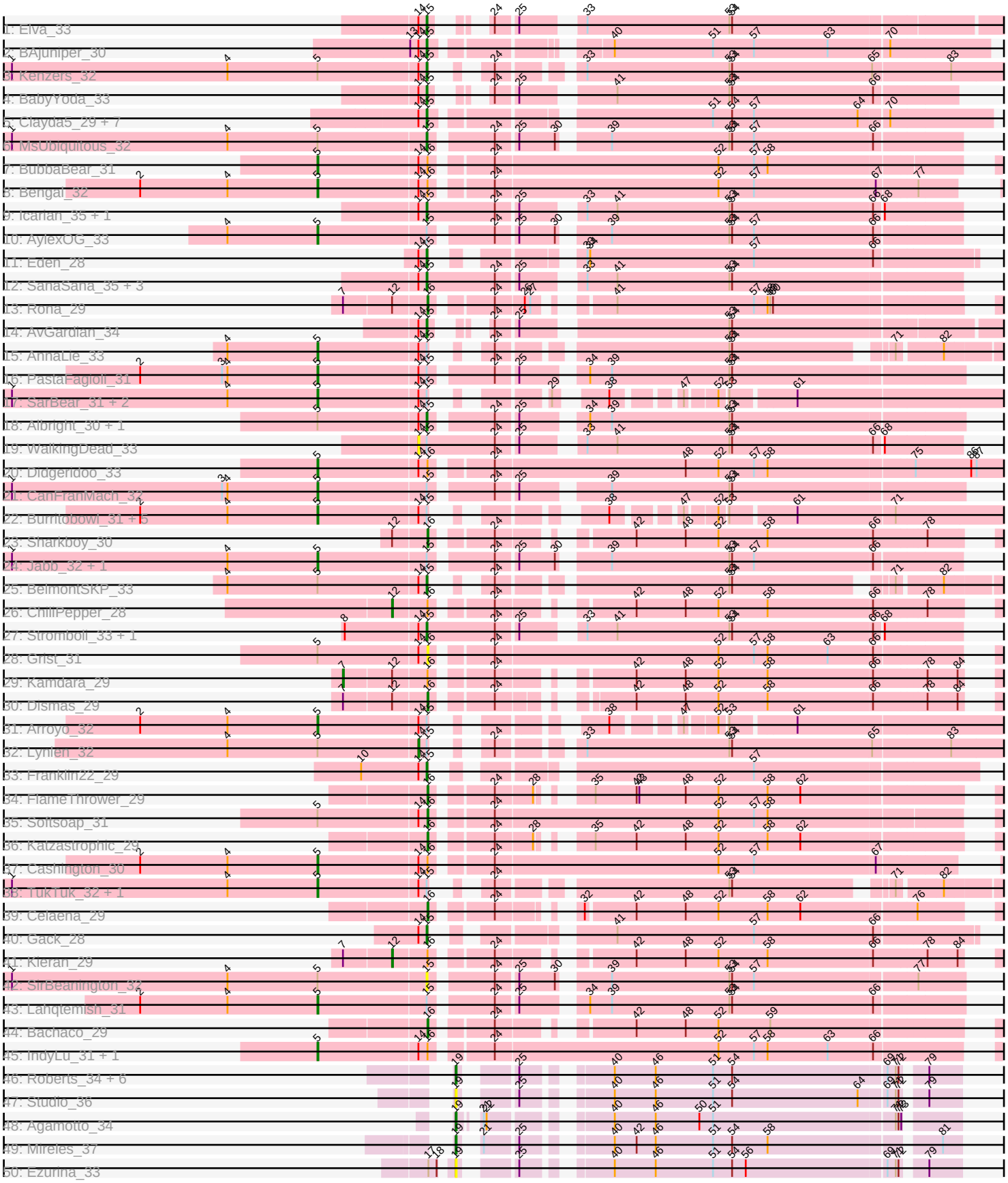
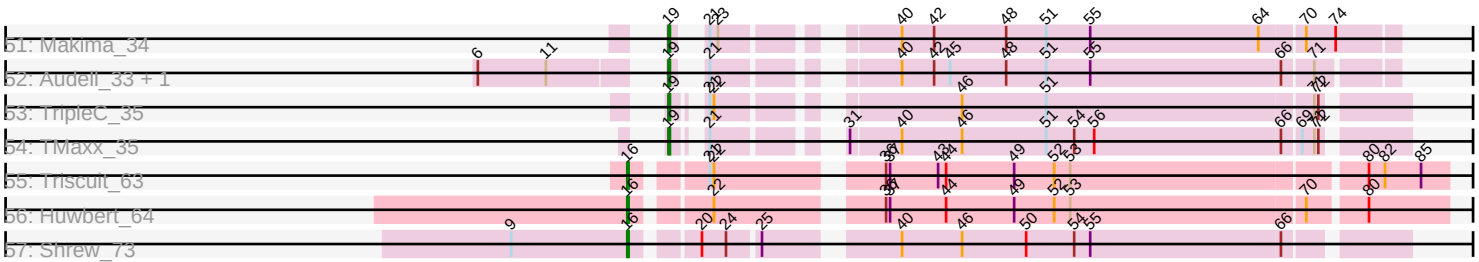
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1: Elva_33
2: BAJuniper_30
3: Kenzers_32
4: BabyYoda_33
5: Clayda5_29 + 7
6: MsObliquitous_32
7: BubbaBear_31
8: Bengal_32
9: Icarian_35 + 1
10: AylexOG_33
11: Eden_28
12: SanaSana_35 + 3
13: Rona_29
14: AvGardian_34
15: AnnaLie_33
16: PastaFagioli_31
17: SarBear_31 + 2
18: Albright_30 + 1
19: WalkingDead_33
20: Didgeridoo_33
21: CanFranMach_32
22: Burritobowl_31 + 5
23: Sharkboy_30
24: Jabb_32 + 1
25: BelmontSKP_33
26: ChiliPepper_28
27: Stromboli_33 + 1
28: Grist_31
29: Kamdara_29
30: Dismas_29
31: Arroyo_32
32: Lynlen_32
33: Franklin22_29
34: FlameThrower_29
35: Softsoap_31
36: Katzastrophic_29
37: Cashington_30
38: TukTuk_32 + 1
39: Celaena_29
40: Gack_28
41: Kieran_29
42: SirBeanington_32
43: Lanqtemish_31
44: Bachaco_29
45: IndyLu_31 + 1
46: Roberts_34 + 6
47: Studio_36
48: Agamotto_34
49: Mireles_37
50: Ezurina_33

