Pham 290926

1: MadamMonkfish_113 + 112

2: Marshmallow_116 + 9

3: Henry_116 + 6

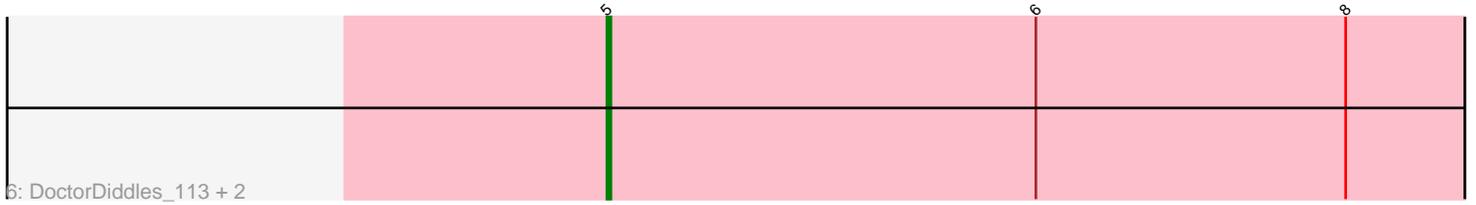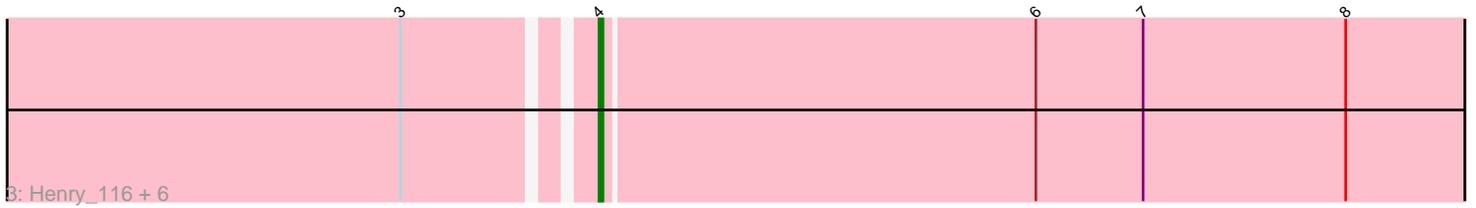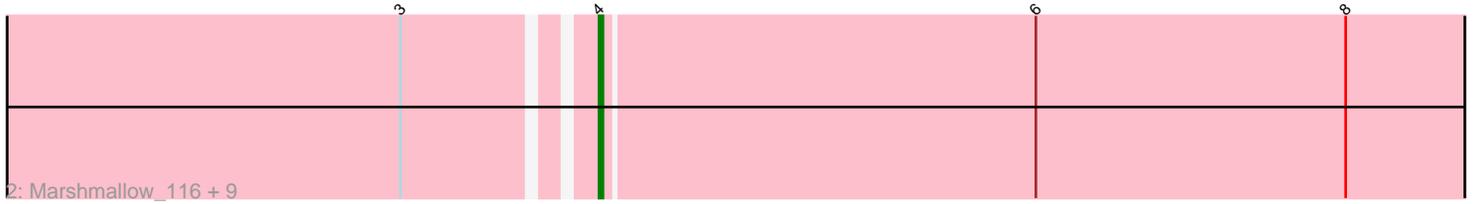4: Budgie_124

5: BadStone_115 + 8

6: DoctorDiddles_113 + 2

7: Kostya_117

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 290926 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290926 has 144 members, 16 are drafts.

Phages represented in each track:
• Track 1 : MadamMonkfish_113, Gage_116, StormChicken_116, Eureka_114, Misfit_115, MollyToe_108, Traaww1_111, HanKaySha_114, Kimchi_119, Contagion_111, PhatBacter_117, Adnama_118, Lilizi_114, Murica_118, Greep_118, Becksu_112, JeTaime_113, Nimrod_115, TBrady12_118, Lilpickle_113, Petra64142_118, Hopey_114, Murphy_113, Phaux_116, Stark_114, BaboJay_114, Moldemort_116, Emmina_114, Pumpkin_115, Bruin_111, Xandras_114, Elite2014_113, Sassay_109, CrystalP_115, GoldenSpark_118, Miniwave_109, Barbarian_114, xkcd_118, Maxxinista_116, 244_116, BilboSwaggins_113, HufflyPuff_116, PaddyBaddy_113, StolenFromERC_116, Tarkin_113, Manda_115, Buck_115, Easy2Say_114, FairyPath_114, Command613_117, Ukulele_109, Stank_117, Flypotenuse_111, Dumbo_114, MISSy_115, Saints25_110, Cjw1_114, Wiggin_117, TeamEdward_114, YassJohnny_111, Brewer_108, Quallification_115, MPhalcon_115, Asriel_113, AmericanBeauty_117, Hoonter_117, Youngblood_118, Rimmer_112, Gemini_119, Simpliphy_112, FireRed_117, Lilac_115, Czyszczon1_114, Elph10_113, Teaspoon_115, Thresher_115, Filch_117, Argent26_118, Ptowny_110, BigBubba_116, Goku_114, Goldilocks_118, Myrale_115, Terminus_117, Palpatine_115, Porky_113, Thimble_116, OrionPax_112, Bogg_115, Highbury_110, Balomoji_115, NoSleep_114, Willez_109, Toto_113, StellaBean_112, Mosby_111, Rakim_116, NelitzaMV_111, Bench_116, BugsBunny_113, Phrux_110, ShereKhan_112, Paperbeatsrock_113, Nala_116, Holt_120, RiverMonster_113, Tomaszewski_109, ShamWow_115, ChosenOne_114, GooberAzure_117, Kanye_111, NonchalantPear_112, Policronamos_117
• Track 2 : Marshmallow_116, Pat3_114, Bask21_118, Inca_114, Cookies_115, Phaja_116, Amao_118, Dusk_115, FoghornLeghorn_111, SirDuracell_118
• Track 3 : Henry_116, Glexan_117, Harella_119, ChotaBhai_118, Gator_116, IHOP_116, DrDrey_118
• Track 4 : Budgie_124
• Track 5 : BadStone_115, TeardropMSU_114, Sotrice96_119, Mindy_117, Icee_119, ABCat_115, Cactus_122, Tuco_119, Pharsalus_114
• Track 6 : DoctorDiddles_113, Daikon_116, SophKB_113
• Track 7 : Kostya_117

