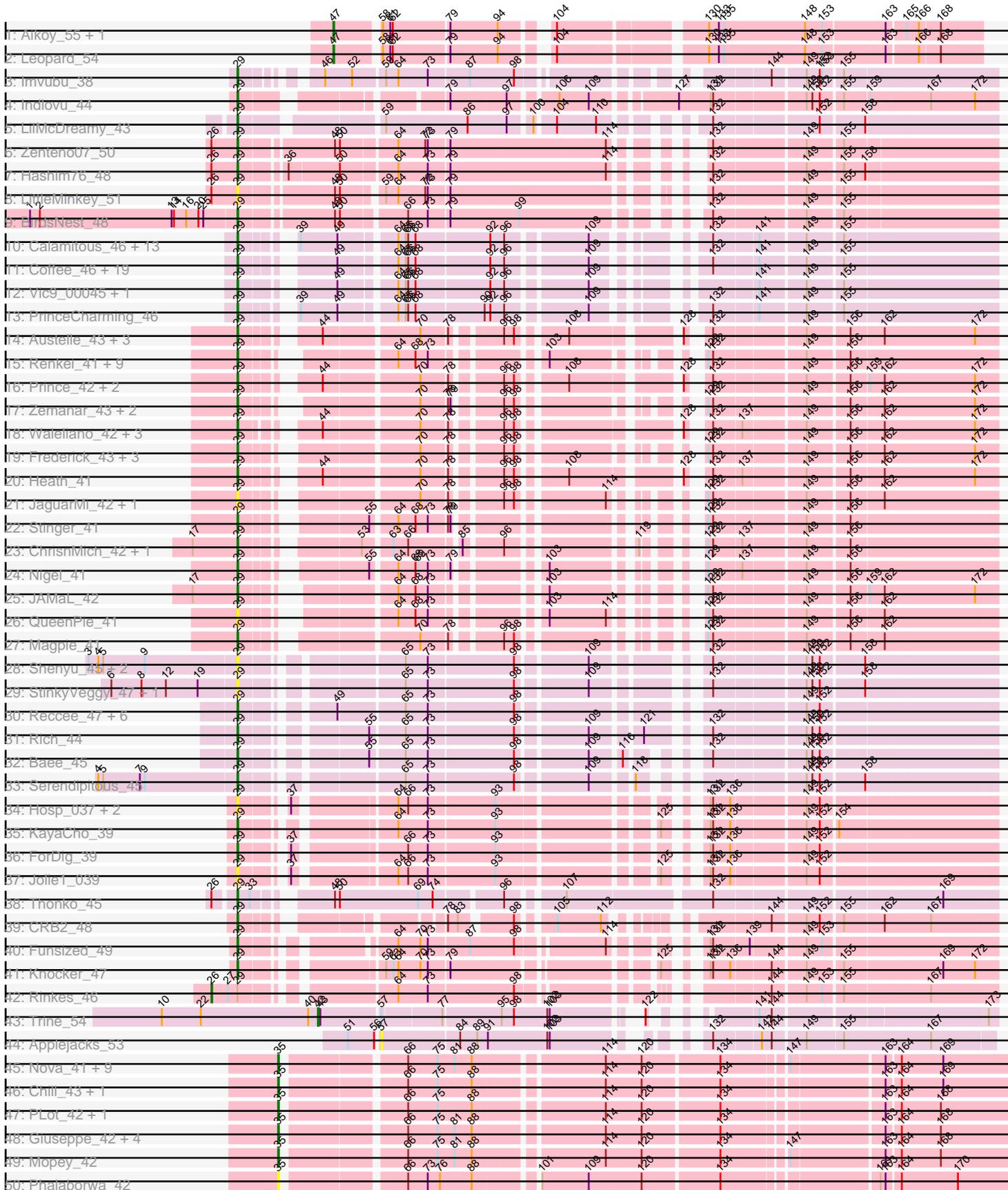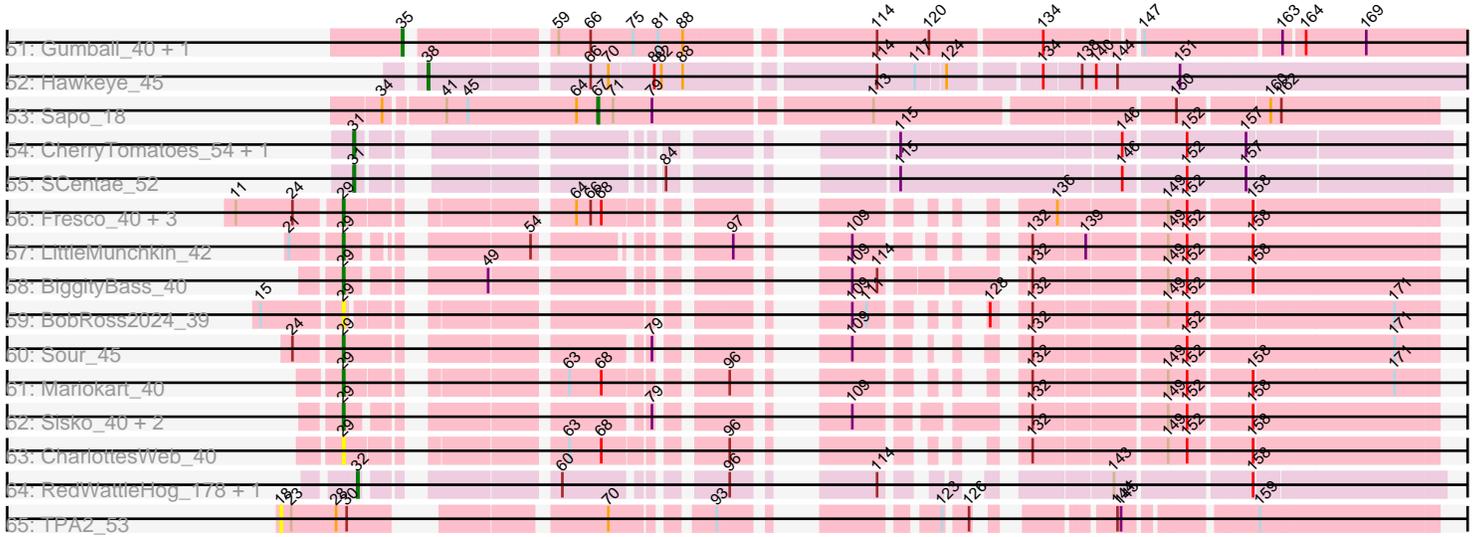Pham 289145

Pham 289145

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 289145 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289145 has 157 members, 34 are drafts.

Phages represented in each track:
• Track 1 : Aikoy_55, Onyinye_55
• Track 2 : Leopard_54
• Track 3 : Imvubu_38
• Track 4 : Indlovu_44
• Track 5 : LilMcDreamy_43
• Track 6 : Zenteno07_50
• Track 7 : Hashim76_48
• Track 8 : LittleMinkey_51
• Track 9 : BirdsNest_48
• Track 10 : Calamitous_46, Lars_46, Allegro_46, Faze9_45, Kaleb_46, TA17A_47, Kheth_46, Blocker23_46, MasterPo_46, Holeinone_46, Phantasmagoria_46, Godines_46, Arbiter_45, Rhinoforte_46
• Track 11 : Coffee_46, Lephleur_46, ItsyBitsy1_46, FrenchFry_46, Tinciduntsolum_47, Bananafish_46, Hedgerow_46, West99_46, Tres_46, LizLemon_46, Kolhan_46, Sabella_45, LilSmirk_46, Ares_46, Brownie5_46, Boyle_46, Eaglehorse_46, Rosebush_45, Opia_46, Glass_46
• Track 12 : Vic9_00045, Laurie_45
• Track 13 : PrinceCharming_46
• Track 14 : Austelle_43, Mudslide_42, Fortunato_43, RawrgerThat_43
• Track 15 : Renkei_41, GinPorsche_42, Ahwei_41, Poster_41, Epah_41, Antihero_41, Hally898_41, Lambano_41, LittleDigger_41, Nanao_41
• Track 16 : Prince_42, Apex_43, VioletZ_44
• Track 17 : Zemanar_43, Lolalove_43, JoyceMaria_42
• Track 18 : Waleliano_42, BrownCNA_44, Hangman_42, Hydro_42
• Track 19 : Frederick_43, Mithril_42, Fanaw_41, BobbyK_43
• Track 20 : Heath_41
• Track 21 : JaguarMi_42, Xincheng_41
• Track 22 : Stinger_41
• Track 23 : ChrisnMich_42, Cooper_43
• Track 24 : Nigel_41
• Track 25 : JAMaL_42
• Track 26 : QueenPie_41
• Track 27 : Magpie_41
• Track 28 : Shenyu_45, DigitDog_45, Nangang_45
• Track 29 : StinkyVeggy_47, KarasumaRum_47
• Track 30 : Reccee_47, Acadian_46, EastView9101_44, Suigeneris_46, Donny_46, SirJeffery_46, Rita130_46

