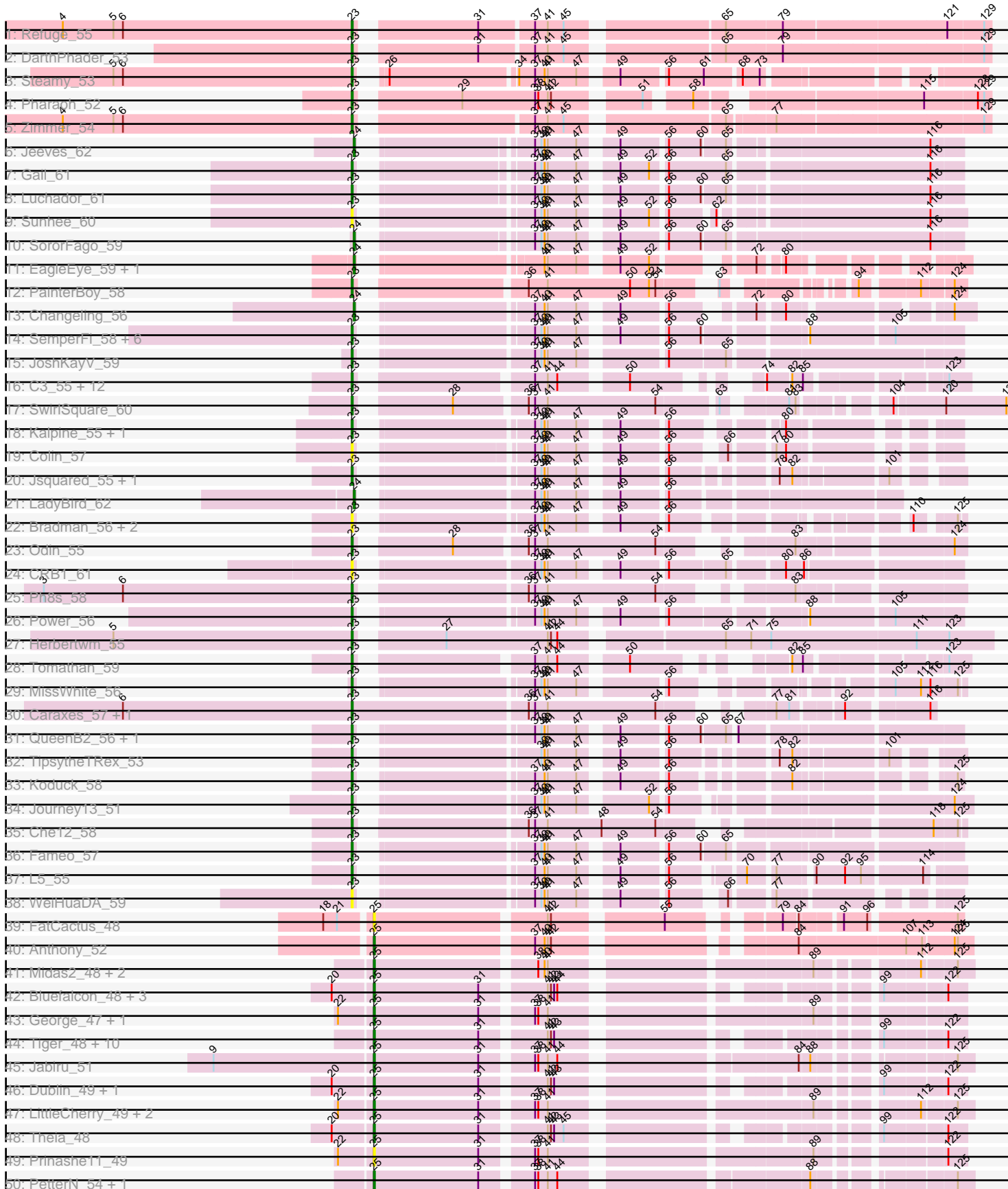


Pham 294454



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 294454 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294454 has 183 members, 27 are drafts.

Phages represented in each track:

- Track 1 : Refuge_55
- Track 2 : DarthPhader_53
- Track 3 : Steamy_53
- Track 4 : Pharaoh_52
- Track 5 : Zimmer_54
- Track 6 : Jeeves_62
- Track 7 : Gail_61
- Track 8 : Luchador_61
- Track 9 : Sunhee_60
- Track 10 : SororFago_59
- Track 11 : EagleEye_59, Lucyedi_58
- Track 12 : PainterBoy_58
- Track 13 : Changeling_56
- Track 14 : SemperFi_58, Georgie2_58, FiringLine_57, SweetiePie_57, SnapTap_57, QueenBeesly_57, Crucio_57
- Track 15 : JoshKayV_59
- Track 16 : C3_55, AN9_60, D29_55, D32_58, Kerberos_59, DBQu4n_59, Travvers_59, Naji_59, Duplo_59, Pomar16_59, ANI8_60, VC3_60, StarStuff_59
- Track 17 : SwirlSquare_60
- Track 18 : Kalpine_55, Trixie_55
- Track 19 : Colin_57
- Track 20 : Jsquared_55, Serenity_57
- Track 21 : LadyBird_62
- Track 22 : Bradman_56, MajorMajor_56, Quokka_55
- Track 23 : Odin_55
- Track 24 : CRB1_61
- Track 25 : Ph8s_58
- Track 26 : Power_56
- Track 27 : Herbertwm_55
- Track 28 : Tomathan_59
- Track 29 : MissWhite_56
- Track 30 : Caraxes_57, Superchunk_55
- Track 31 : QueenB2_56, Heffalump_56
- Track 32 : TipsytheTRex_53
- Track 33 : Koduck_58
- Track 34 : Journey13_51
- Track 35 : Che12_58

- Track 36 : Fameo_57
- Track 37 : L5_55
- Track 38 : WeiHuaDA_59
- Track 39 : FatCactus_48
- Track 40 : Anthony_52
- Track 41 : Midas2_48, Coog_48, Micasa_50
- Track 42 : Bluefalcon_48, SydNat_52, Ghoulboy_52, Zolita_51
- Track 43 : George_47, Milcery_49
- Track 44 : Tiger_48, Aragog_48, Phlorence_47, Conspiracy_49, AgentM_48, Jovo_49, PickleBack_49, Lev2_49, Archetta_48, ForGetIt_49, Discoknowium_47
- Track 45 : Jabiru_51
- Track 46 : Dublin_49, MarysWell_49
- Track 47 : LittleCherry_49, Bonamassa_49, Florence1_47
- Track 48 : Theia_48
- Track 49 : Prinashe11_49
- Track 50 : PetterN_54, Chadwick_53
- Track 51 : HuhtaEnerson15_49
- Track 52 : Florence4_49
- Track 53 : Scorpia_54
- Track 54 : UnionJack_51
- Track 55 : Airmid_50, EITiger69_52
- Track 56 : Cuco_49
- Track 57 : Naca_50
- Track 58 : Benedict_53
- Track 59 : Jordennis_58, Dorothea_58
- Track 60 : ToneTone_56, Jeffabunny_59, Artemis2UCLA_59, BennyP_59, Wiks_58, Koko_60, Helmet_61, Garak_61, BlessJoy_59, Temprado_60, Tucker_59, Indra_62, Zaka_59, Zulu_60, Lilbunny_58, WunderPhul_59, Yokurt_59, CloudWang3_59, Hexamo_59
- Track 61 : Gruunaga_59, Blue7_60, Gladiator_56
- Track 62 : Candra_58, Polyphemus_60, SmellyB_58, SuperCallie99_57, Cookiedough_58, GreedyLawyer_58, Kipper29_58, McFly_58, Kazan_59, EricB_58, Neeharika16_57, Newrala_58, VohminGhazi_58, Pmask_58, Hoot_53
- Track 63 : Isiphiwo_56, DaVinci_57, Chartreuse_57
- Track 64 : SuperAwesome_58
- Track 65 : Priamo_60, DelvinSonDorr_57
- Track 66 : Blinn1_61
- Track 67 : Hammer_59, Roksolana_60, Rifter_59
- Track 68 : JewelBug_59
- Track 69 : BABullseye_52
- Track 70 : DroogsArmy_50
- Track 71 : PP_55
- Track 72 : Sheen_55, FlyCatcher_59, Toro_57
- Track 73 : Timshel_51
- Track 74 : HINdeR_49
- Track 75 : Caitlin_54
- Track 76 : Smeadley_56, Expelliarmus_54
- Track 77 : Phillis_55
- Track 78 : Dixon_55
- Track 79 : Stephig9_56
- Track 80 : SheaKeira_55
- Track 81 : Rahalelujah_57, CogOmlette_56, WorldCup_56, Bellris_56, Minispark_56
- Track 82 : MegTheThird_56, Celestialunch_56

- Track 83 : Klodlith_56, Charm_55, DreamTeam1_55
- Track 84 : Toaka_57
- Track 85 : Vanisoa_57
- Track 86 : Alma_57
- Track 87 : Yecey3_58

