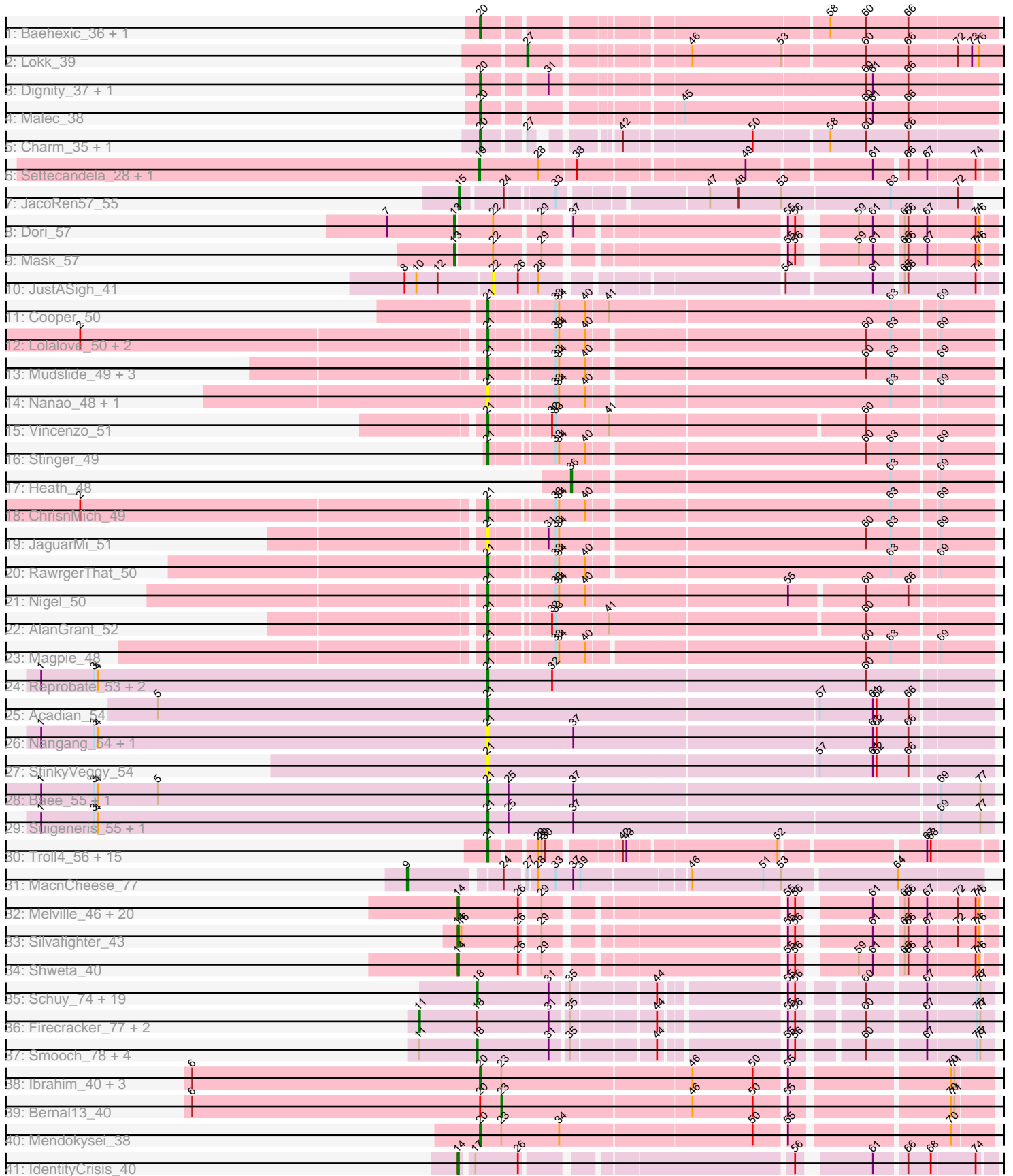


Pham 157711



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 157711 Report

This analysis was run 04/22/24 on database version 561.

Pham number 157711 has 119 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Baehexic\_36, Piro94\_36
- Track 2 : Lokk\_39
- Track 3 : Dignity\_37, Larenn\_37
- Track 4 : Malec\_38
- Track 5 : Charm\_35, DreamTeam1\_35
- Track 6 : Settecandela\_28, Phrappuccino\_28
- Track 7 : JacoRen57\_55
- Track 8 : Dori\_57
- Track 9 : Mask\_57
- Track 10 : JustASigh\_41
- Track 11 : Cooper\_50
- Track 12 : Lolalove\_50, Prince\_50, Apex\_50
- Track 13 : Mudslide\_49, VioletZ\_51, Hydro\_49, Austelle\_50
- Track 14 : Nanao\_48, Poster\_48
- Track 15 : Vincenzo\_51
- Track 16 : Stinger\_49
- Track 17 : Heath\_48
- Track 18 : ChrisnMich\_49
- Track 19 : JaguarMi\_51
- Track 20 : RawrgerThat\_50
- Track 21 : Nigel\_50
- Track 22 : AlanGrant\_52
- Track 23 : Magpie\_48
- Track 24 : Reprobate\_53, Phelemich\_52, Mysterious\_54
- Track 25 : Acadian\_54
- Track 26 : Nangang\_54, DigitDog\_54
- Track 27 : StinkyVeggy\_54
- Track 28 : Bae\_55, Rich\_54
- Track 29 : Suigeneris\_55, Donny\_55
- Track 30 : Troll4\_56, BigMama\_54, Prager\_56, Giuseppe\_57, Butterscotch\_55, Mopey\_57, PBI1\_53, Visconti\_57, Gumball\_55, Helpful\_59, PLOT\_56, Thoth\_56, Adjutor\_55, Delton\_57, SirHarley\_57, Penelope2018\_56
- Track 31 : MacnCheese\_77
- Track 32 : Melville\_46, Schnauzer\_43, Fulbright\_41, Jamie19\_40, Parmesanjohn\_42, Phloss\_40, Magsby\_42, Andies\_40, Duplicity\_42, SpongeBob\_40, Scitech\_39, Panchino\_39, Gex\_42, Xerxes\_42, Pipsqueaks\_42, Smurph\_42, Snekmaggon\_40, Tapioca\_44, Phrann\_44, Chewbacca\_44,

Carcharodon\_42

- Track 33 : Silvafighter\_43
- Track 34 : Shweta\_40
- Track 35 : Schuy\_74, Winget\_76, SchoolBus\_75, TelAviv\_72, Shida\_75, Catdawg\_75, Krili\_75, NiebruSaylor\_75, Blessica\_76, Ryadel\_79, JangDynasty\_75, Familton\_76, Alkhayr\_73, Vorrps\_76, Mori\_76, MadKillah\_77, Bora\_73, Murai\_76, FoulBall\_73, Idergollasper\_75
- Track 36 : Firecracker\_77, Dylan\_76, Corndog\_78
- Track 37 : Smooch\_78, Wildflower\_74, Ashwin\_76, YungJamal\_80, Zakhe101\_75
- Track 38 : Ibrahim\_40, ZenTime222\_39, Nairb\_39, RonRayGun\_40
- Track 39 : Bernal13\_40
- Track 40 : Mendokysei\_38
- Track 41 : IdentityCrisis\_40

