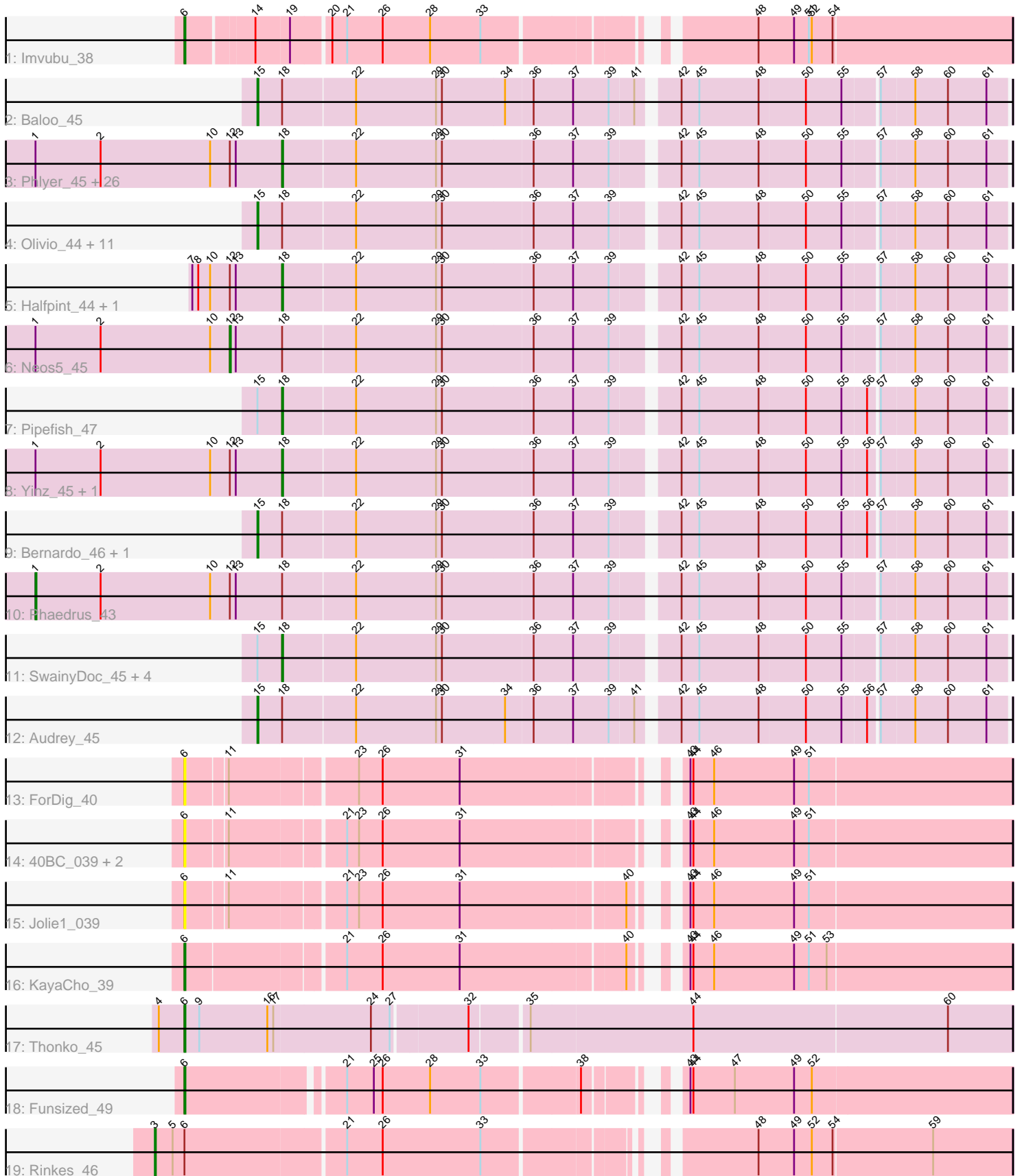


Pham 216153



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 216153 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216153 has 65 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Imvubu_38
- Track 2 : Baloo_45
- Track 3 : Phlyer_45, Nozo_45, Heathcliff_45, Daisy_45, Yahalom_45, GlenHope_46, Chandler_45, Athena_46, SynergyX_45, ChaChing_45, Tydolla_45, RagingRooster_45, Briakila_46, Compostia_46, Corofin_45, OrangeOswald_45, Jackstina_42, Akoma_45, Chalmers_45, Shenandoah_45, Gadget_46, Deenasa_45, HarveySr_45, Philly_44, RomaT_45, Glubnar_45, Marlia_45
- Track 4 : Olivio_44, MmasiCarm_45, Obutu_45, Phayeta_46, SlippinJimmy_45, LestyG_45, Abinghost_45, Ben11_44, Chentzyk_45, Devonte_45, Casbah_44, Rita1961_45
- Track 5 : Halfpint_44, Kamiyu_45
- Track 6 : Neos5_45
- Track 7 : Pipefish_47
- Track 8 : Yinz_45, Kronus_44
- Track 9 : Bernardo_46, Mortcellus_44
- Track 10 : Phaedrus_43
- Track 11 : SwainyDoc_45, Gervas_45, TinyTerror_45, Morty007_45, Marley1013_45
- Track 12 : Audrey_45
- Track 13 : ForDig_40
- Track 14 : 40BC_039, Hosp_037, 39HC_039
- Track 15 : Jolie1_039
- Track 16 : KayaCho_39
- Track 17 : Thonko_45
- Track 18 : Funsized_49
- Track 19 : Rinkes_46

