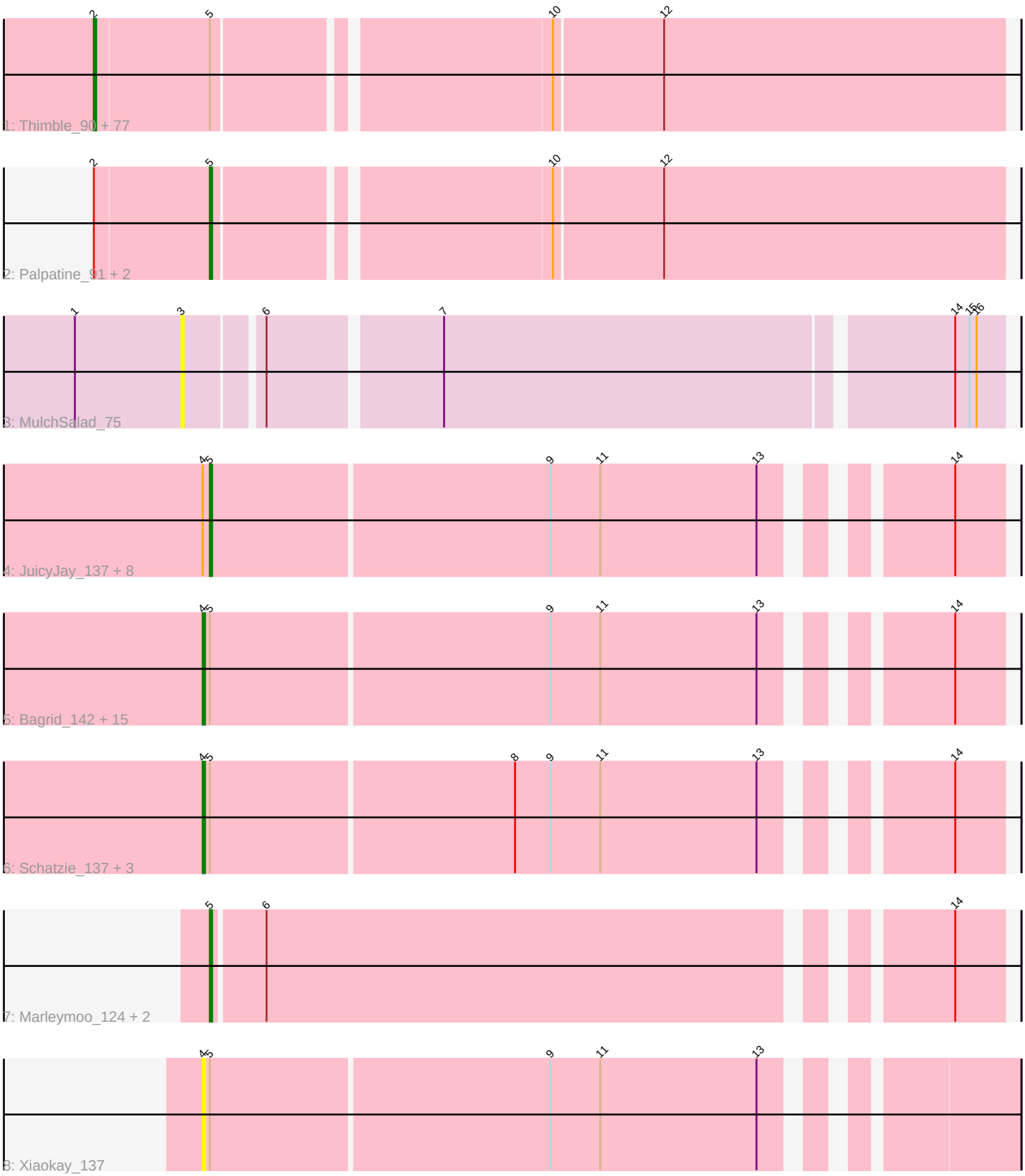
# Pham 290990


2
5
10
12
1: Thimble_90 + 77
2
5
10
12
2: Palpatine_91 + 2
1
3
6
7
14
15
16
3: MulchSalad_75
4
5
9
11
13
14
4: JuicyJay_137 + 8
4
5
9
11
13
14
5: Bagrid_142 + 15
4
5
8
9
11
13
14
6: Schatzie_137 + 3
5
6
14
7: Marleymoo_124 + 2
4
5
9
11
13
8: Xiaokay_137

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 290990 Report

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

Pham number 290990 has 115 members, 12 are drafts.