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51: Makima_34
52: Audell_33 + 1
53: TripleC_35
54: TMaxx_35
55: Triscuit_63
56: Huwbert_64
57: Shrew_73

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 347499 Report

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

Pham number 347499 has 87 members, 8 are drafts.

Phages represented in each track:
- Track 1 : Elva_33
- Track 2 : BAjuniper_30
- Track 3 : Kenzers_32
- Track 4 : BabyYoda_33
- Track 5 : Clayda5_29, Coltrane_28, Skylord_28, Bernstein_28, Brahms_28, Armstrong_28, Rollins_28, Vitas_28
- Track 6 : MsUbiquitous_32
- Track 7 : BubbaBear_31
- Track 8 : Bengal_32
- Track 9 : Icarian_35, Stoor_33
- Track 10 : AylexOG_33
- Track 11 : Eden_28
- Track 12 : SanaSana_35, PondAmelia_34, Akino08_33, Loviatar_34
- Track 13 : Rona_29
- Track 14 : AvGardian_34
- Track 15 : AnnaLie_33
- Track 16 : PastaFagioli_31
- Track 17 : SarBear_31, Swervy_32, Jovita_32
- Track 18 : Albright_30, CroZenni_31
- Track 19 : WalkingDead_33
- Track 20 : Didgeridoo_33
- Track 21 : CanFranMach_32
- Track 22 : Burritobowl_31, Milomuff_32, Doobus_31, DickRichards_31, LimaBean_31, Avocadoman_31
- Track 23 : Sharkboy_30
- Track 24 : Jabb_32, CupcakePrincess_32
- Track 25 : BelmontSKP_33
- Track 26 : ChiliPepper_28
- Track 27 : Stromboli_33, DirtyBubble_32
- Track 28 : Grist_31
- Track 29 : Kamdara_29
- Track 30 : Dismas_29
- Track 31 : Arroyo_32
- Track 32 : Lynlen_32
- Track 33 : Franklin22_29
- Track 34 : FlameThrower_29
- Track 35 : Softsoap_31

• Track 36 : Katzastrophic_29
• Track 37 : Cashington_30
• Track 38 : TukTuk_32, Albedo_32
• Track 39 : Celaena_29
• Track 40 : Gack_28
• Track 41 : Kieran_29
• Track 42 : SirBeanington_32
• Track 43 : Lahqtemish_31
• Track 44 : Bachaco_29
• Track 45 : IndyLu_31, BabyDaisy_31
• Track 46 : Roberts_34, ChamoyPickle_36, Gerri43_34, AnnabelLee_34, CardboardBox_35, Neuvillette_34, ChipsNGuac_34
• Track 47 : Studio_36
• Track 48 : Agamotto_34
• Track 49 : Mireles_37
• Track 50 : Ezurina_33
• Track 51 : Makima_34
• Track 52 : Audell_33, LastNadiia_36
• Track 53 : TripleC_35
• Track 54 : TMaxx_35
• Track 55 : Triscuit_63
• Track 56 : Huwbert_64
• Track 57 : Shrew_73

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

The start number called the most often in the published annotations is 15, it was called in 28 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Akino08_33, Albright_30, Armstrong_28, AvGardian_34, BAjuniper_30, BabyYoda_33, BelmontSKP_33, Bernstein_28, Brahms_28, Clayda5_29, Coltrane_28, CroZenni_31, DirtyBubble_32, Eden_28, Elva_33, Franklin22_29, Gack_28, Icarian_35, Kenzers_32, Loviatar_34, MsUbiquitous_32, PondAmelia_34, Rollins_28, SanaSana_35, SirBeanington_32, Skylord_28, Stoor_33, Stromboli_33, Vitas_28,

Genes that have the "Most Annotated" start but do not call it:
• Albedo_32, AnnaLie_33, Arroyo_32, Avocadoman_31, AylexOG_33, Burritobowl_31, CanFranMach_32, CupcakePrincess_32, DickRichards_31, Doobus_31, Jabb_32, Jovita_32, Lahqtemish_31, LimaBean_31, Lynlen_32, Milomuff_32, PastaFagioli_31, SarBear_31, Swervy_32, TukTuk_32, WalkingDead_33,

Genes that do not have the "Most Annotated" start:
• Agamotto_34, AnnabelLee_34, Audell_33, BabyDaisy_31, Bachaco_29, Bengal_32, BubbaBear_31, CardboardBox_35, Cashington_30, Celaena_29, ChamoyPickle_36, ChiliPepper_28, ChipsNGuac_34, Didgeridoo_33, Dismas_29, Ezurina_33, FlameThrower_29, Gerri43_34, Grist_31, Huwbert_64, IndyLu_31, Kamdara_29, Katzastrophic_29, Kieran_29, LastNadiia_36, Makima_34, Mireles_37,

Neuvillette_34, Roberts_34, Rona_29, Sharkboy_30, Shrew_73, Softsoap_31, Studio_36, TMaxx_35, TripleC_35, Triscuit_63,

Summary by start number:

Start 5:
• Found in 34 of 87 (39.1%) of genes in pham
• Manual Annotations of this start: 25 of 79
• Called 73.5% of time when present
• Phage (with cluster) where this start called: Albedo_32 (EB), AnnaLie_33 (EB), Arroyo_32 (EB), Avocadoman_31 (EB), AylexOG_33 (EB), BabyDaisy_31 (EB), Bengal_32 (EB), BubbaBear_31 (EB), Burritobowl_31 (EB), CanFranMach_32 (EB), Cashington_30 (EB), CupcakePrincess_32 (EB), DickRichards_31 (EB), Didgeridoo_33 (EB), Doobus_31 (EB), IndyLu_31 (EB), Jabb_32 (EB), Jovita_32 (EB), Lahqtemish_31 (EB), LimaBean_31 (EB), Milomuff_32 (EB), PastaFagioli_31 (EB), SarBear_31 (EB), Swervy_32 (EB), TukTuk_32 (EB),

Start 7:
• Found in 4 of 87 (4.6%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Kamdara_29 (EB),

Start 12:
• Found in 6 of 87 (6.9%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 33.3% of time when present
• Phage (with cluster) where this start called: ChiliPepper_28 (EB), Kieran_29 (EB),

Start 14:
• Found in 51 of 87 (58.6%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 3.9% of time when present
• Phage (with cluster) where this start called: Lynlen_32 (EB), WalkingDead_33 (EB),

Start 15:
• Found in 50 of 87 (57.5%) of genes in pham
• Manual Annotations of this start: 28 of 79
• Called 58.0% of time when present
• Phage (with cluster) where this start called: Akino08_33 (EB), Albright_30 (EB), Armstrong_28 (EB), AvGardian_34 (EB), BAjuniper_30 (EB), BabyYoda_33 (EB), BelmontSKP_33 (EB), Bernstein_28 (EB), Brahms_28 (EB), Clayda5_29 (EB), Coltrane_28 (EB), CroZenni_31 (EB), DirtyBubble_32 (EB), Eden_28 (EB), Elva_33 (EB), Franklin22_29 (EB), Gack_28 (EB), Icarian_35 (EB), Kenzers_32 (EB), Loviatar_34 (EB), MsUbiquitous_32 (EB), PondAmelia_34 (EB), Rollins_28 (EB), SanaSana_35 (EB), SirBeanington_32 (EB), Skylord_28 (EB), Stoor_33 (EB), Stromboli_33 (EB), Vitas_28 (EB),

Start 16:
• Found in 21 of 87 (24.1%) of genes in pham
• Manual Annotations of this start: 11 of 79
• Called 57.1% of time when present

• Phage (with cluster) where this start called: Bachaco_29 (EB), Celaena_29 (EB), Dismas_29 (EB), FlameThrower_29 (EB), Grist_31 (EB), Huwbert_64 (GG), Katzastrophic_29 (EB), Rona_29 (EB), Sharkboy_30 (EB), Shrew_73 (singleton), Softsoap_31 (EB), Triscuit_63 (GG),

Start 19:
• Found in 16 of 87 (18.4%) of genes in pham
• Manual Annotations of this start: 11 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Agamotto_34 (FR), AnnabelLee_34 (FR), Audell_33 (FR), CardboardBox_35 (FR), ChamoyPickle_36 (FR), ChipsNGuac_34 (FR), Ezurina_33 (FR), Gerri43_34 (FR), LastNadiia_36 (FR), Makima_34 (FR), Mireles_37 (FR), Neuvillette_34 (FR), Roberts_34 (FR), Studio_36 (FR), TMaxx_35 (FR), TripleC_35 (FR),

Summary by clusters:

There are 4 clusters represented in this pham: GG, FR, singleton, EB,

Info for manual annotations of cluster EB:
•Start number 5 was manually annotated 25 times for cluster EB.
•Start number 7 was manually annotated 1 time for cluster EB.
•Start number 12 was manually annotated 2 times for cluster EB.
•Start number 14 was manually annotated 1 time for cluster EB.
•Start number 15 was manually annotated 28 times for cluster EB.
•Start number 16 was manually annotated 8 times for cluster EB.

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

Info for manual annotations of cluster GG:
•Start number 16 was manually annotated 2 times for cluster GG.

Gene Information:

Gene: Agamotto_34 Start: 24994, Stop: 24515, Start Num: 19
Candidate Starts for Agamotto_34:
(Start: 19 @24994 has 11 MA's), (21, 24982), (22, 24979), (40, 24877), (46, 24832), (50, 24784), (51, 24769), (71, 24574), (72, 24571), (73, 24568),

Gene: Akino08_33 Start: 24925, Stop: 25521, Start Num: 15
Candidate Starts for Akino08_33:
(Start: 14 @24916 has 1 MA's), (Start: 15 @24925 has 28 MA's), (24, 25000), (25, 25021), (33, 25072), (41, 25105), (53, 25228), (54, 25231),

Gene: Albedo_32 Start: 22977, Stop: 23642, Start Num: 5
Candidate Starts for Albedo_32:
(1, 22641), (4, 22878), (Start: 5 @22977 has 25 MA's), (Start: 14 @23085 has 1 MA's), (Start: 15 @23094 has 28 MA's), (24, 23118), (53, 23346), (54, 23349), (71, 23502), (82, 23547),

Gene: Albright_30 Start: 22216, Stop: 22803, Start Num: 15

Candidate Starts for Albright_30:
(Start: 5 @22099 has 25 MA's), (Start: 14 @22207 has 1 MA's), (Start: 15 @22216 has 28 MA's), (24, 22276), (25, 22297), (34, 22354), (39, 22378), (53, 22507), (54, 22510),

Gene: AnnaLie_33 Start: 23260, Stop: 23925, Start Num: 5
Candidate Starts for AnnaLie_33:
(4, 23161), (Start: 5 @23260 has 25 MA's), (Start: 14 @23368 has 1 MA's), (Start: 15 @23377 has 28 MA's), (24, 23401), (53, 23629), (54, 23632), (71, 23785), (82, 23830),

