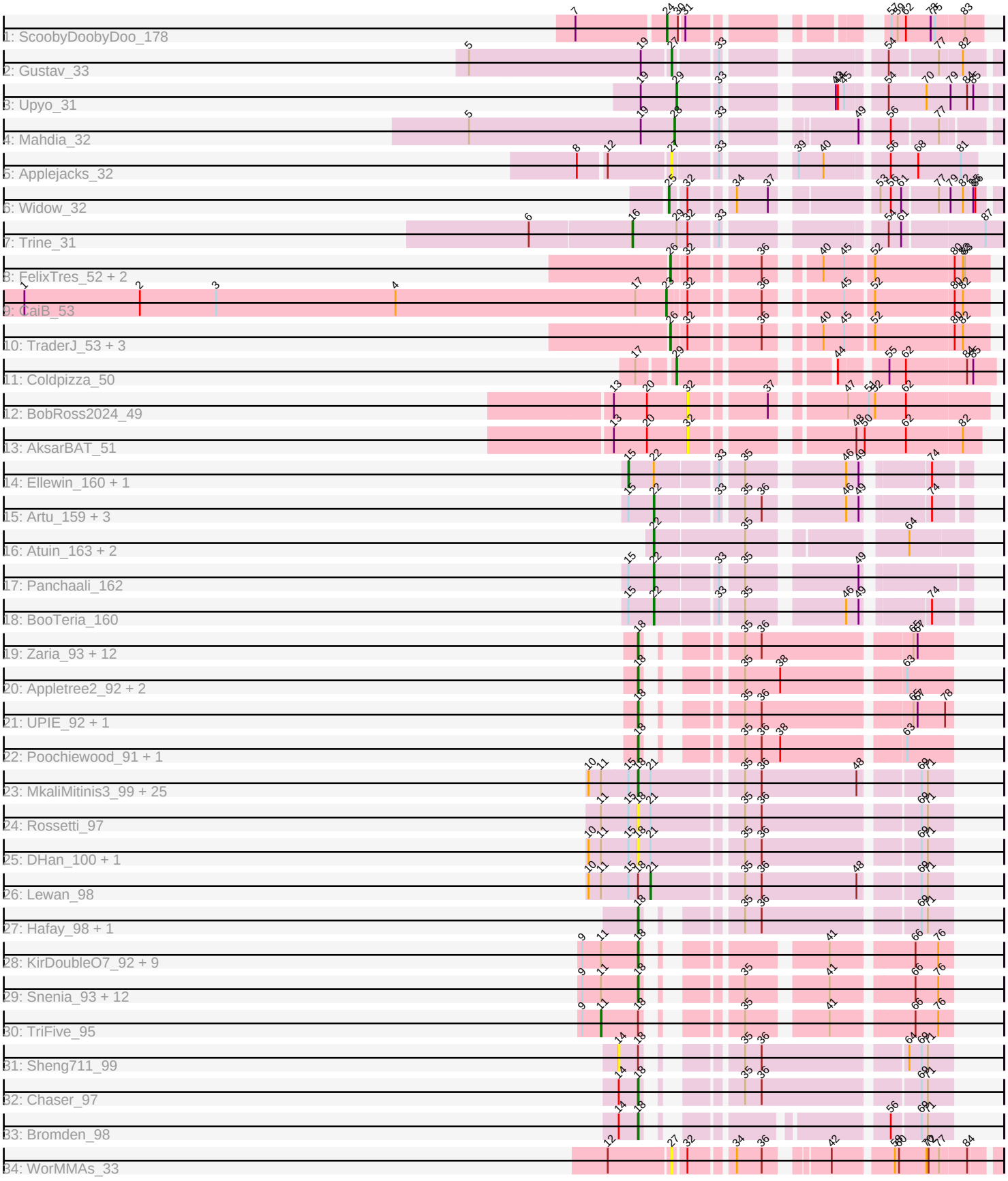
Pham 347438


1: ScoobyDoobyDoo_178
2: Gustav_33
3: Upyo_31
4: Mahdia_32
5: Applejacks_32
6: Widow_32
7: Trine_31
8: FelixTres_52 + 2
9: CaiB_53
10: TraderJ_53 + 3
11: Coldpizza_50
12: BobRoss2024_49
13: AksarBAT_51
14: Ellewin_160 + 1
15: Artu_159 + 3
16: Atuin_163 + 2
17: Panchaali_162
18: BooTeria_160
19: Zaria_93 + 12
20: Appletree2_92 + 2
21: UPIE_92 + 1
22: Poochiewood_91 + 1
23: MkaliMitinis3_99 + 25
24: Rossetti_97
25: DHan_100 + 1
26: Lewan_98
27: Hafay_98 + 1
28: KirDoubleO7_92 + 9
29: Snenia_93 + 12
30: TriFive_95
31: Sheng711_99
32: Chaser_97
33: Bromden_98
34: WorMMAs_33

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 347438 Report

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

Pham number 347438 has 109 members, 27 are drafts.

Phages represented in each track:
• Track 1 : ScoobyDoobyDoo_178
• Track 2 : Gustav_33
• Track 3 : Upyo_31
• Track 4 : Mahdia_32
• Track 5 : Applejacks_32
• Track 6 : Widow_32
• Track 7 : Trine_31
• Track 8 : FelixTres_52, Blackpen_52, CloverMinnie_52
• Track 9 : CaiB_53
• Track 10 : TraderJ_53, MossRose_52, Wooper_53, Yeshua_53
• Track 11 : Coldpizza_50
• Track 12 : BobRoss2024_49
• Track 13 : AksarBAT_51
• Track 14 : Ellewin_160, WaddleDee_156
• Track 15 : Artu_159, KSunshine22_165, Emmetator_163, DunneganBoMo_160
• Track 16 : Atuin_163, LeoJr_172, ReginaGlobina_176
• Track 17 : Panchaali_162
• Track 18 : BooTeria_160
• Track 19 : Zaria_93, AvadaKedavra_93, Wyatt2_94, Tyson_94, Silverleaf_92, LeBron_92, Rose5_94, Acquire49_93, Halena_90, MAckerman_91, Enceladus_90, Wamburgrxpress_92, Calm_94
• Track 20 : Appletree2_92, JoeDirt_94, OhShagHennessy_89
• Track 21 : UPIE_92, CicholasNage_90
• Track 22 : Poochiewood_91, DirkDirk_90
• Track 23 : MkaliMitinis3_99, Breezona_97, OverPar_99, BigCheese_97, LilDestine_95, Faith1_97, Molivier_88, Loadrie_96, DrSeegs_96, Miley16_97, GuuelaD_94, Sarshaun_98, Zakai_98, Wigglewiggle_97, Itos_97, Hiraya_96, Winky_97, Lynnae_98, Vetrix_95, Crossroads_97, Soap141_97, Wilder_98, Netyap_96, Gabriela_97, SoJulia_99, BobsGarage_96
• Track 24 : Rossetti_97
• Track 25 : DHan_100, ZhongYanYuan_94
• Track 26 : Lewan_98
• Track 27 : Hafay_98, Claus_96
• Track 28 : KirDoubleO7_92, BourbonZero_95, Kingsolomon_92, MiniLon_98, Ellson_93, MiniMac_98, DuncansLeg_94, Lolly9_93, Nicholas_92, LiyuLake_93
• Track 29 : Snenia_93, Jubie_93, Moostard_91, Finnry_94, Jobypre_94, Clautastrophe_92, Red305_95, Krypton555_96, MsGreen_94, Bellis_94, Samty_93,

