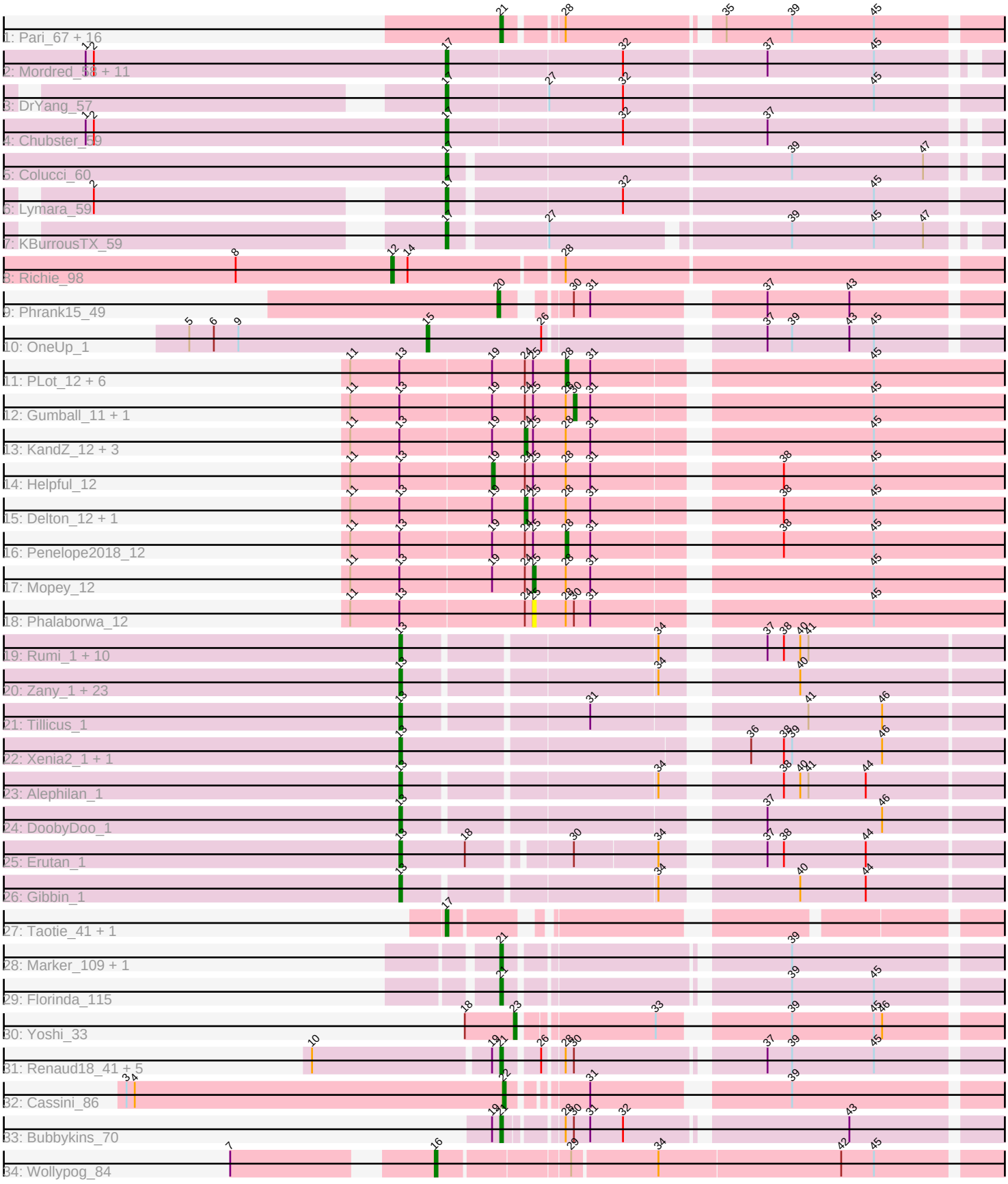
Pham 343805


1: Pari_67 + 16
2: Mordred_88 + 11
3: DrYang_57
4: Chubster_59
5: Colucci_60
6: Lymara_59
7: KBurrousTX_59
8: Richie_98
9: Phrank15_49
10: OneUp_1
11: PLot_12 + 6
12: Gumball_11 + 1
13: KandZ_12 + 3
14: Helpful_12
15: Delton_12 + 1
16: Penelope2018_12
17: Mopey_12
18: Phalaborwa_12
19: Rumi_1 + 10
20: Zany_1 + 23
21: Tillicus_1
22: Xenia2_1 + 1
23: Alephilan_1
24: DoobyDoo_1
25: Erutan_1
26: Gibbin_1
27: Taotie_41 + 1
28: Marker_109 + 1
29: Florinda_115
30: Yoshi_33
31: Renaud18_41 + 5
32: Cassini_86
33: Bubbykins_70
34: Wollypog_84