- Track 31 : Rich_44
- Track 32 : Baee_45
- Track 33 : Serendipitous_45
- Track 34 : Hosp_037, 40BC_039, 39HC_039
- Track 35 : KayaCho_39
- Track 36 : ForDig_39
- Track 37 : Jolie1_039
- Track 38 : Thonko_45
- Track 39 : CRB2_48
- Track 40 : Funsized_49
- Track 41 : Knocker_47
- Track 42 : Rinkes_46
- Track 43 : Trine_54
- Track 44 : Applejacks_53
- Track 45 : Nova_41, SuperheroCarly_43, Butterscotch_41, PBI1_41, Prager_42, Penelope2018_42, Adjutor_42, KandZ_42, BigMama_40, Thoth_42
- Track 46 : Chill_43, WaldoWhy_43
- Track 47 : PLot_42, Erk16_41
- Track 48 : Giuseppe_42, Troll4_42, Visconti_42, Delton_42, Helpful_43
- Track 49 : Mopey_42
- Track 50 : Phalaborwa_42
- Track 51 : Gumball_40, SirHarley_41
- Track 52 : Hawkeye_45
- Track 53 : Sapo_18
- Track 54 : CherryTomatoes_54, Pupper_52
- Track 55 : SCentae_52
- Track 56 : Fresco_40, Axumite_40, Shatter_40, Ligma_40
- Track 57 : LittleMunchkin_42
- Track 58 : BiggityBass_40
- Track 59 : BobRoss2024_39
- Track 60 : Sour_45
- Track 61 : Mariokart_40
- Track 62 : Sisko_40, Yago84_40, AnClar_41
- Track 63 : CharlottesWeb_40
- Track 64 : RedWattleHog_178, Stormageddon_179
- Track 65 : TPA2_53

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

The start number called the most often in the published annotations is 29, it was called in 90 of the 123 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- 39HC_039, 40BC_039, Acadian_46, Ahwei_41, Allegro_46, AnClar_41, Antihero_41, Apex_43, Arbiter_45, Ares_46, Austelle_43, Axumite_40, Baee_45, Bananafish_46, BiggityBass_40, BirdsNest_48, Blocker23_46, BobRoss2024_39, BobbyK_43, Boyle_46, BrownCNA_44, Brownie5_46, CRB2_48, Calamitous_46, CharlottesWeb_40, ChrisnMich_42, Coffee_46, Cooper_43, DigitDog_45, Donny_46, Eaglehorse_46, EastView9101_44, Epah_41, Fanaw_41, Faze9_45, ForDig_39, Fortunato_43, Frederick_43, FrenchFry_46, Fresco_40, Funsized_49,

GinPorsche_42, Glass_46, Godines_46, Hally898_41, Hangman_42, Hashim76_48, Heath_41, Hedgerow_46, Holeinone_46, Hosp_037, Hydro_42, Imvubu_38, Indlovu_44, ItsyBitsy1_46, JAMaL_42, JaguarMi_42, Jolie1_039, JoyceMaria_42, Kaleb_46, KarasumaRum_47, KayaCho_39, Kheth_46, Knocker_47, Kolhan_46, Lambano_41, Lars_46, Laurie_45, Lephleur_46, Ligma_40, LilMcDreamy_43, LilSmirk_46, LittleDigger_41, LittleMinkey_51, LittleMunchkin_42, LizLemon_46, Lolalove_43, Magpie_41, Mariokart_40, MasterPo_46, Mithril_42, Mudslide_42, Nanao_41, Nangang_45, Nigel_41, Opia_46, Phantasmagoria_46, Poster_41, PrinceCharming_46, Prince_42, QueenPie_41, RawrgerThat_43, Reccee_47, Renkei_41, Rhinoforte_46, Rich_44, Rita130_46, Rosebush_45, Sabella_45, Serendipitous_45, Shatter_40, Shenyu_45, SirJeffery_46, Sisko_40, Sour_45, Stinger_41, StinkyVeggy_47, Suigeneris_46, TA17A_47, Thonko_45, Tinciduntsolum_47, Tres_46, Vic9_00045, VioletZ_44, Waleliano_42, West99_46, Xincheng_41, Yago84_40, Zemanar_43, Zenteno07_50,

Genes that have the "Most Annotated" start but do not call it:
• Rinkes_46,

Genes that do not have the "Most Annotated" start:
• Adjutor_42, Aikoy_55, Applejacks_53, BigMama_40, Butterscotch_41, CherryTomatoes_54, Chill_43, Delton_42, Erk16_41, Giuseppe_42, Gumball_40, Hawkeye_45, Helpful_43, KandZ_42, Leopard_54, Mopey_42, Nova_41, Onyinye_55, PBI1_41, PLot_42, Penelope2018_42, Phalaborwa_42, Prager_42, Pupper_52, RedWattleHog_178, SCentae_52, Sapo_18, SirHarley_41, Stormageddon_179, SuperheroCarly_43, TPA2_53, Thoth_42, Trine_54, Troll4_42, Visconti_42, WaldoWhy_43,

Summary by start number:

Start 18:
• Found in 1 of 157 (0.6%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: TPA2_53 (singleton),

Start 26:
• Found in 5 of 157 (3.2%) of genes in pham
• Manual Annotations of this start: 1 of 123
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Rinkes_46 (B9),

Start 29:
• Found in 121 of 157 (77.1%) of genes in pham
• Manual Annotations of this start: 90 of 123
• Called 99.2% of time when present
• Phage (with cluster) where this start called: 39HC_039 (B6), 40BC_039 (B6), Acadian_46 (B5), Ahwei_41 (B4), Allegro_46 (B2), AnClar_41 (DR), Antihero_41 (B4), Apex_43 (B4), Arbiter_45 (B2), Ares_46 (B2), Austelle_43 (B4), Axumite_40 (DR), Baee_45 (B5), Bananafish_46 (B2), BiggityBass_40 (DR), BirdsNest_48 (B13), Blocker23_46 (B2), BobRoss2024_39 (DR), BobbyK_43 (B4), Boyle_46 (B2), BrownCNA_44 (B4), Brownie5_46 (B2), CRB2_48 (B9), Calamitous_46 (B2), CharlottesWeb_40 (DR), ChrisnMich_42 (B4), Coffee_46 (B2), Cooper_43 (B4), DigitDog_45 (B5), Donny_46 (B5), Eaglehorse_46 (B2), EastView9101_44 (B5),

Epah_41 (B4), Fanaw_41 (B4), Faze9_45 (B2), ForDig_39 (B6), Fortunato_43 (B4), Frederick_43 (B4), FrenchFry_46 (B2), Fresco_40 (DR), Funsized_49 (B9), GinPorsche_42 (B4), Glass_46 (B2), Godines_46 (B2), Hally898_41 (B4), Hangman_42 (B4), Hashim76_48 (B13), Heath_41 (B4), Hedgerow_46 (B2), Holeinone_46 (B2), Hosp_037 (B6), Hydro_42 (B4), Imvubu_38 (B10), Indlovu_44 (B11), ItsyBitsy1_46 (B2), JAMaL_42 (B4), JaguarMi_42 (B4), Jolie1_039 (B6), JoyceMaria_42 (B4), Kaleb_46 (B2), KarasumaRum_47 (B5), KayaCho_39 (B6), Kheth_46 (B2), Knocker_47 (B9), Kolhan_46 (B2), Lambano_41 (B4), Lars_46 (B2), Laurie_45 (B2), Lephleur_46 (B2), Ligma_40 (DR), LilMcDreamy_43 (B12), LilSmirk_46 (B2), LittleDigger_41 (B4), LittleMinkey_51 (B13), LittleMunchkin_42 (DR), LizLemon_46 (B2), Lolalove_43 (B4), Magpie_41 (B4), Mariokart_40 (DR), MasterPo_46 (B2), Mithril_42 (B4), Mudslide_42 (B4), Nanao_41 (B4), Nangang_45 (B5), Nigel_41 (B4), Opia_46 (B2), Phantasmagoria_46 (B2), Poster_41 (B4), PrinceCharming_46 (B2), Prince_42 (B4), QueenPie_41 (B4), RawrgerThat_43 (B4), Reccee_47 (B5), Renkei_41 (B4), Rhinoforte_46 (B2), Rich_44 (B5), Rita130_46 (B5), Rosebush_45 (B2), Sabella_45 (B2), Serendipitous_45 (B5), Shatter_40 (DR), Shenyu_45 (B5), SirJeffery_46 (B5), Sisko_40 (DR), Sour_45 (DR), Stinger_41 (B4), StinkyVeggy_47 (B5), Suigeneris_46 (B5), TA17A_47 (B2), Thonko_45 (B8), Tinciduntsolum_47 (B2), Tres_46 (B2), Vic9_00045 (B2), VioletZ_44 (B4), Waleliano_42 (B4), West99_46 (B2), Xincheng_41 (B4), Yago84_40 (DR), Zemanar_43 (B4), Zenteno07_50 (B13),

Start 31:
• Found in 3 of 157 (1.9%) of genes in pham
• Manual Annotations of this start: 3 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CherryTomatoes_54 (DO), Pupper_52 (DO), SCentae_52 (DO),

Start 32:
• Found in 2 of 157 (1.3%) of genes in pham
• Manual Annotations of this start: 2 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: RedWattleHog_178 (DX), Stormageddon_179 (DX),

Start 35:
• Found in 23 of 157 (14.6%) of genes in pham
• Manual Annotations of this start: 21 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Adjutor_42 (D1), BigMama_40 (D1), Butterscotch_41 (D1), Chill_43 (D1), Delton_42 (D1), Erk16_41 (D1), Giuseppe_42 (D1), Gumball_40 (D1), Helpful_43 (D1), KandZ_42 (D1), Mopey_42 (D1), Nova_41 (D1), PBI1_41 (D1), PLot_42 (D1), Penelope2018_42 (D1), Phalaborwa_42 (D1), Prager_42 (D1), SirHarley_41 (D1), SuperheroCarly_43 (D1), Thoth_42 (D1), Troll4_42 (D1), Visconti_42 (D1), WaldoWhy_43 (D1),

Start 38:
• Found in 1 of 157 (0.6%) of genes in pham
• Manual Annotations of this start: 1 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Hawkeye_45 (D2),

Start 42:
• Found in 1 of 157 (0.6%) of genes in pham
• Manual Annotations of this start: 1 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Trine_54 (CD),

Start 47:
• Found in 3 of 157 (1.9%) of genes in pham
• Manual Annotations of this start: 3 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aikoy_55 (AE), Leopard_54 (AE), Onyinye_55 (AE),

Start 57:
• Found in 2 of 157 (1.3%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Applejacks_53 (CD),

Start 67:
• Found in 1 of 157 (0.6%) of genes in pham
• Manual Annotations of this start: 1 of 123
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Sapo_18 (DA),

Summary by clusters:

There are 19 clusters represented in this pham: DO, singleton, AE, DX, B10, D2, DA, B4, B5, B6, B12, B13, B2, B11, CD, DR, B9, B8, D1,

Info for manual annotations of cluster AE:
•Start number 47 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster B10:
•Start number 29 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:
•Start number 29 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:
•Start number 29 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:
•Start number 29 was manually annotated 3 times for cluster B13.