Lumos_94, Whirlwind_95
• Track 30 : TriFive_95
• Track 31 : Sheng711_99
• Track 32 : Chaser_97
• Track 33 : Bromden_98
• Track 34 : WorMMAs_33

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

The start number called the most often in the published annotations is 18, it was called in 60 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Acquire49_93, Appletree2_92, AvadaKedavra_93, Bellis_94, BigCheese_97, BobsGarage_96, BourbonZero_95, Breezona_97, Bromden_98, Calm_94, Chaser_97, CicholasNage_90, Claus_96, Clautastrophe_92, Crossroads_97, DHan_100, DirkDirk_90, DrSeegs_96, DuncansLeg_94, Ellson_93, Enceladus_90, Faith1_97, Finnry_94, Gabriela_97, GuuelaD_94, Hafay_98, Halena_90, Hiraya_96, Itos_97, Jobypre_94, JoeDirt_94, Jubie_93, Kingsolomon_92, KirDoubleO7_92, Krypton555_96, LeBron_92, LilDestine_95, LiyuLake_93, Loadrie_96, Lolly9_93, Lumos_94, Lynnae_98, MAckerman_91, Miley16_97, MiniLon_98, MiniMac_98, MkaliMitinis3_99, Molivier_88, Moostard_91, MsGreen_94, Netyap_96, Nicholas_92, OhShagHennessy_89, OverPar_99, Poochiewood_91, Red305_95, Rose5_94, Rossetti_97, Samty_93, Sarshaun_98, Silverleaf_92, Snenia_93, SoJulia_99, Soap141_97, Tyson_94, UPIE_92, Vetrix_95, Wamburgrxpress_92, Whirlwind_95, Wigglewiggle_97, Wilder_98, Winky_97, Wyatt2_94, Zakai_98, Zaria_93, ZhongYanYuan_94,

Genes that have the "Most Annotated" start but do not call it:
• Lewan_98, Sheng711_99, TriFive_95,

Genes that do not have the "Most Annotated" start:
• AksarBAT_51, Applejacks_32, Artu_159, Atuin_163, Blackpen_52, BobRoss2024_49, BooTeria_160, CaiB_53, CloverMinnie_52, Coldpizza_50, DunneganBoMo_160, Ellewin_160, Emmetator_163, FelixTres_52, Gustav_33, KSunshine22_165, LeoJr_172, Mahdia_32, MossRose_52, Panchaali_162, ReginaGlobina_176, ScoobyDoobyDoo_178, TraderJ_53, Trine_31, Upyo_31, WaddleDee_156, Widow_32, Wooper_53, WorMMAs_33, Yeshua_53,

Summary by start number:

Start 11:
• Found in 54 of 109 (49.5%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 1.9% of time when present
• Phage (with cluster) where this start called: TriFive_95 (L3),

Start 14:
• Found in 3 of 109 (2.8%) of genes in pham
• No Manual Annotations of this start.

• Called 33.3% of time when present
• Phage (with cluster) where this start called: Sheng711_99 (L4),

Start 15:
• Found in 38 of 109 (34.9%) of genes in pham
• Manual Annotations of this start: 2 of 82
• Called 5.3% of time when present
• Phage (with cluster) where this start called: Ellewin_160 (FC), WaddleDee_156 (FC),

Start 16:
• Found in 1 of 109 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Trine_31 (CD),

Start 18:
• Found in 79 of 109 (72.5%) of genes in pham
• Manual Annotations of this start: 60 of 82
• Called 96.2% of time when present
• Phage (with cluster) where this start called: Acquire49_93 (L1), Appletree2_92 (L1), AvadaKedavra_93 (L1), Bellis_94 (L3), BigCheese_97 (L2), BobsGarage_96 (L2), BourbonZero_95 (L3), Breezona_97 (L2), Bromden_98 (L4), Calm_94 (L1), Chaser_97 (L4), CicholasNage_90 (L1), Claus_96 (L2), Clautastrophe_92 (L3), Crossroads_97 (L2), DHan_100 (L2), DirkDirk_90 (L1), DrSeegs_96 (L2), DuncansLeg_94 (L3), Ellson_93 (L3), Enceladus_90 (L1), Faith1_97 (L2), Finnry_94 (L3), Gabriela_97 (L2), GuuelaD_94 (L2), Hafay_98 (L2), Halena_90 (L1), Hiraya_96 (L2), Itos_97 (L2), Jobypre_94 (L3), JoeDirt_94 (L1), Jubie_93 (L3), Kingsolomon_92 (L3), KirDoubleO7_92 (L3), Krypton555_96 (L3), LeBron_92 (L1), LilDestine_95 (L2), LiyuLake_93 (L3), Loadrie_96 (L2), Lolly9_93 (L3), Lumos_94 (L3), Lynnae_98 (L2), MAckerman_91 (L1), Miley16_97 (L2), MiniLon_98 (L3), MiniMac_98 (L3), MkaliMitinis3_99 (L2), Molivier_88 (L2), Moostard_91 (L3), MsGreen_94 (L3), Netyap_96 (L2), Nicholas_92 (L3), OhShagHennessy_89 (L1), OverPar_99 (L2), Poochiewood_91 (L1), Red305_95 (L3), Rose5_94 (L1), Rossetti_97 (L2), Samty_93 (L3), Sarshaun_98 (L2), Silverleaf_92 (L1), Snenia_93 (L3), SoJulia_99 (L2), Soap141_97 (L2), Tyson_94 (L1), UPIE_92 (L1), Vetrix_95 (L2), Wamburgrxpress_92 (L1), Whirlwind_95 (L3), Wigglewiggle_97 (L2), Wilder_98 (L2), Winky_97 (L2), Wyatt2_94 (L1), Zakai_98 (L2), Zaria_93 (L1), ZhongYanYuan_94 (L2),

