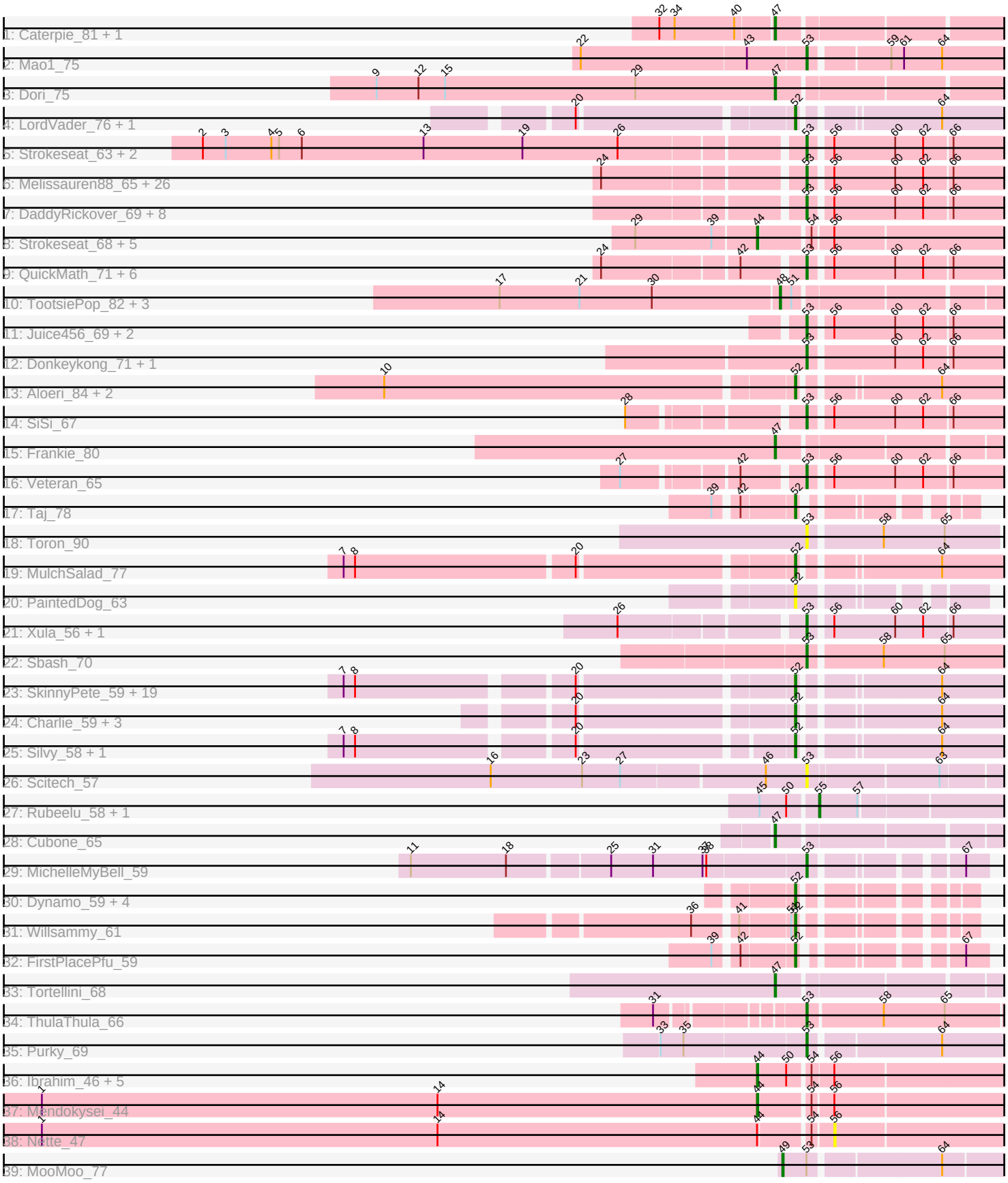
Pham 347380


1: Caterpie_81 + 1
2: Mao1_75
3: Dori_75
4: LordVader_76 + 1
5: Strokeseat_63 + 2
6: Melissauren88_65 + 26
7: DaddyRickover_69 + 8
8: Strokeseat_68 + 5
9: QuickMath_71 + 6
10: TootsiePop_82 + 3
11: Juice456_69 + 2
12: Donkeykong_71 + 1
13: Aloeri_84 + 2
14: SiSi_67
15: Frankie_80
16: Veteran_65
17: Taj_78
18: Toron_90
19: MulchSalad_77
20: PaintedDog_63
21: Xula_56 + 1
22: Sbash_70
23: SkinnyPete_59 + 19
24: Charlie_59 + 3
25: Silvy_58 + 1
26: Scitech_57
27: Rubeelu_58 + 1
28: Cubone_65
29: MichelleMyBell_59
30: Dynamo_59 + 4
31: Willsammy_61
32: FirstPlacePfu_59
33: Tortellini_68
34: ThulaThula_66
35: Purky_69
36: Ibrahim_46 + 5
37: Mendokysei_44
38: Natte_47
39: MooMoo_77

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 347380 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347380 has 130 members, 12 are drafts.