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 102 of the 128 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• 244_116, Adnama_118, AmericanBeauty_117, Argent26_118, Asriel_113, BaboJay_114, Balomoji_115, Barbarian_114, Becksu_112, Bench_116, BigBubba_116, BilboSwaggins_113, Bogg_115, Brewer_108, Bruin_111, Buck_115, BugsBunny_113, ChosenOne_114, Cjw1_114, Command613_117, Contagion_111, CrystalP_115, Czyszczon1_114, Daikon_116, DoctorDiddles_113, Dumbo_114, Easy2Say_114, Elite2014_113, Elph10_113, Emmina_114, Eureka_114, FairyPath_114, Filch_117, FireRed_117, Flypotenuse_111, Gage_116, Gemini_119, Goku_114, GoldenSpark_118, Goldilocks_118, GooberAzure_117, Greep_118, HanKaySha_114, Highbury_110, Holt_120, Hoonter_117, Hopey_114, HufflyPuff_116, JeTaime_113, Kanye_111, Kimchi_119, Lilac_115, Lilizi_114, Lilpickle_113, MISSy_115, MPhalcon_115, MadamMonkfish_113, Manda_115, Maxxinista_116, Miniwave_109, Misfit_115, Moldemort_116, MollyToe_108, Mosby_111, Murica_118, Murphy_113, Myrale_115, Nala_116, NelitzaMV_111, Nimrod_115, NoSleep_114, NonchalantPear_112, OrionPax_112, PaddyBaddy_113, Palpatine_115, Paperbeatsrock_113, Petra64142_118, PhatBacter_117, Phaux_116, Phrux_110, Policronamos_117, Porky_113, Ptowny_110, Pumpkin_115, Quallification_115, Rakim_116, Rimmer_112, RiverMonster_113, Saints25_110, Sassay_109, ShamWow_115, ShereKhan_112, Simpliphy_112, SophKB_113, Stank_117, Stark_114, StellaBean_112, StolenFromERC_116, StormChicken_116, TBrady12_118, Tarkin_113, TeamEdward_114, Teaspoon_115, Terminus_117, Thimble_116, Thresher_115, Tomaszewski_109, Toto_113, Traaww1_111, Ukulele_109, Wiggin_117, Willez_109, Xandras_114, YassJohnny_111, Youngblood_118, xkcd_118,

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

Genes that do not have the "Most Annotated" start:
• ABCat_115, Amao_118, BadStone_115, Bask21_118, Budgie_124, Cactus_122, ChotaBhai_118, Cookies_115, DrDrey_118, Dusk_115, FoghornLeghorn_111, Gator_116, Glexan_117, Harella_119, Henry_116, IHOP_116, Icee_119, Inca_114, Kostya_117, Marshmallow_116, Mindy_117, Pat3_114, Phaja_116, Pharsalus_114, SirDuracell_118, Sotrice96_119, TeardropMSU_114, Tuco_119,

Summary by start number:

Start 3:
• Found in 18 of 144 (12.5%) of genes in pham
• Manual Annotations of this start: 1 of 128
• Called 5.6% of time when present
• Phage (with cluster) where this start called: Kostya_117 (E),

Start 4:
• Found in 28 of 144 (19.4%) of genes in pham
• Manual Annotations of this start: 25 of 128
• Called 96.4% of time when present
• Phage (with cluster) where this start called: ABCat_115 (E), Amao_118 (E), BadStone_115 (E), Bask21_118 (E), Budgie_124 (E), Cactus_122 (E), ChotaBhai_118 (E), Cookies_115 (E), DrDrey_118 (E), Dusk_115 (E),

FoghornLeghorn_111 (E), Gator_116 (E), Glexan_117 (E), Harella_119 (E), Henry_116 (E), IHOP_116 (E), Icee_119 (E), Inca_114 (E), Marshmallow_116 (E), Mindy_117 (E), Pat3_114 (E), Phaja_116 (E), Pharsalus_114 (E), SirDuracell_118 (E), Sotrice96_119 (E), TeardropMSU_114 (E), Tuco_119 (E),