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

The start number called the most often in the published annotations is 21, it was called in 36 of the 101 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acadian\_54, Adjutor\_55, AlanGrant\_52, Apex\_50, Austelle\_50, Bae\_55, BigMama\_54, Butterscotch\_55, ChrisnMich\_49, Cooper\_50, Delton\_57, DigitDog\_54, Donny\_55, Giuseppe\_57, Gumball\_55, Helpful\_59, Hydro\_49, JaguarMi\_51, Lolalove\_50, Magpie\_48, Mopey\_57, Mudslide\_49, Mysterious\_54, Nanao\_48, Nangang\_54, Nigel\_50, PBI1\_53, PLOT\_56, Penelope2018\_56, Phelemich\_52, Poster\_48, Prager\_56, Prince\_50, RawrgerThat\_50, Reprobate\_53, Rich\_54, SirHarley\_57, Stinger\_49, StinkyVeggy\_54, Suigeneris\_55, Thoth\_56, Troll4\_56, Vincenzo\_51, VioletZ\_51, Visconti\_57,

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

- 

Genes that do not have the "Most Annotated" start:

- Alkhayr\_73, Andies\_40, Ashwin\_76, Baehexic\_36, Bernal13\_40, Blessica\_76, Bora\_73, Carcharodon\_42, Catdawg\_75, Charm\_35, Chewbacca\_44, Corndog\_78, Dignity\_37, Dori\_57, DreamTeam1\_35, Duplicity\_42, Dylan\_76, Familton\_76, Firecracker\_77, FoulBall\_73, Fulbright\_41, Gex\_42, Heath\_48, Ibrahim\_40, IdentityCrisis\_40, Idergollasper\_75, JacoRen57\_55, Jamie19\_40, JangDynasty\_75, JustASigh\_41, Krili\_75, Larenn\_37, Lokk\_39, MacnCheese\_77, MadKillah\_77, Magsby\_42, Malec\_38, Mask\_57, Melville\_46, Mendokysei\_38, Mori\_76, Murai\_76, Nairb\_39, NiebruSaylor\_75, Panchino\_39, ParmesanJohn\_42, Phloss\_40, Phrann\_44, Phrappuccino\_28, Pipsqueaks\_42, Piro94\_36, RonRayGun\_40, Ryadel\_79, Schnauzer\_43, SchoolBus\_75, Schuy\_74, Scitech\_39, Settecandela\_28, Shida\_75, Shweta\_40, Silvafighter\_43, Smooch\_78, Smurph\_42, Snekmaggon\_40, SpongeBob\_40, Tapioca\_44, TelAviv\_72, Vorrps\_76, Wildflower\_74, Winget\_76, Xerxes\_42, YungJamal\_80, Zakhe101\_75, ZenTime222\_39,

**Summary by start number:**

Start 9:

- Found in 1 of 119 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MacnCheese\_77 (K3),

Start 11:

- Found in 8 of 119 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 3 of 101
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Corndog\_78 (O), Dylan\_76 (O), Firecracker\_77 (O),

Start 13:

- Found in 2 of 119 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dori\_57 (AD), Mask\_57 (AD),

Start 14:

- Found in 24 of 119 ( 20.2% ) of genes in pham
- Manual Annotations of this start: 22 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Andies\_40 (N), Carcharodon\_42 (N), Chewbacca\_44 (N), Duplicity\_42 (N), Fulbright\_41 (N), Gex\_42 (N), IdentityCrisis\_40 (singleton), Jamie19\_40 (N), Magsby\_42 (N), Melville\_46 (N), Panchino\_39 (N), Parmesanjohn\_42 (N), Phloss\_40 (N), Phrann\_44 (N), Pipsqueaks\_42 (N), Schnauzer\_43 (N), Scitech\_39 (N), Shweta\_40 (N), Silvafighter\_43 (N), Smurph\_42 (N), Snekmaggon\_40 (N), SpongeBob\_40 (N), Tapioca\_44 (N), Xerxes\_42 (N),

Start 15:

- Found in 1 of 119 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JacoRen57\_55 (AB),

Start 18:

- Found in 28 of 119 ( 23.5% ) of genes in pham
- Manual Annotations of this start: 19 of 101
- Called 89.3% of time when present
- Phage (with cluster) where this start called: Alkhayr\_73 (O), Ashwin\_76 (O), Blessica\_76 (O), Bora\_73 (O), Catdawg\_75 (O), Familton\_76 (O), FoulBall\_73 (O), Idergollasper\_75 (O), JangDynasty\_75 (O), Krili\_75 (O), MadKillah\_77 (O), Mori\_76 (O), Murai\_76 (O), NiebruSaylor\_75 (O), Ryadel\_79 (O), SchoolBus\_75 (O), Schuy\_74 (O), Shida\_75 (O), Smooch\_78 (O), TelAviv\_72 (O), Vorrps\_76 (O), Wildflower\_74 (O), Winget\_76 (O), YungJamal\_80 (O), Zakhe101\_75 (O),

Start 19:

- Found in 2 of 119 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_28 (AA), Settecandela\_28 (AA),

Start 20:

- Found in 13 of 119 ( 10.9% ) of genes in pham
- Manual Annotations of this start: 12 of 101
- Called 92.3% of time when present
- Phage (with cluster) where this start called: Baehexic\_36 (A2), Charm\_35 (A9), Dignity\_37 (A2), DreamTeam1\_35 (A9), Ibrahim\_40 (T), Larenn\_37 (A2), Malec\_38 (A2), Mendokysei\_38 (T), Nairb\_39 (T), Piro94\_36 (A2), RonRayGun\_40 (T), ZenTime222\_39 (T),

Start 21:

- Found in 45 of 119 ( 37.8% ) of genes in pham
- Manual Annotations of this start: 36 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acadian\_54 (B5), Adjutor\_55 (D1), AlanGrant\_52 (B4), Apex\_50 (B4), Austelle\_50 (B4), Bae\_55 (B5), BigMama\_54 (D1), Butterscotch\_55 (D1), ChrisnMich\_49 (B4), Cooper\_50 (B4), Delton\_57 (D1), DigitDog\_54 (B5), Donny\_55 (B5), Giuseppe\_57 (D1), Gumball\_55 (D1), Helpful\_59 (D1), Hydro\_49 (B4), JaguarMi\_51 (B4), Lolalove\_50 (B4), Magpie\_48 (B4), Mopey\_57 (D1), Mudslide\_49 (B4), Mysterious\_54 (B5), Nanao\_48 (B4), Nangang\_54 (B5), Nigel\_50 (B4), PBI1\_53 (D1), PLOT\_56 (D1), Penelope2018\_56 (D1), Phelemich\_52 (B5), Poster\_48 (B4), Prager\_56 (D1), Prince\_50 (B4), RawrgerThat\_50 (B4), Reprobate\_53 (B5), Rich\_54 (B5), SirHarley\_57 (D1), Stinger\_49 (B4), StinkyVeggy\_54 (B5), Suigeneris\_55 (B5), Thoth\_56 (D1), Troll4\_56 (D1), Vincenzo\_51 (B4), VioletZ\_51 (B4), Visconti\_57 (D1),