Info for manual annotations of cluster B2:
•Start number 29 was manually annotated 36 times for cluster B2.

Info for manual annotations of cluster B4:
•Start number 29 was manually annotated 24 times for cluster B4.

Info for manual annotations of cluster B5:
•Start number 29 was manually annotated 7 times for cluster B5.

Info for manual annotations of cluster B6:
•Start number 29 was manually annotated 2 times for cluster B6.

Info for manual annotations of cluster B8:
•Start number 29 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster B9:
•Start number 26 was manually annotated 1 time for cluster B9.
•Start number 29 was manually annotated 3 times for cluster B9.

Info for manual annotations of cluster CD:
•Start number 42 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster D1:
•Start number 35 was manually annotated 21 times for cluster D1.

Info for manual annotations of cluster D2:
•Start number 38 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DA:
•Start number 67 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DO:
•Start number 31 was manually annotated 3 times for cluster DO.

Info for manual annotations of cluster DR:
•Start number 29 was manually annotated 11 times for cluster DR.

Info for manual annotations of cluster DX:
•Start number 32 was manually annotated 2 times for cluster DX.

Gene Information:
Gene: 39HC_039 Start: 38257, Stop: 37487, Start Num: 29
Candidate Starts for 39HC_039:
(Start: 29 @38257 has 90 MA's), (37, 38218), (64, 38110), (66, 38098), (73, 38074), (93, 37996), (131, 37810), (132, 37807), (136, 37786), (149, 37705), (152, 37690),

Gene: 40BC_039 Start: 38257, Stop: 37487, Start Num: 29
Candidate Starts for 40BC_039:
(Start: 29 @38257 has 90 MA's), (37, 38218), (64, 38110), (66, 38098), (73, 38074), (93, 37996), (131, 37810), (132, 37807), (136, 37786), (149, 37705), (152, 37690),

Gene: Acadian_46 Start: 40902, Stop: 40117, Start Num: 29
Candidate Starts for Acadian_46:
(Start: 29 @40902 has 90 MA's), (49, 40815), (65, 40740), (73, 40713), (98, 40614), (149, 40335), (152, 40320),

Gene: Adjutor_42 Start: 35432, Stop: 34551, Start Num: 35
Candidate Starts for Adjutor_42:

(Start: 35 @35432 has 21 MA's), (66, 35300), (75, 35264), (81, 35243), (88, 35222), (114, 35078), (120, 35036), (134, 34946), (147, 34874), (163, 34766), (164, 34751), (169, 34700),

Gene: Ahwei_41 Start: 39395, Stop: 38667, Start Num: 29
Candidate Starts for Ahwei_41:
(Start: 29 @39395 has 90 MA's), (64, 39254), (68, 39233), (73, 39218), (103, 39113), (129, 38993), (132, 38987), (149, 38885), (156, 38840),

Gene: Aikoy_55 Start: 40551, Stop: 41255, Start Num: 47
Candidate Starts for Aikoy_55:
(Start: 47 @40551 has 3 MA's), (58, 40599), (61, 40608), (62, 40611), (79, 40677), (94, 40734), (104, 40779), (130, 40938), (133, 40950), (135, 40956), (148, 41052), (153, 41073), (163, 41145), (165, 41166), (166, 41181), (168, 41205),

Gene: Allegro_46 Start: 40703, Stop: 39927, Start Num: 29
Candidate Starts for Allegro_46:
(Start: 29 @40703 has 90 MA's), (39, 40649), (49, 40604), (64, 40547), (65, 40538), (66, 40535), (68, 40526), (92, 40439), (96, 40424), (109, 40340), (132, 40247), (141, 40196), (149, 40145), (155, 40106),

Gene: AnClar_41 Start: 36812, Stop: 36102, Start Num: 29
Candidate Starts for AnClar_41:
(Start: 29 @36812 has 90 MA's), (79, 36614), (109, 36521), (132, 36416), (149, 36314), (152, 36299), (158, 36251),

Gene: Antihero_41 Start: 39395, Stop: 38667, Start Num: 29
Candidate Starts for Antihero_41:
(Start: 29 @39395 has 90 MA's), (64, 39254), (68, 39233), (73, 39218), (103, 39113), (129, 38993), (132, 38987), (149, 38885), (156, 38840),

Gene: Apex_43 Start: 40637, Stop: 39879, Start Num: 29
Candidate Starts for Apex_43:
(Start: 29 @40637 has 90 MA's), (44, 40568), (70, 40460), (78, 40430), (96, 40382), (98, 40370), (108, 40325), (128, 40214), (132, 40199), (149, 40097), (156, 40052), (159, 40031), (162, 40013), (172, 39905),

Gene: Applejacks_53 Start: 38314, Stop: 37676, Start Num: 57
Candidate Starts for Applejacks_53:
(51, 38347), (56, 38317), (57, 38314), (84, 38221), (89, 38200), (91, 38188), (102, 38119), (103, 38116), (132, 37993), (142, 37939), (144, 37927), (149, 37891), (155, 37849), (167, 37750),

Gene: Arbiter_45 Start: 40777, Stop: 40013, Start Num: 29
Candidate Starts for Arbiter_45:
(Start: 29 @40777 has 90 MA's), (39, 40735), (49, 40690), (64, 40633), (65, 40624), (66, 40621), (68, 40612), (92, 40525), (96, 40510), (109, 40426), (132, 40333), (141, 40282), (149, 40231), (155, 40192),

Gene: Ares_46 Start: 40761, Stop: 39997, Start Num: 29
Candidate Starts for Ares_46:
(Start: 29 @40761 has 90 MA's), (49, 40674), (64, 40617), (65, 40608), (66, 40605), (68, 40596), (92, 40509), (96, 40494), (109, 40410), (132, 40317), (141, 40266), (149, 40215), (155, 40176),

Gene: Austelle_43 Start: 41087, Stop: 40329, Start Num: 29

Candidate Starts for Austelle_43:
(Start: 29 @41087 has 90 MA's), (44, 41018), (70, 40910), (78, 40880), (96, 40832), (98, 40820), (108, 40775), (128, 40664), (132, 40649), (149, 40547), (156, 40502), (162, 40463), (172, 40355),

Gene: Axumite_40 Start: 34038, Stop: 33349, Start Num: 29
Candidate Starts for Axumite_40:
(11, 34119), (24, 34071), (Start: 29 @34038 has 90 MA's), (64, 33888), (66, 33876), (68, 33867), (136, 33642), (149, 33561), (152, 33546), (158, 33498),

Gene: Baee_45 Start: 40787, Stop: 40020, Start Num: 29
Candidate Starts for Baee_45:
(Start: 29 @40787 has 90 MA's), (55, 40664), (65, 40625), (73, 40598), (98, 40499), (109, 40424), (116, 40391), (132, 40340), (149, 40238), (150, 40232), (152, 40223),

Gene: Bananafish_46 Start: 40697, Stop: 39933, Start Num: 29
Candidate Starts for Bananafish_46:
(Start: 29 @40697 has 90 MA's), (49, 40610), (64, 40553), (65, 40544), (66, 40541), (68, 40532), (92, 40445), (96, 40430), (109, 40346), (132, 40253), (141, 40202), (149, 40151), (155, 40112),

Gene: BigMama_40 Start: 35508, Stop: 34627, Start Num: 35
Candidate Starts for BigMama_40:
(Start: 35 @35508 has 21 MA's), (66, 35376), (75, 35340), (81, 35319), (88, 35298), (114, 35154), (120, 35112), (134, 35022), (147, 34950), (163, 34842), (164, 34827), (169, 34776),

Gene: BiggityBass_40 Start: 36280, Stop: 35564, Start Num: 29
Candidate Starts for BiggityBass_40:
(Start: 29 @36280 has 90 MA's), (49, 36193), (109, 35992), (114, 35971), (132, 35878), (149, 35776), (152, 35761), (158, 35713),

Gene: BirdsNest_48 Start: 39192, Stop: 38389, Start Num: 29
Candidate Starts for BirdsNest_48:
(1, 39444), (2, 39432), (13, 39270), (14, 39267), (16, 39252), (20, 39237), (25, 39231), (Start: 29 @39192 has 90 MA's), (48, 39087), (50, 39081), (66, 39009), (73, 38985), (79, 38961), (99, 38880), (132, 38709), (149, 38604), (155, 38565),

Gene: Blocker23_46 Start: 40815, Stop: 40051, Start Num: 29
Candidate Starts for Blocker23_46:
(Start: 29 @40815 has 90 MA's), (39, 40773), (49, 40728), (64, 40671), (65, 40662), (66, 40659), (68, 40650), (92, 40563), (96, 40548), (109, 40464), (132, 40371), (141, 40320), (149, 40269), (155, 40230),

Gene: BobRoss2024_39 Start: 34120, Stop: 33434, Start Num: 29
Candidate Starts for BobRoss2024_39:
(15, 34183), (Start: 29 @34120 has 90 MA's), (109, 33823), (111, 33811), (128, 33766), (132, 33748), (149, 33646), (152, 33631), (171, 33469),