Start 21:
• Found in 30 of 109 (27.5%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 3.3% of time when present
• Phage (with cluster) where this start called: Lewan_98 (L2),

Start 22:
• Found in 11 of 109 (10.1%) of genes in pham
• Manual Annotations of this start: 5 of 82
• Called 81.8% of time when present
• Phage (with cluster) where this start called: Artu_159 (FC), Atuin_163 (FC), BooTeria_160 (FC), DunneganBoMo_160 (FC), Emmetator_163 (FC), KSunshine22_165 (FC), LeoJr_172 (FC), Panchaali_162 (FC), ReginaGlobina_176 (FC),

Start 23:
• Found in 1 of 109 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CaiB_53 (DR),

Start 24:
• Found in 1 of 109 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ScoobyDoobyDoo_178 (C2),

Start 25:
• Found in 1 of 109 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Widow_32 (CD),

Start 26:
• Found in 7 of 109 (6.4%) of genes in pham
• Manual Annotations of this start: 5 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Blackpen_52 (DR), CloverMinnie_52 (DR), FelixTres_52 (DR), MossRose_52 (DR), TraderJ_53 (DR), Wooper_53 (DR), Yeshua_53 (DR),

Start 27:
• Found in 3 of 109 (2.8%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Applejacks_32 (CD), Gustav_33 (CD), WorMMAs_33 (UNK),

Start 28:
• Found in 1 of 109 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Mahdia_32 (CD),

Start 29:
• Found in 3 of 109 (2.8%) of genes in pham
• Manual Annotations of this start: 2 of 82
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Coldpizza_50 (DR), Upyo_31 (CD),

Start 32:
• Found in 13 of 109 (11.9%) of genes in pham
• No Manual Annotations of this start.
• Called 15.4% of time when present
• Phage (with cluster) where this start called: AksarBAT_51 (DR), BobRoss2024_49 (DR),

Summary by clusters:

There are 9 clusters represented in this pham: CD, L4, FC, L2, L3, L1, C2, UNK, DR,

Info for manual annotations of cluster C2:
•Start number 24 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster CD:
•Start number 16 was manually annotated 1 time for cluster CD.
•Start number 25 was manually annotated 1 time for cluster CD.
•Start number 27 was manually annotated 1 time for cluster CD.
•Start number 28 was manually annotated 1 time for cluster CD.
•Start number 29 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster DR:
•Start number 23 was manually annotated 1 time for cluster DR.
•Start number 26 was manually annotated 5 times for cluster DR.
•Start number 29 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster FC:
•Start number 15 was manually annotated 2 times for cluster FC.
•Start number 22 was manually annotated 5 times for cluster FC.

Info for manual annotations of cluster L1:
•Start number 18 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L2:
•Start number 18 was manually annotated 21 times for cluster L2.
•Start number 21 was manually annotated 1 time for cluster L2.

Info for manual annotations of cluster L3:
•Start number 11 was manually annotated 1 time for cluster L3.
•Start number 18 was manually annotated 18 times for cluster L3.

Info for manual annotations of cluster L4:
•Start number 18 was manually annotated 2 times for cluster L4.

Gene Information:

Gene: Acquire49_93 Start: 58116, Stop: 58478, Start Num: 18
Candidate Starts for Acquire49_93:
(Start: 18 @58116 has 60 MA's), (35, 58200), (36, 58224), (65, 58422), (67, 58428),

Gene: AksarBAT_51 Start: 44810, Stop: 44442, Start Num: 32
Candidate Starts for AksarBAT_51:
(13, 44915), (20, 44867), (32, 44810), (48, 44615), (50, 44606), (62, 44546), (82, 44468),

Gene: Applejacks_32 Start: 24819, Stop: 24442, Start Num: 27
Candidate Starts for Applejacks_32:

(8, 24942), (12, 24906), (Start: 27 @24819 has 1 MA's), (33, 24762), (39, 24681), (40, 24645), (56, 24564), (68, 24525), (81, 24465),

Gene: Appletree2_92 Start: 57876, Stop: 58238, Start Num: 18
Candidate Starts for Appletree2_92:
(Start: 18 @57876 has 60 MA's), (35, 57960), (38, 58011), (63, 58173),

Gene: Artu_159 Start: 110968, Stop: 111345, Start Num: 22
Candidate Starts for Artu_159:
(Start: 15 @110932 has 2 MA's), (Start: 22 @110968 has 5 MA's), (33, 111052), (35, 111079), (36, 111103), (46, 111202), (49, 111220), (74, 111295),

Gene: Atuin_163 Start: 113494, Stop: 113901, Start Num: 22
Candidate Starts for Atuin_163:
(Start: 22 @113494 has 5 MA's), (35, 113623), (64, 113812),

Gene: AvadaKedavra_93 Start: 58228, Stop: 58590, Start Num: 18
Candidate Starts for AvadaKedavra_93:
(Start: 18 @58228 has 60 MA's), (35, 58312), (36, 58336), (65, 58534), (67, 58540),

Gene: Bellis_94 Start: 59981, Stop: 60322, Start Num: 18
Candidate Starts for Bellis_94:
(9, 59900), (Start: 11 @59927 has 1 MA's), (Start: 18 @59981 has 60 MA's), (35, 60065), (41, 60164), (66, 60269), (76, 60302),

Gene: BigCheese_97 Start: 60561, Stop: 60977, Start Num: 18
Candidate Starts for BigCheese_97:
(10, 60492), (Start: 11 @60510 has 1 MA's), (Start: 15 @60549 has 2 MA's), (Start: 18 @60561 has 60 MA's), (Start: 21 @60579 has 1 MA's), (35, 60699), (36, 60723), (48, 60861), (69, 60933), (71, 60942),

Gene: Blackpen_52 Start: 45239, Stop: 44847, Start Num: 26
Candidate Starts for Blackpen_52:
(Start: 26 @45239 has 5 MA's), (32, 45221), (36, 45131), (40, 45074), (45, 45044), (52, 45008), (80, 44897), (82, 44885), (83, 44882),

Gene: BobRoss2024_49 Start: 43873, Stop: 43490, Start Num: 32
Candidate Starts for BobRoss2024_49:
(13, 43978), (20, 43930), (32, 43873), (37, 43774), (47, 43690), (51, 43660), (52, 43651), (62, 43606),