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 343805 Report

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

Pham number 343805 has 113 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Pari_67, DD5_63, Marco3_69, MrGordo_66, Lockley_62, BPBiebs31_66, Fenn_68, Naira_67, GMonster_61, Bethlehem_63, Ruotula_69, ConceptII_67, Magnito_64, Nerujay_67, Ringer_66, PattyP_66, Petruchio_65
• Track 2 : Mordred_58, JaNo_58, MoyaNatalis_58, Chipper1996_580, Kabreeze_58, Scavito_58, JayCookie_59, PrincessTrina_58, Linus_58, HumptyDumpty_58, Chocolat_58, Tophat_58
• Track 3 : DrYang_57
• Track 4 : Chubster_59
• Track 5 : Colucci_60
• Track 6 : Lymara_59
• Track 7 : KBurrousTX_59
• Track 8 : Richie_98
• Track 9 : Phrank15_49
• Track 10 : OneUp_1
• Track 11 : PLot_12, Visconti_12, WaldoWhy_12, Nova_12, Chill_12, Giuseppe_12, Adjutor_12
• Track 12 : Gumball_11, SirHarley_11
• Track 13 : KandZ_12, Butterscotch_12, Erk16_12, PBI1_12
• Track 14 : Helpful_12
• Track 15 : Delton_12, Troll4_12
• Track 16 : Penelope2018_12
• Track 17 : Mopey_12
• Track 18 : Phalaborwa_12
• Track 19 : Rumi_1, RazorC_1, Riduram_1, Genamy16_1, NovaSharks_1, Jamemuya19_1, Stormer_1, Avian_1, Astralis_1, Alyssamiracle_1, Charminar_1
• Track 20 : Zany_1, Sadboi_1, DaviePasture_1, BirthdayBoy_1, Rukungu_1, LavAbarElk_1, Lambo_1, Rota_1, Ranch_1, Nettle_1, Patos_1, Pywacket_1, Fulcrum_1, OtterstedtS21_1, Lila22_1, Sampudon_1, Mima20_1, ParvusTarda_1, MoiGyank_1, GOATification_1, Wojtek_1, NorManre_1, GretelLyn_1, Yikes_1
• Track 21 : Tillicus_1
• Track 22 : Xenia2_1, DumpTruck_1
• Track 23 : Alephilan_1
• Track 24 : DoobyDoo_1
• Track 25 : Erutan_1
• Track 26 : Gibbin_1
• Track 27 : Taotie_41, PSonyx_43
• Track 28 : Marker_109, Cornucopia_104

• Track 29 : Florinda_115
• Track 30 : Yoshi_33
• Track 31 : Renaud18_41, Blarby_49, DeadP_41, Estave1_38, Taj_40, Wee_41
• Track 32 : Cassini_86
• Track 33 : Bubbykins_70
• Track 34 : Wollypog_84

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

The start number called the most often in the published annotations is 13, it was called in 37 of the 104 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Alephilan_1, Alyssamiracle_1, Astralis_1, Avian_1, BirthdayBoy_1, Charminar_1, DaviePasture_1, DoobyDoo_1, DumpTruck_1, Erutan_1, Fulcrum_1, GOATification_1, Genamy16_1, Gibbin_1, GretelLyn_1, Jamemuya19_1, Lambo_1, LavAbarElk_1, Lila22_1, Mima20_1, MoiGyank_1, Nettle_1, NorManre_1, NovaSharks_1, OtterstedtS21_1, ParvusTarda_1, Patos_1, Pywacket_1, Ranch_1, RazorC_1, Riduram_1, Rota_1, Rukungu_1, Rumi_1, Sadboi_1, Sampudon_1, Stormer_1, Tillicus_1, Wojtek_1, Xenia2_1, Yikes_1, Zany_1,

Genes that have the "Most Annotated" start but do not call it:
• Adjutor_12, Butterscotch_12, Chill_12, Delton_12, Erk16_12, Giuseppe_12, Gumball_11, Helpful_12, KandZ_12, Mopey_12, Nova_12, PBI1_12, PLot_12, Penelope2018_12, Phalaborwa_12, SirHarley_11, Troll4_12, Visconti_12, WaldoWhy_12,

Genes that do not have the "Most Annotated" start:
• BPBiebs31_66, Bethlehem_63, Blarby_49, Bubbykins_70, Cassini_86, Chipper1996_580, Chocolat_58, Chubster_59, Colucci_60, ConceptII_67, Cornucopia_104, DD5_63, DeadP_41, DrYang_57, Estave1_38, Fenn_68, Florinda_115, GMonster_61, HumptyDumpty_58, JaNo_58, JayCookie_59, KBurrousTX_59, Kabreeze_58, Linus_58, Lockley_62, Lymara_59, Magnito_64, Marco3_69, Marker_109, Mordred_58, MoyaNatalis_58, MrGordo_66, Naira_67, Nerujay_67, OneUp_1, PSonyx_43, Pari_67, PattyP_66, Petruchio_65, Phrank15_49, PrincessTrina_58, Renaud18_41, Richie_98, Ringer_66, Ruotula_69, Scavito_58, Taj_40, Taotie_41, Tophat_58, Wee_41, Wollypog_84, Yoshi_33,

Summary by start number:

Start 12:
• Found in 1 of 113 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Richie_98 (AY),

Start 13:
• Found in 61 of 113 (54.0%) of genes in pham
• Manual Annotations of this start: 37 of 104
• Called 68.9% of time when present

