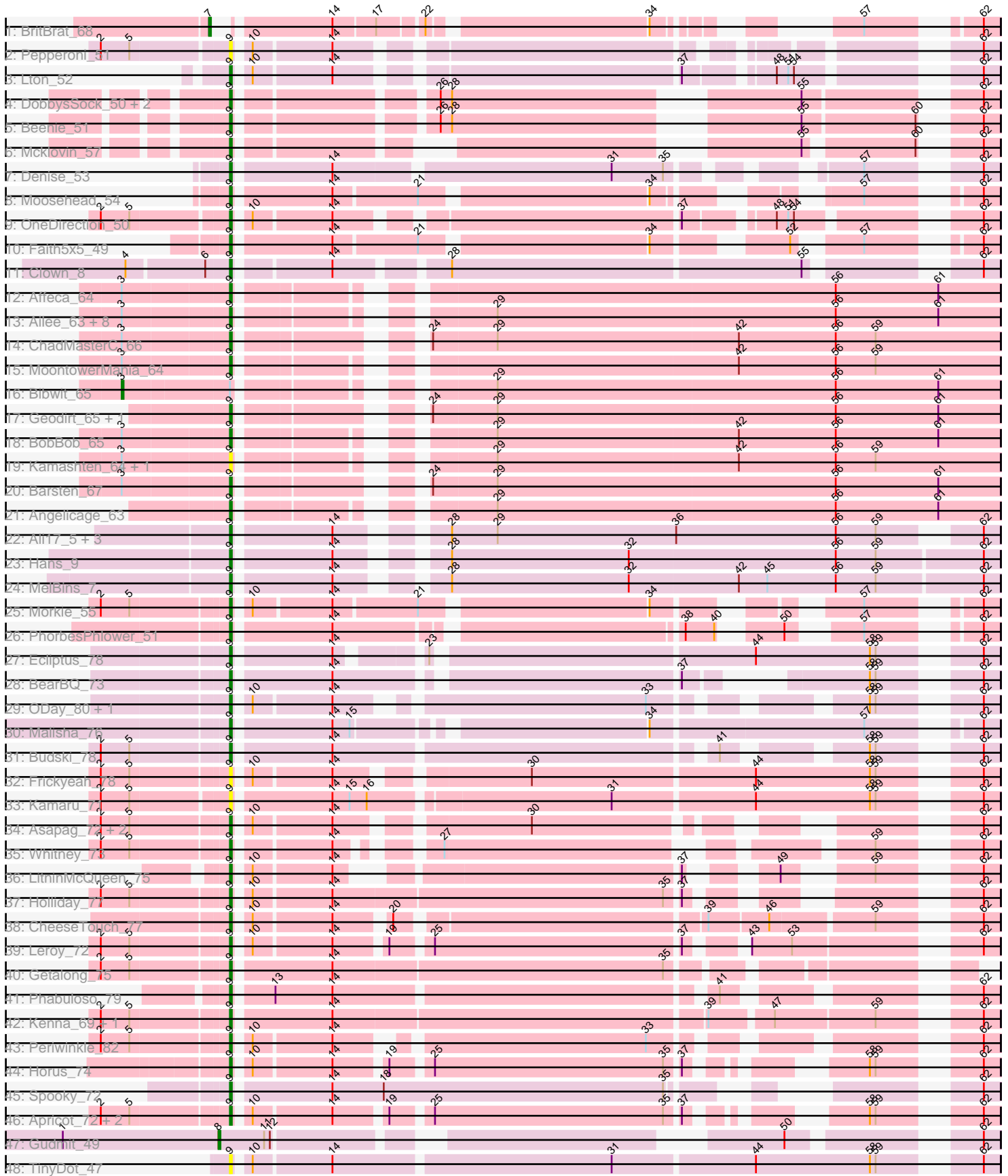


Pham 161843



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 161843 Report

This analysis was run 04/28/24 on database version 559.