Gene: BobsGarage_96 Start: 60561, Stop: 60977, Start Num: 18
Candidate Starts for BobsGarage_96:
(10, 60492), (Start: 11 @60510 has 1 MA's), (Start: 15 @60549 has 2 MA's), (Start: 18 @60561 has 60 MA's), (Start: 21 @60579 has 1 MA's), (35, 60699), (36, 60723), (48, 60861), (69, 60933), (71, 60942),

Gene: BooTeria_160 Start: 111135, Stop: 111512, Start Num: 22
Candidate Starts for BooTeria_160:
(Start: 15 @111099 has 2 MA's), (Start: 22 @111135 has 5 MA's), (33, 111219), (35, 111246), (46, 111369), (49, 111387), (74, 111462),

Gene: BourbonZero_95 Start: 60007, Stop: 60348, Start Num: 18
Candidate Starts for BourbonZero_95:
(9, 59926), (Start: 11 @59953 has 1 MA's), (Start: 18 @60007 has 60 MA's), (41, 60190), (66, 60295), (76, 60328),

Gene: Breezona_97 Start: 60567, Stop: 60983, Start Num: 18
Candidate Starts for Breezona_97:
(10, 60498), (Start: 11 @60516 has 1 MA's), (Start: 15 @60555 has 2 MA's), (Start: 18 @60567 has 60 MA's), (Start: 21 @60585 has 1 MA's), (35, 60705), (36, 60729), (48, 60867), (69, 60939), (71, 60948),

Gene: Bromden_98 Start: 61150, Stop: 61488, Start Num: 18
Candidate Starts for Bromden_98:
(14, 61123), (Start: 18 @61150 has 60 MA's), (56, 61405), (69, 61444), (71, 61453),

Gene: CaiB_53 Start: 46692, Stop: 46294, Start Num: 23
Candidate Starts for CaiB_53:
(1, 47625), (2, 47457), (3, 47346), (4, 47085), (17, 46737), (Start: 23 @46692 has 1 MA's), (32, 46668), (36, 46578), (45, 46491), (52, 46455), (80, 46344), (82, 46332),

Gene: Calm_94 Start: 58127, Stop: 58489, Start Num: 18
Candidate Starts for Calm_94:
(Start: 18 @58127 has 60 MA's), (35, 58211), (36, 58235), (65, 58433), (67, 58439),

Gene: Chaser_97 Start: 59573, Stop: 59935, Start Num: 18
Candidate Starts for Chaser_97:
(14, 59546), (Start: 18 @59573 has 60 MA's), (35, 59657), (36, 59681), (69, 59891), (71, 59900),

Gene: CicholasNage_90 Start: 57780, Stop: 58142, Start Num: 18
Candidate Starts for CicholasNage_90:
(Start: 18 @57780 has 60 MA's), (35, 57864), (36, 57888), (65, 58086), (67, 58092), (78, 58131),

Gene: Claus_96 Start: 60276, Stop: 60638, Start Num: 18
Candidate Starts for Claus_96:
(Start: 18 @60276 has 60 MA's), (35, 60360), (36, 60384), (69, 60594), (71, 60603),

Gene: Clautastrophe_92 Start: 59976, Stop: 60317, Start Num: 18
Candidate Starts for Clautastrophe_92:
(9, 59895), (Start: 11 @59922 has 1 MA's), (Start: 18 @59976 has 60 MA's), (35, 60060), (41, 60159), (66, 60264), (76, 60297),

Gene: CloverMinnie_52 Start: 45747, Stop: 45355, Start Num: 26
Candidate Starts for CloverMinnie_52:
(Start: 26 @45747 has 5 MA's), (32, 45729), (36, 45639), (40, 45582), (45, 45552), (52, 45516), (80, 45405), (82, 45393), (83, 45390),

Gene: Coldpizza_50 Start: 46742, Stop: 46362, Start Num: 29
Candidate Starts for Coldpizza_50:
(17, 46784), (Start: 29 @46742 has 2 MA's), (44, 46568), (55, 46511), (62, 46487), (84, 46403), (85, 46394),

Gene: Crossroads_97 Start: 60279, Stop: 60695, Start Num: 18
Candidate Starts for Crossroads_97:
(10, 60210), (Start: 11 @60228 has 1 MA's), (Start: 15 @60267 has 2 MA's), (Start: 18 @60279 has 60 MA's), (Start: 21 @60297 has 1 MA's), (35, 60417), (36, 60441), (48, 60579), (69, 60651), (71, 60660),

Gene: DHan_100 Start: 60498, Stop: 60914, Start Num: 18
Candidate Starts for DHan_100:

(10, 60429), (Start: 11 @60447 has 1 MA's), (Start: 15 @60486 has 2 MA's), (Start: 18 @60498 has 60 MA's), (Start: 21 @60516 has 1 MA's), (35, 60636), (36, 60660), (69, 60870), (71, 60879),

Gene: DirkDirk_90 Start: 57456, Stop: 57818, Start Num: 18
Candidate Starts for DirkDirk_90:
(Start: 18 @57456 has 60 MA's), (35, 57540), (36, 57564), (38, 57591), (63, 57753),

Gene: DrSeegs_96 Start: 60567, Stop: 60983, Start Num: 18
Candidate Starts for DrSeegs_96:
(10, 60498), (Start: 11 @60516 has 1 MA's), (Start: 15 @60555 has 2 MA's), (Start: 18 @60567 has 60 MA's), (Start: 21 @60585 has 1 MA's), (35, 60705), (36, 60729), (48, 60867), (69, 60939), (71, 60948),

Gene: DuncansLeg_94 Start: 59995, Stop: 60336, Start Num: 18
Candidate Starts for DuncansLeg_94:
(9, 59914), (Start: 11 @59941 has 1 MA's), (Start: 18 @59995 has 60 MA's), (41, 60178), (66, 60283), (76, 60316),

Gene: DunneganBoMo_160 Start: 110317, Stop: 110694, Start Num: 22
Candidate Starts for DunneganBoMo_160:
(Start: 15 @110281 has 2 MA's), (Start: 22 @110317 has 5 MA's), (33, 110401), (35, 110428), (36, 110452), (46, 110551), (49, 110569), (74, 110644),

Gene: Ellewin_160 Start: 110388, Stop: 110801, Start Num: 15
Candidate Starts for Ellewin_160:
(Start: 15 @110388 has 2 MA's), (Start: 22 @110424 has 5 MA's), (33, 110508), (35, 110535), (46, 110658), (49, 110676), (74, 110751),