• Phage (with cluster) where this start called: Alephilan_1 (DV), Alyssamiracle_1 (DV), Astralis_1 (DV), Avian_1 (DV), BirthdayBoy_1 (DV), Charminar_1 (DV), DaviePasture_1 (DV), DoobyDoo_1 (DV), DumpTruck_1 (DV), Erutan_1 (DV), Fulcrum_1 (DV), GOATification_1 (DV), Genamy16_1 (DV), Gibbin_1 (DV), GretelLyn_1 (DV), Jamemuya19_1 (DV), Lambo_1 (DV), LavAbarElk_1 (DV), Lila22_1 (DV), Mima20_1 (DV), MoiGyank_1 (DV), Nettle_1 (DV), NorManre_1 (DV), NovaSharks_1 (DV), OtterstedtS21_1 (DV), ParvusTarda_1 (DV), Patos_1 (DV), Pywacket_1 (DV), Ranch_1 (DV), RazorC_1 (DV), Riduram_1 (DV), Rota_1 (DV), Rukungu_1 (DV), Rumi_1 (DV), Sadboi_1 (DV), Sampudon_1 (DV), Stormer_1 (DV), Tillicus_1 (DV), Wojtek_1 (DV), Xenia2_1 (DV), Yikes_1 (DV), Zany_1 (DV),

Start 15:
• Found in 1 of 113 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: OneUp_1 (CQ2),

Start 16:
• Found in 1 of 113 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Wollypog_84 (singleton),

Start 17:
• Found in 19 of 113 (16.8%) of genes in pham
• Manual Annotations of this start: 17 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Chipper1996_580 (AR), Chocolat_58 (AR), Chubster_59 (AR), Colucci_60 (AR), DrYang_57 (AR), HumptyDumpty_58 (AR), JaNo_58 (AR), JayCookie_59 (AR), KBurrousTX_59 (AR), Kabreeze_58 (AR), Linus_58 (AR), Lymara_59 (AR), Mordred_58 (AR), MoyaNatalis_58 (AR), PSonyx_43 (EQ), PrincessTrina_58 (AR), Scavito_58 (AR), Taotie_41 (EQ), Tophat_58 (AR),

Start 19:
• Found in 25 of 113 (22.1%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 4.0% of time when present
• Phage (with cluster) where this start called: Helpful_12 (D1),

Start 20:
• Found in 1 of 113 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Phrank15_49 (AY),

Start 21:
• Found in 27 of 113 (23.9%) of genes in pham
• Manual Annotations of this start: 26 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BPBiebs31_66 (A1), Bethlehem_63 (A1), Blarby_49 (F), Bubbykins_70 (UNK), ConceptII_67 (A1), Cornucopia_104 (F1), DD5_63 (A1), DeadP_41 (F1), Estave1_38 (F1), Fenn_68 (A1), Florinda_115 (F1),

GMonster_61 (A1), Lockley_62 (A1), Magnito_64 (A1), Marco3_69 (A1), Marker_109 (F1), MrGordo_66 (A1), Naira_67 (A1), Nerujay_67 (A1), Pari_67 (A1), PattyP_66 (A1), Petruchio_65 (A1), Renaud18_41 (F4), Ringer_66 (A1), Ruotula_69 (A1), Taj_40 (F1), Wee_41 (F1),

Start 22:
• Found in 1 of 113 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cassini_86 (FN),

Start 23:
• Found in 1 of 113 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Yoshi_33 (F2),

Start 24:
• Found in 19 of 113 (16.8%) of genes in pham
• Manual Annotations of this start: 6 of 104
• Called 31.6% of time when present
• Phage (with cluster) where this start called: Butterscotch_12 (D1), Delton_12 (D1), Erk16_12 (D1), KandZ_12 (D1), PBI1_12 (D1), Troll4_12 (D1),

Start 25:
• Found in 19 of 113 (16.8%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 10.5% of time when present
• Phage (with cluster) where this start called: Mopey_12 (D1), Phalaborwa_12 (D1),

Start 28:
• Found in 44 of 113 (38.9%) of genes in pham
• Manual Annotations of this start: 8 of 104
• Called 18.2% of time when present
• Phage (with cluster) where this start called: Adjutor_12 (D1), Chill_12 (D1), Giuseppe_12 (D1), Nova_12 (D1), PLot_12 (D1), Penelope2018_12 (D1), Visconti_12 (D1), WaldoWhy_12 (D1),

Start 30:
• Found in 12 of 113 (10.6%) of genes in pham
• Manual Annotations of this start: 2 of 104
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Gumball_11 (D1), SirHarley_11 (D1),

Summary by clusters:

There are 14 clusters represented in this pham: F1, F2, F4, F, singleton, A1, AY, AR, DV, CQ2, UNK, EQ, FN, D1,

Info for manual annotations of cluster A1:
•Start number 21 was manually annotated 17 times for cluster A1.

Info for manual annotations of cluster AR:

•Start number 17 was manually annotated 16 times for cluster AR.

Info for manual annotations of cluster AY:
•Start number 12 was manually annotated 1 time for cluster AY.
•Start number 20 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster CQ2:
•Start number 15 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster D1:
•Start number 19 was manually annotated 1 time for cluster D1.
•Start number 24 was manually annotated 6 times for cluster D1.
•Start number 25 was manually annotated 1 time for cluster D1.
•Start number 28 was manually annotated 8 times for cluster D1.
•Start number 30 was manually annotated 2 times for cluster D1.

