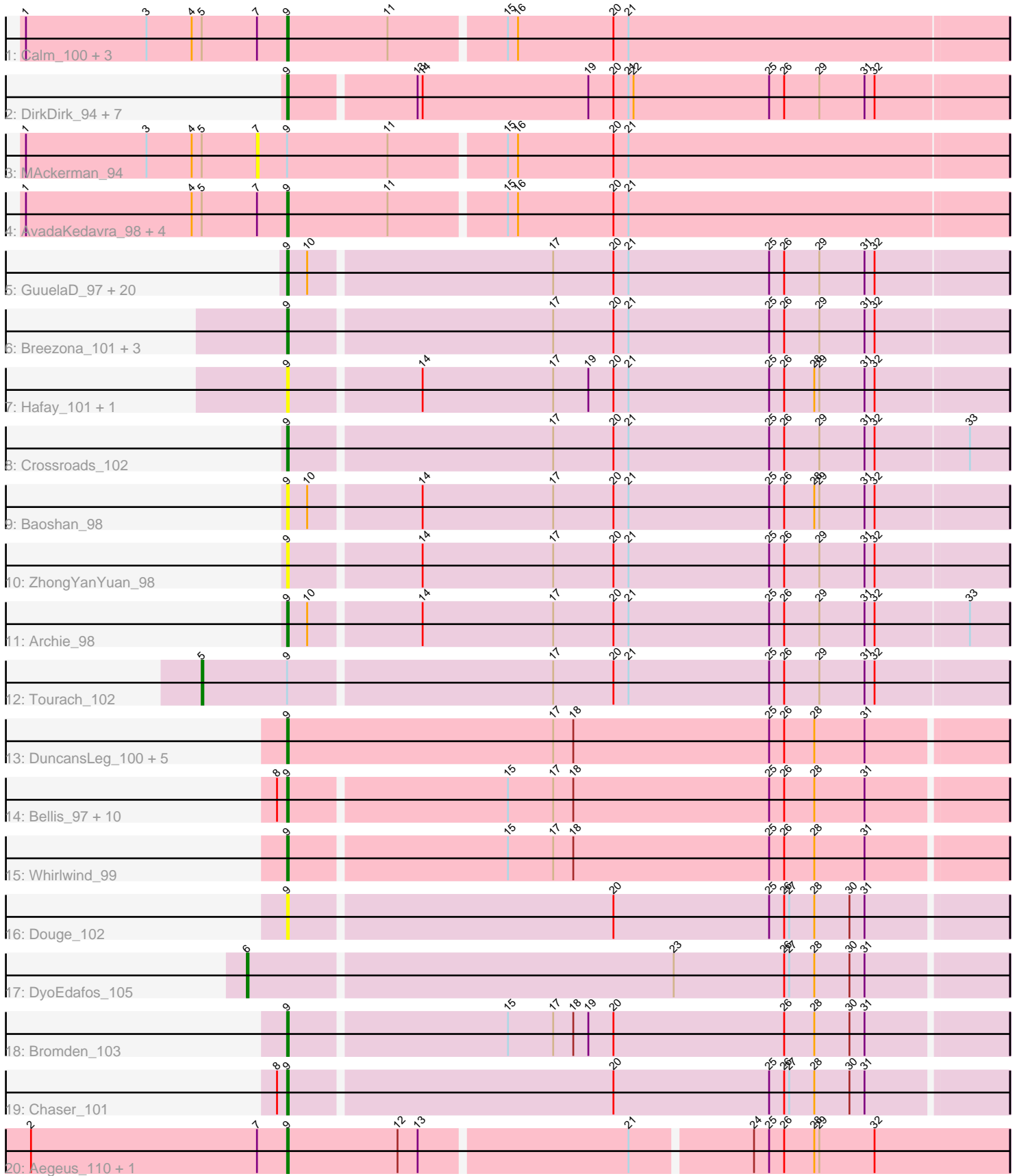


Pham 168198



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 168198 Report

This analysis was run 07/09/24 on database version 566.