Gene: Ellson_93 Start: 60310, Stop: 60651, Start Num: 18
Candidate Starts for Ellson_93:
(9, 60229), (Start: 11 @60256 has 1 MA's), (Start: 18 @60310 has 60 MA's), (41, 60493), (66, 60598), (76, 60631),

Gene: Emmetator_163 Start: 110633, Stop: 111010, Start Num: 22
Candidate Starts for Emmetator_163:
(Start: 15 @110597 has 2 MA's), (Start: 22 @110633 has 5 MA's), (33, 110717), (35, 110744), (36, 110768), (46, 110867), (49, 110885), (74, 110960),

Gene: Enceladus_90 Start: 58157, Stop: 58519, Start Num: 18
Candidate Starts for Enceladus_90:
(Start: 18 @58157 has 60 MA's), (35, 58241), (36, 58265), (65, 58463), (67, 58469),

Gene: Faith1_97 Start: 60204, Stop: 60620, Start Num: 18
Candidate Starts for Faith1_97:
(10, 60135), (Start: 11 @60153 has 1 MA's), (Start: 15 @60192 has 2 MA's), (Start: 18 @60204 has 60 MA's), (Start: 21 @60222 has 1 MA's), (35, 60342), (36, 60366), (48, 60504), (69, 60576), (71, 60585),

Gene: FelixTres_52 Start: 45785, Stop: 45393, Start Num: 26
Candidate Starts for FelixTres_52:
(Start: 26 @45785 has 5 MA's), (32, 45767), (36, 45677), (40, 45620), (45, 45590), (52, 45554), (80, 45443), (82, 45431), (83, 45428),

Gene: Finnry_94 Start: 60329, Stop: 60670, Start Num: 18
Candidate Starts for Finnry_94:

(9, 60248), (Start: 11 @60275 has 1 MA's), (Start: 18 @60329 has 60 MA's), (35, 60413), (41, 60512), (66, 60617), (76, 60650),

Gene: Gabriela_97 Start: 59550, Stop: 59966, Start Num: 18
Candidate Starts for Gabriela_97:
(10, 59481), (Start: 11 @59499 has 1 MA's), (Start: 15 @59538 has 2 MA's), (Start: 18 @59550 has 60 MA's), (Start: 21 @59568 has 1 MA's), (35, 59688), (36, 59712), (48, 59850), (69, 59922), (71, 59931),

Gene: Gustav_33 Start: 25688, Stop: 25296, Start Num: 27
Candidate Starts for Gustav_33:
(5, 25976), (19, 25727), (Start: 27 @25688 has 1 MA's), (33, 25634), (54, 25439), (77, 25373), (82, 25343),

Gene: GuuelaD_94 Start: 60163, Stop: 60579, Start Num: 18
Candidate Starts for GuuelaD_94:
(10, 60094), (Start: 11 @60112 has 1 MA's), (Start: 15 @60151 has 2 MA's), (Start: 18 @60163 has 60 MA's), (Start: 21 @60181 has 1 MA's), (35, 60301), (36, 60325), (48, 60463), (69, 60535), (71, 60544),

Gene: Hafay_98 Start: 60271, Stop: 60633, Start Num: 18
Candidate Starts for Hafay_98:
(Start: 18 @60271 has 60 MA's), (35, 60355), (36, 60379), (69, 60589), (71, 60598),

Gene: Halena_90 Start: 57043, Stop: 57405, Start Num: 18
Candidate Starts for Halena_90:
(Start: 18 @57043 has 60 MA's), (35, 57127), (36, 57151), (65, 57349), (67, 57355),

Gene: Hiraya_96 Start: 60129, Stop: 60545, Start Num: 18
Candidate Starts for Hiraya_96:
(10, 60060), (Start: 11 @60078 has 1 MA's), (Start: 15 @60117 has 2 MA's), (Start: 18 @60129 has 60 MA's), (Start: 21 @60147 has 1 MA's), (35, 60267), (36, 60291), (48, 60429), (69, 60501), (71, 60510),

Gene: Itos_97 Start: 59110, Stop: 59526, Start Num: 18
Candidate Starts for Itos_97:
(10, 59041), (Start: 11 @59059 has 1 MA's), (Start: 15 @59098 has 2 MA's), (Start: 18 @59110 has 60 MA's), (Start: 21 @59128 has 1 MA's), (35, 59248), (36, 59272), (48, 59410), (69, 59482), (71, 59491),

Gene: Jobypre_94 Start: 59976, Stop: 60317, Start Num: 18
Candidate Starts for Jobypre_94:
(9, 59895), (Start: 11 @59922 has 1 MA's), (Start: 18 @59976 has 60 MA's), (35, 60060), (41, 60159), (66, 60264), (76, 60297),

Gene: JoeDirt_94 Start: 58718, Stop: 59080, Start Num: 18
Candidate Starts for JoeDirt_94:
(Start: 18 @58718 has 60 MA's), (35, 58802), (38, 58853), (63, 59015),

Gene: Jubie_93 Start: 60111, Stop: 60452, Start Num: 18
Candidate Starts for Jubie_93:
(9, 60030), (Start: 11 @60057 has 1 MA's), (Start: 18 @60111 has 60 MA's), (35, 60195), (41, 60294), (66, 60399), (76, 60432),

Gene: KSunshine22_165 Start: 111380, Stop: 111757, Start Num: 22
Candidate Starts for KSunshine22_165:

(Start: 15 @111344 has 2 MA's), (Start: 22 @111380 has 5 MA's), (33, 111464), (35, 111491), (36, 111515), (46, 111614), (49, 111632), (74, 111707),

Gene: Kingsolomon_92 Start: 60085, Stop: 60426, Start Num: 18
Candidate Starts for Kingsolomon_92:
(9, 60004), (Start: 11 @60031 has 1 MA's), (Start: 18 @60085 has 60 MA's), (41, 60268), (66, 60373), (76, 60406),

Gene: KirDoubleO7_92 Start: 59997, Stop: 60338, Start Num: 18
Candidate Starts for KirDoubleO7_92:
(9, 59916), (Start: 11 @59943 has 1 MA's), (Start: 18 @59997 has 60 MA's), (41, 60180), (66, 60285), (76, 60318),

Gene: Krypton555_96 Start: 60488, Stop: 60829, Start Num: 18
Candidate Starts for Krypton555_96:
(9, 60407), (Start: 11 @60434 has 1 MA's), (Start: 18 @60488 has 60 MA's), (35, 60572), (41, 60671), (66, 60776), (76, 60809),

