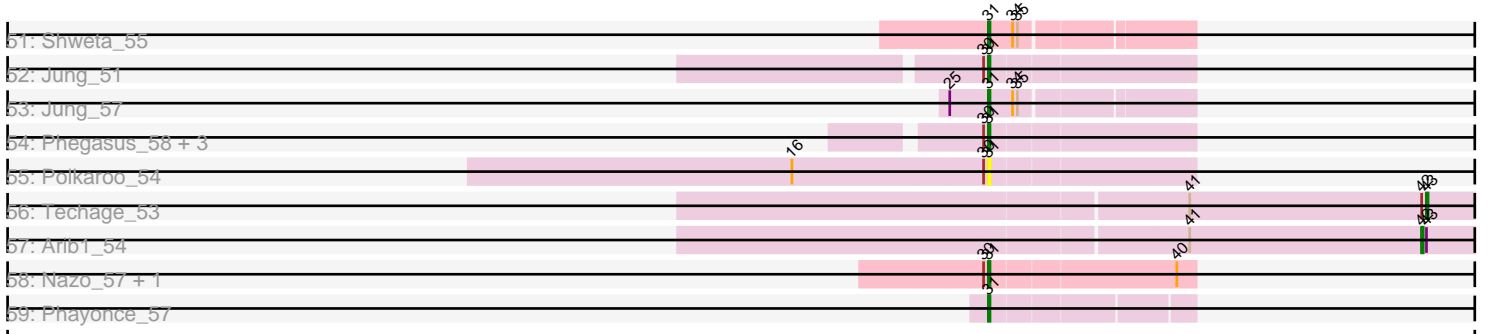


Pham 224272



Pham 224272



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 224272 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224272 has 231 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Shapes_88, DustyMartin_88, Rowdy_88
- Track 2 : Kerberos_92, Pomar16_92, StarStuff_92
- Track 3 : Tristan_85
- Track 4 : Tomathan_92, D32_80, Naji_81, Travvers_92, DBQu4n_92
- Track 5 : D29_82.2, Duplo_93
- Track 6 : C3_82
- Track 7 : ANI8_89, VC3_88, AN9_89
- Track 8 : BabyBack_86
- Track 9 : GaugeLDP_85
- Track 10 : Bactobuster_81, IronMan_86
- Track 11 : MissWhite_84
- Track 12 : NicoleTera_90
- Track 13 : Kinmap_98
- Track 14 : Eurydice_87, Chaph_86, Eapen_86, Happiness_85, JoongJeon_85, CentreCat_86, DirtyDunning_85, Ohfah_87, BubbleTrouble_85, Holli_85, Baby16_86, Thanksgivukkah_85, LochMonster_87, Kye_86, Sparxx_87, Polymorphads_87, ICleared_85, Taquarus_85, Mazhar510_86, Nebs_87, KFPoly_85, SheldonCooper_86, TygerBlood_86, TroyPia_87, Connomayer_86, Cerulean_88, BellusTerra_86, Kratak_85, JetBlade_87, Morrow_88, Alberto7_87, Lunsford_86, Eros_86, Bartimeaus_86, Felipe_86, Scamp_86, PeterPeter_86, Pumbaa_86
- Track 15 : Tinybot_85, Kremtemulon_83, Funston_85, Maxo_88, Cintron_86, Miramae_86, YoSam321_86, Kamy_85, Koan_81, Nemo27_85, Phighter1804_86, NorthStar_83, Kingmustik0402_86, Rosa24_82, AvatarAhPeg_86, Houdini22_85, NotAPhaseMom_85, Ulysses_85, Lorenzo_86, Stink_86, Koreni_85, Cocoaberry_86, Cindaradix_81, SenorClean_81, Clarenza_85
- Track 16 : PetiteSangsue_83, Bumblebee11_82, Datway_83
- Track 17 : Shygu2_84, Noelle_85
- Track 18 : Maverick_85, Bombshell_86, Melvin_88, Pipcraft_82, Mundrea_84, Caelakin_84
- Track 19 : Phontbonne_86
- Track 20 : DaVinci_91, VohminGhazi_93, Chartreuse_91, Kazan_94, Candra_91, SmellyB_93, McFly_93
- Track 21 : Zaka_95, Hammer_95, Roksolana_95, BlessJoy_94, Yokurt_94, Hexamo_94, Zulu_96, Rifter_95, SuperCallie99_89, CloudWang3_95, Jeffabunny_83, Gruunaga_95, Wiks_94, Lilbunny_91, Koko_96, Helmet_96, Artemis2UCLA_94, Tucker_95, Gladiator_91, Blue7_96, Garak_96, Temprado_96

- Track 22 : JewelBug_85, Hoot_88, Neeharika16_92, EricB_91, Dorothea_93, Jordennis_91, Polyphemus_85, BABullseye_86, SuperAwesome_93, Pmask_92, Cookiedough_93, Kipper29_93, Priamo_93, Newrala_92
- Track 23 : Isiphiwo_89
- Track 24 : PP_05
- Track 25 : Mao1_73
- Track 26 : Gumball_87, Erk16_88, KandZ_85
- Track 27 : Helpful_90, Adjutor_85, Delton_86, Visconti_88, Thoth_87, WaldoWhy_88, BigMama_86, Butterscotch_85, Troll4_87, Chill_88, Prager_87, Penelope2018_87
- Track 28 : Mopey_89
- Track 29 : PLOT_88, SirHarley_89
- Track 30 : Nova_87, Giuseppe_89
- Track 31 : Phalaborwa_89
- Track 32 : Hawkeye_52
- Track 33 : Ovechkin_74, Quico_81, Batiatus_70, Kingsley_75, Babsiella_59, Brushbloom_79, Florinda_84
- Track 34 : JoeyJr_72, Doomphist_75, KingMidas_71, PHappiness_72, Poenanya_75, Nimbo_64, Leperchaun_70, Geralt_65, Daenerys_71, Inventum_70, RedBird_73, Dorothy_73, Polka14_76, Empress_70, Deb65_65, RitaG_72, Scottish_70, Sassafras_73, OldBen_69
- Track 35 : Donkeykong_73
- Track 36 : BodEinwohner17_71, BuzzLyseyear_73, Andies_53, Tapioca_57
- Track 37 : Phalconet_68
- Track 38 : SG4_68, Hegedechwinu_71, StAnnes_69
- Track 39 : Ms6_70, DLane_69
- Track 40 : PhesterPotato_74
- Track 41 : Misha28_73, TootsiePop_73
- Track 42 : LittleShirley_70
- Track 43 : Madiba_68
- Track 44 : LunaStella_70, TChen_72
- Track 45 : Island3_57
- Track 46 : Xula_49
- Track 47 : QueenHazel_50
- Track 48 : Melville_58
- Track 49 : Xeno_55
- Track 50 : Gex_55
- Track 51 : Shweta_55
- Track 52 : Jung_51
- Track 53 : Jung_57
- Track 54 : Phegasus_58, Mangethe_58, Zilizebeth_58, Majeke_58
- Track 55 : Polkaroo_54
- Track 56 : Techage_53
- Track 57 : Arib1_54
- Track 58 : Nazo_57, BigNuz_56
- Track 59 : Phayonce_57

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

The start number called the most often in the published annotations is 31, it was called in 145 of the 211 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adjutor_85, Andies_53, Artemis2UCLA_94, AvatarAhPeg_86, BABullseye_86, Babsiella_59, Batiatus_70, BigMama_86, BigNuz_56, BlessJoy_94, Blue7_96, BodEinwohner17_71, Brushbloom_79, Bumblebee11_82, Butterscotch_85, BuzzLyseyear_73, C3_82, Candra_91, Chartreuse_91, Chill_88, Cindaradix_81, Cintron_86, Clarenza_85, CloudWang3_95, Cocoaberry_86, Cookiedough_93, D29_82.2, DLane_69, DaVinci_91, Daenerys_71, Datway_83, Deb65_65, Delton_86, Donkeykong_73, Doomphist_75, Dorothea_93, Dorothy_73, Duplo_93, DustyMartin_88, Empress_70, EricB_91, Erk16_88, Florinda_84, Funston_85, Garak_96, Geralt_65, Gex_55, Giuseppe_89, Gladiator_91, Gruunaga_95, Gumball_87, Hammer_95, Hawkeye_52, Hegedechwinu_71, Helmet_96, Helpful_90, Hexamo_94, Hoot_88, Houdini22_85, Inventum_70, Isiphiwo_89, Island3_57, Jeffabunny_83, JewelBug_85, JoeyJr_72, Jordennis_91, Jung_51, Jung_57, Kamy_85, KandZ_85, Kazan_94, KingMidas_71, Kingmustik0402_86, Kingsley_75, Kinmap_98, Kipper29_93, Koan_81, Koko_96, Koreni_85, Kremtemulon_83, Leperchaun_70, Lilbunny_91, LittleShirley_70, Lorenzo_86, LunaStella_70, Madiba_68, Majeke_58, Mangethe_58, Mao1_73, Maxo_88, McFly_93, Melville_58, Miramae_86, Misha28_73, Ms6_70, Nazo_57, Neeharika16_92, Nemo27_85, Newrala_92, NicoleTera_90, Nimbo_64, Noelle_85, NorthStar_83, NotAPhaseMom_85, Nova_87, OldBen_69, Ovechkin_74, PHappiness_72, Penelope2018_87, PetiteSangsue_83, Phalaborwa_89, Phalconet_68, Phayonce_57, Phegasus_58, PhesterPhotato_74, Phighter1804_86, Phontbonne_86, Pmask_92, Poenanya_75, Polka14_76, Polkaroo_54, Polyphemus_85, Prager_87, Priamo_93, QueenHazel_50, Quico_81, RedBird_73, Rifter_95, RitaG_72, Roksolana_95, Rosa24_82, Rowdy_88, SG4_68, Sassafra_73, Scottish_70, SeniorClean_81, Shapes_88, Shweta_55, Shygu2_84, SmellyB_93, StAnnes_69, Stink_86, SuperAwesome_93, SuperCallie99_89, TChen_72, Tapioca_57, Temprado_96, Thoth_87, Tinybot_85, TootsiePop_73, Troll4_87, Tucker_95, Ulysses_85, Visconti_88, VohminGhazi_93, WaldoWhy_88, Wiks_94, Xula_49, YoSam321_86, Yokurt_94, Zaka_95, Zilizebeth_58, Zulu_96,

