3),

Summary by clusters:

There are 14 clusters represented in this pham: P3, P1, P6, AD, P4, P5, I1, DE1, DE2, DE3, DE4, DE5, N, I2,

Info for manual annotations of cluster AD:

- Start number 19 was manually annotated 2 times for cluster AD.
- Start number 22 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster DE1:

- Start number 17 was manually annotated 8 times for cluster DE1.
- Start number 19 was manually annotated 17 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 19 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 19 was manually annotated 1 time for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 19 was manually annotated 6 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 19 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster I1:

- Start number 19 was manually annotated 2 times for cluster I1.
- Start number 22 was manually annotated 4 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 22 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster N:

- Start number 19 was manually annotated 18 times for cluster N.
- Start number 22 was manually annotated 3 times for cluster N.
- Start number 23 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P1:

- Start number 22 was manually annotated 18 times for cluster P1.

Info for manual annotations of cluster P3:

- Start number 24 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

- Start number 22 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 19 was manually annotated 1 time for cluster P5.
- Start number 22 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:

- Start number 22 was manually annotated 1 time for cluster P6.

Gene Information:

Gene: Affeca_49 Start: 42918, Stop: 43916, Start Num: 19

Candidate Starts for Affeca_49:

(4, 42675), (5, 42777), (15, 42864), (Start: 19 @42918 has 49 MA's), (25, 42954), (33, 43005), (35, 43011), (38, 43029), (42, 43059), (50, 43122), (53, 43137), (61, 43218), (65, 43233), (67, 43257), (70, 43281), (88, 43428), (92, 43461), (94, 43476), (101, 43545), (102, 43560), (112, 43617), (114, 43632), (139, 43809), (146, 43881),

Gene: Aggie_46 Start: 32126, Stop: 33115, Start Num: 22

Candidate Starts for Aggie_46:

(3, 31805), (6, 31973), (12, 32036), (Start: 22 @32126 has 32 MA's), (25, 32141), (33, 32189), (41, 32240), (54, 32336), (59, 32375), (79, 32510), (91, 32621), (92, 32624), (96, 32663), (100, 32687), (101, 32705), (108, 32750), (113, 32780), (114, 32792), (134, 32936), (143, 33035), (146, 33083),

Gene: Ailee_48 Start: 42523, Stop: 43524, Start Num: 19

Candidate Starts for Ailee_48:

(4, 42280), (5, 42382), (15, 42469), (Start: 19 @42523 has 49 MA's), (25, 42559), (33, 42610), (35, 42616), (38, 42634), (42, 42664), (50, 42727), (53, 42742), (61, 42823), (65, 42838), (67, 42862), (70, 42886), (88, 43033), (92, 43066), (94, 43081), (101, 43150), (102, 43165), (112, 43222), (114, 43237), (139, 43417), (146, 43489),

Gene: Andies_45 Start: 32643, Stop: 33707, Start Num: 19

Candidate Starts for Andies_45:

(9, 32529), (Start: 19 @32643 has 49 MA's), (21, 32655), (30, 32721), (31, 32724), (33, 32730), (38, 32754), (40, 32775), (41, 32781), (43, 32793), (44, 32796), (46, 32805), (50, 32847), (53, 32862), (75, 33054), (85, 33135), (87, 33147), (88, 33156), (92, 33189), (94, 33204), (97, 33231), (101, 33285), (102, 33300), (105, 33315), (107, 33324), (111, 33354), (114, 33372), (115, 33378), (120, 33429), (129, 33486), (132, 33522), (134, 33528), (142, 33618), (143, 33627), (146, 33675), (147, 33684),

Gene: Angelicage_49 Start: 43336, Stop: 44331, Start Num: 19

Candidate Starts for Angelicage_49:

(2, 42985), (4, 43093), (5, 43195), (15, 43282), (Start: 19 @43336 has 49 MA's), (25, 43372), (33, 43423), (35, 43429), (38, 43447), (42, 43477), (50, 43540), (53, 43555), (61, 43636), (65, 43651), (67, 43675), (70, 43699), (88, 43846), (92, 43879), (94, 43894), (101, 43963), (102, 43978), (112, 44035), (114, 44050), (139, 44224), (146, 44296),

Gene: Arib1_47 Start: 32549, Stop: 33544, Start Num: 22

Candidate Starts for Arib1_47:

(3, 32228), (6, 32396), (12, 32459), (Start: 22 @32549 has 32 MA's), (25, 32564), (33, 32612), (41, 32663), (54, 32759), (59, 32798), (79, 32933), (91, 33044), (92, 33047), (96, 33086), (100, 33110), (101, 33128), (108, 33173), (113, 33203), (114, 33215), (134, 33362), (143, 33461), (146, 33509), (148, 33533),

Gene: BabeRuth_53 Start: 34364, Stop: 35428, Start Num: 19

Candidate Starts for BabeRuth_53:

(9, 34250), (Start: 19 @34364 has 49 MA's), (21, 34376), (30, 34442), (31, 34445), (33, 34451), (38, 34475), (40, 34496), (41, 34502), (43, 34514), (44, 34517), (46, 34526), (50, 34568), (53, 34583), (75, 34775), (85, 34856), (87, 34868), (88, 34877), (92, 34910), (94, 34925), (97, 34952), (101, 35006), (102, 35021), (105, 35036), (107, 35045), (111, 35075), (114, 35093), (115, 35099), (120, 35150), (129, 35207), (132, 35243), (134, 35249), (142, 35339), (143, 35348), (146, 35396), (147, 35405),

Gene: Babsiella_48 Start: 33402, Stop: 34397, Start Num: 22

Candidate Starts for Babsiella_48:

(8, 33267), (Start: 22 @33402 has 32 MA's), (25, 33417), (33, 33465), (41, 33516), (46, 33540), (59, 33651), (79, 33786), (91, 33897), (92, 33900), (96, 33939), (100, 33963), (101, 33981), (108, 34026), (113, 34056), (114, 34068), (122, 34125), (134, 34215), (143, 34314), (146, 34362), (148, 34386),

Gene: Barsten_52 Start: 43289, Stop: 44287, Start Num: 19

Candidate Starts for Barsten_52:

(14, 43238), (Start: 19 @43289 has 49 MA's), (25, 43325), (33, 43376), (35, 43382), (38, 43400), (42, 43430), (50, 43493), (53, 43508), (61, 43589), (65, 43604), (67, 43628), (70, 43652), (88, 43799), (92, 43832), (94, 43847), (101, 43916), (102, 43931), (112, 43988), (114, 44003), (139, 44180), (146, 44252),

Gene: Bartholomew_46 Start: 32543, Stop: 33535, Start Num: 22

Candidate Starts for Bartholomew_46:

(3, 32222), (6, 32390), (12, 32453), (Start: 22 @32543 has 32 MA's), (25, 32558), (33, 32606), (41, 32657), (54, 32753), (59, 32792), (79, 32927), (91, 33038), (92, 33041), (96, 33080), (100, 33104), (101, 33122), (108, 33167), (113, 33197), (114, 33209), (134, 33353), (143, 33452), (146, 33500), (148, 33524),

Gene: BigNuz_48 Start: 34451, Stop: 35503, Start Num: 22

Candidate Starts for BigNuz_48:

(20, 34433), (Start: 22 @34451 has 32 MA's), (27, 34490), (34, 34526), (38, 34547), (39, 34559), (43, 34586), (59, 34739), (61, 34766), (67, 34805), (78, 34886), (79, 34892), (88, 34967), (91, 34994), (101, 35075), (104, 35102), (133, 35318), (134, 35324), (143, 35423), (146, 35471),