Gene: AnnabelLee_34 Start: 22212, Stop: 21736, Start Num: 19
Candidate Starts for AnnabelLee_34:
(Start: 19 @22212 has 11 MA's), (25, 22170), (40, 22098), (46, 22053), (51, 21990), (54, 21969), (69, 21804), (71, 21795), (72, 21792), (79, 21771),

Gene: Armstrong_28 Start: 20941, Stop: 21507, Start Num: 15
Candidate Starts for Armstrong_28:
(Start: 14 @20932 has 1 MA's), (Start: 15 @20941 has 28 MA's), (51, 21208), (54, 21229), (57, 21253), (64, 21367), (70, 21397),

Gene: Arroyo_32 Start: 23288, Stop: 23941, Start Num: 5
Candidate Starts for Arroyo_32:
(2, 23093), (4, 23189), (Start: 5 @23288 has 25 MA's), (Start: 14 @23396 has 1 MA's), (Start: 15 @23405 has 28 MA's), (38, 23513), (47, 23570), (52, 23600), (53, 23606), (61, 23672),

Gene: Audell_33 Start: 24613, Stop: 24143, Start Num: 19
Candidate Starts for Audell_33:
(6, 24724), (11, 24673), (Start: 19 @24613 has 11 MA's), (21, 24604), (40, 24499), (42, 24475), (45, 24463), (48, 24421), (51, 24391), (55, 24358), (66, 24217), (71, 24196),

Gene: AvGardian_34 Start: 23607, Stop: 24188, Start Num: 15
Candidate Starts for AvGardian_34:
(Start: 14 @23598 has 1 MA's), (Start: 15 @23607 has 28 MA's), (24, 23631), (25, 23652), (53, 23859), (54, 23862),

Gene: Avocadoman_31 Start: 22453, Stop: 23106, Start Num: 5
Candidate Starts for Avocadoman_31:
(2, 22258), (4, 22354), (Start: 5 @22453 has 25 MA's), (Start: 14 @22561 has 1 MA's), (Start: 15 @22570 has 28 MA's), (38, 22678), (47, 22735), (52, 22765), (53, 22771), (61, 22837), (71, 22942),

Gene: AylexOG_33 Start: 23288, Stop: 23989, Start Num: 5
Candidate Starts for AylexOG_33:
(4, 23189), (Start: 5 @23288 has 25 MA's), (Start: 15 @23405 has 28 MA's), (24, 23465), (25, 23486), (30, 23525), (39, 23567), (53, 23696), (54, 23699), (57, 23723), (66, 23852),

Gene: BAjuniper_30 Start: 23839, Stop: 24396, Start Num: 15
Candidate Starts for BAjuniper_30:
(13, 23821), (Start: 14 @23830 has 1 MA's), (Start: 15 @23839 has 28 MA's), (40, 23992), (51, 24100), (57, 24145), (63, 24226), (70, 24289),

Gene: BabyDaisy_31 Start: 22831, Stop: 23553, Start Num: 5
Candidate Starts for BabyDaisy_31:
(Start: 5 @22831 has 25 MA's), (Start: 14 @22939 has 1 MA's), (Start: 16 @22948 has 11 MA's), (24, 23002), (52, 23245), (57, 23284), (58, 23299), (63, 23365), (66, 23413),

Gene: BabyYoda_33 Start: 24127, Stop: 24666, Start Num: 15
Candidate Starts for BabyYoda_33:
(Start: 14 @24118 has 1 MA's), (Start: 15 @24127 has 28 MA's), (24, 24151), (25, 24172), (41, 24256), (53, 24379), (54, 24382), (66, 24535),

Gene: Bachaco_29 Start: 24051, Stop: 24608, Start Num: 16
Candidate Starts for Bachaco_29:
(Start: 16 @24051 has 11 MA's), (24, 24105), (42, 24216), (48, 24270), (52, 24306), (59, 24363),

Gene: BelmontSKP_33 Start: 23377, Stop: 23925, Start Num: 15
Candidate Starts for BelmontSKP_33:
(4, 23161), (Start: 5 @23260 has 25 MA's), (Start: 14 @23368 has 1 MA's), (Start: 15 @23377 has 28 MA's), (24, 23401), (53, 23629), (54, 23632), (71, 23785), (82, 23830),

Gene: Bengal_32 Start: 22846, Stop: 23553, Start Num: 5
Candidate Starts for Bengal_32:
(2, 22651), (4, 22747), (Start: 5 @22846 has 25 MA's), (Start: 14 @22954 has 1 MA's), (Start: 16 @22963 has 11 MA's), (24, 23017), (52, 23260), (57, 23299), (67, 23431), (77, 23473),

Gene: Bernstein_28 Start: 20996, Stop: 21562, Start Num: 15
Candidate Starts for Bernstein_28:
(Start: 14 @20987 has 1 MA's), (Start: 15 @20996 has 28 MA's), (51, 21263), (54, 21284), (57, 21308), (64, 21422), (70, 21452),

Gene: Brahms_28 Start: 20943, Stop: 21509, Start Num: 15
Candidate Starts for Brahms_28:
(Start: 14 @20934 has 1 MA's), (Start: 15 @20943 has 28 MA's), (51, 21210), (54, 21231), (57, 21255), (64, 21369), (70, 21399),

Gene: BubbaBear_31 Start: 22778, Stop: 23494, Start Num: 5
Candidate Starts for BubbaBear_31:
(Start: 5 @22778 has 25 MA's), (Start: 14 @22886 has 1 MA's), (Start: 16 @22895 has 11 MA's), (24, 22949), (52, 23192), (57, 23231), (58, 23246),

Gene: Burritobowl_31 Start: 22845, Stop: 23498, Start Num: 5
Candidate Starts for Burritobowl_31:
(2, 22650), (4, 22746), (Start: 5 @22845 has 25 MA's), (Start: 14 @22953 has 1 MA's), (Start: 15 @22962 has 28 MA's), (38, 23070), (47, 23127), (52, 23157), (53, 23163), (61, 23229), (71, 23334),