Start 5:
• Found in 116 of 144 (80.6%) of genes in pham
• Manual Annotations of this start: 102 of 128
• Called 100.0% of time when present
• Phage (with cluster) where this start called: 244_116 (E), Adnama_118 (E), AmericanBeauty_117 (E), Argent26_118 (E), Asriel_113 (E), BaboJay_114 (E), Balomoji_115 (E), Barbarian_114 (E), Becksu_112 (E), Bench_116 (E), BigBubba_116 (E), BilboSwaggins_113 (E), Bogg_115 (E), Brewer_108 (E), Bruin_111 (E), Buck_115 (E), BugsBunny_113 (E), ChosenOne_114 (E), Cjw1_114 (E), Command613_117 (E), Contagion_111 (E), CrystalP_115 (E), Czyszczon1_114 (E), Daikon_116 (E), DoctorDiddles_113 (E), Dumbo_114 (E), Easy2Say_114 (E), Elite2014_113 (E), Elph10_113 (E), Emmina_114 (E), Eureka_114 (E), FairyPath_114 (E), Filch_117 (E), FireRed_117 (E), Flypotenuse_111 (E), Gage_116 (E), Gemini_119 (E), Goku_114 (E), GoldenSpark_118 (E), Goldilocks_118 (E), GooberAzure_117 (E), Greep_118 (E), HanKaySha_114 (E), Highbury_110 (E), Holt_120 (E), Hoonter_117 (E), Hopey_114 (E), HufflyPuff_116 (E), JeTaime_113 (E), Kanye_111 (E), Kimchi_119 (E), Lilac_115 (E), Lilizi_114 (E), Lilpickle_113 (E), MISSy_115 (E), MPhalcon_115 (E), MadamMonkfish_113 (E), Manda_115 (E), Maxxinista_116 (E), Miniwave_109 (E), Misfit_115 (E), Moldemort_116 (E), MollyToe_108 (E), Mosby_111 (E), Murica_118 (E), Murphy_113 (E), Myrale_115 (E), Nala_116 (E), NelitzaMV_111 (E), Nimrod_115 (E), NoSleep_114 (E), NonchalantPear_112 (E), OrionPax_112 (E), PaddyBaddy_113 (E), Palpatine_115 (E), Paperbeatsrock_113 (E), Petra64142_118 (E), PhatBacter_117 (E), Phaux_116 (E), Phrux_110 (E), Policronamos_117 (E), Porky_113 (E), Ptowny_110 (E), Pumpkin_115 (E), Quallification_115 (E), Rakim_116 (E), Rimmer_112 (E), RiverMonster_113 (E), Saints25_110 (E), Sassay_109 (E), ShamWow_115 (E), ShereKhan_112 (E), Simpliphy_112 (E), SophKB_113 (E), Stank_117 (E), Stark_114 (E), StellaBean_112 (E), StolenFromERC_116 (E), StormChicken_116 (E), TBrady12_118 (E), Tarkin_113 (E), TeamEdward_114 (E), Teaspoon_115 (E), Terminus_117 (E), Thimble_116 (E), Thresher_115 (E), Tomaszewski_109 (E), Toto_113 (E), Traaww1_111 (E), Ukulele_109 (E), Wiggin_117 (E), Willez_109 (E), Xandras_114 (E), YassJohnny_111 (E), Youngblood_118 (E), xkcd_118 (E),

Summary by clusters:

There is one cluster represented in this pham: E

Info for manual annotations of cluster E:
•Start number 3 was manually annotated 1 time for cluster E.
•Start number 4 was manually annotated 25 times for cluster E.
•Start number 5 was manually annotated 102 times for cluster E.

Gene Information:
Gene: 244_116 Start: 65056, Stop: 65298, Start Num: 5
Candidate Starts for 244_116:

(2, 64978), (Start: 5 @65056 has 102 MA's), (6, 65164), (8, 65242),

Gene: ABCat_115 Start: 66539, Stop: 66781, Start Num: 4
Candidate Starts for ABCat_115:
(Start: 4 @66539 has 25 MA's), (6, 66647), (8, 66725),

Gene: Adnama_118 Start: 64969, Stop: 65211, Start Num: 5
Candidate Starts for Adnama_118:
(2, 64891), (Start: 5 @64969 has 102 MA's), (6, 65077), (8, 65155),

Gene: Amao_118 Start: 66102, Stop: 66344, Start Num: 4
Candidate Starts for Amao_118:
(Start: 3 @66060 has 1 MA's), (Start: 4 @66102 has 25 MA's), (6, 66210), (8, 66288),

Gene: AmericanBeauty_117 Start: 65011, Stop: 65253, Start Num: 5
Candidate Starts for AmericanBeauty_117:
(2, 64933), (Start: 5 @65011 has 102 MA's), (6, 65119), (8, 65197),

Gene: Argent26_118 Start: 64893, Stop: 65135, Start Num: 5
Candidate Starts for Argent26_118:
(2, 64815), (Start: 5 @64893 has 102 MA's), (6, 65001), (8, 65079),

Gene: Asriel_113 Start: 63844, Stop: 64086, Start Num: 5
Candidate Starts for Asriel_113:
(2, 63766), (Start: 5 @63844 has 102 MA's), (6, 63952), (8, 64030),

Gene: BaboJay_114 Start: 66229, Stop: 66471, Start Num: 5
Candidate Starts for BaboJay_114:
(2, 66151), (Start: 5 @66229 has 102 MA's), (6, 66337), (8, 66415),

Gene: BadStone_115 Start: 66087, Stop: 66329, Start Num: 4
Candidate Starts for BadStone_115:
(Start: 4 @66087 has 25 MA's), (6, 66195), (8, 66273),

Gene: Balomoji_115 Start: 65627, Stop: 65869, Start Num: 5
Candidate Starts for Balomoji_115:
(2, 65549), (Start: 5 @65627 has 102 MA's), (6, 65735), (8, 65813),

Gene: Barbarian_114 Start: 63844, Stop: 64086, Start Num: 5
Candidate Starts for Barbarian_114:
(2, 63766), (Start: 5 @63844 has 102 MA's), (6, 63952), (8, 64030),

Gene: Bask21_118 Start: 64904, Stop: 65146, Start Num: 4
Candidate Starts for Bask21_118:
(Start: 3 @64862 has 1 MA's), (Start: 4 @64904 has 25 MA's), (6, 65012), (8, 65090),

Gene: Becksu_112 Start: 65282, Stop: 65524, Start Num: 5
Candidate Starts for Becksu_112:
(2, 65204), (Start: 5 @65282 has 102 MA's), (6, 65390), (8, 65468),

Gene: Bench_116 Start: 65650, Stop: 65892, Start Num: 5
Candidate Starts for Bench_116:
(2, 65572), (Start: 5 @65650 has 102 MA's), (6, 65758), (8, 65836),

Gene: BigBubba_116 Start: 64702, Stop: 64944, Start Num: 5
Candidate Starts for BigBubba_116:
(2, 64624), (Start: 5 @64702 has 102 MA's), (6, 64810), (8, 64888),

Gene: BilboSwaggins_113 Start: 66124, Stop: 66366, Start Num: 5
Candidate Starts for BilboSwaggins_113:
(2, 66046), (Start: 5 @66124 has 102 MA's), (6, 66232), (8, 66310),

Gene: Bogg_115 Start: 65169, Stop: 65411, Start Num: 5
Candidate Starts for Bogg_115:
(2, 65091), (Start: 5 @65169 has 102 MA's), (6, 65277), (8, 65355),