Phages represented in each track:
• Track 1 : Caterpie_81, Sejanus_78
• Track 2 : Mao1_75
• Track 3 : Dori_75
• Track 4 : LordVader_76, Piper2020_86
• Track 5 : Strokeseat_63, Hlubikazi_63, Mandlovu_63
• Track 6 : Melissauren88_65, Scottish_66, Akhila_58, Empress_66, Ovechkin_67, DotProduct_62, Wee_73, Nimbo_61, Hegedechwinu_69, KingMidas_67, Ms6_64, Seagreen_66, Slim_70, Emmaloid_70, Filuzino_66, Fruitloop_64, Clank_73, Shauna1_65, Deb65_62, DLane_63, StAnnes_67, Doomslug_79, Rialto_73, Quico_75, Geralt_62, Medindi_64, Taj_73
• Track 7 : DaddyRickover_69, Sassafras_68, JoeyJr_68, PHappiness_68, Inventum_65, RedBird_68, Daenerys_67, Dorothy_68, RitaG_68
• Track 8 : Strokeseat_68, Minnie_70, Sandalphon_68, Phrann_58, Hlubikazi_68, Mandlovu_68
• Track 9 : QuickMath_71, Soul22_76, Kimberlium_72, MulchExplorer_71, Blarby_80, Zapner_81, Jabbawokkie_82
• Track 10 : TootsiePop_82, Misha28_82, Awesomesauce_83, LilSpotty_79
• Track 11 : Juice456_69, JalFarm20_81, KristaRAM_71
• Track 12 : Donkeykong_71, Jant_72
• Track 13 : Aloeri_84, ChickenDinner_83, DocMcStuffins_80
• Track 14 : SiSi_67
• Track 15 : Frankie_80
• Track 16 : Veteran_65
• Track 17 : Taj_78
• Track 18 : Toron_90
• Track 19 : MulchSalad_77
• Track 20 : PaintedDog_63
• Track 21 : Xula_56, QueenHazel_57
• Track 22 : Sbash_70
• Track 23 : SkinnyPete_59, FirstPlacePfu_64, Pipsqueaks_63, Smurph_62, EGUnicorn_57, Carcharodon_62, Magsby_61, Chewbacca_65, Schnauzer_63, Philonius_62, Silvafighter_64, Fulbright_60, Xerxes_62, Tessdabest_63, Parmesanjohn_62, Phloss_60, Duplicity_60, Melville_67, Tortoise12_62, Gex_63
• Track 24 : Charlie_59, Tapioca_60, Andies_56, Bosection6_57
• Track 25 : Silvy_58, Aggie_58
• Track 26 : Scitech_57
• Track 27 : Rubeelu_58, Butters_58

• Track 28 : Cubone_65
• Track 29 : MichelleMyBell_59
• Track 30 : Dynamo_59, HUHilltop_62, Sonah_60, Bhagsy_65, Jebeks_60
• Track 31 : Willsammy_61
• Track 32 : FirstPlacePfu_59
• Track 33 : Tortellini_68
• Track 34 : ThulaThula_66
• Track 35 : Purky_69
• Track 36 : Ibrahim_46, Nairb_45, Bernal13_46, Whitty_45, ZenTime222_45, RonRayGun_46
• Track 37 : Mendokysei_44
• Track 38 : Nette_47
• Track 39 : MooMoo_77

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

The start number called the most often in the published annotations is 53, it was called in 54 of the 118 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Akhila_58, Blarby_80, Clank_73, DLane_63, DaddyRickover_69, Daenerys_67, Deb65_62, Donkeykong_71, Doomslug_79, Dorothy_68, DotProduct_62, Emmaloid_70, Empress_66, Filuzino_66, Fruitloop_64, Geralt_62, Hegedechwinu_69, Hlubikazi_63, Inventum_65, Jabbawokkie_82, JalFarm20_81, Jant_72, JoeyJr_68, Juice456_69, Kimberlium_72, KingMidas_67, KristaRAM_71, Mandlovu_63, Mao1_75, Medindi_64, Melissauren88_65, MichelleMyBell_59, Ms6_64, MulchExplorer_71, Nimbo_61, Ovechkin_67, PHappiness_68, Purky_69, QueenHazel_57, QuickMath_71, Quico_75, RedBird_68, Rialto_73, RitaG_68, Sassafras_68, Sbash_70, Scitech_57, Scottish_66, Seagreen_66, Shauna1_65, SiSi_67, Slim_70, Soul22_76, StAnnes_67, Strokeseat_63, Taj_73, ThulaThula_66, Toron_90, Veteran_65, Wee_73, Xula_56, Zapner_81,

Genes that have the "Most Annotated" start but do not call it:
• MooMoo_77,

Genes that do not have the "Most Annotated" start:
• Aggie_58, Aloeri_84, Andies_56, Awesomesauce_83, Bernal13_46, Bhagsy_65, Bosection6_57, Butters_58, Carcharodon_62, Caterpie_81, Charlie_59, Chewbacca_65, ChickenDinner_83, Cubone_65, DocMcStuffins_80, Dori_75, Duplicity_60, Dynamo_59, EGUnicorn_57, FirstPlacePfu_59, FirstPlacePfu_64, Frankie_80, Fulbright_60, Gex_63, HUHilltop_62, Hlubikazi_68, Ibrahim_46, Jebeks_60, LilSpotty_79, LordVader_76, Magsby_61, Mandlovu_68, Melville_67, Mendokysei_44, Minnie_70, Misha28_82, MulchSalad_77, Nairb_45, Nette_47, PaintedDog_63, Parmesanjohn_62, Philonius_62, Phloss_60, Phrann_58, Piper2020_86, Pipsqueaks_63, RonRayGun_46, Rubeelu_58, Sandalphon_68, Schnauzer_63, Sejanus_78, Silvafighter_64, Silvy_58, SkinnyPete_59, Smurph_62, Sonah_60, Strokeseat_68, Taj_78, Tapioca_60, Tessdabest_63, TootsiePop_82, Tortellini_68, Tortoise12_62, Whitty_45, Willsammy_61, Xerxes_62, ZenTime222_45,

Summary by start number:

Start 44:
• Found in 14 of 130 (10.8%) of genes in pham
• Manual Annotations of this start: 13 of 118
• Called 92.9% of time when present
• Phage (with cluster) where this start called: Bernal13_46 (T), Hlubikazi_68 (F1), Ibrahim_46 (T), Mandlovu_68 (F1), Mendokysei_44 (T), Minnie_70 (F1), Nairb_45 (T), Phrann_58 (N), RonRayGun_46 (T), Sandalphon_68 (F1), Strokeseat_68 (F1), Whitty_45 (T), ZenTime222_45 (T),

Start 47:
• Found in 6 of 130 (4.6%) of genes in pham
• Manual Annotations of this start: 5 of 118
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Caterpie_81 (AD), Cubone_65 (N), Dori_75 (AD), Frankie_80 (F1), Sejanus_78 (AD), Tortellini_68 (P2),

Start 48:
• Found in 4 of 130 (3.1%) of genes in pham
• Manual Annotations of this start: 4 of 118
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Awesomesauce_83 (F1), LilSpotty_79 (singleton), Misha28_82 (F1), TootsiePop_82 (F1),

Start 49:
• Found in 1 of 130 (0.8%) of genes in pham
• Manual Annotations of this start: 1 of 118
• Called 100.0% of time when present
• Phage (with cluster) where this start called: MooMoo_77 (singleton),