Phages represented in each track:
• Track 1 : Thimble_90, Ptowny_86, Tarkin_88, Miniwave_84, Filch_90, FairyPath_89, Highbury_88, TBrady12_92, Command613_91, ShereKhan_87, Hopey_89, CrystalP_88, Quallification_90, Terminus_92, Rakim_90, Mosby_85, Myrale_89, Policronamos_92, Dusk_86, NelitzaMV_87, Ukulele_84, Pharsalus_86, BugsBunny_89, Czyszczon1_90, Misfit_90, Maxxinista_91, Stark_90, ShamWow_89, ChosenOne_89, Easy2Say_90, StellaBean_87, Teaspoon_90, Pumpkin_92, Marshmallow_87, Phaja_87, Mindy_88, Tomaszewski_84, Cjw1_89, Goku_88, RiverMonster_89, TeardropMSU_85, Sassay_84, Elite2014_88, Phaux_91, Eureka_88, Youngblood_92, Kostya_89, Kanye_86, SophKB_86, Paperbeatsrock_88, Brewer_84, Inca_86, Henry_87, Contagion_85, Xandras_88, Toto_87, Simpliphy_88, DrDrey_89, PaddyBaddy_89, Murica_92, MadamMonkfish_89, BilboSwaggins_87, Murphy_89, StolenFromERC_92, Tuco_90, ABCat_86, Greep_93, Lilizi_90, Bruin_86, xkcd_92, Saints25_88, Willez_84, Kimchi_93, AmericanBeauty_93, Lilpickle_88, Gage_91, Dumbo_89, IHOP_87
• Track 2 : Palpatine_91, BadStone_86, Bench_92
• Track 3 : MulchSalad_75
• Track 4 : JuicyJay_137, Kalah2_132, Optimus_132, Duke13_137, ThreeRngTarjay_136, Ejimix_134, Dallas_142, Beem_143, Zelink_136
• Track 5 : Bagrid_142, Klein_139, Bombitas_129, Redno2_133, BAKA_141, NihilNomen_143, HokkenD_133, EricMillard_133, Dove_127, Constella_135, Halley_143, Minerva_141, Hughesyang_140, Yeet_134, Pound_129, Phoebus_141
• Track 6 : Schatzie_137, Wanda_141, Odette_145, DmpstrDiver_142
• Track 7 : Marleymoo_124, Hidrated_127, Bobby_131
• Track 8 : Xiaokay_137

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

The start number called the most often in the published annotations is 2, it was called in 72 of the 103 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ABCat_86, AmericanBeauty_93, BilboSwaggins_87, Brewer_84, Bruin_86, BugsBunny_89, ChosenOne_89, Cjw1_89, Command613_91, Contagion_85, CrystalP_88, Czyszczon1_90, DrDrey_89, Dumbo_89, Dusk_86, Easy2Say_90,

Elite2014_88, Eureka_88, FairyPath_89, Filch_90, Gage_91, Goku_88, Greep_93, Henry_87, Highbury_88, Hopey_89, IHOP_87, Inca_86, Kanye_86, Kimchi_93, Kostya_89, Lilizi_90, Lilpickle_88, MadamMonkfish_89, Marshmallow_87, Maxxinista_91, Mindy_88, Miniwave_84, Misfit_90, Mosby_85, Murica_92, Murphy_89, Myrale_89, NelitzaMV_87, PaddyBaddy_89, Paperbeatsrock_88, Phaja_87, Pharsalus_86, Phaux_91, Policronamos_92, Ptowny_86, Pumpkin_92, Quallification_90, Rakim_90, RiverMonster_89, Saints25_88, Sassay_84, ShamWow_89, ShereKhan_87, Simpliphy_88, SophKB_86, Stark_90, StellaBean_87, StolenFromERC_92, TBrady12_92, Tarkin_88, TeardropMSU_85, Teaspoon_90, Terminus_92, Thimble_90, Tomaszewski_84, Toto_87, Tuco_90, Ukulele_84, Willez_84, Xandras_88, Youngblood_92, xkcd_92,

Genes that have the "Most Annotated" start but do not call it:
• BadStone_86, Bench_92, Palpatine_91,

Genes that do not have the "Most Annotated" start:
• BAKA_141, Bagrid_142, Beem_143, Bobby_131, Bombitas_129, Constella_135, Dallas_142, DmpstrDiver_142, Dove_127, Duke13_137, Ejimix_134, EricMillard_133, Halley_143, Hidrated_127, HokkenD_133, Hughesyang_140, JuicyJay_137, Kalah2_132, Klein_139, Marleymoo_124, Minerva_141, MulchSalad_75, NihilNomen_143, Odette_145, Optimus_132, Phoebus_141, Pound_129, Redno2_133, Schatzie_137, ThreeRngTarjay_136, Wanda_141, Xiaokay_137, Yeet_134, Zelink_136,

**Summary by start number:**

Start 2:
• Found in 81 of 115 ( 70.4% ) of genes in pham
• Manual Annotations of this start: 72 of 103
• Called 96.3% of time when present
• Phage (with cluster) where this start called: ABCat_86 (E), AmericanBeauty_93 (E), BilboSwaggins_87 (E), Brewer_84 (E), Bruin_86 (E), BugsBunny_89 (E), ChosenOne_89 (E), Cjw1_89 (E), Command613_91 (E), Contagion_85 (E), CrystalP_88 (E), Czyszczon1_90 (E), DrDrey_89 (E), Dumbo_89 (E), Dusk_86 (E), Easy2Say_90 (E), Elite2014_88 (E), Eureka_88 (E), FairyPath_89 (E), Filch_90 (E), Gage_91 (E), Goku_88 (E), Greep_93 (E), Henry_87 (E), Highbury_88 (E), Hopey_89 (E), IHOP_87 (E), Inca_86 (E), Kanye_86 (E), Kimchi_93 (E), Kostya_89 (E), Lilizi_90 (E), Lilpickle_88 (E), MadamMonkfish_89 (E), Marshmallow_87 (E), Maxxinista_91 (E), Mindy_88 (E), Miniwave_84 (E), Misfit_90 (E), Mosby_85 (E), Murica_92 (E), Murphy_89 (E), Myrale_89 (E), NelitzaMV_87 (E), PaddyBaddy_89 (E), Paperbeatsrock_88 (E), Phaja_87 (E), Pharsalus_86 (E), Phaux_91 (E), Policronamos_92 (E), Ptowny_86 (E), Pumpkin_92 (E), Quallification_90 (E), Rakim_90 (E), RiverMonster_89 (E), Saints25_88 (E), Sassay_84 (E), ShamWow_89 (E), ShereKhan_87 (E), Simpliphy_88 (E), SophKB_86 (E), Stark_90 (E), StellaBean_87 (E), StolenFromERC_92 (E), TBrady12_92 (E), Tarkin_88 (E), TeardropMSU_85 (E), Teaspoon_90 (E), Terminus_92 (E), Thimble_90 (E), Tomaszewski_84 (E), Toto_87 (E), Tuco_90 (E), Ukulele_84 (E), Willez_84 (E), Xandras_88 (E), Youngblood_92 (E), xkcd_92 (E),

