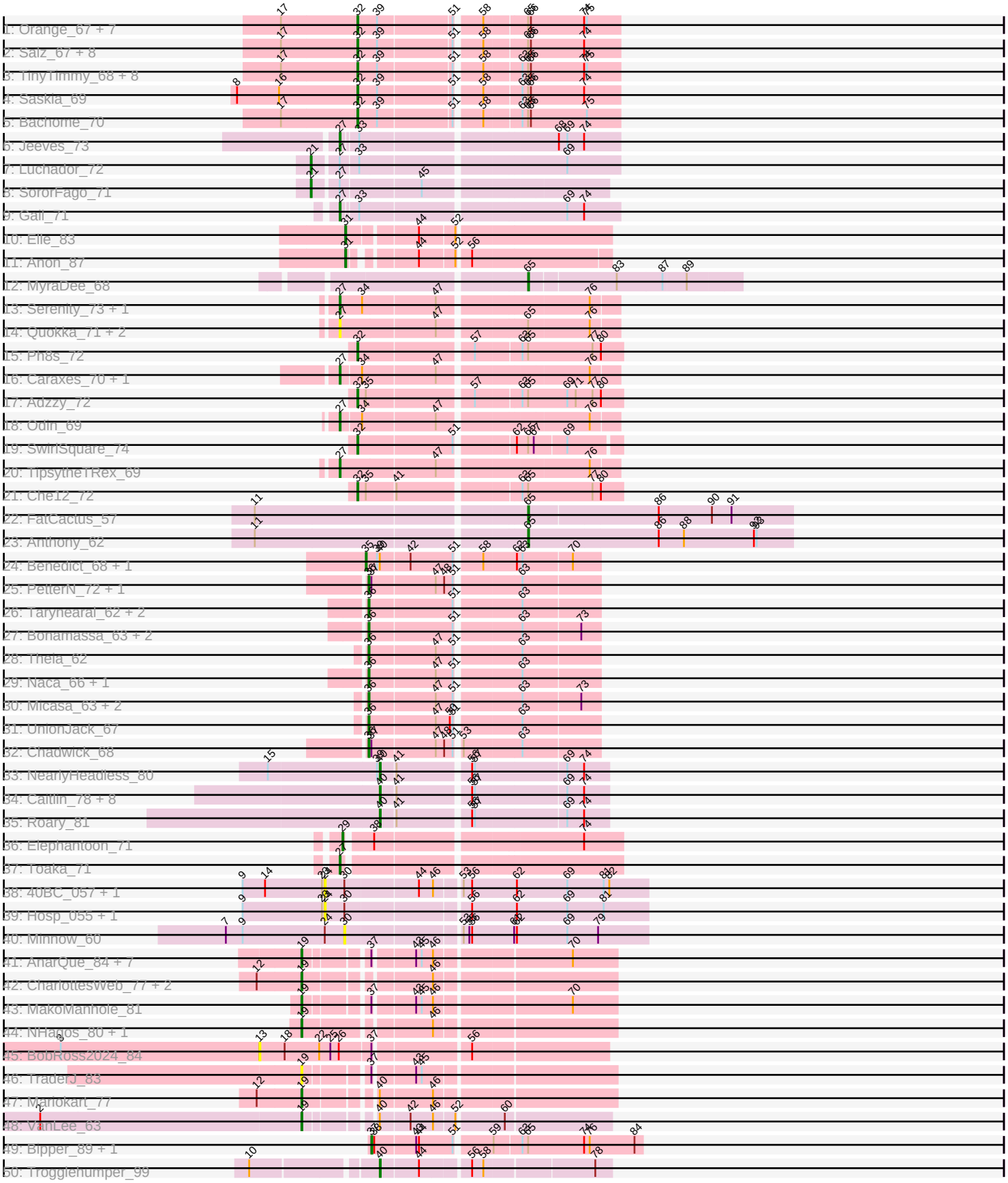
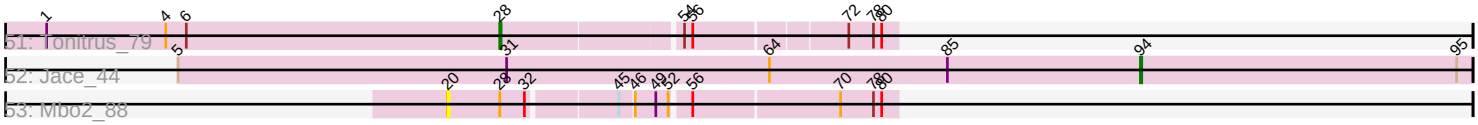
Pham 347436


1: Orange_67 + 7
2: Salz_67 + 8
3: TinyTimmy_68 + 8
4: Saskia_69
5: Bachome_70
6: Jeeves_73
7: Luchador_72
8: SororFago_71
9: Gail_71
10: Ellie_83
11: Anon_87
12: MyraDee_68
13: Serenity_73 + 1
14: Quokka_71 + 2
15: Ph8s_72
16: Caraxes_70 + 1
17: Adzzy_72
18: Odin_69
19: SwirlSquare_74
20: TipsytheTRex_69
21: Che12_72
22: FatCactus_57
23: Anthony_62
24: Benedict_68 + 1
25: PetterN_72 + 1
26: Tarynearal_62 + 2
27: Bonamassa_63 + 2
28: Thela_62
29: Naca_66 + 1
30: Micasa_63 + 2
31: UnionJack_67
32: Chadwick_68
33: NearlyHeadless_80
34: Caitlin_78 + 8
35: Roary_81
36: Elephantoon_71
37: Toaka_71
38: 40BC_057 + 1
39: Hosp_055 + 1
40: Minnow_60
41: AnarQue_84 + 7
42: CharlottesWeb_77 + 2
43: MakoManhole_81
44: NHagos_80 + 1
45: BobRoss2024_84
46: TraderJ_83
47: Manokan_77
48: VanLee_63
49: Bipper_89 + 1
50: Troglehumper_99

Pham 347436


1
4
6
28
54
56
72
78
80
51: Tonitrus_79
5
31
64
85
94
95
52: Jace_44
20
28
32
45
46
49
52
56
70
78
80
53: Mboi2_88

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 347436 Report

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

Pham number 347436 has 110 members, 17 are drafts.

