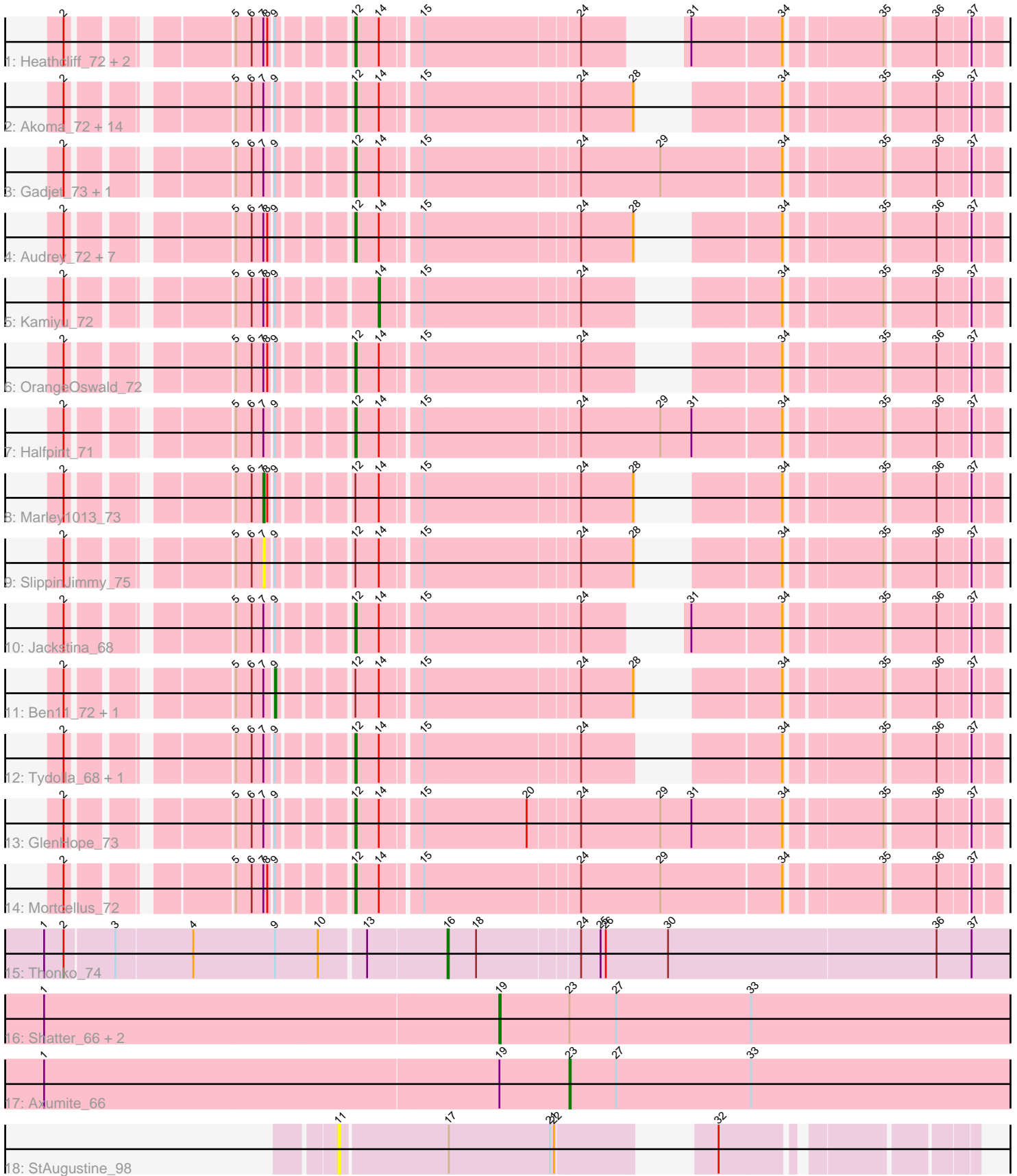


Pham 194110



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 194110 Report

This analysis was run 11/02/24 on database version 579.

