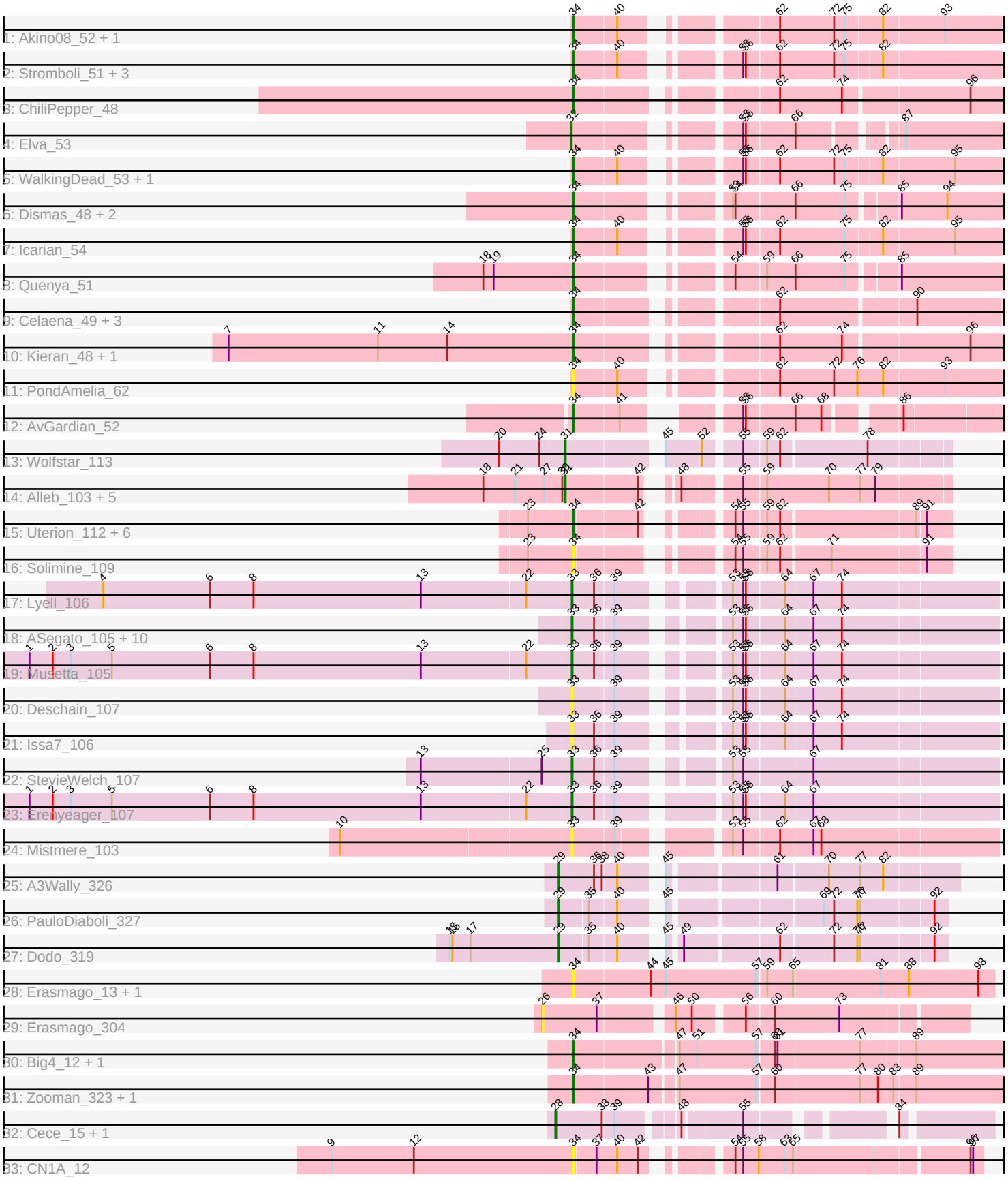
Pham 303345


1: Akino08_52 + 1
2: Stromboli_51 + 3
3: ChiliPepper_48
4: Elva_53
5: WalkingDead_53 + 1
6: Dismas_48 + 2
7: Icarian_54
8: Quenya_51
9: Celaena_49 + 3
10: Kieran_48 + 1
11: PondAmelia_62
12: AvGardian_52
13: Wolfstar_113
14: Alleb_103 + 5
15: Uterion_112 + 6
16: Solimine_109
17: Lyell_106
18: ASegato_105 + 10
19: Musetta_105
20: Deschain_107
21: Issa7_106
22: SteyieWelch_107
23: Erenyeager_107
24: Mistmere_103
25: A3Wally_326
26: PauloDiaboli_327
27: Dodo_319
28: Erasmago_13 + 1
29: Erasmago_304
30: Big4_12 + 1
31: Zooman_323 + 1
32: Cece_15 + 1
33: CN1A_12