Phages represented in each track:
• Track 1 : Orange_67, Bowtie_69, Sham4_68, Timothy_68, Flaverint_69, Lucivia_69, Munch_68, Aneem_69
• Track 2 : Salz_67, Gilberta_69, Et2Brutus_67, Mabel_68, Fibonacci_68, Mulciber_67, Snape_68, Ebony_68, MaCh_68
• Track 3 : TinyTimmy_68, Bud_67, Hutc2_67, Insomnia_69, Kimba_68, Joselito_69, Petersenfast_68, Jabith_69, Wolpertinger_66
• Track 4 : Saskia_69
• Track 5 : Bachome_70
• Track 6 : Jeeves_73
• Track 7 : Luchador_72
• Track 8 : SororFago_71
• Track 9 : Gail_71
• Track 10 : Elle_83
• Track 11 : Anon_87
• Track 12 : MyraDee_68
• Track 13 : Serenity_73, Jsquared_73
• Track 14 : Quokka_71, Bradman_72, MajorMajor_71
• Track 15 : Ph8s_72
• Track 16 : Caraxes_70, Superchunk_70
• Track 17 : Adzzy_72
• Track 18 : Odin_69
• Track 19 : SwirlSquare_74
• Track 20 : TipsytheTRex_69
• Track 21 : Che12_72
• Track 22 : FatCactus_57
• Track 23 : Anthony_62
• Track 24 : Benedict_68, Airmid_67
• Track 25 : PetterN_72, Scorpia_68
• Track 26 : Tarynearal_62, Florence4_62, Florence1_60
• Track 27 : Bonamassa_63, George_60, Milcery_63
• Track 28 : Theia_62
• Track 29 : Naca_66, ElTiger69_69
• Track 30 : Micasa_63, MarysWell_63, Dublin_63
• Track 31 : UnionJack_67
• Track 32 : Chadwick_68
• Track 33 : NearlyHeadless_80

• Track 34 : Caitlin_78, Saintus_75, Danforth_80, Expelliarmus_76, Stephig9_78, Astro_79, Groundhog_77, Dixon_78, Smeadley_79
• Track 35 : Roary_81
• Track 36 : Elephantoon_71
• Track 37 : Toaka_71
• Track 38 : 40BC_057, 39HC_057
• Track 39 : Hosp_055, Jolie1_057
• Track 40 : Minnow_60
• Track 41 : AnarQue_84, CloverMinnie_82, FelixTres_83, Yeshua_83, Wooper_84, CaiB_83, Blackpen_81, MossRose_82
• Track 42 : CharlottesWeb_77, Coco2012_76, JellyBelly_76
• Track 43 : MakoManhole_81
• Track 44 : NHagos_80, AksarBAT_84
• Track 45 : BobRoss2024_84
• Track 46 : TraderJ_83
• Track 47 : Mariokart_77
• Track 48 : VanLee_63
• Track 49 : Bipper_89, Cracklewink_90
• Track 50 : Trogglehumper_99
• Track 51 : Tonitrus_79
• Track 52 : Jace_44
• Track 53 : Mbo2_88

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

The start number called the most often in the published annotations is 32, it was called in 32 of the 93 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Adzzy_72, Aneem_69, Bachome_70, Bowtie_69, Bud_67, Che12_72, Ebony_68, Et2Brutus_67, Fibonacci_68, Flaverint_69, Gilberta_69, Hutc2_67, Insomnia_69, Jabith_69, Joselito_69, Kimba_68, Lucivia_69, MaCh_68, Mabel_68, Mulciber_67, Munch_68, Orange_67, Petersenfast_68, Ph8s_72, Salz_67, Saskia_69, Sham4_68, Snape_68, SwirlSquare_74, Timothy_68, TinyTimmy_68, Wolpertinger_66,

Genes that have the "Most Annotated" start but do not call it:
• Mbo2_88,

Genes that do not have the "Most Annotated" start:
• 39HC_057, 40BC_057, Airmid_67, AksarBAT_84, AnarQue_84, Anon_87, Anthony_62, Astro_79, Benedict_68, Bipper_89, Blackpen_81, BobRoss2024_84, Bonamassa_63, Bradman_72, CaiB_83, Caitlin_78, Caraxes_70, Chadwick_68, CharlottesWeb_77, CloverMinnie_82, Coco2012_76, Cracklewink_90, Danforth_80, Dixon_78, Dublin_63, ElTiger69_69, Elephantoon_71, Elle_83, Expelliarmus_76, FatCactus_57, FelixTres_83, Florence1_60, Florence4_62, Gail_71, George_60, Groundhog_77, Hosp_055, Jace_44, Jeeves_73, JellyBelly_76, Jolie1_057, Jsquared_73, Luchador_72, MajorMajor_71, MakoManhole_81, Mariokart_77, MarysWell_63, Micasa_63, Milcery_63, Minnow_60, MossRose_82, MyraDee_68, NHagos_80, Naca_66, NearlyHeadless_80, Odin_69, PetterN_72, Quokka_71, Roary_81, Saintus_75, Scorpia_68, Serenity_73, Smeadley_79, SororFago_71,

Stephig9_78, Superchunk_70, Tarynearal_62, Theia_62, TipsytheTRex_69, Toaka_71, Tonitrus_79, TraderJ_83, Trogglehumper_99, UnionJack_67, VanLee_63, Wooper_84, Yeshua_83,

Summary by start number:

Start 13:
• Found in 1 of 110 (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: BobRoss2024_84 (DR),

Start 19:
• Found in 17 of 110 (15.5%) of genes in pham
• Manual Annotations of this start: 12 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AksarBAT_84 (DR), AnarQue_84 (DR), Blackpen_81 (DR), CaiB_83 (DR), CharlottesWeb_77 (DR), CloverMinnie_82 (DR), Coco2012_76 (DR), FelixTres_83 (DR), JellyBelly_76 (DR), MakoManhole_81 (DR), Mariokart_77 (DR), MossRose_82 (DR), NHagos_80 (DR), TraderJ_83 (DR), VanLee_63 (KA), Wooper_84 (DR), Yeshua_83 (DR),

Start 20:
• Found in 1 of 110 (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: Mbo2_88 (singleton),