Pham number 161843 has 69 members, 7 are drafts.

Phages represented in each track:

- Track 1 : BritBrat_68
- Track 2 : Pepperoni_51
- Track 3 : Lton_52
- Track 4 : DobbysSock_50, Samman98_58, Clark_57
- Track 5 : Beenie_51
- Track 6 : Mcklovin_57
- Track 7 : Denise_53
- Track 8 : Moosehead_54
- Track 9 : OneDirection_50
- Track 10 : Faith5x5_49
- Track 11 : Clown_8
- Track 12 : Affeca_64
- Track 13 : Ailee_63, Fitzgerald_64, Sedona_65, Sitar_66, Keitabear_65, Sanjuju_65, Stultus_62, Shivanishola_63, Lennon_66
- Track 14 : ChadMasterC_66
- Track 15 : MoontowerMania_64
- Track 16 : Bibwit_65
- Track 17 : Geodirt_65, Kewpiedoll_65
- Track 18 : BobBob_65
- Track 19 : Kamashten_64, Thing3_64
- Track 20 : Barsten_67
- Track 21 : Angelicage_63
- Track 22 : Ali17_5, Inspectinfecti_8, Phinally_7, Leonard_7
- Track 23 : Hans_9
- Track 24 : MelBins_7
- Track 25 : Morkie_55
- Track 26 : PhorbesPhlower_51
- Track 27 : Ecliptus_78
- Track 28 : BearBQ_73
- Track 29 : ODay_80, Kuwabara_74
- Track 30 : Malisha_76
- Track 31 : Budski_78
- Track 32 : Frickyeah_78
- Track 33 : Kamaru_71
- Track 34 : Asapag_72, BENtherdunthat_76, Birdsong_71
- Track 35 : Whitney_73
- Track 36 : LitninMcQueen_75

- Track 37 : Holliday_77
- Track 38 : CheeseTouch_77
- Track 39 : Leroy_72
- Track 40 : Getalong_75
- Track 41 : Phabuloso_79
- Track 42 : Kenna_69, Lutum_75
- Track 43 : Periwinkle_82
- Track 44 : Horus_74
- Track 45 : Spooky_72
- Track 46 : Apricot_72, Phistory_71, Crater_72
- Track 47 : Gudmit_49
- Track 48 : TinyDot_47

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

The start number called the most often in the published annotations is 9, it was called in 59 of the 62 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca_64, Ailee_63, Ali17_5, Angelicage_63, Apricot_72, Asapag_72, BENtherdunthat_76, Barsten_67, BearBQ_73, Beenie_51, Birdsong_71, BobBob_65, Budski_78, ChadMasterC_66, CheeseTouch_77, Clark_57, Clown_8, Crater_72, Denise_53, DobbysSock_50, Ecliptus_78, Faith5x5_49, Fitzgerald_64, Frickyeah_78, Geodirt_65, Getalong_75, Hans_9, Holliday_77, Horus_74, Inspectinfecti_8, Kamaru_71, Kamashten_64, Keitabear_65, Kenna_69, Kewpiedoll_65, Kuwabara_74, Lennon_66, Leonard_7, Leroy_72, LitninMcQueen_75, Lton_52, Lutum_75, Malisha_76, Mcklovin_57, MelBins_7, MoontowerMania_64, Moosehead_54, Morkie_55, ODay_80, OneDirection_50, Pepperoni_51, Periwinkle_82, Phabuloso_79, Phinally_7, Phistory_71, PhorbesPhlower_51, Samman98_58, Sanjuju_65, Sedona_65, Shivanishola_63, Sitar_66, Spooky_72, Stultus_62, Thing3_64, TinyDot_47, Whitney_73,

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

- Bibwit_65,

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

- BritBrat_68, Gudmit_49,

Summary by start number:

Start 3:

- Found in 17 of 69 (24.6%) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Bibwit_65 (DE1),

Start 7:

- Found in 1 of 69 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 100.0% of time when present

- Phage (with cluster) where this start called: BritBrat_68 (CY2),

Start 8:

- Found in 1 of 69 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit_49 (singleton),

Start 9:

- Found in 67 of 69 (97.1%) of genes in pham
- Manual Annotations of this start: 59 of 62
- Called 98.5% of time when present
- Phage (with cluster) where this start called: Affeca_64 (DE1), Ailee_63 (DE1), Ali17_5 (DE2), Angelicage_63 (DE1), Apricot_72 (DN3), Asapag_72 (DN1), BENTherdunthat_76 (DN1), Barsten_67 (DE1), BearBQ_73 (DN), Beenie_51 (CZ4), Birdsong_71 (DN), BobBob_65 (DE1), Budski_78 (DN), ChadMasterC_66 (DE1), CheeseTouch_77 (DN1), Clark_57 (CZ4), Clown_8 (DC2), Crater_72 (DN3), Denise_53 (CZ5), DobbysSock_50 (CZ4), Ecliptus_78 (DN), Faith5x5_49 (CZ6), Fitzgerald_64 (DE1), Frickyeah_78 (DN1), Geodirt_65 (DE1), Getalong_75 (DN1), Hans_9 (DE2), Holliday_77 (DN1), Horus_74 (DN1), Inspectinfecti_8 (DE2), Kamaru_71 (DN1), Kamashten_64 (DE1), Keitabear_65 (DE1), Kenna_69 (DN1), Kewpiedoll_65 (DE1), Kuwabara_74 (DN4), Lennon_66 (DE1), Leonard_7 (DE2), Leroy_72 (DN1), LitninMcQueen_75 (DN1), Lton_52 (CZ), Lutum_75 (DN1), Malisha_76 (DN), Mcklovin_57 (CZ4), MelBins_7 (DE2), MoontowerMania_64 (DE1), Moosehead_54 (CZ6), Morkie_55 (DH), ODay_80 (DN), OneDirection_50 (CZ6), Pepperoni_51 (CZ), Periwinkle_82 (DN1), Phabuloso_79 (DN1), Phinally_7 (DE2), Phistory_71 (DN1), PhorbesPhlower_51 (DH), Samman98_58 (CZ4), Sanjuju_65 (DE1), Sedona_65 (DE1), Shivanishola_63 (DE1), Sitar_66 (DE1), Spooky_72 (DN2), Stultus_62 (DE1), Thing3_64 (DE1), TinyDot_47 (singleton), Whitney_73 (DN1),

Summary by clusters:

There are 15 clusters represented in this pham: DN, CY2, singleton, DH, CZ, DE1, DE2, CZ6, CZ4, CZ5, DN4, DN1, DN3, DN2, DC2,

Info for manual annotations of cluster CY2:

- Start number 7 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 9 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ4:

- Start number 9 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 9 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 9 was manually annotated 3 times for cluster CZ6.

Info for manual annotations of cluster DC2:

- Start number 9 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE1:

- Start number 3 was manually annotated 1 time for cluster DE1.
- Start number 9 was manually annotated 17 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 9 was manually annotated 5 times for cluster DE2.

Info for manual annotations of cluster DH:

- Start number 9 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 9 was manually annotated 6 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 9 was manually annotated 14 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 9 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 9 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 9 was manually annotated 1 time for cluster DN4.