Gene: BobBob_50 Start: 42507, Stop: 43514, Start Num: 17

Candidate Starts for BobBob_50:

(Start: 17 @42507 has 8 MA's), (18, 42516), (25, 42552), (33, 42603), (35, 42609), (38, 42627), (42, 42657), (50, 42720), (53, 42735), (58, 42786), (69, 42864), (88, 43026), (92, 43059), (94, 43074), (101, 43143), (102, 43158), (112, 43215), (114, 43230), (139, 43407), (146, 43479),

Gene: Bosection6_48 Start: 32109, Stop: 33173, Start Num: 19

Candidate Starts for Bosection6_48:

(1, 31737), (9, 31995), (Start: 19 @32109 has 49 MA's), (21, 32121), (30, 32187), (31, 32190), (33, 32196), (38, 32220), (40, 32241), (41, 32247), (43, 32259), (44, 32262), (46, 32271), (50, 32313), (53, 32328), (75, 32520), (85, 32601), (87, 32613), (88, 32622), (92, 32655), (94, 32670), (97, 32697), (101, 32751), (102, 32766), (105, 32781), (107, 32790), (111, 32820), (114, 32838), (115, 32844), (120, 32895), (129, 32952), (132, 32988), (134, 32994), (142, 33084), (143, 33093), (146, 33141), (147, 33150),

Gene: Brandonk123_53 Start: 43467, Stop: 44465, Start Num: 19

Candidate Starts for Brandonk123_53:

(5, 43326), (15, 43413), (Start: 19 @43467 has 49 MA's), (25, 43503), (33, 43554), (35, 43560), (38, 43578), (42, 43608), (50, 43671), (53, 43686), (61, 43767), (65, 43782), (67, 43806), (70, 43830), (76, 43878), (88, 43977), (92, 44010), (94, 44025), (101, 44094), (102, 44109), (112, 44166), (114, 44181), (139, 44358), (146, 44430),

Gene: Brujita_49 Start: 34787, Stop: 35854, Start Num: 19

Candidate Starts for Brujita_49:

(Start: 19 @34787 has 49 MA's), (21, 34799), (30, 34865), (33, 34874), (38, 34898), (40, 34919), (41, 34925), (44, 34940), (46, 34949), (50, 34991), (53, 35006), (61, 35093), (87, 35291), (92, 35333), (94, 35348), (97, 35375), (99, 35396), (101, 35429), (102, 35444), (105, 35459), (107, 35468), (111, 35498), (114, 35516), (115, 35522), (118, 35555), (120, 35573), (133, 35666), (134, 35672), (143,

35771), (146, 35819), (148, 35843),

Gene: Butters_51 Start: 34063, Stop: 35127, Start Num: 19

Candidate Starts for Butters_51:

(Start: 19 @34063 has 49 MA's), (21, 34075), (30, 34141), (33, 34150), (38, 34174), (40, 34195), (41, 34201), (44, 34216), (46, 34225), (50, 34267), (53, 34282), (61, 34369), (87, 34567), (92, 34609), (94, 34624), (97, 34651), (99, 34672), (101, 34705), (102, 34720), (105, 34735), (107, 34744), (111, 34774), (114, 34792), (115, 34798), (118, 34831), (120, 34849), (133, 34942), (134, 34948), (142, 35038), (143, 35047), (146, 35095), (147, 35104),

Gene: ChadMasterC_52 Start: 44688, Stop: 45686, Start Num: 19

Candidate Starts for ChadMasterC_52:

(14, 44637), (Start: 19 @44688 has 49 MA's), (25, 44724), (33, 44775), (35, 44781), (38, 44799), (42, 44829), (50, 44892), (53, 44907), (61, 44988), (67, 45027), (70, 45051), (88, 45198), (92, 45231), (94, 45246), (101, 45315), (102, 45330), (112, 45387), (114, 45402), (139, 45579), (146, 45651),

Gene: Charlie_48 Start: 31920, Stop: 32912, Start Num: 22

Candidate Starts for Charlie_48:

(3, 31599), (6, 31767), (12, 31830), (Start: 22 @31920 has 32 MA's), (25, 31935), (33, 31983), (41, 32034), (54, 32130), (59, 32169), (79, 32304), (91, 32415), (92, 32418), (96, 32457), (100, 32481), (101, 32499), (108, 32544), (113, 32574), (114, 32586), (134, 32730), (143, 32829), (146, 32877), (148, 32901),

Gene: Charming_52 Start: 42946, Stop: 43956, Start Num: 17

Candidate Starts for Charming_52:

(Start: 17 @42946 has 8 MA's), (18, 42955), (25, 42991), (33, 43045), (35, 43051), (38, 43069), (42, 43099), (50, 43162), (53, 43177), (61, 43258), (70, 43321), (88, 43468), (92, 43501), (94, 43516), (101, 43585), (102, 43600), (112, 43657), (114, 43672), (138, 43837), (146, 43921),

Gene: Che9c_61 Start: 43643, Stop: 44704, Start Num: 22

Candidate Starts for Che9c_61:

(20, 43625), (Start: 22 @43643 has 32 MA's), (29, 43703), (32, 43712), (34, 43718), (38, 43739), (39, 43751), (43, 43778), (59, 43931), (61, 43958), (78, 44078), (81, 44105), (88, 44159), (91, 44186), (95, 44213), (101, 44267), (104, 44294), (133, 44519), (134, 44525), (147, 44681),

Gene: Delrey21_51 Start: 44353, Stop: 45396, Start Num: 19

Candidate Starts for Delrey21_51:

(Start: 19 @44353 has 49 MA's), (33, 44443), (38, 44467), (39, 44479), (53, 44575), (80, 44782), (88, 44848), (94, 44896), (101, 44968), (102, 44983), (106, 45004), (109, 45025), (110, 45028), (114, 45055), (122, 45133), (126, 45166), (130, 45178), (140, 45301), (144, 45328), (146, 45364),

Gene: Dextert_48 Start: 39661, Stop: 40713, Start Num: 19

Candidate Starts for Dextert_48:

(Start: 19 @39661 has 49 MA's), (33, 39748), (38, 39772), (42, 39802), (50, 39865), (53, 39880), (56, 39913), (70, 40024), (74, 40051), (80, 40105), (88, 40171), (89, 40192), (92, 40204), (94, 40219), (101, 40303), (103, 40321), (106, 40339), (114, 40390), (125, 40492), (138, 40600), (140, 40621), (146, 40684),

Gene: DoctorFroggo_51 Start: 44353, Stop: 45396, Start Num: 19

Candidate Starts for DoctorFroggo_51:

(Start: 19 @44353 has 49 MA's), (33, 44443), (38, 44467), (39, 44479), (53, 44575), (80, 44782), (88, 44848), (94, 44896), (101, 44968), (102, 44983), (106, 45004), (109, 45025), (110, 45028), (114, 45055), (122, 45133), (126, 45166), (130, 45178), (140, 45301), (144, 45328), (146, 45364),

Gene: Donovan_47 Start: 32566, Stop: 33558, Start Num: 22

Candidate Starts for Donovan_47:

(3, 32245), (6, 32413), (12, 32476), (Start: 22 @32566 has 32 MA's), (25, 32581), (33, 32629), (41, 32680), (54, 32776), (59, 32815), (79, 32950), (91, 33061), (92, 33064), (96, 33103), (100, 33127), (101, 33145), (108, 33190), (113, 33220), (114, 33232), (134, 33376), (143, 33475), (146, 33523), (148, 33547),

Gene: Dori_64 Start: 50133, Stop: 51218, Start Num: 19

Candidate Starts for Dori_64:

(Start: 19 @50133 has 49 MA's), (26, 50169), (30, 50208), (33, 50217), (38, 50241), (40, 50262), (44, 50283), (46, 50292), (48, 50310), (49, 50343), (53, 50364), (54, 50379), (55, 50385), (57, 50406), (65, 50466), (73, 50526), (74, 50541), (82, 50613), (83, 50616), (92, 50700), (94, 50715), (97, 50742), (101, 50799), (102, 50814), (103, 50817), (105, 50829), (106, 50835), (107, 50838), (111, 50868), (114, 50886), (115, 50892), (120, 50943), (123, 50967), (129, 51000), (130, 51003), (132, 51033), (134, 51039), (136, 51072), (143, 51138), (145, 51162), (147, 51195),

Gene: Dynamo_47 Start: 33026, Stop: 34018, Start Num: 22

Candidate Starts for Dynamo_47:

(3, 32705), (6, 32873), (12, 32936), (Start: 22 @33026 has 32 MA's), (25, 33041), (33, 33089), (41, 33140), (54, 33236), (59, 33275), (79, 33410), (91, 33521), (92, 33524), (96, 33563), (100, 33587), (101, 33605), (108, 33650), (113, 33680), (114, 33692), (134, 33836), (143, 33935), (146, 33983), (148, 34007),

Gene: FirstPlacePfu_47 Start: 32575, Stop: 33567, Start Num: 22

Candidate Starts for FirstPlacePfu_47:

(6, 32422), (12, 32485), (Start: 22 @32575 has 32 MA's), (25, 32590), (33, 32638), (41, 32689), (54, 32785), (59, 32824), (79, 32959), (91, 33070), (92, 33073), (96, 33112), (100, 33136), (101, 33154), (108, 33199), (113, 33229), (114, 33241), (134, 33385), (143, 33484), (146, 33532), (148, 33556),

Gene: Fishburne_46 Start: 32543, Stop: 33535, Start Num: 22

Candidate Starts for Fishburne_46:

(3, 32222), (6, 32390), (12, 32453), (Start: 22 @32543 has 32 MA's), (25, 32558), (33, 32606), (41, 32657), (54, 32753), (59, 32792), (79, 32927), (91, 33038), (92, 33041), (96, 33080), (100, 33104), (101, 33122), (108, 33167), (113, 33197), (114, 33209), (134, 33353), (143, 33452), (146, 33500), (148, 33524),

Gene: Fitzgerald_50 Start: 43949, Stop: 44947, Start Num: 19

Candidate Starts for Fitzgerald_50:

(10, 43865), (13, 43886), (Start: 19 @43949 has 49 MA's), (25, 43985), (33, 44036), (35, 44042), (38, 44060), (42, 44090), (50, 44153), (53, 44168), (70, 44312), (88, 44459), (92, 44492), (94, 44507), (101, 44576), (102, 44591), (112, 44648), (114, 44663), (139, 44840), (146, 44912),

Gene: Galadriel_52 Start: 43406, Stop: 44413, Start Num: 17

Candidate Starts for Galadriel_52:

(Start: 17 @43406 has 8 MA's), (18, 43415), (25, 43451), (33, 43502), (35, 43508), (38, 43526), (42, 43556), (50, 43619), (53, 43634), (70, 43778), (88, 43925), (92, 43958), (94, 43973), (101, 44042), (102, 44057), (112, 44114), (114, 44129), (146, 44378),

Gene: Geodirt_50 Start: 44037, Stop: 45035, Start Num: 19

Candidate Starts for Geodirt_50:

(10, 43953), (13, 43974), (Start: 19 @44037 has 49 MA's), (25, 44073), (33, 44124), (35, 44130), (38, 44148), (42, 44178), (50, 44241), (53, 44256), (61, 44337), (67, 44376), (70, 44400), (88, 44547), (92,

44580), (94, 44595), (101, 44664), (102, 44679), (112, 44736), (114, 44751), (139, 44928), (146, 45000),

Gene: HC_46 Start: 32186, Stop: 33181, Start Num: 22

Candidate Starts for HC_46:

(8, 32051), (Start: 22 @32186 has 32 MA's), (25, 32201), (33, 32249), (41, 32300), (46, 32324), (59, 32435), (79, 32570), (91, 32681), (92, 32684), (96, 32723), (100, 32747), (101, 32765), (108, 32810), (113, 32840), (114, 32852), (124, 32930), (134, 32999), (143, 33098), (146, 33146), (148, 33170),

Gene: Island3_49 Start: 34787, Stop: 35854, Start Num: 19

Candidate Starts for Island3_49:

(Start: 19 @34787 has 49 MA's), (21, 34799), (30, 34865), (33, 34874), (38, 34898), (40, 34919), (41, 34925), (44, 34940), (46, 34949), (50, 34991), (53, 35006), (61, 35093), (87, 35291), (92, 35333), (94, 35348), (97, 35375), (99, 35396), (101, 35429), (102, 35444), (105, 35459), (107, 35468), (111, 35498), (114, 35516), (115, 35522), (118, 35555), (120, 35573), (133, 35666), (134, 35672), (143, 35771), (146, 35819), (148, 35843),

Gene: Jabberwocky_49 Start: 44097, Stop: 45095, Start Num: 19

Candidate Starts for Jabberwocky_49:

(Start: 19 @44097 has 49 MA's), (25, 44133), (33, 44184), (35, 44190), (38, 44208), (42, 44238), (50, 44301), (53, 44316), (61, 44397), (65, 44412), (67, 44436), (70, 44460), (76, 44508), (88, 44607), (92, 44640), (94, 44655), (101, 44724), (102, 44739), (112, 44796), (114, 44811), (139, 44988), (146, 45060),

Gene: Jamie19_46 Start: 32655, Stop: 33719, Start Num: 19

Candidate Starts for Jamie19_46:

(9, 32541), (Start: 19 @32655 has 49 MA's), (21, 32667), (30, 32733), (31, 32736), (33, 32742), (38, 32766), (40, 32787), (41, 32793), (43, 32805), (44, 32808), (46, 32817), (50, 32859), (53, 32874), (75, 33066), (85, 33147), (87, 33159), (88, 33168), (92, 33201), (94, 33216), (97, 33243), (101, 33297), (102, 33312), (105, 33327), (107, 33336), (111, 33366), (114, 33384), (115, 33390), (120, 33441), (129, 33498), (132, 33534), (134, 33540), (142, 33630), (143, 33639), (146, 33687), (147, 33696),

Gene: Jebeks_48 Start: 32603, Stop: 33595, Start Num: 22

Candidate Starts for Jebeks_48:

(3, 32282), (6, 32450), (12, 32513), (Start: 22 @32603 has 32 MA's), (25, 32618), (33, 32666), (41, 32717), (54, 32813), (59, 32852), (79, 32987), (91, 33098), (92, 33101), (96, 33140), (100, 33164), (101, 33182), (108, 33227), (113, 33257), (114, 33269), (134, 33413), (143, 33512), (146, 33560), (148, 33584),

Gene: Journey_50 Start: 31920, Stop: 32912, Start Num: 22

Candidate Starts for Journey_50:

(3, 31599), (6, 31767), (12, 31830), (Start: 22 @31920 has 32 MA's), (25, 31935), (33, 31983), (41, 32034), (54, 32130), (59, 32169), (79, 32304), (91, 32415), (92, 32418), (96, 32457), (100, 32481), (101, 32499), (108, 32544), (113, 32574), (114, 32586), (134, 32730), (143, 32829), (146, 32877), (148, 32901),

Gene: Jung_45 Start: 32501, Stop: 33496, Start Num: 22

Candidate Starts for Jung_45:

(3, 32180), (6, 32348), (12, 32411), (Start: 22 @32501 has 32 MA's), (25, 32516), (33, 32564), (41, 32615), (54, 32711), (59, 32750), (79, 32885), (91, 32996), (92, 32999), (96, 33038), (100, 33062), (101, 33080), (108, 33125), (113, 33155), (114, 33167), (134, 33314), (143, 33413), (146, 33461), (148, 33485),

Gene: Kamashten_50 Start: 42629, Stop: 43627, Start Num: 19

Candidate Starts for Kamashten_50:

(4, 42386), (5, 42488), (15, 42575), (Start: 19 @42629 has 49 MA's), (25, 42665), (33, 42716), (35, 42722), (38, 42740), (42, 42770), (50, 42833), (53, 42848), (61, 42929), (67, 42968), (70, 42992), (88, 43139), (92, 43172), (94, 43187), (101, 43256), (102, 43271), (112, 43328), (114, 43343), (139, 43520), (146, 43592),

Gene: Kari_46 Start: 32540, Stop: 33532, Start Num: 22

Candidate Starts for Kari_46:

(3, 32219), (6, 32387), (12, 32450), (Start: 22 @32540 has 32 MA's), (25, 32555), (33, 32603), (41, 32654), (54, 32750), (59, 32789), (79, 32924), (91, 33035), (92, 33038), (96, 33077), (100, 33101), (101, 33119), (108, 33164), (113, 33194), (114, 33206), (134, 33350), (143, 33449), (146, 33497), (148, 33521),

Gene: Keitabear_51 Start: 44151, Stop: 45146, Start Num: 19

Candidate Starts for Keitabear_51:

(4, 43908), (5, 44010), (15, 44097), (Start: 19 @44151 has 49 MA's), (25, 44187), (33, 44238), (35, 44244), (38, 44262), (42, 44292), (50, 44355), (53, 44370), (61, 44451), (65, 44466), (67, 44490), (70, 44514), (88, 44661), (92, 44694), (94, 44709), (101, 44778), (102, 44793), (112, 44850), (114, 44865), (139, 45039), (146, 45111),

Gene: Kevin1_50 Start: 33499, Stop: 34563, Start Num: 19

Candidate Starts for Kevin1_50:

(Start: 19 @33499 has 49 MA's), (21, 33511), (30, 33577), (33, 33586), (38, 33610), (40, 33631), (41, 33637), (44, 33652), (46, 33661), (50, 33703), (53, 33718), (61, 33805), (87, 34003), (92, 34045), (94, 34060), (97, 34087), (99, 34108), (101, 34141), (102, 34156), (105, 34171), (107, 34180), (111, 34210), (114, 34228), (115, 34234), (118, 34267), (120, 34285), (133, 34378), (134, 34384), (142, 34474), (143, 34483), (146, 34531), (147, 34540),

Gene: Kewpiedoll_52 Start: 43580, Stop: 44578, Start Num: 19

Candidate Starts for Kewpiedoll_52:

(2, 43229), (4, 43337), (5, 43439), (15, 43526), (Start: 19 @43580 has 49 MA's), (25, 43616), (33, 43667), (35, 43673), (38, 43691), (42, 43721), (50, 43784), (53, 43799), (61, 43880), (65, 43895), (67, 43919), (70, 43943), (76, 43991), (88, 44090), (92, 44123), (94, 44138), (101, 44207), (102, 44222), (112, 44279), (114, 44294), (139, 44471), (146, 44543),

Gene: Langerak_47 Start: 32559, Stop: 33551, Start Num: 22

Candidate Starts for Langerak_47:

(3, 32238), (6, 32406), (12, 32469), (Start: 22 @32559 has 32 MA's), (25, 32574), (33, 32622), (41, 32673), (54, 32769), (59, 32808), (79, 32943), (91, 33054), (92, 33057), (96, 33096), (100, 33120), (101, 33138), (108, 33183), (113, 33213), (114, 33225), (134, 33369), (143, 33468), (146, 33516), (148, 33540),

Gene: Lilbeanie_53 Start: 38965, Stop: 40047, Start Num: 19

Candidate Starts for Lilbeanie_53:

(Start: 19 @38965 has 49 MA's), (33, 39055), (38, 39079), (39, 39091), (40, 39100), (47, 39136), (53, 39187), (60, 39247), (62, 39271), (72, 39340), (80, 39412), (84, 39451), (92, 39508), (94, 39523), (98, 39550), (101, 39604), (138, 39937), (139, 39949), (141, 39961), (146, 40018),

Gene: Love_56 Start: 44855, Stop: 45853, Start Num: 19

Candidate Starts for Love_56:

(4, 44612), (5, 44714), (15, 44801), (Start: 19 @44855 has 49 MA's), (25, 44891), (33, 44942), (35, 44948), (38, 44966), (42, 44996), (50, 45059), (53, 45074), (61, 45155), (65, 45170), (67, 45194), (70,

45218), (88, 45365), (92, 45398), (94, 45413), (101, 45482), (102, 45497), (112, 45554), (114, 45569), (139, 45746), (146, 45818),

Gene: Majeke_47 Start: 32584, Stop: 33576, Start Num: 22

Candidate Starts for Majeke_47:

(3, 32263), (6, 32431), (12, 32494), (Start: 22 @32584 has 32 MA's), (25, 32599), (33, 32647), (41, 32698), (54, 32794), (59, 32833), (79, 32968), (91, 33079), (92, 33082), (96, 33121), (100, 33145), (101, 33163), (108, 33208), (113, 33238), (114, 33250), (134, 33394), (143, 33493), (146, 33541), (148, 33565),

Gene: Malithi_47 Start: 32459, Stop: 33451, Start Num: 22

Candidate Starts for Malithi_47:

(3, 32138), (6, 32306), (12, 32369), (Start: 22 @32459 has 32 MA's), (25, 32474), (33, 32522), (41, 32573), (54, 32669), (59, 32708), (79, 32843), (91, 32954), (92, 32957), (96, 32996), (100, 33020), (101, 33038), (108, 33083), (113, 33113), (114, 33125), (134, 33269), (143, 33368), (146, 33416), (148, 33440),

Gene: Mangethe_47 Start: 32584, Stop: 33576, Start Num: 22

Candidate Starts for Mangethe_47:

(3, 32263), (6, 32431), (12, 32494), (Start: 22 @32584 has 32 MA's), (25, 32599), (33, 32647), (41, 32698), (54, 32794), (59, 32833), (79, 32968), (91, 33079), (92, 33082), (96, 33121), (100, 33145), (101, 33163), (108, 33208), (113, 33238), (114, 33250), (134, 33394), (143, 33493), (146, 33541), (148, 33565),

Gene: Mao1_67 Start: 48471, Stop: 49460, Start Num: 22

Candidate Starts for Mao1_67:

(11, 48357), (Start: 22 @48471 has 32 MA's), (28, 48516), (33, 48537), (39, 48573), (41, 48588), (53, 48669), (59, 48723), (64, 48741), (81, 48879), (86, 48915), (90, 48957), (91, 48960), (92, 48963), (100, 49026), (101, 49044), (103, 49062), (104, 49071), (107, 49083), (113, 49119), (114, 49131), (116, 49155), (117, 49164), (122, 49191), (127, 49227), (128, 49230), (131, 49251), (134, 49281), (143, 49380), (145, 49404), (147, 49437),

Gene: Mask_64 Start: 50876, Stop: 51961, Start Num: 19

Candidate Starts for Mask_64:

(Start: 19 @50876 has 49 MA's), (26, 50912), (30, 50951), (33, 50960), (38, 50984), (40, 51005), (44, 51026), (46, 51035), (48, 51053), (49, 51086), (53, 51107), (54, 51122), (55, 51128), (57, 51149), (65, 51209), (73, 51269), (74, 51284), (82, 51356), (83, 51359), (92, 51443), (94, 51458), (97, 51485), (101, 51542), (102, 51557), (103, 51560), (105, 51572), (106, 51578), (107, 51581), (111, 51611), (114, 51629), (115, 51635), (120, 51686), (123, 51710), (129, 51743), (130, 51746), (132, 51776), (134, 51782), (136, 51815), (143, 51881), (145, 51905), (147, 51938),

Gene: McKinley_54 Start: 43977, Stop: 44984, Start Num: 17

Candidate Starts for McKinley_54:

(Start: 17 @43977 has 8 MA's), (18, 43986), (25, 44022), (33, 44073), (35, 44079), (38, 44097), (42, 44127), (50, 44190), (53, 44205), (61, 44286), (65, 44301), (67, 44325), (70, 44349), (88, 44496), (92, 44529), (94, 44544), (101, 44613), (102, 44628), (112, 44685), (114, 44700), (139, 44877), (146, 44949),

Gene: Megiddo_46 Start: 32800, Stop: 33774, Start Num: 22

Candidate Starts for Megiddo_46:

(Start: 22 @32800 has 32 MA's), (25, 32818), (33, 32866), (41, 32917), (44, 32932), (46, 32941), (59, 33052), (79, 33187), (91, 33298), (92, 33301), (96, 33340), (100, 33364), (101, 33382), (108, 33427), (113, 33457), (114, 33469), (122, 33526), (134, 33595), (143, 33694), (146, 33742),

Gene: MelBins_50 Start: 42252, Stop: 43313, Start Num: 19

Candidate Starts for MelBins_50:

(Start: 19 @42252 has 49 MA's), (25, 42288), (33, 42339), (38, 42363), (40, 42384), (47, 42420), (50, 42456), (53, 42471), (56, 42504), (70, 42615), (88, 42762), (89, 42783), (92, 42795), (94, 42810), (101, 42891), (102, 42906), (109, 42948), (110, 42951), (119, 43020), (125, 43080), (137, 43176), (144, 43248), (146, 43284),

Gene: MichelleMyBell_48 Start: 32199, Stop: 33182, Start Num: 23

Candidate Starts for MichelleMyBell_48:

(Start: 23 @32199 has 1 MA's), (38, 32286), (39, 32298), (41, 32313), (44, 32328), (45, 32334), (53, 32394), (59, 32448), (64, 32466), (66, 32475), (71, 32523), (74, 32547), (81, 32604), (86, 32640), (90, 32682), (91, 32685), (92, 32688), (93, 32694), (94, 32703), (100, 32751), (101, 32769), (103, 32787), (107, 32808), (113, 32844), (114, 32856), (117, 32889), (128, 32949), (131, 32973), (134, 33003), (135, 33021), (143, 33102), (145, 33126), (147, 33159),

Gene: MoontowerMania_51 Start: 43863, Stop: 44861, Start Num: 19

Candidate Starts for MoontowerMania_51:

(4, 43620), (5, 43722), (15, 43809), (Start: 19 @43863 has 49 MA's), (25, 43899), (33, 43950), (35, 43956), (38, 43974), (42, 44004), (50, 44067), (53, 44082), (61, 44163), (65, 44178), (67, 44202), (70, 44226), (88, 44373), (92, 44406), (94, 44421), (101, 44490), (102, 44505), (112, 44562), (114, 44577), (139, 44754), (146, 44826),

Gene: Nazo_49 Start: 34648, Stop: 35700, Start Num: 22

Candidate Starts for Nazo_49:

(20, 34630), (Start: 22 @34648 has 32 MA's), (27, 34687), (34, 34723), (38, 34744), (39, 34756), (43, 34783), (59, 34936), (61, 34963), (67, 35002), (78, 35083), (79, 35089), (88, 35164), (91, 35191), (101, 35272), (104, 35299), (133, 35515), (134, 35521), (143, 35620), (146, 35668),

Gene: Necropolis_46 Start: 32615, Stop: 33607, Start Num: 22

Candidate Starts for Necropolis_46:

(3, 32294), (6, 32462), (12, 32525), (Start: 22 @32615 has 32 MA's), (25, 32630), (33, 32678), (41, 32729), (54, 32825), (59, 32864), (79, 32999), (91, 33110), (92, 33113), (96, 33152), (100, 33176), (101, 33194), (108, 33239), (113, 33269), (114, 33281), (134, 33425), (143, 33524), (146, 33572), (148, 33596),

Gene: Nenae_52 Start: 34366, Stop: 35430, Start Num: 19

Candidate Starts for Nenae_52:

(9, 34252), (Start: 19 @34366 has 49 MA's), (21, 34378), (30, 34444), (31, 34447), (33, 34453), (38, 34477), (40, 34498), (41, 34504), (43, 34516), (44, 34519), (46, 34528), (50, 34570), (53, 34585), (75, 34777), (85, 34858), (87, 34870), (88, 34879), (92, 34912), (94, 34927), (97, 34954), (101, 35008), (102, 35023), (105, 35038), (107, 35047), (111, 35077), (114, 35095), (115, 35101), (120, 35152), (129, 35209), (132, 35245), (134, 35251), (142, 35341), (143, 35350), (146, 35398), (147, 35407),

Gene: Nordenberg_47 Start: 42762, Stop: 43769, Start Num: 17

Candidate Starts for Nordenberg_47:

(Start: 17 @42762 has 8 MA's), (18, 42771), (25, 42807), (33, 42858), (35, 42864), (38, 42882), (42, 42912), (50, 42975), (53, 42990), (58, 43041), (69, 43119), (88, 43281), (92, 43314), (94, 43329), (101, 43398), (102, 43413), (112, 43470), (114, 43485), (146, 43734),

Gene: Panchino_45 Start: 34001, Stop: 35065, Start Num: 19

Candidate Starts for Panchino_45:

(9, 33887), (Start: 19 @34001 has 49 MA's), (21, 34013), (30, 34079), (31, 34082), (33, 34088), (38, 34112), (40, 34133), (41, 34139), (43, 34151), (44, 34154), (46, 34163), (50, 34205), (53, 34220), (75, 34412), (85, 34493), (87, 34505), (88, 34514), (92, 34547), (94, 34562), (97, 34589), (101, 34643), (102, 34658), (105, 34673), (107, 34682), (111, 34712), (114, 34730), (115, 34736), (120, 34787), (129, 34844), (132, 34880), (134, 34886), (142, 34976), (143, 34985), (146, 35033), (147, 35042),

Gene: Paries_55 Start: 44233, Stop: 45240, Start Num: 17

Candidate Starts for Paries_55:

(Start: 17 @44233 has 8 MA's), (18, 44242), (25, 44278), (33, 44329), (35, 44335), (38, 44353), (42, 44383), (50, 44446), (53, 44461), (70, 44605), (88, 44752), (92, 44785), (94, 44800), (101, 44869), (102, 44884), (112, 44941), (114, 44956), (146, 45205),

Gene: PhancyPhin_52 Start: 34360, Stop: 35424, Start Num: 19

Candidate Starts for PhancyPhin_52:

(9, 34246), (Start: 19 @34360 has 49 MA's), (21, 34372), (30, 34438), (31, 34441), (33, 34447), (38, 34471), (40, 34492), (41, 34498), (43, 34510), (44, 34513), (46, 34522), (50, 34564), (53, 34579), (75, 34771), (85, 34852), (87, 34864), (88, 34873), (92, 34906), (94, 34921), (97, 34948), (101, 35002), (102, 35017), (105, 35032), (107, 35041), (111, 35071), (114, 35089), (115, 35095), (120, 35146), (129, 35203), (132, 35239), (134, 35245), (142, 35335), (143, 35344), (146, 35392), (147, 35401),