Start 21:
• Found in 2 of 110 (1.8%) of genes in pham
• Manual Annotations of this start: 2 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Luchador_72 (A14), SororFago_71 (A14),

Start 24:
• Found in 5 of 110 (4.5%) of genes in pham
• No Manual Annotations of this start.
• Called 80.0% of time when present
• Phage (with cluster) where this start called: 39HC_057 (B6), 40BC_057 (B6), Hosp_055 (B6), Jolie1_057 (B6),

Start 27:
• Found in 14 of 110 (12.7%) of genes in pham
• Manual Annotations of this start: 9 of 93
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Bradman_72 (A2), Caraxes_70 (A2), Gail_71 (A14), Jeeves_73 (A14), Jsquared_73 (A2), MajorMajor_71 (A2), Odin_69 (A2), Quokka_71 (A2), Serenity_73 (A2), Superchunk_70 (A2), TipsytheTRex_69 (A2), Toaka_71 (A9),

Start 28:
• Found in 2 of 110 (1.8%) of genes in pham

• Manual Annotations of this start: 1 of 93
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Tonitrus_79 (singleton),

Start 29:
• Found in 1 of 110 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Elephantoon_71 (A9),

Start 30:
• Found in 5 of 110 (4.5%) of genes in pham
• No Manual Annotations of this start.
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Minnow_60 (B6),

Start 31:
• Found in 3 of 110 (2.7%) of genes in pham
• Manual Annotations of this start: 2 of 93
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Anon_87 (A15), Elle_83 (A15),

Start 32:
• Found in 33 of 110 (30.0%) of genes in pham
• Manual Annotations of this start: 32 of 93
• Called 97.0% of time when present
• Phage (with cluster) where this start called: Adzzy_72 (A2), Aneem_69 (A11), Bachome_70 (A11), Bowtie_69 (A11), Bud_67 (A11), Che12_72 (A2), Ebony_68 (A11), Et2Brutus_67 (A11), Fibonacci_68 (A11), Flaverint_69 (A11), Gilberta_69 (A11), Hutc2_67 (A11), Insomnia_69 (A11), Jabith_69 (A11), Joselito_69 (A11), Kimba_68 (A11), Lucivia_69 (A11), MaCh_68 (A11), Mabel_68 (A11), Mulciber_67 (A11), Munch_68 (A11), Orange_67 (A11), Petersenfast_68 (A11), Ph8s_72 (A2), Salz_67 (A11), Saskia_69 (A11), Sham4_68 (A11), Snape_68 (A11), SwirlSquare_74 (A2), Timothy_68 (A11), TinyTimmy_68 (A11), Wolpertinger_66 (A11),

Start 35:
• Found in 4 of 110 (3.6%) of genes in pham
• Manual Annotations of this start: 2 of 93
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Airmid_67 (A5), Benedict_68 (A5),

Start 36:
• Found in 16 of 110 (14.5%) of genes in pham
• Manual Annotations of this start: 14 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Bonamassa_63 (A5), Chadwick_68 (A5), Dublin_63 (A5), ElTiger69_69 (A5), Florence1_60 (A5), Florence4_62 (A5), George_60 (A5), MarysWell_63 (A5), Micasa_63 (A5), Milcery_63 (A5), Naca_66 (A5), PetterN_72 (A5), Scorpia_68 (A5), Tarynearal_62 (A5), Theia_62 (A5), UnionJack_67 (A5),

Start 37:
• Found in 16 of 110 (14.5%) of genes in pham

• Manual Annotations of this start: 2 of 93
• Called 12.5% of time when present
• Phage (with cluster) where this start called: Bipper_89 (Y), Cracklewink_90 (Y),

Start 40:
• Found in 16 of 110 (14.5%) of genes in pham
• Manual Annotations of this start: 12 of 93
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Astro_79 (A8), Caitlin_78 (A8), Danforth_80 (A8), Dixon_78 (A8), Expelliarmus_76 (A8), Groundhog_77 (A8), NearlyHeadless_80 (A8), Roary_81 (A8), Saintus_75 (A8), Smeadley_79 (A8), Stephig9_78 (A8), Trogglehumper_99 (singleton),

Start 65:
• Found in 40 of 110 (36.4%) of genes in pham
• Manual Annotations of this start: 3 of 93
• Called 7.5% of time when present
• Phage (with cluster) where this start called: Anthony_62 (A20), FatCactus_57 (A20), MyraDee_68 (A18),

Start 94:
• Found in 1 of 110 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 93
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jace_44 (singleton),

Summary by clusters:

There are 14 clusters represented in this pham: A15, A14, KA, A20, A11, singleton, A18, A9, B6, A2, A5, Y, A8, DR,

Info for manual annotations of cluster A11:
•Start number 32 was manually annotated 28 times for cluster A11.

Info for manual annotations of cluster A14:
•Start number 21 was manually annotated 2 times for cluster A14.
•Start number 27 was manually annotated 2 times for cluster A14.

Info for manual annotations of cluster A15:
•Start number 31 was manually annotated 2 times for cluster A15.

Info for manual annotations of cluster A18:
•Start number 65 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:
•Start number 27 was manually annotated 6 times for cluster A2.
•Start number 32 was manually annotated 4 times for cluster A2.

Info for manual annotations of cluster A20:
•Start number 65 was manually annotated 2 times for cluster A20.

Info for manual annotations of cluster A5:
•Start number 35 was manually annotated 2 times for cluster A5.

•Start number 36 was manually annotated 14 times for cluster A5.

Info for manual annotations of cluster A8:
•Start number 40 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:
•Start number 27 was manually annotated 1 time for cluster A9.
•Start number 29 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster DR:
•Start number 19 was manually annotated 11 times for cluster DR.

Info for manual annotations of cluster KA:
•Start number 19 was manually annotated 1 time for cluster KA.