Start 52:
• Found in 41 of 130 (31.5%) of genes in pham
• Manual Annotations of this start: 39 of 118
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aggie_58 (N), Aloeri_84 (F1), Andies_56 (N), Bhagsy_65 (P1), Bosection6_57 (N), Carcharodon_62 (N), Charlie_59 (N), Chewbacca_65 (N), ChickenDinner_83 (F1), DocMcStuffins_80 (F1), Duplicity_60 (N), Dynamo_59 (P1), EGUnicorn_57 (N), FirstPlacePfu_59 (P1), FirstPlacePfu_64 (P1), Fulbright_60 (N), Gex_63 (N), HUHilltop_62 (P1), Jebeks_60 (P1), LordVader_76 (F), Magsby_61 (N), Melville_67 (N), MulchSalad_77 (F7), PaintedDog_63 (I1), Parmesanjohn_62 (N), Philonius_62 (N), Phloss_60 (N), Piper2020_86 (F1), Pipsqueaks_63 (N), Schnauzer_63 (N), Silvafighter_64 (N), Silvy_58 (N), SkinnyPete_59 (N), Smurph_62 (N), Sonah_60 (P1), Taj_78 (F1), Tapioca_60 (N), Tessdabest_63 (N), Tortoise12_62 (N), Willsammy_61 (P1), Xerxes_62 (N),

Start 53:
• Found in 63 of 130 (48.5%) of genes in pham
• Manual Annotations of this start: 54 of 118
• Called 98.4% of time when present
• Phage (with cluster) where this start called: Akhila_58 (F1), Blarby_80 (F), Clank_73 (F), DLane_63 (F1), DaddyRickover_69 (F1), Daenerys_67 (F1), Deb65_62 (F1), Donkeykong_71 (F1), Doomslug_79 (F), Dorothy_68 (F1), DotProduct_62 (F1),

Emmaloid_70 (F1), Empress_66 (F1), Filuzino_66 (F1), Fruitloop_64 (F1), Geralt_62 (F1), Hegedechwinu_69 (F1), Hlubikazi_63 (F1), Inventum_65 (F1), Jabbawokkie_82 (F2), JalFarm20_81 (F1), Jant_72 (F1), JoeyJr_68 (F1), Juice456_69 (F1), Kimberlium_72 (F1), KingMidas_67 (F1), KristaRAM_71 (F1), Mandlovu_63 (F1), Mao1_75 (AD), Medindi_64 (F1), Melissauren88_65 (F1), MichelleMyBell_59 (N), Ms6_64 (F1), MulchExplorer_71 (F1), Nimbo_61 (F1), Ovechkin_67 (F1), PHappiness_68 (F1), Purky_69 (P6), QueenHazel_57 (I1), QuickMath_71 (F1), Quico_75 (F1), RedBird_68 (F1), Rialto_73 (F1), RitaG_68 (F1), Sassafras_68 (F1), Sbash_70 (I2), Scitech_57 (N), Scottish_66 (F1), Seagreen_66 (F1), Shauna1_65 (F1), SiSi_67 (F1), Slim_70 (F1), Soul22_76 (F2), StAnnes_67 (F1), Strokeseat_63 (F1), Taj_73 (F1), ThulaThula_66 (P5), Toron_90 (F6), Veteran_65 (F1), Wee_73 (F1), Xula_56 (I1), Zapner_81 (F2),

Start 55:
• Found in 2 of 130 (1.5%) of genes in pham
• Manual Annotations of this start: 2 of 118
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Butters_58 (N), Rubeelu_58 (N),

Start 56:
• Found in 67 of 130 (51.5%) of genes in pham
• No Manual Annotations of this start.
• Called 1.5% of time when present
• Phage (with cluster) where this start called: Nette_47 (T),

Summary by clusters:

There are 15 clusters represented in this pham: P2, F1, singleton, P1, P6, AD, F7, P5, I1, F, F2, N, F6, T, I2,

Info for manual annotations of cluster AD:
•Start number 47 was manually annotated 2 times for cluster AD.
•Start number 53 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster F:
•Start number 52 was manually annotated 1 time for cluster F.

Info for manual annotations of cluster F1:
•Start number 44 was manually annotated 5 times for cluster F1.
•Start number 47 was manually annotated 1 time for cluster F1.
•Start number 48 was manually annotated 3 times for cluster F1.
•Start number 52 was manually annotated 5 times for cluster F1.
•Start number 53 was manually annotated 44 times for cluster F1.

Info for manual annotations of cluster F2:
•Start number 53 was manually annotated 3 times for cluster F2.

Info for manual annotations of cluster F7:
•Start number 52 was manually annotated 1 time for cluster F7.

Info for manual annotations of cluster I1:
•Start number 53 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:
•Start number 53 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster N:
•Start number 44 was manually annotated 1 time for cluster N.
•Start number 47 was manually annotated 1 time for cluster N.
•Start number 52 was manually annotated 24 times for cluster N.
•Start number 53 was manually annotated 1 time for cluster N.
•Start number 55 was manually annotated 2 times for cluster N.

Info for manual annotations of cluster P1:
•Start number 52 was manually annotated 8 times for cluster P1.

Info for manual annotations of cluster P2:
•Start number 47 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P5:
•Start number 53 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:
•Start number 53 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster T:
•Start number 44 was manually annotated 7 times for cluster T.

Gene Information:

Gene: Aggie_58 Start: 39856, Stop: 39999, Start Num: 52
Candidate Starts for Aggie_58:
(7, 39541), (8, 39550), (20, 39706), (Start: 52 @39856 has 39 MA's), (64, 39952),

Gene: Akhila_58 Start: 38471, Stop: 38626, Start Num: 53
Candidate Starts for Akhila_58:
(24, 38333), (Start: 53 @38471 has 54 MA's), (56, 38486), (60, 38534), (62, 38555), (66, 38576),

Gene: Aloeri_84 Start: 50246, Stop: 50389, Start Num: 52
Candidate Starts for Aloeri_84:
(10, 49937), (Start: 52 @50246 has 39 MA's), (64, 50342),

Gene: Andies_56 Start: 39301, Stop: 39444, Start Num: 52
Candidate Starts for Andies_56:
(20, 39148), (Start: 52 @39301 has 39 MA's), (64, 39397),

