Pham 85293


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 85293 Report

This analysis was run 04/05/24 on database version 557.
Pham number 85293 has 96 members, 5 are drafts.
Phages represented in each track:

- Track 1 : Cjw1_133, Elph10_133, Inca_134, 244_136, Cactus_143, Emmina_136
- Track 2 : Easy 2 Say_137, DōctorDiddles_133, Sāssay_130, StōlenFromERC_138,

TeardropMSU_136, MISSy_137, FireRed_138, ABCat_136, HufflyPuff_137,
OrionPax_131,-Willez_133,-Stank_138, Harella_141, Tomaszewski_129, Phrux_131, ShereKhan_135, AmericanBeauty_143, Daikon_138, Dumbo 136, Mosby_132, Myrale_137, BadStone_136, Contāgion_131, YāssJohnny_1 $1 \mathbf{3} 1$, Kimchi_141, Adnama_140, JeTaime_133, Filch_137, MadamMonkfish 135, Argent26_140, Highbury_131, GoldenSpark_140, xkcd_139, Dusk_136, Balomoji_137, Cookies_137, Pat3_135, Murica_139, Tuco_141, Saints25_131, Holt_141, RiverMonster_134, Mindy_139, Xandras_134, ChotaBhai_139, Moldemort_138, Quallification_136, MPhalcon_136, Hoonter_138, Gemini_141, Simpliphy_134, Bruin_132, Lilizi_136, Traaww1_132, Goldilocks_141

- Track 3 : IHOP-139, Buck 13̄̄, Sotrice96_140, GooberAzure_138, Eureka_135, Marshmallow_136, Phaja_139, Wiggin_138, Nala_137, Thresher_137, Youngblood_139, Rimmer_132, Bench_137, Czyszczon1_135, ChosenOne_136, TBrady12_1 $\overline{4} 0$, BaboJay_134, Miniwave_129, Lilpickle_1 $\overline{3} 5$, Tarkin_134,
Pharsalus_133, Ukulele_130, Maxxinista_137, Porky_137, Manda_136, Stark_133, Goku_134, Pumpkin_135, Elite2014_135
- Track 4 : Command613-138
- Track 5 : Misfit_135, Mưrphy_134, Rakim_137, Terminus_138
- Track 6 : Phaux_137


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

The start number called the most often in the published annotations is 5 , it was called in 79 of the 91 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABCat_136, Adnama_140, AmericanBeauty_143, Argent26_140, BaboJay_134, BadStone_136, Balomoji_137, Bench_137, Bruin_132, Buck_136, ChosenŌne_136, ChotaBhai 139, Contagiōn_131, Cookies 137, Cžyszczon1-135, Daikon_138, DoctorDiddles 133, Dumbo_136, Dusk 1 $\overline{3} 6$, Easy2Say_13 $\overline{7}$, Elite2014- $1 \overline{3} 5$, Eureka_135, Filch_137, Firēed_138, Gemini_141, Goku_134, GoldenS̄park_140, Goldilocks_141, GooberAzure_1 $\overline{8} 8$, Harella_1 $\overline{4} 1$, Highbury_131, Holt_141,

Hoonter_138, HufflyPuff_137, IHOP_139, JeTaime_133, Kimchi_141, Lilizi_136, Lilpickle_135, MISSy_137, MPhalcon_136, MadamMonkfish_135, Manda_136, Marshmallow_136, Maxxinista_137, Mindy_139, Miniwave_129, Moldemort_138, Mosby_132, Murica_139, Myrale_137, Nala_137, OrionPax_131, Pat3_135, Phaja_139, Pharsalūs_133, Phrux_131, Porky_137, Pumpkin_135, Quallification_136, Rimmer_132, RiverMonster_134, Saints25-131, Sassay_130, ShereKhan_135, Simpliphy_134, Sotrice96_140, Stank_138, Stark_133, StolenFromERC_138, TBrady12_140, Tarkin_134, TeardropMSU_136, Thresher_137, Tōmaszewski_12 $\overline{9}$, Traaww1_132, Tuco_141, UkuTele_130, Wiggin_138, Willez_133, Xandras_134, Yass̄Johnny_131, Youngblood_139, xkcd_139,

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

- 244_136, Cactus_143, Cjw1_133, Command613_138, Elph10_133, Emmina_136, Inca_134, Misfit_135, Murphy_134, Phaux_137, Rākim_137, Terminus_138,

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

## Summary by start number:

Start 4:

- Found in 96 of 96 ( $100.0 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 1.0\% of time when present
- Phage (with cluster) where this start called: Phaux_137 (E),

Start 5:

- Found in 96 of 96 ( $100.0 \%$ ) of genes in pham
- Manual Annotations of this start: 79 of 91
- Called $87.5 \%$ of time when present
- Phage (with cluster) where this start called: ABCat_136(E), Adnama_140 (E),

AmericanBeauty_143 (E), Argent26_140 (E), BaboJay_134 (E), BadSTone_136 (E), Balomoji_137(E), Bench_137(E), Bruin_132 (E), Buck_136(E), ChosenOne_136 (E), ChotāBhai_139 (E), Contagion_131 (E), Cookies_137 (E), Czyszczon1_135 (E), Daikon_138(E), DoctorDiddles $13 \overline{3}$ (E), Dumbo_136 (E), Dusk 136 (E),
Easy2Say_137 (E), Elite2014_135 (E), Eureka_135 (E), Filch_137 (E), FireRed_138 (E), Gemini_141 (E), Goku_134 (E), GoldenSpark_140 (E), Gōldilocks 141 (E), GooberAzure_138 (E), Harēlla_141 (E), Highbury_131 (E), Holt_141 (E), Hoonter_138 (E), HufflyPuff_137 (E), IHOP_139 (E), JeTaime_133 (E), Kimchi_141 (E), Lilizi_136(E), Lilpickle_135 (E), MISSy_137 (E), MPhalcon 136 (E),