Gene: Brewer_108 Start: 63806, Stop: 64048, Start Num: 5
Candidate Starts for Brewer_108:
(2, 63728), (Start: 5 @63806 has 102 MA's), (6, 63914), (8, 63992),

Gene: Bruin_111 Start: 64334, Stop: 64576, Start Num: 5
Candidate Starts for Bruin_111:
(2, 64256), (Start: 5 @64334 has 102 MA's), (6, 64442), (8, 64520),

Gene: Buck_115 Start: 66150, Stop: 66392, Start Num: 5
Candidate Starts for Buck_115:
(2, 66072), (Start: 5 @66150 has 102 MA's), (6, 66258), (8, 66336),

Gene: Budgie_124 Start: 66165, Stop: 66407, Start Num: 4
Candidate Starts for Budgie_124:
(1, 66057), (Start: 4 @66165 has 25 MA's), (6, 66273), (7, 66300), (8, 66351),

Gene: BugsBunny_113 Start: 65648, Stop: 65890, Start Num: 5
Candidate Starts for BugsBunny_113:
(2, 65570), (Start: 5 @65648 has 102 MA's), (6, 65756), (8, 65834),

Gene: Cactus_122 Start: 65447, Stop: 65689, Start Num: 4
Candidate Starts for Cactus_122:
(Start: 4 @65447 has 25 MA's), (6, 65555), (8, 65633),

Gene: ChosenOne_114 Start: 64534, Stop: 64776, Start Num: 5
Candidate Starts for ChosenOne_114:
(2, 64456), (Start: 5 @64534 has 102 MA's), (6, 64642), (8, 64720),

Gene: ChotaBhai_118 Start: 65846, Stop: 66088, Start Num: 4
Candidate Starts for ChotaBhai_118:
(Start: 3 @65804 has 1 MA's), (Start: 4 @65846 has 25 MA's), (6, 65954), (7, 65981), (8, 66032),

Gene: Cjw1_114 Start: 66343, Stop: 66585, Start Num: 5
Candidate Starts for Cjw1_114:
(2, 66265), (Start: 5 @66343 has 102 MA's), (6, 66451), (8, 66529),

Gene: Command613_117 Start: 65620, Stop: 65862, Start Num: 5
Candidate Starts for Command613_117:
(2, 65542), (Start: 5 @65620 has 102 MA's), (6, 65728), (8, 65806),

Gene: Contagion_111 Start: 64696, Stop: 64938, Start Num: 5
Candidate Starts for Contagion_111:
(2, 64618), (Start: 5 @64696 has 102 MA's), (6, 64804), (8, 64882),

Gene: Cookies_115 Start: 65832, Stop: 66074, Start Num: 4
Candidate Starts for Cookies_115:
(Start: 3 @65790 has 1 MA's), (Start: 4 @65832 has 25 MA's), (6, 65940), (8, 66018),

Gene: CrystalP_115 Start: 66124, Stop: 66366, Start Num: 5
Candidate Starts for CrystalP_115:
(2, 66046), (Start: 5 @66124 has 102 MA's), (6, 66232), (8, 66310),

Gene: Czyszczon1_114 Start: 64689, Stop: 64931, Start Num: 5
Candidate Starts for Czyszczon1_114:
(2, 64611), (Start: 5 @64689 has 102 MA's), (6, 64797), (8, 64875),

Gene: Daikon_116 Start: 64923, Stop: 65165, Start Num: 5
Candidate Starts for Daikon_116:
(Start: 5 @64923 has 102 MA's), (6, 65031), (8, 65109),

Gene: DoctorDiddles_113 Start: 64583, Stop: 64825, Start Num: 5
Candidate Starts for DoctorDiddles_113:
(Start: 5 @64583 has 102 MA's), (6, 64691), (8, 64769),

Gene: DrDrey_118 Start: 67225, Stop: 67467, Start Num: 4
Candidate Starts for DrDrey_118:
(Start: 3 @67183 has 1 MA's), (Start: 4 @67225 has 25 MA's), (6, 67333), (7, 67360), (8, 67411),

Gene: Dumbo_114 Start: 64726, Stop: 64968, Start Num: 5
Candidate Starts for Dumbo_114:
(2, 64648), (Start: 5 @64726 has 102 MA's), (6, 64834), (8, 64912),

Gene: Dusk_115 Start: 65747, Stop: 65989, Start Num: 4
Candidate Starts for Dusk_115:
(Start: 3 @65705 has 1 MA's), (Start: 4 @65747 has 25 MA's), (6, 65855), (8, 65933),

Gene: Easy2Say_114 Start: 65360, Stop: 65602, Start Num: 5
Candidate Starts for Easy2Say_114:
(2, 65282), (Start: 5 @65360 has 102 MA's), (6, 65468), (8, 65546),

Gene: Elite2014_113 Start: 64533, Stop: 64775, Start Num: 5
Candidate Starts for Elite2014_113:
(2, 64455), (Start: 5 @64533 has 102 MA's), (6, 64641), (8, 64719),

Gene: Elph10_113 Start: 64372, Stop: 64614, Start Num: 5
Candidate Starts for Elph10_113:
(2, 64294), (Start: 5 @64372 has 102 MA's), (6, 64480), (8, 64558),

Gene: Emmina_114 Start: 64311, Stop: 64553, Start Num: 5
Candidate Starts for Emmina_114:
(2, 64233), (Start: 5 @64311 has 102 MA's), (6, 64419), (8, 64497),

Gene: Eureka_114 Start: 65499, Stop: 65741, Start Num: 5

Candidate Starts for Eureka_114:
(2, 65421), (Start: 5 @65499 has 102 MA's), (6, 65607), (8, 65685),

Gene: FairyPath_114 Start: 65804, Stop: 66046, Start Num: 5
Candidate Starts for FairyPath_114:
(2, 65726), (Start: 5 @65804 has 102 MA's), (6, 65912), (8, 65990),