Start 22:

- Found in 3 of 119 ( 2.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: JustASigh\_41 (AH),

Start 23:

- Found in 6 of 119 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Bernal13\_40 (T),

Start 27:

- Found in 4 of 119 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Lokk\_39 (A2),

Start 36:

- Found in 1 of 119 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Heath\_48 (B4),

**Summary by clusters:**

There are 14 clusters represented in this pham: AA, K3, singleton, AB, AD, AH, O, N, B4, B5, A2, T, A9, D1,

Info for manual annotations of cluster A2:

- Start number 20 was manually annotated 5 times for cluster A2.
- Start number 27 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A9:

- Start number 20 was manually annotated 2 times for cluster A9.

Info for manual annotations of cluster AA:

- Start number 19 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AB:

- Start number 15 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster AD:

- Start number 13 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster B4:

- Start number 21 was manually annotated 14 times for cluster B4.
- Start number 36 was manually annotated 1 time for cluster B4.

Info for manual annotations of cluster B5:

- Start number 21 was manually annotated 7 times for cluster B5.

Info for manual annotations of cluster D1:

- Start number 21 was manually annotated 15 times for cluster D1.

Info for manual annotations of cluster K3:

- Start number 9 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster N:

- Start number 14 was manually annotated 21 times for cluster N.

Info for manual annotations of cluster O:

- Start number 11 was manually annotated 3 times for cluster O.
- Start number 18 was manually annotated 19 times for cluster O.

Info for manual annotations of cluster T:

- Start number 20 was manually annotated 5 times for cluster T.
- Start number 23 was manually annotated 1 time for cluster T.

### ***Gene Information:***

Gene: Acadian\_54 Start: 48515, Stop: 48102, Start Num: 21

Candidate Starts for Acadian\_54:

(5, 48794), (Start: 21 @48515 has 36 MA's), (57, 48242), (61, 48197), (62, 48194), (66, 48167),

Gene: Adjutor\_55 Start: 42662, Stop: 43042, Start Num: 21

Candidate Starts for Adjutor\_55:

(Start: 21 @42662 has 36 MA's), (28, 42695), (29, 42698), (30, 42701), (42, 42755), (43, 42758), (52, 42878), (67, 42989), (68, 42992),

Gene: AlanGrant\_52 Start: 48916, Stop: 48518, Start Num: 21

Candidate Starts for AlanGrant\_52:

(Start: 21 @48916 has 36 MA's), (32, 48871), (33, 48868), (41, 48826), (60, 48619),

Gene: Alkhayr\_73 Start: 47301, Stop: 46924, Start Num: 18

Candidate Starts for Alkhayr\_73:

(Start: 18 @47301 has 19 MA's), (31, 47241), (35, 47229), (44, 47166), (55, 47073), (56, 47067), (60, 47022), (67, 46977), (75, 46938), (77, 46935),

Gene: Andies\_40 Start: 29966, Stop: 30364, Start Num: 14

Candidate Starts for Andies\_40:

(Start: 14 @29966 has 22 MA's), (26, 30017), (29, 30032), (55, 30215), (56, 30221), (61, 30272), (65, 30293), (66, 30296), (67, 30311), (72, 30335), (74, 30350), (76, 30353),

Gene: Apex\_50 Start: 48386, Stop: 47988, Start Num: 21

Candidate Starts for Apex\_50:

(2, 48719), (Start: 21 @48386 has 36 MA's), (33, 48338), (34, 48335), (40, 48314), (60, 48089), (63, 48068), (69, 48032),

Gene: Ashwin\_76 Start: 48047, Stop: 47670, Start Num: 18

Candidate Starts for Ashwin\_76:

(Start: 11 @48095 has 3 MA's), (Start: 18 @48047 has 19 MA's), (31, 47987), (35, 47975), (44, 47912), (55, 47819), (56, 47813), (60, 47768), (67, 47723), (75, 47684), (77, 47681),

Gene: Austelle\_50 Start: 48836, Stop: 48438, Start Num: 21

Candidate Starts for Austelle\_50:

(Start: 21 @48836 has 36 MA's), (33, 48788), (34, 48785), (40, 48764), (60, 48539), (63, 48518), (69, 48482),

Gene: Bae\_55 Start: 49794, Stop: 49378, Start Num: 21

Candidate Starts for Bae\_55:

(1, 50172), (3, 50127), (4, 50124), (5, 50073), (Start: 21 @49794 has 36 MA's), (25, 49776), (37, 49722), (69, 49422), (77, 49389),

Gene: Baehexic\_36 Start: 27724, Stop: 28119, Start Num: 20

Candidate Starts for Baehexic\_36:

(Start: 20 @27724 has 12 MA's), (58, 27982), (60, 28012), (66, 28048),

Gene: Bernal13\_40 Start: 31063, Stop: 31446, Start Num: 23

Candidate Starts for Bernal13\_40:

(6, 30802), (Start: 20 @31045 has 12 MA's), (Start: 23 @31063 has 1 MA's), (46, 31219), (50, 31270), (55, 31294), (70, 31414), (71, 31417),

Gene: BigMama\_54 Start: 42738, Stop: 43118, Start Num: 21

Candidate Starts for BigMama\_54:

(Start: 21 @42738 has 36 MA's), (28, 42771), (29, 42774), (30, 42777), (42, 42831), (43, 42834), (52, 42954), (67, 43065), (68, 43068),

Gene: Blessica\_76 Start: 47851, Stop: 47474, Start Num: 18

Candidate Starts for Blessica\_76:

(Start: 18 @47851 has 19 MA's), (31, 47791), (35, 47779), (44, 47716), (55, 47623), (56, 47617), (60, 47572), (67, 47527), (75, 47488), (77, 47485),

Gene: Bora\_73 Start: 47232, Stop: 46855, Start Num: 18

Candidate Starts for Bora\_73:

(Start: 18 @47232 has 19 MA's), (31, 47172), (35, 47160), (44, 47097), (55, 47004), (56, 46998), (60, 46953), (67, 46908), (75, 46869), (77, 46866),

Gene: Butterscotch\_55 Start: 42722, Stop: 43102, Start Num: 21

Candidate Starts for Butterscotch\_55:

(Start: 21 @42722 has 36 MA's), (28, 42755), (29, 42758), (30, 42761), (42, 42815), (43, 42818), (52, 42938), (67, 43049), (68, 43052),