Gene: Awesomesauce_83 Start: 50467, Stop: 50625, Start Num: 48
Candidate Starts for Awesomesauce_83:
(17, 50251), (21, 50314), (30, 50371), (Start: 48 @50467 has 4 MA's), (51, 50476),

Gene: Bernal13_46 Start: 34733, Stop: 34924, Start Num: 44
Candidate Starts for Bernal13_46:
(Start: 44 @34733 has 13 MA's), (50, 34754), (54, 34769), (56, 34784),

Gene: Bhagsy_65 Start: 41269, Stop: 41373, Start Num: 52
Candidate Starts for Bhagsy_65:
(Start: 52 @41269 has 39 MA's),

Gene: Blarby_80 Start: 44685, Stop: 44834, Start Num: 53
Candidate Starts for Blarby_80:
(24, 44547), (42, 44646), (Start: 53 @44685 has 54 MA's), (56, 44700), (60, 44748), (62, 44769), (66, 44790),

Gene: Bosection6_57 Start: 38905, Stop: 39048, Start Num: 52
Candidate Starts for Bosection6_57:
(20, 38752), (Start: 52 @38905 has 39 MA's), (64, 39001),

Gene: Butters_58 Start: 37292, Stop: 37432, Start Num: 55
Candidate Starts for Butters_58:
(45, 37250), (50, 37271), (Start: 55 @37292 has 2 MA's), (57, 37322),

Gene: Carcharodon_62 Start: 39203, Stop: 39346, Start Num: 52
Candidate Starts for Carcharodon_62:
(7, 38885), (8, 38894), (20, 39050), (Start: 52 @39203 has 39 MA's), (64, 39299),

Gene: Caterpie_81 Start: 55418, Stop: 55582, Start Num: 47
Candidate Starts for Caterpie_81:
(32, 55334), (34, 55346), (40, 55391), (Start: 47 @55418 has 5 MA's),

Gene: Charlie_59 Start: 38529, Stop: 38672, Start Num: 52
Candidate Starts for Charlie_59:
(20, 38376), (Start: 52 @38529 has 39 MA's), (64, 38625),

Gene: Chewbacca_65 Start: 39098, Stop: 39241, Start Num: 52
Candidate Starts for Chewbacca_65:
(7, 38780), (8, 38789), (20, 38945), (Start: 52 @39098 has 39 MA's), (64, 39194),

Gene: ChickenDinner_83 Start: 50246, Stop: 50389, Start Num: 52
Candidate Starts for ChickenDinner_83:
(10, 49937), (Start: 52 @50246 has 39 MA's), (64, 50342),

Gene: Clank_73 Start: 44016, Stop: 44165, Start Num: 53
Candidate Starts for Clank_73:
(24, 43878), (Start: 53 @44016 has 54 MA's), (56, 44031), (60, 44079), (62, 44100), (66, 44121),

Gene: Cubone_65 Start: 39807, Stop: 39968, Start Num: 47
Candidate Starts for Cubone_65:
(Start: 47 @39807 has 5 MA's),

Gene: DLane_63 Start: 42015, Stop: 42170, Start Num: 53
Candidate Starts for DLane_63:
(24, 41877), (Start: 53 @42015 has 54 MA's), (56, 42030), (60, 42078), (62, 42099), (66, 42120),

Gene: DaddyRickover_69 Start: 43982, Stop: 44137, Start Num: 53
Candidate Starts for DaddyRickover_69:
(Start: 53 @43982 has 54 MA's), (56, 43997), (60, 44045), (62, 44066), (66, 44087),

Gene: Daenerys_67 Start: 44101, Stop: 44256, Start Num: 53
Candidate Starts for Daenerys_67:
(Start: 53 @44101 has 54 MA's), (56, 44116), (60, 44164), (62, 44185), (66, 44206),

Gene: Deb65_62 Start: 41821, Stop: 41976, Start Num: 53
Candidate Starts for Deb65_62:
(24, 41683), (Start: 53 @41821 has 54 MA's), (56, 41836), (60, 41884), (62, 41905), (66, 41926),

Gene: DocMcStuffins_80 Start: 51876, Stop: 52019, Start Num: 52
Candidate Starts for DocMcStuffins_80:
(10, 51567), (Start: 52 @51876 has 39 MA's), (64, 51972),

Gene: Donkeykong_71 Start: 45836, Stop: 45991, Start Num: 53
Candidate Starts for Donkeykong_71:
(Start: 53 @45836 has 54 MA's), (60, 45899), (62, 45920), (66, 45941),

Gene: Doomslug_79 Start: 43911, Stop: 44066, Start Num: 53
Candidate Starts for Doomslug_79:
(24, 43773), (Start: 53 @43911 has 54 MA's), (56, 43926), (60, 43974), (62, 43995), (66, 44016),

Gene: Dori_75 Start: 56198, Stop: 56362, Start Num: 47
Candidate Starts for Dori_75:
(9, 55886), (12, 55919), (15, 55940), (29, 56090), (Start: 47 @56198 has 5 MA's),

Gene: Dorothy_68 Start: 43156, Stop: 43311, Start Num: 53
Candidate Starts for Dorothy_68:
(Start: 53 @43156 has 54 MA's), (56, 43171), (60, 43219), (62, 43240), (66, 43261),

Gene: DotProduct_62 Start: 41324, Stop: 41479, Start Num: 53
Candidate Starts for DotProduct_62:
(24, 41186), (Start: 53 @41324 has 54 MA's), (56, 41339), (60, 41387), (62, 41408), (66, 41429),

Gene: Duplicity_60 Start: 38460, Stop: 38603, Start Num: 52
Candidate Starts for Duplicity_60:
(7, 38142), (8, 38151), (20, 38307), (Start: 52 @38460 has 39 MA's), (64, 38556),

Gene: Dynamo_59 Start: 39180, Stop: 39284, Start Num: 52
Candidate Starts for Dynamo_59:
(Start: 52 @39180 has 39 MA's),

Gene: EGUnicorn_57 Start: 37526, Stop: 37669, Start Num: 52
Candidate Starts for EGUnicorn_57:
(7, 37208), (8, 37217), (20, 37373), (Start: 52 @37526 has 39 MA's), (64, 37622),