MadamMonkfish 135 (E), Manda_136 (E), Marshmallow_136 (可), Maxxinista_137
(E), Mindy_139 (E), Miniwave_129 (E), Moldemort_138 ( $\overline{\mathrm{E}})$, Mosby_132 (E), Murica_139 (E), Myrale_137 (E), Nala_137 (E), OrionPax_131 (E), Pat3_135 (E),
Phaja_139 (E), Pharsalus_133 (E), Phrux_131 (E), Porky_137 (E), Pump̄kin_135 (E), Quallification_136 (E), Rimmer_132 (E), RiverMonster_134 (E), Saints25_131 (E), Sassay_130 (E), ShereKhan_135 (E), Simpliphy_134 (E), Sotrice96_140 (E), Stank_138 (E), Stark_133 (E), StolenFromERC_138 (E), TBrady12_140 (E), Tarkin_134 (E), TeardropMSU_136 (E), Thresher_137 (E), Tomaszewski_129 (E), Traaww1_132 (E), Tuco_141 (E), Ukulele_130 (E), Wiggin_138 (E), Willez_133 (E), Xandras_134 (E), YassJohnny_131 (E), Youngblood_139 (E), xkcd_139 (E),

Start 6:

- Found in 96 of 96 ( $100.0 \%$ ) of genes in pham
- Manual Annotations of this start: 10 of 91
- Called $10.4 \%$ of time when present
- Phage (with cluster) where this start called: 244_136 (E), Cactus_143 (E), Cjw1_133 (E), Elph10_133 (E), Emmina_136 (E), Inca_134 (E), Misfit_135 (E), Murphy_134 (E), Rakim_137 (E), Terminus_13 $\overline{8}$ (E),

Start 7:

- Found in 96 of 96 ( $100.0 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called $1.0 \%$ of time when present
- Phage (with cluster) where this start called: Command613_138 (E),


## Summary by clusters:

There is one cluster represented in this pham: $E$
Info for manual annotations of cluster E:

- Start number 4 was manually annotated 1 time for cluster E.
- Start number 5 was manually annotated 79 times for cluster E.
- Start number 6 was manually annotated 10 times for cluster E.
-Start number 7 was manually annotated 1 time for cluster $E$.


## Gene Information:

Gene: 244_136 Start: 71352, Stop: 71242, Start Num: 6
Candidate Starts for 244_136:
(2, 71436), (3, 71433), (Start: 4 @71415 has 1 MA's), (Start: 5 @71367 has 79 MA's), (Start: 6
@71352 has 10 MA's), (Start: 7 @71349 has 1 MA's),
Gene: ABCat_136 Start: 72994, Stop: 72869, Start Num: 5
Candidate Starts for ABCat_136:
(1, 73153), (2, 73063), (3, 73060), (Start: $4 @ 73042$ has 1 MA's), (Start: 5 @72994 has 79 MA's), (Start: 6 @72979 has 10 MA's), (Start: 7 @72976 has 1 MA's),

Gene: Adnama_140 Start: 72031, Stop: 71906, Start Num: 5
Candidate Starts for Adnama_140:
(1, 72190), (2, 72100), (3, 72097), (Start: 4 @72079 has 1 MA's), (Start: 5 @72031 has 79 MA's), (Start: 6 @72016 has 10 MA's), (Start: 7 @72013 has 1 MA's),

Gene: AmericanBeauty_143 Start: 72073, Stop: 71948, Start Num: 5
Candidate Starts for AmericanBeauty_143:
(1, 72232), (2, 72142), (3, 72139), (Start: $4 @ 72121$ has 1 MA's), (Start: 5 @72073 has 79 MA's), (Start: 6 @72058 has 10 MA's), (Start: 7 @72055 has 1 MA's),

Gene: Argent26_140 Start: 71955, Stop: 71830, Start Num: 5 Candidate Starts for Argent26_140:
(1, 72114), (2, 72024), (3, 72021), (Start: $4 @ 72003$ has 1 MA's), (Start: 5 @71955 has 79 MA's), (Start: 6 @71940 has 10 MA's), (Start: 7 @71937 has 1 MA's),

Gene: BaboJay_134 Start: 72534, Stop: 72409, Start Num: 5

Candidate Starts for BaboJay_134:
(2, 72603), (3, 72600), (Start: 4 @72582 has 1 MA's), (Start: 5 @72534 has 79 MA's), (Start: 6 @72519 has 10 MA's), (Start: 7 @72516 has 1 MA's),

Gene: BadStone_136 Start: 72542, Stop: 72417, Start Num: 5 Candidate Starts for BadStone_136:
(1, 72701), (2, 72611), (3, 72608), (Start: 4 @72590 has 1 MA's), (Start: 5 @ 72542 has 79 MA's), (Start: 6 @ 72527 has 10 MA's), (Start: 7 @ 72524 has 1 MA's),

Gene: Balomoji_137 Start: 72542, Stop: 72417, Start Num: 5
Candidate Starts for Balomoji_137:
(1, 72701), (2, 72611), (3, 72608), (Start: 4 @72590 has 1 MA's), (Start: 5 @72542 has 79 MA's), (Start: 6 @72527 has 10 MA's), (Start: 7 @72524 has 1 MA's),