Info for manual annotations of cluster DV:
•Start number 13 was manually annotated 37 times for cluster DV.

Info for manual annotations of cluster EQ:
•Start number 17 was manually annotated 1 time for cluster EQ.

Info for manual annotations of cluster F1:
•Start number 21 was manually annotated 7 times for cluster F1.

Info for manual annotations of cluster F2:
•Start number 23 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster F4:
•Start number 21 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster FN:
•Start number 22 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster UNK:
•Start number 21 was manually annotated 1 time for cluster UNK.

Gene Information:

Gene: Adjutor_12 Start: 8570, Stop: 8734, Start Num: 28
Candidate Starts for Adjutor_12:
(11, 8492), (Start: 13 @8510 has 37 MA's), (Start: 19 @8543 has 1 MA's), (Start: 24 @8555 has 6 MA's), (Start: 25 @8558 has 1 MA's), (Start: 28 @8570 has 8 MA's), (31, 8579), (45, 8672),

Gene: Alephilan_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Alephilan_1:
(Start: 13 @1 has 37 MA's), (34, 88), (38, 124), (40, 130), (41, 133), (44, 154),

Gene: Alyssamiracle_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Alyssamiracle_1:

(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Astralis_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Astralis_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Avian_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Avian_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: BPBiebs31_66 Start: 42808, Stop: 42638, Start Num: 21
Candidate Starts for BPBiebs31_66:
(Start: 21 @42808 has 26 MA's), (Start: 28 @42790 has 8 MA's), (35, 42739), (39, 42715), (45, 42685),

Gene: Bethlehem_63 Start: 43484, Stop: 43314, Start Num: 21
Candidate Starts for Bethlehem_63:
(Start: 21 @43484 has 26 MA's), (Start: 28 @43466 has 8 MA's), (35, 43415), (39, 43391), (45, 43361),

Gene: BirthdayBoy_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for BirthdayBoy_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Blarby_49 Start: 31815, Stop: 31648, Start Num: 21
Candidate Starts for Blarby_49:
(10, 31881), (Start: 19 @31818 has 1 MA's), (Start: 21 @31815 has 26 MA's), (26, 31803), (Start: 28 @31797 has 8 MA's), (Start: 30 @31794 has 2 MA's), (37, 31731), (39, 31722), (45, 31692),

Gene: Bubbykins_70 Start: 48691, Stop: 48876, Start Num: 21
Candidate Starts for Bubbykins_70:
(Start: 19 @48688 has 1 MA's), (Start: 21 @48691 has 26 MA's), (Start: 28 @48709 has 8 MA's), (Start: 30 @48712 has 2 MA's), (31, 48718), (32, 48730), (43, 48805),

Gene: Butterscotch_12 Start: 8615, Stop: 8794, Start Num: 24
Candidate Starts for Butterscotch_12:
(11, 8552), (Start: 13 @8570 has 37 MA's), (Start: 19 @8603 has 1 MA's), (Start: 24 @8615 has 6 MA's), (Start: 25 @8618 has 1 MA's), (Start: 28 @8630 has 8 MA's), (31, 8639), (45, 8732),

Gene: Cassini_86 Start: 48915, Stop: 49079, Start Num: 22
Candidate Starts for Cassini_86:
(3, 48777), (4, 48780), (Start: 22 @48915 has 1 MA's), (31, 48939), (39, 49002),

Gene: Charminar_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Charminar_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Chill_12 Start: 8633, Stop: 8797, Start Num: 28
Candidate Starts for Chill_12:
(11, 8555), (Start: 13 @8573 has 37 MA's), (Start: 19 @8606 has 1 MA's), (Start: 24 @8618 has 6 MA's), (Start: 25 @8621 has 1 MA's), (Start: 28 @8633 has 8 MA's), (31, 8642), (45, 8735),

Gene: Chipper1996_580 Start: 42767, Stop: 42958, Start Num: 17
Candidate Starts for Chipper1996_580:
(1, 42635), (2, 42638), (Start: 17 @42767 has 17 MA's), (32, 42830), (37, 42881), (45, 42920),

Gene: Chocolat_58 Start: 42637, Stop: 42828, Start Num: 17
Candidate Starts for Chocolat_58:
(1, 42505), (2, 42508), (Start: 17 @42637 has 17 MA's), (32, 42700), (37, 42751), (45, 42790),

Gene: Chubster_59 Start: 42789, Stop: 42980, Start Num: 17
Candidate Starts for Chubster_59:
(1, 42657), (2, 42660), (Start: 17 @42789 has 17 MA's), (32, 42852), (37, 42903),

Gene: Colucci_60 Start: 42919, Stop: 43107, Start Num: 17
Candidate Starts for Colucci_60:
(Start: 17 @42919 has 17 MA's), (39, 43039), (47, 43087),

Gene: ConceptII_67 Start: 43443, Stop: 43276, Start Num: 21
Candidate Starts for ConceptII_67:
(Start: 21 @43443 has 26 MA's), (Start: 28 @43425 has 8 MA's), (35, 43374), (39, 43350), (45, 43320),