Info for manual annotations of cluster Y:
•Start number 37 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: 39HC_057 Start: 54355, Stop: 54023, Start Num: 24
Candidate Starts for 39HC_057:
(9, 54442), (14, 54418), (23, 54358), (24, 54355), (30, 54334), (44, 54259), (46, 54244), (53, 54220), (56, 54211), (62, 54163), (69, 54109), (81, 54070), (82, 54064),

Gene: 40BC_057 Start: 54355, Stop: 54023, Start Num: 24
Candidate Starts for 40BC_057:
(9, 54442), (14, 54418), (23, 54358), (24, 54355), (30, 54334), (44, 54259), (46, 54244), (53, 54220), (56, 54211), (62, 54163), (69, 54109), (81, 54070), (82, 54064),

Gene: Adzzy_72 Start: 41570, Stop: 41304, Start Num: 32
Candidate Starts for Adzzy_72:
(Start: 32 @41570 has 32 MA's), (Start: 35 @41561 has 2 MA's), (57, 41456), (63, 41411), (Start: 65 @41405 has 3 MA's), (69, 41363), (71, 41354), (77, 41336), (80, 41327),

Gene: Airmid_67 Start: 42203, Stop: 41970, Start Num: 35
Candidate Starts for Airmid_67:
(Start: 35 @42203 has 2 MA's), (39, 42191), (Start: 40 @42188 has 12 MA's), (42, 42158), (51, 42113), (58, 42089), (62, 42056), (63, 42050), (70, 41999),

Gene: AksarBAT_84 Start: 60421, Stop: 60119, Start Num: 19
Candidate Starts for AksarBAT_84:
(Start: 19 @60421 has 12 MA's), (46, 60301),

Gene: AnarQue_84 Start: 61315, Stop: 61019, Start Num: 19
Candidate Starts for AnarQue_84:
(Start: 19 @61315 has 12 MA's), (Start: 37 @61258 has 2 MA's), (43, 61219), (45, 61213), (46, 61201), (70, 61066),

Gene: Aneem_69 Start: 41746, Stop: 41486, Start Num: 32

Candidate Starts for Aneem_69:
(17, 41827), (Start: 32 @41746 has 32 MA's), (39, 41725), (51, 41650), (58, 41626), (Start: 65 @41584 has 3 MA's), (66, 41581), (74, 41524), (75, 41521),

Gene: Anon_87 Start: 47141, Stop: 46893, Start Num: 31
Candidate Starts for Anon_87:
(Start: 31 @47141 has 2 MA's), (44, 47084), (52, 47048), (56, 47036),

Gene: Anthony_62 Start: 39800, Stop: 39519, Start Num: 65
Candidate Starts for Anthony_62:
(11, 40076), (Start: 65 @39800 has 3 MA's), (86, 39662), (88, 39635), (92, 39560), (93, 39557),

Gene: Astro_79 Start: 43758, Stop: 43531, Start Num: 40
Candidate Starts for Astro_79:
(Start: 40 @43758 has 12 MA's), (41, 43743), (56, 43671), (57, 43668), (69, 43575), (74, 43557),

Gene: Bachome_70 Start: 41742, Stop: 41482, Start Num: 32
Candidate Starts for Bachome_70:
(17, 41823), (Start: 32 @41742 has 32 MA's), (39, 41721), (51, 41646), (58, 41622), (63, 41586), (Start: 65 @41580 has 3 MA's), (66, 41577), (75, 41517),

Gene: Benedict_68 Start: 41935, Stop: 41702, Start Num: 35
Candidate Starts for Benedict_68:
(Start: 35 @41935 has 2 MA's), (39, 41923), (Start: 40 @41920 has 12 MA's), (42, 41890), (51, 41845), (58, 41821), (62, 41788), (63, 41782), (70, 41731),

Gene: Bipper_89 Start: 57383, Stop: 57655, Start Num: 37
Candidate Starts for Bipper_89:
(Start: 37 @57383 has 2 MA's), (38, 57386), (43, 57428), (44, 57431), (51, 57467), (59, 57500), (63, 57527), (Start: 65 @57533 has 3 MA's), (74, 57593), (76, 57599), (84, 57647),

Gene: Blackpen_81 Start: 59779, Stop: 59483, Start Num: 19
Candidate Starts for Blackpen_81:
(Start: 19 @59779 has 12 MA's), (Start: 37 @59722 has 2 MA's), (43, 59683), (45, 59677), (46, 59665), (70, 59530),

Gene: BobRoss2024_84 Start: 60453, Stop: 60106, Start Num: 13
Candidate Starts for BobRoss2024_84:
(3, 60666), (13, 60453), (18, 60426), (22, 60390), (25, 60378), (26, 60369), (Start: 37 @60339 has 2 MA's), (56, 60246),

Gene: Bonamassa_63 Start: 41386, Stop: 41156, Start Num: 36
Candidate Starts for Bonamassa_63:
(Start: 36 @41386 has 14 MA's), (51, 41299), (63, 41236), (73, 41176),

Gene: Bowtie_69 Start: 41753, Stop: 41493, Start Num: 32
Candidate Starts for Bowtie_69:
(17, 41834), (Start: 32 @41753 has 32 MA's), (39, 41732), (51, 41657), (58, 41633), (Start: 65 @41591 has 3 MA's), (66, 41588), (74, 41531), (75, 41528),

Gene: Bradman_72 Start: 42151, Stop: 41876, Start Num: 27
Candidate Starts for Bradman_72:
(Start: 27 @42151 has 9 MA's), (47, 42052), (Start: 65 @41968 has 3 MA's), (76, 41905),

Gene: Bud_67 Start: 41300, Stop: 41040, Start Num: 32
Candidate Starts for Bud_67:
(17, 41381), (Start: 32 @41300 has 32 MA's), (39, 41279), (51, 41204), (58, 41180), (63, 41144), (Start: 65 @41138 has 3 MA's), (66, 41135), (74, 41078), (75, 41075),

Gene: CaiB_83 Start: 61113, Stop: 60817, Start Num: 19
Candidate Starts for CaiB_83:
(Start: 19 @61113 has 12 MA's), (Start: 37 @61056 has 2 MA's), (43, 61017), (45, 61011), (46, 60999), (70, 60864),

Gene: Caitlin_78 Start: 43450, Stop: 43223, Start Num: 40
Candidate Starts for Caitlin_78:
(Start: 40 @43450 has 12 MA's), (41, 43435), (56, 43363), (57, 43360), (69, 43267), (74, 43249),

Gene: Caraxes_70 Start: 41338, Stop: 41066, Start Num: 27
Candidate Starts for Caraxes_70:
(Start: 27 @41338 has 9 MA's), (34, 41317), (47, 41242), (76, 41095),

