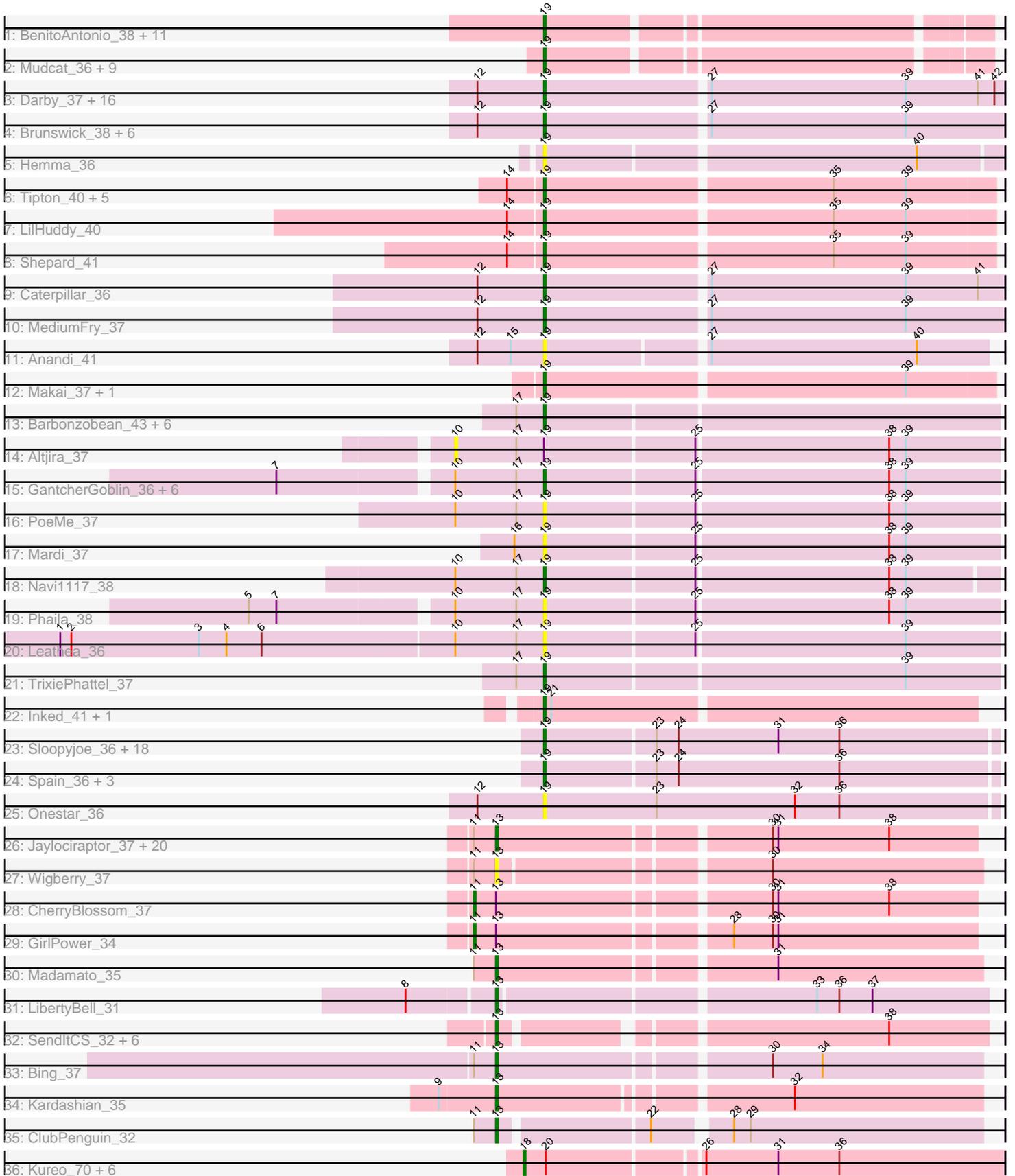# Pham 290912

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 290912 Report

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

Pham number 290912 has 150 members, 33 are drafts.

Phages represented in each track:
• Track 1 : BenitoAntonio_38, Circum_39, GoCrazy_36, Benllo_37, Hankly_37, KeaneyLin_36, Bowling_38, Dynamite_38, YoshiYama_37, Kardesai_39, Mooshroom_40, NapoleonB_38
• Track 2 : Mudcat_36, Xenomorph_34, JEGGS_37, Arcadia_37, Nason_37, Tribby_37, Correa_35, Cheesy_37, Heisenberger_37, Elsa_37
• Track 3 : Darby_37, Dinallo_39, Nivinsha_39, Trustiboi_39, AreFloNak_38, Westerlin_39, CapnMurica_37, MiniBagel_37, Gordon_37, Breylor17_39, DevitoJr_38, ScienceWizSam_40, Nightmare_39, CastorTray_40, Synepsis_37, Issa_38, Tenno_38
• Track 4 : Brunswick_38, Tatanka_37, LucySwiss_37, Niktson_37, Teacup_39, Acai_39, ElephantMan_37
• Track 5 : Hemma_36
• Track 6 : Tipton_40, Chlochlo_40, Tokki_39, Giantsbane_40, Phaby_40, Bouchard_39
• Track 7 : LilHuddy_40
• Track 8 : Shepard_41
• Track 9 : Caterpillar_36
• Track 10 : MediumFry_37
• Track 11 : Anandi_41
• Track 12 : Makai_37, Truckee_36
• Track 13 : Barbonzobean_43, BarbieDoll_41, Renaldo_42, Muglass_39, Lewando_40, Kinny_40, Biscute_37
• Track 14 : Altjira_37
• Track 15 : GantcherGoblin_36, Argan_36, KevinMinion_38, Stardrop_38, Zeina_38, Tenney120_38, Uzumaki_36
• Track 16 : PoeMe_37
• Track 17 : Mardi_37
• Track 18 : Navi1117_38
• Track 19 : Phaila_38
• Track 20 : Leathea_36
• Track 21 : TrixiePhattel_37
• Track 22 : Inked_41, Zippen_40
• Track 23 : Sloopyjoe_36, ProfFrink_36, StarLord_36, Shiba_36, Natasha_37, RustyBoy_37, Salk_36, Egad_36, Stayer_36, Boog_36, BronxBay_36, Jeremy4pt0_36, Sprinkle_35, DoctorPepper_36, Raunak_37, Michelle_36, HerbBucket_35, Sporto_38, Linda_36
• Track 24 : Spain_36, Powelldog_38, MrAaronian_36, Djungelskog_36