Gene Information:

Gene: Affeca_64 Start: 50623, Stop: 50991, Start Num: 9

Candidate Starts for Affeca_64:

(Start: 3 @50569 has 1 MA's), (Start: 9 @50623 has 59 MA's), (56, 50905), (61, 50959),

Gene: Ailee_63 Start: 50343, Stop: 50711, Start Num: 9

Candidate Starts for Ailee_63:

(Start: 3 @50289 has 1 MA's), (Start: 9 @50343 has 59 MA's), (29, 50448), (56, 50625), (61, 50679),

Gene: Ali17_5 Start: 4477, Stop: 4836, Start Num: 9

Candidate Starts for Ali17_5:

(Start: 9 @4477 has 59 MA's), (14, 4525), (28, 4567), (29, 4591), (36, 4684), (56, 4768), (59, 4789), (62, 4828),

Gene: Angelicage_63 Start: 50575, Stop: 50943, Start Num: 9

Candidate Starts for Angelicage_63:

(Start: 9 @50575 has 59 MA's), (29, 50680), (56, 50857), (61, 50911),

Gene: Apricot_72 Start: 42626, Stop: 42949, Start Num: 9

Candidate Starts for Apricot_72:

(2, 42563), (5, 42578), (Start: 9 @42626 has 59 MA's), (10, 42632), (14, 42671), (19, 42695), (25, 42713), (35, 42833), (37, 42839), (58, 42899), (59, 42902), (62, 42941),

Gene: Asapag_72 Start: 42928, Stop: 43242, Start Num: 9

Candidate Starts for Asapag_72:

(2, 42865), (5, 42880), (Start: 9 @42928 has 59 MA's), (10, 42934), (14, 42973), (30, 43060), (62, 43234),

Gene: BENtherdunthat_76 Start: 43974, Stop: 44288, Start Num: 9

Candidate Starts for BENtherdunthat_76:

(2, 43911), (5, 43926), (Start: 9 @43974 has 59 MA's), (10, 43980), (14, 44019), (30, 44106), (62, 44280),

Gene: Barsten_67 Start: 50851, Stop: 51222, Start Num: 9

Candidate Starts for Barsten_67:

(Start: 3 @50797 has 1 MA's), (Start: 9 @50851 has 59 MA's), (24, 50926), (29, 50959), (56, 51136), (61, 51190),

Gene: BearBQ_73 Start: 45171, Stop: 45494, Start Num: 9

Candidate Starts for BearBQ_73:

(Start: 9 @45171 has 59 MA's), (14, 45219), (37, 45384), (58, 45444), (59, 45447), (62, 45486),

Gene: Beenie_51 Start: 38991, Stop: 39326, Start Num: 9

Candidate Starts for Beenie_51:

(Start: 9 @38991 has 59 MA's), (26, 39081), (28, 39087), (55, 39243), (60, 39300), (62, 39318),

Gene: Bibwit_65 Start: 49883, Stop: 50305, Start Num: 3

Candidate Starts for Bibwit_65:

(Start: 3 @49883 has 1 MA's), (Start: 9 @49937 has 59 MA's), (29, 50042), (56, 50219), (61, 50273),

Gene: Birdsong_71 Start: 42664, Stop: 42978, Start Num: 9

Candidate Starts for Birdsong_71:

(2, 42601), (5, 42616), (Start: 9 @42664 has 59 MA's), (10, 42670), (14, 42709), (30, 42796), (62, 42970),

Gene: BobBob_65 Start: 50063, Stop: 50431, Start Num: 9

Candidate Starts for BobBob_65:

(Start: 3 @50009 has 1 MA's), (Start: 9 @50063 has 59 MA's), (29, 50168), (42, 50294), (56, 50345), (61, 50399),

Gene: BritBrat_68 Start: 44637, Stop: 44939, Start Num: 7

Candidate Starts for BritBrat_68:

(Start: 7 @44637 has 1 MA's), (14, 44685), (17, 44706), (22, 44727), (34, 44832), (57, 44889), (62, 44931),

Gene: Budski_78 Start: 44785, Stop: 45126, Start Num: 9

Candidate Starts for Budski_78:

(2, 44722), (5, 44737), (Start: 9 @44785 has 59 MA's), (14, 44833), (41, 45019), (58, 45076), (59, 45079), (62, 45118),

Gene: ChadMasterC_66 Start: 52230, Stop: 52601, Start Num: 9

Candidate Starts for ChadMasterC_66:

(Start: 3 @52176 has 1 MA's), (Start: 9 @52230 has 59 MA's), (24, 52305), (29, 52338), (42, 52464), (56, 52515), (59, 52536),

Gene: CheeseTouch_77 Start: 40196, Stop: 40543, Start Num: 9

Candidate Starts for CheeseTouch_77:

(Start: 9 @40196 has 59 MA's), (10, 40202), (14, 40241), (20, 40265), (39, 40415), (46, 40445), (59, 40496), (62, 40535),

Gene: Clark_57 Start: 38808, Stop: 39143, Start Num: 9

Candidate Starts for Clark_57:

(Start: 9 @38808 has 59 MA's), (26, 38898), (28, 38904), (55, 39060), (62, 39135),

Gene: Clown_8 Start: 5206, Stop: 5559, Start Num: 9

Candidate Starts for Clown_8:

(4, 5155), (6, 5194), (Start: 9 @5206 has 59 MA's), (14, 5251), (28, 5302), (55, 5482), (62, 5551),

Gene: Crater_72 Start: 43021, Stop: 43344, Start Num: 9

Candidate Starts for Crater_72:

(2, 42958), (5, 42973), (Start: 9 @43021 has 59 MA's), (10, 43027), (14, 43066), (19, 43090), (25, 43108), (35, 43228), (37, 43234), (58, 43294), (59, 43297), (62, 43336),

Gene: Denise_53 Start: 34928, Stop: 35266, Start Num: 9

Candidate Starts for Denise_53:

(Start: 9 @34928 has 59 MA's), (14, 34976), (31, 35114), (35, 35141), (57, 35213), (62, 35258),

Gene: DobbysSock_50 Start: 37650, Stop: 37985, Start Num: 9

Candidate Starts for DobbysSock_50:

(Start: 9 @37650 has 59 MA's), (26, 37740), (28, 37746), (55, 37902), (62, 37977),

Gene: Ecliptus_78 Start: 45538, Stop: 45891, Start Num: 9

Candidate Starts for Ecliptus_78:

(Start: 9 @45538 has 59 MA's), (14, 45586), (23, 45622), (44, 45781), (58, 45841), (59, 45844), (62, 45883),

Gene: Faith5x5_49 Start: 33082, Stop: 33411, Start Num: 9

Candidate Starts for Faith5x5_49:

(Start: 9 @33082 has 59 MA's), (14, 33130), (21, 33172), (34, 33283), (52, 33337), (57, 33361), (62, 33403),

Gene: Fitzgerald_64 Start: 51085, Stop: 51453, Start Num: 9

Candidate Starts for Fitzgerald_64:

(Start: 3 @51031 has 1 MA's), (Start: 9 @51085 has 59 MA's), (29, 51190), (56, 51367), (61, 51421),

Gene: Frickyeah_78 Start: 44063, Stop: 44419, Start Num: 9

Candidate Starts for Frickyeah_78:

(2, 44000), (5, 44015), (Start: 9 @44063 has 59 MA's), (10, 44069), (14, 44108), (30, 44195), (44, 44309), (58, 44369), (59, 44372), (62, 44411),

Gene: Geodirt_65 Start: 51295, Stop: 51666, Start Num: 9

Candidate Starts for Geodirt_65:

(Start: 9 @51295 has 59 MA's), (24, 51370), (29, 51403), (56, 51580), (61, 51634),

Gene: Getalong_75 Start: 45221, Stop: 45565, Start Num: 9

Candidate Starts for Getalong_75:

(2, 45158), (5, 45173), (Start: 9 @45221 has 59 MA's), (14, 45269), (35, 45440),

Gene: Gudmit_49 Start: 31812, Stop: 32141, Start Num: 8

Candidate Starts for Gudmit_49:

(1, 31731), (Start: 8 @31812 has 1 MA's), (11, 31836), (12, 31839), (50, 32055), (62, 32133),