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

- AN9_89, ANI8_89, Bombshell_86, Caelakin_84, D32_80, DBQu4n_92, Kerberos_92, Maverick_85, Melvin_88, Mopey_89, Mundrea_84, Naji_81, PLOT_88, Pipcraft_82, Pomar16_92, SirHarley_89, StarStuff_92, Tomathan_92, Travvers_92, VC3_88, Xeno_55,

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

- Alberto7_87, Arib1_54, Baby16_86, BabyBack_86, Bactobuster_81, Bartimeaus_86, BellusTerra_86, BubbleTrouble_85, CentreCat_86, Cerulean_88, Chaph_86, Connomayer_86, DirtyDunning_85, Eapen_86, Eros_86, Eurydice_87, GaugeLDP_85, Happiness_85, Holli_85, ICleared_85, IronMan_86, JetBlade_87, JoongJeon_85, KFPoly_85, Kratark_85, Kyee_86, LochMonster_87, Lunsford_86, Mazhar510_86, MissWhite_84, Morrow_88, Nebs_87, Ohfah_87, PP_05, PeterPeter_86, Phelipe_86, Polymorphads_87, Pumbaa_86, Scamp_86, SheldonCooper_86, Sparxx_87, Taquarus_85, Techage_53, Thanksgivukkah_85, Tristan_85, TroyPia_87, TygerBlood_86,

Summary by start number:

Start 24:

- Found in 6 of 231 (2.6%) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Tristan_85 (A2),

Start 26:

- Found in 14 of 231 (6.1%) of genes in pham
- Manual Annotations of this start: 10 of 211
- Called 78.6% of time when present
- Phage (with cluster) where this start called: AN9_89 (A2), ANI8_89 (A2), D32_80 (A2), DBQu4n_92 (A2), Kerberos_92 (A2), Naji_81 (A2), Pomar16_92 (A2), StarStuff_92 (A2), Tomathan_92 (A2), Travvers_92 (A2), VC3_88 (A2),

Start 28:

- Found in 1 of 231 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 211
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PP_05 (A7),

Start 29:

- Found in 82 of 231 (35.5%) of genes in pham
- Manual Annotations of this start: 52 of 211
- Called 63.4% of time when present
- Phage (with cluster) where this start called: Alberto7_87 (A4), Baby16_86 (A4), BabyBack_86 (A2), Bactobuster_81 (A2), Bartimeaus_86 (A4), BellusTerra_86 (A4), Bombshell_86 (A4), BubbleTrouble_85 (A4), Caelakin_84 (A4), CentreCat_86 (A4), Cerulean_88 (A4), Chaph_86 (A4), Connomayer_86 (A4), DirtyDunning_85 (A4), Eapen_86 (A4), Eros_86 (A4), Eurydice_87 (A4), GaugeLDP_85 (A2), Happiness_85 (A4), Holli_85 (A4), ICleared_85 (A4), IronMan_86 (A2), JetBlade_87 (A4), JoongJeon_85 (A4), KFPoly_85 (A4), Kratark_85 (A4), Kye_86 (A4), LochMonster_87 (A4), Lunsford_86 (A4), Maverick_85 (A4), Mazhar510_86 (A4), Melvin_88 (A4), MissWhite_84 (A2), Mopey_89 (D1), Morrow_88 (A4), Mundrea_84 (A4), Nebs_87 (A4), Ohfah_87 (A4), PLOT_88 (D1), PeterPeter_86 (A4), Phelipe_86 (A4), Pipcraft_82 (A4), Polymorphads_87 (A4), Pumbaa_86 (A4), Scamp_86 (A4), SheldonCooper_86 (A4), SirHarley_89 (D1), Sparxx_87 (A4), Taquarus_85 (A4), Thanksgivukkah_85 (A4), TroyPia_87 (A4), TygerBlood_86 (A4),

Start 30:

- Found in 12 of 231 (5.2%) of genes in pham
- Manual Annotations of this start: 1 of 211
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Xeno_55 (N),

Start 31:

- Found in 184 of 231 (79.7%) of genes in pham
- Manual Annotations of this start: 145 of 211
- Called 88.6% of time when present
- Phage (with cluster) where this start called: Adjutor_85 (D1), Andies_53 (N), Artemis2UCLA_94 (A6), AvatarAhPeg_86 (A4), BABullseye_86 (A6), Babsiella_59 (I1), Batiatus_70 (F1), BigMama_86 (D1), BigNuz_56 (P4), BlessJoy_94 (A6), Blue7_96 (A6), BodEinwohner17_71 (F1), Brushbloom_79 (F1), Bumblebee11_82 (A4), Butterscotch_85 (D1), BuzzLyseyear_73 (F1), C3_82 (A2), Candra_91 (A6),

Chartreuse_91 (A6), Chill_88 (D1), Cindaradix_81 (A4), Cintron_86 (A4), Clarenza_85 (A4), CloudWang3_95 (A6), Cocoaberry_86 (A4), Cookiedough_93 (A6), D29_82.2 (A2), DLane_69 (F1), DaVinci_91 (A6), Daenerys_71 (F1), Datway_83 (A4), Deb65_65 (F1), Delton_86 (D1), Donkeykong_73 (F1), Doomphist_75 (F1), Dorothea_93 (A6), Dorothy_73 (F1), Duplo_93 (A2), DustyMartin_88 (A10), Empress_70 (F1), EricB_91 (A6), Erk16_88 (D1), Florinda_84 (F1), Funston_85 (A4), Garak_96 (A6), Geralt_65 (F1), Gex_55 (N), Giuseppe_89 (D1), Gladiator_91 (A6), Gruunaga_95 (A6), Gumball_87 (D1), Hammer_95 (A6), Hawkeye_52 (D2), Hegedechwinu_71 (F1), Helmet_96 (A6), Helpful_90 (D1), Hexamo_94 (A6), Hoot_88 (A6), Houdini22_85 (A4), Inventum_70 (F1), Isiphiwo_89 (A6), Island3_57 (I1), Jeffabunny_83 (A6), JewelBug_85 (A6), JoeyJr_72 (F1), Jordennis_91 (A6), Jung_51 (P1), Jung_57 (P1), Kamy_85 (A4), KandZ_85 (D1), Kazan_94 (A6), KingMidas_71 (F1), Kingmustik0402_86 (A4), Kingsley_75 (F1), Kinmap_98 (A21), Kipper29_93 (A6), Koan_81 (A4), Koko_96 (A6), Koreni_85 (A4), Kremtemulon_83 (A4), Leperchaun_70 (F1), Lilbunny_91 (A6), LittleShirley_70 (F1), Lorenzo_86 (A4), LunaStella_70 (F4), Madiba_68 (F1), Majeke_58 (P1), Mangethe_58 (P1), Mao1_73 (AD), Maxo_88 (A4), McFly_93 (A6), Melville_58 (N), Miramae_86 (A4), Misha28_73 (F1), Ms6_70 (F1), Nazo_57 (P4), Neeharika16_92 (A6), Nemo27_85 (A4), Newrala_92 (A6), NicoleTera_90 (A2), Nimbo_64 (F1), Noelle_85 (A4), NorthStar_83 (A4), NotAPhaseMom_85 (A4), Nova_87 (D1), OldBen_69 (F1), Ovechkin_74 (F1), PHappiness_72 (F1), Penelope2018_87 (D1), PetiteSangsue_83 (A4), Phalaborwa_89 (D1), Phalconet_68 (F1), Phayonce_57 (P5), Phegasus_58 (P1), PhesterPhotato_74 (F1), Phighter1804_86 (A4), Phontbonne_86 (A4), Pmask_92 (A6), Poenanya_75 (F1), Polka14_76 (F1), Polkaroo_54 (P1), Polyphemos_85 (A6), Prager_87 (D1), Priamo_93 (A6), QueenHazel_50 (I1), Quico_81 (F1), RedBird_73 (F1), Rifter_95 (A6), RitaG_72 (F1), Roksolana_95 (A6), Rosa24_82 (A4), Rowdy_88 (A10), SG4_68 (F1), Sassafra_73 (F1), Scottish_70 (F1), SeniorClean_81 (A4), Shapes_88 (A10), Shweta_55 (N), Shygu2_84 (A4), SmellyB_93 (A6), StAnnes_69 (F1), Stink_86 (A4), SuperAwesome_93 (A6), SuperCallie99_89 (A6), TChen_72 (F4), Tapioca_57 (N), Temprado_96 (A6), Thoth_87 (D1), Tinybot_85 (A4), TootsiePop_73 (F1), Troll4_87 (D1), Tucker_95 (A6), Ulysses_85 (A4), Visconti_88 (D1), VohminGhazi_93 (A6), WaldoWhy_88 (D1), Wiks_94 (A6), Xula_49 (I1), YoSam321_86 (A4), Yokurt_94 (A6), Zaka_95 (A6), Zilizabeth_58 (P1), Zulu_96 (A6),

Start 42:

- Found in 2 of 231 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 211
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Arib1_54 (P1),

Start 43:

- Found in 2 of 231 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 211
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Techage_53 (P1),

Summary by clusters:

There are 16 clusters represented in this pham: F1, P1, F4, A10, P4, P5, I1, N, A2, A4, A7, A6, A21, AD, D2, D1,

Info for manual annotations of cluster A2:

- Start number 26 was manually annotated 10 times for cluster A2.
- Start number 29 was manually annotated 5 times for cluster A2.
- Start number 31 was manually annotated 4 times for cluster A2.