• Track 25 : Onestar_36
• Track 26 : Jaylociraptor_37, Espio_38, Hoshi_37, HazuAndZazu_36, TaidaOne_37, OlympicHelado_37, TonyStarch_36, Maya_37, Meibysrarus_36, Namo_37, FidgetOrca_37, Rima_37, Spectropatronm_37, Esketit_37, DrGrey_36, IceWarrior_36, Popy_37, Indigenous_37, Soshi_36, FrodoSwaggins_37, TieDye_36
• Track 27 : Wigberry_37
• Track 28 : CherryBlossom_37
• Track 29 : GirlPower_34
• Track 30 : Madamato_35
• Track 31 : LibertyBell_31
• Track 32 : SendItCS_32, Thiqqums_34, Miek_33, CricKo_34, FromIndy_34, Rainydai_34, Regigigas_35
• Track 33 : Bing_37
• Track 34 : Kardashian_35
• Track 35 : ClubPenguin_32
• Track 36 : Kureo_70, Marianna39_70, Elver_68, Gandionco_68, Qui_70, JeNeSaisPas_67, Paella_70

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

The start number called the most often in the published annotations is 19, it was called in 82 of the 117 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Acai_39, Anandi_41, Arcadia_37, AreFloNak_38, Argan_36, BarbieDoll_41, Barbonzobean_43, BenitoAntonio_38, Benllo_37, Biscute_37, Boog_36, Bouchard_39, Bowling_38, Breylor17_39, BronxBay_36, Brunswick_38, CapnMurica_37, CastorTray_40, Caterpillar_36, Cheesy_37, Chlochlo_40, Circum_39, Correa_35, Darby_37, DevitoJr_38, Dinallo_39, Djungelskog_36, DoctorPepper_36, Dynamite_38, Egad_36, ElephantMan_37, Elsa_37, GantcherGoblin_36, Giantsbane_40, GoCrazy_36, Gordon_37, Hankly_37, Heisenberger_37, Hemma_36, HerbBucket_35, Inked_41, Issa_38, JEGGS_37, Jeremy4pt0_36, Kardesai_39, KeaneyLin_36, KevinMinion_38, Kinny_40, Leathea_36, Lewando_40, LilHuddy_40, Linda_36, LucySwiss_37, Makai_37, Mardi_37, MediumFry_37, Michelle_36, MiniBagel_37, Mooshroom_40, MrAaronian_36, Mudcat_36, Muglass_39, NapoleonB_38, Nason_37, Natasha_37, Navi1117_38, Nightmare_39, Niktson_37, Nivinsha_39, Onestar_36, Phaby_40, Phaila_38, PoeMe_37, Powelldog_38, ProfFrink_36, Raunak_37, Renaldo_42, RustyBoy_37, Salk_36, ScienceWizSam_40, Shepard_41, Shiba_36, Sloopyjoe_36, Spain_36, Sporto_38, Sprinkle_35, StarLord_36, Stardrop_38, Stayer_36, Synepsis_37, Tatanka_37, Teacup_39, Tenney120_38, Tenno_38, Tipton_40, Tokki_39, Tribby_37, TrixiePhattel_37, Truckee_36, Trustiboi_39, Uzumaki_36, Westerlin_39, Xenomorph_34, YoshiYama_37, Zeina_38, Zippen_40,

Genes that have the "Most Annotated" start but do not call it:
• Altjira_37,

Genes that do not have the "Most Annotated" start:
• Bing_37, CherryBlossom_37, ClubPenguin_32, CricKo_34, DrGrey_36, Elver_68, Esketit_37, Espio_38, FidgetOrca_37, FrodoSwaggins_37, FromIndy_34,

Gandionco_68, GirlPower_34, HazuAndZazu_36, Hoshi_37, IceWarrior_36, Indigenous_37, Jaylociraptor_37, JeNeSaisPas_67, Kardashian_35, Kureo_70, LibertyBell_31, Madamato_35, Marianna39_70, Maya_37, Meibysrarus_36, Miek_33, Namo_37, OlympicHelado_37, Paella_70, Popy_37, Qui_70, Rainydai_34, Regigigas_35, Rima_37, SendItCS_32, Soshi_36, Spectropatronm_37, TaidaOne_37, Thiqqums_34, TieDye_36, TonyStarch_36, Wigberry_37,

Summary by start number:

Start 10:
• Found in 12 of 150 (8.0%) of genes in pham
• No Manual Annotations of this start.
• Called 8.3% of time when present
• Phage (with cluster) where this start called: Altjira_37 (AU6),

Start 11:
• Found in 27 of 150 (18.0%) of genes in pham
• Manual Annotations of this start: 2 of 117
• Called 7.4% of time when present
• Phage (with cluster) where this start called: CherryBlossom_37 (BI1), GirlPower_34 (BI1),

Start 13:
• Found in 36 of 150 (24.0%) of genes in pham
• Manual Annotations of this start: 30 of 117
• Called 94.4% of time when present
• Phage (with cluster) where this start called: Bing_37 (BI5), ClubPenguin_32 (BI7), CricKo_34 (BI4), DrGrey_36 (BI1), Esketit_37 (BI1), Espio_38 (BI1), FidgetOrca_37 (BI1), FrodoSwaggins_37 (BI1), FromIndy_34 (BI4), HazuAndZazu_36 (BI1), Hoshi_37 (BI1), IceWarrior_36 (BI1), Indigenous_37 (BI1), Jaylociraptor_37 (BI1), Kardashian_35 (BI6), LibertyBell_31 (BI3), Madamato_35 (BI1), Maya_37 (BI1), Meibysrarus_36 (BI1), Miek_33 (BI4), Namo_37 (BI1), OlympicHelado_37 (BI1), Popy_37 (BI1), Rainydai_34 (BI4), Regigigas_35 (BI4), Rima_37 (BI1), SendItCS_32 (BI4), Soshi_36 (BI1), Spectropatronm_37 (BI1), TaidaOne_37 (BI1), Thiqqums_34 (BI4), TieDye_36 (BI1), TonyStarch_36 (BI1), Wigberry_37 (BI1),