Pham number 168198 has 74 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Calm_100, LeBron_97, Zaria_99, Halena_96
- Track 2 : DirkDirk_94, Enceladus_94, OhShagHennessy_93, CicholasNage_94, Appletree2_96, Rose5_99, Wamburggrxpress_96, Silverleaf_96
- Track 3 : MAckerman_94
- Track 4 : AvadaKedavra_98, Tyson_100, Acquire49_98, UPIE_97, Wyatt2_99
- Track 5 : GuuelaD_97, Wilder_101, Itos_101, Netyap_99, Kahlid_100, Finemlucis_102, Loadrie_99, BobsGarage_100, Zakai_102, Gabriela_101, Rumpelstiltskin_97, MkaliMitinis3_102, BigCheese_100, Nicholasp3_101, Gardann_100, LilDestine_99, Lewan_101, Vetrix_99, Faith1_100, Wigglewiggle_100, Bazzle_98
- Track 6 : Breezona_101, Miley16_101, DrSeegs_100, Winky_101
- Track 7 : Hafay_101, Claus_100
- Track 8 : Crossroads_102
- Track 9 : Baoshan_98
- Track 10 : ZhongYanYuan_98
- Track 11 : Archie_98
- Track 12 : Tourach_102
- Track 13 : DuncansLeg_100, MiniLon_102, Lolly9_97, MiniMac_102, Ellson_98, Krypton555_101
- Track 14 : Bellis_97, Kingsolomon_96, Jubie_98, Jobypre_99, Clautastrophe_97, Moostard_95, MsGreen_99, Snenia_97, Lumos_98, Finnry_99, Nicholas_96
- Track 15 : Whirlwind_99
- Track 16 : Douge_102
- Track 17 : DyoEdafos_105
- Track 18 : Bromden_103
- Track 19 : Chaser_101
- Track 20 : Aegeus_110, Baudelaire_110

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 63 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49_98, Aegeus_110, Appletree2_96, Archie_98, AvadaKedavra_98, Baoshan_98, Baudelaire_110, Bazzle_98, Bellis_97, BigCheese_100, BobsGarage_100, Breezona_101, Bromden_103, Calm_100, Chaser_101, CicholasNage_94, Claus_100, Clautastrophe_97, Crossroads_102, DirkDirk_94, Douge_102, DrSeegs_100, DuncansLeg_100, Ellson_98, Enceladus_94, Faith1_100, Finemlucis_102, Finnry_99, Gabriela_101, Gardann_100, GuuelaD_97, Hafay_101, Halena_96, Itos_101, Jobypre_99, Jubie_98, Kahlid_100, Kingsolomon_96, Krypton555_101, LeBron_97, Lewan_101, LilDestine_99, Loadrie_99, Lolly9_97, Lumos_98, Miley16_101, MiniLon_102, MiniMac_102, MkaliMitinis3_102, Moostard_95, MsGreen_99, Netyap_99, Nicholas_96, Nicholasp3_101, OhShagHennessy_93, Rose5_99, Rumpelstiltskin_97, Silverleaf_96, Snenia_97, Tyson_100, UPIE_97, Vetrix_99, Wamburggrxpress_96, Whirlwind_99, Wigglewiggles_100, Wilder_101, Winky_101, Wyatt2_99, Zakai_102, Zaria_99, ZhongYanYuan_98,

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

- MAckerman_94, Tourach_102,

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

- DyoEdafos_105,

Summary by start number:

Start 5:

- Found in 11 of 74 (14.9%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Tourach_102 (L2),

Start 6:

- Found in 1 of 74 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DyoEdafos_105 (L4),

Start 7:

- Found in 12 of 74 (16.2%) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: MAckerman_94 (L1),

Start 9:

- Found in 73 of 74 (98.6%) of genes in pham
- Manual Annotations of this start: 63 of 65
- Called 97.3% of time when present
- Phage (with cluster) where this start called: Acquire49_98 (L1), Aegeus_110 (L5), Appletree2_96 (L1), Archie_98 (L2), AvadaKedavra_98 (L1), Baoshan_98 (L2), Baudelaire_110 (L5), Bazzle_98 (L2), Bellis_97 (L3), BigCheese_100 (L2), BobsGarage_100 (L2), Breezona_101 (L2), Bromden_103 (L4), Calm_100 (L1), Chaser_101 (L4), CicholasNage_94 (L1), Claus_100 (L2), Clautastrophe_97 (L3), Crossroads_102 (L2), DirkDirk_94 (L1), Douge_102 (L4), DrSeegs_100 (L2), DuncansLeg_100 (L3), Ellson_98 (L3), Enceladus_94 (L1), Faith1_100 (L2), Finemlucis_102 (L2), Finnry_99 (L3), Gabriela_101 (L2), Gardann_100 (L2),