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 303345 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303345 has 69 members, 15 are drafts.

Phages represented in each track:
- Track 1 : Akino08_52, Loviatar_52
- Track 2 : Stromboli_51, DirtyBubble_50, BabyYoda_51, SanaSana_53
- Track 3 : ChiliPepper_48
- Track 4 : Elva_53
- Track 5 : WalkingDead_53, Stoor_51
- Track 6 : Dismas_48, Rona_48, Sharkboy_49
- Track 7 : Icarian_54
- Track 8 : Quenya_51
- Track 9 : Celaena_49, Katzastrophic_50, Bachaco_49, FlameThrower_48
- Track 10 : Kieran_48, Kamdara_48
- Track 11 : PondAmelia_62
- Track 12 : AvGardian_52
- Track 13 : Wolfstar_113
- Track 14 : Alleb_103, OlinDD_107, Platte_106, Tandem_107, Pioneer3_107, Hortus1_107
- Track 15 : Uterion_112, DejaVu_108, Pavlo_108, Saradis_109, PhillyPhilly_105, Roman_109, Hubbs_107
- Track 16 : Solimine_109
- Track 17 : Lyell_106
- Track 18 : ASegato_105, Casablancas_107, Yuma_105, Welcome_109, DustyDino_110, Fork_103, Necrophoxinus_109, RunningBrook_108, HollowPurple_108, SteakFry_106, Shroomer_110
- Track 19 : Musetta_105
- Track 20 : Deschain_107
- Track 21 : Issa7_106
- Track 22 : StevieWelch_107
- Track 23 : Erenyeager_107
- Track 24 : Mistmere_103
- Track 25 : A3Wally_326
- Track 26 : PauloDiaboli_327
- Track 27 : Dodo_319
- Track 28 : Erasmago_13, Erasmago_351
- Track 29 : Erasmago_304
- Track 30 : Big4_12, Big4_338
- Track 31 : Zooman_323, Zooman_10
- Track 32 : Cece_15, Cece_317
- Track 33 : CN1A_12

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

The start number called the most often in the published annotations is 34, it was called in 28 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Akino08_52, AvGardian_52, BabyYoda_51, Bachaco_49, Big4_12, Big4_338, CN1A_12, Celaena_49, ChiliPepper_48, DejaVu_108, DirtyBubble_50, Dismas_48, Erasmago_13, Erasmago_351, FlameThrower_48, Hubbs_107, Icarian_54, Kamdara_48, Katzastrophic_50, Kieran_48, Loviatar_52, Pavlo_108, PhillyPhilly_105, PondAmelia_62, Quenya_51, Roman_109, Rona_48, SanaSana_53, Saradis_109, Sharkboy_49, Solimine_109, Stoor_51, Stromboli_51, Uterion_112, WalkingDead_53, Zooman_10, Zooman_323,

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

Genes that do not have the "Most Annotated" start:
• A3Wally_326, ASegato_105, Alleb_103, Casablancas_107, Cece_15, Cece_317, Deschain_107, Dodo_319, DustyDino_110, Elva_53, Erasmago_304, Erenyeager_107, Fork_103, HollowPurple_108, Hortus1_107, Issa7_106, Lyell_106, Mistmere_103, Musetta_105, Necrophoxinus_109, OlinDD_107, PauloDiaboli_327, Pioneer3_107, Platte_106, RunningBrook_108, Shroomer_110, SteakFry_106, StevieWelch_107, Tandem_107, Welcome_109, Wolfstar_113, Yuma_105,

Summary by start number:

Start 26:
• Found in 1 of 69 (1.4%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Erasmago_304 (GD2),