Start 18:
• Found in 7 of 150 (4.7%) of genes in pham
• Manual Annotations of this start: 3 of 117
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Elver_68 (FK), Gandionco_68 (FK), JeNeSaisPas_67 (FK), Kureo_70 (FK), Marianna39_70 (FK), Paella_70 (FK), Qui_70 (FK),

Start 19:
• Found in 107 of 150 (71.3%) of genes in pham
• Manual Annotations of this start: 82 of 117
• Called 99.1% of time when present
• Phage (with cluster) where this start called: Acai_39 (AU1), Anandi_41 (AU4), Arcadia_37 (AM), AreFloNak_38 (AU1), Argan_36 (AU6), BarbieDoll_41 (AU6), Barbonzobean_43 (AU6), BenitoAntonio_38 (AM), Benllo_37 (AM), Biscute_37 (AU6), Boog_36 (AW), Bouchard_39 (AU2), Bowling_38 (AM), Breylor17_39 (AU1), BronxBay_36 (AW), Brunswick_38 (AU1), CapnMurica_37 (AU1), CastorTray_40

(AU1), Caterpillar_36 (AU4), Cheesy_37 (AM), Chlochlo_40 (AU2), Circum_39 (AM), Correa_35 (AM), Darby_37 (AU1), DevitoJr_38 (AU1), Dinallo_39 (AU1), Djungelskog_36 (AW), DoctorPepper_36 (AW), Dynamite_38 (AM), Egad_36 (AW), ElephantMan_37 (AU1), Elsa_37 (AM), GantcherGoblin_36 (AU6), Giantsbane_40 (AU2), GoCrazy_36 (AM), Gordon_37 (AU1), Hankly_37 (AM), Heisenberger_37 (AM), Hemma_36 (AU1), HerbBucket_35 (AW), Inked_41 (AU7), Issa_38 (AU1), JEGGS_37 (AM), Jeremy4pt0_36 (AW), Kardesai_39 (AM), KeaneyLin_36 (AM), KevinMinion_38 (AU6), Kinny_40 (AU6), Leathea_36 (AU6), Lewando_40 (AU6), LilHuddy_40 (AU2), Linda_36 (AW), LucySwiss_37 (AU1), Makai_37 (AU5), Mardi_37 (AU6), MediumFry_37 (AU4), Michelle_36 (AW), MiniBagel_37 (AU1), Mooshroom_40 (AM), MrAaronian_36 (AW), Mudcat_36 (AM), Muglass_39 (AU6), NapoleonB_38 (AM), Nason_37 (AM), Natasha_37 (AW), Navi1117_38 (AU6), Nightmare_39 (AU1), Niktson_37 (AU1), Nivinsha_39 (AU1), Onestar_36 (AW), Phaby_40 (AU2), Phaila_38 (AU6), PoeMe_37 (AU6), Powelldog_38 (AW), ProfFrink_36 (AW), Raunak_37 (AW), Renaldo_42 (AU6), RustyBoy_37 (AW), Salk_36 (AW), ScienceWizSam_40 (AU1), Shepard_41 (AU2), Shiba_36 (AW), Sloopyjoe_36 (AW), Spain_36 (AW), Sporto_38 (AW), Sprinkle_35 (AW), StarLord_36 (AW), Stardrop_38 (AU6), Stayer_36 (AW), Synepsis_37 (AU1), Tatanka_37 (AU1), Teacup_39 (AU1), Tenney120_38 (AU6), Tenno_38 (AU1), Tipton_40 (AU2), Tokki_39 (AU2), Tribby_37 (AM), TrixiePhattel_37 (AU6), Truckee_36 (AU5), Trustiboi_39 (AU1), Uzumaki_36 (AU6), Westerlin_39 (AU1), Xenomorph_34 (AM), YoshiYama_37 (AM), Zeina_38 (AU6), Zippen_40 (AU7),

Summary by clusters:

There are 15 clusters represented in this pham: BI5, AU7, AM, AU1, AU2, AU5, AU4, AW, AU6, BI6, BI7, BI4, FK, BI3, BI1,

Info for manual annotations of cluster AM:
•Start number 19 was manually annotated 21 times for cluster AM.

Info for manual annotations of cluster AU1:
•Start number 19 was manually annotated 19 times for cluster AU1.

Info for manual annotations of cluster AU2:
•Start number 19 was manually annotated 7 times for cluster AU2.

Info for manual annotations of cluster AU4:
•Start number 19 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:
•Start number 19 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:
•Start number 19 was manually annotated 11 times for cluster AU6.

Info for manual annotations of cluster AU7:
•Start number 19 was manually annotated 2 times for cluster AU7.

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

Info for manual annotations of cluster BI1:

•Start number 11 was manually annotated 2 times for cluster BI1.
•Start number 13 was manually annotated 21 times for cluster BI1.

Info for manual annotations of cluster BI3:
•Start number 13 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:
•Start number 13 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:
•Start number 13 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:
•Start number 13 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:
•Start number 13 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster FK:
•Start number 18 was manually annotated 3 times for cluster FK.