Pham number 194110 has 46 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Heathcliff_72, Phaedrus_67, Phlyer_72
- Track 2 : Akoma_72, Corofin_72, Baloo_71, Daisy_71, HarveySr_71, Abinghost_72, RomaT_72, Casbah_72, Kronus_72, Nozo_72, Neos5_72, Athena_74, Yinz_72, SynergyX_72, ChaChing_72
- Track 3 : Gadget_73, Gervas_73
- Track 4 : Audrey_72, Morty007_71, Bernardo_73, Rita1961_73, MmasiCarm_73, Pipefish_75, Yahalom_70, Phayeta_75
- Track 5 : Kamiyu_72
- Track 6 : OrangeOswald_72
- Track 7 : Halfpint_71
- Track 8 : Marley1013_73
- Track 9 : SlippinJimmy_75
- Track 10 : Jackstina_68
- Track 11 : Ben11_72, Devonte_71
- Track 12 : Tydolla_68, Obutu_74
- Track 13 : GlenHope_73
- Track 14 : Mortcellus_72
- Track 15 : Thonko_74
- Track 16 : Shatter_66, Fresco_66, Ligma_66
- Track 17 : Axumite_66
- Track 18 : StAugustine_98

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

The start number called the most often in the published annotations is 12, it was called in 35 of the 43 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_72, Akoma_72, Athena_74, Audrey_72, Baloo_71, Bernardo_73, Casbah_72, ChaChing_72, Corofin_72, Daisy_71, Gadget_73, Gervas_73, GlenHope_73, Halfpint_71, HarveySr_71, Heathcliff_72, Jackstina_68, Kronus_72, MmasiCarm_73, Mortcellus_72, Morty007_71, Neos5_72, Nozo_72, Obutu_74, OrangeOswald_72, Phaedrus_67, Phayeta_75, Phlyer_72, Pipefish_75, Rita1961_73, RomaT_72, SynergyX_72, Tydolla_68, Yahalom_70, Yinz_72,

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

- Ben11_72, Devonte_71, Marley1013_73, SlippinJimmy_75,

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

- Axumite_66, Fresco_66, Kamiyu_72, Ligma_66, Shatter_66, StAugustine_98, Thonko_74,

Summary by start number:

Start 7:

- Found in 40 of 46 (87.0%) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Marley1013_73 (B3), SlippinJimmy_75 (B3),

Start 9:

- Found in 41 of 46 (89.1%) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 4.9% of time when present
- Phage (with cluster) where this start called: Ben11_72 (B3), Devonte_71 (B3),

Start 11:

- Found in 1 of 46 (2.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAugustine_98 (singleton),

Start 12:

- Found in 39 of 46 (84.8%) of genes in pham
- Manual Annotations of this start: 35 of 43
- Called 89.7% of time when present
- Phage (with cluster) where this start called: Abinghost_72 (B3), Akoma_72 (B3), Athena_74 (B3), Audrey_72 (B3), Baloo_71 (B3), Bernardo_73 (B3), Casbah_72 (B3), ChaChing_72 (B3), Corofin_72 (B3), Daisy_71 (B3), Gadget_73 (B3), Gervas_73 (B3), GlenHope_73 (B3), Halfpint_71 (B3), HarveySr_71 (B3), Heathcliff_72 (B3), Jackstina_68 (B3), Kronus_72 (B3), MmasiCarm_73 (B3), Mortcellus_72 (B3), Morty007_71 (B3), Neos5_72 (B3), Nozo_72 (B3), Obutu_74 (B3), OrangeOswald_72 (B3), Phaedrus_67 (B3), Phayeta_75 (B3), Phlyer_72 (B3), Pipefish_75 (B3), Rita1961_73 (B3), RomaT_72 (B3), SynergyX_72 (B3), Tydolla_68 (B3), Yahalom_70 (B3), Yinz_72 (B3),

Start 14:

- Found in 40 of 46 (87.0%) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 2.5% of time when present
- Phage (with cluster) where this start called: Kamiyu_72 (B3),

Start 16:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Thonko_74 (B8),

Start 19:

- Found in 4 of 46 (8.7%) of genes in pham
- Manual Annotations of this start: 3 of 43
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Fresco_66 (DR), Ligma_66 (DR), Shatter_66 (DR),

Start 23:

- Found in 4 of 46 (8.7%) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Axumite_66 (DR),

Summary by clusters:

There are 4 clusters represented in this pham: B8, singleton, DR, B3,

Info for manual annotations of cluster B3:

- Start number 7 was manually annotated 1 time for cluster B3.
- Start number 9 was manually annotated 1 time for cluster B3.
- Start number 12 was manually annotated 35 times for cluster B3.
- Start number 14 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster B8:

- Start number 16 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster DR:

- Start number 19 was manually annotated 3 times for cluster DR.
- Start number 23 was manually annotated 1 time for cluster DR.