Gene: LeBron_92 Start: 57350, Stop: 57712, Start Num: 18
Candidate Starts for LeBron_92:
(Start: 18 @57350 has 60 MA's), (35, 57434), (36, 57458), (65, 57656), (67, 57662),

Gene: LeoJr_172 Start: 114114, Stop: 114521, Start Num: 22
Candidate Starts for LeoJr_172:
(Start: 22 @114114 has 5 MA's), (35, 114243), (64, 114432),

Gene: Lewan_98 Start: 60221, Stop: 60619, Start Num: 21
Candidate Starts for Lewan_98:
(10, 60134), (Start: 11 @60152 has 1 MA's), (Start: 15 @60191 has 2 MA's), (Start: 18 @60203 has 60 MA's), (Start: 21 @60221 has 1 MA's), (35, 60341), (36, 60365), (48, 60503), (69, 60575), (71, 60584),

Gene: LilDestine_95 Start: 59874, Stop: 60290, Start Num: 18
Candidate Starts for LilDestine_95:
(10, 59805), (Start: 11 @59823 has 1 MA's), (Start: 15 @59862 has 2 MA's), (Start: 18 @59874 has 60 MA's), (Start: 21 @59892 has 1 MA's), (35, 60012), (36, 60036), (48, 60174), (69, 60246), (71, 60255),

Gene: LiyuLake_93 Start: 60070, Stop: 60411, Start Num: 18
Candidate Starts for LiyuLake_93:
(9, 59989), (Start: 11 @60016 has 1 MA's), (Start: 18 @60070 has 60 MA's), (41, 60253), (66, 60358), (76, 60391),

Gene: Loadrie_96 Start: 60365, Stop: 60781, Start Num: 18
Candidate Starts for Loadrie_96:
(10, 60296), (Start: 11 @60314 has 1 MA's), (Start: 15 @60353 has 2 MA's), (Start: 18 @60365 has 60 MA's), (Start: 21 @60383 has 1 MA's), (35, 60503), (36, 60527), (48, 60665), (69, 60737), (71, 60746),

Gene: Lolly9_93 Start: 60161, Stop: 60502, Start Num: 18
Candidate Starts for Lolly9_93:
(9, 60080), (Start: 11 @60107 has 1 MA's), (Start: 18 @60161 has 60 MA's), (41, 60344), (66, 60449), (76, 60482),

Gene: Lumos_94 Start: 59973, Stop: 60314, Start Num: 18
Candidate Starts for Lumos_94:

(9, 59892), (Start: 11 @59919 has 1 MA's), (Start: 18 @59973 has 60 MA's), (35, 60057), (41, 60156), (66, 60261), (76, 60294),

Gene: Lynnae_98 Start: 59975, Stop: 60391, Start Num: 18
Candidate Starts for Lynnae_98:
(10, 59906), (Start: 11 @59924 has 1 MA's), (Start: 15 @59963 has 2 MA's), (Start: 18 @59975 has 60 MA's), (Start: 21 @59993 has 1 MA's), (35, 60113), (36, 60137), (48, 60275), (69, 60347), (71, 60356),

Gene: MAckerman_91 Start: 57036, Stop: 57398, Start Num: 18
Candidate Starts for MAckerman_91:
(Start: 18 @57036 has 60 MA's), (35, 57120), (36, 57144), (65, 57342), (67, 57348),

Gene: Mahdia_32 Start: 24869, Stop: 24492, Start Num: 28
Candidate Starts for Mahdia_32:
(5, 25166), (19, 24917), (Start: 28 @24869 has 1 MA's), (33, 24812), (49, 24656), (56, 24623), (77, 24560),

Gene: Miley16_97 Start: 60567, Stop: 60983, Start Num: 18
Candidate Starts for Miley16_97:
(10, 60498), (Start: 11 @60516 has 1 MA's), (Start: 15 @60555 has 2 MA's), (Start: 18 @60567 has 60 MA's), (Start: 21 @60585 has 1 MA's), (35, 60705), (36, 60729), (48, 60867), (69, 60939), (71, 60948),

Gene: MiniLon_98 Start: 60162, Stop: 60503, Start Num: 18
Candidate Starts for MiniLon_98:
(9, 60081), (Start: 11 @60108 has 1 MA's), (Start: 18 @60162 has 60 MA's), (41, 60345), (66, 60450), (76, 60483),

Gene: MiniMac_98 Start: 60157, Stop: 60498, Start Num: 18
Candidate Starts for MiniMac_98:
(9, 60076), (Start: 11 @60103 has 1 MA's), (Start: 18 @60157 has 60 MA's), (41, 60340), (66, 60445), (76, 60478),

Gene: MkaliMitinis3_99 Start: 60329, Stop: 60745, Start Num: 18
Candidate Starts for MkaliMitinis3_99:
(10, 60260), (Start: 11 @60278 has 1 MA's), (Start: 15 @60317 has 2 MA's), (Start: 18 @60329 has 60 MA's), (Start: 21 @60347 has 1 MA's), (35, 60467), (36, 60491), (48, 60629), (69, 60701), (71, 60710),

Gene: Molivier_88 Start: 55126, Stop: 55542, Start Num: 18
Candidate Starts for Molivier_88:
(10, 55057), (Start: 11 @55075 has 1 MA's), (Start: 15 @55114 has 2 MA's), (Start: 18 @55126 has 60 MA's), (Start: 21 @55144 has 1 MA's), (35, 55264), (36, 55288), (48, 55426), (69, 55498), (71, 55507),

Gene: Moostard_91 Start: 60080, Stop: 60421, Start Num: 18
Candidate Starts for Moostard_91:
(9, 59999), (Start: 11 @60026 has 1 MA's), (Start: 18 @60080 has 60 MA's), (35, 60164), (41, 60263), (66, 60368), (76, 60401),

Gene: MossRose_52 Start: 45804, Stop: 45412, Start Num: 26
Candidate Starts for MossRose_52:
(Start: 26 @45804 has 5 MA's), (32, 45786), (36, 45696), (40, 45639), (45, 45609), (52, 45573), (80, 45462), (82, 45450),

Gene: MsGreen_94 Start: 59975, Stop: 60316, Start Num: 18

Candidate Starts for MsGreen_94:
(9, 59894), (Start: 11 @59921 has 1 MA's), (Start: 18 @59975 has 60 MA's), (35, 60059), (41, 60158), (66, 60263), (76, 60296),