Gene: Cornucopia_104 Start: 54556, Stop: 54723, Start Num: 21
Candidate Starts for Cornucopia_104:
(Start: 21 @54556 has 26 MA's), (39, 54649),

Gene: DD5_63 Start: 42996, Stop: 42829, Start Num: 21
Candidate Starts for DD5_63:
(Start: 21 @42996 has 26 MA's), (Start: 28 @42978 has 8 MA's), (35, 42927), (39, 42903), (45, 42873),

Gene: DaviePasture_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for DaviePasture_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: DeadP_41 Start: 31512, Stop: 31345, Start Num: 21
Candidate Starts for DeadP_41:
(10, 31578), (Start: 19 @31515 has 1 MA's), (Start: 21 @31512 has 26 MA's), (26, 31500), (Start: 28 @31494 has 8 MA's), (Start: 30 @31491 has 2 MA's), (37, 31428), (39, 31419), (45, 31389),

Gene: Delton_12 Start: 8624, Stop: 8803, Start Num: 24
Candidate Starts for Delton_12:
(11, 8561), (Start: 13 @8579 has 37 MA's), (Start: 19 @8612 has 1 MA's), (Start: 24 @8624 has 6 MA's), (Start: 25 @8627 has 1 MA's), (Start: 28 @8639 has 8 MA's), (31, 8648), (38, 8708), (45, 8741),

Gene: DoobyDoo_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for DoobyDoo_1:
(Start: 13 @1 has 37 MA's), (37, 118), (46, 160),

Gene: DrYang_57 Start: 44041, Stop: 44238, Start Num: 17
Candidate Starts for DrYang_57:
(Start: 17 @44041 has 17 MA's), (27, 44077), (32, 44104), (45, 44194),

Gene: DumpTruck_1 Start: 1, Stop: 207, Start Num: 13
Candidate Starts for DumpTruck_1:
(Start: 13 @1 has 37 MA's), (36, 115), (38, 127), (39, 130), (46, 163),

Gene: Erk16_12 Start: 8618, Stop: 8797, Start Num: 24
Candidate Starts for Erk16_12:

(11, 8555), (Start: 13 @8573 has 37 MA's), (Start: 19 @8606 has 1 MA's), (Start: 24 @8618 has 6 MA's), (Start: 25 @8621 has 1 MA's), (Start: 28 @8633 has 8 MA's), (31, 8642), (45, 8735),

Gene: Erutan_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Erutan_1:
(Start: 13 @1 has 37 MA's), (18, 25), (Start: 30 @58 has 2 MA's), (34, 88), (37, 118), (38, 124), (44, 154),

Gene: Estave1_38 Start: 30815, Stop: 30648, Start Num: 21
Candidate Starts for Estave1_38:
(10, 30881), (Start: 19 @30818 has 1 MA's), (Start: 21 @30815 has 26 MA's), (26, 30803), (Start: 28 @30797 has 8 MA's), (Start: 30 @30794 has 2 MA's), (37, 30731), (39, 30722), (45, 30692),

Gene: Fenn_68 Start: 43955, Stop: 43788, Start Num: 21
Candidate Starts for Fenn_68:
(Start: 21 @43955 has 26 MA's), (Start: 28 @43937 has 8 MA's), (35, 43886), (39, 43862), (45, 43832),

Gene: Florinda_115 Start: 58161, Stop: 58328, Start Num: 21
Candidate Starts for Florinda_115:
(Start: 21 @58161 has 26 MA's), (39, 58254), (45, 58284),

Gene: Fulcrum_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Fulcrum_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: GMonster_61 Start: 41666, Stop: 41496, Start Num: 21
Candidate Starts for GMonster_61:
(Start: 21 @41666 has 26 MA's), (Start: 28 @41648 has 8 MA's), (35, 41597), (39, 41573), (45, 41543),

Gene: GOATification_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for GOATification_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Genamy16_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Genamy16_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Gibbin_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Gibbin_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130), (44, 154),

Gene: Giuseppe_12 Start: 8622, Stop: 8786, Start Num: 28
Candidate Starts for Giuseppe_12:
(11, 8544), (Start: 13 @8562 has 37 MA's), (Start: 19 @8595 has 1 MA's), (Start: 24 @8607 has 6 MA's), (Start: 25 @8610 has 1 MA's), (Start: 28 @8622 has 8 MA's), (31, 8631), (45, 8724),

Gene: GretelLyn_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for GretelLyn_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Gumball_11 Start: 8580, Stop: 8741, Start Num: 30
Candidate Starts for Gumball_11:

(11, 8499), (Start: 13 @8517 has 37 MA's), (Start: 19 @8550 has 1 MA's), (Start: 24 @8562 has 6 MA's), (Start: 25 @8565 has 1 MA's), (Start: 28 @8577 has 8 MA's), (Start: 30 @8580 has 2 MA's), (31, 8586), (45, 8679),

Gene: Helpful_12 Start: 8603, Stop: 8794, Start Num: 19
Candidate Starts for Helpful_12:
(11, 8552), (Start: 13 @8570 has 37 MA's), (Start: 19 @8603 has 1 MA's), (Start: 24 @8615 has 6 MA's), (Start: 25 @8618 has 1 MA's), (Start: 28 @8630 has 8 MA's), (31, 8639), (38, 8699), (45, 8732),