Gene: CanFranMach_32 Start: 22960, Stop: 23664, Start Num: 5
Candidate Starts for CanFranMach_32:
(1, 22624), (3, 22855), (4, 22861), (Start: 5 @22960 has 25 MA's), (Start: 15 @23077 has 28 MA's), (24, 23137), (25, 23158), (39, 23239), (53, 23368), (54, 23371),

Gene: CardboardBox_35 Start: 22215, Stop: 21739, Start Num: 19
Candidate Starts for CardboardBox_35:
(Start: 19 @22215 has 11 MA's), (25, 22173), (40, 22101), (46, 22056), (51, 21993), (54, 21972), (69, 21807), (71, 21798), (72, 21795), (79, 21774),

Gene: Cashington_30 Start: 22134, Stop: 22841, Start Num: 5
Candidate Starts for Cashington_30:

(2, 21939), (4, 22035), (Start: 5 @22134 has 25 MA's), (Start: 14 @22242 has 1 MA's), (Start: 16 @22251 has 11 MA's), (24, 22305), (52, 22548), (57, 22587), (67, 22719),

Gene: Celaena_29 Start: 23736, Stop: 24290, Start Num: 16
Candidate Starts for Celaena_29:
(Start: 16 @23736 has 11 MA's), (24, 23790), (32, 23847), (42, 23898), (48, 23952), (52, 23988), (58, 24042), (62, 24078), (76, 24198),

Gene: ChamoyPickle_36 Start: 22755, Stop: 22279, Start Num: 19
Candidate Starts for ChamoyPickle_36:
(Start: 19 @22755 has 11 MA's), (25, 22713), (40, 22641), (46, 22596), (51, 22533), (54, 22512), (69, 22347), (71, 22338), (72, 22335), (79, 22314),

Gene: ChiliPepper_28 Start: 23178, Stop: 23786, Start Num: 12
Candidate Starts for ChiliPepper_28:
(Start: 12 @23178 has 2 MA's), (Start: 16 @23214 has 11 MA's), (24, 23268), (42, 23379), (48, 23433), (52, 23469), (58, 23523), (66, 23637), (78, 23691),

Gene: ChipsNGuac_34 Start: 22215, Stop: 21739, Start Num: 19
Candidate Starts for ChipsNGuac_34:
(Start: 19 @22215 has 11 MA's), (25, 22173), (40, 22101), (46, 22056), (51, 21993), (54, 21972), (69, 21807), (71, 21798), (72, 21795), (79, 21774),

Gene: Clayda5_29 Start: 20930, Stop: 21496, Start Num: 15
Candidate Starts for Clayda5_29:
(Start: 14 @20921 has 1 MA's), (Start: 15 @20930 has 28 MA's), (51, 21197), (54, 21218), (57, 21242), (64, 21356), (70, 21386),

Gene: Coltrane_28 Start: 20943, Stop: 21509, Start Num: 15
Candidate Starts for Coltrane_28:
(Start: 14 @20934 has 1 MA's), (Start: 15 @20943 has 28 MA's), (51, 21210), (54, 21231), (57, 21255), (64, 21369), (70, 21399),

Gene: CroZenni_31 Start: 22800, Stop: 23387, Start Num: 15
Candidate Starts for CroZenni_31:
(Start: 5 @22683 has 25 MA's), (Start: 14 @22791 has 1 MA's), (Start: 15 @22800 has 28 MA's), (24, 22860), (25, 22881), (34, 22938), (39, 22962), (53, 23091), (54, 23094),

Gene: CupcakePrincess_32 Start: 22975, Stop: 23676, Start Num: 5
Candidate Starts for CupcakePrincess_32:
(1, 22639), (4, 22876), (Start: 5 @22975 has 25 MA's), (Start: 15 @23092 has 28 MA's), (24, 23152), (25, 23173), (30, 23212), (39, 23254), (53, 23383), (54, 23386), (57, 23410), (66, 23539),

Gene: DickRichards_31 Start: 23174, Stop: 23827, Start Num: 5
Candidate Starts for DickRichards_31:
(2, 22979), (4, 23075), (Start: 5 @23174 has 25 MA's), (Start: 14 @23282 has 1 MA's), (Start: 15 @23291 has 28 MA's), (38, 23399), (47, 23456), (52, 23486), (53, 23492), (61, 23558), (71, 23663),

Gene: Didgeridoo_33 Start: 23183, Stop: 23950, Start Num: 5
Candidate Starts for Didgeridoo_33:
(Start: 5 @23183 has 25 MA's), (Start: 14 @23291 has 1 MA's), (Start: 16 @23300 has 11 MA's), (24, 23354), (48, 23561), (52, 23597), (57, 23636), (58, 23651), (75, 23807), (86, 23867), (87, 23873),

Gene: DirtyBubble_32 Start: 23754, Stop: 24350, Start Num: 15
Candidate Starts for DirtyBubble_32:
(8, 23667), (Start: 14 @23745 has 1 MA's), (Start: 15 @23754 has 28 MA's), (24, 23829), (25, 23850), (33, 23901), (41, 23934), (53, 24057), (54, 24060), (66, 24213), (68, 24222),

Gene: Dismas_29 Start: 23391, Stop: 23957, Start Num: 16
Candidate Starts for Dismas_29:
(Start: 7 @23304 has 1 MA's), (Start: 12 @23355 has 2 MA's), (Start: 16 @23391 has 11 MA's), (24, 23445), (42, 23550), (48, 23604), (52, 23640), (58, 23694), (66, 23808), (78, 23862), (84, 23895),

Gene: Doobus_31 Start: 22620, Stop: 23273, Start Num: 5
Candidate Starts for Doobus_31:
(2, 22425), (4, 22521), (Start: 5 @22620 has 25 MA's), (Start: 14 @22728 has 1 MA's), (Start: 15 @22737 has 28 MA's), (38, 22845), (47, 22902), (52, 22932), (53, 22938), (61, 23004), (71, 23109),