Gene: Netyap_96 Start: 60205, Stop: 60621, Start Num: 18
Candidate Starts for Netyap_96:
(10, 60136), (Start: 11 @60154 has 1 MA's), (Start: 15 @60193 has 2 MA's), (Start: 18 @60205 has 60 MA's), (Start: 21 @60223 has 1 MA's), (35, 60343), (36, 60367), (48, 60505), (69, 60577), (71, 60586),

Gene: Nicholas_92 Start: 60085, Stop: 60426, Start Num: 18
Candidate Starts for Nicholas_92:
(9, 60004), (Start: 11 @60031 has 1 MA's), (Start: 18 @60085 has 60 MA's), (41, 60268), (66, 60373), (76, 60406),

Gene: OhShagHennessy_89 Start: 57293, Stop: 57655, Start Num: 18
Candidate Starts for OhShagHennessy_89:
(Start: 18 @57293 has 60 MA's), (35, 57377), (38, 57428), (63, 57590),

Gene: OverPar_99 Start: 60365, Stop: 60781, Start Num: 18
Candidate Starts for OverPar_99:
(10, 60296), (Start: 11 @60314 has 1 MA's), (Start: 15 @60353 has 2 MA's), (Start: 18 @60365 has 60 MA's), (Start: 21 @60383 has 1 MA's), (35, 60503), (36, 60527), (48, 60665), (69, 60737), (71, 60746),

Gene: Panchaali_162 Start: 111232, Stop: 111618, Start Num: 22
Candidate Starts for Panchaali_162:
(Start: 15 @111196 has 2 MA's), (Start: 22 @111232 has 5 MA's), (33, 111316), (35, 111343), (49, 111484),

Gene: Poochiewood_91 Start: 58690, Stop: 59052, Start Num: 18
Candidate Starts for Poochiewood_91:
(Start: 18 @58690 has 60 MA's), (35, 58774), (36, 58798), (38, 58825), (63, 58987),

Gene: Red305_95 Start: 59976, Stop: 60317, Start Num: 18
Candidate Starts for Red305_95:
(9, 59895), (Start: 11 @59922 has 1 MA's), (Start: 18 @59976 has 60 MA's), (35, 60060), (41, 60159), (66, 60264), (76, 60297),

Gene: ReginaGlobina_176 Start: 115387, Stop: 115794, Start Num: 22
Candidate Starts for ReginaGlobina_176:
(Start: 22 @115387 has 5 MA's), (35, 115516), (64, 115705),

Gene: Rose5_94 Start: 58560, Stop: 58922, Start Num: 18
Candidate Starts for Rose5_94:
(Start: 18 @58560 has 60 MA's), (35, 58644), (36, 58668), (65, 58866), (67, 58872),

Gene: Rossetti_97 Start: 60365, Stop: 60781, Start Num: 18
Candidate Starts for Rossetti_97:
(Start: 11 @60314 has 1 MA's), (Start: 15 @60353 has 2 MA's), (Start: 18 @60365 has 60 MA's), (Start: 21 @60383 has 1 MA's), (35, 60503), (36, 60527), (69, 60737), (71, 60746),

Gene: Samty_93 Start: 60073, Stop: 60414, Start Num: 18
Candidate Starts for Samty_93:

(9, 59992), (Start: 11 @60019 has 1 MA's), (Start: 18 @60073 has 60 MA's), (35, 60157), (41, 60256), (66, 60361), (76, 60394),

Gene: Sarshaun_98 Start: 60956, Stop: 61372, Start Num: 18
Candidate Starts for Sarshaun_98:
(10, 60887), (Start: 11 @60905 has 1 MA's), (Start: 15 @60944 has 2 MA's), (Start: 18 @60956 has 60 MA's), (Start: 21 @60974 has 1 MA's), (35, 61094), (36, 61118), (48, 61256), (69, 61328), (71, 61337),

Gene: ScoobyDoobyDoo_178 Start: 98579, Stop: 98932, Start Num: 24
Candidate Starts for ScoobyDoobyDoo_178:
(7, 98456), (Start: 24 @98579 has 1 MA's), (30, 98594), (31, 98600), (57, 98804), (59, 98813), (62, 98825), (73, 98861), (75, 98867), (83, 98906),

Gene: Sheng711_99 Start: 59973, Stop: 60362, Start Num: 14
Candidate Starts for Sheng711_99:
(14, 59973), (Start: 18 @60000 has 60 MA's), (35, 60084), (36, 60108), (64, 60300), (69, 60318), (71, 60327),

Gene: Silverleaf_92 Start: 58056, Stop: 58418, Start Num: 18
Candidate Starts for Silverleaf_92:
(Start: 18 @58056 has 60 MA's), (35, 58140), (36, 58164), (65, 58362), (67, 58368),

Gene: Snenia_93 Start: 59977, Stop: 60318, Start Num: 18
Candidate Starts for Snenia_93:
(9, 59896), (Start: 11 @59923 has 1 MA's), (Start: 18 @59977 has 60 MA's), (35, 60061), (41, 60160), (66, 60265), (76, 60298),

Gene: SoJulia_99 Start: 61721, Stop: 62137, Start Num: 18
Candidate Starts for SoJulia_99:
(10, 61652), (Start: 11 @61670 has 1 MA's), (Start: 15 @61709 has 2 MA's), (Start: 18 @61721 has 60 MA's), (Start: 21 @61739 has 1 MA's), (35, 61859), (36, 61883), (48, 62021), (69, 62093), (71, 62102),

Gene: Soap141_97 Start: 60956, Stop: 61372, Start Num: 18
Candidate Starts for Soap141_97:
(10, 60887), (Start: 11 @60905 has 1 MA's), (Start: 15 @60944 has 2 MA's), (Start: 18 @60956 has 60 MA's), (Start: 21 @60974 has 1 MA's), (35, 61094), (36, 61118), (48, 61256), (69, 61328), (71, 61337),

Gene: TraderJ_53 Start: 46127, Stop: 45735, Start Num: 26
Candidate Starts for TraderJ_53:
(Start: 26 @46127 has 5 MA's), (32, 46109), (36, 46019), (40, 45962), (45, 45932), (52, 45896), (80, 45785), (82, 45773),

Gene: TriFive_95 Start: 60035, Stop: 60430, Start Num: 11
Candidate Starts for TriFive_95:
(9, 60008), (Start: 11 @60035 has 1 MA's), (Start: 18 @60089 has 60 MA's), (35, 60173), (41, 60272), (66, 60377), (76, 60410),