Start 28:
• Found in 2 of 69 (2.9%) of genes in pham
• Manual Annotations of this start: 2 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cece_15 (GD3), Cece_317 (GD3),

Start 29:
• Found in 3 of 69 (4.3%) of genes in pham
• Manual Annotations of this start: 3 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: A3Wally_326 (GD1), Dodo_319 (GD1), PauloDiaboli_327 (GD1),

Start 31:
• Found in 7 of 69 (10.1%) of genes in pham
• Manual Annotations of this start: 7 of 54

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alleb_103 (ED1), Hortus1_107 (ED1), OlinDD_107 (ED1), Pioneer3_107 (ED1), Platte_106 (ED1), Tandem_107 (ED1), Wolfstar_113 (ED),

Start 32:
• Found in 1 of 69 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Elva_53 (EB),

Start 33:
• Found in 18 of 69 (26.1%) of genes in pham
• Manual Annotations of this start: 13 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ASegato_105 (ED2), Casablancas_107 (ED2), Deschain_107 (ED2), DustyDino_110 (ED2), Erenyeager_107 (ED2), Fork_103 (ED2), HollowPurple_108 (ED2), Issa7_106 (ED2), Lyell_106 (ED2), Mistmere_103 (ED3), Musetta_105 (ED2), Necrophoxinus_109 (ED2), RunningBrook_108 (ED2), Shroomer_110 (ED2), SteakFry_106 (ED2), StevieWelch_107 (ED2), Welcome_109 (ED2), Yuma_105 (ED2),

Start 34:
• Found in 37 of 69 (53.6%) of genes in pham
• Manual Annotations of this start: 28 of 54
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Akino08_52 (EB), AvGardian_52 (EB), BabyYoda_51 (EB), Bachaco_49 (EB), Big4_12 (GD2), Big4_338 (GD2), CN1A_12 (singleton), Celaena_49 (EB), ChiliPepper_48 (EB), DejaVu_108 (ED1), DirtyBubble_50 (EB), Dismas_48 (EB), Erasmago_13 (GD2), Erasmago_351 (GD2), FlameThrower_48 (EB), Hubbs_107 (ED1), Icarian_54 (EB), Kamdara_48 (EB), Katzastrophic_50 (EB), Kieran_48 (EB), Loviatar_52 (EB), Pavlo_108 (ED1), PhillyPhilly_105 (ED1), PondAmelia_62 (EB), Quenya_51 (EB), Roman_109 (ED1), Rona_48 (EB), SanaSana_53 (EB), Saradis_109 (ED1), Sharkboy_49 (EB), Solimine_109 (ED1), Stoor_51 (EB), Stromboli_51 (EB), Uterion_112 (ED1), WalkingDead_53 (EB), Zooman_10 (GD2), Zooman_323 (GD2),

Summary by clusters:

There are 9 clusters represented in this pham: GD1, GD2, GD3, ED, singleton, EB, ED2, ED3, ED1,

Info for manual annotations of cluster EB:
•Start number 32 was manually annotated 1 time for cluster EB.
•Start number 34 was manually annotated 19 times for cluster EB.

Info for manual annotations of cluster ED:
•Start number 31 was manually annotated 1 time for cluster ED.

Info for manual annotations of cluster ED1:
•Start number 31 was manually annotated 6 times for cluster ED1.
•Start number 34 was manually annotated 5 times for cluster ED1.

Info for manual annotations of cluster ED2:
•Start number 33 was manually annotated 13 times for cluster ED2.

Info for manual annotations of cluster GD1:
•Start number 29 was manually annotated 3 times for cluster GD1.

Info for manual annotations of cluster GD2:
•Start number 34 was manually annotated 4 times for cluster GD2.

Info for manual annotations of cluster GD3:
•Start number 28 was manually annotated 2 times for cluster GD3.