Start 3:
• Found in 1 of 115 ( 0.9% ) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present

• Phage (with cluster) where this start called: MulchSalad_75 (F7),

Start 4:
• Found in 30 of 115 ( 26.1% ) of genes in pham
• Manual Annotations of this start: 18 of 103
• Called 70.0% of time when present
• Phage (with cluster) where this start called: BAKA_141 (J), Bagrid_142 (J), Bombitas_129 (J), Constella_135 (J), DmpstrDiver_142 (J), Dove_127 (J), EricMillard_133 (J), Halley_143 (J), HokkenD_133 (J), Hughesyang_140 (J), Klein_139 (J), Minerva_141 (J), NihilNomen_143 (J), Odette_145 (J), Phoebus_141 (J), Pound_129 (J), Redno2_133 (J), Schatzie_137 (J), Wanda_141 (J), Xiaokay_137 (J), Yeet_134 (J),

Start 5:
• Found in 114 of 115 ( 99.1% ) of genes in pham
• Manual Annotations of this start: 13 of 103
• Called 13.2% of time when present
• Phage (with cluster) where this start called: BadStone_86 (E), Beem_143 (J), Bench_92 (E), Bobby_131 (J), Dallas_142 (J), Duke13_137 (J), Ejimix_134 (J), Hidrated_127 (J), JuicyJay_137 (J), Kalah2_132 (J), Marleymoo_124 (J), Optimus_132 (J), Palpatine_91 (E), ThreeRngTarjay_136 (J), Zelink_136 (J),

**Summary by clusters:**

There are 3 clusters represented in this pham: J, E, F7,

Info for manual annotations of cluster E:
•Start number 2 was manually annotated 72 times for cluster E.
•Start number 5 was manually annotated 3 times for cluster E.

Info for manual annotations of cluster J:
•Start number 4 was manually annotated 18 times for cluster J.
•Start number 5 was manually annotated 10 times for cluster J.

***Gene Information:***

Gene: ABCat_86 Start: 54488, Stop: 54856, Start Num: 2
Candidate Starts for ABCat_86:
(Start: 2 @54488 has 72 MA's), (Start: 5 @54536 has 13 MA's), (10, 54668), (12, 54713),

Gene: AmericanBeauty_93 Start: 54657, Stop: 55025, Start Num: 2
Candidate Starts for AmericanBeauty_93:
(Start: 2 @54657 has 72 MA's), (Start: 5 @54705 has 13 MA's), (10, 54837), (12, 54882),

Gene: BAKA_141 Start: 75066, Stop: 75377, Start Num: 4
Candidate Starts for BAKA_141:
(Start: 4 @75066 has 18 MA's), (Start: 5 @75069 has 13 MA's), (9, 75210), (11, 75231), (13, 75297), (14, 75357),

Gene: BadStone_86 Start: 54105, Stop: 54425, Start Num: 5

Candidate Starts for BadStone_86:
(Start: 2 @54057 has 72 MA's), (Start: 5 @54105 has 13 MA's), (10, 54237), (12, 54282),

Gene: Bagrid_142 Start: 75761, Stop: 76072, Start Num: 4
Candidate Starts for Bagrid_142:
(Start: 4 @75761 has 18 MA's), (Start: 5 @75764 has 13 MA's), (9, 75905), (11, 75926), (13, 75992), (14, 76052),

Gene: Beem_143 Start: 76667, Stop: 76975, Start Num: 5
Candidate Starts for Beem_143:
(Start: 4 @76664 has 18 MA's), (Start: 5 @76667 has 13 MA's), (9, 76808), (11, 76829), (13, 76895), (14, 76955),

Gene: Bench_92 Start: 54200, Stop: 54520, Start Num: 5
Candidate Starts for Bench_92:
(Start: 2 @54152 has 72 MA's), (Start: 5 @54200 has 13 MA's), (10, 54332), (12, 54377),

Gene: BilboSwaggins_87 Start: 54454, Stop: 54822, Start Num: 2
Candidate Starts for BilboSwaggins_87:
(Start: 2 @54454 has 72 MA's), (Start: 5 @54502 has 13 MA's), (10, 54634), (12, 54679),

Gene: Bobby_131 Start: 76521, Stop: 76829, Start Num: 5
Candidate Starts for Bobby_131:
(Start: 5 @76521 has 13 MA's), (6, 76542), (14, 76809),

Gene: Bombitas_129 Start: 74075, Stop: 74386, Start Num: 4
Candidate Starts for Bombitas_129:
(Start: 4 @74075 has 18 MA's), (Start: 5 @74078 has 13 MA's), (9, 74219), (11, 74240), (13, 74306), (14, 74366),

Gene: Brewer_84 Start: 52954, Stop: 53322, Start Num: 2
Candidate Starts for Brewer_84:
(Start: 2 @52954 has 72 MA's), (Start: 5 @53002 has 13 MA's), (10, 53134), (12, 53179),

Gene: Bruin_86 Start: 53031, Stop: 53399, Start Num: 2
Candidate Starts for Bruin_86:
(Start: 2 @53031 has 72 MA's), (Start: 5 @53079 has 13 MA's), (10, 53211), (12, 53256),