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

The start number called the most often in the published annotations is 18, it was called in 31 of the 50 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akoma_45, Athena_46, Briakila_46, ChaChing_45, Chalmers_45, Chandler_45, Compostia_46, Corofin_45, Daisy_45, Deenasa_45, Gadget_46, Gervas_45, GlenHope_46, Glubnar_45, Halfpint_44, HarveySr_45, Heathcliff_45, Jackstina_42, Kamiyu_45, Kronus_44, Marley1013_45, Marlia_45, Morty007_45, Nozo_45, OrangeOswald_45, Philly_44, Phlyer_45, Pipefish_47, RagingRooster_45, RomaT_45, Shenandoah_45, SwainyDoc_45, SynergyX_45, TinyTerror_45, Tydolla_45, Yahalom_45, Yinz_45,

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

- Abinghost_45, Audrey_45, Baloo_45, Ben11_44, Bernardo_46, Casbah_44, Chentzyk_45, Devonte_45, LestyG_45, MmasiCarm_45, Mortcellus_44, Neos5_45, Obutu_45, Olivio_44, Phaedrus_43, Phayeta_46, Rita1961_45, SlippinJimmy_45,

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

- 39HC_039, 40BC_039, ForDig_40, Funsized_49, Hosp_037, Imvubu_38, Jolie1_039, KayaCho_39, Rinkes_46, Thonko_45,

Summary by start number:

Start 1:

- Found in 31 of 65 (47.7%) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 3.2% of time when present
- Phage (with cluster) where this start called: Phaedrus_43 (B3),

Start 3:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rinkes_46 (B9),

Start 6:

- Found in 10 of 65 (15.4%) of genes in pham
- Manual Annotations of this start: 4 of 50
- Called 90.0% of time when present
- Phage (with cluster) where this start called: 39HC_039 (B6), 40BC_039 (B6), ForDig_40 (B6), Funsized_49 (B9), Hosp_037 (B6), Imvubu_38 (B10), Jolie1_039 (B6), KayaCho_39 (B6), Thonko_45 (B8),

Start 12:

- Found in 33 of 65 (50.8%) of genes in pham
- Manual Annotations of this start: 1 of 50
- Called 3.0% of time when present
- Phage (with cluster) where this start called: Neos5_45 (B3),

Start 15:

- Found in 22 of 65 (33.8%) of genes in pham
- Manual Annotations of this start: 12 of 50
- Called 72.7% of time when present
- Phage (with cluster) where this start called: Abinghost_45 (B3), Audrey_45 (B3), Baloo_45 (B3), Ben11_44 (B3), Bernardo_46 (B3), Casbah_44 (B3), Chentzyk_45 (B3), Devonte_45 (B3), LestyG_45 (B3), MmasiCarm_45 (B3), Mortcellus_44 (B3), Obutu_45 (B3), Olivio_44 (B3), Phayeta_46 (B3), Rita1961_45 (B3), SlippinJimmy_45

(B3),

Start 18:

- Found in 55 of 65 (84.6%) of genes in pham
- Manual Annotations of this start: 31 of 50
- Called 67.3% of time when present
- Phage (with cluster) where this start called: Akoma_45 (B3), Athena_46 (B3), Briakila_46 (B3), ChaChing_45 (B3), Chalmers_45 (B3), Chandler_45 (B3), Compostia_46 (B3), Corofin_45 (B3), Daisy_45 (B3), Deenasa_45 (B3), Gadget_46 (B3), Gervas_45 (B3), GlenHope_46 (B3), Glubnar_45 (B3), Halfpint_44 (B3), HarveySr_45 (B3), Heathcliff_45 (B3), Jackstina_42 (B3), Kamiyu_45 (B3), Kronus_44 (B3), Marley1013_45 (B3), Marlia_45 (B3), Morty007_45 (B3), Nozo_45 (B3), OrangeOswald_45 (B3), Philly_44 (B3), Phlyer_45 (B3), Pipefish_47 (B3), RagingRooster_45 (B3), RomaT_45 (B3), Shenandoah_45 (B3), SwainyDoc_45 (B3), SynergyX_45 (B3), TinyTerror_45 (B3), Tydolla_45 (B3), Yahalom_45 (B3), Yinz_45 (B3),

Summary by clusters:

There are 5 clusters represented in this pham: B6, B8, B9, B10, B3,

Info for manual annotations of cluster B10:

- Start number 6 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B3:

- Start number 1 was manually annotated 1 time for cluster B3.
- Start number 12 was manually annotated 1 time for cluster B3.
- Start number 15 was manually annotated 12 times for cluster B3.
- Start number 18 was manually annotated 31 times for cluster B3.

Info for manual annotations of cluster B6:

- Start number 6 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B8:

- Start number 6 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster B9:

- Start number 3 was manually annotated 1 time for cluster B9.
- Start number 6 was manually annotated 1 time for cluster B9.