GuuelaD_97 (L2), Hafay_101 (L2), Halena_96 (L1), Itos_101 (L2), Jobypre_99 (L3), Jubie_98 (L3), Kahlid_100 (L2), Kingsolomon_96 (L3), Krypton555_101 (L3), LeBron_97 (L1), Lewan_101 (L2), LilDestine_99 (L2), Loadrie_99 (L2), Lolly9_97 (L3), Lumos_98 (L3), Miley16_101 (L2), MiniLon_102 (L3), MiniMac_102 (L3), MkaliMitinis3_102 (L2), Moostard_95 (L3), MsGreen_99 (L3), Netyap_99 (L2), Nicholas_96 (L3), Nicholasp3_101 (L2), OhShagHennessy_93 (L1), Rose5_99 (L1), Rumpelstiltskin_97 (L2), Silverleaf_96 (L1), Snenia_97 (L3), Tyson_100 (L1), UPIE_97 (L1), Vetrix_99 (L2), Wamburggrxpress_96 (L1), Whirlwind_99 (L3), Wigglewobble_100 (L2), Wilder_101 (L2), Winky_101 (L2), Wyatt2_99 (L1), Zakai_102 (L2), Zaria_99 (L1), ZhongYanYuan_98 (L2),

Summary by clusters:

There are 5 clusters represented in this pham: L4, L5, L2, L3, L1,

Info for manual annotations of cluster L1:

- Start number 9 was manually annotated 17 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 5 was manually annotated 1 time for cluster L2.
- Start number 9 was manually annotated 27 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 9 was manually annotated 15 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 6 was manually annotated 1 time for cluster L4.
- Start number 9 was manually annotated 2 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 9 was manually annotated 2 times for cluster L5.

Gene Information:

Gene: Acquire49_98 Start: 60121, Stop: 60543, Start Num: 9

Candidate Starts for Acquire49_98:

(1, 59965), (4, 60064), (Start: 5 @60070 has 1 MA's), (7, 60103), (Start: 9 @60121 has 63 MA's), (11, 60181), (15, 60247), (16, 60253), (20, 60310), (21, 60319),

Gene: Aegeus_110 Start: 63361, Stop: 63780, Start Num: 9

Candidate Starts for Aegeus_110:

(2, 63208), (7, 63343), (Start: 9 @63361 has 63 MA's), (12, 63427), (13, 63439), (21, 63559), (24, 63628), (25, 63637), (26, 63646), (28, 63664), (29, 63667), (32, 63700),

Gene: Appletree2_96 Start: 59711, Stop: 60133, Start Num: 9

Candidate Starts for Appletree2_96:

(Start: 9 @59711 has 63 MA's), (13, 59783), (14, 59786), (19, 59885), (20, 59900), (21, 59909), (22, 59912), (25, 59993), (26, 60002), (29, 60023), (31, 60050), (32, 60056),

Gene: Archie_98 Start: 61295, Stop: 61717, Start Num: 9

Candidate Starts for Archie_98:

(Start: 9 @61295 has 63 MA's), (10, 61307), (14, 61370), (17, 61448), (20, 61484), (21, 61493), (25, 61577), (26, 61586), (29, 61607), (31, 61634), (32, 61640), (33, 61694),

Gene: AvadaKedavra_98 Start: 60233, Stop: 60655, Start Num: 9

Candidate Starts for AvadaKedavra_98:

(1, 60077), (4, 60176), (Start: 5 @60182 has 1 MA's), (7, 60215), (Start: 9 @60233 has 63 MA's), (11, 60293), (15, 60359), (16, 60365), (20, 60422), (21, 60431),

Gene: Baoshan_98 Start: 62080, Stop: 62502, Start Num: 9

Candidate Starts for Baoshan_98:

(Start: 9 @62080 has 63 MA's), (10, 62092), (14, 62155), (17, 62233), (20, 62269), (21, 62278), (25, 62362), (26, 62371), (28, 62389), (29, 62392), (31, 62419), (32, 62425),

Gene: Baudelaire_110 Start: 63361, Stop: 63780, Start Num: 9

Candidate Starts for Baudelaire_110:

(2, 63208), (7, 63343), (Start: 9 @63361 has 63 MA's), (12, 63427), (13, 63439), (21, 63559), (24, 63628), (25, 63637), (26, 63646), (28, 63664), (29, 63667), (32, 63700),

Gene: Bazzle_98 Start: 61851, Stop: 62273, Start Num: 9

Candidate Starts for Bazzle_98:

(Start: 9 @61851 has 63 MA's), (10, 61863), (17, 62004), (20, 62040), (21, 62049), (25, 62133), (26, 62142), (29, 62163), (31, 62190), (32, 62196),