Gene: Phayonce_47 Start: 34633, Stop: 35622, Start Num: 22

Candidate Starts for Phayonce_47:

(11, 34519), (Start: 22 @34633 has 32 MA's), (28, 34678), (33, 34699), (39, 34735), (41, 34750), (53, 34831), (59, 34885), (64, 34903), (81, 35041), (86, 35077), (90, 35119), (91, 35122), (92, 35125), (100, 35188), (101, 35206), (103, 35224), (104, 35233), (107, 35245), (113, 35281), (114, 35293), (116, 35317), (117, 35326), (122, 35353), (127, 35389), (128, 35392), (131, 35413), (134, 35443), (143, 35542), (145, 35566), (147, 35599),

Gene: Phegasus_47 Start: 32551, Stop: 33543, Start Num: 22

Candidate Starts for Phegasus_47:

(3, 32230), (6, 32398), (12, 32461), (Start: 22 @32551 has 32 MA's), (25, 32566), (33, 32614), (41, 32665), (54, 32761), (59, 32800), (79, 32935), (91, 33046), (92, 33049), (96, 33088), (100, 33112), (101, 33130), (108, 33175), (113, 33205), (114, 33217), (134, 33361), (143, 33460), (146, 33508), (148, 33532),

Gene: Philonius_48 Start: 31652, Stop: 32644, Start Num: 22

Candidate Starts for Philonius_48:

(Start: 22 @31652 has 32 MA's), (25, 31670), (33, 31718), (41, 31769), (44, 31784), (46, 31793), (59, 31904), (79, 32039), (91, 32150), (92, 32153), (96, 32192), (100, 32216), (101, 32234), (108, 32279), (113, 32309), (114, 32321), (134, 32465), (143, 32564), (146, 32612),

Gene: Phrann_49 Start: 34643, Stop: 35707, Start Num: 19

Candidate Starts for Phrann_49:

(9, 34529), (Start: 19 @34643 has 49 MA's), (21, 34655), (30, 34721), (31, 34724), (33, 34730), (38, 34754), (40, 34775), (41, 34781), (43, 34793), (44, 34796), (46, 34805), (50, 34847), (53, 34862), (75, 35054), (85, 35135), (87, 35147), (88, 35156), (92, 35189), (94, 35204), (97, 35231), (101, 35285), (102, 35300), (105, 35315), (107, 35324), (111, 35354), (114, 35372), (115, 35378), (120, 35429), (129, 35486), (132, 35522), (134, 35528), (142, 35618), (143, 35627), (146, 35675), (147, 35684),

Gene: Polkaroo_47 Start: 32547, Stop: 33539, Start Num: 22

Candidate Starts for Polkaroo_47:

(3, 32226), (6, 32394), (12, 32457), (Start: 22 @32547 has 32 MA's), (25, 32562), (33, 32610), (41, 32661), (54, 32757), (59, 32796), (79, 32931), (91, 33042), (92, 33045), (96, 33084), (100, 33108),

(101, 33126), (108, 33171), (113, 33201), (114, 33213), (134, 33357), (143, 33456), (146, 33504), (148, 33528),

Gene: Purgamenstris_52 Start: 34364, Stop: 35428, Start Num: 19

Candidate Starts for Purgamenstris_52:

(9, 34250), (Start: 19 @34364 has 49 MA's), (21, 34376), (30, 34442), (31, 34445), (33, 34451), (38, 34475), (40, 34496), (41, 34502), (43, 34514), (44, 34517), (46, 34526), (50, 34568), (53, 34583), (75, 34775), (85, 34856), (87, 34868), (88, 34877), (92, 34910), (94, 34925), (97, 34952), (101, 35006), (102, 35021), (105, 35036), (107, 35045), (111, 35075), (114, 35093), (115, 35099), (120, 35150), (129, 35207), (132, 35243), (134, 35249), (142, 35339), (143, 35348), (146, 35396), (147, 35405),

Gene: Purky_52 Start: 35044, Stop: 36114, Start Num: 22

Candidate Starts for Purky_52:

(20, 35026), (Start: 22 @35044 has 32 MA's), (29, 35104), (32, 35113), (34, 35119), (38, 35140), (39, 35152), (43, 35179), (59, 35332), (61, 35359), (78, 35479), (81, 35506), (88, 35560), (91, 35587), (95, 35614), (101, 35668), (104, 35695), (133, 35929), (134, 35935), (143, 36034), (146, 36082),

Gene: QueenHazel_44 Start: 32701, Stop: 33696, Start Num: 22

Candidate Starts for QueenHazel_44:

(8, 32566), (Start: 22 @32701 has 32 MA's), (25, 32716), (33, 32764), (41, 32815), (46, 32839), (59, 32950), (79, 33085), (91, 33196), (92, 33199), (96, 33238), (100, 33262), (101, 33280), (108, 33325), (113, 33355), (114, 33367), (122, 33424), (134, 33514), (143, 33613), (146, 33661), (148, 33685),

Gene: Raymond7_46 Start: 34152, Stop: 35216, Start Num: 19

Candidate Starts for Raymond7_46:

(9, 34038), (Start: 19 @34152 has 49 MA's), (21, 34164), (30, 34230), (31, 34233), (33, 34239), (38, 34263), (40, 34284), (41, 34290), (43, 34302), (44, 34305), (46, 34314), (50, 34356), (53, 34371), (75, 34563), (85, 34644), (87, 34656), (88, 34665), (92, 34698), (94, 34713), (97, 34740), (101, 34794), (102, 34809), (105, 34824), (107, 34833), (111, 34863), (114, 34881), (115, 34887), (120, 34938), (129, 34995), (132, 35031), (134, 35037), (142, 35127), (143, 35136), (146, 35184), (147, 35193),

Gene: Rebel_44 Start: 30494, Stop: 31558, Start Num: 19

Candidate Starts for Rebel_44:

(9, 30380), (Start: 19 @30494 has 49 MA's), (21, 30506), (30, 30572), (31, 30575), (33, 30581), (38, 30605), (40, 30626), (41, 30632), (43, 30644), (44, 30647), (46, 30656), (50, 30698), (53, 30713), (75, 30905), (85, 30986), (87, 30998), (88, 31007), (92, 31040), (94, 31055), (97, 31082), (101, 31136), (102, 31151), (105, 31166), (107, 31175), (111, 31205), (114, 31223), (115, 31229), (120, 31280), (129, 31337), (132, 31373), (134, 31379), (142, 31469), (143, 31478), (146, 31526), (147, 31535),

Gene: Redi_52 Start: 34363, Stop: 35427, Start Num: 19

Candidate Starts for Redi_52:

(9, 34249), (Start: 19 @34363 has 49 MA's), (21, 34375), (30, 34441), (31, 34444), (33, 34450), (38, 34474), (40, 34495), (41, 34501), (43, 34513), (44, 34516), (46, 34525), (50, 34567), (53, 34582), (75, 34774), (85, 34855), (87, 34867), (88, 34876), (92, 34909), (94, 34924), (97, 34951), (101, 35005), (102, 35020), (105, 35035), (107, 35044), (111, 35074), (114, 35092), (115, 35098), (120, 35149), (129, 35206), (132, 35242), (134, 35248), (142, 35338), (143, 35347), (146, 35395), (147, 35404),

Gene: Rofo_51 Start: 43335, Stop: 44345, Start Num: 17

Candidate Starts for Rofo_51:

(Start: 17 @43335 has 8 MA's), (18, 43344), (25, 43380), (33, 43434), (35, 43440), (38, 43458), (42, 43488), (50, 43551), (53, 43566), (61, 43647), (70, 43710), (88, 43857), (92, 43890), (94, 43905), (101, 43974), (102, 43989), (112, 44046), (114, 44061), (138, 44226), (146, 44310),

Gene: Rubeelu_51 Start: 34063, Stop: 35127, Start Num: 19

Candidate Starts for Rubeelu_51:

(Start: 19 @34063 has 49 MA's), (21, 34075), (30, 34141), (33, 34150), (38, 34174), (40, 34195), (41, 34201), (44, 34216), (46, 34225), (50, 34267), (53, 34282), (61, 34369), (87, 34567), (92, 34609), (94, 34624), (97, 34651), (99, 34672), (101, 34705), (102, 34720), (105, 34735), (107, 34744), (111, 34774), (114, 34792), (115, 34798), (118, 34831), (120, 34849), (133, 34942), (134, 34948), (142, 35038), (143, 35047), (146, 35095), (147, 35104),

Gene: Sanjuju_50 Start: 44082, Stop: 45080, Start Num: 19

Candidate Starts for Sanjuju_50:

(10, 43998), (13, 44019), (Start: 19 @44082 has 49 MA's), (25, 44118), (33, 44169), (35, 44175), (38, 44193), (42, 44223), (50, 44286), (53, 44301), (70, 44445), (88, 44592), (92, 44625), (94, 44640), (101, 44709), (102, 44724), (112, 44781), (114, 44796), (139, 44973), (146, 45045),

Gene: Sbash_58 Start: 41406, Stop: 42380, Start Num: 22

Candidate Starts for Sbash_58:

(Start: 22 @41406 has 32 MA's), (25, 41421), (33, 41469), (36, 41481), (41, 41520), (45, 41541), (46, 41544), (48, 41562), (68, 41709), (75, 41769), (77, 41778), (86, 41850), (87, 41859), (92, 41898), (96, 41937), (100, 41961), (101, 41979), (103, 41997), (107, 42018), (108, 42024), (113, 42054), (133, 42195), (134, 42201), (146, 42348),

Gene: Sedona_51 Start: 43831, Stop: 44826, Start Num: 19

Candidate Starts for Sedona_51:

(4, 43588), (5, 43690), (15, 43777), (Start: 19 @43831 has 49 MA's), (25, 43867), (33, 43918), (35, 43924), (38, 43942), (42, 43972), (50, 44035), (53, 44050), (61, 44131), (65, 44146), (67, 44170), (70, 44194), (88, 44341), (92, 44374), (94, 44389), (101, 44458), (102, 44473), (112, 44530), (114, 44545), (139, 44719), (146, 44791),

Gene: Sejanus_64 Start: 49582, Stop: 50574, Start Num: 22

Candidate Starts for Sejanus_64:

(11, 49468), (Start: 22 @49582 has 32 MA's), (28, 49627), (33, 49648), (38, 49672), (39, 49684), (41, 49699), (52, 49777), (53, 49780), (59, 49834), (64, 49852), (79, 49969), (81, 49990), (86, 50026), (90, 50068), (91, 50071), (92, 50074), (100, 50137), (101, 50155), (103, 50173), (107, 50194), (113, 50230), (114, 50242), (122, 50302), (127, 50338), (128, 50341), (131, 50365), (134, 50395), (135, 50413), (143, 50494), (145, 50518), (147, 50551),

Gene: Shivanishola_51 Start: 42552, Stop: 43547, Start Num: 19

Candidate Starts for Shivanishola_51:

(4, 42309), (5, 42411), (15, 42498), (Start: 19 @42552 has 49 MA's), (25, 42588), (33, 42639), (35, 42645), (38, 42663), (42, 42693), (50, 42756), (53, 42771), (61, 42852), (65, 42867), (67, 42891), (70, 42915), (88, 43062), (92, 43095), (94, 43110), (101, 43179), (102, 43194), (112, 43251), (114, 43266), (139, 43440), (146, 43512),

Gene: ShrimpFriedEgg_52 Start: 34363, Stop: 35427, Start Num: 19

Candidate Starts for ShrimpFriedEgg_52:

(9, 34249), (Start: 19 @34363 has 49 MA's), (21, 34375), (30, 34441), (31, 34444), (33, 34450), (38, 34474), (40, 34495), (41, 34501), (43, 34513), (44, 34516), (46, 34525), (50, 34567), (53, 34582), (75, 34774), (85, 34855), (87, 34867), (88, 34876), (92, 34909), (94, 34924), (97, 34951), (101, 35005), (102, 35020), (105, 35035), (107, 35044), (111, 35074), (114, 35092), (115, 35098), (120, 35149), (129, 35206), (132, 35242), (134, 35248), (142, 35338), (143, 35347), (146, 35395), (147, 35404),

Gene: Shweta_46 Start: 32422, Stop: 33489, Start Num: 19

Candidate Starts for Shweta_46:

(9, 32308), (Start: 19 @32422 has 49 MA's), (21, 32434), (30, 32500), (31, 32503), (33, 32509), (38, 32533), (40, 32554), (41, 32560), (43, 32572), (44, 32575), (46, 32584), (50, 32626), (53, 32641), (75, 32833), (85, 32914), (87, 32926), (88, 32935), (92, 32968), (94, 32983), (97, 33010), (101, 33064), (102, 33079), (105, 33094), (107, 33103), (111, 33133), (114, 33151), (115, 33157), (120, 33208), (129, 33265), (134, 33307), (143, 33406), (146, 33454), (148, 33478),

Gene: Silvy_48 Start: 32126, Stop: 33115, Start Num: 22

Candidate Starts for Silvy_48:

(3, 31805), (6, 31973), (12, 32036), (Start: 22 @32126 has 32 MA's), (25, 32141), (33, 32189), (41, 32240), (54, 32336), (59, 32375), (79, 32510), (91, 32621), (92, 32624), (96, 32663), (100, 32687), (101, 32705), (108, 32750), (113, 32780), (114, 32792), (134, 32936), (143, 33035), (146, 33083),

Gene: Snekmaggedon_46 Start: 32655, Stop: 33719, Start Num: 19

Candidate Starts for Snekmaggedon_46:

(9, 32541), (Start: 19 @32655 has 49 MA's), (21, 32667), (30, 32733), (31, 32736), (33, 32742), (38, 32766), (40, 32787), (41, 32793), (43, 32805), (44, 32808), (46, 32817), (50, 32859), (53, 32874), (75, 33066), (85, 33147), (87, 33159), (88, 33168), (92, 33201), (94, 33216), (97, 33243), (101, 33297), (102, 33312), (105, 33327), (107, 33336), (111, 33366), (114, 33384), (115, 33390), (120, 33441), (129, 33498), (132, 33534), (134, 33540), (142, 33630), (143, 33639), (146, 33687), (147, 33696),

Gene: SpongeBob_46 Start: 32655, Stop: 33719, Start Num: 19

Candidate Starts for SpongeBob_46:

(9, 32541), (Start: 19 @32655 has 49 MA's), (21, 32667), (30, 32733), (31, 32736), (33, 32742), (38, 32766), (40, 32787), (41, 32793), (43, 32805), (44, 32808), (46, 32817), (50, 32859), (53, 32874), (75, 33066), (85, 33147), (87, 33159), (88, 33168), (92, 33201), (94, 33216), (97, 33243), (101, 33297), (102, 33312), (105, 33327), (107, 33336), (111, 33366), (114, 33384), (115, 33390), (120, 33441), (129, 33498), (132, 33534), (134, 33540), (142, 33630), (143, 33639), (146, 33687), (147, 33696),