Gene: Chadwick_68 Start: 41682, Stop: 41452, Start Num: 36
Candidate Starts for Chadwick_68:
(Start: 36 @41682 has 14 MA's), (Start: 37 @41679 has 2 MA's), (47, 41613), (48, 41604), (51, 41595), (53, 41592), (63, 41532),

Gene: CharlottesWeb_77 Start: 58341, Stop: 58042, Start Num: 19
Candidate Starts for CharlottesWeb_77:
(12, 58386), (Start: 19 @58341 has 12 MA's), (46, 58224),

Gene: Che12_72 Start: 41454, Stop: 41188, Start Num: 32
Candidate Starts for Che12_72:
(Start: 32 @41454 has 32 MA's), (Start: 35 @41445 has 2 MA's), (41, 41415), (63, 41295), (Start: 65 @41289 has 3 MA's), (77, 41220), (80, 41211),

Gene: CloverMinnie_82 Start: 60591, Stop: 60295, Start Num: 19
Candidate Starts for CloverMinnie_82:
(Start: 19 @60591 has 12 MA's), (Start: 37 @60534 has 2 MA's), (43, 60495), (45, 60489), (46, 60477), (70, 60342),

Gene: Coco2012_76 Start: 57965, Stop: 57666, Start Num: 19
Candidate Starts for Coco2012_76:
(12, 58010), (Start: 19 @57965 has 12 MA's), (46, 57848),

Gene: Cracklewink_90 Start: 56578, Stop: 56850, Start Num: 37
Candidate Starts for Cracklewink_90:
(Start: 37 @56578 has 2 MA's), (38, 56581), (43, 56623), (44, 56626), (51, 56662), (59, 56695), (63, 56722), (Start: 65 @56728 has 3 MA's), (74, 56788), (76, 56794), (84, 56842),

Gene: Danforth_80 Start: 43835, Stop: 43608, Start Num: 40
Candidate Starts for Danforth_80:
(Start: 40 @43835 has 12 MA's), (41, 43820), (56, 43748), (57, 43745), (69, 43652), (74, 43634),

Gene: Dixon_78 Start: 43317, Stop: 43090, Start Num: 40
Candidate Starts for Dixon_78:

(Start: 40 @43317 has 12 MA's), (41, 43302), (56, 43230), (57, 43227), (69, 43134), (74, 43116),

Gene: Dublin_63 Start: 41343, Stop: 41113, Start Num: 36
Candidate Starts for Dublin_63:
(Start: 36 @41343 has 14 MA's), (47, 41274), (51, 41256), (63, 41193), (73, 41133),

Gene: Ebony_68 Start: 41317, Stop: 41057, Start Num: 32
Candidate Starts for Ebony_68:
(17, 41398), (Start: 32 @41317 has 32 MA's), (39, 41296), (51, 41221), (58, 41197), (Start: 65 @41155 has 3 MA's), (66, 41152), (74, 41095),

Gene: ElTiger69_69 Start: 42424, Stop: 42194, Start Num: 36
Candidate Starts for ElTiger69_69:
(Start: 36 @42424 has 14 MA's), (47, 42355), (51, 42337), (63, 42274),

Gene: Elephantoon_71 Start: 42028, Stop: 41756, Start Num: 29
Candidate Starts for Elephantoon_71:
(Start: 29 @42028 has 1 MA's), (38, 42004), (74, 41797),

Gene: Elle_83 Start: 46131, Stop: 45871, Start Num: 31
Candidate Starts for Elle_83:
(Start: 31 @46131 has 2 MA's), (44, 46065), (52, 46029),

Gene: Et2Brutus_67 Start: 41280, Stop: 41020, Start Num: 32
Candidate Starts for Et2Brutus_67:
(17, 41361), (Start: 32 @41280 has 32 MA's), (39, 41259), (51, 41184), (58, 41160), (Start: 65 @41118 has 3 MA's), (66, 41115), (74, 41058),

Gene: Expelliarmus_76 Start: 43531, Stop: 43304, Start Num: 40
Candidate Starts for Expelliarmus_76:
(Start: 40 @43531 has 12 MA's), (41, 43516), (56, 43444), (57, 43441), (69, 43348), (74, 43330),

Gene: FatCactus_57 Start: 38730, Stop: 38452, Start Num: 65
Candidate Starts for FatCactus_57:
(11, 39006), (Start: 65 @38730 has 3 MA's), (86, 38595), (90, 38538), (91, 38517),

Gene: FelixTres_83 Start: 60557, Stop: 60261, Start Num: 19
Candidate Starts for FelixTres_83:
(Start: 19 @60557 has 12 MA's), (Start: 37 @60500 has 2 MA's), (43, 60461), (45, 60455), (46, 60443), (70, 60308),

Gene: Fibonacci_68 Start: 41286, Stop: 41026, Start Num: 32
Candidate Starts for Fibonacci_68:
(17, 41367), (Start: 32 @41286 has 32 MA's), (39, 41265), (51, 41190), (58, 41166), (Start: 65 @41124 has 3 MA's), (66, 41121), (74, 41064),

Gene: Flaverint_69 Start: 41744, Stop: 41484, Start Num: 32
Candidate Starts for Flaverint_69:
(17, 41825), (Start: 32 @41744 has 32 MA's), (39, 41723), (51, 41648), (58, 41624), (Start: 65 @41582 has 3 MA's), (66, 41579), (74, 41522), (75, 41519),

Gene: Florence1_60 Start: 40898, Stop: 40668, Start Num: 36
Candidate Starts for Florence1_60:

(Start: 36 @40898 has 14 MA's), (51, 40811), (63, 40748),

Gene: Florence4_62 Start: 40898, Stop: 40668, Start Num: 36
Candidate Starts for Florence4_62:
(Start: 36 @40898 has 14 MA's), (51, 40811), (63, 40748),

Gene: Gail_71 Start: 43173, Stop: 42898, Start Num: 27
Candidate Starts for Gail_71:
(Start: 27 @43173 has 9 MA's), (33, 43158), (69, 42954), (74, 42936),

Gene: George_60 Start: 41130, Stop: 40900, Start Num: 36
Candidate Starts for George_60:
(Start: 36 @41130 has 14 MA's), (51, 41043), (63, 40980), (73, 40920),