Gene Information:

Gene: A3Wally_326 Start: 170993, Stop: 171403, Start Num: 29
Candidate Starts for A3Wally_326:
(Start: 29 @170993 has 3 MA's), (36, 171035), (38, 171044), (40, 171059), (45, 171095), (61, 171203), (70, 171257), (77, 171293), (82, 171320),

Gene: ASegato_105 Start: 56034, Stop: 55597, Start Num: 33
Candidate Starts for ASegato_105:
(Start: 33 @56034 has 13 MA's), (36, 56010), (39, 55989), (53, 55893), (55, 55881), (56, 55878), (64, 55836), (67, 55806), (74, 55773),

Gene: Akino08_52 Start: 36189, Stop: 36629, Start Num: 34
Candidate Starts for Akino08_52:
(Start: 34 @36189 has 28 MA's), (40, 36237), (62, 36375), (72, 36438), (75, 36450), (82, 36492), (93, 36561),

Gene: Alleb_103 Start: 57500, Stop: 57114, Start Num: 31
Candidate Starts for Alleb_103:
(18, 57593), (21, 57557), (27, 57524), (30, 57503), (Start: 31 @57500 has 7 MA's), (42, 57419), (48, 57401), (55, 57347), (59, 57323), (70, 57251), (77, 57215), (79, 57197),

Gene: AvGardian_52 Start: 34737, Stop: 35147, Start Num: 34
Candidate Starts for AvGardian_52:
(Start: 34 @34737 has 28 MA's), (41, 34788), (55, 34878), (56, 34881), (66, 34935), (68, 34965), (86, 35037),

Gene: BabyYoda_51 Start: 35131, Stop: 35568, Start Num: 34
Candidate Starts for BabyYoda_51:
(Start: 34 @35131 has 28 MA's), (40, 35179), (55, 35278), (56, 35281), (62, 35317), (72, 35380), (75, 35392), (82, 35431),

Gene: Bachaco_49 Start: 35861, Stop: 36301, Start Num: 34
Candidate Starts for Bachaco_49:
(Start: 34 @35861 has 28 MA's), (62, 36050), (90, 36200),

Gene: Big4_12 Start: 5535, Stop: 6011, Start Num: 34
Candidate Starts for Big4_12:

(Start: 34 @5535 has 28 MA's), (47, 5646), (51, 5664), (57, 5733), (60, 5751), (61, 5754), (77, 5847), (89, 5907),

Gene: Big4_338 Start: 180229, Stop: 180705, Start Num: 34
Candidate Starts for Big4_338:
(Start: 34 @180229 has 28 MA's), (47, 180340), (51, 180358), (57, 180427), (60, 180445), (61, 180448), (77, 180541), (89, 180601),

Gene: CN1A_12 Start: 5964, Stop: 6377, Start Num: 34
Candidate Starts for CN1A_12:
(9, 5682), (12, 5778), (Start: 34 @5964 has 28 MA's), (37, 5988), (40, 6012), (42, 6036), (54, 6102), (55, 6111), (58, 6129), (63, 6159), (65, 6168), (96, 6363), (97, 6366),

Gene: Casablancas_107 Start: 55664, Stop: 55227, Start Num: 33
Candidate Starts for Casablancas_107:
(Start: 33 @55664 has 13 MA's), (36, 55640), (39, 55619), (53, 55523), (55, 55511), (56, 55508), (64, 55466), (67, 55436), (74, 55403),

Gene: Cece_15 Start: 5418, Stop: 5840, Start Num: 28
Candidate Starts for Cece_15:
(Start: 28 @5418 has 2 MA's), (38, 5472), (39, 5484), (48, 5544), (55, 5607), (84, 5742),

Gene: Cece_317 Start: 173852, Stop: 174274, Start Num: 28
Candidate Starts for Cece_317:
(Start: 28 @173852 has 2 MA's), (38, 173906), (39, 173918), (48, 173978), (55, 174041), (84, 174176),

Gene: Celaena_49 Start: 35623, Stop: 36063, Start Num: 34
Candidate Starts for Celaena_49:
(Start: 34 @35623 has 28 MA's), (62, 35812), (90, 35962),

Gene: ChiliPepper_48 Start: 34921, Stop: 35364, Start Num: 34
Candidate Starts for ChiliPepper_48:
(Start: 34 @34921 has 28 MA's), (62, 35110), (74, 35182), (96, 35320),

Gene: DejaVu_108 Start: 57205, Stop: 56840, Start Num: 34
Candidate Starts for DejaVu_108:
(23, 57256), (Start: 34 @57205 has 28 MA's), (42, 57136), (54, 57076), (55, 57067), (59, 57043), (62, 57028), (89, 56878), (91, 56869),