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

The start number called the most often in the published annotations is 23, it was called in 65 of the 156 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AN9_60, ANI8_60, Alma_57, Bellris_56, Bradman_56, C3_55, CRB1_61, Caitlin_54, Caraxes_57, Celestiallunch_56, Charm_55, Che12_58, CogOmlette_56, Colin_57, Crucio_57, D29_55, D32_58, DBQu4n_59, DarthPhader_53, Dixon_55, DreamTeam1_55, DroogsArmy_50, Duplo_59, Expelliarmus_54, Fameo_57, FiringLine_57, FlyCatcher_59, Gail_61, Georgie2_58, HINdeR_49, Heffalump_56, Herbertwm_55, JoshKayV_59, Journey13_51, Jsquared_55, Kalpine_55, Kerberos_59, Klodlith_56, Koduck_58, L5_55, Luchador_61, MajorMajor_56, MegTheThird_56, Minispark_56, MissWhite_56, Naji_59, Odin_55, PainterBoy_58, Ph8s_58, Pharaoh_52, Phillis_55, Pomar16_59, Power_56, QueenB2_56, QueenBeesly_57, Quokka_55, Rahalelujah_57, Refuge_55, SemperFi_58, Serenity_57, SheaKeira_55, Sheen_55, Smeadley_56, SnapTap_57, StarStuff_59, Steamy_53, Stephig9_56, Sunhee_60, Superchunk_55, SweetiePie_57, SwirlSquare_60, Timshel_51, TipsytheTRex_53, Toaka_57, Tomathan_59, Toro_57, Travvers_59, Trixie_55, VC3_60, Vanisoa_57, WeiHuaDA_59, WorldCup_56, Yecey3_58, Zimmer_54,

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

-

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

- AgentM_48, Airmid_50, Anthony_52, Aragog_48, Archetta_48, Artemis2UCLA_59, BABullseye_52, Benedict_53, BennyP_59, BlessJoy_59, Blinn1_61, Blue7_60, Bluefalcon_48, Bonamassa_49, Candra_58, Chadwick_53, Changeling_56, Chartreuse_57, CloudWang3_59, Conspiracy_49, Coog_48, Cookiedough_58, Cuco_49, DaVinci_57, DelvinSonDorr_57, Discoknowium_47, Dorothea_58, Dublin_49, EagleEye_59, ElTiger69_52, EricB_58, FatCactus_48, Florence1_47, Florence4_49, ForGetIt_49, Garak_61, George_47, Ghoulboy_52, Gladiator_56, GreedyLawyer_58, Gruunaga_59, Hammer_59, Helmet_61, Hexamo_59, Hoot_53, HuhtaEnerson15_49, Indra_62, Isiphiwo_56, Jabiru_51, Jeeves_62, Jeffabunny_59, JewelBug_59, Jordennis_58, Jovo_49, Kazan_59, Kipper29_58, Koko_60, LadyBird_62, Lev2_49, Lilbunny_58, LittleCherry_49, Lucyedi_58, MarysWell_49, McFly_58, Micasa_50, Midas2_48, Milcery_49, Naca_50, Neeharika16_57, Newrala_58, PP_55, PetterN_54, Phlorence_47, PickleBack_49, Pmask_58, Polyphemus_60, Priamo_60, Prinasha11_49, Rifter_59, Roksolana_60, Scorpia_54, SmellyB_58, SororFago_59, SuperAwesome_58, SuperCallie99_57, SydNat_52, Temprado_60, Theia_48, Tiger_48, ToneTone_56, Tucker_59, UnionJack_51, VohminGhazi_58, Wiks_58, WunderPhul_59, Yokurt_59, Zaka_59, Zolita_51, Zulu_60,

Summary by start number:

Start 16:

- Found in 1 of 183 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 156
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PP_55 (A7),

Start 22:

- Found in 8 of 183 (4.4%) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Florence4_49 (A5),

Start 23:

- Found in 84 of 183 (45.9%) of genes in pham
- Manual Annotations of this start: 65 of 156
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AN9_60 (A2), ANI8_60 (A2), Alma_57 (A9), Bellris_56 (A9), Bradman_56 (A2), C3_55 (A2), CRB1_61 (A2), Caitlin_54 (A8), Caraxes_57 (A2), Celestiallunch_56 (A9), Charm_55 (A9), Che12_58 (A2), CogOmlette_56 (A9), Colin_57 (A2), Crucio_57 (A2), D29_55 (A2), D32_58 (A2), DBQu4n_59 (A2), DARTHPhader_53 (A12), Dixon_55 (A8), DreamTeam1_55 (A9), DroogsArmy_50 (A7), Duplo_59 (A2), Expelliarmus_54 (A8), Fameo_57 (A2), FiringLine_57 (A2), FlyCatcher_59 (A7), Gail_61 (A14), Georgie2_58 (A2), HINdeR_49 (A7), Heffalump_56 (A2), Herbertwm_55 (A2), JoshKayV_59 (A2), Journey13_51 (A2), Jsquared_55 (A2), Kalpine_55 (A2), Kerberos_59 (A2), Klodlith_56 (A9), Koduck_58 (A2), L5_55 (A2), Luchador_61 (A14), MajorMajor_56 (A2), MegTheThird_56 (A9), Minispark_56 (A9), MissWhite_56 (A2), Naji_59 (A2), Odin_55 (A2), PainterBoy_58 (A16), Ph8s_58 (A2), Pharaoh_52 (A12), Phillis_55 (A8), Pomar16_59 (A2), Power_56 (A2), QueenB2_56 (A2), QueenBeesly_57 (A2), Quokka_55 (A2), Rahalelujah_57 (A9), Refuge_55 (A12), SemperFi_58 (A2), Serenity_57 (A2), SheakKeira_55 (A9), Sheen_55 (A7), Smeadley_56 (A8), SnapTap_57 (A2), StarStuff_59 (A2), Steamy_53 (A12), StepHig9_56 (A8), Sunhee_60 (A14), Superchunk_55 (A2), SweetiePie_57 (A2), SwirlSquare_60 (A2), Timshel_51 (A7), TopsytheTRex_53 (A2), Toaka_57 (A9), Tomathan_59 (A2), Toro_57 (A7), Travvers_59 (A2), Trixie_55 (A2), VC3_60 (A2), Vanisoa_57 (A9), WeiHuaDA_59 (A2), WorldCup_56 (A9), Yecey3_58 (A9), Zimmer_54 (A12),

Start 24:

- Found in 57 of 183 (31.1%) of genes in pham
- Manual Annotations of this start: 53 of 156
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Artemis2UCLA_59 (A6), BABullseye_52 (A6), BennyP_59 (A6), BlessJoy_59 (A6), Blinn1_61 (A6), Blue7_60 (A6), Candra_58 (A6), Changeling_56 (A2), Chartreuse_57 (A6), CloudWang3_59 (A6), Cookiedough_58 (A6), DaVinci_57 (A6), DelvinSonDorr_57 (A6), Dorothea_58 (A6), EagleEye_59 (A16), EricB_58 (A6), Garak_61 (A6), Gladiator_56 (A6), GreedyLawyer_58 (A6), Gruunaga_59 (A6), Hammer_59 (A6), Helmet_61 (A6), Hexamo_59 (A6), Hoot_53 (A6), Indra_62 (A6), Isiphiwo_56 (A6), Jeeves_62 (A14), Jeffabunny_59 (A6), JewelBug_59 (A6), Jordennis_58 (A6), Kazan_59 (A6), Kipper29_58 (A6), Koko_60 (A6), LadyBird_62 (A2), Lilbunny_58 (A6), Lucyedi_58

(A16), McFly_58 (A6), Neeharika16_57 (A6), Newrala_58 (A6), Pmask_58 (A6), Polyphemus_60 (A6), Priamo_60 (A6), Rifter_59 (A6), Roksolana_60 (A6), SmellyB_58 (A6), SororFago_59 (A14), SuperAwesome_58 (A6), SuperCallie99_57 (A6), Temprado_60 (A6), ToneTone_56 (A6), Tucker_59 (A6), VohminGhazi_58 (A6), Wiks_58 (A6), WunderPhul_59 (A6), Yokurt_59 (A6), Zaka_59 (A6), Zulu_60 (A6),

Start 25:

- Found in 41 of 183 (22.4%) of genes in pham
- Manual Annotations of this start: 37 of 156
- Called 97.6% of time when present
- Phage (with cluster) where this start called: AgentM_48 (A5), Airmid_50 (A5), Anthony_52 (A20), Aragog_48 (A5), Archetta_48 (A5), Benedict_53 (A5), Bluefalcon_48 (A5), Bonamassa_49 (A5), Chadwick_53 (A5), Conspiracy_49 (A5), Coog_48 (A5), Cuco_49 (A5), Discoknowium_47 (A5), Dublin_49 (A5), ElTiger69_52 (A5), FatCactus_48 (A20), Florence1_47 (A5), ForGetIt_49 (A5), George_47 (A5), Ghoulboy_52 (A5), HuhtaEnerson15_49 (A5), Jabiru_51 (A5), Jovo_49 (A5), Lev2_49 (A5), LittleCherry_49 (A5), MarysWell_49 (A5), Micasa_50 (A5), Midas2_48 (A5), Milcery_49 (A5), Naca_50 (A5), PetterN_54 (A5), Phlorence_47 (A5), PickleBack_49 (A5), Prinash11_49 (A5), Scorpia_54 (A5), SydNat_52 (A5), Theia_48 (A5), Tiger_48 (A5), UnionJack_51 (A5), Zolita_51 (A5),

Summary by clusters:

There are 10 clusters represented in this pham: A20, A14, A16, A12, A2, A5, A7, A6, A9, A8,

Info for manual annotations of cluster A12:

- Start number 23 was manually annotated 5 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 23 was manually annotated 2 times for cluster A14.
- Start number 24 was manually annotated 2 times for cluster A14.