Gene Information:

Gene: Acai_39 Start: 30421, Stop: 30663, Start Num: 19
Candidate Starts for Acai_39:
(12, 30385), (Start: 19 @30421 has 82 MA's), (27, 30505), (39, 30610),

Gene: Altjira_37 Start: 29464, Stop: 29751, Start Num: 10
Candidate Starts for Altjira_37:
(10, 29464), (17, 29497), (Start: 19 @29512 has 82 MA's), (25, 29590), (38, 29692), (39, 29701),

Gene: Anandi_41 Start: 30969, Stop: 31199, Start Num: 19
Candidate Starts for Anandi_41:
(12, 30933), (15, 30951), (Start: 19 @30969 has 82 MA's), (27, 31050), (40, 31161),

Gene: Arcadia_37 Start: 27918, Stop: 28139, Start Num: 19
Candidate Starts for Arcadia_37:
(Start: 19 @27918 has 82 MA's),

Gene: AreFloNak_38 Start: 30359, Stop: 30601, Start Num: 19
Candidate Starts for AreFloNak_38:
(12, 30323), (Start: 19 @30359 has 82 MA's), (27, 30443), (39, 30548), (41, 30587), (42, 30596),

Gene: Argan_36 Start: 28652, Stop: 28891, Start Num: 19
Candidate Starts for Argan_36:
(7, 28517), (10, 28604), (17, 28637), (Start: 19 @28652 has 82 MA's), (25, 28730), (38, 28832), (39, 28841),

Gene: BarbieDoll_41 Start: 30355, Stop: 30594, Start Num: 19
Candidate Starts for BarbieDoll_41:
(17, 30340), (Start: 19 @30355 has 82 MA's),

Gene: Barbonzobean_43 Start: 30531, Stop: 30770, Start Num: 19
Candidate Starts for Barbonzobean_43:
(17, 30516), (Start: 19 @30531 has 82 MA's),

Gene: BenitoAntonio_38 Start: 27761, Stop: 27982, Start Num: 19
Candidate Starts for BenitoAntonio_38:
(Start: 19 @27761 has 82 MA's),

Gene: Benllo_37 Start: 28439, Stop: 28660, Start Num: 19
Candidate Starts for Benllo_37:
(Start: 19 @28439 has 82 MA's),

Gene: Bing_37 Start: 27756, Stop: 28007, Start Num: 13
Candidate Starts for Bing_37:
(Start: 11 @27744 has 2 MA's), (Start: 13 @27756 has 30 MA's), (30, 27894), (34, 27921),

Gene: Biscute_37 Start: 30008, Stop: 30247, Start Num: 19
Candidate Starts for Biscute_37:
(17, 29993), (Start: 19 @30008 has 82 MA's),

Gene: Boog_36 Start: 27777, Stop: 28016, Start Num: 19
Candidate Starts for Boog_36:
(Start: 19 @27777 has 82 MA's), (23, 27834), (24, 27846), (31, 27900), (36, 27933),

Gene: Bouchard_39 Start: 30556, Stop: 30792, Start Num: 19
Candidate Starts for Bouchard_39:
(14, 30538), (Start: 19 @30556 has 82 MA's), (35, 30706), (39, 30745),

Gene: Bowling_38 Start: 27906, Stop: 28127, Start Num: 19
Candidate Starts for Bowling_38:
(Start: 19 @27906 has 82 MA's),

Gene: Breylor17_39 Start: 30968, Stop: 31210, Start Num: 19
Candidate Starts for Breylor17_39:
(12, 30932), (Start: 19 @30968 has 82 MA's), (27, 31052), (39, 31157), (41, 31196), (42, 31205),

Gene: BronxBay_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for BronxBay_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (31, 27899), (36, 27932),

Gene: Brunswick_38 Start: 30104, Stop: 30346, Start Num: 19
Candidate Starts for Brunswick_38:
(12, 30068), (Start: 19 @30104 has 82 MA's), (27, 30188), (39, 30293),

Gene: CapnMurica_37 Start: 31196, Stop: 31438, Start Num: 19
Candidate Starts for CapnMurica_37:
(12, 31160), (Start: 19 @31196 has 82 MA's), (27, 31280), (39, 31385), (41, 31424), (42, 31433),

Gene: CastorTray_40 Start: 30823, Stop: 31065, Start Num: 19
Candidate Starts for CastorTray_40:
(12, 30787), (Start: 19 @30823 has 82 MA's), (27, 30907), (39, 31012), (41, 31051), (42, 31060),

Gene: Caterpillar_36 Start: 29603, Stop: 29845, Start Num: 19
Candidate Starts for Caterpillar_36:
(12, 29567), (Start: 19 @29603 has 82 MA's), (27, 29687), (39, 29792), (41, 29831),

Gene: Cheesy_37 Start: 27610, Stop: 27831, Start Num: 19
Candidate Starts for Cheesy_37:
(Start: 19 @27610 has 82 MA's),

Gene: CherryBlossom_37 Start: 27952, Stop: 28212, Start Num: 11
Candidate Starts for CherryBlossom_37:
(Start: 11 @27952 has 2 MA's), (Start: 13 @27964 has 30 MA's), (30, 28102), (31, 28105), (38, 28165),

Gene: Chlochlo_40 Start: 30591, Stop: 30827, Start Num: 19
Candidate Starts for Chlochlo_40:
(14, 30573), (Start: 19 @30591 has 82 MA's), (35, 30741), (39, 30780),

Gene: Circum_39 Start: 28270, Stop: 28491, Start Num: 19
Candidate Starts for Circum_39:
(Start: 19 @28270 has 82 MA's),

Gene: ClubPenguin_32 Start: 26523, Stop: 26768, Start Num: 13
Candidate Starts for ClubPenguin_32:
(Start: 11 @26511 has 2 MA's), (Start: 13 @26523 has 30 MA's), (22, 26598), (28, 26634), (29, 26643),

Gene: Correa_35 Start: 26801, Stop: 27022, Start Num: 19
Candidate Starts for Correa_35:
(Start: 19 @26801 has 82 MA's),

Gene: CricKo_34 Start: 26745, Stop: 26987, Start Num: 13
Candidate Starts for CricKo_34:
(Start: 13 @26745 has 30 MA's), (38, 26934),