Gene: Bench_137 Start: 72260, Stop: 72135, Start Num: 5
Candidate Starts for Bench_137:
(2, 72329), (3, 72326), (Start: 4 @72308 has 1 MA's), (Start: 5 @ 72260 has 79 MA's), (Start: 6 @72245 has 10 MA's), (Start: 7 @72242 has 1 MA's),

Gene: Bruin_132 Start: 70644, Stop: 70519, Start Num: 5
Candidate Starts for Bruin_132:
(1, 70803), (2, 70713), (3, 70710), (Start: 4 @70692 has 1 MA's), (Start: 5 @70644 has 79 MA's), (Start: 6 @ 70629 has 10 MA's), (Start: 7 @70626 has 1 MA's),

Gene: Buck_136 Start: 72913, Stop: 72788, Start Num: 5
Candidate Starts for Buck_136:
(2, 72982), (3, 72979), (Start: 4 @72961 has 1 MA's), (Start: 5 @72913 has 79 MA's), (Start: 6 @72898 has 10 MA's), (Start: 7 @72895 has 1 MA's),

Gene: Cactus_143 Start: 72042, Stop: 71932, Start Num: 6
Candidate Starts for Cactus_143:
(2, 72126), (3, 72123), (Start: 4 @ 72105 has 1 MA's), (Start: 5 @ 72057 has 79 MA's), (Start: 6 @72042 has 10 MA's), (Start: 7 @72039 has 1 MA's),

Gene: ChosenOne_136 Start: 71437, Stop: 71312, Start Num: 5
Candidate Starts for ChosenOne_136:
(2, 71506), (3, 71503), (Start: 4 @71485 has 1 MA's), (Start: 5 @71437 has 79 MA's), (Start: 6 @71422 has 10 MA's), (Start: 7 @71419 has 1 MA's),

Gene: ChotaBhai_139 Start: 72222, Stop: 72097, Start Num: 5
Candidate Starts for ChotaBhai_139:
(1, 72381), (2, 72291), (3, 72288), (Start: 4 @72270 has 1 MA's), (Start: 5 @72222 has 79 MA's), (Start: 6 @ 72207 has 10 MA's), (Start: 7 @72204 has 1 MA's),

Gene: Cjw1_133 Start: 72623, Stop: 72513, Start Num: 6
Candidate Starts for Cjw1_133:
(2, 72707), (3, 72704), (Start: 4 @72686 has 1 MA's), (Start: 5 @72638 has 79 MA's), (Start: 6 @72623 has 10 MA's), (Start: 7 @72620 has 1 MA's),

Gene: Command613_138 Start: 72515, Stop: 72408, Start Num: 7
Candidate Starts for Command613_138:
(1, 72692), (2, 72602), (3, 72599), (Start: 4 @72581 has 1 MA's), (Start: 5 @72533 has 79 MA's), (Start: 6 @72518 has 10 MA's), (Start: 7 @72515 has 1 MA's),

Gene: Contagion_131 Start: 71006, Stop: 70881, Start Num: 5
Candidate Starts for Contagion_131:
(1, 71165), (2, 71075), (3, 71072), (Start: 4 @71054 has 1 MA's), (Start: 5 @ 71006 has 79 MA's), (Start: 6 @ 70991 has 10 MA's), (Start: 7 @70988 has 1 MA's),

Gene: Cookies_137 Start: 72774, Stop: 72649, Start Num: 5
Candidate Starts for Cookies_137:
(1, 72933), (2, 72843), (3, 72840), (Start: 4 @72822 has 1 MA's), (Start: 5 @72774 has 79 MA's), (Start: 6 @72759 has 10 MA's), (Start: 7 @72756 has 1 MA's),

Gene: Czyszczon1_135 Start: 71451, Stop: 71326, Start Num: 5
Candidate Starts for Czyszczon1_135:
(2, 71520), (3, 71517), (Start: 4 @ 71499 has 1 MA's), (Start: 5 @ 71451 has 79 MA's), (Start: 6
@ 71436 has 10 MA's), (Start: 7 @71433 has 1 MA's),
Gene: Daikon_138 Start: 71838, Stop: 71713, Start Num: 5
Candidate Starts for Daikon_138:
(1, 71997), (2, 71907), (3, 71904), (Start: 4 @ 71886 has 1 MA's), (Start: 5 @ 71838 has 79 MA's), (Start: 6 @ 71823 has 10 MA's), (Start: 7 @71820 has 1 MA's),

Gene: DoctorDiddles_133 Start: 70959, Stop: 70834, Start Num: 5
Candidate Starts for DoctorDiddles_133:
(1, 71118), (2, 71028), (3, 71025), (Start: 4 @71007 has 1 MA's), (Start: 5 @ 70959 has 79 MA's), (Start: 6 @ 70944 has 10 MA's), (Start: 7 @70941 has 1 MA's),

Gene: Dumbo_136 Start: 71647, Stop: 71522, Start Num: 5 Candidate Starts for Dumbo_136:
(1, 71806), (2, 71716), (3, 71713), (Start: 4 @71695 has 1 MA's), (Start: 5 @ 71647 has 79 MA's), (Start: 6 @ 71632 has 10 MA's), (Start: 7 @71629 has 1 MA's),