Gene: Trine_31 Start: 25044, Stop: 24577, Start Num: 16
Candidate Starts for Trine_31:
(6, 25191), (Start: 16 @25044 has 1 MA's), (Start: 29 @24981 has 2 MA's), (32, 24966), (33, 24927), (54, 24732), (61, 24714), (87, 24603),

Gene: Tyson_94 Start: 58453, Stop: 58815, Start Num: 18

Candidate Starts for Tyson_94:
(Start: 18 @58453 has 60 MA's), (35, 58537), (36, 58561), (65, 58759), (67, 58765),

Gene: UPIE_92 Start: 58049, Stop: 58411, Start Num: 18
Candidate Starts for UPIE_92:
(Start: 18 @58049 has 60 MA's), (35, 58133), (36, 58157), (65, 58355), (67, 58361), (78, 58400),

Gene: Upyo_31 Start: 25589, Stop: 25188, Start Num: 29
Candidate Starts for Upyo_31:
(19, 25640), (Start: 29 @25589 has 2 MA's), (33, 25535), (43, 25400), (44, 25397), (45, 25388), (54, 25340), (70, 25286), (79, 25256), (84, 25232), (85, 25223),

Gene: Vetrix_95 Start: 59819, Stop: 60235, Start Num: 18
Candidate Starts for Vetrix_95:
(10, 59750), (Start: 11 @59768 has 1 MA's), (Start: 15 @59807 has 2 MA's), (Start: 18 @59819 has 60 MA's), (Start: 21 @59837 has 1 MA's), (35, 59957), (36, 59981), (48, 60119), (69, 60191), (71, 60200),

Gene: WaddleDee_156 Start: 109554, Stop: 109967, Start Num: 15
Candidate Starts for WaddleDee_156:
(Start: 15 @109554 has 2 MA's), (Start: 22 @109590 has 5 MA's), (33, 109674), (35, 109701), (46, 109824), (49, 109842), (74, 109917),

Gene: Wamburgrxpress_92 Start: 58177, Stop: 58539, Start Num: 18
Candidate Starts for Wamburgrxpress_92:
(Start: 18 @58177 has 60 MA's), (35, 58261), (36, 58285), (65, 58483), (67, 58489),

Gene: Whirlwind_95 Start: 60316, Stop: 60657, Start Num: 18
Candidate Starts for Whirlwind_95:
(9, 60235), (Start: 11 @60262 has 1 MA's), (Start: 18 @60316 has 60 MA's), (35, 60400), (41, 60499), (66, 60604), (76, 60637),

Gene: Widow_32 Start: 25169, Stop: 24783, Start Num: 25
Candidate Starts for Widow_32:
(Start: 25 @25169 has 1 MA's), (32, 25151), (34, 25097), (37, 25052), (53, 24935), (56, 24920), (61, 24905), (77, 24857), (79, 24845), (82, 24827), (85, 24815), (86, 24812),

Gene: Wigglewiggle_97 Start: 60127, Stop: 60543, Start Num: 18
Candidate Starts for Wigglewiggle_97:
(10, 60058), (Start: 11 @60076 has 1 MA's), (Start: 15 @60115 has 2 MA's), (Start: 18 @60127 has 60 MA's), (Start: 21 @60145 has 1 MA's), (35, 60265), (36, 60289), (48, 60427), (69, 60499), (71, 60508),

Gene: Wilder_98 Start: 59963, Stop: 60379, Start Num: 18
Candidate Starts for Wilder_98:
(10, 59894), (Start: 11 @59912 has 1 MA's), (Start: 15 @59951 has 2 MA's), (Start: 18 @59963 has 60 MA's), (Start: 21 @59981 has 1 MA's), (35, 60101), (36, 60125), (48, 60263), (69, 60335), (71, 60344),

Gene: Winky_97 Start: 60567, Stop: 60983, Start Num: 18
Candidate Starts for Winky_97:
(10, 60498), (Start: 11 @60516 has 1 MA's), (Start: 15 @60555 has 2 MA's), (Start: 18 @60567 has 60 MA's), (Start: 21 @60585 has 1 MA's), (35, 60705), (36, 60729), (48, 60867), (69, 60939), (71, 60948),

Gene: Wooper_53 Start: 46136, Stop: 45744, Start Num: 26
Candidate Starts for Wooper_53:

(Start: 26 @46136 has 5 MA's), (32, 46118), (36, 46028), (40, 45971), (45, 45941), (52, 45905), (80, 45794), (82, 45782),

Gene: WorMMAs_33 Start: 24796, Stop: 24407, Start Num: 27
Candidate Starts for WorMMAs_33:
(12, 24883), (Start: 27 @24796 has 1 MA's), (32, 24781), (34, 24727), (36, 24691), (42, 24622), (58, 24544), (60, 24538), (70, 24499), (72, 24496), (77, 24481), (84, 24445),

Gene: Wyatt2_94 Start: 58484, Stop: 58846, Start Num: 18
Candidate Starts for Wyatt2_94:
(Start: 18 @58484 has 60 MA's), (35, 58568), (36, 58592), (65, 58790), (67, 58796),

Gene: Yeshua_53 Start: 46113, Stop: 45721, Start Num: 26
Candidate Starts for Yeshua_53:
(Start: 26 @46113 has 5 MA's), (32, 46095), (36, 46005), (40, 45948), (45, 45918), (52, 45882), (80, 45771), (82, 45759),

Gene: Zakai_98 Start: 60606, Stop: 61022, Start Num: 18
Candidate Starts for Zakai_98:
(10, 60537), (Start: 11 @60555 has 1 MA's), (Start: 15 @60594 has 2 MA's), (Start: 18 @60606 has 60 MA's), (Start: 21 @60624 has 1 MA's), (35, 60744), (36, 60768), (48, 60906), (69, 60978), (71, 60987),

Gene: Zaria_93 Start: 57592, Stop: 57954, Start Num: 18
Candidate Starts for Zaria_93:
(Start: 18 @57592 has 60 MA's), (35, 57676), (36, 57700), (65, 57898), (67, 57904),

Gene: ZhongYanYuan_94 Start: 60018, Stop: 60434, Start Num: 18
Candidate Starts for ZhongYanYuan_94:
(10, 59949), (Start: 11 @59967 has 1 MA's), (Start: 15 @60006 has 2 MA's), (Start: 18 @60018 has 60 MA's), (Start: 21 @60036 has 1 MA's), (35, 60156), (36, 60180), (69, 60390), (71, 60399),