Gene: Stultus_49 Start: 42729, Stop: 43727, Start Num: 19

Candidate Starts for Stultus_49:

(Start: 19 @42729 has 49 MA's), (25, 42765), (33, 42816), (35, 42822), (38, 42840), (42, 42870), (50, 42933), (53, 42948), (61, 43029), (65, 43044), (67, 43068), (70, 43092), (88, 43239), (92, 43272), (94, 43287), (101, 43356), (102, 43371), (112, 43428), (114, 43443), (139, 43620), (146, 43692),

Gene: Tangent_52 Start: 42958, Stop: 43968, Start Num: 17

Candidate Starts for Tangent_52:

(Start: 17 @42958 has 8 MA's), (18, 42967), (25, 43003), (33, 43057), (35, 43063), (38, 43081), (42, 43111), (50, 43174), (53, 43189), (61, 43270), (70, 43333), (88, 43480), (92, 43513), (94, 43528), (101, 43597), (102, 43612), (112, 43669), (114, 43684), (138, 43849), (146, 43933),

Gene: Tardus_53 Start: 43285, Stop: 44328, Start Num: 19

Candidate Starts for Tardus_53:

(Start: 19 @43285 has 49 MA's), (33, 43375), (38, 43399), (39, 43411), (42, 43429), (53, 43507), (67, 43609), (80, 43714), (88, 43780), (94, 43828), (101, 43900), (102, 43915), (106, 43936), (109, 43957), (110, 43960), (122, 44065), (126, 44098), (130, 44110), (144, 44260), (146, 44296),

Gene: Techage_46 Start: 32569, Stop: 33561, Start Num: 22

Candidate Starts for Techage_46:

(3, 32248), (6, 32416), (12, 32479), (Start: 22 @32569 has 32 MA's), (25, 32584), (33, 32632), (41, 32683), (54, 32779), (59, 32818), (79, 32953), (91, 33064), (92, 33067), (96, 33106), (100, 33130), (101, 33148), (108, 33193), (113, 33223), (114, 33235), (134, 33379), (143, 33478), (146, 33526), (148, 33550),

Gene: Thing3_50 Start: 42629, Stop: 43627, Start Num: 19

Candidate Starts for Thing3_50:

(4, 42386), (5, 42488), (15, 42575), (Start: 19 @42629 has 49 MA's), (25, 42665), (33, 42716), (35, 42722), (38, 42740), (42, 42770), (50, 42833), (53, 42848), (61, 42929), (67, 42968), (70, 42992), (88, 43139), (92, 43172), (94, 43187), (101, 43256), (102, 43271), (112, 43328), (114, 43343), (139, 43520), (146, 43592),

Gene: ThulaThula_53 Start: 37120, Stop: 38187, Start Num: 19

Candidate Starts for ThulaThula_53:

(9, 37006), (Start: 19 @37120 has 49 MA's), (21, 37132), (33, 37207), (38, 37231), (40, 37252), (44, 37273), (46, 37282), (50, 37324), (53, 37339), (56, 37372), (75, 37531), (77, 37540), (87, 37624), (92, 37666), (94, 37681), (97, 37708), (99, 37729), (101, 37762), (102, 37777), (105, 37792), (107, 37801), (111, 37831), (114, 37849), (118, 37888), (120, 37906), (133, 38002), (134, 38008), (143, 38107),

Gene: Venti_47 Start: 32543, Stop: 33535, Start Num: 22

Candidate Starts for Venti_47:

(3, 32222), (6, 32390), (12, 32453), (Start: 22 @32543 has 32 MA's), (25, 32558), (33, 32606), (41, 32657), (54, 32753), (59, 32792), (79, 32927), (91, 33038), (92, 33041), (96, 33080), (100, 33104), (101, 33122), (108, 33167), (113, 33197), (114, 33209), (134, 33353), (143, 33452), (146, 33500), (148, 33524),

Gene: Verity_51 Start: 44353, Stop: 45396, Start Num: 19

Candidate Starts for Verity_51:

(Start: 19 @44353 has 49 MA's), (33, 44443), (38, 44467), (39, 44479), (53, 44575), (80, 44782), (88, 44848), (94, 44896), (101, 44968), (102, 44983), (106, 45004), (109, 45025), (110, 45028), (114, 45055), (122, 45133), (126, 45166), (130, 45178), (140, 45301), (144, 45328), (146, 45364),

Gene: Vidya_46 Start: 32576, Stop: 33568, Start Num: 22

Candidate Starts for Vidya_46:

(3, 32255), (6, 32423), (12, 32486), (Start: 22 @32576 has 32 MA's), (25, 32591), (33, 32639), (41, 32690), (54, 32786), (59, 32825), (79, 32960), (91, 33071), (92, 33074), (96, 33113), (100, 33137), (101, 33155), (108, 33200), (113, 33230), (114, 33242), (134, 33386), (143, 33485), (146, 33533), (148, 33557),

Gene: Xavia_54 Start: 39834, Stop: 40823, Start Num: 24

Candidate Starts for Xavia_54:

(7, 39696), (9, 39705), (14, 39759), (16, 39768), (Start: 24 @39834 has 1 MA's), (28, 39873), (33, 39894), (37, 39915), (39, 39930), (41, 39945), (45, 39966), (48, 39987), (51, 40014), (53, 40026), (55, 40047), (57, 40062), (59, 40083), (63, 40098), (71, 40158), (79, 40218), (86, 40284), (91, 40329), (92, 40332), (93, 40338), (94, 40347), (101, 40413), (111, 40482), (114, 40500), (117, 40530), (121, 40545), (128, 40590), (131, 40614), (134, 40644), (135, 40662), (143, 40743), (147, 40800),

Gene: Xula_43 Start: 32303, Stop: 33298, Start Num: 22

Candidate Starts for Xula_43:

(8, 32168), (Start: 22 @32303 has 32 MA's), (25, 32318), (33, 32366), (41, 32417), (46, 32441), (59, 32552), (79, 32687), (91, 32798), (92, 32801), (96, 32840), (100, 32864), (101, 32882), (108, 32927), (113, 32957), (114, 32969), (122, 33026), (134, 33116), (143, 33215), (146, 33263), (148, 33287),

Gene: Zilizebeth_47 Start: 32575, Stop: 33567, Start Num: 22

Candidate Starts for Zilizebeth_47:

(3, 32254), (6, 32422), (12, 32485), (Start: 22 @32575 has 32 MA's), (25, 32590), (33, 32638), (41, 32689), (54, 32785), (59, 32824), (79, 32959), (91, 33070), (92, 33073), (96, 33112), (100, 33136), (101, 33154), (108, 33199), (113, 33229), (114, 33241), (134, 33385), (143, 33484), (146, 33532),

(148, 33556),

Gene: Zipp_52 Start: 44268, Stop: 45311, Start Num: 19

Candidate Starts for Zipp_52:

(Start: 19 @44268 has 49 MA's), (33, 44358), (38, 44382), (39, 44394), (53, 44490), (80, 44697), (88, 44763), (94, 44811), (101, 44883), (102, 44898), (106, 44919), (109, 44940), (110, 44943), (114, 44970), (122, 45048), (126, 45081), (130, 45093), (140, 45216), (144, 45243), (146, 45279),

Gene: Zitch_54 Start: 42394, Stop: 43437, Start Num: 19

Candidate Starts for Zitch_54:

(Start: 19 @42394 has 49 MA's), (33, 42484), (38, 42508), (39, 42520), (42, 42538), (53, 42616), (56, 42649), (80, 42823), (88, 42889), (94, 42937), (101, 43009), (102, 43024), (106, 43045), (109, 43066), (110, 43069), (122, 43174), (126, 43207), (130, 43219), (144, 43369),