Gene: Eden_28 Start: 21161, Stop: 21682, Start Num: 15
Candidate Starts for Eden_28:
(Start: 14 @21152 has 1 MA's), (Start: 15 @21161 has 28 MA's), (33, 21263), (34, 21266), (57, 21446), (66, 21575),

Gene: Elva_33 Start: 23789, Stop: 24370, Start Num: 15
Candidate Starts for Elva_33:
(Start: 14 @23780 has 1 MA's), (Start: 15 @23789 has 28 MA's), (24, 23813), (25, 23834), (33, 23885), (53, 24041), (54, 24044),

Gene: Ezurina_33 Start: 23256, Stop: 22780, Start Num: 19
Candidate Starts for Ezurina_33:
(17, 23274), (18, 23265), (Start: 19 @23256 has 11 MA's), (25, 23214), (40, 23142), (46, 23097), (51, 23034), (54, 23013), (56, 22998), (69, 22848), (71, 22839), (72, 22836), (79, 22815),

Gene: FlameThrower_29 Start: 23222, Stop: 23782, Start Num: 16
Candidate Starts for FlameThrower_29:
(Start: 16 @23222 has 11 MA's), (24, 23276), (28, 23315), (35, 23345), (42, 23390), (43, 23393), (48, 23444), (52, 23480), (58, 23534), (62, 23570),

Gene: Franklin22_29 Start: 21323, Stop: 21847, Start Num: 15
Candidate Starts for Franklin22_29:
(10, 21251), (Start: 14 @21314 has 1 MA's), (Start: 15 @21323 has 28 MA's), (57, 21608),

Gene: Gack_28 Start: 21205, Stop: 21726, Start Num: 15
Candidate Starts for Gack_28:
(Start: 14 @21196 has 1 MA's), (Start: 15 @21205 has 28 MA's), (41, 21340), (57, 21490), (66, 21619),

Gene: Gerri43_34 Start: 22215, Stop: 21739, Start Num: 19
Candidate Starts for Gerri43_34:
(Start: 19 @22215 has 11 MA's), (25, 22173), (40, 22101), (46, 22056), (51, 21993), (54, 21972), (69, 21807), (71, 21798), (72, 21795), (79, 21774),

Gene: Grist_31 Start: 22772, Stop: 23377, Start Num: 16
Candidate Starts for Grist_31:
(Start: 5 @22655 has 25 MA's), (Start: 14 @22763 has 1 MA's), (Start: 16 @22772 has 11 MA's), (24, 22826), (52, 23069), (57, 23108), (58, 23123), (63, 23189), (66, 23237),

Gene: Huwbert_64 Start: 39565, Stop: 40128, Start Num: 16
Candidate Starts for Huwbert_64:
(Start: 16 @39565 has 11 MA's), (22, 39613), (36, 39721), (37, 39724), (44, 39766), (49, 39817), (52, 39847), (53, 39859), (70, 40030), (80, 40069),

Gene: Icarian_35 Start: 24388, Stop: 24984, Start Num: 15
Candidate Starts for Icarian_35:
(Start: 14 @24379 has 1 MA's), (Start: 15 @24388 has 28 MA's), (24, 24463), (25, 24484), (33, 24535), (41, 24568), (53, 24691), (54, 24694), (66, 24847), (68, 24856),

Gene: IndyLu_31 Start: 22792, Stop: 23514, Start Num: 5
Candidate Starts for IndyLu_31:
(Start: 5 @22792 has 25 MA's), (Start: 14 @22900 has 1 MA's), (Start: 16 @22909 has 11 MA's), (24, 22963), (52, 23206), (57, 23245), (58, 23260), (63, 23326), (66, 23374),

Gene: Jabb_32 Start: 22975, Stop: 23676, Start Num: 5
Candidate Starts for Jabb_32:
(1, 22639), (4, 22876), (Start: 5 @22975 has 25 MA's), (Start: 15 @23092 has 28 MA's), (24, 23152), (25, 23173), (30, 23212), (39, 23254), (53, 23383), (54, 23386), (57, 23410), (66, 23539),

Gene: Jovita_32 Start: 23039, Stop: 23692, Start Num: 5
Candidate Starts for Jovita_32:
(1, 22703), (4, 22940), (Start: 5 @23039 has 25 MA's), (Start: 14 @23147 has 1 MA's), (Start: 15 @23156 has 28 MA's), (29, 23225), (38, 23264), (47, 23321), (52, 23351), (53, 23357), (61, 23423),

Gene: Kamdara_29 Start: 23303, Stop: 23962, Start Num: 7
Candidate Starts for Kamdara_29:
(Start: 7 @23303 has 1 MA's), (Start: 12 @23354 has 2 MA's), (Start: 16 @23390 has 11 MA's), (24, 23444), (42, 23555), (48, 23609), (52, 23645), (58, 23699), (66, 23813), (78, 23867), (84, 23900),

Gene: Katzastrophic_29 Start: 23340, Stop: 23900, Start Num: 16
Candidate Starts for Katzastrophic_29:
(Start: 16 @23340 has 11 MA's), (24, 23394), (28, 23433), (35, 23463), (42, 23508), (48, 23562), (52, 23598), (58, 23652), (62, 23688),

Gene: Kenzers_32 Start: 23043, Stop: 23639, Start Num: 15
Candidate Starts for Kenzers_32:
(1, 22590), (4, 22827), (Start: 5 @22926 has 25 MA's), (Start: 14 @23034 has 1 MA's), (Start: 15 @23043 has 28 MA's), (24, 23067), (33, 23139), (53, 23295), (54, 23298), (65, 23451), (83, 23535),

Gene: Kieran_29 Start: 23358, Stop: 23966, Start Num: 12
Candidate Starts for Kieran_29:
(Start: 7 @23307 has 1 MA's), (Start: 12 @23358 has 2 MA's), (Start: 16 @23394 has 11 MA's), (24, 23448), (42, 23559), (48, 23613), (52, 23649), (58, 23703), (66, 23817), (78, 23871), (84, 23904),