Gene: BobbyK_43 Start: 40432, Stop: 39698, Start Num: 29
Candidate Starts for BobbyK_43:
(Start: 29 @40432 has 90 MA's), (70, 40258), (78, 40228), (96, 40180), (98, 40168), (129, 40024), (132, 40018), (149, 39916), (156, 39871), (162, 39832), (172, 39724),

Gene: Boyle_46 Start: 40816, Stop: 40052, Start Num: 29
Candidate Starts for Boyle_46:

(Start: 29 @40816 has 90 MA's), (49, 40729), (64, 40672), (65, 40663), (66, 40660), (68, 40651), (92, 40564), (96, 40549), (109, 40465), (132, 40372), (141, 40321), (149, 40270), (155, 40231),

Gene: BrownCNA_44 Start: 40717, Stop: 39959, Start Num: 29
Candidate Starts for BrownCNA_44:
(Start: 29 @40717 has 90 MA's), (44, 40648), (70, 40540), (78, 40510), (96, 40462), (98, 40450), (128, 40294), (132, 40279), (137, 40246), (149, 40177), (156, 40132), (162, 40093), (172, 39985),

Gene: Brownie5_46 Start: 40828, Stop: 40058, Start Num: 29
Candidate Starts for Brownie5_46:
(Start: 29 @40828 has 90 MA's), (49, 40735), (64, 40678), (65, 40669), (66, 40666), (68, 40657), (92, 40570), (96, 40555), (109, 40471), (132, 40378), (141, 40327), (149, 40276), (155, 40237),

Gene: Butterscotch_41 Start: 35492, Stop: 34611, Start Num: 35
Candidate Starts for Butterscotch_41:
(Start: 35 @35492 has 21 MA's), (66, 35360), (75, 35324), (81, 35303), (88, 35282), (114, 35138), (120, 35096), (134, 35006), (147, 34934), (163, 34826), (164, 34811), (169, 34760),

Gene: CRB2_48 Start: 42937, Stop: 42212, Start Num: 29
Candidate Starts for CRB2_48:
(Start: 29 @42937 has 90 MA's), (78, 42748), (83, 42736), (98, 42685), (105, 42652), (112, 42601), (144, 42466), (149, 42430), (152, 42415), (155, 42391), (162, 42346), (167, 42292),

Gene: Calamitous_46 Start: 40702, Stop: 39938, Start Num: 29
Candidate Starts for Calamitous_46:
(Start: 29 @40702 has 90 MA's), (39, 40660), (49, 40615), (64, 40558), (65, 40549), (66, 40546), (68, 40537), (92, 40450), (96, 40435), (109, 40351), (132, 40258), (141, 40207), (149, 40156), (155, 40117),

Gene: CharlottesWeb_40 Start: 33924, Stop: 33235, Start Num: 29
Candidate Starts for CharlottesWeb_40:
(Start: 29 @33924 has 90 MA's), (63, 33780), (68, 33753), (96, 33675), (132, 33549), (149, 33447), (152, 33432), (158, 33384),

Gene: CherryTomatoes_54 Start: 17569, Stop: 18327, Start Num: 31
Candidate Starts for CherryTomatoes_54:
(Start: 31 @17569 has 3 MA's), (115, 17890), (146, 18070), (152, 18118), (157, 18166),

Gene: Chill_43 Start: 35498, Stop: 34617, Start Num: 35
Candidate Starts for Chill_43:
(Start: 35 @35498 has 21 MA's), (66, 35366), (75, 35330), (88, 35288), (114, 35144), (120, 35102), (134, 35012), (163, 34832), (164, 34817), (169, 34766),

Gene: ChrisnMich_42 Start: 39396, Stop: 38659, Start Num: 29
Candidate Starts for ChrisnMich_42:
(17, 39450), (Start: 29 @39396 has 90 MA's), (53, 39282), (63, 39252), (66, 39234), (85, 39180), (96, 39141), (119, 39021), (129, 38985), (132, 38979), (137, 38946), (149, 38877), (156, 38832),

Gene: Coffee_46 Start: 40805, Stop: 40041, Start Num: 29
Candidate Starts for Coffee_46:
(Start: 29 @40805 has 90 MA's), (49, 40718), (64, 40661), (65, 40652), (66, 40649), (68, 40640), (92, 40553), (96, 40538), (109, 40454), (132, 40361), (141, 40310), (149, 40259), (155, 40220),

Gene: Cooper_43 Start: 39615, Stop: 38878, Start Num: 29
Candidate Starts for Cooper_43:
(17, 39669), (Start: 29 @39615 has 90 MA's), (53, 39501), (63, 39471), (66, 39453), (85, 39399), (96, 39360), (119, 39240), (129, 39204), (132, 39198), (137, 39165), (149, 39096), (156, 39051),

Gene: Delton_42 Start: 35504, Stop: 34623, Start Num: 35
Candidate Starts for Delton_42:
(Start: 35 @35504 has 21 MA's), (66, 35372), (75, 35336), (81, 35315), (88, 35294), (114, 35150), (120, 35108), (134, 35018), (163, 34838), (164, 34823), (168, 34775),

Gene: DigitDog_45 Start: 40602, Stop: 39817, Start Num: 29
Candidate Starts for DigitDog_45:
(3, 40782), (4, 40770), (5, 40764), (9, 40713), (Start: 29 @40602 has 90 MA's), (65, 40440), (73, 40413), (98, 40314), (109, 40239), (132, 40137), (149, 40035), (150, 40029), (152, 40020), (158, 39972),

Gene: Donny_46 Start: 40907, Stop: 40122, Start Num: 29
Candidate Starts for Donny_46:
(Start: 29 @40907 has 90 MA's), (49, 40820), (65, 40745), (73, 40718), (98, 40619), (149, 40340), (152, 40325),

Gene: Eaglehorse_46 Start: 40729, Stop: 39965, Start Num: 29
Candidate Starts for Eaglehorse_46:
(Start: 29 @40729 has 90 MA's), (49, 40642), (64, 40585), (65, 40576), (66, 40573), (68, 40564), (92, 40477), (96, 40462), (109, 40378), (132, 40285), (141, 40234), (149, 40183), (155, 40144),

Gene: EastView9101_44 Start: 40557, Stop: 39772, Start Num: 29
Candidate Starts for EastView9101_44:
(Start: 29 @40557 has 90 MA's), (49, 40470), (65, 40395), (73, 40368), (98, 40269), (149, 39990), (152, 39975),

Gene: Epah_41 Start: 39395, Stop: 38667, Start Num: 29
Candidate Starts for Epah_41:
(Start: 29 @39395 has 90 MA's), (64, 39254), (68, 39233), (73, 39218), (103, 39113), (129, 38993), (132, 38987), (149, 38885), (156, 38840),

Gene: Erk16_41 Start: 35489, Stop: 34620, Start Num: 35
Candidate Starts for Erk16_41:
(Start: 35 @35489 has 21 MA's), (66, 35357), (75, 35321), (88, 35279), (114, 35135), (120, 35093), (134, 35003), (163, 34823), (164, 34808), (168, 34760),

Gene: Fanaw_41 Start: 40092, Stop: 39364, Start Num: 29
Candidate Starts for Fanaw_41:
(Start: 29 @40092 has 90 MA's), (70, 39924), (78, 39894), (96, 39846), (98, 39834), (129, 39690), (132, 39684), (149, 39582), (156, 39537), (162, 39498), (172, 39390),

Gene: Faze9_45 Start: 40825, Stop: 40061, Start Num: 29
Candidate Starts for Faze9_45:
(Start: 29 @40825 has 90 MA's), (39, 40783), (49, 40738), (64, 40681), (65, 40672), (66, 40669), (68, 40660), (92, 40573), (96, 40558), (109, 40474), (132, 40381), (141, 40330), (149, 40279), (155, 40240),

Gene: ForDig_39 Start: 38242, Stop: 37472, Start Num: 29

Candidate Starts for ForDig_39:
(Start: 29 @38242 has 90 MA's), (37, 38203), (66, 38083), (73, 38059), (93, 37981), (131, 37795), (132, 37792), (136, 37771), (149, 37690), (152, 37675),

Gene: Fortunato_43 Start: 40450, Stop: 39692, Start Num: 29
Candidate Starts for Fortunato_43:
(Start: 29 @40450 has 90 MA's), (44, 40381), (70, 40273), (78, 40243), (96, 40195), (98, 40183), (108, 40138), (128, 40027), (132, 40012), (149, 39910), (156, 39865), (162, 39826), (172, 39718),

Gene: Frederick_43 Start: 40432, Stop: 39698, Start Num: 29
Candidate Starts for Frederick_43:
(Start: 29 @40432 has 90 MA's), (70, 40258), (78, 40228), (96, 40180), (98, 40168), (129, 40024), (132, 40018), (149, 39916), (156, 39871), (162, 39832), (172, 39724),

Gene: FrenchFry_46 Start: 40819, Stop: 40055, Start Num: 29
Candidate Starts for FrenchFry_46:
(Start: 29 @40819 has 90 MA's), (49, 40732), (64, 40675), (65, 40666), (66, 40663), (68, 40654), (92, 40567), (96, 40552), (109, 40468), (132, 40375), (141, 40324), (149, 40273), (155, 40234),

Gene: Fresco_40 Start: 34038, Stop: 33349, Start Num: 29
Candidate Starts for Fresco_40:
(11, 34119), (24, 34071), (Start: 29 @34038 has 90 MA's), (64, 33888), (66, 33876), (68, 33867), (136, 33642), (149, 33561), (152, 33546), (158, 33498),

Gene: Funsized_49 Start: 43198, Stop: 42434, Start Num: 29
Candidate Starts for Funsized_49:
(Start: 29 @43198 has 90 MA's), (64, 43051), (70, 43024), (73, 43015), (87, 42967), (98, 42916), (114, 42823), (131, 42757), (132, 42754), (139, 42712), (149, 42652), (153, 42634),