Gene: HumptyDumpty_58 Start: 42765, Stop: 42956, Start Num: 17
Candidate Starts for HumptyDumpty_58:
(1, 42633), (2, 42636), (Start: 17 @42765 has 17 MA's), (32, 42828), (37, 42879), (45, 42918),

Gene: JaNo_58 Start: 42771, Stop: 42962, Start Num: 17
Candidate Starts for JaNo_58:
(1, 42639), (2, 42642), (Start: 17 @42771 has 17 MA's), (32, 42834), (37, 42885), (45, 42924),

Gene: Jamemuya19_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Jamemuya19_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: JayCookie_59 Start: 43048, Stop: 43239, Start Num: 17
Candidate Starts for JayCookie_59:
(1, 42916), (2, 42919), (Start: 17 @43048 has 17 MA's), (32, 43111), (37, 43162), (45, 43201),

Gene: KBurrousTX_59 Start: 44136, Stop: 44318, Start Num: 17
Candidate Starts for KBurrousTX_59:
(Start: 17 @44136 has 17 MA's), (27, 44169), (39, 44250), (45, 44280), (47, 44298),

Gene: Kabreeze_58 Start: 42655, Stop: 42846, Start Num: 17
Candidate Starts for Kabreeze_58:
(1, 42523), (2, 42526), (Start: 17 @42655 has 17 MA's), (32, 42718), (37, 42769), (45, 42808),

Gene: KandZ_12 Start: 8712, Stop: 8891, Start Num: 24
Candidate Starts for KandZ_12:
(11, 8649), (Start: 13 @8667 has 37 MA's), (Start: 19 @8700 has 1 MA's), (Start: 24 @8712 has 6 MA's), (Start: 25 @8715 has 1 MA's), (Start: 28 @8727 has 8 MA's), (31, 8736), (45, 8829),

Gene: Lambo_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Lambo_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: LavAbarElk_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for LavAbarElk_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Lila22_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Lila22_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Linus_58 Start: 42778, Stop: 42969, Start Num: 17
Candidate Starts for Linus_58:
(1, 42646), (2, 42649), (Start: 17 @42778 has 17 MA's), (32, 42841), (37, 42892), (45, 42931),

Gene: Lockley_62 Start: 42158, Stop: 41991, Start Num: 21
Candidate Starts for Lockley_62:
(Start: 21 @42158 has 26 MA's), (Start: 28 @42140 has 8 MA's), (35, 42089), (39, 42065), (45, 42035),

Gene: Lymara_59 Start: 42891, Stop: 43085, Start Num: 17
Candidate Starts for Lymara_59:
(2, 42777), (Start: 17 @42891 has 17 MA's), (32, 42951), (45, 43041),

Gene: Magnito_64 Start: 42276, Stop: 42106, Start Num: 21
Candidate Starts for Magnito_64:
(Start: 21 @42276 has 26 MA's), (Start: 28 @42258 has 8 MA's), (35, 42207), (39, 42183), (45, 42153),

Gene: Marco3_69 Start: 44585, Stop: 44418, Start Num: 21
Candidate Starts for Marco3_69:
(Start: 21 @44585 has 26 MA's), (Start: 28 @44567 has 8 MA's), (35, 44516), (39, 44492), (45, 44462),

Gene: Marker_109 Start: 57954, Stop: 58121, Start Num: 21
Candidate Starts for Marker_109:
(Start: 21 @57954 has 26 MA's), (39, 58047),

Gene: Mima20_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Mima20_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: MoiGyank_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for MoiGyank_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Mopey_12 Start: 8618, Stop: 8794, Start Num: 25
Candidate Starts for Mopey_12:
(11, 8552), (Start: 13 @8570 has 37 MA's), (Start: 19 @8603 has 1 MA's), (Start: 24 @8615 has 6 MA's), (Start: 25 @8618 has 1 MA's), (Start: 28 @8630 has 8 MA's), (31, 8639), (45, 8732),

Gene: Mordred_58 Start: 42765, Stop: 42956, Start Num: 17
Candidate Starts for Mordred_58:
(1, 42633), (2, 42636), (Start: 17 @42765 has 17 MA's), (32, 42828), (37, 42879), (45, 42918),

Gene: MoyaNatalis_58 Start: 42624, Stop: 42815, Start Num: 17
Candidate Starts for MoyaNatalis_58:
(1, 42492), (2, 42495), (Start: 17 @42624 has 17 MA's), (32, 42687), (37, 42738), (45, 42777),

Gene: MrGordo_66 Start: 42620, Stop: 42450, Start Num: 21
Candidate Starts for MrGordo_66:
(Start: 21 @42620 has 26 MA's), (Start: 28 @42602 has 8 MA's), (35, 42551), (39, 42527), (45, 42497),

Gene: Naira_67 Start: 44011, Stop: 43844, Start Num: 21
Candidate Starts for Naira_67:
(Start: 21 @44011 has 26 MA's), (Start: 28 @43993 has 8 MA's), (35, 43942), (39, 43918), (45, 43888),

Gene: Nerujay_67 Start: 43590, Stop: 43423, Start Num: 21
Candidate Starts for Nerujay_67:
(Start: 21 @43590 has 26 MA's), (Start: 28 @43572 has 8 MA's), (35, 43521), (39, 43497), (45, 43467),