Gene: Dusk_136 Start: 72202, Stop: 72077, Start Num: 5
Candidate Starts for Dusk_136:
(1, 72361), (2, 72271), (3, 72268), (Start: 4 @72250 has 1 MA's), (Start: 5 @72202 has 79 MA's), (Start: 6 @ 72187 has 10 MA's), (Start: 7 @72184 has 1 MA's),

Gene: Easy2Say_137 Start: 72421, Stop: 72296, Start Num: 5 Candidate Starts for Easy2Say_137:
(1, 72580), (2, 72490), (3, 72487), (Start: 4 @72469 has 1 MA's), (Start: 5 @72421 has 79 MA's), (Start: 6 @72406 has 10 MA's), (Start: 7 @72403 has 1 MA's),

Gene: Elite2014_135 Start: 71436, Stop: 71311, Start Num: 5 Candidate Starts for Elite2014_135:
(2, 71505), (3, 71502), (Start: 4 @ 1484 has 1 MA's), (Start: 5 @ 71436 has 79 MA's), (Start: 6 @71421 has 10 MA's), (Start: 7 @71418 has 1 MA's),

Gene: Elph10_133 Start: 70738, Stop: 70628, Start Num: 6
Candidate Starts for Elph10_133:
(2, 70822), (3, 70819), (Start: 4 @70801 has 1 MA's), (Start: 5 @ 70753 has 79 MA's), (Start: 6 @70738 has 10 MA's), (Start: 7 @70735 has 1 MA's),

Gene: Emmina_136 Start: 71358, Stop: 71248, Start Num: 6 Candidate Starts for Emmina_136:
(2, 71442), (3, 71439), (Start: 4 @71421 has 1 MA's), (Start: 5 @71373 has 79 MA's), (Start: 6 @71358 has 10 MA's), (Start: 7 @71355 has 1 MA's),

Gene: Eureka_135 Start: 72301, Stop: 72176, Start Num: 5 Candidate Starts for Eureka_135:
(2, 72370), (3, 72367), (Start: 4 @72349 has 1 MA's), (Start: 5 @ 72301 has 79 MA's), (Start: 6 @72286 has 10 MA's), (Start: 7 @72283 has 1 MA's),

Gene: Filch_137 Start: 71576, Stop: 71451, Start Num: 5
Candidate Starts for Filch_137:
(1, 71735), (2, 71645), (3, 71642), (Start: 4 @71624 has 1 MA's), (Start: 5 @71576 has 79 MA's), (Start: 6 @71561 has 10 MA's), (Start: 7 @71558 has 1 MA's),

Gene: FireRed_138 Start: 72314, Stop: 72189, Start Num: 5
Candidate Starts for FireRed_138:
(1, 72473), (2, 72383), (3, 72380), (Start: 4 @72362 has 1 MA's), (Start: 5 @72314 has 79 MA's), (Start: 6 @ 72299 has 10 MA's), (Start: $7 @ 72296$ has 1 MA's),

Gene: Gemini_141 Start: 72472, Stop: 72347, Start Num: 5
Candidate Starts for Gemini_141:
(1, 72631), (2, 72541), (3, 72538), (Start: 4 @ 72520 has 1 MA's), (Start: 5 @ 72472 has 79 MA's), (Start: 6 @72457 has 10 MA's), (Start: 7 @72454 has 1 MA's),

Gene: Goku_134 Start: 72610, Stop: 72485, Start Num: 5
Candidate Starts for Goku_134:
(2, 72679), (3, 72676), (Start: 4 @72658 has 1 MA's), (Start: 5 @72610 has 79 MA's), (Start: 6 @72595 has 10 MA's), (Start: 7 @72592 has 1 MA's),

Gene: GoldenSpark_140 Start: 71955, Stop: 71830, Start Num: 5 Candidate Starts for GoldenSpark_140:
(1, 72114), (2, 72024), (3, 72021), (Start: 4 @72003 has 1 MA's), (Start: 5 @71955 has 79 MA's), (Start: 6 @ 71940 has 10 MA's), (Start: 7 @71937 has 1 MA's),

Gene: Goldilocks_141 Start: 72551, Stop: 72426, Start Num: 5 Candidate Starts for Goldilocks_141:
(1, 72710), (2, 72620), (3, 72617), (Start: 4 @72599 has 1 MA's), (Start: 5 @ 72551 has 79 MA's), (Start: 6 @72536 has 10 MA's), (Start: 7 @72533 has 1 MA's),

Gene: GooberAzure_138 Start: 71955, Stop: 71830, Start Num: 5
Candidate Starts for GooberAzure_138:
(2, 72024), (3, 72021), (Start: 4 @72003 has 1 MA's), (Start: 5 @71955 has 79 MA's), (Start: 6 @71940 has 10 MA's), (Start: 7 @71937 has 1 MA's),

Gene: Harella_141 Start: 73159, Stop: 73034, Start Num: 5
Candidate Starts for Harella_141:
(1, 73318), (2, 73228), (3, 73225), (Start: 4 @ 73207 has 1 MA's), (Start: 5 @73159 has 79 MA's), (Start: 6 @ 73144 has 10 MA's), (Start: 7 @73141 has 1 MA's),

Gene: Highbury_131 Start: 69849, Stop: 69724, Start Num: 5
Candidate Starts for Highbury_131:
(1, 70008), (2, 69918), (3, 69915), (Start: 4 @69897 has 1 MA's), (Start: 5 @69849 has 79 MA's), (Start: 6 @69834 has 10 MA's), (Start: 7 @69831 has 1 MA's),