Info for manual annotations of cluster A4:

- Start number 29 was manually annotated 44 times for cluster A4.
- Start number 31 was manually annotated 28 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 31 was manually annotated 37 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 28 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster AD:

- Start number 31 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster D1:

- Start number 29 was manually annotated 3 times for cluster D1.
- Start number 31 was manually annotated 17 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 31 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster F1:

- Start number 31 was manually annotated 37 times for cluster F1.

Info for manual annotations of cluster F4:

- Start number 31 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster I1:

- Start number 31 was manually annotated 4 times for cluster I1.

Info for manual annotations of cluster N:

- Start number 30 was manually annotated 1 time for cluster N.
- Start number 31 was manually annotated 5 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 31 was manually annotated 6 times for cluster P1.
- Start number 42 was manually annotated 1 time for cluster P1.
- Start number 43 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P4:

- Start number 31 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 31 was manually annotated 1 time for cluster P5.

Gene Information:

Gene: AN9_89 Start: 48160, Stop: 48047, Start Num: 26
Candidate Starts for AN9_89:
(19, 48226), (Start: 26 @48160 has 10 MA's), (Start: 31 @48142 has 145 MA's), (34, 48127), (36, 48118), (38, 48094),

Gene: ANI8_89 Start: 48160, Stop: 48047, Start Num: 26
Candidate Starts for ANI8_89:
(19, 48226), (Start: 26 @48160 has 10 MA's), (Start: 31 @48142 has 145 MA's), (34, 48127), (36, 48118), (38, 48094),

Gene: Adjutor_85 Start: 60952, Stop: 61065, Start Num: 31
Candidate Starts for Adjutor_85:
(Start: 31 @60952 has 145 MA's), (34, 60967), (35, 60970), (36, 60976),

Gene: Alberto7_87 Start: 49235, Stop: 49137, Start Num: 29
Candidate Starts for Alberto7_87:
(Start: 29 @49235 has 52 MA's), (34, 49220), (36, 49211),

Gene: Andies_53 Start: 38224, Stop: 38349, Start Num: 31
Candidate Starts for Andies_53:
(Start: 31 @38224 has 145 MA's), (34, 38239), (35, 38242),

Gene: Arib1_54 Start: 36196, Stop: 36321, Start Num: 42
Candidate Starts for Arib1_54:
(41, 36052), (Start: 42 @36196 has 1 MA's), (Start: 43 @36199 has 1 MA's),

Gene: Artemis2UCLA_94 Start: 48593, Stop: 48501, Start Num: 31
Candidate Starts for Artemis2UCLA_94:
(Start: 31 @48593 has 145 MA's), (34, 48578),

Gene: AvatarAhPeg_86 Start: 49151, Stop: 49053, Start Num: 31
Candidate Starts for AvatarAhPeg_86:
(Start: 29 @49154 has 52 MA's), (Start: 31 @49151 has 145 MA's), (34, 49136), (36, 49127),

Gene: BABullseye_86 Start: 46928, Stop: 46836, Start Num: 31
Candidate Starts for BABullseye_86:
(14, 47072), (20, 47000), (21, 46997), (23, 46988), (Start: 31 @46928 has 145 MA's), (33, 46916), (34, 46913),

Gene: Babsiella_59 Start: 39433, Stop: 39555, Start Num: 31
Candidate Starts for Babsiella_59:
(Start: 31 @39433 has 145 MA's), (39, 39505),

Gene: Baby16_86 Start: 48909, Stop: 48811, Start Num: 29
Candidate Starts for Baby16_86:
(Start: 29 @48909 has 52 MA's), (34, 48894), (36, 48885),

Gene: BabyBack_86 Start: 50367, Stop: 50266, Start Num: 29
Candidate Starts for BabyBack_86:
(1, 50931), (2, 50814), (3, 50724), (24, 50385), (Start: 29 @50367 has 52 MA's), (33, 50355), (34, 50352), (36, 50343),

Gene: Bactobuster_81 Start: 48864, Stop: 48763, Start Num: 29

Candidate Starts for Bactobuster_81:
(24, 48882), (Start: 29 @48864 has 52 MA's), (34, 48849), (35, 48846),

Gene: Bartimeaus_86 Start: 48900, Stop: 48802, Start Num: 29
Candidate Starts for Bartimeaus_86:
(Start: 29 @48900 has 52 MA's), (34, 48885), (36, 48876),

Gene: Batiatus_70 Start: 44968, Stop: 45090, Start Num: 31
Candidate Starts for Batiatus_70:
(Start: 31 @44968 has 145 MA's), (39, 45040),

Gene: BellusTerra_86 Start: 48763, Stop: 48665, Start Num: 29
Candidate Starts for BellusTerra_86:
(Start: 29 @48763 has 52 MA's), (34, 48748), (36, 48739),

Gene: BigMama_86 Start: 61043, Stop: 61156, Start Num: 31
Candidate Starts for BigMama_86:
(Start: 31 @61043 has 145 MA's), (34, 61058), (35, 61061), (36, 61067),

Gene: BigNuz_56 Start: 39756, Stop: 39878, Start Num: 31
Candidate Starts for BigNuz_56:
(Start: 30 @39753 has 1 MA's), (Start: 31 @39756 has 145 MA's), (40, 39867),

Gene: BlessJoy_94 Start: 49117, Stop: 49025, Start Num: 31
Candidate Starts for BlessJoy_94:
(Start: 31 @49117 has 145 MA's), (34, 49102),

Gene: Blue7_96 Start: 48827, Stop: 48735, Start Num: 31
Candidate Starts for Blue7_96:
(Start: 31 @48827 has 145 MA's), (34, 48812),

Gene: BodEinwohner17_71 Start: 45997, Stop: 46113, Start Num: 31
Candidate Starts for BodEinwohner17_71:
(Start: 31 @45997 has 145 MA's), (34, 46012), (35, 46015),

Gene: Bombshell_86 Start: 48898, Stop: 48797, Start Num: 29
Candidate Starts for Bombshell_86:
(Start: 29 @48898 has 52 MA's), (Start: 31 @48895 has 145 MA's), (34, 48880), (36, 48871),

Gene: Brushbloom_79 Start: 45900, Stop: 46022, Start Num: 31
Candidate Starts for Brushbloom_79:
(Start: 31 @45900 has 145 MA's), (39, 45972),

Gene: BubbleTrouble_85 Start: 48925, Stop: 48827, Start Num: 29
Candidate Starts for BubbleTrouble_85:
(Start: 29 @48925 has 52 MA's), (34, 48910), (36, 48901),

Gene: Bumblebee11_82 Start: 48676, Stop: 48578, Start Num: 31
Candidate Starts for Bumblebee11_82:
(Start: 31 @48676 has 145 MA's), (33, 48664), (34, 48661), (36, 48652),

Gene: Butterscotch_85 Start: 61003, Stop: 61116, Start Num: 31
Candidate Starts for Butterscotch_85:

(Start: 31 @61003 has 145 MA's), (34, 61018), (35, 61021), (36, 61027),

Gene: BuzzLyseyear_73 Start: 47467, Stop: 47583, Start Num: 31

Candidate Starts for BuzzLyseyear_73:

(Start: 31 @47467 has 145 MA's), (34, 47482), (35, 47485),

Gene: C3_82 Start: 48142, Stop: 48047, Start Num: 31

Candidate Starts for C3_82:

(19, 48226), (Start: 26 @48160 has 10 MA's), (Start: 31 @48142 has 145 MA's), (34, 48127), (36, 48118), (38, 48094),

Gene: Caelakin_84 Start: 48901, Stop: 48800, Start Num: 29

Candidate Starts for Caelakin_84:

(Start: 29 @48901 has 52 MA's), (Start: 31 @48898 has 145 MA's), (34, 48883), (36, 48874),

Gene: Candra_91 Start: 48632, Stop: 48540, Start Num: 31

Candidate Starts for Candra_91:

(Start: 31 @48632 has 145 MA's), (33, 48620), (34, 48617),

Gene: CentreCat_86 Start: 48938, Stop: 48840, Start Num: 29

Candidate Starts for CentreCat_86:

(Start: 29 @48938 has 52 MA's), (34, 48923), (36, 48914),

Gene: Cerulean_88 Start: 49336, Stop: 49238, Start Num: 29

Candidate Starts for Cerulean_88:

(Start: 29 @49336 has 52 MA's), (34, 49321), (36, 49312),

Gene: Chaph_86 Start: 48909, Stop: 48811, Start Num: 29

Candidate Starts for Chaph_86:

(Start: 29 @48909 has 52 MA's), (34, 48894), (36, 48885),

Gene: Chartreuse_91 Start: 47933, Stop: 47841, Start Num: 31

Candidate Starts for Chartreuse_91:

(Start: 31 @47933 has 145 MA's), (33, 47921), (34, 47918),

Gene: Chill_88 Start: 60980, Stop: 61093, Start Num: 31

Candidate Starts for Chill_88:

(Start: 31 @60980 has 145 MA's), (34, 60995), (35, 60998), (36, 61004),

Gene: Cindaradix_81 Start: 49097, Stop: 48999, Start Num: 31

Candidate Starts for Cindaradix_81:

(Start: 29 @49100 has 52 MA's), (Start: 31 @49097 has 145 MA's), (34, 49082), (36, 49073),

Gene: Cintron_86 Start: 48973, Stop: 48869, Start Num: 31

Candidate Starts for Cintron_86:

(Start: 29 @48976 has 52 MA's), (Start: 31 @48973 has 145 MA's), (34, 48958), (36, 48949),

Gene: Clarenza_85 Start: 48895, Stop: 48797, Start Num: 31

Candidate Starts for Clarenza_85:

(Start: 29 @48898 has 52 MA's), (Start: 31 @48895 has 145 MA's), (34, 48880), (36, 48871),

Gene: CloudWang3_95 Start: 49122, Stop: 49030, Start Num: 31

Candidate Starts for CloudWang3_95:

(Start: 31 @49122 has 145 MA's), (34, 49107),

Gene: Cocoaberry_86 Start: 48899, Stop: 48801, Start Num: 31

Candidate Starts for Cocoaberry_86:

(Start: 29 @48902 has 52 MA's), (Start: 31 @48899 has 145 MA's), (34, 48884), (36, 48875),

Gene: Connomayer_86 Start: 48898, Stop: 48800, Start Num: 29

Candidate Starts for Connomayer_86:

(Start: 29 @48898 has 52 MA's), (34, 48883), (36, 48874),

Gene: Cookiedough_93 Start: 49247, Stop: 49155, Start Num: 31

Candidate Starts for Cookiedough_93:

(14, 49391), (20, 49319), (21, 49316), (23, 49307), (Start: 31 @49247 has 145 MA's), (33, 49235), (34, 49232),

Gene: D29_82.2 Start: 46114, Stop: 46019, Start Num: 31

Candidate Starts for D29_82.2:

(Start: 26 @46132 has 10 MA's), (Start: 31 @46114 has 145 MA's), (34, 46099), (36, 46090), (38, 46066),

Gene: D32_80 Start: 46132, Stop: 46019, Start Num: 26

Candidate Starts for D32_80:

(Start: 26 @46132 has 10 MA's), (Start: 31 @46114 has 145 MA's), (34, 46099), (36, 46090), (38, 46066),

Gene: DBQu4n_92 Start: 49747, Stop: 49634, Start Num: 26

Candidate Starts for DBQu4n_92:

(Start: 26 @49747 has 10 MA's), (Start: 31 @49729 has 145 MA's), (34, 49714), (36, 49705), (38, 49681),

Gene: DLane_69 Start: 44902, Stop: 45024, Start Num: 31

Candidate Starts for DLane_69:

(Start: 31 @44902 has 145 MA's),

Gene: DaVinci_91 Start: 47987, Stop: 47895, Start Num: 31

Candidate Starts for DaVinci_91:

(Start: 31 @47987 has 145 MA's), (33, 47975), (34, 47972),

Gene: Daenerys_71 Start: 46948, Stop: 47070, Start Num: 31

Candidate Starts for Daenerys_71:

(15, 46825), (Start: 31 @46948 has 145 MA's), (39, 47020),

Gene: Datway_83 Start: 48706, Stop: 48611, Start Num: 31

Candidate Starts for Datway_83:

(Start: 31 @48706 has 145 MA's), (33, 48694), (34, 48691), (36, 48682),

Gene: Deb65_65 Start: 44669, Stop: 44791, Start Num: 31

Candidate Starts for Deb65_65:

(15, 44546), (Start: 31 @44669 has 145 MA's), (39, 44741),

Gene: Delton_86 Start: 61413, Stop: 61526, Start Num: 31

Candidate Starts for Delton_86:

(Start: 31 @61413 has 145 MA's), (34, 61428), (35, 61431), (36, 61437),

Gene: DirtyDunning_85 Start: 48910, Stop: 48812, Start Num: 29
Candidate Starts for DirtyDunning_85:
(Start: 29 @48910 has 52 MA's), (34, 48895), (36, 48886),

Gene: Donkeykong_73 Start: 46520, Stop: 46642, Start Num: 31
Candidate Starts for Donkeykong_73:
(7, 46217), (10, 46289), (11, 46298), (12, 46310), (Start: 31 @46520 has 145 MA's),

Gene: Doomphist_75 Start: 46761, Stop: 46883, Start Num: 31
Candidate Starts for Doomphist_75:
(15, 46638), (Start: 31 @46761 has 145 MA's), (39, 46833),

Gene: Dorothea_93 Start: 49239, Stop: 49147, Start Num: 31
Candidate Starts for Dorothea_93:
(14, 49383), (20, 49311), (21, 49308), (23, 49299), (Start: 31 @49239 has 145 MA's), (33, 49227), (34, 49224),

Gene: Dorothy_73 Start: 45386, Stop: 45508, Start Num: 31
Candidate Starts for Dorothy_73:
(15, 45263), (Start: 31 @45386 has 145 MA's), (39, 45458),

Gene: Duplo_93 Start: 49786, Stop: 49691, Start Num: 31
Candidate Starts for Duplo_93:
(Start: 26 @49804 has 10 MA's), (Start: 31 @49786 has 145 MA's), (34, 49771), (36, 49762), (38, 49738),

Gene: DustyMartin_88 Start: 48914, Stop: 48810, Start Num: 31
Candidate Starts for DustyMartin_88:
(22, 48980), (Start: 31 @48914 has 145 MA's), (34, 48899), (36, 48890),

Gene: Eapen_86 Start: 48893, Stop: 48795, Start Num: 29
Candidate Starts for Eapen_86:
(Start: 29 @48893 has 52 MA's), (34, 48878), (36, 48869),

Gene: Empress_70 Start: 45572, Stop: 45694, Start Num: 31
Candidate Starts for Empress_70:
(15, 45449), (Start: 31 @45572 has 145 MA's), (39, 45644),

Gene: EricB_91 Start: 48136, Stop: 48044, Start Num: 31
Candidate Starts for EricB_91:
(14, 48280), (20, 48208), (21, 48205), (23, 48196), (Start: 31 @48136 has 145 MA's), (33, 48124), (34, 48121),

Gene: Erk16_88 Start: 61335, Stop: 61448, Start Num: 31
Candidate Starts for Erk16_88:
(13, 61185), (21, 61266), (Start: 29 @61326 has 52 MA's), (Start: 31 @61335 has 145 MA's), (34, 61350), (35, 61353),

Gene: Eros_86 Start: 48906, Stop: 48808, Start Num: 29
Candidate Starts for Eros_86:
(Start: 29 @48906 has 52 MA's), (34, 48891), (36, 48882),

Gene: Eurydice_87 Start: 48935, Stop: 48837, Start Num: 29

Candidate Starts for Eurydice_87:

(Start: 29 @48935 has 52 MA's), (34, 48920), (36, 48911),

Gene: Florinda_84 Start: 47608, Stop: 47730, Start Num: 31

Candidate Starts for Florinda_84:

(Start: 31 @47608 has 145 MA's), (39, 47680),

Gene: Funston_85 Start: 48895, Stop: 48797, Start Num: 31

Candidate Starts for Funston_85:

(Start: 29 @48898 has 52 MA's), (Start: 31 @48895 has 145 MA's), (34, 48880), (36, 48871),

Gene: Garak_96 Start: 49067, Stop: 48975, Start Num: 31

Candidate Starts for Garak_96:

(Start: 31 @49067 has 145 MA's), (34, 49052),

Gene: GaugeLDP_85 Start: 49917, Stop: 49816, Start Num: 29

Candidate Starts for GaugeLDP_85:

(24, 49935), (Start: 29 @49917 has 52 MA's), (34, 49902), (35, 49899), (36, 49893),

Gene: Geralt_65 Start: 44668, Stop: 44790, Start Num: 31

Candidate Starts for Geralt_65:

(15, 44545), (Start: 31 @44668 has 145 MA's), (39, 44740),

Gene: Gex_55 Start: 36173, Stop: 36286, Start Num: 31

Candidate Starts for Gex_55:

(Start: 31 @36173 has 145 MA's), (37, 36215),

Gene: Giuseppe_89 Start: 61055, Stop: 61168, Start Num: 31

Candidate Starts for Giuseppe_89:

(Start: 31 @61055 has 145 MA's), (34, 61070), (35, 61073),

Gene: Gladiator_91 Start: 48787, Stop: 48695, Start Num: 31

Candidate Starts for Gladiator_91:

(Start: 31 @48787 has 145 MA's), (34, 48772),

Gene: Gruunaga_95 Start: 48743, Stop: 48651, Start Num: 31

Candidate Starts for Gruunaga_95:

(Start: 31 @48743 has 145 MA's), (34, 48728),

Gene: Gumball_87 Start: 61267, Stop: 61380, Start Num: 31

Candidate Starts for Gumball_87:

(13, 61117), (21, 61198), (Start: 29 @61258 has 52 MA's), (Start: 31 @61267 has 145 MA's), (34, 61282), (35, 61285),

Gene: Hammer_95 Start: 48440, Stop: 48348, Start Num: 31

Candidate Starts for Hammer_95:

(Start: 31 @48440 has 145 MA's), (34, 48425),

Gene: Happiness_85 Start: 48921, Stop: 48823, Start Num: 29

Candidate Starts for Happiness_85:

(Start: 29 @48921 has 52 MA's), (34, 48906), (36, 48897),

Gene: Hawkeye_52 Start: 38301, Stop: 38384, Start Num: 31
Candidate Starts for Hawkeye_52:
(19, 38220), (Start: 31 @38301 has 145 MA's), (34, 38316), (36, 38325),

Gene: Hegedechwinu_71 Start: 42986, Stop: 43108, Start Num: 31
Candidate Starts for Hegedechwinu_71:
(Start: 31 @42986 has 145 MA's),

Gene: Helmet_96 Start: 49067, Stop: 48975, Start Num: 31
Candidate Starts for Helmet_96:
(Start: 31 @49067 has 145 MA's), (34, 49052),

Gene: Helpful_90 Start: 61254, Stop: 61367, Start Num: 31
Candidate Starts for Helpful_90:
(Start: 31 @61254 has 145 MA's), (34, 61269), (35, 61272), (36, 61278),

Gene: Hexamo_94 Start: 48608, Stop: 48516, Start Num: 31
Candidate Starts for Hexamo_94:
(Start: 31 @48608 has 145 MA's), (34, 48593),

Gene: Holli_85 Start: 48688, Stop: 48590, Start Num: 29
Candidate Starts for Holli_85:
(Start: 29 @48688 has 52 MA's), (34, 48673), (36, 48664),

Gene: Hoot_88 Start: 46453, Stop: 46361, Start Num: 31
Candidate Starts for Hoot_88:
(14, 46597), (20, 46525), (21, 46522), (23, 46513), (Start: 31 @46453 has 145 MA's), (33, 46441), (34, 46438),

Gene: Houdini22_85 Start: 48899, Stop: 48801, Start Num: 31
Candidate Starts for Houdini22_85:
(Start: 29 @48902 has 52 MA's), (Start: 31 @48899 has 145 MA's), (34, 48884), (36, 48875),

Gene: ICleared_85 Start: 48966, Stop: 48868, Start Num: 29
Candidate Starts for ICleared_85:
(Start: 29 @48966 has 52 MA's), (34, 48951), (36, 48942),

Gene: Inventum_70 Start: 45584, Stop: 45706, Start Num: 31
Candidate Starts for Inventum_70:
(15, 45461), (Start: 31 @45584 has 145 MA's), (39, 45656),

Gene: IronMan_86 Start: 50377, Stop: 50276, Start Num: 29
Candidate Starts for IronMan_86:
(24, 50395), (Start: 29 @50377 has 52 MA's), (34, 50362), (35, 50359),

Gene: Isiphiwo_89 Start: 48158, Stop: 48066, Start Num: 31
Candidate Starts for Isiphiwo_89:
(Start: 31 @48158 has 145 MA's), (33, 48146), (34, 48143),

Gene: Island3_57 Start: 38289, Stop: 38411, Start Num: 31
Candidate Starts for Island3_57:
(17, 38178), (18, 38205), (20, 38226), (27, 38274), (Start: 30 @38286 has 1 MA's), (Start: 31 @38289 has 145 MA's), (39, 38361),

Gene: Jeffabunny_83 Start: 45211, Stop: 45119, Start Num: 31
Candidate Starts for Jeffabunny_83:
(Start: 31 @45211 has 145 MA's), (34, 45196),

Gene: JetBlade_87 Start: 48926, Stop: 48828, Start Num: 29
Candidate Starts for JetBlade_87:
(Start: 29 @48926 has 52 MA's), (34, 48911), (36, 48902),

Gene: JewelBug_85 Start: 46932, Stop: 46840, Start Num: 31
Candidate Starts for JewelBug_85:
(14, 47076), (20, 47004), (21, 47001), (23, 46992), (Start: 31 @46932 has 145 MA's), (33, 46920), (34, 46917),

Gene: JoeyJr_72 Start: 46573, Stop: 46695, Start Num: 31
Candidate Starts for JoeyJr_72:
(15, 46450), (Start: 31 @46573 has 145 MA's), (39, 46645),

Gene: JoongJeon_85 Start: 48892, Stop: 48794, Start Num: 29
Candidate Starts for JoongJeon_85:
(Start: 29 @48892 has 52 MA's), (34, 48877), (36, 48868),

Gene: Jordennis_91 Start: 48836, Stop: 48744, Start Num: 31
Candidate Starts for Jordennis_91:
(14, 48980), (20, 48908), (21, 48905), (23, 48896), (Start: 31 @48836 has 145 MA's), (33, 48824), (34, 48821),

Gene: Jung_51 Start: 35878, Stop: 36000, Start Num: 31
Candidate Starts for Jung_51:
(Start: 30 @35875 has 1 MA's), (Start: 31 @35878 has 145 MA's),

Gene: Jung_57 Start: 38107, Stop: 38223, Start Num: 31
Candidate Starts for Jung_57:
(25, 38083), (Start: 31 @38107 has 145 MA's), (34, 38122), (35, 38125),

Gene: KFPoly_85 Start: 48892, Stop: 48794, Start Num: 29
Candidate Starts for KFPoly_85:
(Start: 29 @48892 has 52 MA's), (34, 48877), (36, 48868),

Gene: Kamy_85 Start: 48901, Stop: 48803, Start Num: 31
Candidate Starts for Kamy_85:
(Start: 29 @48904 has 52 MA's), (Start: 31 @48901 has 145 MA's), (34, 48886), (36, 48877),

Gene: KandZ_85 Start: 61077, Stop: 61190, Start Num: 31
Candidate Starts for KandZ_85:
(13, 60927), (21, 61008), (Start: 29 @61068 has 52 MA's), (Start: 31 @61077 has 145 MA's), (34, 61092), (35, 61095),

Gene: Kazan_94 Start: 48602, Stop: 48510, Start Num: 31
Candidate Starts for Kazan_94:
(Start: 31 @48602 has 145 MA's), (33, 48590), (34, 48587),

Gene: Kerberos_92 Start: 49767, Stop: 49654, Start Num: 26

Candidate Starts for Kerberos_92:

(Start: 26 @49767 has 10 MA's), (Start: 31 @49749 has 145 MA's), (34, 49734), (36, 49725), (37, 49707), (38, 49701),

Gene: KingMidas_71 Start: 45987, Stop: 46109, Start Num: 31

Candidate Starts for KingMidas_71:

(15, 45864), (Start: 31 @45987 has 145 MA's), (39, 46059),

Gene: Kingmustik0402_86 Start: 48887, Stop: 48789, Start Num: 31

Candidate Starts for Kingmustik0402_86:

(Start: 29 @48890 has 52 MA's), (Start: 31 @48887 has 145 MA's), (34, 48872), (36, 48863),

Gene: Kingsley_75 Start: 48363, Stop: 48485, Start Num: 31

Candidate Starts for Kingsley_75:

(Start: 31 @48363 has 145 MA's), (39, 48435),

Gene: Kinmap_98 Start: 49864, Stop: 49757, Start Num: 31

Candidate Starts for Kinmap_98:

(Start: 31 @49864 has 145 MA's), (34, 49849), (36, 49840),

Gene: Kipper29_93 Start: 48611, Stop: 48519, Start Num: 31

Candidate Starts for Kipper29_93:

(14, 48755), (20, 48683), (21, 48680), (23, 48671), (Start: 31 @48611 has 145 MA's), (33, 48599), (34, 48596),

Gene: Koan_81 Start: 48898, Stop: 48800, Start Num: 31

Candidate Starts for Koan_81:

(Start: 29 @48901 has 52 MA's), (Start: 31 @48898 has 145 MA's), (34, 48883), (36, 48874),

Gene: Koko_96 Start: 49457, Stop: 49365, Start Num: 31

Candidate Starts for Koko_96:

(Start: 31 @49457 has 145 MA's), (34, 49442),

Gene: Koreni_85 Start: 48579, Stop: 48481, Start Num: 31

Candidate Starts for Koreni_85:

(Start: 29 @48582 has 52 MA's), (Start: 31 @48579 has 145 MA's), (34, 48564), (36, 48555),