Gene: Carcharodon\_42 Start: 30650, Stop: 31048, Start Num: 14

Candidate Starts for Carcharodon\_42:

(Start: 14 @30650 has 22 MA's), (26, 30701), (29, 30716), (55, 30899), (56, 30905), (61, 30956), (65, 30977), (66, 30980), (67, 30995), (72, 31019), (74, 31034), (76, 31037),

Gene: Catdawg\_75 Start: 47587, Stop: 47210, Start Num: 18

Candidate Starts for Catdawg\_75:

(Start: 18 @47587 has 19 MA's), (31, 47527), (35, 47515), (44, 47452), (55, 47359), (56, 47353), (60, 47308), (67, 47263), (75, 47224), (77, 47221),

Gene: Charm\_35 Start: 26987, Stop: 27367, Start Num: 20

Candidate Starts for Charm\_35:

(Start: 20 @26987 has 12 MA's), (Start: 27 @27017 has 1 MA's), (42, 27068), (50, 27170), (58, 27230), (60, 27260), (66, 27296),

Gene: Chewbacca\_44 Start: 30650, Stop: 31048, Start Num: 14

Candidate Starts for Chewbacca\_44:

(Start: 14 @30650 has 22 MA's), (26, 30701), (29, 30716), (55, 30899), (56, 30905), (61, 30956), (65, 30977), (66, 30980), (67, 30995), (72, 31019), (74, 31034), (76, 31037),

Gene: ChrisnMich\_49 Start: 47148, Stop: 46750, Start Num: 21

Candidate Starts for ChrisnMich\_49:

(2, 47481), (Start: 21 @47148 has 36 MA's), (33, 47100), (34, 47097), (40, 47076), (63, 46830), (69, 46794),

Gene: Cooper\_50 Start: 47373, Stop: 46969, Start Num: 21

Candidate Starts for Cooper\_50:

(Start: 21 @47373 has 36 MA's), (33, 47325), (34, 47322), (40, 47301), (41, 47283), (63, 47049), (69, 47013),

Gene: Corndog\_78 Start: 48615, Stop: 48190, Start Num: 11

Candidate Starts for Corndog\_78:

(Start: 11 @48615 has 3 MA's), (Start: 18 @48567 has 19 MA's), (31, 48507), (35, 48495), (44, 48432), (55, 48339), (56, 48333), (60, 48288), (67, 48243), (75, 48204), (77, 48201),

Gene: Delton\_57 Start: 43120, Stop: 43500, Start Num: 21

Candidate Starts for Delton\_57:

(Start: 21 @43120 has 36 MA's), (28, 43153), (29, 43156), (30, 43159), (42, 43213), (43, 43216), (52, 43336), (67, 43447), (68, 43450),



Gene: DigitDog\_54 Start: 48511, Stop: 48098, Start Num: 21

Candidate Starts for DigitDog\_54:

(1, 48889), (3, 48844), (4, 48841), (Start: 21 @48511 has 36 MA's), (37, 48439), (61, 48193), (62, 48190), (66, 48163),

Gene: Dignity\_37 Start: 27627, Stop: 28025, Start Num: 20

Candidate Starts for Dignity\_37:

(Start: 20 @27627 has 12 MA's), (31, 27675), (60, 27918), (61, 27924), (66, 27954),

Gene: Donny\_55 Start: 48805, Stop: 48392, Start Num: 21

Candidate Starts for Donny\_55:

(1, 49183), (3, 49138), (4, 49135), (Start: 21 @48805 has 36 MA's), (25, 48787), (37, 48733), (69, 48436), (77, 48403),

Gene: Dori\_57 Start: 47308, Stop: 47706, Start Num: 13

Candidate Starts for Dori\_57:

(7, 47251), (Start: 13 @47308 has 2 MA's), (22, 47338), (29, 47374), (37, 47392), (55, 47557), (56, 47563), (59, 47602), (61, 47614), (65, 47635), (66, 47638), (67, 47653), (74, 47692), (76, 47695),

Gene: DreamTeam1\_35 Start: 26870, Stop: 27250, Start Num: 20

Candidate Starts for DreamTeam1\_35:

(Start: 20 @26870 has 12 MA's), (Start: 27 @26900 has 1 MA's), (42, 26951), (50, 27053), (58, 27113), (60, 27143), (66, 27179),

Gene: Duplicity\_42 Start: 30659, Stop: 31057, Start Num: 14

Candidate Starts for Duplicity\_42:

(Start: 14 @30659 has 22 MA's), (26, 30710), (29, 30725), (55, 30908), (56, 30914), (61, 30965), (65, 30986), (66, 30989), (67, 31004), (72, 31028), (74, 31043), (76, 31046),

Gene: Dylan\_76 Start: 47811, Stop: 47386, Start Num: 11

Candidate Starts for Dylan\_76:

(Start: 11 @47811 has 3 MA's), (Start: 18 @47763 has 19 MA's), (31, 47703), (35, 47691), (44, 47628), (55, 47535), (56, 47529), (60, 47484), (67, 47439), (75, 47400), (77, 47397),

Gene: Familton\_76 Start: 47544, Stop: 47167, Start Num: 18

Candidate Starts for Familton\_76:

(Start: 18 @47544 has 19 MA's), (31, 47484), (35, 47472), (44, 47409), (55, 47316), (56, 47310), (60, 47265), (67, 47220), (75, 47181), (77, 47178),

Gene: Firecracker\_77 Start: 47969, Stop: 47544, Start Num: 11

Candidate Starts for Firecracker\_77:

(Start: 11 @47969 has 3 MA's), (Start: 18 @47921 has 19 MA's), (31, 47861), (35, 47849), (44, 47786), (55, 47693), (56, 47687), (60, 47642), (67, 47597), (75, 47558), (77, 47555),

Gene: FoulBall\_73 Start: 47587, Stop: 47210, Start Num: 18

Candidate Starts for FoulBall\_73:

(Start: 18 @47587 has 19 MA's), (31, 47527), (35, 47515), (44, 47452), (55, 47359), (56, 47353), (60, 47308), (67, 47263), (75, 47224), (77, 47221),

Gene: Fulbright\_41 Start: 29739, Stop: 30137, Start Num: 14

Candidate Starts for Fulbright\_41:

(Start: 14 @29739 has 22 MA's), (26, 29790), (29, 29805), (55, 29988), (56, 29994), (61, 30045), (65, 30066), (66, 30069), (67, 30084), (72, 30108), (74, 30123), (76, 30126),

Gene: Gex\_42 Start: 30666, Stop: 31064, Start Num: 14

Candidate Starts for Gex\_42:

(Start: 14 @30666 has 22 MA's), (26, 30717), (29, 30732), (55, 30915), (56, 30921), (61, 30972), (65, 30993), (66, 30996), (67, 31011), (72, 31035), (74, 31050), (76, 31053),