Gene Information:

Gene: 39HC_039 Start: 38257, Stop: 37487, Start Num: 6

Candidate Starts for 39HC_039:

(Start: 6 @38257 has 4 MA's), (11, 38218), (21, 38110), (23, 38098), (26, 38074), (31, 37996), (43, 37810), (44, 37807), (46, 37786), (49, 37705), (51, 37690),

Gene: 40BC_039 Start: 38257, Stop: 37487, Start Num: 6

Candidate Starts for 40BC_039:

(Start: 6 @38257 has 4 MA's), (11, 38218), (21, 38110), (23, 38098), (26, 38074), (31, 37996), (43, 37810), (44, 37807), (46, 37786), (49, 37705), (51, 37690),

Gene: Abinghost_45 Start: 40228, Stop: 39506, Start Num: 15

Candidate Starts for Abinghost_45:

(Start: 15 @40228 has 12 MA's), (Start: 18 @40204 has 31 MA's), (22, 40132), (29, 40051), (30, 40045), (36, 39955), (37, 39916), (39, 39880), (42, 39823), (45, 39805), (48, 39745), (50, 39700), (55, 39664), (57, 39631), (58, 39598), (60, 39565), (61, 39526),

Gene: Akoma_45 Start: 40208, Stop: 39510, Start Num: 18

Candidate Starts for Akoma_45:

(Start: 1 @40454 has 1 MA's), (2, 40388), (10, 40277), (Start: 12 @40259 has 1 MA's), (13, 40253), (Start: 18 @40208 has 31 MA's), (22, 40136), (29, 40055), (30, 40049), (36, 39959), (37, 39920), (39, 39884), (42, 39827), (45, 39809), (48, 39749), (50, 39704), (55, 39668), (57, 39635), (58, 39602), (60, 39569), (61, 39530),

Gene: Athena_46 Start: 40955, Stop: 40257, Start Num: 18

Candidate Starts for Athena_46:

(Start: 1 @41201 has 1 MA's), (2, 41135), (10, 41024), (Start: 12 @41006 has 1 MA's), (13, 41000), (Start: 18 @40955 has 31 MA's), (22, 40883), (29, 40802), (30, 40796), (36, 40706), (37, 40667), (39, 40631), (42, 40574), (45, 40556), (48, 40496), (50, 40451), (55, 40415), (57, 40382), (58, 40349), (60, 40316), (61, 40277),

Gene: Audrey_45 Start: 40228, Stop: 39506, Start Num: 15

Candidate Starts for Audrey_45:

(Start: 15 @40228 has 12 MA's), (Start: 18 @40204 has 31 MA's), (22, 40132), (29, 40051), (30, 40045), (34, 39982), (36, 39955), (37, 39916), (39, 39880), (41, 39856), (42, 39823), (45, 39805), (48, 39745), (50, 39700), (55, 39664), (56, 39640), (57, 39631), (58, 39598), (60, 39565), (61, 39526),

Gene: Baloo_45 Start: 40231, Stop: 39509, Start Num: 15

Candidate Starts for Baloo_45:

(Start: 15 @40231 has 12 MA's), (Start: 18 @40207 has 31 MA's), (22, 40135), (29, 40054), (30, 40048), (34, 39985), (36, 39958), (37, 39919), (39, 39883), (41, 39859), (42, 39826), (45, 39808), (48, 39748), (50, 39703), (55, 39667), (57, 39634), (58, 39601), (60, 39568), (61, 39529),

Gene: Ben11_44 Start: 40050, Stop: 39328, Start Num: 15

Candidate Starts for Ben11_44:

(Start: 15 @40050 has 12 MA's), (Start: 18 @40026 has 31 MA's), (22, 39954), (29, 39873), (30, 39867), (36, 39777), (37, 39738), (39, 39702), (42, 39645), (45, 39627), (48, 39567), (50, 39522), (55, 39486), (57, 39453), (58, 39420), (60, 39387), (61, 39348),

Gene: Bernardo_46 Start: 40776, Stop: 40054, Start Num: 15

Candidate Starts for Bernardo_46:

(Start: 15 @40776 has 12 MA's), (Start: 18 @40752 has 31 MA's), (22, 40680), (29, 40599), (30, 40593), (36, 40503), (37, 40464), (39, 40428), (42, 40371), (45, 40353), (48, 40293), (50, 40248), (55, 40212), (56, 40188), (57, 40179), (58, 40146), (60, 40113), (61, 40074),

Gene: Briakila_46 Start: 40974, Stop: 40276, Start Num: 18

Candidate Starts for Briakila_46:

(Start: 1 @41220 has 1 MA's), (2, 41154), (10, 41043), (Start: 12 @41025 has 1 MA's), (13, 41019), (Start: 18 @40974 has 31 MA's), (22, 40902), (29, 40821), (30, 40815), (36, 40725), (37, 40686), (39, 40650), (42, 40593), (45, 40575), (48, 40515), (50, 40470), (55, 40434), (57, 40401), (58, 40368), (60, 40335), (61, 40296),

Gene: Casbah_44 Start: 40080, Stop: 39358, Start Num: 15

Candidate Starts for Casbah_44:

(Start: 15 @40080 has 12 MA's), (Start: 18 @40056 has 31 MA's), (22, 39984), (29, 39903), (30, 39897), (36, 39807), (37, 39768), (39, 39732), (42, 39675), (45, 39657), (48, 39597), (50, 39552), (55, 39516), (57, 39483), (58, 39450), (60, 39417), (61, 39378),

Gene: ChaChing_45 Start: 40219, Stop: 39521, Start Num: 18

Candidate Starts for ChaChing_45:

(Start: 1 @40465 has 1 MA's), (2, 40399), (10, 40288), (Start: 12 @40270 has 1 MA's), (13, 40264), (Start: 18 @40219 has 31 MA's), (22, 40147), (29, 40066), (30, 40060), (36, 39970), (37, 39931), (39, 39895), (42, 39838), (45, 39820), (48, 39760), (50, 39715), (55, 39679), (57, 39646), (58, 39613), (60, 39580), (61, 39541),

Gene: Chalmers_45 Start: 41011, Stop: 40313, Start Num: 18

Candidate Starts for Chalmers_45:

(Start: 1 @41257 has 1 MA's), (2, 41191), (10, 41080), (Start: 12 @41062 has 1 MA's), (13, 41056), (Start: 18 @41011 has 31 MA's), (22, 40939), (29, 40858), (30, 40852), (36, 40762), (37, 40723), (39, 40687), (42, 40630), (45, 40612), (48, 40552), (50, 40507), (55, 40471), (57, 40438), (58, 40405), (60, 40372), (61, 40333),

Gene: Chandler_45 Start: 40987, Stop: 40289, Start Num: 18

Candidate Starts for Chandler_45:

(Start: 1 @41233 has 1 MA's), (2, 41167), (10, 41056), (Start: 12 @41038 has 1 MA's), (13, 41032), (Start: 18 @40987 has 31 MA's), (22, 40915), (29, 40834), (30, 40828), (36, 40738), (37, 40699), (39, 40663), (42, 40606), (45, 40588), (48, 40528), (50, 40483), (55, 40447), (57, 40414), (58, 40381), (60, 40348), (61, 40309),

Gene: Chentzyk_45 Start: 40592, Stop: 39870, Start Num: 15

Candidate Starts for Chentzyk_45:

(Start: 15 @40592 has 12 MA's), (Start: 18 @40568 has 31 MA's), (22, 40496), (29, 40415), (30, 40409), (36, 40319), (37, 40280), (39, 40244), (42, 40187), (45, 40169), (48, 40109), (50, 40064), (55, 40028), (57, 39995), (58, 39962), (60, 39929), (61, 39890),

Gene: Compostia_46 Start: 40635, Stop: 39937, Start Num: 18

Candidate Starts for Compostia_46:

(Start: 1 @40881 has 1 MA's), (2, 40815), (10, 40704), (Start: 12 @40686 has 1 MA's), (13, 40680), (Start: 18 @40635 has 31 MA's), (22, 40563), (29, 40482), (30, 40476), (36, 40386), (37, 40347), (39, 40311), (42, 40254), (45, 40236), (48, 40176), (50, 40131), (55, 40095), (57, 40062), (58, 40029), (60, 39996), (61, 39957),

Gene: Corofin_45 Start: 40230, Stop: 39532, Start Num: 18

Candidate Starts for Corofin_45:

(Start: 1 @40476 has 1 MA's), (2, 40410), (10, 40299), (Start: 12 @40281 has 1 MA's), (13, 40275), (Start: 18 @40230 has 31 MA's), (22, 40158), (29, 40077), (30, 40071), (36, 39981), (37, 39942), (39, 39906), (42, 39849), (45, 39831), (48, 39771), (50, 39726), (55, 39690), (57, 39657), (58, 39624), (60, 39591), (61, 39552),

Gene: Daisy_45 Start: 40231, Stop: 39533, Start Num: 18

Candidate Starts for Daisy_45:

(Start: 1 @40477 has 1 MA's), (2, 40411), (10, 40300), (Start: 12 @40282 has 1 MA's), (13, 40276), (Start: 18 @40231 has 31 MA's), (22, 40159), (29, 40078), (30, 40072), (36, 39982), (37, 39943), (39, 39907), (42, 39850), (45, 39832), (48, 39772), (50, 39727), (55, 39691), (57, 39658), (58, 39625), (60, 39592), (61, 39553),

Gene: Deenasa_45 Start: 40966, Stop: 40268, Start Num: 18

Candidate Starts for Deenasa_45:

(Start: 1 @41212 has 1 MA's), (2, 41146), (10, 41035), (Start: 12 @41017 has 1 MA's), (13, 41011), (Start: 18 @40966 has 31 MA's), (22, 40894), (29, 40813), (30, 40807), (36, 40717), (37, 40678), (39, 40642), (42, 40585), (45, 40567), (48, 40507), (50, 40462), (55, 40426), (57, 40393), (58, 40360), (60, 40327), (61, 40288),

Gene: Devonte_45 Start: 40219, Stop: 39497, Start Num: 15

Candidate Starts for Devonte_45:

(Start: 15 @40219 has 12 MA's), (Start: 18 @40195 has 31 MA's), (22, 40123), (29, 40042), (30, 40036), (36, 39946), (37, 39907), (39, 39871), (42, 39814), (45, 39796), (48, 39736), (50, 39691), (55, 39655), (57, 39622), (58, 39589), (60, 39556), (61, 39517),

Gene: ForDig_40 Start: 38242, Stop: 37472, Start Num: 6

Candidate Starts for ForDig_40:

(Start: 6 @38242 has 4 MA's), (11, 38203), (23, 38083), (26, 38059), (31, 37981), (43, 37795), (44, 37792), (46, 37771), (49, 37690), (51, 37675),

Gene: Funsized_49 Start: 43198, Stop: 42434, Start Num: 6

Candidate Starts for Funsized_49:

(Start: 6 @43198 has 4 MA's), (21, 43051), (25, 43024), (26, 43015), (28, 42967), (33, 42916), (38, 42823), (43, 42757), (44, 42754), (47, 42712), (49, 42652), (52, 42634),

Gene: Gadget_46 Start: 40218, Stop: 39520, Start Num: 18

Candidate Starts for Gadget_46:

(Start: 1 @40464 has 1 MA's), (2, 40398), (10, 40287), (Start: 12 @40269 has 1 MA's), (13, 40263), (Start: 18 @40218 has 31 MA's), (22, 40146), (29, 40065), (30, 40059), (36, 39969), (37, 39930), (39, 39894), (42, 39837), (45, 39819), (48, 39759), (50, 39714), (55, 39678), (57, 39645), (58, 39612), (60, 39579), (61, 39540),