Gene: Lahqtemish_31 Start: 22843, Stop: 23547, Start Num: 5
Candidate Starts for Lahqtemish_31:
(2, 22648), (4, 22744), (Start: 5 @22843 has 25 MA's), (Start: 15 @22960 has 28 MA's), (24, 23020), (25, 23041), (34, 23098), (39, 23122), (53, 23251), (54, 23254), (66, 23407),

Gene: LastNadiia_36 Start: 24572, Stop: 24102, Start Num: 19
Candidate Starts for LastNadiia_36:

(6, 24683), (11, 24632), (Start: 19 @24572 has 11 MA's), (21, 24563), (40, 24458), (42, 24434), (45, 24422), (48, 24380), (51, 24350), (55, 24317), (66, 24176), (71, 24155),

Gene: LimaBean_31 Start: 22389, Stop: 23042, Start Num: 5
Candidate Starts for LimaBean_31:
(2, 22194), (4, 22290), (Start: 5 @22389 has 25 MA's), (Start: 14 @22497 has 1 MA's), (Start: 15 @22506 has 28 MA's), (38, 22614), (47, 22671), (52, 22701), (53, 22707), (61, 22773), (71, 22878),

Gene: Loviatar_34 Start: 24940, Stop: 25536, Start Num: 15
Candidate Starts for Loviatar_34:
(Start: 14 @24931 has 1 MA's), (Start: 15 @24940 has 28 MA's), (24, 25015), (25, 25036), (33, 25087), (41, 25120), (53, 25243), (54, 25246),

Gene: Lynlen_32 Start: 23034, Stop: 23639, Start Num: 14
Candidate Starts for Lynlen_32:
(4, 22827), (Start: 5 @22926 has 25 MA's), (Start: 14 @23034 has 1 MA's), (Start: 15 @23043 has 28 MA's), (24, 23067), (33, 23139), (53, 23295), (54, 23298), (65, 23451), (83, 23535),

Gene: Makima_34 Start: 23688, Stop: 23212, Start Num: 19
Candidate Starts for Makima_34:
(Start: 19 @23688 has 11 MA's), (21, 23679), (23, 23673), (40, 23574), (42, 23550), (48, 23496), (51, 23466), (55, 23433), (64, 23307), (70, 23277), (74, 23256),

Gene: Milomuff_32 Start: 22754, Stop: 23407, Start Num: 5
Candidate Starts for Milomuff_32:
(2, 22559), (4, 22655), (Start: 5 @22754 has 25 MA's), (Start: 14 @22862 has 1 MA's), (Start: 15 @22871 has 28 MA's), (38, 22979), (47, 23036), (52, 23066), (53, 23072), (61, 23138), (71, 23243),

Gene: Mireles_37 Start: 23247, Stop: 22771, Start Num: 19
Candidate Starts for Mireles_37:
(Start: 19 @23247 has 11 MA's), (21, 23238), (25, 23205), (40, 23133), (42, 23109), (46, 23088), (51, 23025), (54, 23004), (58, 22965), (81, 22791),

Gene: MsUbiquitous_32 Start: 23092, Stop: 23676, Start Num: 15
Candidate Starts for MsUbiquitous_32:
(1, 22639), (4, 22876), (Start: 5 @22975 has 25 MA's), (Start: 15 @23092 has 28 MA's), (24, 23152), (25, 23173), (30, 23212), (39, 23254), (53, 23383), (54, 23386), (57, 23410), (66, 23539),

Gene: Neuvillette_34 Start: 22215, Stop: 21739, Start Num: 19
Candidate Starts for Neuvillette_34:
(Start: 19 @22215 has 11 MA's), (25, 22173), (40, 22101), (46, 22056), (51, 21993), (54, 21972), (69, 21807), (71, 21798), (72, 21795), (79, 21774),

Gene: PastaFagioli_31 Start: 22828, Stop: 23532, Start Num: 5
Candidate Starts for PastaFagioli_31:
(2, 22633), (3, 22723), (4, 22729), (Start: 5 @22828 has 25 MA's), (Start: 14 @22936 has 1 MA's), (Start: 15 @22945 has 28 MA's), (24, 23005), (25, 23026), (34, 23083), (39, 23107), (53, 23236), (54, 23239),

Gene: PondAmelia_34 Start: 23954, Stop: 24535, Start Num: 15
Candidate Starts for PondAmelia_34:
(Start: 14 @23945 has 1 MA's), (Start: 15 @23954 has 28 MA's), (24, 23978), (25, 23999), (33, 24050), (41, 24083), (53, 24206), (54, 24209),

Gene: Roberts_34 Start: 22215, Stop: 21739, Start Num: 19
Candidate Starts for Roberts_34:
(Start: 19 @22215 has 11 MA's), (25, 22173), (40, 22101), (46, 22056), (51, 21993), (54, 21972), (69, 21807), (71, 21798), (72, 21795), (79, 21774),

Gene: Rollins_28 Start: 20996, Stop: 21562, Start Num: 15
Candidate Starts for Rollins_28:
(Start: 14 @20987 has 1 MA's), (Start: 15 @20996 has 28 MA's), (51, 21263), (54, 21284), (57, 21308), (64, 21422), (70, 21452),

Gene: Rona_29 Start: 23391, Stop: 23948, Start Num: 16
Candidate Starts for Rona_29:
(Start: 7 @23304 has 1 MA's), (Start: 12 @23355 has 2 MA's), (Start: 16 @23391 has 11 MA's), (24, 23445), (26, 23475), (27, 23481), (41, 23535), (57, 23685), (58, 23700), (59, 23703), (60, 23706),

Gene: SanaSana_35 Start: 24590, Stop: 25186, Start Num: 15
Candidate Starts for SanaSana_35:
(Start: 14 @24581 has 1 MA's), (Start: 15 @24590 has 28 MA's), (24, 24665), (25, 24686), (33, 24737), (41, 24770), (53, 24893), (54, 24896),