Gene: Darby_37 Start: 29946, Stop: 30188, Start Num: 19
Candidate Starts for Darby_37:
(12, 29910), (Start: 19 @29946 has 82 MA's), (27, 30030), (39, 30135), (41, 30174), (42, 30183),

Gene: DevitoJr_38 Start: 30442, Stop: 30684, Start Num: 19
Candidate Starts for DevitoJr_38:
(12, 30406), (Start: 19 @30442 has 82 MA's), (27, 30526), (39, 30631), (41, 30670), (42, 30679),

Gene: Dinallo_39 Start: 31506, Stop: 31748, Start Num: 19
Candidate Starts for Dinallo_39:
(12, 31470), (Start: 19 @31506 has 82 MA's), (27, 31590), (39, 31695), (41, 31734), (42, 31743),

Gene: Djungelskog_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for Djungelskog_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (36, 27932),

Gene: DoctorPepper_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for DoctorPepper_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (31, 27899), (36, 27932),

Gene: DrGrey_36 Start: 28304, Stop: 28552, Start Num: 13

Candidate Starts for DrGrey_36:
(Start: 11 @28292 has 2 MA's), (Start: 13 @28304 has 30 MA's), (30, 28442), (31, 28445), (38, 28505),

Gene: Dynamite_38 Start: 28101, Stop: 28322, Start Num: 19
Candidate Starts for Dynamite_38:
(Start: 19 @28101 has 82 MA's),

Gene: Egad_36 Start: 27777, Stop: 28016, Start Num: 19
Candidate Starts for Egad_36:
(Start: 19 @27777 has 82 MA's), (23, 27834), (24, 27846), (31, 27900), (36, 27933),

Gene: ElephantMan_37 Start: 30644, Stop: 30886, Start Num: 19
Candidate Starts for ElephantMan_37:
(12, 30608), (Start: 19 @30644 has 82 MA's), (27, 30728), (39, 30833),

Gene: Elsa_37 Start: 27918, Stop: 28139, Start Num: 19
Candidate Starts for Elsa_37:
(Start: 19 @27918 has 82 MA's),

Gene: Elver_68 Start: 44169, Stop: 44420, Start Num: 18
Candidate Starts for Elver_68:
(Start: 18 @44169 has 3 MA's), (20, 44181), (26, 44259), (31, 44298), (36, 44331),

Gene: Esketit_37 Start: 28039, Stop: 28287, Start Num: 13
Candidate Starts for Esketit_37:
(Start: 11 @28027 has 2 MA's), (Start: 13 @28039 has 30 MA's), (30, 28177), (31, 28180), (38, 28240),

Gene: Espio_38 Start: 28699, Stop: 28947, Start Num: 13
Candidate Starts for Espio_38:
(Start: 11 @28687 has 2 MA's), (Start: 13 @28699 has 30 MA's), (30, 28837), (31, 28840), (38, 28900),

Gene: FidgetOrca_37 Start: 28044, Stop: 28292, Start Num: 13
Candidate Starts for FidgetOrca_37:
(Start: 11 @28032 has 2 MA's), (Start: 13 @28044 has 30 MA's), (30, 28182), (31, 28185), (38, 28245),

Gene: FrodoSwaggins_37 Start: 28698, Stop: 28946, Start Num: 13
Candidate Starts for FrodoSwaggins_37:
(Start: 11 @28686 has 2 MA's), (Start: 13 @28698 has 30 MA's), (30, 28836), (31, 28839), (38, 28899),

Gene: FromIndy_34 Start: 26349, Stop: 26591, Start Num: 13
Candidate Starts for FromIndy_34:
(Start: 13 @26349 has 30 MA's), (38, 26538),

Gene: Gandionco_68 Start: 44478, Stop: 44729, Start Num: 18
Candidate Starts for Gandionco_68:
(Start: 18 @44478 has 3 MA's), (20, 44490), (26, 44568), (31, 44607), (36, 44640),

Gene: GantcherGoblin_36 Start: 28690, Stop: 28929, Start Num: 19
Candidate Starts for GantcherGoblin_36:
(7, 28555), (10, 28642), (17, 28675), (Start: 19 @28690 has 82 MA's), (25, 28768), (38, 28870), (39, 28879),

Gene: Giantsbane_40 Start: 29463, Stop: 29699, Start Num: 19

Candidate Starts for Giantsbane_40:
(14, 29445), (Start: 19 @29463 has 82 MA's), (35, 29613), (39, 29652),

Gene: GirlPower_34 Start: 29017, Stop: 29277, Start Num: 11
Candidate Starts for GirlPower_34:
(Start: 11 @29017 has 2 MA's), (Start: 13 @29029 has 30 MA's), (28, 29146), (30, 29167), (31, 29170),

Gene: GoCrazy_36 Start: 27748, Stop: 27969, Start Num: 19
Candidate Starts for GoCrazy_36:
(Start: 19 @27748 has 82 MA's),

Gene: Gordon_37 Start: 31225, Stop: 31467, Start Num: 19
Candidate Starts for Gordon_37:
(12, 31189), (Start: 19 @31225 has 82 MA's), (27, 31309), (39, 31414), (41, 31453), (42, 31462),

Gene: Hankly_37 Start: 27293, Stop: 27514, Start Num: 19
Candidate Starts for Hankly_37:
(Start: 19 @27293 has 82 MA's),

Gene: HazuAndZazu_36 Start: 28300, Stop: 28548, Start Num: 13
Candidate Starts for HazuAndZazu_36:
(Start: 11 @28288 has 2 MA's), (Start: 13 @28300 has 30 MA's), (30, 28438), (31, 28441), (38, 28501),

Gene: Heisenberger_37 Start: 27603, Stop: 27824, Start Num: 19
Candidate Starts for Heisenberger_37:
(Start: 19 @27603 has 82 MA's),

Gene: Hemma_36 Start: 27247, Stop: 27483, Start Num: 19
Candidate Starts for Hemma_36:
(Start: 19 @27247 has 82 MA's), (40, 27439),