Gene: Gervas_45 Start: 40185, Stop: 39487, Start Num: 18

Candidate Starts for Gervas_45:

(Start: 15 @40209 has 12 MA's), (Start: 18 @40185 has 31 MA's), (22, 40113), (29, 40032), (30, 40026), (36, 39936), (37, 39897), (39, 39861), (42, 39804), (45, 39786), (48, 39726), (50, 39681), (55, 39645), (57, 39612), (58, 39579), (60, 39546), (61, 39507),

Gene: GlenHope_46 Start: 40198, Stop: 39500, Start Num: 18

Candidate Starts for GlenHope_46:

(Start: 1 @40444 has 1 MA's), (2, 40378), (10, 40267), (Start: 12 @40249 has 1 MA's), (13, 40243), (Start: 18 @40198 has 31 MA's), (22, 40126), (29, 40045), (30, 40039), (36, 39949), (37, 39910), (39, 39874), (42, 39817), (45, 39799), (48, 39739), (50, 39694), (55, 39658), (57, 39625), (58, 39592), (60, 39559), (61, 39520),

Gene: Glubnar_45 Start: 40197, Stop: 39499, Start Num: 18

Candidate Starts for Glubnar_45:

(Start: 1 @40443 has 1 MA's), (2, 40377), (10, 40266), (Start: 12 @40248 has 1 MA's), (13, 40242), (Start: 18 @40197 has 31 MA's), (22, 40125), (29, 40044), (30, 40038), (36, 39948), (37, 39909), (39, 39873), (42, 39816), (45, 39798), (48, 39738), (50, 39693), (55, 39657), (57, 39624), (58, 39591), (60, 39558), (61, 39519),

Gene: Halfpint_44 Start: 40024, Stop: 39326, Start Num: 18

Candidate Starts for Halfpint_44:

(7, 40111), (8, 40105), (10, 40093), (Start: 12 @40075 has 1 MA's), (13, 40069), (Start: 18 @40024 has 31 MA's), (22, 39952), (29, 39871), (30, 39865), (36, 39775), (37, 39736), (39, 39700), (42, 39643), (45, 39625), (48, 39565), (50, 39520), (55, 39484), (57, 39451), (58, 39418), (60, 39385), (61, 39346),

Gene: HarveySr_45 Start: 40191, Stop: 39493, Start Num: 18

Candidate Starts for HarveySr_45:

(Start: 1 @40437 has 1 MA's), (2, 40371), (10, 40260), (Start: 12 @40242 has 1 MA's), (13, 40236), (Start: 18 @40191 has 31 MA's), (22, 40119), (29, 40038), (30, 40032), (36, 39942), (37, 39903), (39, 39867), (42, 39810), (45, 39792), (48, 39732), (50, 39687), (55, 39651), (57, 39618), (58, 39585), (60, 39552), (61, 39513),

Gene: Heathcliff_45 Start: 40169, Stop: 39471, Start Num: 18

Candidate Starts for Heathcliff_45:

(Start: 1 @40415 has 1 MA's), (2, 40349), (10, 40238), (Start: 12 @40220 has 1 MA's), (13, 40214), (Start: 18 @40169 has 31 MA's), (22, 40097), (29, 40016), (30, 40010), (36, 39920), (37, 39881), (39, 39845), (42, 39788), (45, 39770), (48, 39710), (50, 39665), (55, 39629), (57, 39596), (58, 39563), (60, 39530), (61, 39491),

Gene: Hosp_037 Start: 36449, Stop: 35679, Start Num: 6

Candidate Starts for Hosp_037:

(Start: 6 @36449 has 4 MA's), (11, 36410), (21, 36302), (23, 36290), (26, 36266), (31, 36188), (43, 36002), (44, 35999), (46, 35978), (49, 35897), (51, 35882),

Gene: Imvubu_38 Start: 37209, Stop: 36445, Start Num: 6

Candidate Starts for Imvubu_38:

(Start: 6 @37209 has 4 MA's), (14, 37146), (19, 37113), (20, 37077), (21, 37062), (26, 37026), (28, 36978), (33, 36927), (48, 36699), (49, 36663), (51, 36648), (52, 36645), (54, 36624),

Gene: Jackstina_42 Start: 40128, Stop: 39430, Start Num: 18

Candidate Starts for Jackstina_42:

(Start: 1 @40374 has 1 MA's), (2, 40308), (10, 40197), (Start: 12 @40179 has 1 MA's), (13, 40173), (Start: 18 @40128 has 31 MA's), (22, 40056), (29, 39975), (30, 39969), (36, 39879), (37, 39840), (39, 39804), (42, 39747), (45, 39729), (48, 39669), (50, 39624), (55, 39588), (57, 39555), (58, 39522), (60, 39489), (61, 39450),

Gene: Jolie1_039 Start: 38233, Stop: 37463, Start Num: 6

Candidate Starts for Jolie1_039:

(Start: 6 @38233 has 4 MA's), (11, 38194), (21, 38086), (23, 38074), (26, 38050), (31, 37972), (40, 37813), (43, 37786), (44, 37783), (46, 37762), (49, 37681), (51, 37666),

Gene: Kamiyu_45 Start: 40177, Stop: 39479, Start Num: 18

Candidate Starts for Kamiyu_45:

(7, 40264), (8, 40258), (10, 40246), (Start: 12 @40228 has 1 MA's), (13, 40222), (Start: 18 @40177 has 31 MA's), (22, 40105), (29, 40024), (30, 40018), (36, 39928), (37, 39889), (39, 39853), (42, 39796), (45, 39778), (48, 39718), (50, 39673), (55, 39637), (57, 39604), (58, 39571), (60, 39538), (61, 39499),

Gene: KayaCho_39 Start: 38235, Stop: 37462, Start Num: 6

Candidate Starts for KayaCho_39:

(Start: 6 @38235 has 4 MA's), (21, 38085), (26, 38049), (31, 37971), (40, 37812), (43, 37785), (44, 37782), (46, 37761), (49, 37680), (51, 37665), (53, 37647),

Gene: Kronus_44 Start: 40787, Stop: 40089, Start Num: 18

Candidate Starts for Kronus_44:

(Start: 1 @41033 has 1 MA's), (2, 40967), (10, 40856), (Start: 12 @40838 has 1 MA's), (13, 40832), (Start: 18 @40787 has 31 MA's), (22, 40715), (29, 40634), (30, 40628), (36, 40538), (37, 40499), (39, 40463), (42, 40406), (45, 40388), (48, 40328), (50, 40283), (55, 40247), (56, 40223), (57, 40214), (58, 40181), (60, 40148), (61, 40109),

Gene: LestyG_45 Start: 40232, Stop: 39510, Start Num: 15

Candidate Starts for LestyG_45:

(Start: 15 @40232 has 12 MA's), (Start: 18 @40208 has 31 MA's), (22, 40136), (29, 40055), (30, 40049), (36, 39959), (37, 39920), (39, 39884), (42, 39827), (45, 39809), (48, 39749), (50, 39704), (55, 39668), (57, 39635), (58, 39602), (60, 39569), (61, 39530),

Gene: Marley1013_45 Start: 40986, Stop: 40288, Start Num: 18

Candidate Starts for Marley1013_45:

(Start: 15 @41010 has 12 MA's), (Start: 18 @40986 has 31 MA's), (22, 40914), (29, 40833), (30, 40827), (36, 40737), (37, 40698), (39, 40662), (42, 40605), (45, 40587), (48, 40527), (50, 40482), (55, 40446), (57, 40413), (58, 40380), (60, 40347), (61, 40308),

Gene: Marlia_45 Start: 40189, Stop: 39491, Start Num: 18

Candidate Starts for Marlia_45:

(Start: 1 @40435 has 1 MA's), (2, 40369), (10, 40258), (Start: 12 @40240 has 1 MA's), (13, 40234), (Start: 18 @40189 has 31 MA's), (22, 40117), (29, 40036), (30, 40030), (36, 39940), (37, 39901), (39, 39865), (42, 39808), (45, 39790), (48, 39730), (50, 39685), (55, 39649), (57, 39616), (58, 39583), (60, 39550), (61, 39511),

Gene: MmasiCarm_45 Start: 40214, Stop: 39492, Start Num: 15

Candidate Starts for MmasiCarm_45:

(Start: 15 @40214 has 12 MA's), (Start: 18 @40190 has 31 MA's), (22, 40118), (29, 40037), (30, 40031), (36, 39941), (37, 39902), (39, 39866), (42, 39809), (45, 39791), (48, 39731), (50, 39686), (55, 39650), (57, 39617), (58, 39584), (60, 39551), (61, 39512),

Gene: Mortcellus_44 Start: 40866, Stop: 40144, Start Num: 15

Candidate Starts for Mortcellus_44:

(Start: 15 @40866 has 12 MA's), (Start: 18 @40842 has 31 MA's), (22, 40770), (29, 40689), (30, 40683), (36, 40593), (37, 40554), (39, 40518), (42, 40461), (45, 40443), (48, 40383), (50, 40338), (55, 40302), (56, 40278), (57, 40269), (58, 40236), (60, 40203), (61, 40164),

Gene: Morty007_45 Start: 40986, Stop: 40288, Start Num: 18

Candidate Starts for Morty007_45:

(Start: 15 @41010 has 12 MA's), (Start: 18 @40986 has 31 MA's), (22, 40914), (29, 40833), (30, 40827), (36, 40737), (37, 40698), (39, 40662), (42, 40605), (45, 40587), (48, 40527), (50, 40482), (55, 40446), (57, 40413), (58, 40380), (60, 40347), (61, 40308),

Gene: Neos5_45 Start: 41052, Stop: 40303, Start Num: 12

Candidate Starts for Neos5_45:

(Start: 1 @41247 has 1 MA's), (2, 41181), (10, 41070), (Start: 12 @41052 has 1 MA's), (13, 41046), (Start: 18 @41001 has 31 MA's), (22, 40929), (29, 40848), (30, 40842), (36, 40752), (37, 40713), (39, 40677), (42, 40620), (45, 40602), (48, 40542), (50, 40497), (55, 40461), (57, 40428), (58, 40395), (60, 40362), (61, 40323),

Gene: Nozo_45 Start: 40966, Stop: 40268, Start Num: 18

Candidate Starts for Nozo_45:

(Start: 1 @41212 has 1 MA's), (2, 41146), (10, 41035), (Start: 12 @41017 has 1 MA's), (13, 41011), (Start: 18 @40966 has 31 MA's), (22, 40894), (29, 40813), (30, 40807), (36, 40717), (37, 40678), (39,

40642), (42, 40585), (45, 40567), (48, 40507), (50, 40462), (55, 40426), (57, 40393), (58, 40360), (60, 40327), (61, 40288),

Gene: Obutu_45 Start: 40214, Stop: 39492, Start Num: 15

Candidate Starts for Obutu_45:

(Start: 15 @40214 has 12 MA's), (Start: 18 @40190 has 31 MA's), (22, 40118), (29, 40037), (30, 40031), (36, 39941), (37, 39902), (39, 39866), (42, 39809), (45, 39791), (48, 39731), (50, 39686), (55, 39650), (57, 39617), (58, 39584), (60, 39551), (61, 39512),

Gene: Olivio_44 Start: 40083, Stop: 39361, Start Num: 15

Candidate Starts for Olivio_44:

(Start: 15 @40083 has 12 MA's), (Start: 18 @40059 has 31 MA's), (22, 39987), (29, 39906), (30, 39900), (36, 39810), (37, 39771), (39, 39735), (42, 39678), (45, 39660), (48, 39600), (50, 39555), (55, 39519), (57, 39486), (58, 39453), (60, 39420), (61, 39381),

Gene: OrangeOswald_45 Start: 40207, Stop: 39509, Start Num: 18

Candidate Starts for OrangeOswald_45:

(Start: 1 @40453 has 1 MA's), (2, 40387), (10, 40276), (Start: 12 @40258 has 1 MA's), (13, 40252), (Start: 18 @40207 has 31 MA's), (22, 40135), (29, 40054), (30, 40048), (36, 39958), (37, 39919), (39, 39883), (42, 39826), (45, 39808), (48, 39748), (50, 39703), (55, 39667), (57, 39634), (58, 39601), (60, 39568), (61, 39529),

Gene: Phaedrus_43 Start: 40373, Stop: 39429, Start Num: 1

Candidate Starts for Phaedrus_43:

(Start: 1 @40373 has 1 MA's), (2, 40307), (10, 40196), (Start: 12 @40178 has 1 MA's), (13, 40172), (Start: 18 @40127 has 31 MA's), (22, 40055), (29, 39974), (30, 39968), (36, 39878), (37, 39839), (39, 39803), (42, 39746), (45, 39728), (48, 39668), (50, 39623), (55, 39587), (57, 39554), (58, 39521), (60, 39488), (61, 39449),

Gene: Phayeta_46 Start: 40096, Stop: 39374, Start Num: 15

Candidate Starts for Phayeta_46:

(Start: 15 @40096 has 12 MA's), (Start: 18 @40072 has 31 MA's), (22, 40000), (29, 39919), (30, 39913), (36, 39823), (37, 39784), (39, 39748), (42, 39691), (45, 39673), (48, 39613), (50, 39568), (55, 39532), (57, 39499), (58, 39466), (60, 39433), (61, 39394),

Gene: Philly_44 Start: 40058, Stop: 39360, Start Num: 18

Candidate Starts for Philly_44:

(Start: 1 @40304 has 1 MA's), (2, 40238), (10, 40127), (Start: 12 @40109 has 1 MA's), (13, 40103), (Start: 18 @40058 has 31 MA's), (22, 39986), (29, 39905), (30, 39899), (36, 39809), (37, 39770), (39, 39734), (42, 39677), (45, 39659), (48, 39599), (50, 39554), (55, 39518), (57, 39485), (58, 39452), (60, 39419), (61, 39380),

Gene: Phlyer_45 Start: 40946, Stop: 40248, Start Num: 18

Candidate Starts for Phlyer_45:

(Start: 1 @41192 has 1 MA's), (2, 41126), (10, 41015), (Start: 12 @40997 has 1 MA's), (13, 40991), (Start: 18 @40946 has 31 MA's), (22, 40874), (29, 40793), (30, 40787), (36, 40697), (37, 40658), (39, 40622), (42, 40565), (45, 40547), (48, 40487), (50, 40442), (55, 40406), (57, 40373), (58, 40340), (60, 40307), (61, 40268),

Gene: Pipefish_47 Start: 41599, Stop: 40901, Start Num: 18

Candidate Starts for Pipefish_47:

(Start: 15 @41623 has 12 MA's), (Start: 18 @41599 has 31 MA's), (22, 41527), (29, 41446), (30, 41440), (36, 41350), (37, 41311), (39, 41275), (42, 41218), (45, 41200), (48, 41140), (50, 41095), (55,

41059), (56, 41035), (57, 41026), (58, 40993), (60, 40960), (61, 40921),

Gene: RagingRooster_45 Start: 40208, Stop: 39510, Start Num: 18

Candidate Starts for RagingRooster_45:

(Start: 1 @40454 has 1 MA's), (2, 40388), (10, 40277), (Start: 12 @40259 has 1 MA's), (13, 40253), (Start: 18 @40208 has 31 MA's), (22, 40136), (29, 40055), (30, 40049), (36, 39959), (37, 39920), (39, 39884), (42, 39827), (45, 39809), (48, 39749), (50, 39704), (55, 39668), (57, 39635), (58, 39602), (60, 39569), (61, 39530),

Gene: Rinkes_46 Start: 41695, Stop: 40898, Start Num: 3

Candidate Starts for Rinkes_46:

(Start: 3 @41695 has 1 MA's), (5, 41677), (Start: 6 @41665 has 4 MA's), (21, 41509), (26, 41473), (33, 41374), (48, 41152), (49, 41116), (52, 41098), (54, 41077), (59, 40978),

Gene: Rita1961_45 Start: 40215, Stop: 39493, Start Num: 15

Candidate Starts for Rita1961_45:

(Start: 15 @40215 has 12 MA's), (Start: 18 @40191 has 31 MA's), (22, 40119), (29, 40038), (30, 40032), (36, 39942), (37, 39903), (39, 39867), (42, 39810), (45, 39792), (48, 39732), (50, 39687), (55, 39651), (57, 39618), (58, 39585), (60, 39552), (61, 39513),