Gene: Bellis_97 Start: 61628, Stop: 62047, Start Num: 9

Candidate Starts for Bellis_97:

(8, 61622), (Start: 9 @61628 has 63 MA's), (15, 61754), (17, 61781), (18, 61793), (25, 61910), (26, 61919), (28, 61937), (31, 61967),

Gene: BigCheese_100 Start: 62069, Stop: 62491, Start Num: 9

Candidate Starts for BigCheese_100:

(Start: 9 @62069 has 63 MA's), (10, 62081), (17, 62222), (20, 62258), (21, 62267), (25, 62351), (26, 62360), (29, 62381), (31, 62408), (32, 62414),

Gene: BobsGarage_100 Start: 62069, Stop: 62491, Start Num: 9

Candidate Starts for BobsGarage_100:

(Start: 9 @62069 has 63 MA's), (10, 62081), (17, 62222), (20, 62258), (21, 62267), (25, 62351), (26, 62360), (29, 62381), (31, 62408), (32, 62414),

Gene: Breezona_101 Start: 62404, Stop: 62826, Start Num: 9

Candidate Starts for Breezona_101:

(Start: 9 @62404 has 63 MA's), (17, 62557), (20, 62593), (21, 62602), (25, 62686), (26, 62695), (29, 62716), (31, 62743), (32, 62749),

Gene: Bromden_103 Start: 62854, Stop: 63273, Start Num: 9

Candidate Starts for Bromden_103:

(Start: 9 @62854 has 63 MA's), (15, 62980), (17, 63007), (18, 63019), (19, 63028), (20, 63043), (26, 63145), (28, 63163), (30, 63184), (31, 63193),

Gene: Calm_100 Start: 60500, Stop: 60922, Start Num: 9

Candidate Starts for Calm_100:

(1, 60344), (3, 60416), (4, 60443), (Start: 5 @60449 has 1 MA's), (7, 60482), (Start: 9 @60500 has 63 MA's), (11, 60560), (15, 60626), (16, 60632), (20, 60689), (21, 60698),

Gene: Chaser_101 Start: 61467, Stop: 61886, Start Num: 9

Candidate Starts for Chaser_101:

(8, 61461), (Start: 9 @61467 has 63 MA's), (20, 61656), (25, 61749), (26, 61758), (27, 61761), (28, 61776), (30, 61797), (31, 61806),

Gene: CicholasNage_94 Start: 59615, Stop: 60037, Start Num: 9

Candidate Starts for CicholasNage_94:

(Start: 9 @59615 has 63 MA's), (13, 59687), (14, 59690), (19, 59789), (20, 59804), (21, 59813), (22, 59816), (25, 59897), (26, 59906), (29, 59927), (31, 59954), (32, 59960),

Gene: Claus_100 Start: 61890, Stop: 62312, Start Num: 9

Candidate Starts for Claus_100:

(Start: 9 @61890 has 63 MA's), (14, 61965), (17, 62043), (19, 62064), (20, 62079), (21, 62088), (25, 62172), (26, 62181), (28, 62199), (29, 62202), (31, 62229), (32, 62235),

Gene: Clautastrophe_97 Start: 61623, Stop: 62042, Start Num: 9

Candidate Starts for Clautastrophe_97:

(8, 61617), (Start: 9 @61623 has 63 MA's), (15, 61749), (17, 61776), (18, 61788), (25, 61905), (26, 61914), (28, 61932), (31, 61962),

Gene: Crossroads_102 Start: 61956, Stop: 62378, Start Num: 9

Candidate Starts for Crossroads_102:

(Start: 9 @61956 has 63 MA's), (17, 62109), (20, 62145), (21, 62154), (25, 62238), (26, 62247), (29, 62268), (31, 62295), (32, 62301), (33, 62355),

Gene: DirkDirk_94 Start: 59326, Stop: 59748, Start Num: 9

Candidate Starts for DirkDirk_94:

(Start: 9 @59326 has 63 MA's), (13, 59398), (14, 59401), (19, 59500), (20, 59515), (21, 59524), (22, 59527), (25, 59608), (26, 59617), (29, 59638), (31, 59665), (32, 59671),

Gene: Douge_102 Start: 61538, Stop: 61957, Start Num: 9

Candidate Starts for Douge_102:

(Start: 9 @61538 has 63 MA's), (20, 61727), (25, 61820), (26, 61829), (27, 61832), (28, 61847), (30, 61868), (31, 61877),