Gene: GinPorsche_42 Start: 39395, Stop: 38667, Start Num: 29
Candidate Starts for GinPorsche_42:
(Start: 29 @39395 has 90 MA's), (64, 39254), (68, 39233), (73, 39218), (103, 39113), (129, 38993), (132, 38987), (149, 38885), (156, 38840),

Gene: Giuseppe_42 Start: 35481, Stop: 34612, Start Num: 35
Candidate Starts for Giuseppe_42:
(Start: 35 @35481 has 21 MA's), (66, 35349), (75, 35313), (81, 35292), (88, 35271), (114, 35127), (120, 35085), (134, 34995), (163, 34815), (164, 34800), (168, 34752),

Gene: Glass_46 Start: 40819, Stop: 40055, Start Num: 29
Candidate Starts for Glass_46:
(Start: 29 @40819 has 90 MA's), (49, 40732), (64, 40675), (65, 40666), (66, 40663), (68, 40654), (92, 40567), (96, 40552), (109, 40468), (132, 40375), (141, 40324), (149, 40273), (155, 40234),

Gene: Godines_46 Start: 40761, Stop: 39997, Start Num: 29
Candidate Starts for Godines_46:
(Start: 29 @40761 has 90 MA's), (39, 40719), (49, 40674), (64, 40617), (65, 40608), (66, 40605), (68, 40596), (92, 40509), (96, 40494), (109, 40410), (132, 40317), (141, 40266), (149, 40215), (155, 40176),

Gene: Gumball_40 Start: 35445, Stop: 34561, Start Num: 35
Candidate Starts for Gumball_40:

(Start: 35 @35445 has 21 MA's), (59, 35340), (66, 35313), (75, 35277), (81, 35256), (88, 35235), (114, 35091), (120, 35049), (134, 34959), (147, 34887), (163, 34776), (164, 34761), (169, 34710),

Gene: Hally898_41 Start: 39407, Stop: 38679, Start Num: 29
Candidate Starts for Hally898_41:
(Start: 29 @39407 has 90 MA's), (64, 39266), (68, 39245), (73, 39230), (103, 39125), (129, 39005), (132, 38999), (149, 38897), (156, 38852),

Gene: Hangman_42 Start: 40448, Stop: 39690, Start Num: 29
Candidate Starts for Hangman_42:
(Start: 29 @40448 has 90 MA's), (44, 40379), (70, 40271), (78, 40241), (96, 40193), (98, 40181), (128, 40025), (132, 40010), (137, 39977), (149, 39908), (156, 39863), (162, 39824), (172, 39716),

Gene: Hashim76_48 Start: 39661, Stop: 38867, Start Num: 29
Candidate Starts for Hashim76_48:
(Start: 26 @39691 has 1 MA's), (Start: 29 @39661 has 90 MA's), (36, 39613), (50, 39553), (64, 39490), (73, 39454), (79, 39430), (114, 39244), (132, 39187), (149, 39082), (155, 39043), (158, 39019),

Gene: Hawkeye_45 Start: 35438, Stop: 34584, Start Num: 38
Candidate Starts for Hawkeye_45:
(Start: 38 @35438 has 1 MA's), (66, 35315), (70, 35300), (80, 35264), (82, 35258), (88, 35240), (114, 35096), (117, 35066), (124, 35045), (134, 34976), (138, 34946), (140, 34934), (144, 34916), (151, 34865),

Gene: Heath_41 Start: 40055, Stop: 39297, Start Num: 29
Candidate Starts for Heath_41:
(Start: 29 @40055 has 90 MA's), (44, 39986), (70, 39878), (78, 39848), (96, 39800), (98, 39788), (108, 39743), (128, 39632), (132, 39617), (137, 39584), (149, 39515), (156, 39470), (162, 39431), (172, 39323),

Gene: Hedgerow_46 Start: 40801, Stop: 40037, Start Num: 29
Candidate Starts for Hedgerow_46:
(Start: 29 @40801 has 90 MA's), (49, 40714), (64, 40657), (65, 40648), (66, 40645), (68, 40636), (92, 40549), (96, 40534), (109, 40450), (132, 40357), (141, 40306), (149, 40255), (155, 40216),

Gene: Helpful_43 Start: 35480, Stop: 34611, Start Num: 35
Candidate Starts for Helpful_43:
(Start: 35 @35480 has 21 MA's), (66, 35348), (75, 35312), (81, 35291), (88, 35270), (114, 35126), (120, 35084), (134, 34994), (163, 34814), (164, 34799), (168, 34751),

Gene: Holeinone_46 Start: 40681, Stop: 39917, Start Num: 29
Candidate Starts for Holeinone_46:
(Start: 29 @40681 has 90 MA's), (39, 40639), (49, 40594), (64, 40537), (65, 40528), (66, 40525), (68, 40516), (92, 40429), (96, 40414), (109, 40330), (132, 40237), (141, 40186), (149, 40135), (155, 40096),

Gene: Hosp_037 Start: 36449, Stop: 35679, Start Num: 29
Candidate Starts for Hosp_037:
(Start: 29 @36449 has 90 MA's), (37, 36410), (64, 36302), (66, 36290), (73, 36266), (93, 36188), (131, 36002), (132, 35999), (136, 35978), (149, 35897), (152, 35882),

Gene: Hydro_42 Start: 40465, Stop: 39707, Start Num: 29
Candidate Starts for Hydro_42:

(Start: 29 @40465 has 90 MA's), (44, 40396), (70, 40288), (78, 40258), (96, 40210), (98, 40198), (128, 40042), (132, 40027), (137, 39994), (149, 39925), (156, 39880), (162, 39841), (172, 39733),

Gene: Imvubu_38 Start: 37209, Stop: 36445, Start Num: 29
Candidate Starts for Imvubu_38:
(Start: 29 @37209 has 90 MA's), (46, 37146), (52, 37113), (59, 37077), (64, 37062), (73, 37026), (87, 36978), (98, 36927), (144, 36699), (149, 36663), (152, 36648), (153, 36645), (155, 36624),

Gene: Indlovu_44 Start: 39795, Stop: 38992, Start Num: 29
Candidate Starts for Indlovu_44:
(Start: 29 @39795 has 90 MA's), (79, 39591), (97, 39525), (106, 39477), (109, 39441), (127, 39354), (131, 39315), (132, 39312), (149, 39210), (150, 39204), (152, 39195), (155, 39171), (159, 39144), (167, 39072), (172, 39018),

Gene: ItsyBitsy1_46 Start: 40683, Stop: 39919, Start Num: 29
Candidate Starts for ItsyBitsy1_46:
(Start: 29 @40683 has 90 MA's), (49, 40596), (64, 40539), (65, 40530), (66, 40527), (68, 40518), (92, 40431), (96, 40416), (109, 40332), (132, 40239), (141, 40188), (149, 40137), (155, 40098),

Gene: JAMaL_42 Start: 40606, Stop: 39878, Start Num: 29
Candidate Starts for JAMaL_42:
(17, 40660), (Start: 29 @40606 has 90 MA's), (64, 40465), (68, 40444), (73, 40429), (103, 40324), (129, 40204), (132, 40198), (149, 40096), (156, 40051), (159, 40030), (162, 40012), (172, 39904),

Gene: JaguarMi_42 Start: 39908, Stop: 39174, Start Num: 29
Candidate Starts for JaguarMi_42:
(Start: 29 @39908 has 90 MA's), (70, 39734), (78, 39704), (96, 39656), (98, 39644), (114, 39554), (129, 39500), (132, 39494), (149, 39392), (156, 39347), (162, 39308),

Gene: Jolie1_039 Start: 38233, Stop: 37463, Start Num: 29
Candidate Starts for Jolie1_039:
(Start: 29 @38233 has 90 MA's), (37, 38194), (64, 38086), (66, 38074), (73, 38050), (93, 37972), (125, 37813), (131, 37786), (132, 37783), (136, 37762), (149, 37681), (152, 37666),

Gene: JoyceMaria_42 Start: 40421, Stop: 39693, Start Num: 29
Candidate Starts for JoyceMaria_42:
(Start: 29 @40421 has 90 MA's), (70, 40253), (78, 40223), (79, 40220), (96, 40175), (98, 40163), (129, 40019), (132, 40013), (149, 39911), (156, 39866), (162, 39827), (172, 39719),

Gene: Kaleb_46 Start: 40816, Stop: 40052, Start Num: 29
Candidate Starts for Kaleb_46:
(Start: 29 @40816 has 90 MA's), (39, 40774), (49, 40729), (64, 40672), (65, 40663), (66, 40660), (68, 40651), (92, 40564), (96, 40549), (109, 40465), (132, 40372), (141, 40321), (149, 40270), (155, 40231),

Gene: KandZ_42 Start: 35592, Stop: 34711, Start Num: 35
Candidate Starts for KandZ_42:
(Start: 35 @35592 has 21 MA's), (66, 35460), (75, 35424), (81, 35403), (88, 35382), (114, 35238), (120, 35196), (134, 35106), (147, 35034), (163, 34926), (164, 34911), (169, 34860),

Gene: KarasumaRum_47 Start: 41044, Stop: 40259, Start Num: 29
Candidate Starts for KarasumaRum_47:

(6, 41194), (8, 41158), (12, 41128), (19, 41089), (Start: 29 @41044 has 90 MA's), (65, 40882), (73, 40855), (98, 40756), (109, 40681), (132, 40579), (149, 40477), (150, 40471), (152, 40462), (158, 40414),