Gene: Emmaloid_70 Start: 44558, Stop: 44713, Start Num: 53
Candidate Starts for Emmaloid_70:
(24, 44420), (Start: 53 @44558 has 54 MA's), (56, 44573), (60, 44621), (62, 44642), (66, 44663),

Gene: Empress_66 Start: 43265, Stop: 43420, Start Num: 53
Candidate Starts for Empress_66:
(24, 43127), (Start: 53 @43265 has 54 MA's), (56, 43280), (60, 43328), (62, 43349), (66, 43370),

Gene: Filuzino_66 Start: 42350, Stop: 42505, Start Num: 53
Candidate Starts for Filuzino_66:
(24, 42212), (Start: 53 @42350 has 54 MA's), (56, 42365), (60, 42413), (62, 42434), (66, 42455),

Gene: FirstPlacePfu_64 Start: 39003, Stop: 39146, Start Num: 52
Candidate Starts for FirstPlacePfu_64:
(7, 38685), (8, 38694), (20, 38850), (Start: 52 @39003 has 39 MA's), (64, 39099),

Gene: FirstPlacePfu_59 Start: 37654, Stop: 37764, Start Num: 52
Candidate Starts for FirstPlacePfu_59:
(39, 37603), (42, 37618), (Start: 52 @37654 has 39 MA's), (67, 37747),

Gene: Frankie_80 Start: 47540, Stop: 47701, Start Num: 47
Candidate Starts for Frankie_80:
(Start: 47 @47540 has 5 MA's),

Gene: Fruitloop_64 Start: 43656, Stop: 43811, Start Num: 53
Candidate Starts for Fruitloop_64:
(24, 43518), (Start: 53 @43656 has 54 MA's), (56, 43671), (60, 43719), (62, 43740), (66, 43761),

Gene: Fulbright_60 Start: 37897, Stop: 38040, Start Num: 52
Candidate Starts for Fulbright_60:
(7, 37579), (8, 37588), (20, 37744), (Start: 52 @37897 has 39 MA's), (64, 37993),

Gene: Geralt_62 Start: 41820, Stop: 41975, Start Num: 53
Candidate Starts for Geralt_62:
(24, 41682), (Start: 53 @41820 has 54 MA's), (56, 41835), (60, 41883), (62, 41904), (66, 41925),

Gene: Gex_63 Start: 39219, Stop: 39362, Start Num: 52
Candidate Starts for Gex_63:
(7, 38901), (8, 38910), (20, 39066), (Start: 52 @39219 has 39 MA's), (64, 39315),

Gene: HUHilltop_62 Start: 39403, Stop: 39507, Start Num: 52
Candidate Starts for HUHilltop_62:
(Start: 52 @39403 has 39 MA's),

Gene: Hegedechwinu_69 Start: 42429, Stop: 42584, Start Num: 53
Candidate Starts for Hegedechwinu_69:
(24, 42291), (Start: 53 @42429 has 54 MA's), (56, 42444), (60, 42492), (62, 42513), (66, 42534),

Gene: Hlubikazi_63 Start: 40435, Stop: 40590, Start Num: 53
Candidate Starts for Hlubikazi_63:
(2, 39982), (3, 40000), (4, 40036), (5, 40042), (6, 40060), (13, 40156), (19, 40234), (26, 40309), (Start: 53 @40435 has 54 MA's), (56, 40450), (60, 40498), (62, 40519), (66, 40540),

Gene: Hlubikazi_68 Start: 44082, Stop: 44270, Start Num: 44
Candidate Starts for Hlubikazi_68:
(29, 43989), (39, 44049), (Start: 44 @44082 has 13 MA's), (54, 44118), (56, 44133),

Gene: Ibrahim_46 Start: 35179, Stop: 35370, Start Num: 44
Candidate Starts for Ibrahim_46:
(Start: 44 @35179 has 13 MA's), (50, 35200), (54, 35215), (56, 35230),

Gene: Inventum_65 Start: 43354, Stop: 43509, Start Num: 53
Candidate Starts for Inventum_65:
(Start: 53 @43354 has 54 MA's), (56, 43369), (60, 43417), (62, 43438), (66, 43459),

Gene: Jabbawokkie_82 Start: 44605, Stop: 44754, Start Num: 53
Candidate Starts for Jabbawokkie_82:
(24, 44467), (42, 44566), (Start: 53 @44605 has 54 MA's), (56, 44620), (60, 44668), (62, 44689), (66, 44710),

Gene: JalFarm20_81 Start: 47224, Stop: 47373, Start Num: 53
Candidate Starts for JalFarm20_81:
(Start: 53 @47224 has 54 MA's), (56, 47239), (60, 47287), (62, 47308), (66, 47329),

Gene: Jant_72 Start: 44995, Stop: 45144, Start Num: 53
Candidate Starts for Jant_72:
(Start: 53 @44995 has 54 MA's), (60, 45058), (62, 45079), (66, 45100),

Gene: Jebeks_60 Start: 38700, Stop: 38804, Start Num: 52
Candidate Starts for Jebeks_60:
(Start: 52 @38700 has 39 MA's),

Gene: JoeyJr_68 Start: 44269, Stop: 44424, Start Num: 53
Candidate Starts for JoeyJr_68:
(Start: 53 @44269 has 54 MA's), (56, 44284), (60, 44332), (62, 44353), (66, 44374),

Gene: Juice456_69 Start: 45180, Stop: 45329, Start Num: 53
Candidate Starts for Juice456_69:
(Start: 53 @45180 has 54 MA's), (56, 45195), (60, 45243), (62, 45264), (66, 45285),

Gene: Kimberlium_72 Start: 44776, Stop: 44925, Start Num: 53
Candidate Starts for Kimberlium_72:
(24, 44638), (42, 44737), (Start: 53 @44776 has 54 MA's), (56, 44791), (60, 44839), (62, 44860), (66, 44881),

Gene: KingMidas_67 Start: 43681, Stop: 43836, Start Num: 53
Candidate Starts for KingMidas_67:
(24, 43543), (Start: 53 @43681 has 54 MA's), (56, 43696), (60, 43744), (62, 43765), (66, 43786),

Gene: KristaRAM_71 Start: 45549, Stop: 45698, Start Num: 53
Candidate Starts for KristaRAM_71:
(Start: 53 @45549 has 54 MA's), (56, 45564), (60, 45612), (62, 45633), (66, 45654),