Info for manual annotations of cluster A16:

- Start number 23 was manually annotated 1 time for cluster A16.
- Start number 24 was manually annotated 2 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 23 was manually annotated 40 times for cluster A2.
- Start number 24 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 25 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A5:

- Start number 25 was manually annotated 36 times for cluster A5.

Info for manual annotations of cluster A6:

- Start number 24 was manually annotated 47 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 16 was manually annotated 1 time for cluster A7.
- Start number 23 was manually annotated 4 times for cluster A7.

Info for manual annotations of cluster A8:

- Start number 23 was manually annotated 5 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 23 was manually annotated 8 times for cluster A9.

Gene Information:

Gene: AN9_60 Start: 38397, Stop: 37942, Start Num: 23

Candidate Starts for AN9_60:

(Start: 23 @38397 has 65 MA's), (37, 38256), (41, 38244), (44, 38235), (50, 38181), (74, 38106), (82, 38085), (85, 38076), (123, 37962),

Gene: ANI8_60 Start: 38397, Stop: 37942, Start Num: 23

Candidate Starts for ANI8_60:

(Start: 23 @38397 has 65 MA's), (37, 38256), (41, 38244), (44, 38235), (50, 38181), (74, 38106), (82, 38085), (85, 38076), (123, 37962),

Gene: AgentM_48 Start: 36508, Stop: 36041, Start Num: 25

Candidate Starts for AgentM_48:

(Start: 25 @36508 has 37 MA's), (31, 36409), (41, 36355), (42, 36352), (43, 36349), (99, 36112), (122, 36058),

Gene: Airmid_50 Start: 36667, Stop: 36200, Start Num: 25

Candidate Starts for Airmid_50:

(9, 36814), (Start: 25 @36667 has 37 MA's), (31, 36568), (37, 36526), (38, 36523), (41, 36514), (77, 36343), (93, 36292),

Gene: Alma_57 Start: 38259, Stop: 37786, Start Num: 23

Candidate Starts for Alma_57:

(Start: 23 @38259 has 65 MA's), (31, 38160), (37, 38118), (41, 38106), (46, 38082), (53, 38022), (71, 37971), (127, 37791),

Gene: Anthony_52 Start: 35777, Stop: 35280, Start Num: 25

Candidate Starts for Anthony_52:

(Start: 25 @35777 has 37 MA's), (37, 35636), (40, 35627), (41, 35624), (42, 35621), (84, 35435), (107, 35339), (113, 35324), (124, 35297), (125, 35294),

Gene: Aragog_48 Start: 36528, Stop: 36061, Start Num: 25

Candidate Starts for Aragog_48:

(Start: 25 @36528 has 37 MA's), (31, 36429), (41, 36375), (42, 36372), (43, 36369), (99, 36132), (122, 36078),

Gene: Archetta_48 Start: 36938, Stop: 36471, Start Num: 25

Candidate Starts for Archetta_48:

(Start: 25 @36938 has 37 MA's), (31, 36839), (41, 36785), (42, 36782), (43, 36779), (99, 36542), (122, 36488),

Gene: Artemis2UCLA_59 Start: 37105, Stop: 36662, Start Num: 24

Candidate Starts for Artemis2UCLA_59:

(Start: 24 @37105 has 53 MA's), (40, 36961), (41, 36958), (47, 36931), (56, 36865), (69, 36805), (83, 36760),

Gene: BABullseye_52 Start: 34678, Stop: 34244, Start Num: 24

Candidate Starts for BABullseye_52:

(Start: 24 @34678 has 53 MA's), (40, 34534), (41, 34531), (47, 34504), (49, 34477), (56, 34438), (69, 34378), (83, 34333),

Gene: Bellris_56 Start: 37720, Stop: 37262, Start Num: 23

Candidate Starts for Bellris_56:

(Start: 23 @37720 has 65 MA's), (37, 37582), (39, 37576), (40, 37573), (41, 37570), (47, 37543), (49, 37516), (56, 37477), (78, 37396), (97, 37324), (125, 37267),

Gene: Benedict_53 Start: 36915, Stop: 36427, Start Num: 25

Candidate Starts for Benedict_53:

(9, 37062), (Start: 25 @36915 has 37 MA's), (31, 36816), (37, 36774), (38, 36771), (41, 36762), (84, 36558), (88, 36549), (125, 36441),

Gene: BennyP_59 Start: 37175, Stop: 36732, Start Num: 24

Candidate Starts for BennyP_59:

(Start: 24 @37175 has 53 MA's), (40, 37031), (41, 37028), (47, 37001), (56, 36935), (69, 36875), (83, 36830),

Gene: BlessJoy_59 Start: 37531, Stop: 37088, Start Num: 24

Candidate Starts for BlessJoy_59:

(Start: 24 @37531 has 53 MA's), (40, 37387), (41, 37384), (47, 37357), (56, 37291), (69, 37231), (83, 37186),

Gene: Blinn1_61 Start: 37123, Stop: 36680, Start Num: 24

Candidate Starts for Blinn1_61:

(Start: 24 @37123 has 53 MA's), (40, 36979), (41, 36976), (47, 36949), (56, 36883), (83, 36778),

Gene: Blue7_60 Start: 37199, Stop: 36762, Start Num: 24

Candidate Starts for Blue7_60:

(Start: 24 @37199 has 53 MA's), (40, 37055), (41, 37052), (47, 37025), (56, 36959), (69, 36896), (83, 36851), (102, 36773),

Gene: Bluefalcon_48 Start: 37083, Stop: 36616, Start Num: 25

Candidate Starts for Bluefalcon_48:

(20, 37119), (Start: 25 @37083 has 37 MA's), (31, 36984), (41, 36930), (42, 36927), (43, 36924), (44, 36921), (99, 36687), (122, 36633),

Gene: Bonamassa_49 Start: 36951, Stop: 36457, Start Num: 25

Candidate Starts for Bonamassa_49:

(22, 36981), (Start: 25 @36951 has 37 MA's), (31, 36852), (37, 36810), (38, 36807), (41, 36798), (89, 36579), (112, 36501), (125, 36471),

Gene: Bradman_56 Start: 37152, Stop: 36703, Start Num: 23

Candidate Starts for Bradman_56:

(Start: 23 @37152 has 65 MA's), (37, 37014), (39, 37008), (40, 37005), (41, 37002), (47, 36975), (49, 36948), (56, 36909), (110, 36738), (125, 36708),

Gene: C3_55 Start: 38397, Stop: 37942, Start Num: 23

Candidate Starts for C3_55:

(Start: 23 @38397 has 65 MA's), (37, 38256), (41, 38244), (44, 38235), (50, 38181), (74, 38106), (82, 38085), (85, 38076), (123, 37962),

Gene: CRB1_61 Start: 39164, Stop: 38667, Start Num: 23

Candidate Starts for CRB1_61:

(Start: 23 @39164 has 65 MA's), (37, 39023), (39, 39017), (40, 39014), (41, 39011), (47, 38984), (49, 38957), (56, 38918), (65, 38867), (80, 38822), (86, 38807),

Gene: Caitlin_54 Start: 36631, Stop: 36161, Start Num: 23

Candidate Starts for Caitlin_54:

(Start: 23 @36631 has 65 MA's), (33, 36514), (37, 36478), (40, 36469), (41, 36466), (71, 36340), (100, 36223), (106, 36205), (119, 36172),

Gene: Candra_58 Start: 37045, Stop: 36602, Start Num: 24

Candidate Starts for Candra_58:

(Start: 24 @37045 has 53 MA's), (40, 36901), (41, 36898), (47, 36871), (56, 36805), (69, 36745), (83, 36700),

Gene: Caraxes_57 Start: 36675, Stop: 36196, Start Num: 23

Candidate Starts for Caraxes_57:

(6, 36891), (Start: 23 @36675 has 65 MA's), (36, 36513), (37, 36507), (41, 36495), (54, 36393), (77, 36324), (81, 36312), (92, 36270), (116, 36201),

Gene: Celestiallunch_56 Start: 37762, Stop: 37325, Start Num: 23

Candidate Starts for Celestiallunch_56:

(2, 38056), (Start: 23 @37762 has 65 MA's), (41, 37609), (53, 37525), (59, 37480), (87, 37417), (109, 37330),

Gene: Chadwick_53 Start: 36756, Stop: 36268, Start Num: 25

Candidate Starts for Chadwick_53:

(Start: 25 @36756 has 37 MA's), (31, 36657), (37, 36615), (38, 36612), (41, 36603), (44, 36594), (88, 36390), (125, 36282),

Gene: Changeling_56 Start: 38803, Stop: 38336, Start Num: 24

Candidate Starts for Changeling_56:

(Start: 24 @38803 has 53 MA's), (37, 38665), (40, 38656), (41, 38653), (47, 38626), (49, 38599), (56, 38560), (72, 38503), (80, 38482), (124, 38356),

Gene: Charm_55 Start: 37821, Stop: 37384, Start Num: 23

Candidate Starts for Charm_55:

(Start: 23 @37821 has 65 MA's), (31, 37722), (41, 37668), (76, 37500), (109, 37389),

Gene: Chartreuse_57 Start: 36396, Stop: 35962, Start Num: 24

Candidate Starts for Chartreuse_57:

(Start: 24 @36396 has 53 MA's), (40, 36252), (41, 36249), (47, 36222), (56, 36156), (69, 36096), (102, 35973),

Gene: Che12_58 Start: 37116, Stop: 36628, Start Num: 23

Candidate Starts for Che12_58:

(Start: 23 @37116 has 65 MA's), (36, 36975), (37, 36969), (41, 36957), (48, 36906), (54, 36855), (118, 36654), (125, 36633),