Gene: Gilberta_69 Start: 41737, Stop: 41477, Start Num: 32
Candidate Starts for Gilberta_69:
(17, 41818), (Start: 32 @41737 has 32 MA's), (39, 41716), (51, 41641), (58, 41617), (Start: 65 @41575 has 3 MA's), (66, 41572), (74, 41515),

Gene: Groundhog_77 Start: 43587, Stop: 43366, Start Num: 40
Candidate Starts for Groundhog_77:
(Start: 40 @43587 has 12 MA's), (41, 43572), (56, 43500), (57, 43497), (69, 43404), (74, 43386),

Gene: Hosp_055 Start: 52590, Stop: 52258, Start Num: 24
Candidate Starts for Hosp_055:
(9, 52677), (23, 52593), (24, 52590), (30, 52569), (56, 52446), (62, 52398), (69, 52344), (81, 52305),

Gene: Hutc2_67 Start: 41286, Stop: 41026, Start Num: 32
Candidate Starts for Hutc2_67:
(17, 41367), (Start: 32 @41286 has 32 MA's), (39, 41265), (51, 41190), (58, 41166), (63, 41130), (Start: 65 @41124 has 3 MA's), (66, 41121), (74, 41064), (75, 41061),

Gene: Insomnia_69 Start: 41725, Stop: 41465, Start Num: 32
Candidate Starts for Insomnia_69:
(17, 41806), (Start: 32 @41725 has 32 MA's), (39, 41704), (51, 41629), (58, 41605), (63, 41569), (Start: 65 @41563 has 3 MA's), (66, 41560), (74, 41503), (75, 41500),

Gene: Jabith_69 Start: 41742, Stop: 41482, Start Num: 32
Candidate Starts for Jabith_69:
(17, 41823), (Start: 32 @41742 has 32 MA's), (39, 41721), (51, 41646), (58, 41622), (63, 41586), (Start: 65 @41580 has 3 MA's), (66, 41577), (74, 41520), (75, 41517),

Gene: Jace_44 Start: 31248, Stop: 31490, Start Num: 94
Candidate Starts for Jace_44:
(5, 30549), (Start: 31 @30789 has 2 MA's), (64, 30978), (85, 31107), (Start: 94 @31248 has 1 MA's), (95, 31479),

Gene: Jeeves_73 Start: 42154, Stop: 41879, Start Num: 27
Candidate Starts for Jeeves_73:
(Start: 27 @42154 has 9 MA's), (33, 42139), (68, 41944), (69, 41935), (74, 41917),

Gene: JellyBelly_76 Start: 58350, Stop: 58051, Start Num: 19
Candidate Starts for JellyBelly_76:

(12, 58395), (Start: 19 @58350 has 12 MA's), (46, 58233),

Gene: Jolie1_057 Start: 54490, Stop: 54158, Start Num: 24
Candidate Starts for Jolie1_057:
(9, 54577), (23, 54493), (24, 54490), (30, 54469), (56, 54346), (62, 54298), (69, 54244), (81, 54205),

Gene: Joselito_69 Start: 41762, Stop: 41502, Start Num: 32
Candidate Starts for Joselito_69:
(17, 41843), (Start: 32 @41762 has 32 MA's), (39, 41741), (51, 41666), (58, 41642), (63, 41606), (Start: 65 @41600 has 3 MA's), (66, 41597), (74, 41540), (75, 41537),

Gene: Jsquared_73 Start: 42281, Stop: 42006, Start Num: 27
Candidate Starts for Jsquared_73:
(Start: 27 @42281 has 9 MA's), (34, 42257), (47, 42182), (76, 42035),

Gene: Kimba_68 Start: 41262, Stop: 41002, Start Num: 32
Candidate Starts for Kimba_68:
(17, 41343), (Start: 32 @41262 has 32 MA's), (39, 41241), (51, 41166), (58, 41142), (63, 41106), (Start: 65 @41100 has 3 MA's), (66, 41097), (74, 41040), (75, 41037),

Gene: Luchador_72 Start: 43662, Stop: 43360, Start Num: 21
Candidate Starts for Luchador_72:
(Start: 21 @43662 has 2 MA's), (Start: 27 @43638 has 9 MA's), (33, 43620), (69, 43416),

Gene: Lucivia_69 Start: 41795, Stop: 41535, Start Num: 32
Candidate Starts for Lucivia_69:
(17, 41876), (Start: 32 @41795 has 32 MA's), (39, 41774), (51, 41699), (58, 41675), (Start: 65 @41633 has 3 MA's), (66, 41630), (74, 41573), (75, 41570),

Gene: MaCh_68 Start: 41741, Stop: 41481, Start Num: 32
Candidate Starts for MaCh_68:
(17, 41822), (Start: 32 @41741 has 32 MA's), (39, 41720), (51, 41645), (58, 41621), (Start: 65 @41579 has 3 MA's), (66, 41576), (74, 41519),

Gene: Mabel_68 Start: 41742, Stop: 41482, Start Num: 32
Candidate Starts for Mabel_68:
(17, 41823), (Start: 32 @41742 has 32 MA's), (39, 41721), (51, 41646), (58, 41622), (Start: 65 @41580 has 3 MA's), (66, 41577), (74, 41520),

Gene: MajorMajor_71 Start: 42151, Stop: 41876, Start Num: 27
Candidate Starts for MajorMajor_71:
(Start: 27 @42151 has 9 MA's), (47, 42052), (Start: 65 @41968 has 3 MA's), (76, 41905),

Gene: MakoManhole_81 Start: 61086, Stop: 60790, Start Num: 19
Candidate Starts for MakoManhole_81:
(Start: 19 @61086 has 12 MA's), (Start: 37 @61029 has 2 MA's), (43, 60990), (45, 60984), (46, 60972), (70, 60837),

Gene: Mariokart_77 Start: 58579, Stop: 58280, Start Num: 19
Candidate Starts for Mariokart_77:
(12, 58624), (Start: 19 @58579 has 12 MA's), (Start: 40 @58516 has 12 MA's), (46, 58462),

Gene: MarysWell_63 Start: 41586, Stop: 41356, Start Num: 36

Candidate Starts for MarysWell_63:
(Start: 36 @41586 has 14 MA's), (47, 41517), (51, 41499), (63, 41436), (73, 41376),