Gene: Deschain_107 Start: 56328, Stop: 55891, Start Num: 33
Candidate Starts for Deschain_107:
(Start: 33 @56328 has 13 MA's), (39, 56283), (53, 56187), (55, 56175), (56, 56172), (64, 56130), (67, 56100), (74, 56067),

Gene: DirtyBubble_50 Start: 34799, Stop: 35236, Start Num: 34
Candidate Starts for DirtyBubble_50:
(Start: 34 @34799 has 28 MA's), (40, 34847), (55, 34946), (56, 34949), (62, 34985), (72, 35048), (75, 35060), (82, 35099),

Gene: Dismas_48 Start: 34843, Stop: 35286, Start Num: 34
Candidate Starts for Dismas_48:
(Start: 34 @34843 has 28 MA's), (53, 34978), (54, 34981), (66, 35047), (75, 35104), (85, 35155), (94, 35206),

Gene: Dodo_319 Start: 170077, Stop: 170469, Start Num: 29
Candidate Starts for Dodo_319:
(15, 169951), (16, 169954), (17, 169975), (Start: 29 @170077 has 3 MA's), (35, 170110), (40, 170140), (45, 170176), (49, 170188), (62, 170287), (72, 170344), (76, 170371), (77, 170374), (92, 170455),

Gene: DustyDino_110 Start: 56887, Stop: 56450, Start Num: 33
Candidate Starts for DustyDino_110:
(Start: 33 @56887 has 13 MA's), (36, 56863), (39, 56842), (53, 56746), (55, 56734), (56, 56731), (64, 56689), (67, 56659), (74, 56626),

Gene: Elva_53 Start: 35217, Stop: 35639, Start Num: 32
Candidate Starts for Elva_53:
(Start: 32 @35217 has 1 MA's), (55, 35367), (56, 35370), (66, 35424), (87, 35523),

Gene: Erasmago_13 Start: 4541, Stop: 5020, Start Num: 34
Candidate Starts for Erasmago_13:
(Start: 34 @4541 has 28 MA's), (44, 4628), (45, 4646), (57, 4751), (59, 4760), (65, 4790), (81, 4889), (88, 4922), (98, 5003),

Gene: Erasmago_304 Start: 162654, Stop: 163103, Start Num: 26
Candidate Starts for Erasmago_304:
(26, 162654), (37, 162717), (46, 162792), (50, 162810), (56, 162861), (60, 162891), (73, 162966),

Gene: Erasmago_351 Start: 179050, Stop: 179529, Start Num: 34
Candidate Starts for Erasmago_351:
(Start: 34 @179050 has 28 MA's), (44, 179137), (45, 179155), (57, 179260), (59, 179269), (65, 179299), (81, 179398), (88, 179431), (98, 179512),

Gene: Erenyeager_107 Start: 55997, Stop: 55551, Start Num: 33
Candidate Starts for Erenyeager_107:
(1, 56621), (2, 56594), (3, 56573), (5, 56525), (6, 56411), (8, 56360), (13, 56168), (22, 56048), (Start: 33 @55997 has 13 MA's), (36, 55973), (39, 55952), (53, 55847), (55, 55835), (56, 55832), (64, 55790), (67, 55760),

Gene: FlameThrower_48 Start: 34660, Stop: 35100, Start Num: 34
Candidate Starts for FlameThrower_48:
(Start: 34 @34660 has 28 MA's), (62, 34849), (90, 34999),

Gene: Fork_103 Start: 55912, Stop: 55475, Start Num: 33
Candidate Starts for Fork_103:
(Start: 33 @55912 has 13 MA's), (36, 55888), (39, 55867), (53, 55771), (55, 55759), (56, 55756), (64, 55714), (67, 55684), (74, 55651),

Gene: HollowPurple_108 Start: 56575, Stop: 56138, Start Num: 33
Candidate Starts for HollowPurple_108:
(Start: 33 @56575 has 13 MA's), (36, 56551), (39, 56530), (53, 56434), (55, 56422), (56, 56419), (64, 56377), (67, 56347), (74, 56314),