Gene: Giuseppe\_57 Start: 42690, Stop: 43070, Start Num: 21

Candidate Starts for Giuseppe\_57:

(Start: 21 @42690 has 36 MA's), (28, 42723), (29, 42726), (30, 42729), (42, 42783), (43, 42786), (52, 42906), (67, 43017), (68, 43020),

Gene: Gumball\_55 Start: 42916, Stop: 43296, Start Num: 21

Candidate Starts for Gumball\_55:

(Start: 21 @42916 has 36 MA's), (28, 42949), (29, 42952), (30, 42955), (42, 43009), (43, 43012), (52, 43132), (67, 43243), (68, 43246),

Gene: Heath\_48 Start: 47727, Stop: 47389, Start Num: 36

Candidate Starts for Heath\_48:

(Start: 36 @47727 has 1 MA's), (63, 47469), (69, 47433),

Gene: Helpful\_59 Start: 43051, Stop: 43431, Start Num: 21

Candidate Starts for Helpful\_59:

(Start: 21 @43051 has 36 MA's), (28, 43084), (29, 43087), (30, 43090), (42, 43144), (43, 43147), (52, 43267), (67, 43378), (68, 43381),

Gene: Hydro\_49 Start: 48214, Stop: 47816, Start Num: 21

Candidate Starts for Hydro\_49:

(Start: 21 @48214 has 36 MA's), (33, 48166), (34, 48163), (40, 48142), (60, 47917), (63, 47896), (69, 47860),

Gene: Ibrahim\_40 Start: 31491, Stop: 31892, Start Num: 20

Candidate Starts for Ibrahim\_40:

(6, 31248), (Start: 20 @31491 has 12 MA's), (Start: 23 @31509 has 1 MA's), (46, 31665), (50, 31716), (55, 31740), (70, 31860), (71, 31863),

Gene: IdentityCrisis\_40 Start: 28510, Stop: 28902, Start Num: 14

Candidate Starts for IdentityCrisis\_40:

(Start: 14 @28510 has 22 MA's), (17, 28519), (26, 28555), (56, 28759), (61, 28810), (66, 28834), (68, 28852), (74, 28888),

Gene: Idergollasper\_75 Start: 47538, Stop: 47161, Start Num: 18

Candidate Starts for Idergollasper\_75:

(Start: 18 @47538 has 19 MA's), (31, 47478), (35, 47466), (44, 47403), (55, 47310), (56, 47304), (60, 47259), (67, 47214), (75, 47175), (77, 47172),

Gene: JacoRen57\_55 Start: 43848, Stop: 44240, Start Num: 15

Candidate Starts for JacoRen57\_55:

(Start: 15 @43848 has 1 MA's), (24, 43881), (33, 43917), (47, 44025), (48, 44049), (53, 44085), (63, 44175), (72, 44229),

Gene: JaguarMi\_51 Start: 49281, Stop: 48883, Start Num: 21

Candidate Starts for JaguarMi\_51:

(Start: 21 @49281 has 36 MA's), (31, 49239), (33, 49233), (34, 49230), (60, 48984), (63, 48963), (69, 48927),

Gene: Jamie19\_40 Start: 29847, Stop: 30245, Start Num: 14

Candidate Starts for Jamie19\_40:

(Start: 14 @29847 has 22 MA's), (26, 29898), (29, 29913), (55, 30096), (56, 30102), (61, 30153), (65, 30174), (66, 30177), (67, 30192), (72, 30216), (74, 30231), (76, 30234),

Gene: JangDynasty\_75 Start: 47605, Stop: 47228, Start Num: 18

Candidate Starts for JangDynasty\_75:

(Start: 18 @47605 has 19 MA's), (31, 47545), (35, 47533), (44, 47470), (55, 47377), (56, 47371), (60, 47326), (67, 47281), (75, 47242), (77, 47239),

Gene: JustASigh\_41 Start: 31479, Stop: 31102, Start Num: 22

Candidate Starts for JustASigh\_41:

(8, 31548), (10, 31539), (12, 31521), (22, 31479), (26, 31458), (28, 31443), (54, 31263), (61, 31194), (65, 31173), (66, 31170), (74, 31116),

Gene: Krili\_75 Start: 47097, Stop: 46720, Start Num: 18

Candidate Starts for Krili\_75:

(Start: 18 @47097 has 19 MA's), (31, 47037), (35, 47025), (44, 46962), (55, 46869), (56, 46863), (60, 46818), (67, 46773), (75, 46734), (77, 46731),

Gene: Larenn\_37 Start: 27686, Stop: 28081, Start Num: 20

Candidate Starts for Larenn\_37:

(Start: 20 @27686 has 12 MA's), (31, 27734), (60, 27974), (61, 27980), (66, 28010),

Gene: Lokk\_39 Start: 28500, Stop: 28871, Start Num: 27

Candidate Starts for Lokk\_39:

(Start: 27 @28500 has 1 MA's), (46, 28617), (53, 28692), (60, 28758), (66, 28794), (72, 28833), (73, 28845), (76, 28851),

Gene: Lolalove\_50 Start: 48182, Stop: 47784, Start Num: 21

Candidate Starts for Lolalove\_50:

(2, 48515), (Start: 21 @48182 has 36 MA's), (33, 48134), (34, 48131), (40, 48110), (60, 47885), (63, 47864), (69, 47828),

Gene: MacnCheese\_77 Start: 50498, Stop: 50944, Start Num: 9

Candidate Starts for MacnCheese\_77:

(Start: 9 @50498 has 1 MA's), (24, 50567), (Start: 27 @50582 has 1 MA's), (28, 50588), (33, 50603), (37, 50618), (39, 50624), (46, 50708), (51, 50768), (53, 50783), (64, 50876),

Gene: MadKillah\_77 Start: 47366, Stop: 46989, Start Num: 18

Candidate Starts for MadKillah\_77:

(Start: 18 @47366 has 19 MA's), (31, 47306), (35, 47294), (44, 47231), (55, 47138), (56, 47132), (60, 47087), (67, 47042), (75, 47003), (77, 47000),

Gene: Magpie\_48 Start: 48017, Stop: 47619, Start Num: 21

Candidate Starts for Magpie\_48:

(Start: 21 @48017 has 36 MA's), (33, 47969), (34, 47966), (40, 47945), (60, 47720), (63, 47699), (69, 47663),

Gene: Magsby\_42 Start: 30667, Stop: 31065, Start Num: 14

Candidate Starts for Magsby\_42:

(Start: 14 @30667 has 22 MA's), (26, 30718), (29, 30733), (55, 30916), (56, 30922), (61, 30973), (65, 30994), (66, 30997), (67, 31012), (72, 31036), (74, 31051), (76, 31054),

Gene: Malec\_38 Start: 28247, Stop: 28645, Start Num: 20

Candidate Starts for Malec\_38:

(Start: 20 @28247 has 12 MA's), (45, 28388), (60, 28538), (61, 28544), (66, 28574),