Gene: Mbo2_88 Start: 61343, Stop: 61041, Start Num: 20
Candidate Starts for Mbo2_88:
(20, 61343), (Start: 28 @61307 has 1 MA's), (Start: 32 @61289 has 32 MA's), (45, 61229), (46, 61220), (49, 61205), (52, 61196), (56, 61184), (70, 61082), (78, 61058), (80, 61052),

Gene: Micasa_63 Start: 41308, Stop: 41078, Start Num: 36
Candidate Starts for Micasa_63:
(Start: 36 @41308 has 14 MA's), (47, 41239), (51, 41221), (63, 41158), (73, 41098),

Gene: Milcery_63 Start: 41098, Stop: 40868, Start Num: 36
Candidate Starts for Milcery_63:
(Start: 36 @41098 has 14 MA's), (51, 41011), (63, 40948), (73, 40888),

Gene: Minnow_60 Start: 54709, Stop: 54398, Start Num: 30
Candidate Starts for Minnow_60:
(7, 54835), (9, 54817), (24, 54730), (30, 54709), (53, 54595), (55, 54589), (56, 54586), (61, 54541), (62, 54538), (69, 54484), (79, 54451),

Gene: MossRose_82 Start: 60565, Stop: 60269, Start Num: 19
Candidate Starts for MossRose_82:
(Start: 19 @60565 has 12 MA's), (Start: 37 @60508 has 2 MA's), (43, 60469), (45, 60463), (46, 60451), (70, 60316),

Gene: Mulciber_67 Start: 41283, Stop: 41023, Start Num: 32
Candidate Starts for Mulciber_67:
(17, 41364), (Start: 32 @41283 has 32 MA's), (39, 41262), (51, 41187), (58, 41163), (Start: 65 @41121 has 3 MA's), (66, 41118), (74, 41061),

Gene: Munch_68 Start: 41746, Stop: 41486, Start Num: 32
Candidate Starts for Munch_68:
(17, 41827), (Start: 32 @41746 has 32 MA's), (39, 41725), (51, 41650), (58, 41626), (Start: 65 @41584 has 3 MA's), (66, 41581), (74, 41524), (75, 41521),

Gene: MyraDee_68 Start: 40150, Stop: 39935, Start Num: 65
Candidate Starts for MyraDee_68:
(Start: 65 @40150 has 3 MA's), (83, 40063), (87, 40015), (89, 39991),

Gene: NHagos_80 Start: 59095, Stop: 58793, Start Num: 19
Candidate Starts for NHagos_80:
(Start: 19 @59095 has 12 MA's), (46, 58975),

Gene: Naca_66 Start: 42496, Stop: 42266, Start Num: 36
Candidate Starts for Naca_66:
(Start: 36 @42496 has 14 MA's), (47, 42427), (51, 42409), (63, 42346),

Gene: NearlyHeadless_80 Start: 43601, Stop: 43374, Start Num: 40
Candidate Starts for NearlyHeadless_80:
(15, 43718), (39, 43604), (Start: 40 @43601 has 12 MA's), (41, 43586), (56, 43514), (57, 43511), (69, 43418), (74, 43400),

Gene: Odin_69 Start: 41725, Stop: 41453, Start Num: 27
Candidate Starts for Odin_69:
(Start: 27 @41725 has 9 MA's), (34, 41704), (47, 41629), (76, 41482),

Gene: Orange_67 Start: 41295, Stop: 41035, Start Num: 32
Candidate Starts for Orange_67:
(17, 41376), (Start: 32 @41295 has 32 MA's), (39, 41274), (51, 41199), (58, 41175), (Start: 65 @41133 has 3 MA's), (66, 41130), (74, 41073), (75, 41070),

Gene: Petersenfast_68 Start: 41294, Stop: 41034, Start Num: 32
Candidate Starts for Petersenfast_68:
(17, 41375), (Start: 32 @41294 has 32 MA's), (39, 41273), (51, 41198), (58, 41174), (63, 41138), (Start: 65 @41132 has 3 MA's), (66, 41129), (74, 41072), (75, 41069),

Gene: PetterN_72 Start: 42468, Stop: 42238, Start Num: 36
Candidate Starts for PetterN_72:
(Start: 36 @42468 has 14 MA's), (Start: 37 @42465 has 2 MA's), (47, 42399), (48, 42390), (51, 42381), (63, 42318),

Gene: Ph8s_72 Start: 41787, Stop: 41521, Start Num: 32
Candidate Starts for Ph8s_72:
(Start: 32 @41787 has 32 MA's), (57, 41673), (63, 41628), (Start: 65 @41622 has 3 MA's), (77, 41553), (80, 41544),

Gene: Quokka_71 Start: 42151, Stop: 41876, Start Num: 27
Candidate Starts for Quokka_71:
(Start: 27 @42151 has 9 MA's), (47, 42052), (Start: 65 @41968 has 3 MA's), (76, 41905),

Gene: Roary_81 Start: 43837, Stop: 43610, Start Num: 40
Candidate Starts for Roary_81:
(Start: 40 @43837 has 12 MA's), (41, 43822), (56, 43750), (57, 43747), (69, 43654), (74, 43636),

Gene: Saintus_75 Start: 40485, Stop: 40258, Start Num: 40
Candidate Starts for Saintus_75:
(Start: 40 @40485 has 12 MA's), (41, 40470), (56, 40398), (57, 40395), (69, 40302), (74, 40284),

Gene: Salz_67 Start: 41209, Stop: 40949, Start Num: 32
Candidate Starts for Salz_67:
(17, 41290), (Start: 32 @41209 has 32 MA's), (39, 41188), (51, 41113), (58, 41089), (Start: 65 @41047 has 3 MA's), (66, 41044), (74, 40987),

Gene: Saskia_69 Start: 41293, Stop: 41033, Start Num: 32
Candidate Starts for Saskia_69:
(8, 41422), (16, 41377), (Start: 32 @41293 has 32 MA's), (39, 41272), (51, 41197), (58, 41173), (63, 41137), (Start: 65 @41131 has 3 MA's), (66, 41128), (74, 41071),

Gene: Scorpia_68 Start: 42039, Stop: 41809, Start Num: 36
Candidate Starts for Scorpia_68:
(Start: 36 @42039 has 14 MA's), (Start: 37 @42036 has 2 MA's), (47, 41970), (48, 41961), (51, 41952), (63, 41889),