Gene: Hortus1_107 Start: 58256, Stop: 57870, Start Num: 31
Candidate Starts for Hortus1_107:
(18, 58349), (21, 58313), (27, 58280), (30, 58259), (Start: 31 @58256 has 7 MA's), (42, 58175), (48, 58157), (55, 58103), (59, 58079), (70, 58007), (77, 57971), (79, 57953),

Gene: Hubbs_107 Start: 57469, Stop: 57104, Start Num: 34
Candidate Starts for Hubbs_107:
(23, 57520), (Start: 34 @57469 has 28 MA's), (42, 57400), (54, 57340), (55, 57331), (59, 57307), (62, 57292), (89, 57142), (91, 57133),

Gene: Icarian_54 Start: 35804, Stop: 36241, Start Num: 34
Candidate Starts for Icarian_54:
(Start: 34 @35804 has 28 MA's), (40, 35852), (55, 35951), (56, 35954), (62, 35990), (75, 36065), (82, 36104), (95, 36185),

Gene: Issa7_106 Start: 55958, Stop: 55521, Start Num: 33
Candidate Starts for Issa7_106:
(Start: 33 @55958 has 13 MA's), (36, 55934), (39, 55913), (53, 55817), (55, 55805), (56, 55802), (64, 55760), (67, 55730), (74, 55697),

Gene: Kamdara_48 Start: 34881, Stop: 35324, Start Num: 34
Candidate Starts for Kamdara_48:
(7, 34479), (11, 34653), (14, 34734), (Start: 34 @34881 has 28 MA's), (62, 35070), (74, 35142), (96, 35280),

Gene: Katzastrophic_50 Start: 35170, Stop: 35610, Start Num: 34
Candidate Starts for Katzastrophic_50:
(Start: 34 @35170 has 28 MA's), (62, 35359), (90, 35509),

Gene: Kieran_48 Start: 34884, Stop: 35327, Start Num: 34
Candidate Starts for Kieran_48:
(7, 34482), (11, 34656), (14, 34737), (Start: 34 @34884 has 28 MA's), (62, 35073), (74, 35145), (96, 35283),

Gene: Loviatar_52 Start: 36204, Stop: 36644, Start Num: 34
Candidate Starts for Loviatar_52:
(Start: 34 @36204 has 28 MA's), (40, 36252), (62, 36390), (72, 36453), (75, 36465), (82, 36507), (93, 36576),

Gene: Lyell_106 Start: 55834, Stop: 55397, Start Num: 33
Candidate Starts for Lyell_106:
(4, 56371), (6, 56248), (8, 56197), (13, 56005), (22, 55885), (Start: 33 @55834 has 13 MA's), (36, 55810), (39, 55789), (53, 55693), (55, 55681), (56, 55678), (64, 55636), (67, 55606), (74, 55573),

Gene: Mistmere_103 Start: 54853, Stop: 54416, Start Num: 33
Candidate Starts for Mistmere_103:
(10, 55114), (Start: 33 @54853 has 13 MA's), (39, 54808), (53, 54709), (55, 54697), (62, 54658), (67, 54622), (68, 54613),

Gene: Musetta_105 Start: 56187, Stop: 55750, Start Num: 33
Candidate Starts for Musetta_105:
(1, 56811), (2, 56784), (3, 56763), (5, 56715), (6, 56601), (8, 56550), (13, 56358), (22, 56238), (Start: 33 @56187 has 13 MA's), (36, 56163), (39, 56142), (53, 56046), (55, 56034), (56, 56031), (64, 55989), (67, 55959), (74, 55926),

Gene: Necrophoxinus_109 Start: 56843, Stop: 56406, Start Num: 33
Candidate Starts for Necrophoxinus_109:

(Start: 33 @56843 has 13 MA's), (36, 56819), (39, 56798), (53, 56702), (55, 56690), (56, 56687), (64, 56645), (67, 56615), (74, 56582),

Gene: OlinDD_107 Start: 58261, Stop: 57875, Start Num: 31
Candidate Starts for OlinDD_107:
(18, 58354), (21, 58318), (27, 58285), (30, 58264), (Start: 31 @58261 has 7 MA's), (42, 58180), (48, 58162), (55, 58108), (59, 58084), (70, 58012), (77, 57976), (79, 57958),