Gene: Filch_117 Start: 65265, Stop: 65507, Start Num: 5
Candidate Starts for Filch_117:
(2, 65187), (Start: 5 @65265 has 102 MA's), (6, 65373), (8, 65451),

Gene: FireRed_117 Start: 65775, Stop: 66017, Start Num: 5
Candidate Starts for FireRed_117:
(2, 65697), (Start: 5 @65775 has 102 MA's), (6, 65883), (8, 65961),

Gene: Flypotenuse_111 Start: 64498, Stop: 64740, Start Num: 5
Candidate Starts for Flypotenuse_111:
(2, 64420), (Start: 5 @64498 has 102 MA's), (6, 64606), (8, 64684),

Gene: FoghornLeghorn_111 Start: 63524, Stop: 63766, Start Num: 4
Candidate Starts for FoghornLeghorn_111:
(Start: 3 @63482 has 1 MA's), (Start: 4 @63524 has 25 MA's), (6, 63632), (8, 63710),

Gene: Gage_116 Start: 65031, Stop: 65273, Start Num: 5
Candidate Starts for Gage_116:
(2, 64953), (Start: 5 @65031 has 102 MA's), (6, 65139), (8, 65217),

Gene: Gator_116 Start: 65799, Stop: 66041, Start Num: 4
Candidate Starts for Gator_116:
(Start: 3 @65757 has 1 MA's), (Start: 4 @65799 has 25 MA's), (6, 65907), (7, 65934), (8, 65985),

Gene: Gemini_119 Start: 65410, Stop: 65652, Start Num: 5
Candidate Starts for Gemini_119:
(2, 65332), (Start: 5 @65410 has 102 MA's), (6, 65518), (8, 65596),

Gene: Glexan_117 Start: 65949, Stop: 66191, Start Num: 4
Candidate Starts for Glexan_117:
(Start: 3 @65907 has 1 MA's), (Start: 4 @65949 has 25 MA's), (6, 66057), (7, 66084), (8, 66135),

Gene: Goku_114 Start: 65808, Stop: 66050, Start Num: 5
Candidate Starts for Goku_114:
(2, 65730), (Start: 5 @65808 has 102 MA's), (6, 65916), (8, 65994),

Gene: GoldenSpark_118 Start: 64893, Stop: 65135, Start Num: 5
Candidate Starts for GoldenSpark_118:
(2, 64815), (Start: 5 @64893 has 102 MA's), (6, 65001), (8, 65079),

Gene: Goldilocks_118 Start: 65489, Stop: 65731, Start Num: 5
Candidate Starts for Goldilocks_118:
(2, 65411), (Start: 5 @65489 has 102 MA's), (6, 65597), (8, 65675),

Gene: GooberAzure_117 Start: 64893, Stop: 65135, Start Num: 5
Candidate Starts for GooberAzure_117:

(2, 64815), (Start: 5 @64893 has 102 MA's), (6, 65001), (8, 65079),

Gene: Greep_118 Start: 66465, Stop: 66707, Start Num: 5
Candidate Starts for Greep_118:
(2, 66387), (Start: 5 @66465 has 102 MA's), (6, 66573), (8, 66651),

Gene: HanKaySha_114 Start: 65081, Stop: 65323, Start Num: 5
Candidate Starts for HanKaySha_114:
(2, 65003), (Start: 5 @65081 has 102 MA's), (6, 65189), (8, 65267),

Gene: Harella_119 Start: 66465, Stop: 66707, Start Num: 4
Candidate Starts for Harella_119:
(Start: 3 @66423 has 1 MA's), (Start: 4 @66465 has 25 MA's), (6, 66573), (7, 66600), (8, 66651),

Gene: Henry_116 Start: 65750, Stop: 65992, Start Num: 4
Candidate Starts for Henry_116:
(Start: 3 @65708 has 1 MA's), (Start: 4 @65750 has 25 MA's), (6, 65858), (7, 65885), (8, 65936),

Gene: Highbury_110 Start: 63238, Stop: 63480, Start Num: 5
Candidate Starts for Highbury_110:
(2, 63160), (Start: 5 @63238 has 102 MA's), (6, 63346), (8, 63424),

Gene: Holt_120 Start: 65887, Stop: 66129, Start Num: 5
Candidate Starts for Holt_120:
(2, 65809), (Start: 5 @65887 has 102 MA's), (6, 65995), (8, 66073),

Gene: Hoonter_117 Start: 65386, Stop: 65628, Start Num: 5
Candidate Starts for Hoonter_117:
(2, 65308), (Start: 5 @65386 has 102 MA's), (6, 65494), (8, 65572),

Gene: Hopey_114 Start: 65692, Stop: 65934, Start Num: 5
Candidate Starts for Hopey_114:
(2, 65614), (Start: 5 @65692 has 102 MA's), (6, 65800), (8, 65878),

Gene: HufflyPuff_116 Start: 66001, Stop: 66243, Start Num: 5
Candidate Starts for HufflyPuff_116:
(2, 65923), (Start: 5 @66001 has 102 MA's), (6, 66109), (8, 66187),

Gene: IHOP_116 Start: 65468, Stop: 65710, Start Num: 4
Candidate Starts for IHOP_116:
(Start: 3 @65426 has 1 MA's), (Start: 4 @65468 has 25 MA's), (6, 65576), (7, 65603), (8, 65654),

Gene: Icee_119 Start: 65438, Stop: 65680, Start Num: 4
Candidate Starts for Icee_119:
(Start: 4 @65438 has 25 MA's), (6, 65546), (8, 65624),

Gene: Inca_114 Start: 63647, Stop: 63889, Start Num: 4
Candidate Starts for Inca_114:
(Start: 3 @63605 has 1 MA's), (Start: 4 @63647 has 25 MA's), (6, 63755), (8, 63833),

Gene: JeTaime_113 Start: 65099, Stop: 65341, Start Num: 5
Candidate Starts for JeTaime_113:
(2, 65021), (Start: 5 @65099 has 102 MA's), (6, 65207), (8, 65285),