Gene: BugsBunny_89 Start: 54560, Stop: 54928, Start Num: 2
Candidate Starts for BugsBunny_89:
(Start: 2 @54560 has 72 MA's), (Start: 5 @54608 has 13 MA's), (10, 54740), (12, 54785),

Gene: ChosenOne_89 Start: 53512, Stop: 53880, Start Num: 2
Candidate Starts for ChosenOne_89:
(Start: 2 @53512 has 72 MA's), (Start: 5 @53560 has 13 MA's), (10, 53692), (12, 53737),

Gene: Cjw1_89 Start: 55207, Stop: 55575, Start Num: 2
Candidate Starts for Cjw1_89:
(Start: 2 @55207 has 72 MA's), (Start: 5 @55255 has 13 MA's), (10, 55387), (12, 55432),

Gene: Command613_91 Start: 54551, Stop: 54919, Start Num: 2
Candidate Starts for Command613_91:
(Start: 2 @54551 has 72 MA's), (Start: 5 @54599 has 13 MA's), (10, 54731), (12, 54776),

Gene: Constella_135 Start: 75317, Stop: 75628, Start Num: 4
Candidate Starts for Constella_135:
(Start: 4 @75317 has 18 MA's), (Start: 5 @75320 has 13 MA's), (9, 75461), (11, 75482), (13, 75548), (14, 75608),

Gene: Contagion_85 Start: 53312, Stop: 53680, Start Num: 2
Candidate Starts for Contagion_85:
(Start: 2 @53312 has 72 MA's), (Start: 5 @53360 has 13 MA's), (10, 53492), (12, 53537),

Gene: CrystalP_88 Start: 54454, Stop: 54822, Start Num: 2
Candidate Starts for CrystalP_88:
(Start: 2 @54454 has 72 MA's), (Start: 5 @54502 has 13 MA's), (10, 54634), (12, 54679),

Gene: Czyszczon1_90 Start: 54015, Stop: 54383, Start Num: 2
Candidate Starts for Czyszczon1_90:
(Start: 2 @54015 has 72 MA's), (Start: 5 @54063 has 13 MA's), (10, 54195), (12, 54240),

Gene: Dallas_142 Start: 76134, Stop: 76442, Start Num: 5
Candidate Starts for Dallas_142:
(Start: 4 @76131 has 18 MA's), (Start: 5 @76134 has 13 MA's), (9, 76275), (11, 76296), (13, 76362), (14, 76422),

Gene: DmpstrDiver_142 Start: 76050, Stop: 76361, Start Num: 4
Candidate Starts for DmpstrDiver_142:
(Start: 4 @76050 has 18 MA's), (Start: 5 @76053 has 13 MA's), (8, 76179), (9, 76194), (11, 76215), (13, 76281), (14, 76341),

Gene: Dove_127 Start: 71649, Stop: 71960, Start Num: 4
Candidate Starts for Dove_127:
(Start: 4 @71649 has 18 MA's), (Start: 5 @71652 has 13 MA's), (9, 71793), (11, 71814), (13, 71880), (14, 71940),

Gene: DrDrey_89 Start: 54934, Stop: 55302, Start Num: 2
Candidate Starts for DrDrey_89:
(Start: 2 @54934 has 72 MA's), (Start: 5 @54982 has 13 MA's), (10, 55114), (12, 55159),

Gene: Duke13_137 Start: 73354, Stop: 73662, Start Num: 5
Candidate Starts for Duke13_137:
(Start: 4 @73351 has 18 MA's), (Start: 5 @73354 has 13 MA's), (9, 73495), (11, 73516), (13, 73582), (14, 73642),

Gene: Dumbo_89 Start: 53414, Stop: 53782, Start Num: 2
Candidate Starts for Dumbo_89:
(Start: 2 @53414 has 72 MA's), (Start: 5 @53462 has 13 MA's), (10, 53594), (12, 53639),

Gene: Dusk_86 Start: 53717, Stop: 54085, Start Num: 2
Candidate Starts for Dusk_86:
(Start: 2 @53717 has 72 MA's), (Start: 5 @53765 has 13 MA's), (10, 53897), (12, 53942),

Gene: Easy2Say_90 Start: 54916, Stop: 55284, Start Num: 2
Candidate Starts for Easy2Say_90:
(Start: 2 @54916 has 72 MA's), (Start: 5 @54964 has 13 MA's), (10, 55096), (12, 55141),

Gene: Ejimix_134 Start: 76202, Stop: 76510, Start Num: 5
Candidate Starts for Ejimix_134:
(Start: 4 @76199 has 18 MA's), (Start: 5 @76202 has 13 MA's), (9, 76343), (11, 76364), (13, 76430), (14, 76490),

Gene: Elite2014_88 Start: 53511, Stop: 53879, Start Num: 2
Candidate Starts for Elite2014_88:
(Start: 2 @53511 has 72 MA's), (Start: 5 @53559 has 13 MA's), (10, 53691), (12, 53736),

Gene: EricMillard_133 Start: 74703, Stop: 75014, Start Num: 4
Candidate Starts for EricMillard_133:
(Start: 4 @74703 has 18 MA's), (Start: 5 @74706 has 13 MA's), (9, 74847), (11, 74868), (13, 74934), (14, 74994),

Gene: Eureka_88 Start: 54424, Stop: 54792, Start Num: 2
Candidate Starts for Eureka_88:
(Start: 2 @54424 has 72 MA's), (Start: 5 @54472 has 13 MA's), (10, 54604), (12, 54649),