Gene: Serenity_73 Start: 42348, Stop: 42073, Start Num: 27
Candidate Starts for Serenity_73:

(Start: 27 @42348 has 9 MA's), (34, 42324), (47, 42249), (76, 42102),

Gene: Sham4_68 Start: 41293, Stop: 41033, Start Num: 32
Candidate Starts for Sham4_68:
(17, 41374), (Start: 32 @41293 has 32 MA's), (39, 41272), (51, 41197), (58, 41173), (Start: 65 @41131 has 3 MA's), (66, 41128), (74, 41071), (75, 41068),

Gene: Smeadley_79 Start: 43653, Stop: 43426, Start Num: 40
Candidate Starts for Smeadley_79:
(Start: 40 @43653 has 12 MA's), (41, 43638), (56, 43566), (57, 43563), (69, 43470), (74, 43452),

Gene: Snape_68 Start: 41285, Stop: 41025, Start Num: 32
Candidate Starts for Snape_68:
(17, 41366), (Start: 32 @41285 has 32 MA's), (39, 41264), (51, 41189), (58, 41165), (Start: 65 @41123 has 3 MA's), (66, 41120), (74, 41063),

Gene: SororFago_71 Start: 43379, Stop: 43092, Start Num: 21
Candidate Starts for SororFago_71:
(Start: 21 @43379 has 2 MA's), (Start: 27 @43355 has 9 MA's), (45, 43274),

Gene: Stephig9_78 Start: 43592, Stop: 43365, Start Num: 40
Candidate Starts for Stephig9_78:
(Start: 40 @43592 has 12 MA's), (41, 43577), (56, 43505), (57, 43502), (69, 43409), (74, 43391),

Gene: Superchunk_70 Start: 41338, Stop: 41066, Start Num: 27
Candidate Starts for Superchunk_70:
(Start: 27 @41338 has 9 MA's), (34, 41317), (47, 41242), (76, 41095),

Gene: SwirlSquare_74 Start: 42056, Stop: 41799, Start Num: 32
Candidate Starts for SwirlSquare_74:
(Start: 32 @42056 has 32 MA's), (51, 41957), (62, 41903), (Start: 65 @41891 has 3 MA's), (67, 41885), (69, 41852),

Gene: Tarynearal_62 Start: 41084, Stop: 40854, Start Num: 36
Candidate Starts for Tarynearal_62:
(Start: 36 @41084 has 14 MA's), (51, 40997), (63, 40934),

Gene: Theia_62 Start: 41570, Stop: 41340, Start Num: 36
Candidate Starts for Theia_62:
(Start: 36 @41570 has 14 MA's), (47, 41501), (51, 41483), (63, 41420),

Gene: Timothy_68 Start: 41262, Stop: 41002, Start Num: 32
Candidate Starts for Timothy_68:
(17, 41343), (Start: 32 @41262 has 32 MA's), (39, 41241), (51, 41166), (58, 41142), (Start: 65 @41100 has 3 MA's), (66, 41097), (74, 41040), (75, 41037),

Gene: TinyTimmy_68 Start: 41255, Stop: 40995, Start Num: 32
Candidate Starts for TinyTimmy_68:
(17, 41336), (Start: 32 @41255 has 32 MA's), (39, 41234), (51, 41159), (58, 41135), (63, 41099), (Start: 65 @41093 has 3 MA's), (66, 41090), (74, 41033), (75, 41030),

Gene: TipsytheTRex_69 Start: 42350, Stop: 42075, Start Num: 27
Candidate Starts for TipsytheTRex_69:

(Start: 27 @42350 has 9 MA's), (47, 42251), (76, 42104),

Gene: Toaka_71 Start: 42411, Stop: 42136, Start Num: 27
Candidate Starts for Toaka_71:
(Start: 27 @42411 has 9 MA's),

Gene: Tonitrus_79 Start: 55218, Stop: 55484, Start Num: 28
Candidate Starts for Tonitrus_79:
(1, 54888), (4, 54975), (6, 54990), (Start: 28 @55218 has 1 MA's), (54, 55341), (56, 55347), (72, 55449), (78, 55467), (80, 55473),

Gene: TraderJ_83 Start: 60657, Stop: 60361, Start Num: 19
Candidate Starts for TraderJ_83:
(Start: 19 @60657 has 12 MA's), (Start: 37 @60600 has 2 MA's), (43, 60561), (45, 60555),

Gene: Trogglehumper_99 Start: 71065, Stop: 70838, Start Num: 40
Candidate Starts for Trogglehumper_99:
(10, 71179), (Start: 40 @71065 has 12 MA's), (44, 71026), (56, 70978), (58, 70966), (78, 70855),

Gene: UnionJack_67 Start: 41521, Stop: 41291, Start Num: 36
Candidate Starts for UnionJack_67:
(Start: 36 @41521 has 14 MA's), (47, 41452), (50, 41437), (51, 41434), (63, 41371),

Gene: VanLee_63 Start: 40991, Stop: 41281, Start Num: 19
Candidate Starts for VanLee_63:
(2, 40715), (Start: 19 @40991 has 12 MA's), (Start: 40 @41051 has 12 MA's), (42, 41081), (46, 41105), (52, 41126), (60, 41171),

Gene: Wolpertinger_66 Start: 41294, Stop: 41034, Start Num: 32
Candidate Starts for Wolpertinger_66:
(17, 41375), (Start: 32 @41294 has 32 MA's), (39, 41273), (51, 41198), (58, 41174), (63, 41138), (Start: 65 @41132 has 3 MA's), (66, 41129), (74, 41072), (75, 41069),

Gene: Wooper_84 Start: 60648, Stop: 60352, Start Num: 19
Candidate Starts for Wooper_84:
(Start: 19 @60648 has 12 MA's), (Start: 37 @60591 has 2 MA's), (43, 60552), (45, 60546), (46, 60534), (70, 60399),

Gene: Yeshua_83 Start: 60624, Stop: 60328, Start Num: 19
Candidate Starts for Yeshua_83:
(Start: 19 @60624 has 12 MA's), (Start: 37 @60567 has 2 MA's), (43, 60528), (45, 60522), (46, 60510), (70, 60375),