Gene: RomaT_45 Start: 40981, Stop: 40283, Start Num: 18

Candidate Starts for RomaT_45:

(Start: 1 @41227 has 1 MA's), (2, 41161), (10, 41050), (Start: 12 @41032 has 1 MA's), (13, 41026), (Start: 18 @40981 has 31 MA's), (22, 40909), (29, 40828), (30, 40822), (36, 40732), (37, 40693), (39, 40657), (42, 40600), (45, 40582), (48, 40522), (50, 40477), (55, 40441), (57, 40408), (58, 40375), (60, 40342), (61, 40303),

Gene: Shenandoah_45 Start: 40180, Stop: 39482, Start Num: 18

Candidate Starts for Shenandoah_45:

(Start: 1 @40426 has 1 MA's), (2, 40360), (10, 40249), (Start: 12 @40231 has 1 MA's), (13, 40225), (Start: 18 @40180 has 31 MA's), (22, 40108), (29, 40027), (30, 40021), (36, 39931), (37, 39892), (39, 39856), (42, 39799), (45, 39781), (48, 39721), (50, 39676), (55, 39640), (57, 39607), (58, 39574), (60, 39541), (61, 39502),

Gene: SlippinJimmy_45 Start: 40997, Stop: 40275, Start Num: 15

Candidate Starts for SlippinJimmy_45:

(Start: 15 @40997 has 12 MA's), (Start: 18 @40973 has 31 MA's), (22, 40901), (29, 40820), (30, 40814), (36, 40724), (37, 40685), (39, 40649), (42, 40592), (45, 40574), (48, 40514), (50, 40469), (55, 40433), (57, 40400), (58, 40367), (60, 40334), (61, 40295),

Gene: SwainyDoc_45 Start: 40202, Stop: 39504, Start Num: 18

Candidate Starts for SwainyDoc_45:

(Start: 15 @40226 has 12 MA's), (Start: 18 @40202 has 31 MA's), (22, 40130), (29, 40049), (30, 40043), (36, 39953), (37, 39914), (39, 39878), (42, 39821), (45, 39803), (48, 39743), (50, 39698), (55, 39662), (57, 39629), (58, 39596), (60, 39563), (61, 39524),

Gene: SynergyX_45 Start: 40208, Stop: 39510, Start Num: 18

Candidate Starts for SynergyX_45:

(Start: 1 @40454 has 1 MA's), (2, 40388), (10, 40277), (Start: 12 @40259 has 1 MA's), (13, 40253), (Start: 18 @40208 has 31 MA's), (22, 40136), (29, 40055), (30, 40049), (36, 39959), (37, 39920), (39, 39884), (42, 39827), (45, 39809), (48, 39749), (50, 39704), (55, 39668), (57, 39635), (58, 39602), (60, 39569), (61, 39530),

Gene: Thonko_45 Start: 38227, Stop: 37415, Start Num: 6

Candidate Starts for Thonko_45:

(4, 38251), (Start: 6 @38227 has 4 MA's), (9, 38212), (16, 38143), (17, 38137), (24, 38041), (27, 38023), (32, 37951), (35, 37897), (44, 37735), (60, 37480),

Gene: TinyTerror_45 Start: 40193, Stop: 39495, Start Num: 18

Candidate Starts for TinyTerror_45:

(Start: 15 @40217 has 12 MA's), (Start: 18 @40193 has 31 MA's), (22, 40121), (29, 40040), (30, 40034), (36, 39944), (37, 39905), (39, 39869), (42, 39812), (45, 39794), (48, 39734), (50, 39689), (55, 39653), (57, 39620), (58, 39587), (60, 39554), (61, 39515),

Gene: Tydolla_45 Start: 40942, Stop: 40244, Start Num: 18

Candidate Starts for Tydolla_45:

(Start: 1 @41188 has 1 MA's), (2, 41122), (10, 41011), (Start: 12 @40993 has 1 MA's), (13, 40987), (Start: 18 @40942 has 31 MA's), (22, 40870), (29, 40789), (30, 40783), (36, 40693), (37, 40654), (39, 40618), (42, 40561), (45, 40543), (48, 40483), (50, 40438), (55, 40402), (57, 40369), (58, 40336), (60, 40303), (61, 40264),

Gene: Yahalom_45 Start: 40218, Stop: 39520, Start Num: 18

Candidate Starts for Yahalom_45:

(Start: 1 @40464 has 1 MA's), (2, 40398), (10, 40287), (Start: 12 @40269 has 1 MA's), (13, 40263), (Start: 18 @40218 has 31 MA's), (22, 40146), (29, 40065), (30, 40059), (36, 39969), (37, 39930), (39, 39894), (42, 39837), (45, 39819), (48, 39759), (50, 39714), (55, 39678), (57, 39645), (58, 39612), (60, 39579), (61, 39540),

Gene: Yinz_45 Start: 40244, Stop: 39546, Start Num: 18

Candidate Starts for Yinz_45:

(Start: 1 @40490 has 1 MA's), (2, 40424), (10, 40313), (Start: 12 @40295 has 1 MA's), (13, 40289), (Start: 18 @40244 has 31 MA's), (22, 40172), (29, 40091), (30, 40085), (36, 39995), (37, 39956), (39, 39920), (42, 39863), (45, 39845), (48, 39785), (50, 39740), (55, 39704), (56, 39680), (57, 39671), (58, 39638), (60, 39605), (61, 39566),