Gene: FairyPath_89 Start: 54630, Stop: 54998, Start Num: 2
Candidate Starts for FairyPath_89:
(Start: 2 @54630 has 72 MA's), (Start: 5 @54678 has 13 MA's), (10, 54810), (12, 54855),

Gene: Filch_90 Start: 53440, Stop: 53808, Start Num: 2
Candidate Starts for Filch_90:
(Start: 2 @53440 has 72 MA's), (Start: 5 @53488 has 13 MA's), (10, 53620), (12, 53665),

Gene: Gage_91 Start: 54158, Stop: 54526, Start Num: 2
Candidate Starts for Gage_91:
(Start: 2 @54158 has 72 MA's), (Start: 5 @54206 has 13 MA's), (10, 54338), (12, 54383),

Gene: Goku_88 Start: 54153, Stop: 54521, Start Num: 2
Candidate Starts for Goku_88:
(Start: 2 @54153 has 72 MA's), (Start: 5 @54201 has 13 MA's), (10, 54333), (12, 54378),

Gene: Greep_93 Start: 55291, Stop: 55659, Start Num: 2
Candidate Starts for Greep_93:
(Start: 2 @55291 has 72 MA's), (Start: 5 @55339 has 13 MA's), (10, 55471), (12, 55516),

Gene: Halley_143 Start: 76515, Stop: 76826, Start Num: 4
Candidate Starts for Halley_143:
(Start: 4 @76515 has 18 MA's), (Start: 5 @76518 has 13 MA's), (9, 76659), (11, 76680), (13, 76746), (14, 76806),

Gene: Henry_87 Start: 53894, Stop: 54262, Start Num: 2
Candidate Starts for Henry_87:
(Start: 2 @53894 has 72 MA's), (Start: 5 @53942 has 13 MA's), (10, 54074), (12, 54119),

Gene: Hidrated_127 Start: 74854, Stop: 75162, Start Num: 5
Candidate Starts for Hidrated_127:
(Start: 5 @74854 has 13 MA's), (6, 74875), (14, 75142),

Gene: Highbury_88 Start: 53584, Stop: 53952, Start Num: 2

Candidate Starts for Highbury_88:
(Start: 2 @53584 has 72 MA's), (Start: 5 @53632 has 13 MA's), (10, 53764), (12, 53809),

Gene: HokkenD_133 Start: 75399, Stop: 75710, Start Num: 4
Candidate Starts for HokkenD_133:
(Start: 4 @75399 has 18 MA's), (Start: 5 @75402 has 13 MA's), (9, 75543), (11, 75564), (13, 75630), (14, 75690),

Gene: Hopey_89 Start: 54126, Stop: 54494, Start Num: 2
Candidate Starts for Hopey_89:
(Start: 2 @54126 has 72 MA's), (Start: 5 @54174 has 13 MA's), (10, 54306), (12, 54351),

Gene: Hughesyang_140 Start: 76285, Stop: 76596, Start Num: 4
Candidate Starts for Hughesyang_140:
(Start: 4 @76285 has 18 MA's), (Start: 5 @76288 has 13 MA's), (9, 76429), (11, 76450), (13, 76516), (14, 76576),

Gene: IHOP_87 Start: 54057, Stop: 54425, Start Num: 2
Candidate Starts for IHOP_87:
(Start: 2 @54057 has 72 MA's), (Start: 5 @54105 has 13 MA's), (10, 54237), (12, 54282),

Gene: Inca_86 Start: 52546, Stop: 52914, Start Num: 2
Candidate Starts for Inca_86:
(Start: 2 @52546 has 72 MA's), (Start: 5 @52594 has 13 MA's), (10, 52726), (12, 52771),

Gene: JuicyJay_137 Start: 77803, Stop: 78111, Start Num: 5
Candidate Starts for JuicyJay_137:
(Start: 4 @77800 has 18 MA's), (Start: 5 @77803 has 13 MA's), (9, 77944), (11, 77965), (13, 78031), (14, 78091),

Gene: Kalah2_132 Start: 75409, Stop: 75717, Start Num: 5
Candidate Starts for Kalah2_132:
(Start: 4 @75406 has 18 MA's), (Start: 5 @75409 has 13 MA's), (9, 75550), (11, 75571), (13, 75637), (14, 75697),

Gene: Kanye_86 Start: 53641, Stop: 54009, Start Num: 2
Candidate Starts for Kanye_86:
(Start: 2 @53641 has 72 MA's), (Start: 5 @53689 has 13 MA's), (10, 53821), (12, 53866),

Gene: Kimchi_93 Start: 54161, Stop: 54529, Start Num: 2
Candidate Starts for Kimchi_93:
(Start: 2 @54161 has 72 MA's), (Start: 5 @54209 has 13 MA's), (10, 54341), (12, 54386),

Gene: Klein_139 Start: 74008, Stop: 74319, Start Num: 4
Candidate Starts for Klein_139:
(Start: 4 @74008 has 18 MA's), (Start: 5 @74011 has 13 MA's), (9, 74152), (11, 74173), (13, 74239), (14, 74299),

Gene: Kostya_89 Start: 54159, Stop: 54527, Start Num: 2
Candidate Starts for Kostya_89:
(Start: 2 @54159 has 72 MA's), (Start: 5 @54207 has 13 MA's), (10, 54339), (12, 54384),

Gene: Lilizi_90 Start: 53623, Stop: 53991, Start Num: 2

Candidate Starts for Lilizi_90:
(Start: 2 @53623 has 72 MA's), (Start: 5 @53671 has 13 MA's), (10, 53803), (12, 53848),