Gene: Nettle_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Nettle_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: NorManre_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for NorManre_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Nova_12 Start: 9054, Stop: 9218, Start Num: 28
Candidate Starts for Nova_12:
(11, 8976), (Start: 13 @8994 has 37 MA's), (Start: 19 @9027 has 1 MA's), (Start: 24 @9039 has 6 MA's), (Start: 25 @9042 has 1 MA's), (Start: 28 @9054 has 8 MA's), (31, 9063), (45, 9156),

Gene: NovaSharks_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for NovaSharks_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: OneUp_1 Start: 311, Stop: 117, Start Num: 15
Candidate Starts for OneUp_1:
(5, 398), (6, 389), (9, 380), (Start: 15 @311 has 1 MA's), (26, 269), (37, 200), (39, 191), (43, 170), (45, 161),

Gene: OtterstedtS21_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for OtterstedtS21_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: PBI1_12 Start: 8546, Stop: 8725, Start Num: 24
Candidate Starts for PBI1_12:
(11, 8483), (Start: 13 @8501 has 37 MA's), (Start: 19 @8534 has 1 MA's), (Start: 24 @8546 has 6 MA's), (Start: 25 @8549 has 1 MA's), (Start: 28 @8561 has 8 MA's), (31, 8570), (45, 8663),

Gene: PLot_12 Start: 8633, Stop: 8797, Start Num: 28
Candidate Starts for PLot_12:
(11, 8555), (Start: 13 @8573 has 37 MA's), (Start: 19 @8606 has 1 MA's), (Start: 24 @8618 has 6 MA's), (Start: 25 @8621 has 1 MA's), (Start: 28 @8633 has 8 MA's), (31, 8642), (45, 8735),

Gene: PSonyx_43 Start: 33068, Stop: 32871, Start Num: 17
Candidate Starts for PSonyx_43:
(Start: 17 @33068 has 17 MA's),

Gene: Pari_67 Start: 41794, Stop: 41624, Start Num: 21
Candidate Starts for Pari_67:
(Start: 21 @41794 has 26 MA's), (Start: 28 @41776 has 8 MA's), (35, 41725), (39, 41701), (45, 41671),

Gene: ParvusTarda_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for ParvusTarda_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Patos_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Patos_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: PattyP_66 Start: 43305, Stop: 43135, Start Num: 21
Candidate Starts for PattyP_66:
(Start: 21 @43305 has 26 MA's), (Start: 28 @43287 has 8 MA's), (35, 43236), (39, 43212), (45, 43182),

Gene: Penelope2018_12 Start: 8630, Stop: 8794, Start Num: 28
Candidate Starts for Penelope2018_12:
(11, 8552), (Start: 13 @8570 has 37 MA's), (Start: 19 @8603 has 1 MA's), (Start: 24 @8615 has 6 MA's), (Start: 25 @8618 has 1 MA's), (Start: 28 @8630 has 8 MA's), (31, 8639), (38, 8699), (45, 8732),

Gene: Petruchio_65 Start: 41908, Stop: 41741, Start Num: 21
Candidate Starts for Petruchio_65:
(Start: 21 @41908 has 26 MA's), (Start: 28 @41890 has 8 MA's), (35, 41839), (39, 41815), (45, 41785),

Gene: Phalaborwa_12 Start: 8660, Stop: 8836, Start Num: 25
Candidate Starts for Phalaborwa_12:
(11, 8594), (Start: 13 @8612 has 37 MA's), (Start: 24 @8657 has 6 MA's), (Start: 25 @8660 has 1 MA's), (Start: 28 @8672 has 8 MA's), (Start: 30 @8675 has 2 MA's), (31, 8681), (45, 8774),

Gene: Phrank15_49 Start: 30399, Stop: 30593, Start Num: 20
Candidate Starts for Phrank15_49:
(Start: 20 @30399 has 1 MA's), (Start: 30 @30417 has 2 MA's), (31, 30423), (37, 30477), (43, 30507),

Gene: PrincessTrina_58 Start: 42801, Stop: 42992, Start Num: 17
Candidate Starts for PrincessTrina_58:
(1, 42669), (2, 42672), (Start: 17 @42801 has 17 MA's), (32, 42864), (37, 42915), (45, 42954),

Gene: Pywacket_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Pywacket_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Ranch_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Ranch_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: RazorC_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for RazorC_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Renaud18_41 Start: 31591, Stop: 31424, Start Num: 21
Candidate Starts for Renaud18_41:
(10, 31657), (Start: 19 @31594 has 1 MA's), (Start: 21 @31591 has 26 MA's), (26, 31579), (Start: 28 @31573 has 8 MA's), (Start: 30 @31570 has 2 MA's), (37, 31507), (39, 31498), (45, 31468),

Gene: Richie_98 Start: 53224, Stop: 53439, Start Num: 12
Candidate Starts for Richie_98:
(8, 53167), (Start: 12 @53224 has 1 MA's), (14, 53230), (Start: 28 @53284 has 8 MA's),

Gene: Riduram_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Riduram_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Ringer_66 Start: 44050, Stop: 43880, Start Num: 21
Candidate Starts for Ringer_66:

(Start: 21 @44050 has 26 MA's), (Start: 28 @44032 has 8 MA's), (35, 43981), (39, 43957), (45, 43927),

Gene: Rota_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Rota_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Rukungu_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Rukungu_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Rumi_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Rumi_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Ruotula_69 Start: 44545, Stop: 44378, Start Num: 21
Candidate Starts for Ruotula_69:
(Start: 21 @44545 has 26 MA's), (Start: 28 @44527 has 8 MA's), (35, 44476), (39, 44452), (45, 44422),

Gene: Sadboi_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Sadboi_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Sampudon_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Sampudon_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Scavito_58 Start: 42662, Stop: 42853, Start Num: 17
Candidate Starts for Scavito_58:
(1, 42530), (2, 42533), (Start: 17 @42662 has 17 MA's), (32, 42725), (37, 42776), (45, 42815),

Gene: SirHarley_11 Start: 8562, Stop: 8723, Start Num: 30
Candidate Starts for SirHarley_11:
(11, 8481), (Start: 13 @8499 has 37 MA's), (Start: 19 @8532 has 1 MA's), (Start: 24 @8544 has 6 MA's), (Start: 25 @8547 has 1 MA's), (Start: 28 @8559 has 8 MA's), (Start: 30 @8562 has 2 MA's), (31, 8568), (45, 8661),

Gene: Stormer_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Stormer_1:
(Start: 13 @1 has 37 MA's), (34, 88), (37, 118), (38, 124), (40, 130), (41, 133),

Gene: Taj_40 Start: 31514, Stop: 31347, Start Num: 21
Candidate Starts for Taj_40:
(10, 31580), (Start: 19 @31517 has 1 MA's), (Start: 21 @31514 has 26 MA's), (26, 31502), (Start: 28 @31496 has 8 MA's), (Start: 30 @31493 has 2 MA's), (37, 31430), (39, 31421), (45, 31391),

Gene: Taotie_41 Start: 30659, Stop: 30462, Start Num: 17
Candidate Starts for Taotie_41:
(Start: 17 @30659 has 17 MA's),

Gene: Tillicus_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Tillicus_1:
(Start: 13 @1 has 37 MA's), (31, 64), (41, 133), (46, 160),

Gene: Tophat_58 Start: 42767, Stop: 42958, Start Num: 17
Candidate Starts for Tophat_58:
(1, 42635), (2, 42638), (Start: 17 @42767 has 17 MA's), (32, 42830), (37, 42881), (45, 42920),

Gene: Troll4_12 Start: 8616, Stop: 8795, Start Num: 24
Candidate Starts for Troll4_12:
(11, 8553), (Start: 13 @8571 has 37 MA's), (Start: 19 @8604 has 1 MA's), (Start: 24 @8616 has 6 MA's), (Start: 25 @8619 has 1 MA's), (Start: 28 @8631 has 8 MA's), (31, 8640), (38, 8700), (45, 8733),

Gene: Visconti_12 Start: 8640, Stop: 8804, Start Num: 28
Candidate Starts for Visconti_12:
(11, 8562), (Start: 13 @8580 has 37 MA's), (Start: 19 @8613 has 1 MA's), (Start: 24 @8625 has 6 MA's), (Start: 25 @8628 has 1 MA's), (Start: 28 @8640 has 8 MA's), (31, 8649), (45, 8742),

Gene: WaldoWhy_12 Start: 8633, Stop: 8797, Start Num: 28
Candidate Starts for WaldoWhy_12:
(11, 8555), (Start: 13 @8573 has 37 MA's), (Start: 19 @8606 has 1 MA's), (Start: 24 @8618 has 6 MA's), (Start: 25 @8621 has 1 MA's), (Start: 28 @8633 has 8 MA's), (31, 8642), (45, 8735),

Gene: Wee_41 Start: 32088, Stop: 31921, Start Num: 21
Candidate Starts for Wee_41:
(10, 32154), (Start: 19 @32091 has 1 MA's), (Start: 21 @32088 has 26 MA's), (26, 32076), (Start: 28 @32070 has 8 MA's), (Start: 30 @32067 has 2 MA's), (37, 32004), (39, 31995), (45, 31965),

Gene: Wojtek_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Wojtek_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Wollypog_84 Start: 57219, Stop: 57422, Start Num: 16
Candidate Starts for Wollypog_84:
(7, 57156), (Start: 16 @57219 has 1 MA's), (29, 57264), (34, 57294), (42, 57360), (45, 57372),

Gene: Xenia2_1 Start: 1, Stop: 207, Start Num: 13
Candidate Starts for Xenia2_1:
(Start: 13 @1 has 37 MA's), (36, 115), (38, 127), (39, 130), (46, 163),

Gene: Yikes_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Yikes_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),

Gene: Yoshi_33 Start: 24948, Stop: 25109, Start Num: 23
Candidate Starts for Yoshi_33:
(18, 24930), (Start: 23 @24948 has 1 MA's), (33, 24993), (39, 25032), (45, 25062), (46, 25065),

Gene: Zany_1 Start: 1, Stop: 204, Start Num: 13
Candidate Starts for Zany_1:
(Start: 13 @1 has 37 MA's), (34, 88), (40, 130),