Gene: Hans_9 Start: 5000, Stop: 5374, Start Num: 9

Candidate Starts for Hans_9:

(Start: 9 @5000 has 59 MA's), (14, 5048), (28, 5090), (32, 5183), (56, 5291), (59, 5312), (62, 5366),

Gene: Holliday_77 Start: 47029, Stop: 47361, Start Num: 9

Candidate Starts for Holliday_77:

(2, 46966), (5, 46981), (Start: 9 @47029 has 59 MA's), (10, 47035), (14, 47074), (35, 47245), (37, 47251), (62, 47353),

Gene: Horus_74 Start: 45088, Stop: 45411, Start Num: 9

Candidate Starts for Horus_74:

(Start: 9 @45088 has 59 MA's), (10, 45094), (14, 45133), (19, 45157), (25, 45175), (35, 45295), (37, 45301), (58, 45361), (59, 45364), (62, 45403),

Gene: Inspectinfecti_8 Start: 5534, Stop: 5893, Start Num: 9

Candidate Starts for Inspectinfecti_8:

(Start: 9 @5534 has 59 MA's), (14, 5582), (28, 5624), (29, 5648), (36, 5741), (56, 5825), (59, 5846), (62, 5885),

Gene: Kamaru_71 Start: 42541, Stop: 42909, Start Num: 9

Candidate Starts for Kamaru_71:

(2, 42478), (5, 42493), (Start: 9 @42541 has 59 MA's), (14, 42589), (15, 42598), (16, 42607), (31, 42727), (44, 42799), (58, 42859), (59, 42862), (62, 42901),

Gene: Kamashten_64 Start: 49896, Stop: 50264, Start Num: 9

Candidate Starts for Kamashten_64:

(Start: 3 @49842 has 1 MA's), (Start: 9 @49896 has 59 MA's), (29, 50001), (42, 50127), (56, 50178), (59, 50199),

Gene: Keitabear_65 Start: 51857, Stop: 52225, Start Num: 9

Candidate Starts for Keitabear_65:

(Start: 3 @51803 has 1 MA's), (Start: 9 @51857 has 59 MA's), (29, 51962), (56, 52139), (61, 52193),

Gene: Kenna_69 Start: 42661, Stop: 43026, Start Num: 9

Candidate Starts for Kenna_69:

(2, 42598), (5, 42613), (Start: 9 @42661 has 59 MA's), (14, 42709), (39, 42898), (47, 42928), (59, 42979), (62, 43018),

Gene: Kewpiedoll_65 Start: 51216, Stop: 51587, Start Num: 9

Candidate Starts for Kewpiedoll_65:

(Start: 9 @51216 has 59 MA's), (24, 51291), (29, 51324), (56, 51501), (61, 51555),

Gene: Kuwabara_74 Start: 44853, Stop: 45173, Start Num: 9

Candidate Starts for Kuwabara_74:

(Start: 9 @44853 has 59 MA's), (10, 44859), (14, 44898), (33, 45042), (58, 45126), (59, 45129), (62, 45165),

Gene: Lennon_66 Start: 52006, Stop: 52374, Start Num: 9

Candidate Starts for Lennon_66:

(Start: 3 @51952 has 1 MA's), (Start: 9 @52006 has 59 MA's), (29, 52111), (56, 52288), (61, 52342),

Gene: Leonard_7 Start: 5129, Stop: 5488, Start Num: 9
Candidate Starts for Leonard_7:
(Start: 9 @5129 has 59 MA's), (14, 5177), (28, 5219), (29, 5243), (36, 5336), (56, 5420), (59, 5441),
(62, 5480),

Gene: Leroy_72 Start: 42957, Stop: 43301, Start Num: 9
Candidate Starts for Leroy_72:
(2, 42894), (5, 42909), (Start: 9 @42957 has 59 MA's), (10, 42963), (14, 43002), (19, 43026), (25,
43044), (37, 43170), (43, 43191), (53, 43212), (62, 43293),