Gene: HerbBucket_35 Start: 27777, Stop: 28016, Start Num: 19
Candidate Starts for HerbBucket_35:
(Start: 19 @27777 has 82 MA's), (23, 27834), (24, 27846), (31, 27900), (36, 27933),

Gene: Hoshi_37 Start: 28039, Stop: 28287, Start Num: 13
Candidate Starts for Hoshi_37:
(Start: 11 @28027 has 2 MA's), (Start: 13 @28039 has 30 MA's), (30, 28177), (31, 28180), (38, 28240),

Gene: IceWarrior_36 Start: 27739, Stop: 27987, Start Num: 13
Candidate Starts for IceWarrior_36:
(Start: 11 @27727 has 2 MA's), (Start: 13 @27739 has 30 MA's), (30, 27877), (31, 27880), (38, 27940),

Gene: Indigenous_37 Start: 28039, Stop: 28287, Start Num: 13
Candidate Starts for Indigenous_37:
(Start: 11 @28027 has 2 MA's), (Start: 13 @28039 has 30 MA's), (30, 28177), (31, 28180), (38, 28240),

Gene: Inked_41 Start: 31501, Stop: 31728, Start Num: 19
Candidate Starts for Inked_41:
(Start: 19 @31501 has 82 MA's), (21, 31504),

Gene: Issa_38 Start: 30251, Stop: 30493, Start Num: 19
Candidate Starts for Issa_38:

(12, 30215), (Start: 19 @30251 has 82 MA's), (27, 30335), (39, 30440), (41, 30479), (42, 30488),

Gene: JEGGS_37 Start: 27657, Stop: 27878, Start Num: 19
Candidate Starts for JEGGS_37:
(Start: 19 @27657 has 82 MA's),

Gene: Jaylociraptor_37 Start: 28039, Stop: 28287, Start Num: 13
Candidate Starts for Jaylociraptor_37:
(Start: 11 @28027 has 2 MA's), (Start: 13 @28039 has 30 MA's), (30, 28177), (31, 28180), (38, 28240),

Gene: JeNeSaisPas_67 Start: 44704, Stop: 44955, Start Num: 18
Candidate Starts for JeNeSaisPas_67:
(Start: 18 @44704 has 3 MA's), (20, 44716), (26, 44794), (31, 44833), (36, 44866),

Gene: Jeremy4pt0_36 Start: 27771, Stop: 28010, Start Num: 19
Candidate Starts for Jeremy4pt0_36:
(Start: 19 @27771 has 82 MA's), (23, 27828), (24, 27840), (31, 27894), (36, 27927),

Gene: Kardashian_35 Start: 27816, Stop: 28064, Start Num: 13
Candidate Starts for Kardashian_35:
(9, 27786), (Start: 13 @27816 has 30 MA's), (32, 27963),

Gene: Kardesai_39 Start: 28323, Stop: 28544, Start Num: 19
Candidate Starts for Kardesai_39:
(Start: 19 @28323 has 82 MA's),

Gene: KeaneyLin_36 Start: 27748, Stop: 27969, Start Num: 19
Candidate Starts for KeaneyLin_36:
(Start: 19 @27748 has 82 MA's),

Gene: KevinMinion_38 Start: 29964, Stop: 30203, Start Num: 19
Candidate Starts for KevinMinion_38:
(7, 29829), (10, 29916), (17, 29949), (Start: 19 @29964 has 82 MA's), (25, 30042), (38, 30144), (39, 30153),

Gene: Kinny_40 Start: 30849, Stop: 31088, Start Num: 19
Candidate Starts for Kinny_40:
(17, 30834), (Start: 19 @30849 has 82 MA's),

Gene: Kureo_70 Start: 43890, Stop: 44141, Start Num: 18
Candidate Starts for Kureo_70:
(Start: 18 @43890 has 3 MA's), (20, 43902), (26, 43980), (31, 44019), (36, 44052),

Gene: Leathea_36 Start: 28113, Stop: 28352, Start Num: 19
Candidate Starts for Leathea_36:
(1, 27855), (2, 27861), (3, 27930), (4, 27945), (6, 27963), (10, 28065), (17, 28098), (Start: 19 @28113 has 82 MA's), (25, 28191), (39, 28302),

Gene: Lewando_40 Start: 30552, Stop: 30791, Start Num: 19
Candidate Starts for Lewando_40:
(17, 30537), (Start: 19 @30552 has 82 MA's),

Gene: LibertyBell_31 Start: 25601, Stop: 25855, Start Num: 13

Candidate Starts for LibertyBell_31:
(8, 25556), (Start: 13 @25601 has 30 MA's), (33, 25763), (36, 25775), (37, 25793),

Gene: LilHuddy_40 Start: 30610, Stop: 30846, Start Num: 19
Candidate Starts for LilHuddy_40:
(14, 30592), (Start: 19 @30610 has 82 MA's), (35, 30760), (39, 30799),

Gene: Linda_36 Start: 27772, Stop: 28011, Start Num: 19
Candidate Starts for Linda_36:
(Start: 19 @27772 has 82 MA's), (23, 27829), (24, 27841), (31, 27895), (36, 27928),

Gene: LucySwiss_37 Start: 29946, Stop: 30188, Start Num: 19
Candidate Starts for LucySwiss_37:
(12, 29910), (Start: 19 @29946 has 82 MA's), (27, 30030), (39, 30135),

Gene: Madamato_35 Start: 27294, Stop: 27545, Start Num: 13
Candidate Starts for Madamato_35:
(Start: 11 @27282 has 2 MA's), (Start: 13 @27294 has 30 MA's), (31, 27435),

Gene: Makai_37 Start: 30096, Stop: 30332, Start Num: 19
Candidate Starts for Makai_37:
(Start: 19 @30096 has 82 MA's), (39, 30285),

Gene: Mardi_37 Start: 28933, Stop: 29172, Start Num: 19
Candidate Starts for Mardi_37:
(16, 28918), (Start: 19 @28933 has 82 MA's), (25, 29011), (38, 29113), (39, 29122),