Gene: Mask\_57 Start: 48051, Stop: 48449, Start Num: 13

Candidate Starts for Mask\_57:

(Start: 13 @48051 has 2 MA's), (22, 48081), (29, 48117), (55, 48300), (56, 48306), (59, 48345), (61, 48357), (65, 48378), (66, 48381), (67, 48396), (74, 48435), (76, 48438),

Gene: Melville\_46 Start: 30651, Stop: 31049, Start Num: 14

Candidate Starts for Melville\_46:

(Start: 14 @30651 has 22 MA's), (26, 30702), (29, 30717), (55, 30900), (56, 30906), (61, 30957), (65, 30978), (66, 30981), (67, 30996), (72, 31020), (74, 31035), (76, 31038),

Gene: Mendokysei\_38 Start: 30582, Stop: 30983, Start Num: 20

Candidate Starts for Mendokysei\_38:

(Start: 20 @30582 has 12 MA's), (Start: 23 @30600 has 1 MA's), (34, 30648), (50, 30807), (55, 30831), (70, 30951),

Gene: Mopey\_57 Start: 42726, Stop: 43106, Start Num: 21

Candidate Starts for Mopey\_57:

(Start: 21 @42726 has 36 MA's), (28, 42759), (29, 42762), (30, 42765), (42, 42819), (43, 42822), (52, 42942), (67, 43053), (68, 43056),

Gene: Mori\_76 Start: 47628, Stop: 47251, Start Num: 18

Candidate Starts for Mori\_76:

(Start: 18 @47628 has 19 MA's), (31, 47568), (35, 47556), (44, 47493), (55, 47400), (56, 47394), (60, 47349), (67, 47304), (75, 47265), (77, 47262),

Gene: Mudslide\_49 Start: 48447, Stop: 48049, Start Num: 21

Candidate Starts for Mudslide\_49:

(Start: 21 @48447 has 36 MA's), (33, 48399), (34, 48396), (40, 48375), (60, 48150), (63, 48129), (69, 48093),

Gene: Murai\_76 Start: 47760, Stop: 47383, Start Num: 18

Candidate Starts for Murai\_76:

(Start: 18 @47760 has 19 MA's), (31, 47700), (35, 47688), (44, 47625), (55, 47532), (56, 47526), (60, 47481), (67, 47436), (75, 47397), (77, 47394),

Gene: Mysterious\_54 Start: 48647, Stop: 48231, Start Num: 21

Candidate Starts for Mysterious\_54:

(1, 49025), (3, 48980), (4, 48977), (Start: 21 @48647 has 36 MA's), (32, 48593), (60, 48332),

Gene: Nairb\_39 Start: 31045, Stop: 31446, Start Num: 20

Candidate Starts for Nairb\_39:

(6, 30802), (Start: 20 @31045 has 12 MA's), (Start: 23 @31063 has 1 MA's), (46, 31219), (50, 31270), (55, 31294), (70, 31414), (71, 31417),

Gene: Nanao\_48 Start: 47151, Stop: 46753, Start Num: 21  
Candidate Starts for Nanao\_48:  
(Start: 21 @47151 has 36 MA's), (33, 47103), (34, 47100), (40, 47079), (63, 46833), (69, 46797),

Gene: Nangang\_54 Start: 48876, Stop: 48463, Start Num: 21  
Candidate Starts for Nangang\_54:  
(1, 49254), (3, 49209), (4, 49206), (Start: 21 @48876 has 36 MA's), (37, 48804), (61, 48558), (62, 48555), (66, 48528),

Gene: NiebruSaylor\_75 Start: 47016, Stop: 46639, Start Num: 18  
Candidate Starts for NiebruSaylor\_75:  
(Start: 18 @47016 has 19 MA's), (31, 46956), (35, 46944), (44, 46881), (55, 46788), (56, 46782), (60, 46737), (67, 46692), (75, 46653), (77, 46650),

Gene: Nigel\_50 Start: 48156, Stop: 47758, Start Num: 21  
Candidate Starts for Nigel\_50:  
(Start: 21 @48156 has 36 MA's), (33, 48108), (34, 48105), (40, 48084), (55, 47919), (60, 47859), (66, 47823),

Gene: PBI1\_53 Start: 42653, Stop: 43033, Start Num: 21  
Candidate Starts for PBI1\_53:  
(Start: 21 @42653 has 36 MA's), (28, 42686), (29, 42689), (30, 42692), (42, 42746), (43, 42749), (52, 42869), (67, 42980), (68, 42983),

Gene: PLOT\_56 Start: 42705, Stop: 43085, Start Num: 21  
Candidate Starts for PLOT\_56:  
(Start: 21 @42705 has 36 MA's), (28, 42738), (29, 42741), (30, 42744), (42, 42798), (43, 42801), (52, 42921), (67, 43032), (68, 43035),

Gene: Panchino\_39 Start: 31193, Stop: 31591, Start Num: 14  
Candidate Starts for Panchino\_39:  
(Start: 14 @31193 has 22 MA's), (26, 31244), (29, 31259), (55, 31442), (56, 31448), (61, 31499), (65, 31520), (66, 31523), (67, 31538), (72, 31562), (74, 31577), (76, 31580),

Gene: Parmesanjohn\_42 Start: 30670, Stop: 31068, Start Num: 14  
Candidate Starts for Parmesanjohn\_42:  
(Start: 14 @30670 has 22 MA's), (26, 30721), (29, 30736), (55, 30919), (56, 30925), (61, 30976), (65, 30997), (66, 31000), (67, 31015), (72, 31039), (74, 31054), (76, 31057),

Gene: Penelope2018\_56 Start: 42723, Stop: 43103, Start Num: 21  
Candidate Starts for Penelope2018\_56:  
(Start: 21 @42723 has 36 MA's), (28, 42756), (29, 42759), (30, 42762), (42, 42816), (43, 42819), (52, 42939), (67, 43050), (68, 43053),

Gene: Phelemich\_52 Start: 48646, Stop: 48230, Start Num: 21  
Candidate Starts for Phelemich\_52:  
(1, 49024), (3, 48979), (4, 48976), (Start: 21 @48646 has 36 MA's), (32, 48592), (60, 48331),

Gene: Phloss\_40 Start: 30077, Stop: 30475, Start Num: 14  
Candidate Starts for Phloss\_40:  
(Start: 14 @30077 has 22 MA's), (26, 30128), (29, 30143), (55, 30326), (56, 30332), (61, 30383), (65, 30404), (66, 30407), (67, 30422), (72, 30446), (74, 30461), (76, 30464),

Gene: Phrann\_44 Start: 31873, Stop: 32271, Start Num: 14

Candidate Starts for Phrann\_44:

(Start: 14 @31873 has 22 MA's), (26, 31924), (29, 31939), (55, 32122), (56, 32128), (61, 32179), (65, 32200), (66, 32203), (67, 32218), (72, 32242), (74, 32257), (76, 32260),