Gene: Lilpickle_88 Start: 53511, Stop: 53879, Start Num: 2
Candidate Starts for Lilpickle_88:
(Start: 2 @53511 has 72 MA's), (Start: 5 @53559 has 13 MA's), (10, 53691), (12, 53736),

Gene: MadamMonkfish_89 Start: 53238, Stop: 53606, Start Num: 2
Candidate Starts for MadamMonkfish_89:
(Start: 2 @53238 has 72 MA's), (Start: 5 @53286 has 13 MA's), (10, 53418), (12, 53463),

Gene: Marleymoo_124 Start: 72267, Stop: 72575, Start Num: 5
Candidate Starts for Marleymoo_124:
(Start: 5 @72267 has 13 MA's), (6, 72288), (14, 72555),

Gene: Marshmallow_87 Start: 54787, Stop: 55155, Start Num: 2
Candidate Starts for Marshmallow_87:
(Start: 2 @54787 has 72 MA's), (Start: 5 @54835 has 13 MA's), (10, 54967), (12, 55012),

Gene: Maxxinista_91 Start: 53884, Stop: 54252, Start Num: 2
Candidate Starts for Maxxinista_91:
(Start: 2 @53884 has 72 MA's), (Start: 5 @53932 has 13 MA's), (10, 54064), (12, 54109),

Gene: Mindy_88 Start: 53060, Stop: 53428, Start Num: 2
Candidate Starts for Mindy_88:
(Start: 2 @53060 has 72 MA's), (Start: 5 @53108 has 13 MA's), (10, 53240), (12, 53285),

Gene: Minerva_141 Start: 75457, Stop: 75768, Start Num: 4
Candidate Starts for Minerva_141:
(Start: 4 @75457 has 18 MA's), (Start: 5 @75460 has 13 MA's), (9, 75601), (11, 75622), (13, 75688),
(14, 75748),

Gene: Miniwave_84 Start: 53555, Stop: 53923, Start Num: 2
Candidate Starts for Miniwave_84:
(Start: 2 @53555 has 72 MA's), (Start: 5 @53603 has 13 MA's), (10, 53735), (12, 53780),

Gene: Misfit_90 Start: 55029, Stop: 55397, Start Num: 2
Candidate Starts for Misfit_90:
(Start: 2 @55029 has 72 MA's), (Start: 5 @55077 has 13 MA's), (10, 55209), (12, 55254),

Gene: Mosby_85 Start: 53312, Stop: 53680, Start Num: 2
Candidate Starts for Mosby_85:
(Start: 2 @53312 has 72 MA's), (Start: 5 @53360 has 13 MA's), (10, 53492), (12, 53537),

Gene: MulchSalad_75 Start: 46643, Stop: 46969, Start Num: 3
Candidate Starts for MulchSalad_75:
(1, 46598), (3, 46643), (6, 46673), (7, 46742), (14, 46949), (15, 46955), (16, 46958),

Gene: Murica_92 Start: 54955, Stop: 55323, Start Num: 2
Candidate Starts for Murica_92:
(Start: 2 @54955 has 72 MA's), (Start: 5 @55003 has 13 MA's), (10, 55135), (12, 55180),

Gene: Murphy_89 Start: 54396, Stop: 54764, Start Num: 2

Candidate Starts for Murphy_89:
(Start: 2 @54396 has 72 MA's), (Start: 5 @54444 has 13 MA's), (10, 54576), (12, 54621),

Gene: Myrale_89 Start: 54518, Stop: 54886, Start Num: 2
Candidate Starts for Myrale_89:
(Start: 2 @54518 has 72 MA's), (Start: 5 @54566 has 13 MA's), (10, 54698), (12, 54743),

Gene: NelitzaMV_87 Start: 53601, Stop: 53969, Start Num: 2
Candidate Starts for NelitzaMV_87:
(Start: 2 @53601 has 72 MA's), (Start: 5 @53649 has 13 MA's), (10, 53781), (12, 53826),

Gene: NihilNomen_143 Start: 75745, Stop: 76056, Start Num: 4
Candidate Starts for NihilNomen_143:
(Start: 4 @75745 has 18 MA's), (Start: 5 @75748 has 13 MA's), (9, 75889), (11, 75910), (13, 75976), (14, 76036),

Gene: Odette_145 Start: 77888, Stop: 78199, Start Num: 4
Candidate Starts for Odette_145:
(Start: 4 @77888 has 18 MA's), (Start: 5 @77891 has 13 MA's), (8, 78017), (9, 78032), (11, 78053), (13, 78119), (14, 78179),

Gene: Optimus_132 Start: 73028, Stop: 73336, Start Num: 5
Candidate Starts for Optimus_132:
(Start: 4 @73025 has 18 MA's), (Start: 5 @73028 has 13 MA's), (9, 73169), (11, 73190), (13, 73256), (14, 73316),

Gene: PaddyBaddy_89 Start: 53608, Stop: 53976, Start Num: 2
Candidate Starts for PaddyBaddy_89:
(Start: 2 @53608 has 72 MA's), (Start: 5 @53656 has 13 MA's), (10, 53788), (12, 53833),

Gene: Palpatine_91 Start: 55030, Stop: 55350, Start Num: 5
Candidate Starts for Palpatine_91:
(Start: 2 @54982 has 72 MA's), (Start: 5 @55030 has 13 MA's), (10, 55162), (12, 55207),

Gene: Paperbeatsrock_88 Start: 54233, Stop: 54601, Start Num: 2
Candidate Starts for Paperbeatsrock_88:
(Start: 2 @54233 has 72 MA's), (Start: 5 @54281 has 13 MA's), (10, 54413), (12, 54458),