Gene: DrSeegs_100 Start: 62404, Stop: 62826, Start Num: 9

Candidate Starts for DrSeegs_100:

(Start: 9 @62404 has 63 MA's), (17, 62557), (20, 62593), (21, 62602), (25, 62686), (26, 62695), (29, 62716), (31, 62743), (32, 62749),

Gene: DuncansLeg_100 Start: 61789, Stop: 62214, Start Num: 9

Candidate Starts for DuncansLeg_100:

(Start: 9 @61789 has 63 MA's), (17, 61948), (18, 61960), (25, 62077), (26, 62086), (28, 62104), (31, 62134),

Gene: DyoEdafos_105 Start: 62092, Stop: 62535, Start Num: 6

Candidate Starts for DyoEdafos_105:

(Start: 6 @62092 has 1 MA's), (23, 62341), (26, 62407), (27, 62410), (28, 62425), (30, 62446), (31, 62455),

Gene: Ellson_98 Start: 62104, Stop: 62529, Start Num: 9

Candidate Starts for Ellson_98:

(Start: 9 @62104 has 63 MA's), (17, 62263), (18, 62275), (25, 62392), (26, 62401), (28, 62419), (31, 62449),

Gene: Enceladus_94 Start: 59624, Stop: 60046, Start Num: 9

Candidate Starts for Enceladus_94:

(Start: 9 @59624 has 63 MA's), (13, 59696), (14, 59699), (19, 59798), (20, 59813), (21, 59822), (22, 59825), (25, 59906), (26, 59915), (29, 59936), (31, 59963), (32, 59969),

Gene: Faith1_100 Start: 61712, Stop: 62134, Start Num: 9

Candidate Starts for Faith1_100:

(Start: 9 @61712 has 63 MA's), (10, 61724), (17, 61865), (20, 61901), (21, 61910), (25, 61994), (26, 62003), (29, 62024), (31, 62051), (32, 62057),

Gene: Finemlucis_102 Start: 62772, Stop: 63194, Start Num: 9

Candidate Starts for Finemlucis_102:

(Start: 9 @62772 has 63 MA's), (10, 62784), (17, 62925), (20, 62961), (21, 62970), (25, 63054), (26, 63063), (29, 63084), (31, 63111), (32, 63117),

Gene: Finnry_99 Start: 61976, Stop: 62395, Start Num: 9

Candidate Starts for Finnry_99:

(8, 61970), (Start: 9 @61976 has 63 MA's), (15, 62102), (17, 62129), (18, 62141), (25, 62258), (26, 62267), (28, 62285), (31, 62315),

Gene: Gabriela_101 Start: 61058, Stop: 61480, Start Num: 9

Candidate Starts for Gabriela_101:

(Start: 9 @61058 has 63 MA's), (10, 61070), (17, 61211), (20, 61247), (21, 61256), (25, 61340), (26, 61349), (29, 61370), (31, 61397), (32, 61403),

Gene: Gardann_100 Start: 61505, Stop: 61927, Start Num: 9

Candidate Starts for Gardann_100:

(Start: 9 @61505 has 63 MA's), (10, 61517), (17, 61658), (20, 61694), (21, 61703), (25, 61787), (26, 61796), (29, 61817), (31, 61844), (32, 61850),

Gene: GuuelaD_97 Start: 61671, Stop: 62093, Start Num: 9

Candidate Starts for GuuelaD_97:

(Start: 9 @61671 has 63 MA's), (10, 61683), (17, 61824), (20, 61860), (21, 61869), (25, 61953), (26, 61962), (29, 61983), (31, 62010), (32, 62016),

Gene: Hafay_101 Start: 61885, Stop: 62307, Start Num: 9

Candidate Starts for Hafay_101:

(Start: 9 @61885 has 63 MA's), (14, 61960), (17, 62038), (19, 62059), (20, 62074), (21, 62083), (25, 62167), (26, 62176), (28, 62194), (29, 62197), (31, 62224), (32, 62230),

Gene: Halena_96 Start: 59416, Stop: 59838, Start Num: 9

Candidate Starts for Halena_96:

(1, 59260), (3, 59332), (4, 59359), (Start: 5 @59365 has 1 MA's), (7, 59398), (Start: 9 @59416 has 63 MA's), (11, 59476), (15, 59542), (16, 59548), (20, 59605), (21, 59614),

Gene: Itos_101 Start: 60618, Stop: 61040, Start Num: 9

Candidate Starts for Itos_101:

(Start: 9 @60618 has 63 MA's), (10, 60630), (17, 60771), (20, 60807), (21, 60816), (25, 60900), (26, 60909), (29, 60930), (31, 60957), (32, 60963),

Gene: Jobypre_99 Start: 61623, Stop: 62042, Start Num: 9

Candidate Starts for Jobypre_99:

(8, 61617), (Start: 9 @61623 has 63 MA's), (15, 61749), (17, 61776), (18, 61788), (25, 61905), (26, 61914), (28, 61932), (31, 61962),

Gene: Jubie_98 Start: 61758, Stop: 62177, Start Num: 9

Candidate Starts for Jubie_98:

(8, 61752), (Start: 9 @61758 has 63 MA's), (15, 61884), (17, 61911), (18, 61923), (25, 62040), (26, 62049), (28, 62067), (31, 62097),

Gene: Kahlid_100 Start: 61423, Stop: 61845, Start Num: 9

Candidate Starts for Kahlid_100:

(Start: 9 @61423 has 63 MA's), (10, 61435), (17, 61576), (20, 61612), (21, 61621), (25, 61705), (26, 61714), (29, 61735), (31, 61762), (32, 61768),

Gene: Kingsolomon_96 Start: 61732, Stop: 62151, Start Num: 9

Candidate Starts for Kingsolomon_96:

(8, 61726), (Start: 9 @61732 has 63 MA's), (15, 61858), (17, 61885), (18, 61897), (25, 62014), (26, 62023), (28, 62041), (31, 62071),

Gene: Krypton555_101 Start: 62044, Stop: 62463, Start Num: 9

Candidate Starts for Krypton555_101:

(Start: 9 @62044 has 63 MA's), (17, 62197), (18, 62209), (25, 62326), (26, 62335), (28, 62353), (31, 62383),

Gene: LeBron_97 Start: 59723, Stop: 60145, Start Num: 9

Candidate Starts for LeBron_97:

(1, 59567), (3, 59639), (4, 59666), (Start: 5 @59672 has 1 MA's), (7, 59705), (Start: 9 @59723 has 63 MA's), (11, 59783), (15, 59849), (16, 59855), (20, 59912), (21, 59921),

Gene: Lewan_101 Start: 61711, Stop: 62133, Start Num: 9

Candidate Starts for Lewan_101:

(Start: 9 @61711 has 63 MA's), (10, 61723), (17, 61864), (20, 61900), (21, 61909), (25, 61993), (26, 62002), (29, 62023), (31, 62050), (32, 62056),

Gene: LilDestine_99 Start: 61382, Stop: 61804, Start Num: 9

Candidate Starts for LilDestine_99:

(Start: 9 @61382 has 63 MA's), (10, 61394), (17, 61535), (20, 61571), (21, 61580), (25, 61664), (26, 61673), (29, 61694), (31, 61721), (32, 61727),

Gene: Loadrie_99 Start: 61873, Stop: 62295, Start Num: 9

Candidate Starts for Loadrie_99:

(Start: 9 @61873 has 63 MA's), (10, 61885), (17, 62026), (20, 62062), (21, 62071), (25, 62155), (26, 62164), (29, 62185), (31, 62212), (32, 62218),

Gene: Lolly9_97 Start: 61717, Stop: 62136, Start Num: 9

Candidate Starts for Lolly9_97:

(Start: 9 @61717 has 63 MA's), (17, 61870), (18, 61882), (25, 61999), (26, 62008), (28, 62026), (31, 62056),

Gene: Lumos_98 Start: 61620, Stop: 62039, Start Num: 9

Candidate Starts for Lumos_98:

(8, 61614), (Start: 9 @61620 has 63 MA's), (15, 61746), (17, 61773), (18, 61785), (25, 61902), (26, 61911), (28, 61929), (31, 61959),

Gene: MAckerman_94 Start: 59391, Stop: 59831, Start Num: 7

Candidate Starts for MAckerman_94:

(1, 59253), (3, 59325), (4, 59352), (Start: 5 @59358 has 1 MA's), (7, 59391), (Start: 9 @59409 has 63 MA's), (11, 59469), (15, 59535), (16, 59541), (20, 59598), (21, 59607),

Gene: Miley16_101 Start: 62404, Stop: 62826, Start Num: 9

Candidate Starts for Miley16_101:

(Start: 9 @62404 has 63 MA's), (17, 62557), (20, 62593), (21, 62602), (25, 62686), (26, 62695), (29, 62716), (31, 62743), (32, 62749),