Gene: Phrappuccino\_28 Start: 15030, Stop: 15431, Start Num: 19

Candidate Starts for Phrappuccino\_28:

(Start: 19 @15030 has 2 MA's), (28, 15078), (38, 15108), (49, 15240), (61, 15339), (66, 15363), (67, 15378), (74, 15417),

Gene: Pipsqueaks\_42 Start: 30647, Stop: 31045, Start Num: 14

Candidate Starts for Pipsqueaks\_42:

(Start: 14 @30647 has 22 MA's), (26, 30698), (29, 30713), (55, 30896), (56, 30902), (61, 30953), (65, 30974), (66, 30977), (67, 30992), (72, 31016), (74, 31031), (76, 31034),

Gene: Piro94\_36 Start: 27692, Stop: 28087, Start Num: 20

Candidate Starts for Piro94\_36:

(Start: 20 @27692 has 12 MA's), (58, 27950), (60, 27980), (66, 28016),

Gene: Poster\_48 Start: 47152, Stop: 46754, Start Num: 21

Candidate Starts for Poster\_48:

(Start: 21 @47152 has 36 MA's), (33, 47104), (34, 47101), (40, 47080), (63, 46834), (69, 46798),

Gene: Prager\_56 Start: 42742, Stop: 43122, Start Num: 21

Candidate Starts for Prager\_56:

(Start: 21 @42742 has 36 MA's), (28, 42775), (29, 42778), (30, 42781), (42, 42835), (43, 42838), (52, 42958), (67, 43069), (68, 43072),

Gene: Prince\_50 Start: 48357, Stop: 47959, Start Num: 21

Candidate Starts for Prince\_50:

(2, 48690), (Start: 21 @48357 has 36 MA's), (33, 48309), (34, 48306), (40, 48285), (60, 48060), (63, 48039), (69, 48003),

Gene: RawrgerThat\_50 Start: 48212, Stop: 47814, Start Num: 21

Candidate Starts for RawrgerThat\_50:

(Start: 21 @48212 has 36 MA's), (33, 48164), (34, 48161), (40, 48140), (63, 47894), (69, 47858),

Gene: Reprobate\_53 Start: 48651, Stop: 48235, Start Num: 21

Candidate Starts for Reprobate\_53:

(1, 49029), (3, 48984), (4, 48981), (Start: 21 @48651 has 36 MA's), (32, 48597), (60, 48336),

Gene: Rich\_54 Start: 50085, Stop: 49669, Start Num: 21

Candidate Starts for Rich\_54:

(1, 50463), (3, 50418), (4, 50415), (5, 50364), (Start: 21 @50085 has 36 MA's), (25, 50067), (37, 50013), (69, 49713), (77, 49680),

Gene: RonRayGun\_40 Start: 31491, Stop: 31892, Start Num: 20

Candidate Starts for RonRayGun\_40:

(6, 31248), (Start: 20 @31491 has 12 MA's), (Start: 23 @31509 has 1 MA's), (46, 31665), (50, 31716), (55, 31740), (70, 31860), (71, 31863),

Gene: Ryadel\_79 Start: 48372, Stop: 47995, Start Num: 18

Candidate Starts for Ryadel\_79:

(Start: 18 @48372 has 19 MA's), (31, 48312), (35, 48300), (44, 48237), (55, 48144), (56, 48138), (60, 48093), (67, 48048), (75, 48009), (77, 48006),

Gene: Schnauzer\_43 Start: 30670, Stop: 31068, Start Num: 14

Candidate Starts for Schnauzer\_43:

(Start: 14 @30670 has 22 MA's), (26, 30721), (29, 30736), (55, 30919), (56, 30925), (61, 30976), (65, 30997), (66, 31000), (67, 31015), (72, 31039), (74, 31054), (76, 31057),

Gene: SchoolBus\_75 Start: 47520, Stop: 47143, Start Num: 18

Candidate Starts for SchoolBus\_75:

(Start: 18 @47520 has 19 MA's), (31, 47460), (35, 47448), (44, 47385), (55, 47292), (56, 47286), (60, 47241), (67, 47196), (75, 47157), (77, 47154),

Gene: Schuy\_74 Start: 47372, Stop: 46995, Start Num: 18

Candidate Starts for Schuy\_74:

(Start: 18 @47372 has 19 MA's), (31, 47312), (35, 47300), (44, 47237), (55, 47144), (56, 47138), (60, 47093), (67, 47048), (75, 47009), (77, 47006),

Gene: Scitech\_39 Start: 28686, Stop: 29084, Start Num: 14

Candidate Starts for Scitech\_39:

(Start: 14 @28686 has 22 MA's), (26, 28737), (29, 28752), (55, 28935), (56, 28941), (61, 28992), (65, 29013), (66, 29016), (67, 29031), (72, 29055), (74, 29070), (76, 29073),

Gene: Settecandela\_28 Start: 15030, Stop: 15431, Start Num: 19

Candidate Starts for Settecandela\_28:

(Start: 19 @15030 has 2 MA's), (28, 15078), (38, 15108), (49, 15240), (61, 15339), (66, 15363), (67, 15378), (74, 15417),

Gene: Shida\_75 Start: 47211, Stop: 46834, Start Num: 18

Candidate Starts for Shida\_75:

(Start: 18 @47211 has 19 MA's), (31, 47151), (35, 47139), (44, 47076), (55, 46983), (56, 46977), (60, 46932), (67, 46887), (75, 46848), (77, 46845),

Gene: Shweta\_40 Start: 29977, Stop: 30375, Start Num: 14

Candidate Starts for Shweta\_40:

(Start: 14 @29977 has 22 MA's), (26, 30028), (29, 30043), (55, 30226), (56, 30232), (59, 30271), (61, 30283), (65, 30304), (66, 30307), (67, 30322), (74, 30361), (76, 30364),

Gene: Silvafighter\_43 Start: 30643, Stop: 31041, Start Num: 14

Candidate Starts for Silvafighter\_43:

(Start: 14 @30643 has 22 MA's), (16, 30646), (26, 30694), (29, 30709), (55, 30892), (56, 30898), (61, 30949), (65, 30970), (66, 30973), (67, 30988), (72, 31012), (74, 31027), (76, 31030),

Gene: SirHarley\_57 Start: 42899, Stop: 43279, Start Num: 21

Candidate Starts for SirHarley\_57:

(Start: 21 @42899 has 36 MA's), (28, 42932), (29, 42935), (30, 42938), (42, 42992), (43, 42995), (52, 43115), (67, 43226), (68, 43229),

Gene: Smooch\_78 Start: 49262, Stop: 48885, Start Num: 18

Candidate Starts for Smooch\_78:

(Start: 11 @49310 has 3 MA's), (Start: 18 @49262 has 19 MA's), (31, 49202), (35, 49190), (44, 49127), (55, 49034), (56, 49028), (60, 48983), (67, 48938), (75, 48899), (77, 48896),