Gene: Phaja_87 Start: 54059, Stop: 54427, Start Num: 2
Candidate Starts for Phaja_87:
(Start: 2 @54059 has 72 MA's), (Start: 5 @54107 has 13 MA's), (10, 54239), (12, 54284),

Gene: Pharsalus_86 Start: 54033, Stop: 54401, Start Num: 2
Candidate Starts for Pharsalus_86:
(Start: 2 @54033 has 72 MA's), (Start: 5 @54081 has 13 MA's), (10, 54213), (12, 54258),

Gene: Phaux_91 Start: 55000, Stop: 55368, Start Num: 2
Candidate Starts for Phaux_91:
(Start: 2 @55000 has 72 MA's), (Start: 5 @55048 has 13 MA's), (10, 55180), (12, 55225),

Gene: Phoebus_141 Start: 77639, Stop: 77950, Start Num: 4
Candidate Starts for Phoebus_141:

(Start: 4 @77639 has 18 MA's), (Start: 5 @77642 has 13 MA's), (9, 77783), (11, 77804), (13, 77870), (14, 77930),

Gene: Policronamos_92 Start: 55000, Stop: 55368, Start Num: 2
Candidate Starts for Policronamos_92:
(Start: 2 @55000 has 72 MA's), (Start: 5 @55048 has 13 MA's), (10, 55180), (12, 55225),

Gene: Pound_129 Start: 74337, Stop: 74648, Start Num: 4
Candidate Starts for Pound_129:
(Start: 4 @74337 has 18 MA's), (Start: 5 @74340 has 13 MA's), (9, 74481), (11, 74502), (13, 74568), (14, 74628),

Gene: Ptowny_86 Start: 52895, Stop: 53263, Start Num: 2
Candidate Starts for Ptowny_86:
(Start: 2 @52895 has 72 MA's), (Start: 5 @52943 has 13 MA's), (10, 53075), (12, 53120),

Gene: Pumpkin_92 Start: 54652, Stop: 55020, Start Num: 2
Candidate Starts for Pumpkin_92:
(Start: 2 @54652 has 72 MA's), (Start: 5 @54700 has 13 MA's), (10, 54832), (12, 54877),

Gene: Quallification_90 Start: 54641, Stop: 55009, Start Num: 2
Candidate Starts for Quallification_90:
(Start: 2 @54641 has 72 MA's), (Start: 5 @54689 has 13 MA's), (10, 54821), (12, 54866),

Gene: Rakim_90 Start: 53970, Stop: 54338, Start Num: 2
Candidate Starts for Rakim_90:
(Start: 2 @53970 has 72 MA's), (Start: 5 @54018 has 13 MA's), (10, 54150), (12, 54195),

Gene: Redno2_133 Start: 73027, Stop: 73338, Start Num: 4
Candidate Starts for Redno2_133:
(Start: 4 @73027 has 18 MA's), (Start: 5 @73030 has 13 MA's), (9, 73171), (11, 73192), (13, 73258), (14, 73318),

Gene: RiverMonster_89 Start: 54172, Stop: 54540, Start Num: 2
Candidate Starts for RiverMonster_89:
(Start: 2 @54172 has 72 MA's), (Start: 5 @54220 has 13 MA's), (10, 54352), (12, 54397),

Gene: Saints25_88 Start: 53584, Stop: 53952, Start Num: 2
Candidate Starts for Saints25_88:
(Start: 2 @53584 has 72 MA's), (Start: 5 @53632 has 13 MA's), (10, 53764), (12, 53809),

Gene: Sassay_84 Start: 52274, Stop: 52642, Start Num: 2
Candidate Starts for Sassay_84:
(Start: 2 @52274 has 72 MA's), (Start: 5 @52322 has 13 MA's), (10, 52454), (12, 52499),

Gene: Schatzie_137 Start: 76307, Stop: 76618, Start Num: 4
Candidate Starts for Schatzie_137:
(Start: 4 @76307 has 18 MA's), (Start: 5 @76310 has 13 MA's), (8, 76436), (9, 76451), (11, 76472), (13, 76538), (14, 76598),

Gene: ShamWow_89 Start: 54454, Stop: 54822, Start Num: 2
Candidate Starts for ShamWow_89:
(Start: 2 @54454 has 72 MA's), (Start: 5 @54502 has 13 MA's), (10, 54634), (12, 54679),

Gene: ShereKhan_87 Start: 54566, Stop: 54934, Start Num: 2
Candidate Starts for ShereKhan_87:
(Start: 2 @54566 has 72 MA's), (Start: 5 @54614 has 13 MA's), (10, 54746), (12, 54791),

Gene: Simpliphy_88 Start: 53574, Stop: 53942, Start Num: 2
Candidate Starts for Simpliphy_88:
(Start: 2 @53574 has 72 MA's), (Start: 5 @53622 has 13 MA's), (10, 53754), (12, 53799),

Gene: SophKB_86 Start: 53252, Stop: 53620, Start Num: 2
Candidate Starts for SophKB_86:
(Start: 2 @53252 has 72 MA's), (Start: 5 @53300 has 13 MA's), (10, 53432), (12, 53477),

Gene: Stark_90 Start: 54055, Stop: 54423, Start Num: 2
Candidate Starts for Stark_90:
(Start: 2 @54055 has 72 MA's), (Start: 5 @54103 has 13 MA's), (10, 54235), (12, 54280),