Gene: Marianna39_70 Start: 45053, Stop: 45304, Start Num: 18
Candidate Starts for Marianna39_70:
(Start: 18 @45053 has 3 MA's), (20, 45065), (26, 45143), (31, 45182), (36, 45215),

Gene: Maya_37 Start: 28053, Stop: 28301, Start Num: 13
Candidate Starts for Maya_37:
(Start: 11 @28041 has 2 MA's), (Start: 13 @28053 has 30 MA's), (30, 28191), (31, 28194), (38, 28254),

Gene: MediumFry_37 Start: 29916, Stop: 30158, Start Num: 19
Candidate Starts for MediumFry_37:
(12, 29880), (Start: 19 @29916 has 82 MA's), (27, 30000), (39, 30105),

Gene: Meibysrarus_36 Start: 27738, Stop: 27986, Start Num: 13
Candidate Starts for Meibysrarus_36:
(Start: 11 @27726 has 2 MA's), (Start: 13 @27738 has 30 MA's), (30, 27876), (31, 27879), (38, 27939),

Gene: Michelle_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for Michelle_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (31, 27899), (36, 27932),

Gene: Miek_33 Start: 26361, Stop: 26603, Start Num: 13
Candidate Starts for Miek_33:
(Start: 13 @26361 has 30 MA's), (38, 26550),

Gene: MiniBagel_37 Start: 31178, Stop: 31420, Start Num: 19
Candidate Starts for MiniBagel_37:

(12, 31142), (Start: 19 @31178 has 82 MA's), (27, 31262), (39, 31367), (41, 31406), (42, 31415),

Gene: Mooshroom_40 Start: 28323, Stop: 28544, Start Num: 19
Candidate Starts for Mooshroom_40:
(Start: 19 @28323 has 82 MA's),

Gene: MrAaronian_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for MrAaronian_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (36, 27932),

Gene: Mudcat_36 Start: 29309, Stop: 29530, Start Num: 19
Candidate Starts for Mudcat_36:
(Start: 19 @29309 has 82 MA's),

Gene: Muglass_39 Start: 29912, Stop: 30151, Start Num: 19
Candidate Starts for Muglass_39:
(17, 29897), (Start: 19 @29912 has 82 MA's),

Gene: Namo_37 Start: 28045, Stop: 28293, Start Num: 13
Candidate Starts for Namo_37:
(Start: 11 @28033 has 2 MA's), (Start: 13 @28045 has 30 MA's), (30, 28183), (31, 28186), (38, 28246),

Gene: NapoleonB_38 Start: 28101, Stop: 28322, Start Num: 19
Candidate Starts for NapoleonB_38:
(Start: 19 @28101 has 82 MA's),

Gene: Nason_37 Start: 27918, Stop: 28139, Start Num: 19
Candidate Starts for Nason_37:
(Start: 19 @27918 has 82 MA's),

Gene: Natasha_37 Start: 27544, Stop: 27783, Start Num: 19
Candidate Starts for Natasha_37:
(Start: 19 @27544 has 82 MA's), (23, 27601), (24, 27613), (31, 27667), (36, 27700),

Gene: Navi1117_38 Start: 29262, Stop: 29498, Start Num: 19
Candidate Starts for Navi1117_38:
(10, 29214), (17, 29247), (Start: 19 @29262 has 82 MA's), (25, 29340), (38, 29442), (39, 29451),

Gene: Nightmare_39 Start: 30810, Stop: 31052, Start Num: 19
Candidate Starts for Nightmare_39:
(12, 30774), (Start: 19 @30810 has 82 MA's), (27, 30894), (39, 30999), (41, 31038), (42, 31047),

Gene: Niktson_37 Start: 30644, Stop: 30886, Start Num: 19
Candidate Starts for Niktson_37:
(12, 30608), (Start: 19 @30644 has 82 MA's), (27, 30728), (39, 30833),

Gene: Nivinsha_39 Start: 30359, Stop: 30601, Start Num: 19
Candidate Starts for Nivinsha_39:
(12, 30323), (Start: 19 @30359 has 82 MA's), (27, 30443), (39, 30548), (41, 30587), (42, 30596),

Gene: OlympicHelado_37 Start: 28045, Stop: 28293, Start Num: 13
Candidate Starts for OlympicHelado_37:
(Start: 11 @28033 has 2 MA's), (Start: 13 @28045 has 30 MA's), (30, 28183), (31, 28186), (38, 28246),

Gene: Onestar_36 Start: 27533, Stop: 27775, Start Num: 19
Candidate Starts for Onestar_36:
(12, 27497), (Start: 19 @27533 has 82 MA's), (23, 27593), (32, 27668), (36, 27692),

Gene: Paella_70 Start: 44762, Stop: 45013, Start Num: 18
Candidate Starts for Paella_70:
(Start: 18 @44762 has 3 MA's), (20, 44774), (26, 44852), (31, 44891), (36, 44924),

Gene: Phaby_40 Start: 30565, Stop: 30801, Start Num: 19
Candidate Starts for Phaby_40:
(14, 30547), (Start: 19 @30565 has 82 MA's), (35, 30715), (39, 30754),

Gene: Phaila_38 Start: 28726, Stop: 28965, Start Num: 19
Candidate Starts for Phaila_38:
(5, 28576), (7, 28591), (10, 28678), (17, 28711), (Start: 19 @28726 has 82 MA's), (25, 28804), (38, 28906), (39, 28915),

Gene: PoeMe_37 Start: 29130, Stop: 29369, Start Num: 19
Candidate Starts for PoeMe_37:
(10, 29082), (17, 29115), (Start: 19 @29130 has 82 MA's), (25, 29208), (38, 29310), (39, 29319),

Gene: Popy_37 Start: 28698, Stop: 28946, Start Num: 13
Candidate Starts for Popy_37:
(Start: 11 @28686 has 2 MA's), (Start: 13 @28698 has 30 MA's), (30, 28836), (31, 28839), (38, 28899),