Gene: Holt_141 Start: 72738, Stop: 72613, Start Num: 5
Candidate Starts for Holt_141:
(1, 72897), (2, 72807), (3, 72804), (Start: $4 @ 72786$ has 1 MA's), (Start: 5 @72738 has 79 MA's), (Start: 6 @ 72723 has 10 MA's), (Start: 7 @72720 has 1 MA's),

Gene: Hoonter_138 Start: 71996, Stop: 71871, Start Num: 5 Candidate Starts for Hoonter_138:
(1, 72155), (2, 72065), (3, 72062), (Start: 4 @72044 has 1 MA's), (Start: 5 @71996 has 79 MA's), (Start: 6 @71981 has 10 MA's), (Start: 7 @71978 has 1 MA's),

Gene: HufflyPuff_137 Start: 72540, Stop: 72415, Start Num: 5
Candidate Starts for HufflyPuff_137:
(1, 72699), (2, 72609), (3, 72606), (Start: 4 @72588 has 1 MA's), (Start: 5 @72540 has 79 MA's), (Start: 6 @72525 has 10 MA's), (Start: 7 @72522 has 1 MA's),

Gene: IHOP_139 Start: 71939, Stop: 71814, Start Num: 5 Candidate Starts for IHOP_139:
(2, 72008), (3, 72005), (Start: 4 @71987 has 1 MA's), (Start: 5 @71939 has 79 MA's), (Start: 6 @71924 has 10 MA's), (Start: 7 @71921 has 1 MA's),

Gene: Inca_134 Start: 69944, Stop: 69834, Start Num: 6
Candidate Starts for Inca_134:
(2, 70028), (3, 70025), (Start: 4 @70007 has 1 MA's), (Start: 5 @69959 has 79 MA's), (Start: 6 @69944 has 10 MA's), (Start: 7 @69941 has 1 MA's),

Gene: JeTaime_133 Start: 71475, Stop: 71350, Start Num: 5 Candidate Starts for JeTaime_133:
(1, 71634), (2, 71544), (3, 71541), (Start: $4 @ 71523$ has 1 MA's), (Start: 5 @71475 has 79 MA's), (Start: 6 @71460 has 10 MA's), (Start: 7 @71457 has 1 MA's),

Gene: Kimchi_141 Start: 72676, Stop: 72551, Start Num: 5 Candidate Starts for Kimchi_141:
(1, 72835), (2, 72745), (3, 72742), (Start: 4 @72724 has 1 MA's), (Start: 5 @72676 has 79 MA's), (Start: 6 @72661 has 10 MA's), (Start: 7 @72658 has 1 MA's),

Gene: Lilizi_136 Start: 72183, Stop: 72058, Start Num: 5
Candidate Starts for Lilizi_136:
(1, 72342), (2, 72252), (3, 72249), (Start: 4 @72231 has 1 MA's), (Start: 5 @72183 has 79 MA's), (Start: 6 @72168 has 10 MA's), (Start: 7 @72165 has 1 MA's),

Gene: Lilpickle_135 Start: 71436, Stop: 71311, Start Num: 5 Candidate Starts for Lilpickle_135:
(2, 71505), (3, 71502), (Start: 4 @71484 has 1 MA's), (Start: 5 @ 71436 has 79 MA's), (Start: 6 @71421 has 10 MA's), (Start: 7 @71418 has 1 MA's),

Gene: MISSy_137 Start: 72350, Stop: 72225, Start Num: 5
Candidate Starts for MISSy_137:
(1, 72509), (2, 72419), (3, 72416), (Start: 4 @72398 has 1 MA's), (Start: 5 @ 72350 has 79 MA's), (Start: 6 @72335 has 10 MA's), (Start: 7 @72332 has 1 MA's),

Gene: MPhalcon_136 Start: 71768, Stop: 71643, Start Num: 5 Candidate Starts for MPhalcon_136:
(1, 71927), (2, 71837), (3, 71834), (Start: 4 @71816 has 1 MA's), (Start: 5 @71768 has 79 MA's), (Start: 6 @71753 has 10 MA's), (Start: 7 @71750 has 1 MA's),

Gene: MadamMonkfish_135 Start: 71444, Stop: 71319, Start Num: 5 Candidate Starts for Mā̄amMonkfish_135:
(1, 71603), (2, 71513), (3, 71510), (Start: $4 @ 71492$ has 1 MA's), (Start: 5 @71444 has 79 MA's), (Start: 6 @71429 has 10 MA's), (Start: 7 @71426 has 1 MA's),

Gene: Manda_136 Start: 71884, Stop: 71759, Start Num: 5
Candidate Starts for Manda_136:
(2, 71953), (3, 71950), (Start: 4 @71932 has 1 MA's), (Start: 5 @71884 has 79 MA's), (Start: 6 @71869 has 10 MA's), (Start: 7 @71866 has 1 MA's),

Gene: Marshmallow_136 Start: 72629, Stop: 72504, Start Num: 5
Candidate Starts for Marshmallow_136:
(2, 72698), (3, 72695), (Start: 4 @ 72677 has 1 MA's), (Start: 5 @72629 has 79 MA's), (Start: 6 @72614 has 10 MA's), (Start: 7 @72611 has 1 MA's),