Gene: StellaBean_87 Start: 53778, Stop: 54146, Start Num: 2
Candidate Starts for StellaBean_87:
(Start: 2 @53778 has 72 MA's), (Start: 5 @53826 has 13 MA's), (10, 53958), (12, 54003),

Gene: StolenFromERC_92 Start: 54158, Stop: 54526, Start Num: 2
Candidate Starts for StolenFromERC_92:
(Start: 2 @54158 has 72 MA's), (Start: 5 @54206 has 13 MA's), (10, 54338), (12, 54383),

Gene: TBrady12_92 Start: 53994, Stop: 54362, Start Num: 2
Candidate Starts for TBrady12_92:
(Start: 2 @53994 has 72 MA's), (Start: 5 @54042 has 13 MA's), (10, 54174), (12, 54219),

Gene: Tarkin_88 Start: 54242, Stop: 54610, Start Num: 2
Candidate Starts for Tarkin_88:
(Start: 2 @54242 has 72 MA's), (Start: 5 @54290 has 13 MA's), (10, 54422), (12, 54467),

Gene: TeardropMSU_85 Start: 53242, Stop: 53610, Start Num: 2
Candidate Starts for TeardropMSU_85:
(Start: 2 @53242 has 72 MA's), (Start: 5 @53290 has 13 MA's), (10, 53422), (12, 53467),

Gene: Teaspoon_90 Start: 54094, Stop: 54462, Start Num: 2
Candidate Starts for Teaspoon_90:
(Start: 2 @54094 has 72 MA's), (Start: 5 @54142 has 13 MA's), (10, 54274), (12, 54319),

Gene: Terminus_92 Start: 55029, Stop: 55397, Start Num: 2
Candidate Starts for Terminus_92:
(Start: 2 @55029 has 72 MA's), (Start: 5 @55077 has 13 MA's), (10, 55209), (12, 55254),

Gene: Thimble_90 Start: 53475, Stop: 53843, Start Num: 2
Candidate Starts for Thimble_90:
(Start: 2 @53475 has 72 MA's), (Start: 5 @53523 has 13 MA's), (10, 53655), (12, 53700),

Gene: ThreeRngTarjay_136 Start: 76233, Stop: 76541, Start Num: 5
Candidate Starts for ThreeRngTarjay_136:
(Start: 4 @76230 has 18 MA's), (Start: 5 @76233 has 13 MA's), (9, 76374), (11, 76395), (13, 76461), (14, 76521),

Gene: Tomaszewski_84 Start: 53405, Stop: 53773, Start Num: 2
Candidate Starts for Tomaszewski_84:
(Start: 2 @53405 has 72 MA's), (Start: 5 @53453 has 13 MA's), (10, 53585), (12, 53630),

Gene: Toto_87 Start: 54454, Stop: 54822, Start Num: 2
Candidate Starts for Toto_87:
(Start: 2 @54454 has 72 MA's), (Start: 5 @54502 has 13 MA's), (10, 54634), (12, 54679),

Gene: Tuco_90 Start: 55001, Stop: 55369, Start Num: 2
Candidate Starts for Tuco_90:
(Start: 2 @55001 has 72 MA's), (Start: 5 @55049 has 13 MA's), (10, 55181), (12, 55226),

Gene: Ukulele_84 Start: 53387, Stop: 53755, Start Num: 2
Candidate Starts for Ukulele_84:
(Start: 2 @53387 has 72 MA's), (Start: 5 @53435 has 13 MA's), (10, 53567), (12, 53612),

Gene: Wanda_141 Start: 73937, Stop: 74248, Start Num: 4
Candidate Starts for Wanda_141:
(Start: 4 @73937 has 18 MA's), (Start: 5 @73940 has 13 MA's), (8, 74066), (9, 74081), (11, 74102), (13, 74168), (14, 74228),

Gene: Willez_84 Start: 52274, Stop: 52642, Start Num: 2
Candidate Starts for Willez_84:
(Start: 2 @52274 has 72 MA's), (Start: 5 @52322 has 13 MA's), (10, 52454), (12, 52499),

Gene: Xandras_88 Start: 53486, Stop: 53854, Start Num: 2
Candidate Starts for Xandras_88:
(Start: 2 @53486 has 72 MA's), (Start: 5 @53534 has 13 MA's), (10, 53666), (12, 53711),

Gene: Xiaokay_137 Start: 75763, Stop: 76080, Start Num: 4
Candidate Starts for Xiaokay_137:
(Start: 4 @75763 has 18 MA's), (Start: 5 @75766 has 13 MA's), (9, 75907), (11, 75928), (13, 75994),

Gene: Yeet_134 Start: 75428, Stop: 75739, Start Num: 4
Candidate Starts for Yeet_134:
(Start: 4 @75428 has 18 MA's), (Start: 5 @75431 has 13 MA's), (9, 75572), (11, 75593), (13, 75659), (14, 75719),

Gene: Youngblood_92 Start: 54956, Stop: 55324, Start Num: 2
Candidate Starts for Youngblood_92:
(Start: 2 @54956 has 72 MA's), (Start: 5 @55004 has 13 MA's), (10, 55136), (12, 55181),

Gene: Zelink_136 Start: 76752, Stop: 77060, Start Num: 5
Candidate Starts for Zelink_136:
(Start: 4 @76749 has 18 MA's), (Start: 5 @76752 has 13 MA's), (9, 76893), (11, 76914), (13, 76980), (14, 77040),

Gene: xkcd_92 Start: 55140, Stop: 55508, Start Num: 2
Candidate Starts for xkcd_92:
(Start: 2 @55140 has 72 MA's), (Start: 5 @55188 has 13 MA's), (10, 55320), (12, 55365),