Gene: PauloDiaboli_327 Start: 168500, Stop: 168892, Start Num: 29
Candidate Starts for PauloDiaboli_327:
(Start: 29 @168500 has 3 MA's), (35, 168533), (40, 168563), (45, 168599), (69, 168755), (72, 168767), (76, 168794), (77, 168797), (92, 168878),

Gene: Pavlo_108 Start: 57864, Stop: 57499, Start Num: 34
Candidate Starts for Pavlo_108:
(23, 57915), (Start: 34 @57864 has 28 MA's), (42, 57795), (54, 57735), (55, 57726), (59, 57702), (62, 57687), (89, 57537), (91, 57528),

Gene: PhillyPhilly_105 Start: 56853, Stop: 56488, Start Num: 34
Candidate Starts for PhillyPhilly_105:
(23, 56904), (Start: 34 @56853 has 28 MA's), (42, 56784), (54, 56724), (55, 56715), (59, 56691), (62, 56676), (89, 56526), (91, 56517),

Gene: Pioneer3_107 Start: 58059, Stop: 57673, Start Num: 31
Candidate Starts for Pioneer3_107:
(18, 58152), (21, 58116), (27, 58083), (30, 58062), (Start: 31 @58059 has 7 MA's), (42, 57978), (48, 57960), (55, 57906), (59, 57882), (70, 57810), (77, 57774), (79, 57756),

Gene: Platte_106 Start: 57843, Stop: 57457, Start Num: 31
Candidate Starts for Platte_106:
(18, 57936), (21, 57900), (27, 57867), (30, 57846), (Start: 31 @57843 has 7 MA's), (42, 57762), (48, 57744), (55, 57690), (59, 57666), (70, 57594), (77, 57558), (79, 57540),

Gene: PondAmelia_62 Start: 35004, Stop: 35447, Start Num: 34
Candidate Starts for PondAmelia_62:
(Start: 34 @35004 has 28 MA's), (40, 35052), (62, 35190), (72, 35253), (76, 35280), (82, 35310), (93, 35379),

Gene: Quenya_51 Start: 35296, Stop: 35745, Start Num: 34
Candidate Starts for Quenya_51:
(18, 35191), (19, 35203), (Start: 34 @35296 has 28 MA's), (54, 35434), (59, 35467), (66, 35500), (75, 35557), (85, 35608),

Gene: Roman_109 Start: 57913, Stop: 57548, Start Num: 34
Candidate Starts for Roman_109:
(23, 57964), (Start: 34 @57913 has 28 MA's), (42, 57844), (54, 57784), (55, 57775), (59, 57751), (62, 57736), (89, 57586), (91, 57577),

Gene: Rona_48 Start: 34834, Stop: 35277, Start Num: 34
Candidate Starts for Rona_48:
(Start: 34 @34834 has 28 MA's), (53, 34969), (54, 34972), (66, 35038), (75, 35095), (85, 35146), (94, 35197),

Gene: RunningBrook_108 Start: 56887, Stop: 56450, Start Num: 33
Candidate Starts for RunningBrook_108:
(Start: 33 @56887 has 13 MA's), (36, 56863), (39, 56842), (53, 56746), (55, 56734), (56, 56731), (64, 56689), (67, 56659), (74, 56626),

Gene: SanaSana_53 Start: 35511, Stop: 35948, Start Num: 34
Candidate Starts for SanaSana_53:
(Start: 34 @35511 has 28 MA's), (40, 35559), (55, 35658), (56, 35661), (62, 35697), (72, 35760), (75, 35772), (82, 35811),

Gene: Saradis_109 Start: 56880, Stop: 56515, Start Num: 34
Candidate Starts for Saradis_109:
(23, 56931), (Start: 34 @56880 has 28 MA's), (42, 56811), (54, 56751), (55, 56742), (59, 56718), (62, 56703), (89, 56553), (91, 56544),

Gene: Sharkboy_49 Start: 34933, Stop: 35376, Start Num: 34
Candidate Starts for Sharkboy_49:
(Start: 34 @34933 has 28 MA's), (53, 35068), (54, 35071), (66, 35137), (75, 35194), (85, 35245), (94, 35296),

Gene: Shroomer_110 Start: 56444, Stop: 56007, Start Num: 33
Candidate Starts for Shroomer_110:
(Start: 33 @56444 has 13 MA's), (36, 56420), (39, 56399), (53, 56303), (55, 56291), (56, 56288), (64, 56246), (67, 56216), (74, 56183),