Gene: Kratark_85 Start: 48932, Stop: 48834, Start Num: 29

Candidate Starts for Kratark_85:

(Start: 29 @48932 has 52 MA's), (34, 48917), (36, 48908),

Gene: Kremtemulon_83 Start: 48731, Stop: 48633, Start Num: 31

Candidate Starts for Kremtemulon_83:

(Start: 29 @48734 has 52 MA's), (Start: 31 @48731 has 145 MA's), (34, 48716), (36, 48707),

Gene: Kyee_86 Start: 48893, Stop: 48795, Start Num: 29

Candidate Starts for Kyee_86:

(Start: 29 @48893 has 52 MA's), (34, 48878), (36, 48869),

Gene: Leperchaun_70 Start: 45807, Stop: 45929, Start Num: 31

Candidate Starts for Leperchaun_70:

(15, 45684), (Start: 31 @45807 has 145 MA's), (39, 45879),

Gene: Lilbunny_91 Start: 47315, Stop: 47223, Start Num: 31
Candidate Starts for Lilbunny_91:
(Start: 31 @47315 has 145 MA's), (34, 47300),

Gene: LittleShirley_70 Start: 44567, Stop: 44689, Start Num: 31
Candidate Starts for LittleShirley_70:
(Start: 31 @44567 has 145 MA's), (39, 44639),

Gene: LochMonster_87 Start: 49135, Stop: 49037, Start Num: 29
Candidate Starts for LochMonster_87:
(Start: 29 @49135 has 52 MA's), (34, 49120), (36, 49111),

Gene: Lorenzo_86 Start: 48896, Stop: 48798, Start Num: 31
Candidate Starts for Lorenzo_86:
(Start: 29 @48899 has 52 MA's), (Start: 31 @48896 has 145 MA's), (34, 48881), (36, 48872),

Gene: LunaStella_70 Start: 45241, Stop: 45366, Start Num: 31
Candidate Starts for LunaStella_70:
(6, 44905), (Start: 31 @45241 has 145 MA's), (37, 45283),

Gene: Lunsford_86 Start: 48891, Stop: 48793, Start Num: 29
Candidate Starts for Lunsford_86:
(Start: 29 @48891 has 52 MA's), (34, 48876), (36, 48867),

Gene: Madiba_68 Start: 44600, Stop: 44716, Start Num: 31
Candidate Starts for Madiba_68:
(Start: 31 @44600 has 145 MA's), (35, 44618),

Gene: Majeke_58 Start: 37716, Stop: 37838, Start Num: 31
Candidate Starts for Majeke_58:
(Start: 30 @37713 has 1 MA's), (Start: 31 @37716 has 145 MA's),

Gene: Mangethe_58 Start: 37716, Stop: 37838, Start Num: 31
Candidate Starts for Mangethe_58:
(Start: 30 @37713 has 1 MA's), (Start: 31 @37716 has 145 MA's),

Gene: Mao1_73 Start: 53391, Stop: 53507, Start Num: 31
Candidate Starts for Mao1_73:
(6, 53055), (Start: 31 @53391 has 145 MA's), (34, 53406), (35, 53409),

Gene: Maverick_85 Start: 48898, Stop: 48797, Start Num: 29
Candidate Starts for Maverick_85:
(Start: 29 @48898 has 52 MA's), (Start: 31 @48895 has 145 MA's), (34, 48880), (36, 48871),

Gene: Maxo_88 Start: 48901, Stop: 48803, Start Num: 31
Candidate Starts for Maxo_88:
(Start: 29 @48904 has 52 MA's), (Start: 31 @48901 has 145 MA's), (34, 48886), (36, 48877),

Gene: Mazhar510_86 Start: 48896, Stop: 48798, Start Num: 29
Candidate Starts for Mazhar510_86:
(Start: 29 @48896 has 52 MA's), (34, 48881), (36, 48872),

Gene: McFly_93 Start: 48941, Stop: 48849, Start Num: 31

Candidate Starts for McFly_93:
(Start: 31 @48941 has 145 MA's), (33, 48929), (34, 48926),

Gene: Melville_58 Start: 36158, Stop: 36271, Start Num: 31
Candidate Starts for Melville_58:
(Start: 31 @36158 has 145 MA's), (34, 36173), (37, 36200),

Gene: Melvin_88 Start: 48896, Stop: 48795, Start Num: 29
Candidate Starts for Melvin_88:
(Start: 29 @48896 has 52 MA's), (Start: 31 @48893 has 145 MA's), (34, 48878), (36, 48869),

Gene: Miramae_86 Start: 48814, Stop: 48716, Start Num: 31
Candidate Starts for Miramae_86:
(Start: 29 @48817 has 52 MA's), (Start: 31 @48814 has 145 MA's), (34, 48799), (36, 48790),

Gene: Misha28_73 Start: 45868, Stop: 45993, Start Num: 31
Candidate Starts for Misha28_73:
(Start: 31 @45868 has 145 MA's), (37, 45910),

Gene: MissWhite_84 Start: 46424, Stop: 46323, Start Num: 29
Candidate Starts for MissWhite_84:
(4, 46784), (5, 46760), (8, 46673), (9, 46667), (19, 46499), (24, 46442), (Start: 29 @46424 has 52 MA's), (34, 46409),

Gene: Mopey_89 Start: 61066, Stop: 61188, Start Num: 29
Candidate Starts for Mopey_89:
(21, 61006), (Start: 29 @61066 has 52 MA's), (Start: 31 @61075 has 145 MA's), (34, 61090), (35, 61093),

Gene: Morrow_88 Start: 48938, Stop: 48840, Start Num: 29
Candidate Starts for Morrow_88:
(Start: 29 @48938 has 52 MA's), (34, 48923), (36, 48914),

Gene: Ms6_70 Start: 41131, Stop: 41253, Start Num: 31
Candidate Starts for Ms6_70:
(Start: 31 @41131 has 145 MA's),

Gene: Mundrea_84 Start: 48776, Stop: 48678, Start Num: 29
Candidate Starts for Mundrea_84:
(Start: 29 @48776 has 52 MA's), (Start: 31 @48773 has 145 MA's), (34, 48758), (36, 48749),

Gene: Naji_81 Start: 46132, Stop: 46019, Start Num: 26
Candidate Starts for Naji_81:
(Start: 26 @46132 has 10 MA's), (Start: 31 @46114 has 145 MA's), (34, 46099), (36, 46090), (38, 46066),

Gene: Nazo_57 Start: 39956, Stop: 40078, Start Num: 31
Candidate Starts for Nazo_57:
(Start: 30 @39953 has 1 MA's), (Start: 31 @39956 has 145 MA's), (40, 40067),

Gene: Nebs_87 Start: 48938, Stop: 48840, Start Num: 29
Candidate Starts for Nebs_87:
(Start: 29 @48938 has 52 MA's), (34, 48923), (36, 48914),

Gene: Neeharika16_92 Start: 48698, Stop: 48606, Start Num: 31

Candidate Starts for Neeharika16_92:

(14, 48842), (20, 48770), (21, 48767), (23, 48758), (Start: 31 @48698 has 145 MA's), (33, 48686), (34, 48683),

Gene: Nemo27_85 Start: 48894, Stop: 48796, Start Num: 31

Candidate Starts for Nemo27_85:

(Start: 29 @48897 has 52 MA's), (Start: 31 @48894 has 145 MA's), (34, 48879), (36, 48870),

Gene: Newrala_92 Start: 49044, Stop: 48952, Start Num: 31

Candidate Starts for Newrala_92:

(14, 49188), (20, 49116), (21, 49113), (23, 49104), (Start: 31 @49044 has 145 MA's), (33, 49032), (34, 49029),

Gene: NicoleTera_90 Start: 49767, Stop: 49672, Start Num: 31

Candidate Starts for NicoleTera_90:

(Start: 31 @49767 has 145 MA's), (34, 49752), (35, 49749),

Gene: Nimbo_64 Start: 44671, Stop: 44793, Start Num: 31

Candidate Starts for Nimbo_64:

(15, 44548), (Start: 31 @44671 has 145 MA's), (39, 44743),

Gene: Noelle_85 Start: 49016, Stop: 48912, Start Num: 31

Candidate Starts for Noelle_85:

(Start: 31 @49016 has 145 MA's), (33, 49004), (34, 49001), (36, 48992),

Gene: NorthStar_83 Start: 48898, Stop: 48800, Start Num: 31

Candidate Starts for NorthStar_83:

(Start: 29 @48901 has 52 MA's), (Start: 31 @48898 has 145 MA's), (34, 48883), (36, 48874),

Gene: NotAPhaseMom_85 Start: 48899, Stop: 48801, Start Num: 31

Candidate Starts for NotAPhaseMom_85:

(Start: 29 @48902 has 52 MA's), (Start: 31 @48899 has 145 MA's), (34, 48884), (36, 48875),

Gene: Nova_87 Start: 61568, Stop: 61681, Start Num: 31

Candidate Starts for Nova_87:

(Start: 31 @61568 has 145 MA's), (34, 61583), (35, 61586),

Gene: Ohfah_87 Start: 48938, Stop: 48840, Start Num: 29

Candidate Starts for Ohfah_87:

(Start: 29 @48938 has 52 MA's), (34, 48923), (36, 48914),

Gene: OldBen_69 Start: 46063, Stop: 46185, Start Num: 31

Candidate Starts for OldBen_69:

(15, 45940), (Start: 31 @46063 has 145 MA's), (39, 46135),

Gene: Ovechkin_74 Start: 46191, Stop: 46313, Start Num: 31

Candidate Starts for Ovechkin_74:

(Start: 31 @46191 has 145 MA's), (39, 46263),

Gene: PHappiness_72 Start: 46892, Stop: 47014, Start Num: 31

Candidate Starts for PHappiness_72:

(15, 46769), (Start: 31 @46892 has 145 MA's), (39, 46964),

Gene: PLOT_88 Start: 61220, Stop: 61342, Start Num: 29

Candidate Starts for PLOT_88:

(13, 61079), (21, 61160), (Start: 29 @61220 has 52 MA's), (Start: 31 @61229 has 145 MA's), (34, 61244), (35, 61247),

Gene: PP_05 Start: 1199, Stop: 1101, Start Num: 28

Candidate Starts for PP_05:

(Start: 28 @1199 has 1 MA's), (32, 1193), (34, 1184),

Gene: Penelope2018_87 Start: 61005, Stop: 61118, Start Num: 31

Candidate Starts for Penelope2018_87:

(Start: 31 @61005 has 145 MA's), (34, 61020), (35, 61023), (36, 61029),

Gene: PeterPeter_86 Start: 48892, Stop: 48794, Start Num: 29

Candidate Starts for PeterPeter_86:

(Start: 29 @48892 has 52 MA's), (34, 48877), (36, 48868),

Gene: PetiteSangsue_83 Start: 48680, Stop: 48582, Start Num: 31

Candidate Starts for PetiteSangsue_83:

(Start: 31 @48680 has 145 MA's), (33, 48668), (34, 48665), (36, 48656),

Gene: Phalaborwa_89 Start: 61576, Stop: 61689, Start Num: 31

Candidate Starts for Phalaborwa_89:

(13, 61426), (21, 61507), (Start: 29 @61567 has 52 MA's), (Start: 31 @61576 has 145 MA's), (34, 61591), (35, 61594), (36, 61600),

Gene: Phalconet_68 Start: 43304, Stop: 43426, Start Num: 31

Candidate Starts for Phalconet_68:

(Start: 31 @43304 has 145 MA's), (39, 43376),

Gene: Phayonce_57 Start: 40353, Stop: 40469, Start Num: 31

Candidate Starts for Phayonce_57:

(Start: 31 @40353 has 145 MA's),

Gene: Phegasus_58 Start: 37683, Stop: 37805, Start Num: 31

Candidate Starts for Phegasus_58:

(Start: 30 @37680 has 1 MA's), (Start: 31 @37683 has 145 MA's),

Gene: Phelipe_86 Start: 48859, Stop: 48761, Start Num: 29

Candidate Starts for Phelipe_86:

(Start: 29 @48859 has 52 MA's), (34, 48844), (36, 48835),

Gene: PhesterPhotato_74 Start: 45630, Stop: 45752, Start Num: 31

Candidate Starts for PhesterPhotato_74:

(Start: 31 @45630 has 145 MA's),

Gene: Phighter1804_86 Start: 48959, Stop: 48861, Start Num: 31

Candidate Starts for Phighter1804_86:

(Start: 29 @48962 has 52 MA's), (Start: 31 @48959 has 145 MA's), (34, 48944), (36, 48935),

Gene: Phontbonne_86 Start: 48796, Stop: 48701, Start Num: 31

Candidate Starts for Phontbonne_86:
(Start: 31 @48796 has 145 MA's), (34, 48781), (36, 48772),

Gene: Pipcraft_82 Start: 48902, Stop: 48801, Start Num: 29
Candidate Starts for Pipcraft_82:
(Start: 29 @48902 has 52 MA's), (Start: 31 @48899 has 145 MA's), (34, 48884), (36, 48875),

Gene: Pmask_92 Start: 49245, Stop: 49153, Start Num: 31
Candidate Starts for Pmask_92:
(14, 49389), (20, 49317), (21, 49314), (23, 49305), (Start: 31 @49245 has 145 MA's), (33, 49233), (34, 49230),

Gene: Poenanya_75 Start: 46761, Stop: 46883, Start Num: 31
Candidate Starts for Poenanya_75:
(15, 46638), (Start: 31 @46761 has 145 MA's), (39, 46833),

Gene: Polka14_76 Start: 47551, Stop: 47673, Start Num: 31
Candidate Starts for Polka14_76:
(15, 47428), (Start: 31 @47551 has 145 MA's), (39, 47623),

Gene: Polkaroo_54 Start: 37256, Stop: 37378, Start Num: 31
Candidate Starts for Polkaroo_54:
(16, 37136), (Start: 30 @37253 has 1 MA's), (Start: 31 @37256 has 145 MA's),

Gene: Polymorphads_87 Start: 48919, Stop: 48821, Start Num: 29
Candidate Starts for Polymorphads_87:
(Start: 29 @48919 has 52 MA's), (34, 48904), (36, 48895),

Gene: Polyphemus_85 Start: 47016, Stop: 46924, Start Num: 31
Candidate Starts for Polyphemus_85:
(14, 47160), (20, 47088), (21, 47085), (23, 47076), (Start: 31 @47016 has 145 MA's), (33, 47004), (34, 47001),

Gene: Pomar16_92 Start: 49840, Stop: 49727, Start Num: 26
Candidate Starts for Pomar16_92:
(Start: 26 @49840 has 10 MA's), (Start: 31 @49822 has 145 MA's), (34, 49807), (36, 49798), (37, 49780), (38, 49774),

Gene: Prager_87 Start: 60913, Stop: 61026, Start Num: 31
Candidate Starts for Prager_87:
(Start: 31 @60913 has 145 MA's), (34, 60928), (35, 60931), (36, 60937),

Gene: Priamo_93 Start: 48288, Stop: 48196, Start Num: 31
Candidate Starts for Priamo_93:
(14, 48432), (20, 48360), (21, 48357), (23, 48348), (Start: 31 @48288 has 145 MA's), (33, 48276), (34, 48273),

Gene: Pumbaa_86 Start: 48843, Stop: 48745, Start Num: 29
Candidate Starts for Pumbaa_86:
(Start: 29 @48843 has 52 MA's), (34, 48828), (36, 48819),

Gene: QueenHazel_50 Start: 36087, Stop: 36209, Start Num: 31
Candidate Starts for QueenHazel_50:

(Start: 30 @36084 has 1 MA's), (Start: 31 @36087 has 145 MA's), (39, 36159),

Gene: Quico_81 Start: 47428, Stop: 47550, Start Num: 31

Candidate Starts for Quico_81:

(Start: 31 @47428 has 145 MA's), (39, 47500),

Gene: RedBird_73 Start: 45253, Stop: 45375, Start Num: 31

Candidate Starts for RedBird_73:

(15, 45130), (Start: 31 @45253 has 145 MA's), (39, 45325),

Gene: Rifter_95 Start: 48235, Stop: 48143, Start Num: 31

Candidate Starts for Rifter_95:

(Start: 31 @48235 has 145 MA's), (34, 48220),

Gene: RitaG_72 Start: 46694, Stop: 46816, Start Num: 31

Candidate Starts for RitaG_72:

(15, 46571), (Start: 31 @46694 has 145 MA's), (39, 46766),

Gene: Roksolana_95 Start: 48951, Stop: 48859, Start Num: 31

Candidate Starts for Roksolana_95:

(Start: 31 @48951 has 145 MA's), (34, 48936),

Gene: Rosa24_82 Start: 48926, Stop: 48828, Start Num: 31

Candidate Starts for Rosa24_82:

(Start: 29 @48929 has 52 MA's), (Start: 31 @48926 has 145 MA's), (34, 48911), (36, 48902),

Gene: Rowdy_88 Start: 48914, Stop: 48810, Start Num: 31

Candidate Starts for Rowdy_88:

(22, 48980), (Start: 31 @48914 has 145 MA's), (34, 48899), (36, 48890),

Gene: SG4_68 Start: 43359, Stop: 43481, Start Num: 31

Candidate Starts for SG4_68:

(Start: 31 @43359 has 145 MA's),

Gene: Sassafras_73 Start: 45583, Stop: 45705, Start Num: 31

Candidate Starts for Sassafras_73:

(15, 45460), (Start: 31 @45583 has 145 MA's), (39, 45655),

Gene: Scamp_86 Start: 48900, Stop: 48802, Start Num: 29

Candidate Starts for Scamp_86:

(Start: 29 @48900 has 52 MA's), (34, 48885), (36, 48876),

Gene: Scottish_70 Start: 45242, Stop: 45364, Start Num: 31

Candidate Starts for Scottish_70:

(15, 45119), (Start: 31 @45242 has 145 MA's), (39, 45314),

Gene: SenorClean_81 Start: 48898, Stop: 48800, Start Num: 31

Candidate Starts for SenorClean_81:

(Start: 29 @48901 has 52 MA's), (Start: 31 @48898 has 145 MA's), (34, 48883), (36, 48874),

Gene: Shapes_88 Start: 48914, Stop: 48810, Start Num: 31

Candidate Starts for Shapes_88:

(22, 48980), (Start: 31 @48914 has 145 MA's), (34, 48899), (36, 48890),

Gene: SheldonCooper_86 Start: 49336, Stop: 49238, Start Num: 29
Candidate Starts for SheldonCooper_86:
(Start: 29 @49336 has 52 MA's), (34, 49321), (36, 49312),

Gene: Shweta_55 Start: 36817, Stop: 36933, Start Num: 31
Candidate Starts for Shweta_55:
(Start: 31 @36817 has 145 MA's), (34, 36832), (35, 36835),

Gene: Shygu2_84 Start: 48839, Stop: 48744, Start Num: 31
Candidate Starts for Shygu2_84:
(Start: 31 @48839 has 145 MA's), (33, 48827), (34, 48824), (36, 48815),

Gene: SirHarley_89 Start: 61242, Stop: 61364, Start Num: 29
Candidate Starts for SirHarley_89:
(13, 61101), (21, 61182), (Start: 29 @61242 has 52 MA's), (Start: 31 @61251 has 145 MA's), (34, 61266), (35, 61269),

Gene: SmellyB_93 Start: 48596, Stop: 48504, Start Num: 31
Candidate Starts for SmellyB_93:
(Start: 31 @48596 has 145 MA's), (33, 48584), (34, 48581),

Gene: Sparxx_87 Start: 48894, Stop: 48796, Start Num: 29
Candidate Starts for Sparxx_87:
(Start: 29 @48894 has 52 MA's), (34, 48879), (36, 48870),

Gene: StAnnes_69 Start: 44436, Stop: 44558, Start Num: 31
Candidate Starts for StAnnes_69:
(Start: 31 @44436 has 145 MA's),

Gene: StarStuff_92 Start: 49802, Stop: 49689, Start Num: 26
Candidate Starts for StarStuff_92:
(Start: 26 @49802 has 10 MA's), (Start: 31 @49784 has 145 MA's), (34, 49769), (36, 49760), (37, 49742), (38, 49736),

Gene: Stink_86 Start: 49122, Stop: 49024, Start Num: 31
Candidate Starts for Stink_86:
(Start: 29 @49125 has 52 MA's), (Start: 31 @49122 has 145 MA's), (34, 49107), (36, 49098),

Gene: SuperAwesome_93 Start: 49284, Stop: 49192, Start Num: 31
Candidate Starts for SuperAwesome_93:
(14, 49428), (20, 49356), (21, 49353), (23, 49344), (Start: 31 @49284 has 145 MA's), (33, 49272), (34, 49269),

Gene: SuperCallie99_89 Start: 48659, Stop: 48567, Start Num: 31
Candidate Starts for SuperCallie99_89:
(Start: 31 @48659 has 145 MA's), (34, 48644),

Gene: TChen_72 Start: 47192, Stop: 47317, Start Num: 31
Candidate Starts for TChen_72:
(6, 46856), (Start: 31 @47192 has 145 MA's), (37, 47234),

Gene: Tapioca_57 Start: 38663, Stop: 38788, Start Num: 31

Candidate Starts for Tapioca_57:
(Start: 31 @38663 has 145 MA's), (34, 38678), (35, 38681),

Gene: Taquarus_85 Start: 48907, Stop: 48809, Start Num: 29
Candidate Starts for Taquarus_85:
(Start: 29 @48907 has 52 MA's), (34, 48892), (36, 48883),

Gene: Techage_53 Start: 36249, Stop: 36371, Start Num: 43
Candidate Starts for Techage_53:
(41, 36102), (Start: 42 @36246 has 1 MA's), (Start: 43 @36249 has 1 MA's),

Gene: Temprado_96 Start: 49067, Stop: 48975, Start Num: 31
Candidate Starts for Temprado_96:
(Start: 31 @49067 has 145 MA's), (34, 49052),

Gene: Thanksgivukkah_85 Start: 48896, Stop: 48798, Start Num: 29
Candidate Starts for Thanksgivukkah_85:
(Start: 29 @48896 has 52 MA's), (34, 48881), (36, 48872),

Gene: Thoth_87 Start: 61056, Stop: 61169, Start Num: 31
Candidate Starts for Thoth_87:
(Start: 31 @61056 has 145 MA's), (34, 61071), (35, 61074), (36, 61080),

Gene: Tinybot_85 Start: 48925, Stop: 48827, Start Num: 31
Candidate Starts for Tinybot_85:
(Start: 29 @48928 has 52 MA's), (Start: 31 @48925 has 145 MA's), (34, 48910), (36, 48901),

Gene: Tomathan_92 Start: 49881, Stop: 49768, Start Num: 26
Candidate Starts for Tomathan_92:
(Start: 26 @49881 has 10 MA's), (Start: 31 @49863 has 145 MA's), (34, 49848), (36, 49839), (38, 49815),

Gene: TootsiePop_73 Start: 45868, Stop: 45993, Start Num: 31
Candidate Starts for TootsiePop_73:
(Start: 31 @45868 has 145 MA's), (37, 45910),

Gene: Travvers_92 Start: 49798, Stop: 49685, Start Num: 26
Candidate Starts for Travvers_92:
(Start: 26 @49798 has 10 MA's), (Start: 31 @49780 has 145 MA's), (34, 49765), (36, 49756), (38, 49732),

Gene: Tristan_85 Start: 50227, Stop: 50108, Start Num: 24
Candidate Starts for Tristan_85:
(24, 50227), (Start: 29 @50209 has 52 MA's), (34, 50194), (35, 50191), (36, 50185),

Gene: Troll4_87 Start: 61063, Stop: 61176, Start Num: 31
Candidate Starts for Troll4_87:
(Start: 31 @61063 has 145 MA's), (34, 61078), (35, 61081), (36, 61087),

Gene: TroyPia_87 Start: 48933, Stop: 48835, Start Num: 29
Candidate Starts for TroyPia_87:
(Start: 29 @48933 has 52 MA's), (34, 48918), (36, 48909),

Gene: Tucker_95 Start: 48821, Stop: 48729, Start Num: 31

Candidate Starts for Tucker_95:

(Start: 31 @48821 has 145 MA's), (34, 48806),

Gene: TygerBlood_86 Start: 48898, Stop: 48800, Start Num: 29

Candidate Starts for TygerBlood_86:

(Start: 29 @48898 has 52 MA's), (34, 48883), (36, 48874),

Gene: Ulysses_85 Start: 48581, Stop: 48483, Start Num: 31

Candidate Starts for Ulysses_85:

(Start: 29 @48584 has 52 MA's), (Start: 31 @48581 has 145 MA's), (34, 48566), (36, 48557),

Gene: VC3_88 Start: 48160, Stop: 48047, Start Num: 26

Candidate Starts for VC3_88:

(19, 48226), (Start: 26 @48160 has 10 MA's), (Start: 31 @48142 has 145 MA's), (34, 48127), (36, 48118), (38, 48094),

Gene: Visconti_88 Start: 61020, Stop: 61133, Start Num: 31

Candidate Starts for Visconti_88:

(Start: 31 @61020 has 145 MA's), (34, 61035), (35, 61038), (36, 61044),

Gene: VohminGhazi_93 Start: 48597, Stop: 48505, Start Num: 31

Candidate Starts for VohminGhazi_93:

(Start: 31 @48597 has 145 MA's), (33, 48585), (34, 48582),

Gene: WaldoWhy_88 Start: 60980, Stop: 61093, Start Num: 31

Candidate Starts for WaldoWhy_88:

(Start: 31 @60980 has 145 MA's), (34, 60995), (35, 60998), (36, 61004),

Gene: Wiks_94 Start: 48698, Stop: 48606, Start Num: 31

Candidate Starts for Wiks_94:

(Start: 31 @48698 has 145 MA's), (34, 48683),

Gene: Xeno_55 Start: 35530, Stop: 35655, Start Num: 30

Candidate Starts for Xeno_55:

(Start: 30 @35530 has 1 MA's), (Start: 31 @35533 has 145 MA's), (39, 35605),

Gene: Xula_49 Start: 35689, Stop: 35811, Start Num: 31

Candidate Starts for Xula_49:

(Start: 30 @35686 has 1 MA's), (Start: 31 @35689 has 145 MA's),

Gene: YoSam321_86 Start: 48893, Stop: 48795, Start Num: 31

Candidate Starts for YoSam321_86:

(Start: 29 @48896 has 52 MA's), (Start: 31 @48893 has 145 MA's), (34, 48878), (36, 48869),

Gene: Yokurt_94 Start: 48698, Stop: 48606, Start Num: 31

Candidate Starts for Yokurt_94:

(Start: 31 @48698 has 145 MA's), (34, 48683),

Gene: Zaka_95 Start: 48698, Stop: 48606, Start Num: 31

Candidate Starts for Zaka_95:

(Start: 31 @48698 has 145 MA's), (34, 48683),

Gene: Zilizebeth_58 Start: 37707, Stop: 37829, Start Num: 31
Candidate Starts for Zilizebeth_58:
(Start: 30 @37704 has 1 MA's), (Start: 31 @37707 has 145 MA's),

Gene: Zulu_96 Start: 49075, Stop: 48983, Start Num: 31
Candidate Starts for Zulu_96:
(Start: 31 @49075 has 145 MA's), (34, 49060),