Gene: Maxxinista_137 Start: 71397, Stop: 71272, Start Num: 5
Candidate Starts for Maxxinista_137:
(2, 71466), (3, 71463), (Start: 4 @71445 has 1 MA's), (Start: 5 @71397 has 79 MA's), (Start: 6
@71382 has 10 MA's), (Start: 7 @71379 has 1 MA's),
Gene: Mindy_139 Start: 72328, Stop: 72203, Start Num: 5
Candidate Starts for Mindy_139:
(1, 72487), (2, 72397), (3, 72394), (Start: 4 @72376 has 1 MA's), (Start: 5 @72328 has 79 MA's), (Start: 6 @72313 has 10 MA's), (Start: 7 @72310 has 1 MA's),

Gene: Miniwave_129 Start: 71493, Stop: 71368, Start Num: 5 Candidate Starts for Miniwave_129:
(2, 71562), (3, 71559), (Start: 4 @71541 has 1 MA's), (Start: 5 @ 71493 has 79 MA's), (Start: 6 @ 71478 has 10 MA's), (Start: 7 @ 71475 has 1 MA's),

Gene: Misfit_135 Start: 72627, Stop: 72517, Start Num: 6
Candidate Starts for Misfit_135:
(1, 72801), (2, 72711), (3, 72708), (Start: 4 @72690 has 1 MA's), (Start: 5 @72642 has 79 MA's), (Start: 6 @72627 has 10 MA's), (Start: 7 @72624 has 1 MA's),

Gene: Moldemort_138 Start: 72063, Stop: 71938, Start Num: 5 Candidate Starts for Moldemort_138:
(1, 72222), (2, 72132), (3, 72129), (Start: 4 @72111 has 1 MA's), (Start: 5 @72063 has 79 MA's), (Start: 6 @72048 has 10 MA's), (Start: 7 @72045 has 1 MA's),

Gene: Mosby_132 Start: 71006, Stop: 70881, Start Num: 5 Candidate Starts for Mosby_132:
(1, 71165), (2, 71075), (3, 71072), (Start: 4 @71054 has 1 MA's), (Start: 5 @71006 has 79 MA's), (Start: 6 @70991 has 10 MA's), (Start: 7 @70988 has 1 MA's),

Gene: Murica_139 Start: 73574, Stop: 73449, Start Num: 5
Candidate Starts for Murica_139:
(1, 73733), (2, 73643), (3, 73640), (Start: 4 @73622 has 1 MA's), (Start: 5 @73574 has 79 MA's), (Start: 6 @73559 has 10 MA's), (Start: 7 @73556 has 1 MA's),

Gene: Murphy_134 Start: 71756, Stop: 71646, Start Num: 6 Candidate Starts for Murphy_134:
(1, 71930), (2, 71840), (3, 71837), (Start: 4 @71819 has 1 MA's), (Start: 5 @ 71771 has 79 MA's), (Start: 6 @ 71756 has 10 MA's), (Start: 7 @71753 has 1 MA's),

Gene: Myrale_137 Start: 73271, Stop: 73146, Start Num: 5
Candidate Starts for Myrale_137:
(1, 73430), (2, 73340), (3, 73337), (Start: 4 @73319 has 1 MA's), (Start: 5 @ 73271 has 79 MA's), (Start: 6 @ 73256 has 10 MA's), (Start: 7 @73253 has 1 MA's),

Gene: Nala_137 Start: 72057, Stop: 71932, Start Num: 5 Candidate Starts for Nala_137:
(2, 72126), (3, 72123), (Start: 4 @72105 has 1 MA's), (Start: 5 @72057 has 79 MA's), (Start: 6 @72042 has 10 MA's), (Start: 7 @72039 has 1 MA's),

Gene: OrionPax_131 Start: 71002, Stop: 70877, Start Num: 5 Candidate Starts for OrionPax_131:
(1, 71161), (2, 71071), (3, 71068), (Start: 4 @ 71050 has 1 MA's), (Start: 5 @ 71002 has 79 MA's), (Start: 6 @ 70987 has 10 MA's), (Start: 7 @70984 has 1 MA's),

Gene: Pat3_135 Start: 71787, Stop: 71662, Start Num: 5
Candidate Starts for Pat3_135:
(1, 71946), (2, 71856), (3, 71853), (Start: 4 @71835 has 1 MA's), (Start: 5 @ 71787 has 79 MA's), (Start: 6 @71772 has 10 MA's), (Start: 7 @71769 has 1 MA's),

Gene: Phaja_139 Start: 71944, Stop: 71819, Start Num: 5
Candidate Starts for Phaja_139:
(2, 72013), (3, 72010), (Start: 4 @71992 has 1 MA's), (Start: 5 @71944 has 79 MA's), (Start: 6 @71929 has 10 MA's), (Start: 7 @71926 has 1 MA's),

Gene: Pharsalus_133 Start: 72311, Stop: 72186, Start Num: 5 Candidate Starts for Pharsalus_133:
(2, 72380), (3, 72377), (Start: 4 @72359 has 1 MA's), (Start: 5 @72311 has 79 MA's), (Start: 6 @72296 has 10 MA's), (Start: 7 @72293 has 1 MA's),

Gene: Phaux_137 Start: 72988, Stop: 72815, Start Num: 4
Candidate Starts for Phaux_137:
(1, 73099), (2, 73009), (3, 73006), (Start: 4 @72988 has 1 MA's), (Start: 5 @72940 has 79 MA's), (Start: 6 @72925 has 10 MA's), (Start: 7 @72922 has 1 MA's),

Gene: Phrux_131 Start: 70789, Stop: 70664, Start Num: 5
Candidate Starts for Phrux_131:
(1, 70948), (2, 70858), (3, 70855 ), (Start: 4 @ 70837 has 1 MA's), (Start: 5 @70789 has 79 MA's), (Start: 6 @ 70774 has 10 MA's), (Start: 7 @ 70771 has 1 MA's),