Gene: SarBear_31 Start: 22749, Stop: 23402, Start Num: 5
Candidate Starts for SarBear_31:
(1, 22413), (4, 22650), (Start: 5 @22749 has 25 MA's), (Start: 14 @22857 has 1 MA's), (Start: 15 @22866 has 28 MA's), (29, 22935), (38, 22974), (47, 23031), (52, 23061), (53, 23067), (61, 23133),

Gene: Sharkboy_30 Start: 23475, Stop: 24047, Start Num: 16
Candidate Starts for Sharkboy_30:
(Start: 12 @23439 has 2 MA's), (Start: 16 @23475 has 11 MA's), (24, 23529), (42, 23640), (48, 23694), (52, 23730), (58, 23784), (66, 23898), (78, 23952),

Gene: Shrew_73 Start: 43134, Stop: 43658, Start Num: 16
Candidate Starts for Shrew_73:
(9, 43047), (Start: 16 @43134 has 11 MA's), (20, 43173), (24, 43191), (25, 43212), (40, 43296), (46, 43341), (50, 43389), (54, 43425), (55, 43437), (66, 43578),

Gene: SirBeanington_32 Start: 23102, Stop: 23689, Start Num: 15
Candidate Starts for SirBeanington_32:
(1, 22649), (4, 22886), (Start: 5 @22985 has 25 MA's), (Start: 15 @23102 has 28 MA's), (24, 23162), (25, 23183), (30, 23222), (39, 23264), (53, 23393), (54, 23396), (57, 23420), (77, 23594),

Gene: Skylord_28 Start: 20927, Stop: 21493, Start Num: 15
Candidate Starts for Skylord_28:
(Start: 14 @20918 has 1 MA's), (Start: 15 @20927 has 28 MA's), (51, 21194), (54, 21215), (57, 21239), (64, 21353), (70, 21383),

Gene: Softsoap_31 Start: 22801, Stop: 23400, Start Num: 16
Candidate Starts for Softsoap_31:
(Start: 5 @22684 has 25 MA's), (Start: 14 @22792 has 1 MA's), (Start: 16 @22801 has 11 MA's), (24, 22855), (52, 23098), (57, 23137), (58, 23152),

Gene: Stoor_33 Start: 24258, Stop: 24854, Start Num: 15
Candidate Starts for Stoor_33:

(Start: 14 @24249 has 1 MA's), (Start: 15 @24258 has 28 MA's), (24, 24333), (25, 24354), (33, 24405), (41, 24438), (53, 24561), (54, 24564), (66, 24717), (68, 24726),

Gene: Stromboli_33 Start: 24124, Stop: 24720, Start Num: 15
Candidate Starts for Stromboli_33:
(8, 24037), (Start: 14 @24115 has 1 MA's), (Start: 15 @24124 has 28 MA's), (24, 24199), (25, 24220), (33, 24271), (41, 24304), (53, 24427), (54, 24430), (66, 24583), (68, 24592),

Gene: Studio_36 Start: 23580, Stop: 23104, Start Num: 19
Candidate Starts for Studio_36:
(Start: 19 @23580 has 11 MA's), (25, 23538), (40, 23466), (46, 23421), (51, 23358), (54, 23337), (64, 23199), (69, 23172), (71, 23163), (72, 23160), (79, 23139),

Gene: Swervy_32 Start: 22916, Stop: 23569, Start Num: 5
Candidate Starts for Swervy_32:
(1, 22580), (4, 22817), (Start: 5 @22916 has 25 MA's), (Start: 14 @23024 has 1 MA's), (Start: 15 @23033 has 28 MA's), (29, 23102), (38, 23141), (47, 23198), (52, 23228), (53, 23234), (61, 23300),

Gene: TMaxx_35 Start: 22869, Stop: 22390, Start Num: 19
Candidate Starts for TMaxx_35:
(Start: 19 @22869 has 11 MA's), (21, 22857), (31, 22788), (40, 22752), (46, 22707), (51, 22644), (54, 22623), (56, 22608), (66, 22470), (69, 22458), (71, 22449), (72, 22446),

Gene: TripleC_35 Start: 25213, Stop: 24734, Start Num: 19
Candidate Starts for TripleC_35:
(Start: 19 @25213 has 11 MA's), (21, 25201), (22, 25198), (46, 25051), (51, 24988), (71, 24793), (72, 24790),

Gene: Triscuit_63 Start: 39489, Stop: 40052, Start Num: 16
Candidate Starts for Triscuit_63:
(Start: 16 @39489 has 11 MA's), (21, 39534), (22, 39537), (36, 39645), (37, 39648), (43, 39684), (44, 39690), (49, 39741), (52, 39771), (53, 39783), (80, 39993), (82, 40005), (85, 40032),

Gene: TukTuk_32 Start: 22975, Stop: 23640, Start Num: 5
Candidate Starts for TukTuk_32:
(1, 22639), (4, 22876), (Start: 5 @22975 has 25 MA's), (Start: 14 @23083 has 1 MA's), (Start: 15 @23092 has 28 MA's), (24, 23116), (53, 23344), (54, 23347), (71, 23500), (82, 23545),

Gene: Vitas_28 Start: 20936, Stop: 21502, Start Num: 15
Candidate Starts for Vitas_28:
(Start: 14 @20927 has 1 MA's), (Start: 15 @20936 has 28 MA's), (51, 21203), (54, 21224), (57, 21248), (64, 21362), (70, 21392),

Gene: WalkingDead_33 Start: 24355, Stop: 24960, Start Num: 14
Candidate Starts for WalkingDead_33:
(Start: 14 @24355 has 1 MA's), (Start: 15 @24364 has 28 MA's), (24, 24439), (25, 24460), (33, 24511), (41, 24544), (53, 24667), (54, 24670), (66, 24823), (68, 24832),