Gene: LitninMcQueen_75 Start: 43856, Stop: 44158, Start Num: 9
Candidate Starts for LitninMcQueen_75:
(Start: 9 @43856 has 59 MA's), (10, 43862), (14, 43901), (37, 44054), (49, 44081), (59, 44111), (62,
44150),

Gene: Lton_52 Start: 32721, Stop: 33059, Start Num: 9
Candidate Starts for Lton_52:
(Start: 9 @32721 has 59 MA's), (10, 32727), (14, 32766), (37, 32928), (48, 32967), (51, 32973), (54,
32976), (62, 33051),

Gene: Lutum_75 Start: 43824, Stop: 44189, Start Num: 9
Candidate Starts for Lutum_75:
(2, 43761), (5, 43776), (Start: 9 @43824 has 59 MA's), (14, 43872), (39, 44061), (47, 44091), (59,
44142), (62, 44181),

Gene: Malisha_76 Start: 47249, Stop: 47602, Start Num: 9
Candidate Starts for Malisha_76:
(Start: 9 @47249 has 59 MA's), (14, 47297), (15, 47306), (34, 47444), (57, 47552), (62, 47594),

Gene: Mcklovin_57 Start: 44830, Stop: 45141, Start Num: 9
Candidate Starts for Mcklovin_57:
(Start: 9 @44830 has 59 MA's), (55, 45064), (60, 45115), (62, 45133),

Gene: MelBins_7 Start: 5115, Stop: 5489, Start Num: 9
Candidate Starts for MelBins_7:
(Start: 9 @5115 has 59 MA's), (14, 5163), (28, 5205), (32, 5298), (42, 5355), (45, 5370), (56, 5406),
(59, 5427), (62, 5481),

Gene: MoontowerMania_64 Start: 51183, Stop: 51551, Start Num: 9
Candidate Starts for MoontowerMania_64:
(Start: 3 @51129 has 1 MA's), (Start: 9 @51183 has 59 MA's), (42, 51414), (56, 51465), (59, 51486),

Gene: Moosehead_54 Start: 33307, Stop: 33630, Start Num: 9
Candidate Starts for Moosehead_54:
(Start: 9 @33307 has 59 MA's), (14, 33355), (21, 33397), (34, 33508), (57, 33580), (62, 33622),

Gene: Morkie_55 Start: 34669, Stop: 34992, Start Num: 9
Candidate Starts for Morkie_55:
(2, 34606), (5, 34621), (Start: 9 @34669 has 59 MA's), (10, 34675), (14, 34714), (21, 34756), (34,
34867), (57, 34942), (62, 34984),

Gene: ODay_80 Start: 46266, Stop: 46589, Start Num: 9
Candidate Starts for ODay_80:

(Start: 9 @46266 has 59 MA's), (10, 46272), (14, 46311), (33, 46455), (58, 46539), (59, 46542), (62, 46581),

Gene: OneDirection_50 Start: 32364, Stop: 32702, Start Num: 9

Candidate Starts for OneDirection_50:

(2, 32301), (5, 32316), (Start: 9 @32364 has 59 MA's), (10, 32370), (14, 32409), (37, 32571), (48, 32610), (51, 32616), (54, 32619), (62, 32694),

Gene: Pepperoni_51 Start: 33825, Stop: 34151, Start Num: 9

Candidate Starts for Pepperoni_51:

(2, 33762), (5, 33777), (Start: 9 @33825 has 59 MA's), (10, 33831), (14, 33870), (62, 34143),

Gene: Periwinkle_82 Start: 46121, Stop: 46444, Start Num: 9

Candidate Starts for Periwinkle_82:

(2, 46058), (5, 46073), (Start: 9 @46121 has 59 MA's), (10, 46127), (14, 46166), (33, 46310), (62, 46436),

Gene: Phabuloso_79 Start: 44818, Stop: 45159, Start Num: 9

Candidate Starts for Phabuloso_79:

(Start: 9 @44818 has 59 MA's), (13, 44836), (14, 44866), (41, 45052), (62, 45151),

Gene: Phinally_7 Start: 5126, Stop: 5485, Start Num: 9

Candidate Starts for Phinally_7:

(Start: 9 @5126 has 59 MA's), (14, 5174), (28, 5216), (29, 5240), (36, 5333), (56, 5417), (59, 5438), (62, 5477),

Gene: Phistory_71 Start: 42186, Stop: 42509, Start Num: 9

Candidate Starts for Phistory_71:

(2, 42123), (5, 42138), (Start: 9 @42186 has 59 MA's), (10, 42192), (14, 42231), (19, 42255), (25, 42273), (35, 42393), (37, 42399), (58, 42459), (59, 42462), (62, 42501),

Gene: PhorbesPhlower_51 Start: 33361, Stop: 33684, Start Num: 9

Candidate Starts for PhorbesPhlower_51:

(Start: 9 @33361 has 59 MA's), (14, 33409), (38, 33574), (40, 33589), (50, 33610), (57, 33634), (62, 33676),

Gene: Samman98_58 Start: 38911, Stop: 39246, Start Num: 9

Candidate Starts for Samman98_58:

(Start: 9 @38911 has 59 MA's), (26, 39001), (28, 39007), (55, 39163), (62, 39238),

Gene: Sanjuju_65 Start: 51217, Stop: 51585, Start Num: 9

Candidate Starts for Sanjuju_65:

(Start: 3 @51163 has 1 MA's), (Start: 9 @51217 has 59 MA's), (29, 51322), (56, 51499), (61, 51553),

Gene: Sedona_65 Start: 51790, Stop: 52158, Start Num: 9

Candidate Starts for Sedona_65:

(Start: 3 @51736 has 1 MA's), (Start: 9 @51790 has 59 MA's), (29, 51895), (56, 52072), (61, 52126),

Gene: Shivanishola_63 Start: 48835, Stop: 49203, Start Num: 9

Candidate Starts for Shivanishola_63:

(Start: 3 @48781 has 1 MA's), (Start: 9 @48835 has 59 MA's), (29, 48940), (56, 49117), (61, 49171),

Gene: Sitar_66 Start: 51715, Stop: 52083, Start Num: 9

Candidate Starts for Sitar_66:

(Start: 3 @51661 has 1 MA's), (Start: 9 @51715 has 59 MA's), (29, 51820), (56, 51997), (61, 52051),

Gene: Spooky_72 Start: 43079, Stop: 43405, Start Num: 9

Candidate Starts for Spooky_72:

(Start: 9 @43079 has 59 MA's), (14, 43127), (18, 43154), (35, 43301), (62, 43397),

Gene: Stultus_62 Start: 49962, Stop: 50330, Start Num: 9

Candidate Starts for Stultus_62:

(Start: 3 @49908 has 1 MA's), (Start: 9 @49962 has 59 MA's), (29, 50067), (56, 50244), (61, 50298),

Gene: Thing3_64 Start: 49896, Stop: 50264, Start Num: 9

Candidate Starts for Thing3_64:

(Start: 3 @49842 has 1 MA's), (Start: 9 @49896 has 59 MA's), (29, 50001), (42, 50127), (56, 50178), (59, 50199),

Gene: TinyDot_47 Start: 31361, Stop: 31729, Start Num: 9

Candidate Starts for TinyDot_47:

(Start: 9 @31361 has 59 MA's), (10, 31367), (14, 31406), (31, 31547), (44, 31619), (58, 31679), (59, 31682), (62, 31721),

Gene: Whitney_73 Start: 44698, Stop: 45015, Start Num: 9

Candidate Starts for Whitney_73:

(2, 44635), (5, 44650), (Start: 9 @44698 has 59 MA's), (14, 44743), (27, 44779), (59, 44968), (62, 45007),