Gene: CloudWang3_59 Start: 37193, Stop: 36750, Start Num: 24

Candidate Starts for CloudWang3_59:

(Start: 24 @37193 has 53 MA's), (40, 37049), (41, 37046), (47, 37019), (56, 36953), (69, 36893), (83, 36848),

Gene: CogOmlette_56 Start: 37717, Stop: 37259, Start Num: 23

Candidate Starts for CogOmlette_56:

(Start: 23 @37717 has 65 MA's), (37, 37579), (39, 37573), (40, 37570), (41, 37567), (47, 37540), (49, 37513), (56, 37474), (78, 37393), (97, 37321), (125, 37264),

Gene: Colin_57 Start: 38509, Stop: 38060, Start Num: 23

Candidate Starts for Colin_57:

(Start: 23 @38509 has 65 MA's), (37, 38374), (39, 38368), (40, 38365), (41, 38362), (47, 38335), (49, 38308), (56, 38269), (66, 38230), (77, 38197), (80, 38188),

Gene: Conspiracy_49 Start: 36750, Stop: 36283, Start Num: 25

Candidate Starts for Conspiracy_49:

(Start: 25 @36750 has 37 MA's), (31, 36651), (41, 36597), (42, 36594), (43, 36591), (99, 36354), (122, 36300),

Gene: Coog_48 Start: 36935, Stop: 36441, Start Num: 25

Candidate Starts for Coog_48:

(Start: 25 @36935 has 37 MA's), (38, 36791), (40, 36785), (41, 36782), (89, 36563), (112, 36485), (125, 36455),

Gene: Cookiedough_58 Start: 37024, Stop: 36581, Start Num: 24

Candidate Starts for Cookiedough_58:

(Start: 24 @37024 has 53 MA's), (40, 36880), (41, 36877), (47, 36850), (56, 36784), (69, 36724), (83, 36679),

Gene: Crucio_57 Start: 38174, Stop: 37680, Start Num: 23

Candidate Starts for Crucio_57:

(Start: 23 @38174 has 65 MA's), (37, 38036), (39, 38030), (40, 38027), (41, 38024), (47, 37997), (49, 37970), (56, 37931), (60, 37901), (88, 37817), (105, 37742),

Gene: Cuco_49 Start: 36807, Stop: 36313, Start Num: 25

Candidate Starts for Cuco_49:

(20, 36843), (Start: 25 @36807 has 37 MA's), (38, 36663), (40, 36657), (41, 36654), (89, 36435), (112, 36357), (125, 36327),

Gene: D29_55 Start: 38000, Stop: 37545, Start Num: 23

Candidate Starts for D29_55:

(Start: 23 @38000 has 65 MA's), (37, 37859), (41, 37847), (44, 37838), (50, 37784), (74, 37709), (82, 37688), (85, 37679), (123, 37565),

Gene: D32_58 Start: 38000, Stop: 37545, Start Num: 23

Candidate Starts for D32_58:

(Start: 23 @38000 has 65 MA's), (37, 37859), (41, 37847), (44, 37838), (50, 37784), (74, 37709), (82, 37688), (85, 37679), (123, 37565),

Gene: DBQu4n_59 Start: 37981, Stop: 37526, Start Num: 23

Candidate Starts for DBQu4n_59:

(Start: 23 @37981 has 65 MA's), (37, 37840), (41, 37828), (44, 37819), (50, 37765), (74, 37690), (82, 37669), (85, 37660), (123, 37546),

Gene: DaVinci_57 Start: 36450, Stop: 36016, Start Num: 24

Candidate Starts for DaVinci_57:

(Start: 24 @36450 has 53 MA's), (40, 36306), (41, 36303), (47, 36276), (56, 36210), (69, 36150), (102, 36027),

Gene: DarthPhader_53 Start: 38914, Stop: 38369, Start Num: 23

Candidate Starts for DarthPhader_53:

(Start: 23 @38914 has 65 MA's), (31, 38815), (37, 38767), (41, 38755), (45, 38740), (65, 38608), (79, 38557), (129, 38374),

Gene: DelvinSonDorr_57 Start: 37255, Stop: 36821, Start Num: 24

Candidate Starts for DelvinSonDorr_57:

(Start: 24 @37255 has 53 MA's), (40, 37111), (41, 37108), (47, 37081), (56, 37015), (83, 36910), (102, 36832),

Gene: Discoknowium_47 Start: 36417, Stop: 35950, Start Num: 25

Candidate Starts for Discoknowium_47:

(Start: 25 @36417 has 37 MA's), (31, 36318), (41, 36264), (42, 36261), (43, 36258), (99, 36021), (122, 35967),

Gene: Dixon_55 Start: 36492, Stop: 36022, Start Num: 23

Candidate Starts for Dixon_55:

(1, 36777), (8, 36618), (Start: 23 @36492 has 65 MA's), (33, 36375), (37, 36339), (40, 36330), (41, 36327), (71, 36201), (100, 36084), (106, 36066), (119, 36033),

Gene: Dorothea_58 Start: 37019, Stop: 36585, Start Num: 24

Candidate Starts for Dorothea_58:

(Start: 24 @37019 has 53 MA's), (40, 36875), (41, 36872), (47, 36845), (49, 36818), (56, 36779), (69, 36719), (83, 36674), (102, 36596),

Gene: DreamTeam1_55 Start: 37653, Stop: 37216, Start Num: 23

Candidate Starts for DreamTeam1_55:

(Start: 23 @37653 has 65 MA's), (31, 37554), (41, 37500), (76, 37332), (109, 37221),

Gene: DroogsArmy_50 Start: 38758, Stop: 38237, Start Num: 23

Candidate Starts for DroogsArmy_50:

(11, 38866), (14, 38833), (15, 38827), (Start: 23 @38758 has 65 MA's), (31, 38659), (35, 38626), (41, 38605), (42, 38602), (44, 38596), (45, 38590), (83, 38407),

Gene: Dublin_49 Start: 36919, Stop: 36452, Start Num: 25

Candidate Starts for Dublin_49:

(20, 36955), (Start: 25 @36919 has 37 MA's), (31, 36820), (41, 36766), (42, 36763), (43, 36760), (99, 36523), (122, 36469),

Gene: Duplo_59 Start: 38037, Stop: 37582, Start Num: 23

Candidate Starts for Duplo_59:

(Start: 23 @38037 has 65 MA's), (37, 37896), (41, 37884), (44, 37875), (50, 37821), (74, 37746), (82, 37725), (85, 37716), (123, 37602),

Gene: EagleEye_59 Start: 37874, Stop: 37425, Start Num: 24

Candidate Starts for EagleEye_59:

(Start: 24 @37874 has 53 MA's), (40, 37730), (41, 37727), (47, 37700), (49, 37673), (52, 37646), (72, 37577), (80, 37559),

Gene: EITiger69_52 Start: 36876, Stop: 36409, Start Num: 25

Candidate Starts for EITiger69_52:

(9, 37023), (Start: 25 @36876 has 37 MA's), (31, 36777), (37, 36735), (38, 36732), (41, 36723), (77, 36552), (93, 36501),

Gene: EricB_58 Start: 37002, Stop: 36559, Start Num: 24

Candidate Starts for EricB_58:

(Start: 24 @37002 has 53 MA's), (40, 36858), (41, 36855), (47, 36828), (56, 36762), (69, 36702), (83, 36657),

Gene: Expelliarmus_54 Start: 36696, Stop: 36226, Start Num: 23

Candidate Starts for Expelliarmus_54:

(1, 36981), (8, 36822), (Start: 23 @36696 has 65 MA's), (33, 36579), (37, 36543), (40, 36534), (41, 36531), (71, 36405), (100, 36288), (119, 36237),

Gene: Fameo_57 Start: 38505, Stop: 38011, Start Num: 23

Candidate Starts for Fameo_57:

(Start: 23 @38505 has 65 MA's), (37, 38367), (39, 38361), (40, 38358), (41, 38355), (47, 38328), (49, 38301), (56, 38262), (60, 38232), (65, 38211),

Gene: FatCactus_48 Start: 35445, Stop: 34978, Start Num: 25

Candidate Starts for FatCactus_48:

(18, 35484), (21, 35472), (Start: 25 @35445 has 37 MA's), (41, 35292), (42, 35289), (55, 35199), (79, 35124), (84, 35112), (91, 35079), (96, 35058), (125, 34983),

Gene: FiringLine_57 Start: 38155, Stop: 37661, Start Num: 23

Candidate Starts for FiringLine_57:

(Start: 23 @38155 has 65 MA's), (37, 38017), (39, 38011), (40, 38008), (41, 38005), (47, 37978), (49, 37951), (56, 37912), (60, 37882), (88, 37798), (105, 37723),

Gene: Florence1_47 Start: 36280, Stop: 35786, Start Num: 25

Candidate Starts for Florence1_47:

(22, 36310), (Start: 25 @36280 has 37 MA's), (31, 36181), (37, 36139), (38, 36136), (41, 36127), (89, 35908), (112, 35830), (125, 35800),

Gene: Florence4_49 Start: 36310, Stop: 35786, Start Num: 22

Candidate Starts for Florence4_49:

(22, 36310), (Start: 25 @36280 has 37 MA's), (31, 36181), (37, 36139), (38, 36136), (41, 36127), (89, 35908), (112, 35830), (125, 35800),

Gene: FlyCatcher_59 Start: 40134, Stop: 39640, Start Num: 23

Candidate Starts for FlyCatcher_59:

(Start: 23 @40134 has 65 MA's), (30, 40038), (41, 39981), (44, 39972), (46, 39957), (79, 39819),

Gene: ForGetIt_49 Start: 36775, Stop: 36308, Start Num: 25

Candidate Starts for ForGetIt_49:

(Start: 25 @36775 has 37 MA's), (31, 36676), (41, 36622), (42, 36619), (43, 36616), (99, 36379), (122, 36325),

Gene: Gail_61 Start: 39377, Stop: 38874, Start Num: 23

Candidate Starts for Gail_61:

(Start: 23 @39377 has 65 MA's), (37, 39242), (39, 39236), (40, 39233), (41, 39230), (47, 39203), (49, 39176), (52, 39149), (56, 39137), (65, 39083), (116, 38903),

Gene: Garak_61 Start: 37472, Stop: 37029, Start Num: 24

Candidate Starts for Garak_61:

(Start: 24 @37472 has 53 MA's), (40, 37328), (41, 37325), (47, 37298), (56, 37232), (69, 37172), (83, 37127),

Gene: George_47 Start: 36848, Stop: 36360, Start Num: 25

Candidate Starts for George_47:

(22, 36878), (Start: 25 @36848 has 37 MA's), (31, 36749), (37, 36707), (38, 36704), (41, 36695), (89, 36476),

Gene: Georgie2_58 Start: 38200, Stop: 37706, Start Num: 23

Candidate Starts for Georgie2_58:

(Start: 23 @38200 has 65 MA's), (37, 38062), (39, 38056), (40, 38053), (41, 38050), (47, 38023), (49, 37996), (56, 37957), (60, 37927), (88, 37843), (105, 37768),

Gene: Ghoulboy_52 Start: 37654, Stop: 37187, Start Num: 25

Candidate Starts for Ghoulboy_52:

(20, 37690), (Start: 25 @37654 has 37 MA's), (31, 37555), (41, 37501), (42, 37498), (43, 37495), (44, 37492), (99, 37258), (122, 37204),

Gene: Gladiator_56 Start: 36697, Stop: 36260, Start Num: 24

Candidate Starts for Gladiator_56:

(Start: 24 @36697 has 53 MA's), (40, 36553), (41, 36550), (47, 36523), (56, 36457), (69, 36394), (83, 36349), (102, 36271),

Gene: GreedyLawyer_58 Start: 37009, Stop: 36566, Start Num: 24

Candidate Starts for GreedyLawyer_58:

(Start: 24 @37009 has 53 MA's), (40, 36865), (41, 36862), (47, 36835), (56, 36769), (69, 36709), (83, 36664),

Gene: Gruunaga_59 Start: 37396, Stop: 36959, Start Num: 24

Candidate Starts for Gruunaga_59:

(Start: 24 @37396 has 53 MA's), (40, 37252), (41, 37249), (47, 37222), (56, 37156), (69, 37093), (83, 37048), (102, 36970),

Gene: HINdeR_49 Start: 38405, Stop: 37899, Start Num: 23

Candidate Starts for HINdeR_49:

(14, 38486), (15, 38480), (Start: 23 @38405 has 65 MA's), (35, 38273), (41, 38252), (42, 38249), (45, 38237),

Gene: Hammer_59 Start: 37003, Stop: 36566, Start Num: 24

Candidate Starts for Hammer_59:

(Start: 24 @37003 has 53 MA's), (40, 36859), (41, 36856), (47, 36829), (56, 36763), (83, 36655), (102, 36577),

Gene: Heffalump_56 Start: 38973, Stop: 38479, Start Num: 23

Candidate Starts for Heffalump_56:

(Start: 23 @38973 has 65 MA's), (37, 38835), (39, 38829), (40, 38826), (41, 38823), (47, 38796), (49, 38769), (56, 38730), (60, 38700), (65, 38679), (67, 38673),

Gene: Helmet_61 Start: 37472, Stop: 37029, Start Num: 24

Candidate Starts for Helmet_61:

(Start: 24 @37472 has 53 MA's), (40, 37328), (41, 37325), (47, 37298), (56, 37232), (69, 37172), (83, 37127),

Gene: Herbertwm_55 Start: 37937, Stop: 37377, Start Num: 23

Candidate Starts for Herbertwm_55:

(5, 38162), (Start: 23 @37937 has 65 MA's), (27, 37868), (41, 37772), (42, 37769), (44, 37763), (65, 37625), (71, 37601), (75, 37583), (111, 37448), (123, 37418),

Gene: Hexamo_59 Start: 37102, Stop: 36659, Start Num: 24

Candidate Starts for Hexamo_59:

(Start: 24 @37102 has 53 MA's), (40, 36958), (41, 36955), (47, 36928), (56, 36862), (69, 36802), (83, 36757),

Gene: Hoot_53 Start: 34860, Stop: 34417, Start Num: 24

Candidate Starts for Hoot_53:

(Start: 24 @34860 has 53 MA's), (40, 34716), (41, 34713), (47, 34686), (56, 34620), (69, 34560), (83, 34515),

Gene: HuhtaEnerson15_49 Start: 36845, Stop: 36351, Start Num: 25

Candidate Starts for HuhtaEnerson15_49:

(7, 37010), (9, 36992), (Start: 25 @36845 has 37 MA's), (31, 36746), (37, 36704), (38, 36701), (41, 36692), (89, 36473), (112, 36395), (125, 36365),

Gene: Indra_62 Start: 37473, Stop: 37030, Start Num: 24

Candidate Starts for Indra_62:

(Start: 24 @37473 has 53 MA's), (40, 37329), (41, 37326), (47, 37299), (56, 37233), (69, 37173), (83, 37128),

Gene: Isiphiwo_56 Start: 36576, Stop: 36142, Start Num: 24

Candidate Starts for Isiphiwo_56:

(Start: 24 @36576 has 53 MA's), (40, 36432), (41, 36429), (47, 36402), (56, 36336), (69, 36276), (102, 36153),

Gene: Jabiru_51 Start: 36770, Stop: 36282, Start Num: 25

Candidate Starts for Jabiru_51:

(9, 36917), (Start: 25 @36770 has 37 MA's), (31, 36671), (37, 36629), (38, 36626), (41, 36617), (44, 36608), (84, 36413), (88, 36404), (125, 36296),

Gene: Jeeves_62 Start: 38354, Stop: 37857, Start Num: 24

Candidate Starts for Jeeves_62:

(Start: 24 @38354 has 53 MA's), (37, 38219), (39, 38213), (40, 38210), (41, 38207), (47, 38180), (49, 38153), (56, 38114), (60, 38084), (65, 38063), (116, 37886),

Gene: Jeffabunny_59 Start: 37099, Stop: 36656, Start Num: 24

Candidate Starts for Jeffabunny_59:

(Start: 24 @37099 has 53 MA's), (40, 36955), (41, 36952), (47, 36925), (56, 36859), (69, 36799), (83, 36754),

Gene: JewelBug_59 Start: 37215, Stop: 36772, Start Num: 24

Candidate Starts for JewelBug_59:

(Start: 24 @37215 has 53 MA's), (40, 37071), (41, 37068), (47, 37041), (56, 36975), (83, 36870), (89, 36855),

Gene: Jordennis_58 Start: 36696, Stop: 36262, Start Num: 24

Candidate Starts for Jordennis_58:

(Start: 24 @36696 has 53 MA's), (40, 36552), (41, 36549), (47, 36522), (49, 36495), (56, 36456), (69, 36396), (83, 36351), (102, 36273),

Gene: JoshKayV_59 Start: 38828, Stop: 38325, Start Num: 23

Candidate Starts for JoshKayV_59:

(Start: 23 @38828 has 65 MA's), (37, 38687), (39, 38681), (40, 38678), (41, 38675), (47, 38648), (56, 38582), (65, 38531),

Gene: Journey13_51 Start: 36542, Stop: 36054, Start Num: 23

Candidate Starts for Journey13_51:

(Start: 23 @36542 has 65 MA's), (37, 36404), (39, 36398), (40, 36395), (41, 36392), (47, 36365), (52, 36311), (56, 36299), (124, 36071),

Gene: Jovo_49 Start: 37031, Stop: 36564, Start Num: 25

Candidate Starts for Jovo_49:

(Start: 25 @37031 has 37 MA's), (31, 36932), (41, 36878), (42, 36875), (43, 36872), (99, 36635), (122, 36581),

Gene: Jsquared_55 Start: 37136, Stop: 36672, Start Num: 23

Candidate Starts for Jsquared_55:

(Start: 23 @37136 has 65 MA's), (37, 36998), (39, 36992), (40, 36989), (41, 36986), (47, 36959), (49, 36932), (56, 36893), (78, 36812), (82, 36800), (101, 36722),

Gene: Kalpine_55 Start: 38383, Stop: 37931, Start Num: 23

Candidate Starts for Kalpine_55:

(Start: 23 @38383 has 65 MA's), (37, 38245), (39, 38239), (40, 38236), (41, 38233), (47, 38206), (49, 38179), (56, 38140), (80, 38059),

Gene: Kazan_59 Start: 37015, Stop: 36572, Start Num: 24

Candidate Starts for Kazan_59:

(Start: 24 @37015 has 53 MA's), (40, 36871), (41, 36868), (47, 36841), (56, 36775), (69, 36715), (83, 36670),

Gene: Kerberos_59 Start: 37999, Stop: 37544, Start Num: 23

Candidate Starts for Kerberos_59:

(Start: 23 @37999 has 65 MA's), (37, 37858), (41, 37846), (44, 37837), (50, 37783), (74, 37708), (82, 37687), (85, 37678), (123, 37564),

Gene: Kipper29_58 Start: 37028, Stop: 36585, Start Num: 24

Candidate Starts for Kipper29_58:

(Start: 24 @37028 has 53 MA's), (40, 36884), (41, 36881), (47, 36854), (56, 36788), (69, 36728), (83, 36683),

Gene: Klodlith_56 Start: 37715, Stop: 37278, Start Num: 23

Candidate Starts for Klodlith_56:

(Start: 23 @37715 has 65 MA's), (31, 37616), (41, 37562), (76, 37394), (109, 37283),

Gene: Koduck_58 Start: 37415, Stop: 36957, Start Num: 23

Candidate Starts for Koduck_58:

(Start: 23 @37415 has 65 MA's), (37, 37277), (40, 37268), (41, 37265), (47, 37238), (49, 37211), (56, 37172), (82, 37082), (125, 36962),

Gene: Koko_60 Start: 37533, Stop: 37090, Start Num: 24

Candidate Starts for Koko_60:

(Start: 24 @37533 has 53 MA's), (40, 37389), (41, 37386), (47, 37359), (56, 37293), (69, 37233), (83, 37188),

Gene: L5_55 Start: 37502, Stop: 37032, Start Num: 23

Candidate Starts for L5_55:

(Start: 23 @37502 has 65 MA's), (37, 37364), (40, 37355), (41, 37352), (47, 37325), (49, 37298), (56, 37259), (70, 37205), (77, 37184), (90, 37157), (92, 37130), (95, 37115), (114, 37064),

Gene: LadyBird_62 Start: 39099, Stop: 38653, Start Num: 24

Candidate Starts for LadyBird_62:

(Start: 24 @39099 has 53 MA's), (37, 38958), (39, 38952), (40, 38949), (41, 38946), (47, 38919), (49, 38892), (56, 38853),

Gene: Lev2_49 Start: 36663, Stop: 36196, Start Num: 25

Candidate Starts for Lev2_49:

(Start: 25 @36663 has 37 MA's), (31, 36564), (41, 36510), (42, 36507), (43, 36504), (99, 36267), (122, 36213),

Gene: Lilbunny_58 Start: 37103, Stop: 36660, Start Num: 24

Candidate Starts for Lilbunny_58:

(Start: 24 @37103 has 53 MA's), (40, 36959), (41, 36956), (47, 36929), (56, 36863), (69, 36803), (83, 36758),

Gene: LittleCherry_49 Start: 36865, Stop: 36371, Start Num: 25

Candidate Starts for LittleCherry_49:

(22, 36895), (Start: 25 @36865 has 37 MA's), (31, 36766), (37, 36724), (38, 36721), (41, 36712), (89, 36493), (112, 36415), (125, 36385),

Gene: Luchador_61 Start: 39939, Stop: 39442, Start Num: 23

Candidate Starts for Luchador_61:

(Start: 23 @39939 has 65 MA's), (37, 39804), (39, 39798), (40, 39795), (41, 39792), (47, 39765), (49, 39738), (56, 39699), (60, 39669), (65, 39648), (116, 39471),

Gene: Lucyedi_58 Start: 38070, Stop: 37621, Start Num: 24

Candidate Starts for Lucyedi_58:

(Start: 24 @38070 has 53 MA's), (40, 37926), (41, 37923), (47, 37896), (49, 37869), (52, 37842), (72, 37773), (80, 37755),

Gene: MajorMajor_56 Start: 37152, Stop: 36703, Start Num: 23

Candidate Starts for MajorMajor_56:

(Start: 23 @37152 has 65 MA's), (37, 37014), (39, 37008), (40, 37005), (41, 37002), (47, 36975), (49, 36948), (56, 36909), (110, 36738), (125, 36708),

Gene: MarysWell_49 Start: 37162, Stop: 36695, Start Num: 25

Candidate Starts for MarysWell_49:

(20, 37198), (Start: 25 @37162 has 37 MA's), (31, 37063), (41, 37009), (42, 37006), (43, 37003), (99, 36766), (122, 36712),

Gene: McFly_58 Start: 37009, Stop: 36566, Start Num: 24

Candidate Starts for McFly_58:

(Start: 24 @37009 has 53 MA's), (40, 36865), (41, 36862), (47, 36835), (56, 36769), (69, 36709), (83, 36664),

Gene: MegTheThird_56 Start: 37761, Stop: 37324, Start Num: 23

Candidate Starts for MegTheThird_56:

(2, 38055), (Start: 23 @37761 has 65 MA's), (41, 37608), (53, 37524), (59, 37479), (87, 37416), (109, 37329),

Gene: Micasa_50 Start: 37033, Stop: 36539, Start Num: 25

Candidate Starts for Micasa_50:

(Start: 25 @37033 has 37 MA's), (38, 36889), (40, 36883), (41, 36880), (89, 36661), (112, 36583), (125, 36553),

Gene: Midas2_48 Start: 36935, Stop: 36441, Start Num: 25

Candidate Starts for Midas2_48:

(Start: 25 @36935 has 37 MA's), (38, 36791), (40, 36785), (41, 36782), (89, 36563), (112, 36485), (125, 36455),

Gene: Milcery_49 Start: 36816, Stop: 36328, Start Num: 25

Candidate Starts for Milcery_49:

(22, 36846), (Start: 25 @36816 has 37 MA's), (31, 36717), (37, 36675), (38, 36672), (41, 36663), (89, 36444),

Gene: Minispark_56 Start: 37714, Stop: 37256, Start Num: 23

Candidate Starts for Minispark_56:

(Start: 23 @37714 has 65 MA's), (37, 37576), (39, 37570), (40, 37567), (41, 37564), (47, 37537), (49, 37510), (56, 37471), (78, 37390), (97, 37318), (125, 37261),

Gene: MissWhite_56 Start: 36656, Stop: 36198, Start Num: 23

Candidate Starts for MissWhite_56:

(Start: 23 @36656 has 65 MA's), (37, 36518), (39, 36512), (40, 36509), (41, 36506), (47, 36479), (56, 36413), (105, 36260), (112, 36236), (116, 36227), (125, 36203),

Gene: Naca_50 Start: 37309, Stop: 36818, Start Num: 25

Candidate Starts for Naca_50:

(9, 37456), (17, 37375), (22, 37339), (Start: 25 @37309 has 37 MA's), (31, 37210), (37, 37168), (38, 37165), (41, 37156), (84, 36952), (88, 36943), (104, 36886), (125, 36832),

Gene: Naji_59 Start: 38000, Stop: 37545, Start Num: 23

Candidate Starts for Naji_59:

(Start: 23 @38000 has 65 MA's), (37, 37859), (41, 37847), (44, 37838), (50, 37784), (74, 37709), (82, 37688), (85, 37679), (123, 37565),

Gene: Neeharika16_57 Start: 36469, Stop: 36026, Start Num: 24

Candidate Starts for Neeharika16_57:

(Start: 24 @36469 has 53 MA's), (40, 36325), (41, 36322), (47, 36295), (56, 36229), (69, 36169), (83, 36124),

Gene: Newrala_58 Start: 37011, Stop: 36568, Start Num: 24

Candidate Starts for Newrala_58:

(Start: 24 @37011 has 53 MA's), (40, 36867), (41, 36864), (47, 36837), (56, 36771), (69, 36711), (83, 36666),

Gene: Odin_55 Start: 37059, Stop: 36571, Start Num: 23

Candidate Starts for Odin_55:

(Start: 23 @37059 has 65 MA's), (28, 36984), (36, 36921), (37, 36915), (41, 36903), (54, 36801), (83, 36714), (124, 36582),

Gene: PP_55 Start: 41225, Stop: 40698, Start Num: 16

Candidate Starts for PP_55:

(10, 41300), (12, 41264), (Start: 16 @41225 has 1 MA's), (19, 41198), (31, 41075), (41, 41021), (44, 41012), (46, 40997), (85, 40829), (97, 40778), (108, 40748), (117, 40730),

Gene: PainterBoy_58 Start: 38029, Stop: 37562, Start Num: 23

Candidate Starts for PainterBoy_58:

(Start: 23 @38029 has 65 MA's), (36, 37891), (41, 37873), (50, 37795), (52, 37777), (54, 37771), (63, 37735), (94, 37648), (112, 37600), (124, 37573),

Gene: PetterN_54 Start: 36924, Stop: 36436, Start Num: 25

Candidate Starts for PetterN_54:

(Start: 25 @36924 has 37 MA's), (31, 36825), (37, 36783), (38, 36780), (41, 36771), (44, 36762), (88, 36558), (125, 36450),

Gene: Ph8s_58 Start: 37416, Stop: 36925, Start Num: 23

Candidate Starts for Ph8s_58:

(3, 37707), (6, 37632), (Start: 23 @37416 has 65 MA's), (36, 37275), (37, 37269), (41, 37257), (54, 37155), (83, 37068),

Gene: Pharaoh_52 Start: 38002, Stop: 37490, Start Num: 23

Candidate Starts for Pharaoh_52:

(Start: 23 @38002 has 65 MA's), (29, 37918), (37, 37849), (38, 37846), (41, 37837), (42, 37834), (51, 37765), (58, 37732), (115, 37549), (128, 37501), (129, 37495),

Gene: Phillis_55 Start: 36641, Stop: 36165, Start Num: 23

Candidate Starts for Phillis_55:

(Start: 23 @36641 has 65 MA's), (33, 36524), (37, 36488), (40, 36479), (41, 36476), (71, 36344), (106, 36209), (119, 36176),

Gene: Phlorence_47 Start: 36408, Stop: 35941, Start Num: 25

Candidate Starts for Phlorence_47:

(Start: 25 @36408 has 37 MA's), (31, 36309), (41, 36255), (42, 36252), (43, 36249), (99, 36012), (122, 35958),

Gene: PickleBack_49 Start: 36655, Stop: 36188, Start Num: 25

Candidate Starts for PickleBack_49:

(Start: 25 @36655 has 37 MA's), (31, 36556), (41, 36502), (42, 36499), (43, 36496), (99, 36259), (122, 36205),

Gene: Pmask_58 Start: 37012, Stop: 36569, Start Num: 24

Candidate Starts for Pmask_58:

(Start: 24 @37012 has 53 MA's), (40, 36868), (41, 36865), (47, 36838), (56, 36772), (69, 36712), (83, 36667),

Gene: Polyphemus_60 Start: 37394, Stop: 36951, Start Num: 24

Candidate Starts for Polyphemus_60:

(Start: 24 @37394 has 53 MA's), (40, 37250), (41, 37247), (47, 37220), (56, 37154), (69, 37094), (83, 37049),

Gene: Pomar16_59 Start: 38040, Stop: 37585, Start Num: 23

Candidate Starts for Pomar16_59:

(Start: 23 @38040 has 65 MA's), (37, 37899), (41, 37887), (44, 37878), (50, 37824), (74, 37749), (82, 37728), (85, 37719), (123, 37605),

Gene: Power_56 Start: 38208, Stop: 37714, Start Num: 23

Candidate Starts for Power_56:

(Start: 23 @38208 has 65 MA's), (37, 38070), (39, 38064), (40, 38061), (41, 38058), (47, 38031), (49, 38004), (56, 37965), (88, 37851), (105, 37776),

Gene: Priamo_60 Start: 36762, Stop: 36328, Start Num: 24

Candidate Starts for Priamo_60:

(Start: 24 @36762 has 53 MA's), (40, 36618), (41, 36615), (47, 36588), (56, 36522), (83, 36417), (102, 36339),

Gene: Prin Ashe11_49 Start: 36718, Stop: 36230, Start Num: 25

Candidate Starts for Prin Ashe11_49:

(22, 36748), (Start: 25 @36718 has 37 MA's), (31, 36619), (37, 36577), (38, 36574), (41, 36565), (89, 36346), (122, 36247),

Gene: QueenB2_56 Start: 38186, Stop: 37692, Start Num: 23

Candidate Starts for QueenB2_56:

(Start: 23 @38186 has 65 MA's), (37, 38048), (39, 38042), (40, 38039), (41, 38036), (47, 38009), (49, 37982), (56, 37943), (60, 37913), (65, 37892), (67, 37886),

Gene: QueenBeesly_57 Start: 38155, Stop: 37661, Start Num: 23

Candidate Starts for QueenBeesly_57:

(Start: 23 @38155 has 65 MA's), (37, 38017), (39, 38011), (40, 38008), (41, 38005), (47, 37978), (49, 37951), (56, 37912), (60, 37882), (88, 37798), (105, 37723),

Gene: Quokka_55 Start: 37152, Stop: 36703, Start Num: 23

Candidate Starts for Quokka_55:

(Start: 23 @37152 has 65 MA's), (37, 37014), (39, 37008), (40, 37005), (41, 37002), (47, 36975), (49, 36948), (56, 36909), (110, 36738), (125, 36708),

Gene: Rahalelujah_57 Start: 37729, Stop: 37271, Start Num: 23

Candidate Starts for Rahalelujah_57:

(Start: 23 @37729 has 65 MA's), (37, 37591), (39, 37585), (40, 37582), (41, 37579), (47, 37552), (49, 37525), (56, 37486), (78, 37405), (97, 37333), (125, 37276),

Gene: Refuge_55 Start: 39270, Stop: 38728, Start Num: 23

Candidate Starts for Refuge_55:

(4, 39543), (5, 39495), (6, 39486), (Start: 23 @39270 has 65 MA's), (31, 39171), (37, 39123), (41, 39111), (45, 39096), (65, 38964), (79, 38913), (121, 38766), (129, 38733),

Gene: Rifter_59 Start: 36599, Stop: 36162, Start Num: 24
Candidate Starts for Rifter_59:
(Start: 24 @36599 has 53 MA's), (40, 36455), (41, 36452), (47, 36425), (56, 36359), (83, 36251), (102, 36173),

Gene: Roksolana_60 Start: 37433, Stop: 36996, Start Num: 24
Candidate Starts for Roksolana_60:
(Start: 24 @37433 has 53 MA's), (40, 37289), (41, 37286), (47, 37259), (56, 37193), (83, 37085), (102, 37007),

Gene: Scorpia_54 Start: 36983, Stop: 36492, Start Num: 25
Candidate Starts for Scorpia_54:
(Start: 25 @36983 has 37 MA's), (31, 36884), (37, 36842), (38, 36839), (41, 36830), (44, 36821), (84, 36626), (88, 36617), (104, 36560), (125, 36506),

Gene: SemperFi_58 Start: 38423, Stop: 37929, Start Num: 23
Candidate Starts for SemperFi_58:
(Start: 23 @38423 has 65 MA's), (37, 38285), (39, 38279), (40, 38276), (41, 38273), (47, 38246), (49, 38219), (56, 38180), (60, 38150), (88, 38066), (105, 37991),

Gene: Serenity_57 Start: 37359, Stop: 36895, Start Num: 23
Candidate Starts for Serenity_57:
(Start: 23 @37359 has 65 MA's), (37, 37221), (39, 37215), (40, 37212), (41, 37209), (47, 37182), (49, 37155), (56, 37116), (78, 37035), (82, 37023), (101, 36945),

Gene: SheaKeira_55 Start: 37666, Stop: 37181, Start Num: 23
Candidate Starts for SheaKeira_55:
(Start: 23 @37666 has 65 MA's), (31, 37567), (41, 37513), (71, 37360), (82, 37327), (85, 37321), (98, 37264),

Gene: Sheen_55 Start: 40022, Stop: 39528, Start Num: 23
Candidate Starts for Sheen_55:
(Start: 23 @40022 has 65 MA's), (30, 39926), (41, 39869), (44, 39860), (46, 39845), (79, 39707),

Gene: Smeadley_56 Start: 36818, Stop: 36348, Start Num: 23
Candidate Starts for Smeadley_56:
(1, 37103), (8, 36944), (Start: 23 @36818 has 65 MA's), (33, 36701), (37, 36665), (40, 36656), (41, 36653), (71, 36527), (100, 36410), (119, 36359),

Gene: SmellyB_58 Start: 37009, Stop: 36566, Start Num: 24
Candidate Starts for SmellyB_58:
(Start: 24 @37009 has 53 MA's), (40, 36865), (41, 36862), (47, 36835), (56, 36769), (69, 36709), (83, 36664),

Gene: SnapTap_57 Start: 38234, Stop: 37740, Start Num: 23
Candidate Starts for SnapTap_57:
(Start: 23 @38234 has 65 MA's), (37, 38096), (39, 38090), (40, 38087), (41, 38084), (47, 38057), (49, 38030), (56, 37991), (60, 37961), (88, 37877), (105, 37802),

Gene: SororFago_59 Start: 39270, Stop: 38767, Start Num: 24
Candidate Starts for SororFago_59:
(Start: 24 @39270 has 53 MA's), (37, 39135), (39, 39129), (40, 39126), (41, 39123), (47, 39096), (49, 39069), (56, 39030), (60, 39000), (65, 38979), (116, 38796),

Gene: StarStuff_59 Start: 38002, Stop: 37547, Start Num: 23

Candidate Starts for StarStuff_59:

(Start: 23 @38002 has 65 MA's), (37, 37861), (41, 37849), (44, 37840), (50, 37786), (74, 37711), (82, 37690), (85, 37681), (123, 37567),

Gene: Steamy_53 Start: 37734, Stop: 37234, Start Num: 23

Candidate Starts for Steamy_53:

(5, 37959), (6, 37950), (Start: 23 @37734 has 65 MA's), (26, 37725), (34, 37611), (37, 37596), (40, 37587), (41, 37584), (47, 37557), (49, 37530), (56, 37491), (61, 37458), (68, 37428), (73, 37413),

Gene: Stephig9_56 Start: 36929, Stop: 36414, Start Num: 23

Candidate Starts for Stephig9_56:

(8, 37055), (Start: 23 @36929 has 65 MA's), (32, 36815), (33, 36812), (40, 36767), (41, 36764), (64, 36617), (71, 36593), (77, 36572), (100, 36476), (119, 36425),

Gene: Sunhee_60 Start: 37715, Stop: 37224, Start Num: 23

Candidate Starts for Sunhee_60:

(Start: 23 @37715 has 65 MA's), (37, 37577), (39, 37571), (40, 37568), (41, 37565), (47, 37538), (49, 37511), (52, 37484), (56, 37472), (62, 37436), (116, 37256),

Gene: SuperAwesome_58 Start: 37014, Stop: 36580, Start Num: 24

Candidate Starts for SuperAwesome_58:

(Start: 24 @37014 has 53 MA's), (40, 36870), (41, 36867), (47, 36840), (56, 36774), (69, 36714),

Gene: SuperCallie99_57 Start: 36896, Stop: 36453, Start Num: 24

Candidate Starts for SuperCallie99_57:

(Start: 24 @36896 has 53 MA's), (40, 36752), (41, 36749), (47, 36722), (56, 36656), (69, 36596), (83, 36551),

Gene: Superchunk_55 Start: 36675, Stop: 36196, Start Num: 23

Candidate Starts for Superchunk_55:

(6, 36891), (Start: 23 @36675 has 65 MA's), (36, 36513), (37, 36507), (41, 36495), (54, 36393), (77, 36324), (81, 36312), (92, 36270), (116, 36201),

Gene: SweetiePie_57 Start: 38366, Stop: 37872, Start Num: 23

Candidate Starts for SweetiePie_57:

(Start: 23 @38366 has 65 MA's), (37, 38228), (39, 38222), (40, 38219), (41, 38216), (47, 38189), (49, 38162), (56, 38123), (60, 38093), (88, 38009), (105, 37934),

Gene: SwirlSquare_60 Start: 37597, Stop: 37061, Start Num: 23

Candidate Starts for SwirlSquare_60:

(Start: 23 @37597 has 65 MA's), (28, 37522), (36, 37459), (37, 37453), (41, 37441), (54, 37339), (63, 37288), (81, 37240), (83, 37234), (104, 37168), (120, 37123), (130, 37066),

Gene: SydNat_52 Start: 37663, Stop: 37196, Start Num: 25

Candidate Starts for SydNat_52:

(20, 37699), (Start: 25 @37663 has 37 MA's), (31, 37564), (41, 37510), (42, 37507), (43, 37504), (44, 37501), (99, 37267), (122, 37213),

Gene: Temprado_60 Start: 37472, Stop: 37029, Start Num: 24

Candidate Starts for Temprado_60:

(Start: 24 @37472 has 53 MA's), (40, 37328), (41, 37325), (47, 37298), (56, 37232), (69, 37172), (83, 37127),

Gene: Theia_48 Start: 37140, Stop: 36673, Start Num: 25

Candidate Starts for Theia_48:

(20, 37176), (Start: 25 @37140 has 37 MA's), (31, 37041), (41, 36987), (42, 36984), (43, 36981), (45, 36972), (99, 36744), (122, 36690),

Gene: Tiger_48 Start: 36329, Stop: 35862, Start Num: 25

Candidate Starts for Tiger_48:

(Start: 25 @36329 has 37 MA's), (31, 36230), (41, 36176), (42, 36173), (43, 36170), (99, 35933), (122, 35879),

Gene: Timshel_51 Start: 38839, Stop: 38318, Start Num: 23

Candidate Starts for Timshel_51:

(13, 38905), (15, 38899), (Start: 23 @38839 has 65 MA's), (31, 38740), (35, 38707), (41, 38686), (42, 38683), (44, 38677), (45, 38671), (83, 38488),

Gene: TopsytheTRex_53 Start: 37429, Stop: 36965, Start Num: 23

Candidate Starts for TopsytheTRex_53:

(Start: 23 @37429 has 65 MA's), (39, 37285), (40, 37282), (41, 37279), (47, 37252), (49, 37225), (56, 37186), (78, 37105), (82, 37093), (101, 37015),

Gene: Toaka_57 Start: 37937, Stop: 37467, Start Num: 23

Candidate Starts for Toaka_57:

(Start: 23 @37937 has 65 MA's), (34, 37814), (37, 37799), (40, 37790), (41, 37787), (47, 37760), (49, 37733), (56, 37694), (78, 37604), (90, 37574), (125, 37472),

Gene: Tomathan_59 Start: 38049, Stop: 37594, Start Num: 23

Candidate Starts for Tomathan_59:

(Start: 23 @38049 has 65 MA's), (37, 37908), (41, 37896), (44, 37887), (50, 37833), (82, 37737), (85, 37728), (123, 37614),

Gene: ToneTone_56 Start: 37032, Stop: 36589, Start Num: 24

Candidate Starts for ToneTone_56:

(Start: 24 @37032 has 53 MA's), (40, 36888), (41, 36885), (47, 36858), (56, 36792), (69, 36732), (83, 36687),

Gene: Toro_57 Start: 40134, Stop: 39640, Start Num: 23

Candidate Starts for Toro_57:

(Start: 23 @40134 has 65 MA's), (30, 40038), (41, 39981), (44, 39972), (46, 39957), (79, 39819),

Gene: Travvers_59 Start: 37999, Stop: 37544, Start Num: 23

Candidate Starts for Travvers_59:

(Start: 23 @37999 has 65 MA's), (37, 37858), (41, 37846), (44, 37837), (50, 37783), (74, 37708), (82, 37687), (85, 37678), (123, 37564),

Gene: Trixie_55 Start: 38251, Stop: 37799, Start Num: 23

Candidate Starts for Trixie_55:

(Start: 23 @38251 has 65 MA's), (37, 38113), (39, 38107), (40, 38104), (41, 38101), (47, 38074), (49, 38047), (56, 38008), (80, 37927),

Gene: Tucker_59 Start: 37201, Stop: 36758, Start Num: 24

Candidate Starts for Tucker_59:

(Start: 24 @37201 has 53 MA's), (40, 37057), (41, 37054), (47, 37027), (56, 36961), (69, 36901), (83, 36856),

Gene: UnionJack_51 Start: 36473, Stop: 35982, Start Num: 25

Candidate Starts for UnionJack_51:

(Start: 25 @36473 has 37 MA's), (31, 36374), (34, 36347), (37, 36332), (38, 36329), (41, 36320), (44, 36311), (57, 36209), (88, 36107), (125, 35996),

Gene: VC3_60 Start: 38397, Stop: 37942, Start Num: 23

Candidate Starts for VC3_60:

(Start: 23 @38397 has 65 MA's), (37, 38256), (41, 38244), (44, 38235), (50, 38181), (74, 38106), (82, 38085), (85, 38076), (123, 37962),

Gene: Vanisoa_57 Start: 39057, Stop: 38596, Start Num: 23

Candidate Starts for Vanisoa_57:

(Start: 23 @39057 has 65 MA's), (34, 38934), (37, 38919), (40, 38910), (41, 38907), (47, 38880), (49, 38853), (56, 38814), (125, 38601),

Gene: VohminGhazi_58 Start: 37010, Stop: 36567, Start Num: 24

Candidate Starts for VohminGhazi_58:

(Start: 24 @37010 has 53 MA's), (40, 36866), (41, 36863), (47, 36836), (56, 36770), (69, 36710), (83, 36665),

Gene: WeiHuaDA_59 Start: 39056, Stop: 38604, Start Num: 23

Candidate Starts for WeiHuaDA_59:

(Start: 23 @39056 has 65 MA's), (37, 38918), (39, 38912), (40, 38909), (41, 38906), (47, 38879), (49, 38852), (56, 38813), (66, 38774), (77, 38741),

Gene: Wiks_58 Start: 37103, Stop: 36660, Start Num: 24

Candidate Starts for Wiks_58:

(Start: 24 @37103 has 53 MA's), (40, 36959), (41, 36956), (47, 36929), (56, 36863), (69, 36803), (83, 36758),

Gene: WorldCup_56 Start: 37723, Stop: 37265, Start Num: 23

Candidate Starts for WorldCup_56:

(Start: 23 @37723 has 65 MA's), (37, 37585), (39, 37579), (40, 37576), (41, 37573), (47, 37546), (49, 37519), (56, 37480), (78, 37399), (97, 37327), (125, 37270),

Gene: WunderPhul_59 Start: 37101, Stop: 36658, Start Num: 24

Candidate Starts for WunderPhul_59:

(Start: 24 @37101 has 53 MA's), (40, 36957), (41, 36954), (47, 36927), (56, 36861), (69, 36801), (83, 36756),

Gene: Yecey3_58 Start: 37824, Stop: 37375, Start Num: 23

Candidate Starts for Yecey3_58:

(Start: 23 @37824 has 65 MA's), (37, 37683), (41, 37671), (46, 37647), (71, 37545), (82, 37509), (103, 37437), (126, 37380),

Gene: Yokurt_59 Start: 37103, Stop: 36660, Start Num: 24

Candidate Starts for Yokurt_59:

(Start: 24 @37103 has 53 MA's), (40, 36959), (41, 36956), (47, 36929), (56, 36863), (69, 36803), (83, 36758),

Gene: Zaka_59 Start: 37103, Stop: 36660, Start Num: 24

Candidate Starts for Zaka_59:

(Start: 24 @37103 has 53 MA's), (40, 36959), (41, 36956), (47, 36929), (56, 36863), (69, 36803), (83, 36758),

Gene: Zimmer_54 Start: 38954, Stop: 38418, Start Num: 23

Candidate Starts for Zimmer_54:

(4, 39227), (5, 39179), (6, 39170), (Start: 23 @38954 has 65 MA's), (37, 38807), (41, 38795), (45, 38780), (65, 38648), (77, 38609), (129, 38423),

Gene: Zolita_51 Start: 37667, Stop: 37200, Start Num: 25

Candidate Starts for Zolita_51:

(20, 37703), (Start: 25 @37667 has 37 MA's), (31, 37568), (41, 37514), (42, 37511), (43, 37508), (44, 37505), (99, 37271), (122, 37217),

Gene: Zulu_60 Start: 37481, Stop: 37038, Start Num: 24

Candidate Starts for Zulu_60:

(Start: 24 @37481 has 53 MA's), (40, 37337), (41, 37334), (47, 37307), (56, 37241), (69, 37181), (83, 37136),