Gene: Smurph\_42 Start: 30670, Stop: 31068, Start Num: 14

Candidate Starts for Smurph\_42:

(Start: 14 @30670 has 22 MA's), (26, 30721), (29, 30736), (55, 30919), (56, 30925), (61, 30976), (65, 30997), (66, 31000), (67, 31015), (72, 31039), (74, 31054), (76, 31057),

Gene: Snekmaggedon\_40 Start: 29847, Stop: 30245, Start Num: 14

Candidate Starts for Snekmaggedon\_40:

(Start: 14 @29847 has 22 MA's), (26, 29898), (29, 29913), (55, 30096), (56, 30102), (61, 30153), (65, 30174), (66, 30177), (67, 30192), (72, 30216), (74, 30231), (76, 30234),

Gene: SpongeBob\_40 Start: 29847, Stop: 30245, Start Num: 14

Candidate Starts for SpongeBob\_40:

(Start: 14 @29847 has 22 MA's), (26, 29898), (29, 29913), (55, 30096), (56, 30102), (61, 30153), (65, 30174), (66, 30177), (67, 30192), (72, 30216), (74, 30231), (76, 30234),

Gene: Stinger\_49 Start: 46888, Stop: 46490, Start Num: 21

Candidate Starts for Stinger\_49:

(Start: 21 @46888 has 36 MA's), (33, 46840), (34, 46837), (40, 46816), (60, 46591), (63, 46570), (69, 46534),

Gene: StinkyVeggy\_54 Start: 48662, Stop: 48249, Start Num: 21

Candidate Starts for StinkyVeggy\_54:

(Start: 21 @48662 has 36 MA's), (57, 48389), (61, 48344), (62, 48341), (66, 48314),

Gene: Suigeneris\_55 Start: 48805, Stop: 48392, Start Num: 21

Candidate Starts for Suigeneris\_55:

(1, 49183), (3, 49138), (4, 49135), (Start: 21 @48805 has 36 MA's), (25, 48787), (37, 48733), (69, 48436), (77, 48403),

Gene: Tapioca\_44 Start: 30636, Stop: 31034, Start Num: 14

Candidate Starts for Tapioca\_44:

(Start: 14 @30636 has 22 MA's), (26, 30687), (29, 30702), (55, 30885), (56, 30891), (61, 30942), (65, 30963), (66, 30966), (67, 30981), (72, 31005), (74, 31020), (76, 31023),

Gene: TelAviv\_72 Start: 47505, Stop: 47128, Start Num: 18

Candidate Starts for TelAviv\_72:

(Start: 18 @47505 has 19 MA's), (31, 47445), (35, 47433), (44, 47370), (55, 47277), (56, 47271), (60, 47226), (67, 47181), (75, 47142), (77, 47139),

Gene: Thoth\_56 Start: 42721, Stop: 43101, Start Num: 21

Candidate Starts for Thoth\_56:

(Start: 21 @42721 has 36 MA's), (28, 42754), (29, 42757), (30, 42760), (42, 42814), (43, 42817), (52, 42937), (67, 43048), (68, 43051),

Gene: Troll4\_56 Start: 42852, Stop: 43232, Start Num: 21

Candidate Starts for Troll4\_56:

(Start: 21 @42852 has 36 MA's), (28, 42885), (29, 42888), (30, 42891), (42, 42945), (43, 42948), (52, 43068), (67, 43179), (68, 43182),

Gene: Vincenzo\_51 Start: 48916, Stop: 48518, Start Num: 21

Candidate Starts for Vincenzo\_51:

(Start: 21 @48916 has 36 MA's), (32, 48871), (33, 48868), (41, 48826), (60, 48619),



Gene: VioletZ\_51 Start: 48276, Stop: 47878, Start Num: 21  
Candidate Starts for VioletZ\_51:  
(Start: 21 @48276 has 36 MA's), (33, 48228), (34, 48225), (40, 48204), (60, 47979), (63, 47958), (69, 47922),

Gene: Visconti\_57 Start: 42732, Stop: 43112, Start Num: 21  
Candidate Starts for Visconti\_57:  
(Start: 21 @42732 has 36 MA's), (28, 42765), (29, 42768), (30, 42771), (42, 42825), (43, 42828), (52, 42948), (67, 43059), (68, 43062),

Gene: Vorrps\_76 Start: 47629, Stop: 47252, Start Num: 18  
Candidate Starts for Vorrps\_76:  
(Start: 18 @47629 has 19 MA's), (31, 47569), (35, 47557), (44, 47494), (55, 47401), (56, 47395), (60, 47350), (67, 47305), (75, 47266), (77, 47263),

Gene: Wildflower\_74 Start: 47353, Stop: 46976, Start Num: 18  
Candidate Starts for Wildflower\_74:  
(Start: 11 @47401 has 3 MA's), (Start: 18 @47353 has 19 MA's), (31, 47293), (35, 47281), (44, 47218), (55, 47125), (56, 47119), (60, 47074), (67, 47029), (75, 46990), (77, 46987),

Gene: Winget\_76 Start: 47798, Stop: 47421, Start Num: 18  
Candidate Starts for Winget\_76:  
(Start: 18 @47798 has 19 MA's), (31, 47738), (35, 47726), (44, 47663), (55, 47570), (56, 47564), (60, 47519), (67, 47474), (75, 47435), (77, 47432),

Gene: Xerxes\_42 Start: 30667, Stop: 31065, Start Num: 14  
Candidate Starts for Xerxes\_42:  
(Start: 14 @30667 has 22 MA's), (26, 30718), (29, 30733), (55, 30916), (56, 30922), (61, 30973), (65, 30994), (66, 30997), (67, 31012), (72, 31036), (74, 31051), (76, 31054),

Gene: YungJamal\_80 Start: 48976, Stop: 48599, Start Num: 18  
Candidate Starts for YungJamal\_80:  
(Start: 11 @49024 has 3 MA's), (Start: 18 @48976 has 19 MA's), (31, 48916), (35, 48904), (44, 48841), (55, 48748), (56, 48742), (60, 48697), (67, 48652), (75, 48613), (77, 48610),

Gene: Zakhe101\_75 Start: 47767, Stop: 47390, Start Num: 18  
Candidate Starts for Zakhe101\_75:  
(Start: 11 @47815 has 3 MA's), (Start: 18 @47767 has 19 MA's), (31, 47707), (35, 47695), (44, 47632), (55, 47539), (56, 47533), (60, 47488), (67, 47443), (75, 47404), (77, 47401),

Gene: ZenTime222\_39 Start: 31045, Stop: 31446, Start Num: 20  
Candidate Starts for ZenTime222\_39:  
(6, 30802), (Start: 20 @31045 has 12 MA's), (Start: 23 @31063 has 1 MA's), (46, 31219), (50, 31270), (55, 31294), (70, 31414), (71, 31417),