Gene: Porky_137 Start: 72390, Stop: 72265, Start Num: 5
Candidate Starts for Porky_137:
(2, 72459), (3, 72456), (Start: 4 @72438 has 1 MA's), (Start: 5 @72390 has 79 MA's), (Start: 6 @72375 has 10 MA's), (Start: 7 @72372 has 1 MA's),

Gene: Pumpkin_135 Start: 71065, Stop: 70940, Start Num: 5 Candidate Starts for Pumpkin_135:
(2, 71134), (3, 71131), (Start: 4 @71113 has 1 MA's), (Start: 5 @71065 has 79 MA's), (Start: 6 @71050 has 10 MA's), (Start: 7 @71047 has 1 MA's),

Gene: Quallification_136 Start: 72649, Stop: 72524, Start Num: 5
Candidate Starts for Quallification_136:
(1, 72808), (2, 72718), (3, 72715), (Start: 4 @72697 has 1 MA's), (Start: 5 @72649 has 79 MA's), (Start: 6 @72634 has 10 MA's), (Start: 7 @72631 has 1 MA's),

Gene: Rakim_137 Start: 72143, Stop: 72033, Start Num: 6
Candidate Starts for Rakim_137:
(1, 72317), (2, 72227), (3, 72224), (Start: 4 @72206 has 1 MA's), (Start: 5 @72158 has 79 MA's), (Start: 6 @72143 has 10 MA's), (Start: 7 @72140 has 1 MA's),

Gene: Rimmer_132 Start: 71524, Stop: 71399, Start Num: 5 Candidate Starts for Rimmer_132:
(2, 71593), (3, 71590), (Start: 4 @71572 has 1 MA's), (Start: 5 @71524 has 79 MA's), (Start: 6 @71509 has 10 MA's), (Start: 7 @71506 has 1 MA's),

Gene: RiverMonster_134 Start: 71684, Stop: 71559, Start Num: 5
Candidate Starts for RiverMonster_134:
(1, 71843), (2, 71753), (3, 71750), (Start: 4 @71732 has 1 MA's), (Start: 5 @71684 has 79 MA's), (Start: 6 @71669 has 10 MA's), (Start: 7 @71666 has 1 MA's),

Gene: Saints25_131 Start: 69849, Stop: 69724, Start Num: 5 Candidate Starts for Saints25_131:
(1, 70008), (2, 69918), (3, 69915), (Start: 4 @69897 has 1 MA's), (Start: 5 @69849 has 79 MA's), (Start: 6 @69834 has 10 MA's), (Start: 7 @69831 has 1 MA's),

Gene: Sassay_130 Start: 69968, Stop: 69843, Start Num: 5
Candidate Starts for Sassay_130:
(1, 70127), (2, 70037), (3, 70034), (Start: 4 @70016 has 1 MA's), (Start: 5 @69968 has 79 MA's), (Start: 6 @69953 has 10 MA's), (Start: 7 @69950 has 1 MA's),

Gene: ShereKhan_135 Start: 72895, Stop: 72770, Start Num: 5
Candidate Starts for ShereKhan_135:
(1, 73054), (2, 72964), (3, 72961), (Start: 4 @72943 has 1 MA's), (Start: 5 @72895 has 79 MA's), (Start: 6 @72880 has 10 MA's), (Start: 7 @72877 has 1 MA's),

Gene: Simpliphy_134 Start: 71255, Stop: 71130, Start Num: 5 Candidate Starts for Simpliphy_134:
(1, 71414), (2, 71324), (3, 71321), (Start: $4 @ 71303$ has 1 MA's), (Start: 5 @71255 has 79 MA's), (Start: 6 @71240 has 10 MA's), (Start: 7 @71237 has 1 MA's),

Gene: Sotrice96_140 Start: 72801, Stop: 72676, Start Num: 5
Candidate Starts for Sotrice96_140:
(2, 72870), (3, 72867), (Start: 4 @72849 has 1 MA's), (Start: 5 @72801 has 79 MA's), (Start: 6 @72786 has 10 MA's), (Start: 7 @72783 has 1 MA's),

Gene: Stank_138 Start: 72748, Stop: 72623, Start Num: 5
Candidate Starts for Stank_138:
(1, 72907), (2, 72817), (3, 72814), (Start: 4 @72796 has 1 MA's), (Start: 5 @72748 has 79 MA's), (Start: 6 @72733 has 10 MA's), (Start: 7 @72730 has 1 MA's),

Gene: Stark_133 Start: 71503, Stop: 71378, Start Num: 5
Candidate Starts for Stark_133:
(2, 71572), (3, 71569), (Start: 4 @ 71551 has 1 MA's), (Start: 5 @ 71503 has 79 MA's), (Start: 6 @ 71488 has 10 MA's), (Start: 7 @71485 has 1 MA's),

Gene: StolenFromERC_138 Start: 72093, Stop: 71968, Start Num: 5
Candidate Starts for StolenFromERC_138:
(1, 72252), (2, 72162), (3, 72159), (Start: 4 @72141 has 1 MA's), (Start: 5 @72093 has 79 MA's), (Start: 6 @72078 has 10 MA's), (Start: 7 @72075 has 1 MA's),