Gene: Solimine_109 Start: 57788, Stop: 57423, Start Num: 34
Candidate Starts for Solimine_109:
(23, 57839), (Start: 34 @57788 has 28 MA's), (54, 57659), (55, 57650), (59, 57626), (62, 57611), (71, 57557), (91, 57452),

Gene: SteakFry_106 Start: 56575, Stop: 56138, Start Num: 33
Candidate Starts for SteakFry_106:
(Start: 33 @56575 has 13 MA's), (36, 56551), (39, 56530), (53, 56434), (55, 56422), (56, 56419), (64, 56377), (67, 56347), (74, 56314),

Gene: StevieWelch_107 Start: 56127, Stop: 55690, Start Num: 33
Candidate Starts for StevieWelch_107:
(13, 56298), (25, 56160), (Start: 33 @56127 has 13 MA's), (36, 56103), (39, 56082), (53, 55986), (55, 55974), (67, 55899),

Gene: Stoor_51 Start: 35304, Stop: 35735, Start Num: 34
Candidate Starts for Stoor_51:
(Start: 34 @35304 has 28 MA's), (40, 35352), (55, 35451), (56, 35454), (62, 35490), (72, 35553), (75, 35565), (82, 35598), (95, 35679),

Gene: Stromboli_51 Start: 35169, Stop: 35606, Start Num: 34
Candidate Starts for Stromboli_51:
(Start: 34 @35169 has 28 MA's), (40, 35217), (55, 35316), (56, 35319), (62, 35355), (72, 35418), (75, 35430), (82, 35469),

Gene: Tandem_107 Start: 58139, Stop: 57753, Start Num: 31
Candidate Starts for Tandem_107:

(18, 58232), (21, 58196), (27, 58163), (30, 58142), (Start: 31 @58139 has 7 MA's), (42, 58058), (48, 58040), (55, 57986), (59, 57962), (70, 57890), (77, 57854), (79, 57836),

Gene: Uterion_112 Start: 57310, Stop: 56945, Start Num: 34
Candidate Starts for Uterion_112:
(23, 57361), (Start: 34 @57310 has 28 MA's), (42, 57241), (54, 57181), (55, 57172), (59, 57148), (62, 57133), (89, 56983), (91, 56974),

Gene: WalkingDead_53 Start: 35918, Stop: 36355, Start Num: 34
Candidate Starts for WalkingDead_53:
(Start: 34 @35918 has 28 MA's), (40, 35966), (55, 36065), (56, 36068), (62, 36104), (72, 36167), (75, 36179), (82, 36218), (95, 36299),

Gene: Welcome_109 Start: 56727, Stop: 56290, Start Num: 33
Candidate Starts for Welcome_109:
(Start: 33 @56727 has 13 MA's), (36, 56703), (39, 56682), (53, 56586), (55, 56574), (56, 56571), (64, 56529), (67, 56499), (74, 56466),

Gene: Wolfstar_113 Start: 59574, Stop: 59188, Start Num: 31
Candidate Starts for Wolfstar_113:
(20, 59646), (24, 59601), (Start: 31 @59574 has 7 MA's), (45, 59481), (52, 59442), (55, 59409), (59, 59385), (62, 59373), (78, 59277),

Gene: Yuma_105 Start: 55848, Stop: 55411, Start Num: 33
Candidate Starts for Yuma_105:
(Start: 33 @55848 has 13 MA's), (36, 55824), (39, 55803), (53, 55707), (55, 55695), (56, 55692), (64, 55650), (67, 55620), (74, 55587),

Gene: Zooman_323 Start: 180374, Stop: 180850, Start Num: 34
Candidate Starts for Zooman_323:
(Start: 34 @180374 has 28 MA's), (43, 180458), (47, 180485), (57, 180572), (60, 180590), (77, 180686), (80, 180707), (83, 180722), (89, 180746),

Gene: Zooman_10 Start: 4723, Stop: 5199, Start Num: 34
Candidate Starts for Zooman_10:
(Start: 34 @4723 has 28 MA's), (43, 4807), (47, 4834), (57, 4921), (60, 4939), (77, 5035), (80, 5056), (83, 5071), (89, 5095),