Gene: LilSpotty_79 Start: 45907, Stop: 46065, Start Num: 48
Candidate Starts for LilSpotty_79:
(17, 45691), (21, 45754), (30, 45811), (Start: 48 @45907 has 4 MA's), (51, 45916),

Gene: LordVader_76 Start: 46472, Stop: 46615, Start Num: 52
Candidate Starts for LordVader_76:
(20, 46319), (Start: 52 @46472 has 39 MA's), (64, 46568),

Gene: Magsby_61 Start: 39165, Stop: 39308, Start Num: 52
Candidate Starts for Magsby_61:
(7, 38847), (8, 38856), (20, 39012), (Start: 52 @39165 has 39 MA's), (64, 39261),

Gene: Mandlovu_63 Start: 40377, Stop: 40532, Start Num: 53
Candidate Starts for Mandlovu_63:
(2, 39924), (3, 39942), (4, 39978), (5, 39984), (6, 40002), (13, 40098), (19, 40176), (26, 40251), (Start: 53 @40377 has 54 MA's), (56, 40392), (60, 40440), (62, 40461), (66, 40482),

Gene: Mandlovu_68 Start: 44024, Stop: 44212, Start Num: 44
Candidate Starts for Mandlovu_68:
(29, 43931), (39, 43991), (Start: 44 @44024 has 13 MA's), (54, 44060), (56, 44075),

Gene: Mao1_75 Start: 54531, Stop: 54680, Start Num: 53
Candidate Starts for Mao1_75:
(22, 54357), (43, 54486), (Start: 53 @54531 has 54 MA's), (59, 54588), (61, 54597), (64, 54627),

Gene: Medindi_64 Start: 41005, Stop: 41160, Start Num: 53
Candidate Starts for Medindi_64:
(24, 40867), (Start: 53 @41005 has 54 MA's), (56, 41020), (60, 41068), (62, 41089), (66, 41110),

Gene: Melissauren88_65 Start: 41894, Stop: 42049, Start Num: 53
Candidate Starts for Melissauren88_65:
(24, 41756), (Start: 53 @41894 has 54 MA's), (56, 41909), (60, 41957), (62, 41978), (66, 41999),

Gene: Melville_67 Start: 38774, Stop: 38917, Start Num: 52
Candidate Starts for Melville_67:
(7, 38456), (8, 38465), (20, 38621), (Start: 52 @38774 has 39 MA's), (64, 38870),

Gene: Mendokysei_44 Start: 34285, Stop: 34473, Start Num: 44
Candidate Starts for Mendokysei_44:
(1, 33721), (14, 34033), (Start: 44 @34285 has 13 MA's), (54, 34321), (56, 34336),

Gene: MichelleMyBell_59 Start: 37278, Stop: 37388, Start Num: 53
Candidate Starts for MichelleMyBell_59:
(11, 36978), (18, 37053), (25, 37128), (31, 37161), (37, 37200), (38, 37203), (Start: 53 @37278 has 54 MA's), (67, 37371),

Gene: Minnie_70 Start: 47983, Stop: 48171, Start Num: 44
Candidate Starts for Minnie_70:
(29, 47890), (39, 47950), (Start: 44 @47983 has 13 MA's), (54, 48019), (56, 48034),

Gene: Misha28_82 Start: 51166, Stop: 51324, Start Num: 48
Candidate Starts for Misha28_82:
(17, 50950), (21, 51013), (30, 51070), (Start: 48 @51166 has 4 MA's), (51, 51175),

Gene: MooMoo_77 Start: 47555, Stop: 47719, Start Num: 49
Candidate Starts for MooMoo_77:
(Start: 49 @47555 has 1 MA's), (Start: 53 @47573 has 54 MA's), (64, 47669),

Gene: Ms6_64 Start: 38259, Stop: 38414, Start Num: 53
Candidate Starts for Ms6_64:
(24, 38121), (Start: 53 @38259 has 54 MA's), (56, 38274), (60, 38322), (62, 38343), (66, 38364),

Gene: MulchExplorer_71 Start: 44775, Stop: 44924, Start Num: 53
Candidate Starts for MulchExplorer_71:

(24, 44637), (42, 44736), (Start: 53 @44775 has 54 MA's), (56, 44790), (60, 44838), (62, 44859), (66, 44880),

Gene: MulchSalad_77 Start: 48222, Stop: 48365, Start Num: 52
Candidate Starts for MulchSalad_77:
(7, 47892), (8, 47901), (20, 48069), (Start: 52 @48222 has 39 MA's), (64, 48318),

Gene: Nairb_45 Start: 34733, Stop: 34924, Start Num: 44
Candidate Starts for Nairb_45:
(Start: 44 @34733 has 13 MA's), (50, 34754), (54, 34769), (56, 34784),

Gene: Nette_47 Start: 34345, Stop: 34482, Start Num: 56
Candidate Starts for Nette_47:
(1, 33730), (14, 34042), (Start: 44 @34294 has 13 MA's), (54, 34330), (56, 34345),

Gene: Nimbo_61 Start: 41823, Stop: 41978, Start Num: 53
Candidate Starts for Nimbo_61:
(24, 41685), (Start: 53 @41823 has 54 MA's), (56, 41838), (60, 41886), (62, 41907), (66, 41928),

Gene: Ovechkin_67 Start: 43210, Stop: 43365, Start Num: 53
Candidate Starts for Ovechkin_67:
(24, 43072), (Start: 53 @43210 has 54 MA's), (56, 43225), (60, 43273), (62, 43294), (66, 43315),

Gene: PHappiness_68 Start: 44045, Stop: 44200, Start Num: 53
Candidate Starts for PHappiness_68:
(Start: 53 @44045 has 54 MA's), (56, 44060), (60, 44108), (62, 44129), (66, 44150),

Gene: PaintedDog_63 Start: 41375, Stop: 41494, Start Num: 52
Candidate Starts for PaintedDog_63:
(Start: 52 @41375 has 39 MA's),

Gene: Parmesanjohn_62 Start: 39223, Stop: 39366, Start Num: 52
Candidate Starts for Parmesanjohn_62:
(7, 38905), (8, 38914), (20, 39070), (Start: 52 @39223 has 39 MA's), (64, 39319),