Gene: KayaCho_39 Start: 38235, Stop: 37462, Start Num: 29
Candidate Starts for KayaCho_39:
(Start: 29 @38235 has 90 MA's), (64, 38085), (73, 38049), (93, 37971), (125, 37812), (131, 37785), (132, 37782), (136, 37761), (149, 37680), (152, 37665), (154, 37647),

Gene: Kheth_46 Start: 40734, Stop: 39940, Start Num: 29
Candidate Starts for Kheth_46:
(Start: 29 @40734 has 90 MA's), (39, 40662), (49, 40617), (64, 40560), (65, 40551), (66, 40548), (68, 40539), (92, 40452), (96, 40437), (109, 40353), (132, 40260), (141, 40209), (149, 40158), (155, 40119),

Gene: Knocker_47 Start: 42121, Stop: 41354, Start Num: 29
Candidate Starts for Knocker_47:
(Start: 29 @42121 has 90 MA's), (59, 41983), (63, 41974), (64, 41968), (70, 41941), (73, 41932), (79, 41908), (125, 41704), (131, 41677), (132, 41674), (136, 41653), (144, 41608), (149, 41572), (155, 41533), (169, 41419), (172, 41380),

Gene: Kolhan_46 Start: 40689, Stop: 39931, Start Num: 29
Candidate Starts for Kolhan_46:
(Start: 29 @40689 has 90 MA's), (49, 40608), (64, 40551), (65, 40542), (66, 40539), (68, 40530), (92, 40443), (96, 40428), (109, 40344), (132, 40251), (141, 40200), (149, 40149), (155, 40110),

Gene: Lambano_41 Start: 39407, Stop: 38679, Start Num: 29
Candidate Starts for Lambano_41:
(Start: 29 @39407 has 90 MA's), (64, 39266), (68, 39245), (73, 39230), (103, 39125), (129, 39005), (132, 38999), (149, 38897), (156, 38852),

Gene: Lars_46 Start: 40806, Stop: 40042, Start Num: 29
Candidate Starts for Lars_46:
(Start: 29 @40806 has 90 MA's), (39, 40764), (49, 40719), (64, 40662), (65, 40653), (66, 40650), (68, 40641), (92, 40554), (96, 40539), (109, 40455), (132, 40362), (141, 40311), (149, 40260), (155, 40221),

Gene: Laurie_45 Start: 40205, Stop: 39441, Start Num: 29
Candidate Starts for Laurie_45:
(Start: 29 @40205 has 90 MA's), (49, 40118), (64, 40061), (65, 40052), (66, 40049), (68, 40040), (92, 39953), (96, 39938), (109, 39854), (141, 39710), (149, 39659), (155, 39620),

Gene: Leopard_54 Start: 40836, Stop: 41540, Start Num: 47
Candidate Starts for Leopard_54:
(Start: 47 @40836 has 3 MA's), (58, 40884), (61, 40893), (62, 40896), (79, 40962), (94, 41019), (104, 41064), (130, 41223), (133, 41235), (135, 41241), (148, 41337), (153, 41358), (163, 41430), (166, 41466), (168, 41490),

Gene: Lephleur_46 Start: 40699, Stop: 39935, Start Num: 29
Candidate Starts for Lephleur_46:
(Start: 29 @40699 has 90 MA's), (49, 40612), (64, 40555), (65, 40546), (66, 40543), (68, 40534), (92, 40447), (96, 40432), (109, 40348), (132, 40255), (141, 40204), (149, 40153), (155, 40114),

Gene: Ligma_40 Start: 34038, Stop: 33349, Start Num: 29
Candidate Starts for Ligma_40:
(11, 34119), (24, 34071), (Start: 29 @34038 has 90 MA's), (64, 33888), (66, 33876), (68, 33867), (136, 33642), (149, 33561), (152, 33546), (158, 33498),

Gene: LilMcDreamy_43 Start: 40014, Stop: 39223, Start Num: 29
Candidate Starts for LilMcDreamy_43:
(Start: 29 @40014 has 90 MA's), (59, 39864), (86, 39765), (97, 39720), (100, 39696), (104, 39675), (110, 39627), (132, 39543), (152, 39426), (158, 39378),

Gene: LilSmirk_46 Start: 40693, Stop: 39929, Start Num: 29
Candidate Starts for LilSmirk_46:
(Start: 29 @40693 has 90 MA's), (49, 40606), (64, 40549), (65, 40540), (66, 40537), (68, 40528), (92, 40441), (96, 40426), (109, 40342), (132, 40249), (141, 40198), (149, 40147), (155, 40108),

Gene: LittleDigger_41 Start: 39429, Stop: 38701, Start Num: 29
Candidate Starts for LittleDigger_41:
(Start: 29 @39429 has 90 MA's), (64, 39288), (68, 39267), (73, 39252), (103, 39147), (129, 39027), (132, 39021), (149, 38919), (156, 38874),

Gene: LittleMinkey_51 Start: 39746, Stop: 38958, Start Num: 29
Candidate Starts for LittleMinkey_51:
(Start: 26 @39776 has 1 MA's), (Start: 29 @39746 has 90 MA's), (48, 39641), (50, 39635), (59, 39593), (64, 39578), (72, 39545), (73, 39542), (79, 39518), (132, 39278), (149, 39173), (155, 39134),

Gene: LittleMunchkin_42 Start: 37302, Stop: 36634, Start Num: 29
Candidate Starts for LittleMunchkin_42:
(21, 37341), (Start: 29 @37302 has 90 MA's), (54, 37188), (97, 37071), (109, 37023), (132, 36948), (139, 36906), (149, 36846), (152, 36831), (158, 36783),

Gene: LizLemon_46 Start: 40815, Stop: 40051, Start Num: 29
Candidate Starts for LizLemon_46:
(Start: 29 @40815 has 90 MA's), (49, 40728), (64, 40671), (65, 40662), (66, 40659), (68, 40650), (92, 40563), (96, 40548), (109, 40464), (132, 40371), (141, 40320), (149, 40269), (155, 40230),

Gene: Lolalove_43 Start: 40432, Stop: 39704, Start Num: 29
Candidate Starts for Lolalove_43:
(Start: 29 @40432 has 90 MA's), (70, 40264), (78, 40234), (79, 40231), (96, 40186), (98, 40174), (129, 40030), (132, 40024), (149, 39922), (156, 39877), (162, 39838), (172, 39730),

Gene: Magpie_41 Start: 40274, Stop: 39540, Start Num: 29
Candidate Starts for Magpie_41:
(Start: 29 @40274 has 90 MA's), (70, 40100), (78, 40070), (96, 40022), (98, 40010), (129, 39866), (132, 39860), (149, 39758), (156, 39713), (162, 39674),

Gene: Mariokart_40 Start: 33941, Stop: 33252, Start Num: 29
Candidate Starts for Mariokart_40:
(Start: 29 @33941 has 90 MA's), (63, 33797), (68, 33770), (96, 33692), (132, 33566), (149, 33464), (152, 33449), (158, 33401), (171, 33287),

Gene: MasterPo_46 Start: 40702, Stop: 39938, Start Num: 29
Candidate Starts for MasterPo_46:

(Start: 29 @40702 has 90 MA's), (39, 40660), (49, 40615), (64, 40558), (65, 40549), (66, 40546), (68, 40537), (92, 40450), (96, 40435), (109, 40351), (132, 40258), (141, 40207), (149, 40156), (155, 40117),

Gene: Mithril_42 Start: 40442, Stop: 39708, Start Num: 29
Candidate Starts for Mithril_42:
(Start: 29 @40442 has 90 MA's), (70, 40268), (78, 40238), (96, 40190), (98, 40178), (129, 40034), (132, 40028), (149, 39926), (156, 39881), (162, 39842), (172, 39734),

Gene: Mopey_42 Start: 35492, Stop: 34611, Start Num: 35
Candidate Starts for Mopey_42:
(Start: 35 @35492 has 21 MA's), (66, 35360), (75, 35324), (81, 35303), (88, 35282), (114, 35138), (120, 35096), (134, 35006), (147, 34934), (163, 34826), (164, 34811), (168, 34763),

Gene: Mudslide_42 Start: 40698, Stop: 39940, Start Num: 29
Candidate Starts for Mudslide_42:
(Start: 29 @40698 has 90 MA's), (44, 40629), (70, 40521), (78, 40491), (96, 40443), (98, 40431), (108, 40386), (128, 40275), (132, 40260), (149, 40158), (156, 40113), (162, 40074), (172, 39966),

Gene: Nanao_41 Start: 39394, Stop: 38666, Start Num: 29
Candidate Starts for Nanao_41:
(Start: 29 @39394 has 90 MA's), (64, 39253), (68, 39232), (73, 39217), (103, 39112), (129, 38992), (132, 38986), (149, 38884), (156, 38839),

Gene: Nangang_45 Start: 40967, Stop: 40182, Start Num: 29
Candidate Starts for Nangang_45:
(3, 41147), (4, 41135), (5, 41129), (9, 41078), (Start: 29 @40967 has 90 MA's), (65, 40805), (73, 40778), (98, 40679), (109, 40604), (132, 40502), (149, 40400), (150, 40394), (152, 40385), (158, 40337),

Gene: Nigel_41 Start: 39313, Stop: 38579, Start Num: 29
Candidate Starts for Nigel_41:
(Start: 29 @39313 has 90 MA's), (55, 39193), (64, 39166), (68, 39145), (69, 39142), (73, 39130), (79, 39106), (103, 39025), (129, 38905), (137, 38866), (149, 38797), (156, 38752),

Gene: Nova_41 Start: 35918, Stop: 35037, Start Num: 35
Candidate Starts for Nova_41:
(Start: 35 @35918 has 21 MA's), (66, 35786), (75, 35750), (81, 35729), (88, 35708), (114, 35564), (120, 35522), (134, 35432), (147, 35360), (163, 35252), (164, 35237), (169, 35186),