Gene Information:

Gene: Abinghost_72 Start: 58483, Stop: 58887, Start Num: 12

Candidate Starts for Abinghost_72:

(2, 58312), (5, 58411), (6, 58423), (Start: 7 @58432 has 1 MA's), (Start: 9 @58438 has 1 MA's), (Start: 12 @58483 has 35 MA's), (Start: 14 @58501 has 1 MA's), (15, 58528), (24, 58642), (28, 58681), (34, 58747), (35, 58813), (36, 58846), (37, 58867),

Gene: Akoma_72 Start: 58523, Stop: 58927, Start Num: 12

Candidate Starts for Akoma_72:

(2, 58352), (5, 58451), (6, 58463), (Start: 7 @58472 has 1 MA's), (Start: 9 @58478 has 1 MA's), (Start: 12 @58523 has 35 MA's), (Start: 14 @58541 has 1 MA's), (15, 58568), (24, 58682), (28, 58721), (34, 58787), (35, 58853), (36, 58886), (37, 58907),

Gene: Athena_74 Start: 59258, Stop: 59662, Start Num: 12

Candidate Starts for Athena_74:

(2, 59087), (5, 59186), (6, 59198), (Start: 7 @59207 has 1 MA's), (Start: 9 @59213 has 1 MA's), (Start: 12 @59258 has 35 MA's), (Start: 14 @59276 has 1 MA's), (15, 59303), (24, 59417), (28, 59456), (34, 59522), (35, 59588), (36, 59621), (37, 59642),

Gene: Audrey_72 Start: 58522, Stop: 58926, Start Num: 12

Candidate Starts for Audrey_72:

(2, 58351), (5, 58450), (6, 58462), (Start: 7 @58471 has 1 MA's), (8, 58474), (Start: 9 @58477 has 1 MA's), (Start: 12 @58522 has 35 MA's), (Start: 14 @58540 has 1 MA's), (15, 58567), (24, 58681), (28, 58720), (34, 58786), (35, 58852), (36, 58885), (37, 58906),

Gene: Axumite_66 Start: 52194, Stop: 52562, Start Num: 23

Candidate Starts for Axumite_66:

(1, 51795), (Start: 19 @52140 has 3 MA's), (Start: 23 @52194 has 1 MA's), (27, 52230), (33, 52332),

Gene: Baloo_71 Start: 58355, Stop: 58759, Start Num: 12

Candidate Starts for Baloo_71:

(2, 58184), (5, 58283), (6, 58295), (Start: 7 @58304 has 1 MA's), (Start: 9 @58310 has 1 MA's), (Start: 12 @58355 has 35 MA's), (Start: 14 @58373 has 1 MA's), (15, 58400), (24, 58514), (28, 58553), (34, 58619), (35, 58685), (36, 58718), (37, 58739),

Gene: Ben11_72 Start: 58695, Stop: 59144, Start Num: 9

Candidate Starts for Ben11_72:

(2, 58569), (5, 58668), (6, 58680), (Start: 7 @58689 has 1 MA's), (Start: 9 @58695 has 1 MA's), (Start: 12 @58740 has 35 MA's), (Start: 14 @58758 has 1 MA's), (15, 58785), (24, 58899), (28, 58938), (34, 59004), (35, 59070), (36, 59103), (37, 59124),

Gene: Bernardo_73 Start: 58721, Stop: 59125, Start Num: 12

Candidate Starts for Bernardo_73:

(2, 58550), (5, 58649), (6, 58661), (Start: 7 @58670 has 1 MA's), (8, 58673), (Start: 9 @58676 has 1 MA's), (Start: 12 @58721 has 35 MA's), (Start: 14 @58739 has 1 MA's), (15, 58766), (24, 58880), (28, 58919), (34, 58985), (35, 59051), (36, 59084), (37, 59105),

Gene: Casbah_72 Start: 58842, Stop: 59246, Start Num: 12

Candidate Starts for Casbah_72:

(2, 58671), (5, 58770), (6, 58782), (Start: 7 @58791 has 1 MA's), (Start: 9 @58797 has 1 MA's), (Start: 12 @58842 has 35 MA's), (Start: 14 @58860 has 1 MA's), (15, 58887), (24, 59001), (28, 59040), (34, 59106), (35, 59172), (36, 59205), (37, 59226),