Gene: Philonius_62 Start: 39388, Stop: 39531, Start Num: 52
Candidate Starts for Philonius_62:
(7, 39070), (8, 39079), (20, 39235), (Start: 52 @39388 has 39 MA's), (64, 39484),

Gene: Phloss_60 Start: 38630, Stop: 38773, Start Num: 52
Candidate Starts for Phloss_60:
(7, 38312), (8, 38321), (20, 38477), (Start: 52 @38630 has 39 MA's), (64, 38726),

Gene: Phrann_58 Start: 40465, Stop: 40653, Start Num: 44
Candidate Starts for Phrann_58:
(29, 40372), (39, 40432), (Start: 44 @40465 has 13 MA's), (54, 40501), (56, 40516),

Gene: Piper2020_86 Start: 51987, Stop: 52130, Start Num: 52
Candidate Starts for Piper2020_86:
(20, 51834), (Start: 52 @51987 has 39 MA's), (64, 52083),

Gene: Pipsqueaks_63 Start: 39201, Stop: 39344, Start Num: 52
Candidate Starts for Pipsqueaks_63:

(7, 38883), (8, 38892), (20, 39048), (Start: 52 @39201 has 39 MA's), (64, 39297),

Gene: Purky_69 Start: 44331, Stop: 44486, Start Num: 53
Candidate Starts for Purky_69:
(33, 44220), (35, 44238), (Start: 53 @44331 has 54 MA's), (64, 44427),

Gene: QueenHazel_57 Start: 39547, Stop: 39696, Start Num: 53
Candidate Starts for QueenHazel_57:
(26, 39421), (Start: 53 @39547 has 54 MA's), (56, 39562), (60, 39610), (62, 39631), (66, 39652),

Gene: QuickMath_71 Start: 44999, Stop: 45148, Start Num: 53
Candidate Starts for QuickMath_71:
(24, 44861), (42, 44960), (Start: 53 @44999 has 54 MA's), (56, 45014), (60, 45062), (62, 45083), (66, 45104),

Gene: Quico_75 Start: 44316, Stop: 44471, Start Num: 53
Candidate Starts for Quico_75:
(24, 44178), (Start: 53 @44316 has 54 MA's), (56, 44331), (60, 44379), (62, 44400), (66, 44421),

Gene: RedBird_68 Start: 43035, Stop: 43190, Start Num: 53
Candidate Starts for RedBird_68:
(Start: 53 @43035 has 54 MA's), (56, 43050), (60, 43098), (62, 43119), (66, 43140),

Gene: Rialto_73 Start: 45931, Stop: 46086, Start Num: 53
Candidate Starts for Rialto_73:
(24, 45793), (Start: 53 @45931 has 54 MA's), (56, 45946), (60, 45994), (62, 46015), (66, 46036),

Gene: RitaG_68 Start: 44390, Stop: 44545, Start Num: 53
Candidate Starts for RitaG_68:
(Start: 53 @44390 has 54 MA's), (56, 44405), (60, 44453), (62, 44474), (66, 44495),

Gene: RonRayGun_46 Start: 35179, Stop: 35370, Start Num: 44
Candidate Starts for RonRayGun_46:
(Start: 44 @35179 has 13 MA's), (50, 35200), (54, 35215), (56, 35230),

Gene: Rubeelu_58 Start: 37292, Stop: 37432, Start Num: 55
Candidate Starts for Rubeelu_58:
(45, 37250), (50, 37271), (Start: 55 @37292 has 2 MA's), (57, 37322),

Gene: Sandalphon_68 Start: 45968, Stop: 46156, Start Num: 44
Candidate Starts for Sandalphon_68:
(29, 45875), (39, 45935), (Start: 44 @45968 has 13 MA's), (54, 46004), (56, 46019),

Gene: Sassafras_68 Start: 43353, Stop: 43508, Start Num: 53
Candidate Starts for Sassafras_68:
(Start: 53 @43353 has 54 MA's), (56, 43368), (60, 43416), (62, 43437), (66, 43458),

Gene: Sbash_70 Start: 46782, Stop: 46940, Start Num: 53
Candidate Starts for Sbash_70:
(Start: 53 @46782 has 54 MA's), (58, 46836), (65, 46884),

Gene: Schnauzer_63 Start: 39223, Stop: 39366, Start Num: 52
Candidate Starts for Schnauzer_63:

(7, 38905), (8, 38914), (20, 39070), (Start: 52 @39223 has 39 MA's), (64, 39319),

Gene: Scitech_57 Start: 38626, Stop: 38769, Start Num: 53
Candidate Starts for Scitech_57:
(16, 38389), (23, 38461), (27, 38491), (46, 38599), (Start: 53 @38626 has 54 MA's), (63, 38722),

Gene: Scottish_66 Start: 42936, Stop: 43091, Start Num: 53
Candidate Starts for Scottish_66:
(24, 42798), (Start: 53 @42936 has 54 MA's), (56, 42951), (60, 42999), (62, 43020), (66, 43041),

Gene: Seagreen_66 Start: 42125, Stop: 42280, Start Num: 53
Candidate Starts for Seagreen_66:
(24, 41987), (Start: 53 @42125 has 54 MA's), (56, 42140), (60, 42188), (62, 42209), (66, 42230),

Gene: Sejanus_78 Start: 56346, Stop: 56510, Start Num: 47
Candidate Starts for Sejanus_78:
(32, 56262), (34, 56274), (40, 56319), (Start: 47 @56346 has 5 MA's),

Gene: Shauna1_65 Start: 42665, Stop: 42820, Start Num: 53
Candidate Starts for Shauna1_65:
(24, 42527), (Start: 53 @42665 has 54 MA's), (56, 42680), (60, 42728), (62, 42749), (66, 42770),

Gene: SiSi_67 Start: 44560, Stop: 44715, Start Num: 53
Candidate Starts for SiSi_67:
(28, 44446), (Start: 53 @44560 has 54 MA's), (56, 44575), (60, 44623), (62, 44644), (66, 44665),

Gene: Silvafighter_64 Start: 38766, Stop: 38909, Start Num: 52
Candidate Starts for Silvafighter_64:
(7, 38448), (8, 38457), (20, 38613), (Start: 52 @38766 has 39 MA's), (64, 38862),

Gene: Silvy_58 Start: 39856, Stop: 39999, Start Num: 52
Candidate Starts for Silvy_58:
(7, 39541), (8, 39550), (20, 39706), (Start: 52 @39856 has 39 MA's), (64, 39952),