Gene: Onyinye_55 Start: 40718, Stop: 41422, Start Num: 47
Candidate Starts for Onyinye_55:
(Start: 47 @40718 has 3 MA's), (58, 40766), (61, 40775), (62, 40778), (79, 40844), (94, 40901), (104, 40946), (130, 41105), (133, 41117), (135, 41123), (148, 41219), (153, 41240), (163, 41312), (165, 41333), (166, 41348), (168, 41372),

Gene: Opia_46 Start: 40688, Stop: 39924, Start Num: 29
Candidate Starts for Opia_46:
(Start: 29 @40688 has 90 MA's), (49, 40601), (64, 40544), (65, 40535), (66, 40532), (68, 40523), (92, 40436), (96, 40421), (109, 40337), (132, 40244), (141, 40193), (149, 40142), (155, 40103),

Gene: PBI1_41 Start: 35423, Stop: 34542, Start Num: 35
Candidate Starts for PBI1_41:

(Start: 35 @35423 has 21 MA's), (66, 35291), (75, 35255), (81, 35234), (88, 35213), (114, 35069), (120, 35027), (134, 34937), (147, 34865), (163, 34757), (164, 34742), (169, 34691),

Gene: PLot_42 Start: 35483, Stop: 34614, Start Num: 35
Candidate Starts for PLot_42:
(Start: 35 @35483 has 21 MA's), (66, 35351), (75, 35315), (88, 35273), (114, 35129), (120, 35087), (134, 34997), (163, 34817), (164, 34802), (168, 34754),

Gene: Penelope2018_42 Start: 35492, Stop: 34611, Start Num: 35
Candidate Starts for Penelope2018_42:
(Start: 35 @35492 has 21 MA's), (66, 35360), (75, 35324), (81, 35303), (88, 35282), (114, 35138), (120, 35096), (134, 35006), (147, 34934), (163, 34826), (164, 34811), (169, 34760),

Gene: Phalaborwa_42 Start: 35515, Stop: 34637, Start Num: 35
Candidate Starts for Phalaborwa_42:
(Start: 35 @35515 has 21 MA's), (66, 35383), (73, 35359), (76, 35344), (88, 35305), (101, 35239), (109, 35182), (120, 35119), (134, 35032), (161, 34858), (163, 34852), (164, 34837), (170, 34768),

Gene: Phantasmagoria_46 Start: 40700, Stop: 39936, Start Num: 29
Candidate Starts for Phantasmagoria_46:
(Start: 29 @40700 has 90 MA's), (39, 40658), (49, 40613), (64, 40556), (65, 40547), (66, 40544), (68, 40535), (92, 40448), (96, 40433), (109, 40349), (132, 40256), (141, 40205), (149, 40154), (155, 40115),

Gene: Poster_41 Start: 39395, Stop: 38667, Start Num: 29
Candidate Starts for Poster_41:
(Start: 29 @39395 has 90 MA's), (64, 39254), (68, 39233), (73, 39218), (103, 39113), (129, 38993), (132, 38987), (149, 38885), (156, 38840),

Gene: Prager_42 Start: 35504, Stop: 34623, Start Num: 35
Candidate Starts for Prager_42:
(Start: 35 @35504 has 21 MA's), (66, 35372), (75, 35336), (81, 35315), (88, 35294), (114, 35150), (120, 35108), (134, 35018), (147, 34946), (163, 34838), (164, 34823), (169, 34772),

Gene: Prince_42 Start: 40608, Stop: 39850, Start Num: 29
Candidate Starts for Prince_42:
(Start: 29 @40608 has 90 MA's), (44, 40539), (70, 40431), (78, 40401), (96, 40353), (98, 40341), (108, 40296), (128, 40185), (132, 40170), (149, 40068), (156, 40023), (159, 40002), (162, 39984), (172, 39876),

Gene: PrinceCharming_46 Start: 40808, Stop: 40044, Start Num: 29
Candidate Starts for PrinceCharming_46:
(Start: 29 @40808 has 90 MA's), (39, 40766), (49, 40721), (64, 40664), (65, 40655), (66, 40652), (68, 40643), (90, 40562), (92, 40556), (96, 40541), (109, 40457), (132, 40364), (141, 40313), (149, 40262), (155, 40223),

Gene: Pupper_52 Start: 17408, Stop: 18166, Start Num: 31
Candidate Starts for Pupper_52:
(Start: 31 @17408 has 3 MA's), (115, 17729), (146, 17909), (152, 17957), (157, 18005),

Gene: QueenPie_41 Start: 40519, Stop: 39791, Start Num: 29
Candidate Starts for QueenPie_41:

(Start: 29 @40519 has 90 MA's), (64, 40378), (68, 40357), (73, 40342), (103, 40237), (114, 40171), (129, 40117), (132, 40111), (149, 40009), (156, 39964), (162, 39925),

Gene: RawrgerThat_43 Start: 40453, Stop: 39695, Start Num: 29
Candidate Starts for RawrgerThat_43:
(Start: 29 @40453 has 90 MA's), (44, 40384), (70, 40276), (78, 40246), (96, 40198), (98, 40186), (108, 40141), (128, 40030), (132, 40015), (149, 39913), (156, 39868), (162, 39829), (172, 39721),

Gene: Reccee_47 Start: 41085, Stop: 40300, Start Num: 29
Candidate Starts for Reccee_47:
(Start: 29 @41085 has 90 MA's), (49, 40998), (65, 40923), (73, 40896), (98, 40797), (149, 40518), (152, 40503),

Gene: RedWattleHog_178 Start: 112519, Stop: 113199, Start Num: 32
Candidate Starts for RedWattleHog_178:
(Start: 32 @112519 has 2 MA's), (60, 112642), (96, 112747), (114, 112819), (143, 112945), (158, 113047),

Gene: Renkei_41 Start: 39429, Stop: 38701, Start Num: 29
Candidate Starts for Renkei_41:
(Start: 29 @39429 has 90 MA's), (64, 39288), (68, 39267), (73, 39252), (103, 39147), (129, 39027), (132, 39021), (149, 38919), (156, 38874),

Gene: Rhinoforte_46 Start: 40821, Stop: 40045, Start Num: 29
Candidate Starts for Rhinoforte_46:
(Start: 29 @40821 has 90 MA's), (39, 40767), (49, 40722), (64, 40665), (65, 40656), (66, 40653), (68, 40644), (92, 40557), (96, 40542), (109, 40458), (132, 40365), (141, 40314), (149, 40263), (155, 40224),

Gene: Rich_44 Start: 40775, Stop: 39990, Start Num: 29
Candidate Starts for Rich_44:
(Start: 29 @40775 has 90 MA's), (55, 40652), (65, 40613), (73, 40586), (98, 40487), (109, 40412), (121, 40361), (132, 40310), (149, 40208), (150, 40202), (152, 40193),

Gene: Rinkes_46 Start: 41695, Stop: 40898, Start Num: 26
Candidate Starts for Rinkes_46:
(Start: 26 @41695 has 1 MA's), (27, 41677), (Start: 29 @41665 has 90 MA's), (64, 41509), (73, 41473), (98, 41374), (144, 41152), (149, 41116), (153, 41098), (155, 41077), (167, 40978),

Gene: Rita130_46 Start: 40905, Stop: 40120, Start Num: 29
Candidate Starts for Rita130_46:
(Start: 29 @40905 has 90 MA's), (49, 40818), (65, 40743), (73, 40716), (98, 40617), (149, 40338), (152, 40323),

Gene: Rosebush_45 Start: 40816, Stop: 40052, Start Num: 29
Candidate Starts for Rosebush_45:
(Start: 29 @40816 has 90 MA's), (49, 40729), (64, 40672), (65, 40663), (66, 40660), (68, 40651), (92, 40564), (96, 40549), (109, 40465), (132, 40372), (141, 40321), (149, 40270), (155, 40231),

Gene: SCentae_52 Start: 17425, Stop: 18183, Start Num: 31
Candidate Starts for SCentae_52:
(Start: 31 @17425 has 3 MA's), (84, 17620), (115, 17746), (146, 17926), (152, 17974), (157, 18022),

Gene: Sabella_45 Start: 40693, Stop: 39929, Start Num: 29
Candidate Starts for Sabella_45:
(Start: 29 @40693 has 90 MA's), (49, 40606), (64, 40549), (65, 40540), (66, 40537), (68, 40528), (92, 40441), (96, 40426), (109, 40342), (132, 40249), (141, 40198), (149, 40147), (155, 40108),

Gene: Sapo_18 Start: 17320, Stop: 16661, Start Num: 67
Candidate Starts for Sapo_18:
(34, 17491), (41, 17446), (45, 17428), (64, 17338), (Start: 67 @17320 has 1 MA's), (71, 17308), (79, 17275), (113, 17101), (150, 16867), (160, 16798), (162, 16789),

Gene: Serendipitous_45 Start: 40717, Stop: 39950, Start Num: 29
Candidate Starts for Serendipitous_45:
(4, 40885), (5, 40879), (7, 40834), (9, 40828), (Start: 29 @40717 has 90 MA's), (65, 40555), (73, 40528), (98, 40429), (109, 40354), (118, 40315), (149, 40168), (150, 40162), (152, 40153), (158, 40105),

Gene: Shatter_40 Start: 34038, Stop: 33349, Start Num: 29
Candidate Starts for Shatter_40:
(11, 34119), (24, 34071), (Start: 29 @34038 has 90 MA's), (64, 33888), (66, 33876), (68, 33867), (136, 33642), (149, 33561), (152, 33546), (158, 33498),