Gene: Kanye_111 Start: 65142, Stop: 65384, Start Num: 5
Candidate Starts for Kanye_111:
(2, 65064), (Start: 5 @65142 has 102 MA's), (6, 65250), (8, 65328),

Gene: Kimchi_119 Start: 65614, Stop: 65856, Start Num: 5
Candidate Starts for Kimchi_119:
(2, 65536), (Start: 5 @65614 has 102 MA's), (6, 65722), (8, 65800),

Gene: Kostya_117 Start: 65528, Stop: 65812, Start Num: 3
Candidate Starts for Kostya_117:
(Start: 3 @65528 has 1 MA's), (Start: 4 @65570 has 25 MA's), (6, 65678), (7, 65705), (8, 65756),

Gene: Lilac_115 Start: 65835, Stop: 66077, Start Num: 5
Candidate Starts for Lilac_115:
(2, 65757), (Start: 5 @65835 has 102 MA's), (6, 65943), (8, 66021),

Gene: Lilizi_114 Start: 65121, Stop: 65363, Start Num: 5
Candidate Starts for Lilizi_114:
(2, 65043), (Start: 5 @65121 has 102 MA's), (6, 65229), (8, 65307),

Gene: Lilpickle_113 Start: 64533, Stop: 64775, Start Num: 5
Candidate Starts for Lilpickle_113:
(2, 64455), (Start: 5 @64533 has 102 MA's), (6, 64641), (8, 64719),

Gene: MISSy_115 Start: 65818, Stop: 66060, Start Num: 5
Candidate Starts for MISSy_115:
(2, 65740), (Start: 5 @65818 has 102 MA's), (6, 65926), (8, 66004),

Gene: MPhalcon_115 Start: 65236, Stop: 65478, Start Num: 5
Candidate Starts for MPhalcon_115:
(2, 65158), (Start: 5 @65236 has 102 MA's), (6, 65344), (8, 65422),

Gene: MadamMonkfish_113 Start: 64543, Stop: 64785, Start Num: 5
Candidate Starts for MadamMonkfish_113:
(2, 64465), (Start: 5 @64543 has 102 MA's), (6, 64651), (8, 64729),

Gene: Manda_115 Start: 65273, Stop: 65515, Start Num: 5
Candidate Starts for Manda_115:
(2, 65195), (Start: 5 @65273 has 102 MA's), (6, 65381), (8, 65459),

Gene: Marshmallow_116 Start: 66252, Stop: 66494, Start Num: 4
Candidate Starts for Marshmallow_116:
(Start: 3 @66210 has 1 MA's), (Start: 4 @66252 has 25 MA's), (6, 66360), (8, 66438),

Gene: Maxxinista_116 Start: 65020, Stop: 65262, Start Num: 5
Candidate Starts for Maxxinista_116:
(2, 64942), (Start: 5 @65020 has 102 MA's), (6, 65128), (8, 65206),

Gene: Mindy_117 Start: 65411, Stop: 65653, Start Num: 4
Candidate Starts for Mindy_117:
(Start: 4 @65411 has 25 MA's), (6, 65519), (8, 65597),

Gene: Miniwave_109 Start: 64729, Stop: 64971, Start Num: 5
Candidate Starts for Miniwave_109:
(2, 64651), (Start: 5 @64729 has 102 MA's), (6, 64837), (8, 64915),

Gene: Misfit_115 Start: 66332, Stop: 66574, Start Num: 5
Candidate Starts for Misfit_115:
(2, 66254), (Start: 5 @66332 has 102 MA's), (6, 66440), (8, 66518),

Gene: Moldemort_116 Start: 65001, Stop: 65243, Start Num: 5
Candidate Starts for Moldemort_116:
(2, 64923), (Start: 5 @65001 has 102 MA's), (6, 65109), (8, 65187),

Gene: MollyToe_108 Start: 63109, Stop: 63351, Start Num: 5
Candidate Starts for MollyToe_108:
(2, 63031), (Start: 5 @63109 has 102 MA's), (6, 63217), (8, 63295),

Gene: Mosby_111 Start: 64696, Stop: 64938, Start Num: 5
Candidate Starts for Mosby_111:
(2, 64618), (Start: 5 @64696 has 102 MA's), (6, 64804), (8, 64882),

Gene: Murica_118 Start: 67035, Stop: 67277, Start Num: 5
Candidate Starts for Murica_118:
(2, 66957), (Start: 5 @67035 has 102 MA's), (6, 67143), (8, 67221),

Gene: Murphy_113 Start: 65393, Stop: 65635, Start Num: 5
Candidate Starts for Murphy_113:
(2, 65315), (Start: 5 @65393 has 102 MA's), (6, 65501), (8, 65579),

Gene: Myrale_115 Start: 65908, Stop: 66150, Start Num: 5
Candidate Starts for Myrale_115:
(2, 65830), (Start: 5 @65908 has 102 MA's), (6, 66016), (8, 66094),

Gene: Nala_116 Start: 65745, Stop: 65987, Start Num: 5
Candidate Starts for Nala_116:
(2, 65667), (Start: 5 @65745 has 102 MA's), (6, 65853), (8, 65931),

Gene: NelitzaMV_111 Start: 63718, Stop: 63960, Start Num: 5
Candidate Starts for NelitzaMV_111:
(2, 63640), (Start: 5 @63718 has 102 MA's), (6, 63826), (8, 63904),

Gene: Nimrod_115 Start: 65959, Stop: 66201, Start Num: 5
Candidate Starts for Nimrod_115:
(2, 65881), (Start: 5 @65959 has 102 MA's), (6, 66067), (8, 66145),

Gene: NoSleep_114 Start: 64553, Stop: 64795, Start Num: 5
Candidate Starts for NoSleep_114:
(2, 64475), (Start: 5 @64553 has 102 MA's), (6, 64661), (8, 64739),