Gene: SkinnyPete_59 Start: 38970, Stop: 39113, Start Num: 52
Candidate Starts for SkinnyPete_59:
(7, 38652), (8, 38661), (20, 38817), (Start: 52 @38970 has 39 MA's), (64, 39066),

Gene: Slim_70 Start: 44549, Stop: 44704, Start Num: 53
Candidate Starts for Slim_70:
(24, 44411), (Start: 53 @44549 has 54 MA's), (56, 44564), (60, 44612), (62, 44633), (66, 44654),

Gene: Smurph_62 Start: 39223, Stop: 39366, Start Num: 52
Candidate Starts for Smurph_62:
(7, 38905), (8, 38914), (20, 39070), (Start: 52 @39223 has 39 MA's), (64, 39319),

Gene: Sonah_60 Start: 38874, Stop: 38978, Start Num: 52
Candidate Starts for Sonah_60:
(Start: 52 @38874 has 39 MA's),

Gene: Soul22_76 Start: 44557, Stop: 44706, Start Num: 53
Candidate Starts for Soul22_76:

(24, 44419), (42, 44518), (Start: 53 @44557 has 54 MA's), (56, 44572), (60, 44620), (62, 44641), (66, 44662),

Gene: StAnnes_67 Start: 43879, Stop: 44034, Start Num: 53
Candidate Starts for StAnnes_67:
(24, 43741), (Start: 53 @43879 has 54 MA's), (56, 43894), (60, 43942), (62, 43963), (66, 43984),

Gene: Strokeseat_63 Start: 40434, Stop: 40589, Start Num: 53
Candidate Starts for Strokeseat_63:
(2, 39981), (3, 39999), (4, 40035), (5, 40041), (6, 40059), (13, 40155), (19, 40233), (26, 40308), (Start: 53 @40434 has 54 MA's), (56, 40449), (60, 40497), (62, 40518), (66, 40539),

Gene: Strokeseat_68 Start: 44081, Stop: 44269, Start Num: 44
Candidate Starts for Strokeseat_68:
(29, 43988), (39, 44048), (Start: 44 @44081 has 13 MA's), (54, 44117), (56, 44132),

Gene: Taj_78 Start: 46564, Stop: 46665, Start Num: 52
Candidate Starts for Taj_78:
(39, 46513), (42, 46528), (Start: 52 @46564 has 39 MA's),

Gene: Taj_73 Start: 45199, Stop: 45354, Start Num: 53
Candidate Starts for Taj_73:
(24, 45061), (Start: 53 @45199 has 54 MA's), (56, 45214), (60, 45262), (62, 45283), (66, 45304),

Gene: Tapioca_60 Start: 39740, Stop: 39883, Start Num: 52
Candidate Starts for Tapioca_60:
(20, 39587), (Start: 52 @39740 has 39 MA's), (64, 39836),

Gene: Tessdabest_63 Start: 39357, Stop: 39500, Start Num: 52
Candidate Starts for Tessdabest_63:
(7, 39039), (8, 39048), (20, 39204), (Start: 52 @39357 has 39 MA's), (64, 39453),

Gene: ThulaThula_66 Start: 44182, Stop: 44340, Start Num: 53
Candidate Starts for ThulaThula_66:
(31, 44086), (Start: 53 @44182 has 54 MA's), (58, 44239), (65, 44287),

Gene: TootsiePop_82 Start: 51166, Stop: 51324, Start Num: 48
Candidate Starts for TootsiePop_82:
(17, 50950), (21, 51013), (30, 51070), (Start: 48 @51166 has 4 MA's), (51, 51175),

Gene: Toron_90 Start: 52849, Stop: 53001, Start Num: 53
Candidate Starts for Toron_90:
(Start: 53 @52849 has 54 MA's), (58, 52903), (65, 52951),

Gene: Tortellini_68 Start: 45349, Stop: 45510, Start Num: 47
Candidate Starts for Tortellini_68:
(Start: 47 @45349 has 5 MA's),

Gene: Tortoise12_62 Start: 38344, Stop: 38487, Start Num: 52
Candidate Starts for Tortoise12_62:
(7, 38026), (8, 38035), (20, 38191), (Start: 52 @38344 has 39 MA's), (64, 38440),

Gene: Veteran_65 Start: 44909, Stop: 45058, Start Num: 53

Candidate Starts for Veteran_65:
(27, 44792), (42, 44870), (Start: 53 @44909 has 54 MA's), (56, 44924), (60, 44972), (62, 44993), (66, 45014),

Gene: Wee_73 Start: 45275, Stop: 45430, Start Num: 53
Candidate Starts for Wee_73:
(24, 45137), (Start: 53 @45275 has 54 MA's), (56, 45290), (60, 45338), (62, 45359), (66, 45380),

Gene: Whitty_45 Start: 34734, Stop: 34925, Start Num: 44
Candidate Starts for Whitty_45:
(Start: 44 @34734 has 13 MA's), (50, 34755), (54, 34770), (56, 34785),

Gene: Willsammy_61 Start: 41085, Stop: 41189, Start Num: 52
Candidate Starts for Willsammy_61:
(36, 41016), (41, 41046), (51, 41082), (Start: 52 @41085 has 39 MA's),

Gene: Xerxes_62 Start: 39220, Stop: 39363, Start Num: 52
Candidate Starts for Xerxes_62:
(7, 38902), (8, 38911), (20, 39067), (Start: 52 @39220 has 39 MA's), (64, 39316),

Gene: Xula_56 Start: 39168, Stop: 39317, Start Num: 53
Candidate Starts for Xula_56:
(26, 39042), (Start: 53 @39168 has 54 MA's), (56, 39183), (60, 39231), (62, 39252), (66, 39273),

Gene: Zapner_81 Start: 44699, Stop: 44848, Start Num: 53
Candidate Starts for Zapner_81:
(24, 44561), (42, 44660), (Start: 53 @44699 has 54 MA's), (56, 44714), (60, 44762), (62, 44783), (66, 44804),

Gene: ZenTime222_45 Start: 34733, Stop: 34924, Start Num: 44
Candidate Starts for ZenTime222_45:
(Start: 44 @34733 has 13 MA's), (50, 34754), (54, 34769), (56, 34784),