Gene: Shenyu_45 Start: 40967, Stop: 40182, Start Num: 29
Candidate Starts for Shenyu_45:
(3, 41147), (4, 41135), (5, 41129), (9, 41078), (Start: 29 @40967 has 90 MA's), (65, 40805), (73, 40778), (98, 40679), (109, 40604), (132, 40502), (149, 40400), (150, 40394), (152, 40385), (158, 40337),

Gene: SirHarley_41 Start: 35427, Stop: 34543, Start Num: 35
Candidate Starts for SirHarley_41:
(Start: 35 @35427 has 21 MA's), (59, 35322), (66, 35295), (75, 35259), (81, 35238), (88, 35217), (114, 35073), (120, 35031), (134, 34941), (147, 34869), (163, 34758), (164, 34743), (169, 34692),

Gene: SirJeffery_46 Start: 40904, Stop: 40119, Start Num: 29
Candidate Starts for SirJeffery_46:
(Start: 29 @40904 has 90 MA's), (49, 40817), (65, 40742), (73, 40715), (98, 40616), (149, 40337), (152, 40322),

Gene: Sisko_40 Start: 34816, Stop: 34106, Start Num: 29
Candidate Starts for Sisko_40:
(Start: 29 @34816 has 90 MA's), (79, 34618), (109, 34525), (132, 34420), (149, 34318), (152, 34303), (158, 34255),

Gene: Sour_45 Start: 38694, Stop: 38008, Start Num: 29
Candidate Starts for Sour_45:
(24, 38730), (Start: 29 @38694 has 90 MA's), (79, 38487), (109, 38394), (132, 38322), (152, 38205), (171, 38043),

Gene: Stinger_41 Start: 39003, Stop: 38269, Start Num: 29
Candidate Starts for Stinger_41:
(Start: 29 @39003 has 90 MA's), (55, 38883), (64, 38856), (68, 38835), (73, 38820), (78, 38799), (79, 38796), (129, 38595), (132, 38589), (149, 38487), (156, 38442),

Gene: StinkyVeggy_47 Start: 41044, Stop: 40259, Start Num: 29

Candidate Starts for StinkyVeggy_47:
(6, 41194), (8, 41158), (12, 41128), (19, 41089), (Start: 29 @41044 has 90 MA's), (65, 40882), (73, 40855), (98, 40756), (109, 40681), (132, 40579), (149, 40477), (150, 40471), (152, 40462), (158, 40414),

Gene: Stormageddon_179 Start: 113484, Stop: 114164, Start Num: 32
Candidate Starts for Stormageddon_179:
(Start: 32 @113484 has 2 MA's), (60, 113607), (96, 113712), (114, 113784), (143, 113910), (158, 114012),

Gene: Suigeneris_46 Start: 40907, Stop: 40122, Start Num: 29
Candidate Starts for Suigeneris_46:
(Start: 29 @40907 has 90 MA's), (49, 40820), (65, 40745), (73, 40718), (98, 40619), (149, 40340), (152, 40325),

Gene: SuperheroCarly_43 Start: 35354, Stop: 34473, Start Num: 35
Candidate Starts for SuperheroCarly_43:
(Start: 35 @35354 has 21 MA's), (66, 35222), (75, 35186), (81, 35165), (88, 35144), (114, 35000), (120, 34958), (134, 34868), (147, 34796), (163, 34688), (164, 34673), (169, 34622),

Gene: TA17A_47 Start: 40683, Stop: 39919, Start Num: 29
Candidate Starts for TA17A_47:
(Start: 29 @40683 has 90 MA's), (39, 40641), (49, 40596), (64, 40539), (65, 40530), (66, 40527), (68, 40518), (92, 40431), (96, 40416), (109, 40332), (132, 40239), (141, 40188), (149, 40137), (155, 40098),

Gene: TPA2_53 Start: 40141, Stop: 39410, Start Num: 18
Candidate Starts for TPA2_53:
(18, 40141), (23, 40132), (28, 40096), (30, 40087), (70, 39925), (93, 39859), (123, 39742), (126, 39727), (144, 39652), (145, 39649), (159, 39556),

Gene: Thonko_45 Start: 38227, Stop: 37415, Start Num: 29
Candidate Starts for Thonko_45:
(Start: 26 @38251 has 1 MA's), (Start: 29 @38227 has 90 MA's), (33, 38212), (48, 38143), (50, 38137), (69, 38041), (74, 38023), (96, 37951), (107, 37897), (132, 37735), (169, 37480),

Gene: Thoth_42 Start: 35489, Stop: 34608, Start Num: 35
Candidate Starts for Thoth_42:
(Start: 35 @35489 has 21 MA's), (66, 35357), (75, 35321), (81, 35300), (88, 35279), (114, 35135), (120, 35093), (134, 35003), (147, 34931), (163, 34823), (164, 34808), (169, 34757),

Gene: Tinciduntsolum_47 Start: 40827, Stop: 40057, Start Num: 29
Candidate Starts for Tinciduntsolum_47:
(Start: 29 @40827 has 90 MA's), (49, 40734), (64, 40677), (65, 40668), (66, 40665), (68, 40656), (92, 40569), (96, 40554), (109, 40470), (132, 40377), (141, 40326), (149, 40275), (155, 40236),

Gene: Tres_46 Start: 40696, Stop: 39932, Start Num: 29
Candidate Starts for Tres_46:
(Start: 29 @40696 has 90 MA's), (49, 40609), (64, 40552), (65, 40543), (66, 40540), (68, 40531), (92, 40444), (96, 40429), (109, 40345), (132, 40252), (141, 40201), (149, 40150), (155, 40111),

Gene: Trine_54 Start: 39655, Stop: 38969, Start Num: 42
Candidate Starts for Trine_54:

(10, 39847), (22, 39799), (40, 39667), (Start: 42 @39655 has 1 MA's), (43, 39652), (57, 39583), (77, 39514), (95, 39448), (98, 39433), (102, 39394), (103, 39391), (122, 39310), (141, 39235), (144, 39220), (173, 38980),

Gene: Troll4_42 Start: 35493, Stop: 34612, Start Num: 35
Candidate Starts for Troll4_42:
(Start: 35 @35493 has 21 MA's), (66, 35361), (75, 35325), (81, 35304), (88, 35283), (114, 35139), (120, 35097), (134, 35007), (163, 34827), (164, 34812), (168, 34764),

Gene: Vic9_00045 Start: 41205, Stop: 40438, Start Num: 29
Candidate Starts for Vic9_00045:
(Start: 29 @41205 has 90 MA's), (49, 41115), (64, 41058), (65, 41049), (66, 41046), (68, 41037), (92, 40950), (96, 40935), (109, 40851), (141, 40707), (149, 40656), (155, 40617),

Gene: VioletZ_44 Start: 40524, Stop: 39766, Start Num: 29
Candidate Starts for VioletZ_44:
(Start: 29 @40524 has 90 MA's), (44, 40455), (70, 40347), (78, 40317), (96, 40269), (98, 40257), (108, 40212), (128, 40101), (132, 40086), (149, 39984), (156, 39939), (159, 39918), (162, 39900), (172, 39792),

Gene: Visconti_42 Start: 35502, Stop: 34621, Start Num: 35
Candidate Starts for Visconti_42:
(Start: 35 @35502 has 21 MA's), (66, 35370), (75, 35334), (81, 35313), (88, 35292), (114, 35148), (120, 35106), (134, 35016), (163, 34836), (164, 34821), (168, 34773),

Gene: WaldoWhy_43 Start: 35498, Stop: 34617, Start Num: 35
Candidate Starts for WaldoWhy_43:
(Start: 35 @35498 has 21 MA's), (66, 35366), (75, 35330), (88, 35288), (114, 35144), (120, 35102), (134, 35012), (163, 34832), (164, 34817), (169, 34766),

Gene: Waleliano_42 Start: 40448, Stop: 39693, Start Num: 29
Candidate Starts for Waleliano_42:
(Start: 29 @40448 has 90 MA's), (44, 40382), (70, 40274), (78, 40244), (96, 40196), (98, 40184), (128, 40028), (132, 40013), (137, 39980), (149, 39911), (156, 39866), (162, 39827), (172, 39719),

Gene: West99_46 Start: 40816, Stop: 40052, Start Num: 29
Candidate Starts for West99_46:
(Start: 29 @40816 has 90 MA's), (49, 40729), (64, 40672), (65, 40663), (66, 40660), (68, 40651), (92, 40564), (96, 40549), (109, 40465), (132, 40372), (141, 40321), (149, 40270), (155, 40231),

Gene: Xincheng_41 Start: 39884, Stop: 39150, Start Num: 29
Candidate Starts for Xincheng_41:
(Start: 29 @39884 has 90 MA's), (70, 39710), (78, 39680), (96, 39632), (98, 39620), (114, 39530), (129, 39476), (132, 39470), (149, 39368), (156, 39323), (162, 39284),

Gene: Yago84_40 Start: 34890, Stop: 34180, Start Num: 29
Candidate Starts for Yago84_40:
(Start: 29 @34890 has 90 MA's), (79, 34692), (109, 34599), (132, 34494), (149, 34392), (152, 34377), (158, 34329),

Gene: Zemanar_43 Start: 40424, Stop: 39696, Start Num: 29
Candidate Starts for Zemanar_43:

(Start: 29 @40424 has 90 MA's), (70, 40256), (78, 40226), (79, 40223), (96, 40178), (98, 40166), (129, 40022), (132, 40016), (149, 39914), (156, 39869), (162, 39830), (172, 39722),

Gene: Zenteno07_50 Start: 39868, Stop: 39071, Start Num: 29
Candidate Starts for Zenteno07_50:
(Start: 26 @39898 has 1 MA's), (Start: 29 @39868 has 90 MA's), (48, 39763), (50, 39757), (64, 39694), (72, 39661), (73, 39658), (79, 39634), (114, 39448), (132, 39391), (149, 39286), (155, 39247),