Gene: NonchalantPear_112 Start: 63986, Stop: 64228, Start Num: 5
Candidate Starts for NonchalantPear_112:
(2, 63908), (Start: 5 @63986 has 102 MA's), (6, 64094), (8, 64172),

Gene: OrionPax_112 Start: 64626, Stop: 64868, Start Num: 5

Candidate Starts for OrionPax_112:
(2, 64548), (Start: 5 @64626 has 102 MA's), (6, 64734), (8, 64812),

Gene: PaddyBaddy_113 Start: 64744, Stop: 64986, Start Num: 5
Candidate Starts for PaddyBaddy_113:
(2, 64666), (Start: 5 @64744 has 102 MA's), (6, 64852), (8, 64930),

Gene: Palpatine_115 Start: 66030, Stop: 66272, Start Num: 5
Candidate Starts for Palpatine_115:
(2, 65952), (Start: 5 @66030 has 102 MA's), (6, 66138), (8, 66216),

Gene: Paperbeatsrock_113 Start: 65407, Stop: 65649, Start Num: 5
Candidate Starts for Paperbeatsrock_113:
(2, 65329), (Start: 5 @65407 has 102 MA's), (6, 65515), (8, 65593),

Gene: Pat3_114 Start: 64905, Stop: 65147, Start Num: 4
Candidate Starts for Pat3_114:
(Start: 3 @64863 has 1 MA's), (Start: 4 @64905 has 25 MA's), (6, 65013), (8, 65091),

Gene: Petra64142_118 Start: 65875, Stop: 66117, Start Num: 5
Candidate Starts for Petra64142_118:
(2, 65797), (Start: 5 @65875 has 102 MA's), (6, 65983), (8, 66061),

Gene: Phaja_116 Start: 65473, Stop: 65715, Start Num: 4
Candidate Starts for Phaja_116:
(Start: 3 @65431 has 1 MA's), (Start: 4 @65473 has 25 MA's), (6, 65581), (8, 65659),

Gene: Pharsalus_114 Start: 65547, Stop: 65789, Start Num: 4
Candidate Starts for Pharsalus_114:
(Start: 4 @65547 has 25 MA's), (6, 65655), (8, 65733),

Gene: PhatBacter_117 Start: 65775, Stop: 66017, Start Num: 5
Candidate Starts for PhatBacter_117:
(2, 65697), (Start: 5 @65775 has 102 MA's), (6, 65883), (8, 65961),

Gene: Phaux_116 Start: 66335, Stop: 66577, Start Num: 5
Candidate Starts for Phaux_116:
(2, 66257), (Start: 5 @66335 has 102 MA's), (6, 66443), (8, 66521),

Gene: Phrux_110 Start: 64413, Stop: 64655, Start Num: 5
Candidate Starts for Phrux_110:
(2, 64335), (Start: 5 @64413 has 102 MA's), (6, 64521), (8, 64599),

Gene: Policronamos_117 Start: 66039, Stop: 66281, Start Num: 5
Candidate Starts for Policronamos_117:
(2, 65961), (Start: 5 @66039 has 102 MA's), (6, 66147), (8, 66225),

Gene: Porky_113 Start: 64737, Stop: 64979, Start Num: 5
Candidate Starts for Porky_113:
(2, 64659), (Start: 5 @64737 has 102 MA's), (6, 64845), (8, 64923),

Gene: Ptowny_110 Start: 63447, Stop: 63689, Start Num: 5
Candidate Starts for Ptowny_110:

(2, 63369), (Start: 5 @63447 has 102 MA's), (6, 63555), (8, 63633),

Gene: Pumpkin_115 Start: 64753, Stop: 64995, Start Num: 5
Candidate Starts for Pumpkin_115:
(2, 64675), (Start: 5 @64753 has 102 MA's), (6, 64861), (8, 64939),

Gene: Quallification_115 Start: 65821, Stop: 66063, Start Num: 5
Candidate Starts for Quallification_115:
(2, 65743), (Start: 5 @65821 has 102 MA's), (6, 65929), (8, 66007),

Gene: Rakim_116 Start: 65241, Stop: 65483, Start Num: 5
Candidate Starts for Rakim_116:
(2, 65163), (Start: 5 @65241 has 102 MA's), (6, 65349), (8, 65427),

Gene: Rimmer_112 Start: 65212, Stop: 65454, Start Num: 5
Candidate Starts for Rimmer_112:
(2, 65134), (Start: 5 @65212 has 102 MA's), (6, 65320), (8, 65398),

Gene: RiverMonster_113 Start: 65308, Stop: 65550, Start Num: 5
Candidate Starts for RiverMonster_113:
(2, 65230), (Start: 5 @65308 has 102 MA's), (6, 65416), (8, 65494),

Gene: Saints25_110 Start: 63238, Stop: 63480, Start Num: 5
Candidate Starts for Saints25_110:
(2, 63160), (Start: 5 @63238 has 102 MA's), (6, 63346), (8, 63424),

Gene: Sassay_109 Start: 63658, Stop: 63900, Start Num: 5
Candidate Starts for Sassay_109:
(2, 63580), (Start: 5 @63658 has 102 MA's), (6, 63766), (8, 63844),

Gene: ShamWow_115 Start: 66124, Stop: 66366, Start Num: 5
Candidate Starts for ShamWow_115:
(2, 66046), (Start: 5 @66124 has 102 MA's), (6, 66232), (8, 66310),

Gene: ShereKhan_112 Start: 66067, Stop: 66309, Start Num: 5
Candidate Starts for ShereKhan_112:
(2, 65989), (Start: 5 @66067 has 102 MA's), (6, 66175), (8, 66253),

Gene: Simpliphy_112 Start: 64879, Stop: 65121, Start Num: 5
Candidate Starts for Simpliphy_112:
(2, 64801), (Start: 5 @64879 has 102 MA's), (6, 64987), (8, 65065),

Gene: SirDuracell_118 Start: 65404, Stop: 65646, Start Num: 4
Candidate Starts for SirDuracell_118:
(Start: 3 @65362 has 1 MA's), (Start: 4 @65404 has 25 MA's), (6, 65512), (8, 65590),