Gene: MiniLon_102 Start: 61718, Stop: 62137, Start Num: 9

Candidate Starts for MiniLon_102:

(Start: 9 @61718 has 63 MA's), (17, 61871), (18, 61883), (25, 62000), (26, 62009), (28, 62027), (31, 62057),

Gene: MiniMac_102 Start: 61713, Stop: 62132, Start Num: 9

Candidate Starts for MiniMac_102:

(Start: 9 @61713 has 63 MA's), (17, 61866), (18, 61878), (25, 61995), (26, 62004), (28, 62022), (31, 62052),

Gene: MkaliMitinis3_102 Start: 61837, Stop: 62259, Start Num: 9

Candidate Starts for MkaliMitinis3_102:

(Start: 9 @61837 has 63 MA's), (10, 61849), (17, 61990), (20, 62026), (21, 62035), (25, 62119), (26, 62128), (29, 62149), (31, 62176), (32, 62182),

Gene: Moostard_95 Start: 61727, Stop: 62146, Start Num: 9

Candidate Starts for Moostard_95:

(8, 61721), (Start: 9 @61727 has 63 MA's), (15, 61853), (17, 61880), (18, 61892), (25, 62009), (26, 62018), (28, 62036), (31, 62066),

Gene: MsGreen_99 Start: 61622, Stop: 62041, Start Num: 9

Candidate Starts for MsGreen_99:

(8, 61616), (Start: 9 @61622 has 63 MA's), (15, 61748), (17, 61775), (18, 61787), (25, 61904), (26, 61913), (28, 61931), (31, 61961),

Gene: Netyap_99 Start: 61713, Stop: 62135, Start Num: 9

Candidate Starts for Netyap_99:

(Start: 9 @61713 has 63 MA's), (10, 61725), (17, 61866), (20, 61902), (21, 61911), (25, 61995), (26, 62004), (29, 62025), (31, 62052), (32, 62058),

Gene: Nicholas_96 Start: 61732, Stop: 62151, Start Num: 9

Candidate Starts for Nicholas_96:

(8, 61726), (Start: 9 @61732 has 63 MA's), (15, 61858), (17, 61885), (18, 61897), (25, 62014), (26, 62023), (28, 62041), (31, 62071),

Gene: Nicholasp3_101 Start: 61505, Stop: 61927, Start Num: 9

Candidate Starts for Nicholasp3_101:

(Start: 9 @61505 has 63 MA's), (10, 61517), (17, 61658), (20, 61694), (21, 61703), (25, 61787), (26, 61796), (29, 61817), (31, 61844), (32, 61850),

Gene: OhShagHennessy_93 Start: 59128, Stop: 59550, Start Num: 9

Candidate Starts for OhShagHennessy_93:

(Start: 9 @59128 has 63 MA's), (13, 59200), (14, 59203), (19, 59302), (20, 59317), (21, 59326), (22, 59329), (25, 59410), (26, 59419), (29, 59440), (31, 59467), (32, 59473),

Gene: Rose5_99 Start: 60395, Stop: 60817, Start Num: 9

Candidate Starts for Rose5_99:

(Start: 9 @60395 has 63 MA's), (13, 60467), (14, 60470), (19, 60569), (20, 60584), (21, 60593), (22, 60596), (25, 60677), (26, 60686), (29, 60707), (31, 60734), (32, 60740),

Gene: Rumpelstiltskin_97 Start: 61298, Stop: 61720, Start Num: 9

Candidate Starts for Rumpelstiltskin_97:

(Start: 9 @61298 has 63 MA's), (10, 61310), (17, 61451), (20, 61487), (21, 61496), (25, 61580), (26, 61589), (29, 61610), (31, 61637), (32, 61643),

Gene: Silverleaf_96 Start: 59535, Stop: 59957, Start Num: 9

Candidate Starts for Silverleaf_96:

(Start: 9 @59535 has 63 MA's), (13, 59607), (14, 59610), (19, 59709), (20, 59724), (21, 59733), (22, 59736), (25, 59817), (26, 59826), (29, 59847), (31, 59874), (32, 59880),

Gene: Snenia_97 Start: 61624, Stop: 62043, Start Num: 9

Candidate Starts for Snenia_97:

(8, 61618), (Start: 9 @61624 has 63 MA's), (15, 61750), (17, 61777), (18, 61789), (25, 61906), (26, 61915), (28, 61933), (31, 61963),

Gene: Tourach_102 Start: 62713, Stop: 63186, Start Num: 5

Candidate Starts for Tourach_102:

(Start: 5 @62713 has 1 MA's), (Start: 9 @62764 has 63 MA's), (17, 62917), (20, 62953), (21, 62962), (25, 63046), (26, 63055), (29, 63076), (31, 63103), (32, 63109),

Gene: Tyson_100 Start: 60826, Stop: 61248, Start Num: 9

Candidate Starts for Tyson_100:

(1, 60670), (4, 60769), (Start: 5 @60775 has 1 MA's), (7, 60808), (Start: 9 @60826 has 63 MA's), (11, 60886), (15, 60952), (16, 60958), (20, 61015), (21, 61024),

Gene: UPIE_97 Start: 60066, Stop: 60488, Start Num: 9

Candidate Starts for UPIE_97:

(1, 59910), (4, 60009), (Start: 5 @60015 has 1 MA's), (7, 60048), (Start: 9 @60066 has 63 MA's), (11, 60126), (15, 60192), (16, 60198), (20, 60255), (21, 60264),

Gene: Vetrix_99 Start: 61538, Stop: 61960, Start Num: 9

Candidate Starts for Vetrix_99:

(Start: 9 @61538 has 63 MA's), (10, 61550), (17, 61691), (20, 61727), (21, 61736), (25, 61820), (26, 61829), (29, 61850), (31, 61877), (32, 61883),

Gene: Wamburgrexpress_96 Start: 60012, Stop: 60434, Start Num: 9

Candidate Starts for Wamburgrexpress_96:

(Start: 9 @60012 has 63 MA's), (13, 60084), (14, 60087), (19, 60186), (20, 60201), (21, 60210), (22, 60213), (25, 60294), (26, 60303), (29, 60324), (31, 60351), (32, 60357),

Gene: Whirlwind_99 Start: 61872, Stop: 62291, Start Num: 9

Candidate Starts for Whirlwind_99:

(Start: 9 @61872 has 63 MA's), (15, 61998), (17, 62025), (18, 62037), (25, 62154), (26, 62163), (28, 62181), (31, 62211),

Gene: Wigglewigggle_100 Start: 61635, Stop: 62057, Start Num: 9

Candidate Starts for Wigglewigggle_100:

(Start: 9 @61635 has 63 MA's), (10, 61647), (17, 61788), (20, 61824), (21, 61833), (25, 61917), (26, 61926), (29, 61947), (31, 61974), (32, 61980),

Gene: Wilder_101 Start: 61682, Stop: 62104, Start Num: 9

Candidate Starts for Wilder_101:

(Start: 9 @61682 has 63 MA's), (10, 61694), (17, 61835), (20, 61871), (21, 61880), (25, 61964), (26, 61973), (29, 61994), (31, 62021), (32, 62027),

Gene: Winky_101 Start: 62404, Stop: 62826, Start Num: 9

Candidate Starts for Winky_101:

(Start: 9 @62404 has 63 MA's), (17, 62557), (20, 62593), (21, 62602), (25, 62686), (26, 62695), (29, 62716), (31, 62743), (32, 62749),

Gene: Wyatt2_99 Start: 60489, Stop: 60911, Start Num: 9

Candidate Starts for Wyatt2_99:

(1, 60333), (4, 60432), (Start: 5 @60438 has 1 MA's), (7, 60471), (Start: 9 @60489 has 63 MA's), (11, 60549), (15, 60615), (16, 60621), (20, 60678), (21, 60687),

Gene: Zakai_102 Start: 62114, Stop: 62536, Start Num: 9

Candidate Starts for Zakai_102:

(Start: 9 @62114 has 63 MA's), (10, 62126), (17, 62267), (20, 62303), (21, 62312), (25, 62396), (26, 62405), (29, 62426), (31, 62453), (32, 62459),

Gene: Zaria_99 Start: 59965, Stop: 60387, Start Num: 9

Candidate Starts for Zaria_99:

(1, 59809), (3, 59881), (4, 59908), (Start: 5 @59914 has 1 MA's), (7, 59947), (Start: 9 @59965 has 63 MA's), (11, 60025), (15, 60091), (16, 60097), (20, 60154), (21, 60163),

Gene: ZhongYanYuan_98 Start: 61828, Stop: 62250, Start Num: 9

Candidate Starts for ZhongYanYuan_98:

(Start: 9 @61828 has 63 MA's), (14, 61903), (17, 61981), (20, 62017), (21, 62026), (25, 62110), (26, 62119), (29, 62140), (31, 62167), (32, 62173),