Gene: TBrady12_140 Start: 72185, Stop: 72060, Start Num: 5
Candidate Starts for TBrady12_140:
(2, 72254), (3, 72251), (Start: 4 @72233 has 1 MA's), (Start: 5 @72185 has 79 MA's), (Start: 6 @ 72170 has 10 MA's), (Start: 7 @72167 has 1 MA's),

Gene: Tarkin_134 Start: 72760, Stop: 72635, Start Num: 5
Candidate Starts for Tarkin_134:
(2, 72829), (3, 72826), (Start: 4 @72808 has 1 MA's), (Start: 5 @ 72760 has 79 MA's), (Start: 6 @72745 has 10 MA's), (Start: 7 @72742 has 1 MA's),

Gene: TeardropMSU_136 Start: 71748, Stop: 71623, Start Num: 5
Candidate Starts for TeardropMSU_136:
(1, 71907), (2, 71817), (3, 71814), (Start: 4 @71796 has 1 MA's), (Start: 5 @ 71748 has 79 MA's), (Start: 6 @ 71733 has 10 MA's), (Start: 7 @71730 has 1 MA's),

Gene: Terminus_138 Start: 72627, Stop: 72517, Start Num: 6 Candidate Starts for Terminus_138:
(1, 72801), (2, 72711), (3, 72708), (Start: 4 @72690 has 1 MA's), (Start: 5 @ 72642 has 79 MA's), (Start: 6 @ 72627 has 10 MA's), (Start: 7 @72624 has 1 MA's),

Gene: Thresher_137 Start: 72568, Stop: 72443, Start Num: 5 Candidate Starts for Thresher_137:
(2, 72637), (3, 72634), (Start: $\overline{4}$ @72616 has 1 MA's), (Start: 5 @72568 has 79 MA's), (Start: 6 @72553 has 10 MA's), (Start: 7 @72550 has 1 MA's),

Gene: Tomaszewski_129 Start: 71180, Stop: 71055, Start Num: 5
Candidate Starts for Tomaszewski_129:
(1, 71339), (2, 71249), (3, 71246), (Start: 4 @71228 has 1 MA's), (Start: 5 @ 71180 has 79 MA's), (Start: 6 @71165 has 10 MA's), (Start: 7 @71162 has 1 MA's),

Gene: Traaww1_132 Start: 71582, Stop: 71457, Start Num: 5 Candidate Starts for Traaww1_132:
(1, 71741), (2, 71651), (3, 71648), (Start: 4 @ 71630 has 1 MA's), (Start: 5 @ 71582 has 79 MA's), (Start: 6 @ 71567 has 10 MA's), (Start: 7 @71564 has 1 MA's),

Gene: Tuco_141 Start: 73807, Stop: 73682, Start Num: 5
Candidate Starts for Tuco_141:
(1, 73966), (2, 73876), (3, 73873), (Start: 4 @73855 has 1 MA's), (Start: 5 @ 73807 has 79 MA's), (Start: 6 @ 73792 has 10 MA's), (Start: 7 @73789 has 1 MA's),

Gene: Ukulele_130 Start: 71064, Stop: 70939, Start Num: 5 Candidate Starts for Ukulele_130:
(2, 71133), (3, 71130), (Start: 4 @71112 has 1 MA's), (Start: 5 @71064 has 79 MA's), (Start: 6 @71049 has 10 MA's), (Start: 7 @71046 has 1 MA's),

Gene: Wiggin_138 Start: 71726, Stop: 71601, Start Num: 5 Candidate Starts for Wiggin_138:
(2, 71795), (3, 71792), (Start: 4 @71774 has 1 MA's), (Start: 5 @ 71726 has 79 MA's), (Start: 6 @71711 has 10 MA's), (Start: 7 @71708 has 1 MA's),

Gene: Willez_133 Start: 71049, Stop: 70924, Start Num: 5
Candidate Starts for Willez_133:
(1, 71208), (2, 71118), (3, 71115), (Start: 4 @71097 has 1 MA's), (Start: 5 @71049 has 79 MA's), (Start: 6 @71034 has 10 MA's), (Start: 7 @71031 has 1 MA's),

Gene: Xandras_134 Start: 72002, Stop: 71877, Start Num: 5
Candidate Starts for Xandras_134:
(1, 72161), (2, 72071), (3, 72068), (Start: 4 @72050 has 1 MA's), (Start: 5 @72002 has 79 MA's), (Start: 6 @71987 has 10 MA's), (Start: 7 @71984 has 1 MA's),

Gene: YassJohnny_131 Start: 70218, Stop: 70093, Start Num: 5 Candidate Starts for YassJohnny_131:
(1, 70377), (2, 70287), (3, 70284), (Start: 4 @70266 has 1 MA's), (Start: 5 @70218 has 79 MA's), (Start: 6 @70203 has 10 MA's), (Start: 7 @70200 has 1 MA's),

Gene: Youngblood_139 Start: 72369, Stop: 72244, Start Num: 5
Candidate Starts for Youngblood_139:
(2, 72438), (3, 72435), (Start: 4 @72417 has 1 MA's), (Start: 5 @72369 has 79 MA's), (Start: 6 @72354 has 10 MA's), (Start: 7 @72351 has 1 MA's),

Gene: xkcd_139 Start: 73006, Stop: 72881, Start Num: 5
Candidate Starts for xkcd_139:
(1, 73165), (2, 73075), (3, 73072), (Start: $4 @ 73054$ has 1 MA's), (Start: 5 @73006 has 79 MA's), (Start: 6 @72991 has 10 MA's), (Start: 7 @72988 has 1 MA's),