Gene: SophKB_113 Start: 65289, Stop: 65531, Start Num: 5
Candidate Starts for SophKB_113:
(Start: 5 @65289 has 102 MA's), (6, 65397), (8, 65475),

Gene: Sotrice96_119 Start: 66191, Stop: 66433, Start Num: 4
Candidate Starts for Sotrice96_119:
(Start: 4 @66191 has 25 MA's), (6, 66299), (8, 66377),

Gene: Stank_117 Start: 65686, Stop: 65928, Start Num: 5
Candidate Starts for Stank_117:
(2, 65608), (Start: 5 @65686 has 102 MA's), (6, 65794), (8, 65872),

Gene: Stark_114 Start: 65192, Stop: 65434, Start Num: 5
Candidate Starts for Stark_114:
(2, 65114), (Start: 5 @65192 has 102 MA's), (6, 65300), (8, 65378),

Gene: StellaBean_112 Start: 65489, Stop: 65731, Start Num: 5
Candidate Starts for StellaBean_112:
(2, 65411), (Start: 5 @65489 has 102 MA's), (6, 65597), (8, 65675),

Gene: StolenFromERC_116 Start: 65031, Stop: 65273, Start Num: 5
Candidate Starts for StolenFromERC_116:
(2, 64953), (Start: 5 @65031 has 102 MA's), (6, 65139), (8, 65217),

Gene: StormChicken_116 Start: 65956, Stop: 66198, Start Num: 5
Candidate Starts for StormChicken_116:
(2, 65878), (Start: 5 @65956 has 102 MA's), (6, 66064), (8, 66142),

Gene: TBrady12_118 Start: 65123, Stop: 65365, Start Num: 5
Candidate Starts for TBrady12_118:
(2, 65045), (Start: 5 @65123 has 102 MA's), (6, 65231), (8, 65309),

Gene: Tarkin_113 Start: 65932, Stop: 66174, Start Num: 5
Candidate Starts for Tarkin_113:
(2, 65854), (Start: 5 @65932 has 102 MA's), (6, 66040), (8, 66118),

Gene: TeamEdward_114 Start: 65573, Stop: 65815, Start Num: 5
Candidate Starts for TeamEdward_114:
(2, 65495), (Start: 5 @65573 has 102 MA's), (6, 65681), (8, 65759),

Gene: TeardropMSU_114 Start: 65293, Stop: 65535, Start Num: 4
Candidate Starts for TeardropMSU_114:
(Start: 4 @65293 has 25 MA's), (6, 65401), (8, 65479),

Gene: Teaspoon_115 Start: 65671, Stop: 65913, Start Num: 5
Candidate Starts for Teaspoon_115:
(2, 65593), (Start: 5 @65671 has 102 MA's), (6, 65779), (8, 65857),

Gene: Terminus_117 Start: 66332, Stop: 66574, Start Num: 5
Candidate Starts for Terminus_117:
(2, 66254), (Start: 5 @66332 has 102 MA's), (6, 66440), (8, 66518),

Gene: Thimble_116 Start: 64293, Stop: 64535, Start Num: 5
Candidate Starts for Thimble_116:
(2, 64215), (Start: 5 @64293 has 102 MA's), (6, 64401), (8, 64479),

Gene: Thresher_115 Start: 65972, Stop: 66214, Start Num: 5
Candidate Starts for Thresher_115:
(2, 65894), (Start: 5 @65972 has 102 MA's), (6, 66080), (8, 66158),

Gene: Tomaszewski_109 Start: 64870, Stop: 65112, Start Num: 5
Candidate Starts for Tomaszewski_109:
(2, 64792), (Start: 5 @64870 has 102 MA's), (6, 64978), (8, 65056),

Gene: Toto_113 Start: 66124, Stop: 66366, Start Num: 5
Candidate Starts for Toto_113:
(2, 66046), (Start: 5 @66124 has 102 MA's), (6, 66232), (8, 66310),

Gene: Traaww1_111 Start: 64673, Stop: 64915, Start Num: 5
Candidate Starts for Traaww1_111:
(2, 64595), (Start: 5 @64673 has 102 MA's), (6, 64781), (8, 64859),

Gene: Tuco_119 Start: 67352, Stop: 67594, Start Num: 4
Candidate Starts for Tuco_119:
(Start: 4 @67352 has 25 MA's), (6, 67460), (8, 67538),

Gene: Ukulele_109 Start: 64689, Stop: 64931, Start Num: 5
Candidate Starts for Ukulele_109:
(2, 64611), (Start: 5 @64689 has 102 MA's), (6, 64797), (8, 64875),

Gene: Wiggin_117 Start: 65116, Stop: 65358, Start Num: 5
Candidate Starts for Wiggin_117:
(2, 65038), (Start: 5 @65116 has 102 MA's), (6, 65224), (8, 65302),

Gene: Willez_109 Start: 63658, Stop: 63900, Start Num: 5
Candidate Starts for Willez_109:
(2, 63580), (Start: 5 @63658 has 102 MA's), (6, 63766), (8, 63844),

Gene: Xandras_114 Start: 64939, Stop: 65181, Start Num: 5
Candidate Starts for Xandras_114:
(2, 64861), (Start: 5 @64939 has 102 MA's), (6, 65047), (8, 65125),

Gene: YassJohnny_111 Start: 63679, Stop: 63921, Start Num: 5
Candidate Starts for YassJohnny_111:
(2, 63601), (Start: 5 @63679 has 102 MA's), (6, 63787), (8, 63865),

Gene: Youngblood_118 Start: 65828, Stop: 66070, Start Num: 5
Candidate Starts for Youngblood_118:
(2, 65750), (Start: 5 @65828 has 102 MA's), (6, 65936), (8, 66014),

Gene: xkcd_118 Start: 66013, Stop: 66255, Start Num: 5
Candidate Starts for xkcd_118:
(2, 65935), (Start: 5 @66013 has 102 MA's), (6, 66121), (8, 66199),