Gene: ChaChing_72 Start: 58540, Stop: 58944, Start Num: 12

Candidate Starts for ChaChing_72:

(2, 58369), (5, 58468), (6, 58480), (Start: 7 @58489 has 1 MA's), (Start: 9 @58495 has 1 MA's), (Start: 12 @58540 has 35 MA's), (Start: 14 @58558 has 1 MA's), (15, 58585), (24, 58699), (28, 58738), (34, 58804), (35, 58870), (36, 58903), (37, 58924),

Gene: Corofin_72 Start: 58553, Stop: 58957, Start Num: 12

Candidate Starts for Corofin_72:

(2, 58382), (5, 58481), (6, 58493), (Start: 7 @58502 has 1 MA's), (Start: 9 @58508 has 1 MA's), (Start: 12 @58553 has 35 MA's), (Start: 14 @58571 has 1 MA's), (15, 58598), (24, 58712), (28, 58751), (34, 58817), (35, 58883), (36, 58916), (37, 58937),

Gene: Daisy_71 Start: 58086, Stop: 58490, Start Num: 12

Candidate Starts for Daisy_71:

(2, 57915), (5, 58014), (6, 58026), (Start: 7 @58035 has 1 MA's), (Start: 9 @58041 has 1 MA's), (Start: 12 @58086 has 35 MA's), (Start: 14 @58104 has 1 MA's), (15, 58131), (24, 58245), (28, 58284), (34, 58350), (35, 58416), (36, 58449), (37, 58470),

Gene: Devonte_71 Start: 58120, Stop: 58569, Start Num: 9

Candidate Starts for Devonte_71:

(2, 57994), (5, 58093), (6, 58105), (Start: 7 @58114 has 1 MA's), (Start: 9 @58120 has 1 MA's), (Start: 12 @58165 has 35 MA's), (Start: 14 @58183 has 1 MA's), (15, 58210), (24, 58324), (28, 58363), (34, 58429), (35, 58495), (36, 58528), (37, 58549),

Gene: Fresco_66 Start: 52146, Stop: 52568, Start Num: 19

Candidate Starts for Fresco_66:

(1, 51801), (Start: 19 @52146 has 3 MA's), (Start: 23 @52200 has 1 MA's), (27, 52236), (33, 52338),

Gene: Gadget_73 Start: 58853, Stop: 59302, Start Num: 12

Candidate Starts for Gadget_73:

(2, 58682), (5, 58781), (6, 58793), (Start: 7 @58802 has 1 MA's), (Start: 9 @58808 has 1 MA's), (Start: 12 @58853 has 35 MA's), (Start: 14 @58871 has 1 MA's), (15, 58898), (24, 59012), (29, 59072), (34, 59162), (35, 59228), (36, 59261), (37, 59282),

Gene: Gervas_73 Start: 58947, Stop: 59396, Start Num: 12

Candidate Starts for Gervas_73:

(2, 58776), (5, 58875), (6, 58887), (Start: 7 @58896 has 1 MA's), (Start: 9 @58902 has 1 MA's), (Start: 12 @58947 has 35 MA's), (Start: 14 @58965 has 1 MA's), (15, 58992), (24, 59106), (29, 59166), (34, 59256), (35, 59322), (36, 59355), (37, 59376),

Gene: GlenHope_73 Start: 58513, Stop: 58962, Start Num: 12

Candidate Starts for GlenHope_73:

(2, 58342), (5, 58441), (6, 58453), (Start: 7 @58462 has 1 MA's), (Start: 9 @58468 has 1 MA's), (Start: 12 @58513 has 35 MA's), (Start: 14 @58531 has 1 MA's), (15, 58558), (20, 58636), (24, 58672), (29, 58732), (31, 58756), (34, 58822), (35, 58888), (36, 58921), (37, 58942),

Gene: Halfpint_71 Start: 58264, Stop: 58713, Start Num: 12

Candidate Starts for Halfpint_71:

(2, 58093), (5, 58192), (6, 58204), (Start: 7 @58213 has 1 MA's), (Start: 9 @58219 has 1 MA's), (Start: 12 @58264 has 35 MA's), (Start: 14 @58282 has 1 MA's), (15, 58309), (24, 58423), (29, 58483), (31, 58507), (34, 58573), (35, 58639), (36, 58672), (37, 58693),

Gene: HarveySr_71 Start: 58069, Stop: 58473, Start Num: 12

Candidate Starts for HarveySr_71:

(2, 57898), (5, 57997), (6, 58009), (Start: 7 @58018 has 1 MA's), (Start: 9 @58024 has 1 MA's), (Start: 12 @58069 has 35 MA's), (Start: 14 @58087 has 1 MA's), (15, 58114), (24, 58228), (28, 58267), (34, 58333), (35, 58399), (36, 58432), (37, 58453),

Gene: Heathcliff_72 Start: 58480, Stop: 58884, Start Num: 12

Candidate Starts for Heathcliff_72:

(2, 58309), (5, 58408), (6, 58420), (Start: 7 @58429 has 1 MA's), (8, 58432), (Start: 9 @58435 has 1 MA's), (Start: 12 @58480 has 35 MA's), (Start: 14 @58498 has 1 MA's), (15, 58525), (24, 58639), (31, 58678), (34, 58744), (35, 58810), (36, 58843), (37, 58864),

Gene: Jackstina_68 Start: 58405, Stop: 58809, Start Num: 12

Candidate Starts for Jackstina_68:

(2, 58234), (5, 58333), (6, 58345), (Start: 7 @58354 has 1 MA's), (Start: 9 @58360 has 1 MA's), (Start: 12 @58405 has 35 MA's), (Start: 14 @58423 has 1 MA's), (15, 58450), (24, 58564), (31, 58603), (34, 58669), (35, 58735), (36, 58768), (37, 58789),

Gene: Kamiyu_72 Start: 58500, Stop: 58886, Start Num: 14

Candidate Starts for Kamiyu_72:

(2, 58311), (5, 58410), (6, 58422), (Start: 7 @58431 has 1 MA's), (8, 58434), (Start: 9 @58437 has 1 MA's), (Start: 14 @58500 has 1 MA's), (15, 58527), (24, 58641), (34, 58746), (35, 58812), (36, 58845), (37, 58866),

Gene: Kronus_72 Start: 59578, Stop: 59982, Start Num: 12

Candidate Starts for Kronus_72:

(2, 59407), (5, 59506), (6, 59518), (Start: 7 @59527 has 1 MA's), (Start: 9 @59533 has 1 MA's), (Start: 12 @59578 has 35 MA's), (Start: 14 @59596 has 1 MA's), (15, 59623), (24, 59737), (28, 59776), (34, 59842), (35, 59908), (36, 59941), (37, 59962),

Gene: Ligma_66 Start: 52140, Stop: 52562, Start Num: 19

Candidate Starts for Ligma_66:

(1, 51795), (Start: 19 @52140 has 3 MA's), (Start: 23 @52194 has 1 MA's), (27, 52230), (33, 52332),

Gene: Marley1013_73 Start: 59379, Stop: 59834, Start Num: 7

Candidate Starts for Marley1013_73:

(2, 59259), (5, 59358), (6, 59370), (Start: 7 @59379 has 1 MA's), (8, 59382), (Start: 9 @59385 has 1 MA's), (Start: 12 @59430 has 35 MA's), (Start: 14 @59448 has 1 MA's), (15, 59475), (24, 59589), (28, 59628), (34, 59694), (35, 59760), (36, 59793), (37, 59814),

Gene: MmasiCarm_73 Start: 58933, Stop: 59337, Start Num: 12

Candidate Starts for MmasiCarm_73:

(2, 58762), (5, 58861), (6, 58873), (Start: 7 @58882 has 1 MA's), (8, 58885), (Start: 9 @58888 has 1 MA's), (Start: 12 @58933 has 35 MA's), (Start: 14 @58951 has 1 MA's), (15, 58978), (24, 59092), (28, 59131), (34, 59197), (35, 59263), (36, 59296), (37, 59317),

Gene: Mortcellus_72 Start: 59595, Stop: 60044, Start Num: 12

Candidate Starts for Mortcellus_72:

(2, 59424), (5, 59523), (6, 59535), (Start: 7 @59544 has 1 MA's), (8, 59547), (Start: 9 @59550 has 1 MA's), (Start: 12 @59595 has 35 MA's), (Start: 14 @59613 has 1 MA's), (15, 59640), (24, 59754), (29, 59814), (34, 59904), (35, 59970), (36, 60003), (37, 60024),

Gene: Morty007_71 Start: 59430, Stop: 59834, Start Num: 12

Candidate Starts for Morty007_71:

(2, 59259), (5, 59358), (6, 59370), (Start: 7 @59379 has 1 MA's), (8, 59382), (Start: 9 @59385 has 1 MA's), (Start: 12 @59430 has 35 MA's), (Start: 14 @59448 has 1 MA's), (15, 59475), (24, 59589), (28, 59628), (34, 59694), (35, 59760), (36, 59793), (37, 59814),

Gene: Neos5_72 Start: 58892, Stop: 59296, Start Num: 12

Candidate Starts for Neos5_72:

(2, 58721), (5, 58820), (6, 58832), (Start: 7 @58841 has 1 MA's), (Start: 9 @58847 has 1 MA's), (Start: 12 @58892 has 35 MA's), (Start: 14 @58910 has 1 MA's), (15, 58937), (24, 59051), (28, 59090), (34, 59156), (35, 59222), (36, 59255), (37, 59276),

Gene: Nozo_72 Start: 59289, Stop: 59693, Start Num: 12

Candidate Starts for Nozo_72:

(2, 59118), (5, 59217), (6, 59229), (Start: 7 @59238 has 1 MA's), (Start: 9 @59244 has 1 MA's), (Start: 12 @59289 has 35 MA's), (Start: 14 @59307 has 1 MA's), (15, 59334), (24, 59448), (28, 59487), (34, 59553), (35, 59619), (36, 59652), (37, 59673),

Gene: Obutu_74 Start: 59112, Stop: 59516, Start Num: 12

Candidate Starts for Obutu_74:

(2, 58941), (5, 59040), (6, 59052), (Start: 7 @59061 has 1 MA's), (Start: 9 @59067 has 1 MA's), (Start: 12 @59112 has 35 MA's), (Start: 14 @59130 has 1 MA's), (15, 59157), (24, 59271), (34, 59376), (35, 59442), (36, 59475), (37, 59496),

Gene: OrangeOswald_72 Start: 58530, Stop: 58934, Start Num: 12

Candidate Starts for OrangeOswald_72:

(2, 58359), (5, 58458), (6, 58470), (Start: 7 @58479 has 1 MA's), (8, 58482), (Start: 9 @58485 has 1 MA's), (Start: 12 @58530 has 35 MA's), (Start: 14 @58548 has 1 MA's), (15, 58575), (24, 58689), (34, 58794), (35, 58860), (36, 58893), (37, 58914),

Gene: Phaedrus_67 Start: 57955, Stop: 58359, Start Num: 12

Candidate Starts for Phaedrus_67:

(2, 57784), (5, 57883), (6, 57895), (Start: 7 @57904 has 1 MA's), (8, 57907), (Start: 9 @57910 has 1 MA's), (Start: 12 @57955 has 35 MA's), (Start: 14 @57973 has 1 MA's), (15, 58000), (24, 58114), (31, 58153), (34, 58219), (35, 58285), (36, 58318), (37, 58339),

Gene: Phayeta_75 Start: 59016, Stop: 59420, Start Num: 12

Candidate Starts for Phayeta_75:

(2, 58845), (5, 58944), (6, 58956), (Start: 7 @58965 has 1 MA's), (8, 58968), (Start: 9 @58971 has 1 MA's), (Start: 12 @59016 has 35 MA's), (Start: 14 @59034 has 1 MA's), (15, 59061), (24, 59175), (28, 59214), (34, 59280), (35, 59346), (36, 59379), (37, 59400),

Gene: Phlyer_72 Start: 59238, Stop: 59642, Start Num: 12

Candidate Starts for Phlyer_72:

(2, 59067), (5, 59166), (6, 59178), (Start: 7 @59187 has 1 MA's), (8, 59190), (Start: 9 @59193 has 1 MA's), (Start: 12 @59238 has 35 MA's), (Start: 14 @59256 has 1 MA's), (15, 59283), (24, 59397), (31, 59436), (34, 59502), (35, 59568), (36, 59601), (37, 59622),

Gene: Pipefish_75 Start: 59649, Stop: 60053, Start Num: 12

Candidate Starts for Pipefish_75:

(2, 59478), (5, 59577), (6, 59589), (Start: 7 @59598 has 1 MA's), (8, 59601), (Start: 9 @59604 has 1 MA's), (Start: 12 @59649 has 35 MA's), (Start: 14 @59667 has 1 MA's), (15, 59694), (24, 59808), (28, 59847), (34, 59913), (35, 59979), (36, 60012), (37, 60033),

Gene: Rita1961_73 Start: 58888, Stop: 59292, Start Num: 12

Candidate Starts for Rita1961_73:

(2, 58717), (5, 58816), (6, 58828), (Start: 7 @58837 has 1 MA's), (8, 58840), (Start: 9 @58843 has 1 MA's), (Start: 12 @58888 has 35 MA's), (Start: 14 @58906 has 1 MA's), (15, 58933), (24, 59047), (28, 59086), (34, 59152), (35, 59218), (36, 59251), (37, 59272),

Gene: RomaT_72 Start: 59089, Stop: 59493, Start Num: 12

Candidate Starts for RomaT_72:

(2, 58918), (5, 59017), (6, 59029), (Start: 7 @59038 has 1 MA's), (Start: 9 @59044 has 1 MA's), (Start: 12 @59089 has 35 MA's), (Start: 14 @59107 has 1 MA's), (15, 59134), (24, 59248), (28, 59287), (34, 59353), (35, 59419), (36, 59452), (37, 59473),

Gene: Shatter_66 Start: 52140, Stop: 52562, Start Num: 19

Candidate Starts for Shatter_66:

(1, 51795), (Start: 19 @52140 has 3 MA's), (Start: 23 @52194 has 1 MA's), (27, 52230), (33, 52332),

Gene: SlippinJimmy_75 Start: 59862, Stop: 60317, Start Num: 7

Candidate Starts for SlippinJimmy_75:

(2, 59742), (5, 59841), (6, 59853), (Start: 7 @59862 has 1 MA's), (Start: 9 @59868 has 1 MA's), (Start: 12 @59913 has 35 MA's), (Start: 14 @59931 has 1 MA's), (15, 59958), (24, 60072), (28, 60111), (34, 60177), (35, 60243), (36, 60276), (37, 60297),

Gene: StAugustine_98 Start: 69941, Stop: 70345, Start Num: 11

Candidate Starts for StAugustine_98:

(11, 69941), (17, 70022), (21, 70100), (22, 70103), (32, 70178),

Gene: SynergyX_72 Start: 58527, Stop: 58931, Start Num: 12

Candidate Starts for SynergyX_72:

(2, 58356), (5, 58455), (6, 58467), (Start: 7 @58476 has 1 MA's), (Start: 9 @58482 has 1 MA's), (Start: 12 @58527 has 35 MA's), (Start: 14 @58545 has 1 MA's), (15, 58572), (24, 58686), (28, 58725), (34, 58791), (35, 58857), (36, 58890), (37, 58911),

Gene: Thonko_74 Start: 58270, Stop: 58695, Start Num: 16

Candidate Starts for Thonko_74:

(1, 57976), (2, 57991), (3, 58027), (4, 58084), (Start: 9 @58147 has 1 MA's), (10, 58180), (13, 58213), (Start: 16 @58270 has 1 MA's), (18, 58291), (24, 58366), (25, 58381), (26, 58384), (30, 58432), (36, 58633), (37, 58660),

Gene: Tydolla_68 Start: 58518, Stop: 58922, Start Num: 12

Candidate Starts for Tydolla_68:

(2, 58347), (5, 58446), (6, 58458), (Start: 7 @58467 has 1 MA's), (Start: 9 @58473 has 1 MA's), (Start: 12 @58518 has 35 MA's), (Start: 14 @58536 has 1 MA's), (15, 58563), (24, 58677), (34, 58782), (35, 58848), (36, 58881), (37, 58902),

Gene: Yahalom_70 Start: 58332, Stop: 58736, Start Num: 12

Candidate Starts for Yahalom_70:

(2, 58161), (5, 58260), (6, 58272), (Start: 7 @58281 has 1 MA's), (8, 58284), (Start: 9 @58287 has 1 MA's), (Start: 12 @58332 has 35 MA's), (Start: 14 @58350 has 1 MA's), (15, 58377), (24, 58491), (28, 58530), (34, 58596), (35, 58662), (36, 58695), (37, 58716),

Gene: Yinz_72 Start: 58397, Stop: 58801, Start Num: 12

Candidate Starts for Yinz_72:

(2, 58226), (5, 58325), (6, 58337), (Start: 7 @58346 has 1 MA's), (Start: 9 @58352 has 1 MA's), (Start: 12 @58397 has 35 MA's), (Start: 14 @58415 has 1 MA's), (15, 58442), (24, 58556), (28, 58595), (34, 58661), (35, 58727), (36, 58760), (37, 58781),