Gene: Powelldog_38 Start: 27783, Stop: 28022, Start Num: 19
Candidate Starts for Powelldog_38:
(Start: 19 @27783 has 82 MA's), (23, 27840), (24, 27852), (36, 27939),

Gene: ProfFrink_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for ProfFrink_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (31, 27899), (36, 27932),

Gene: Qui_70 Start: 44762, Stop: 45013, Start Num: 18
Candidate Starts for Qui_70:
(Start: 18 @44762 has 3 MA's), (20, 44774), (26, 44852), (31, 44891), (36, 44924),

Gene: Rainydai_34 Start: 26745, Stop: 26987, Start Num: 13
Candidate Starts for Rainydai_34:
(Start: 13 @26745 has 30 MA's), (38, 26934),

Gene: Raunak_37 Start: 27771, Stop: 28010, Start Num: 19
Candidate Starts for Raunak_37:
(Start: 19 @27771 has 82 MA's), (23, 27828), (24, 27840), (31, 27894), (36, 27927),

Gene: Regigigas_35 Start: 26745, Stop: 26987, Start Num: 13
Candidate Starts for Regigigas_35:
(Start: 13 @26745 has 30 MA's), (38, 26934),

Gene: Renaldo_42 Start: 30569, Stop: 30808, Start Num: 19
Candidate Starts for Renaldo_42:
(17, 30554), (Start: 19 @30569 has 82 MA's),

Gene: Rima_37 Start: 28045, Stop: 28293, Start Num: 13
Candidate Starts for Rima_37:
(Start: 11 @28033 has 2 MA's), (Start: 13 @28045 has 30 MA's), (30, 28183), (31, 28186), (38, 28246),

Gene: RustyBoy_37 Start: 27525, Stop: 27764, Start Num: 19
Candidate Starts for RustyBoy_37:
(Start: 19 @27525 has 82 MA's), (23, 27582), (24, 27594), (31, 27648), (36, 27681),

Gene: Salk_36 Start: 27772, Stop: 28011, Start Num: 19
Candidate Starts for Salk_36:
(Start: 19 @27772 has 82 MA's), (23, 27829), (24, 27841), (31, 27895), (36, 27928),

Gene: ScienceWizSam_40 Start: 30761, Stop: 31003, Start Num: 19
Candidate Starts for ScienceWizSam_40:
(12, 30725), (Start: 19 @30761 has 82 MA's), (27, 30845), (39, 30950), (41, 30989), (42, 30998),

Gene: SendItCS_32 Start: 26361, Stop: 26603, Start Num: 13
Candidate Starts for SendItCS_32:
(Start: 13 @26361 has 30 MA's), (38, 26550),

Gene: Shepard_41 Start: 30896, Stop: 31132, Start Num: 19
Candidate Starts for Shepard_41:
(14, 30878), (Start: 19 @30896 has 82 MA's), (35, 31046), (39, 31085),

Gene: Shiba_36 Start: 27771, Stop: 28010, Start Num: 19
Candidate Starts for Shiba_36:
(Start: 19 @27771 has 82 MA's), (23, 27828), (24, 27840), (31, 27894), (36, 27927),

Gene: Sloopyjoe_36 Start: 27777, Stop: 28016, Start Num: 19
Candidate Starts for Sloopyjoe_36:
(Start: 19 @27777 has 82 MA's), (23, 27834), (24, 27846), (31, 27900), (36, 27933),

Gene: Soshi_36 Start: 28310, Stop: 28558, Start Num: 13
Candidate Starts for Soshi_36:
(Start: 11 @28298 has 2 MA's), (Start: 13 @28310 has 30 MA's), (30, 28448), (31, 28451), (38, 28511),

Gene: Spain_36 Start: 27776, Stop: 28015, Start Num: 19
Candidate Starts for Spain_36:
(Start: 19 @27776 has 82 MA's), (23, 27833), (24, 27845), (36, 27932),

Gene: Spectropatronm_37 Start: 28039, Stop: 28287, Start Num: 13
Candidate Starts for Spectropatronm_37:
(Start: 11 @28027 has 2 MA's), (Start: 13 @28039 has 30 MA's), (30, 28177), (31, 28180), (38, 28240),

Gene: Sporto_38 Start: 29260, Stop: 29499, Start Num: 19
Candidate Starts for Sporto_38:
(Start: 19 @29260 has 82 MA's), (23, 29317), (24, 29329), (31, 29383), (36, 29416),

Gene: Sprinkle_35 Start: 27600, Stop: 27842, Start Num: 19
Candidate Starts for Sprinkle_35:
(Start: 19 @27600 has 82 MA's), (23, 27657), (24, 27669), (31, 27723), (36, 27756),

Gene: StarLord_36 Start: 27777, Stop: 28016, Start Num: 19
Candidate Starts for StarLord_36:
(Start: 19 @27777 has 82 MA's), (23, 27834), (24, 27846), (31, 27900), (36, 27933),

Gene: Stardrop_38 Start: 29277, Stop: 29516, Start Num: 19
Candidate Starts for Stardrop_38:
(7, 29142), (10, 29229), (17, 29262), (Start: 19 @29277 has 82 MA's), (25, 29355), (38, 29457), (39, 29466),

Gene: Stayer_36 Start: 27772, Stop: 28011, Start Num: 19
Candidate Starts for Stayer_36:
(Start: 19 @27772 has 82 MA's), (23, 27829), (24, 27841), (31, 27895), (36, 27928),

Gene: Synepsis_37 Start: 30426, Stop: 30668, Start Num: 19
Candidate Starts for Synepsis_37:
(12, 30390), (Start: 19 @30426 has 82 MA's), (27, 30510), (39, 30615), (41, 30654), (42, 30663),

Gene: TaidaOne_37 Start: 28595, Stop: 28843, Start Num: 13
Candidate Starts for TaidaOne_37:
(Start: 11 @28583 has 2 MA's), (Start: 13 @28595 has 30 MA's), (30, 28733), (31, 28736), (38, 28796),

Gene: Tatanka_37 Start: 30589, Stop: 30831, Start Num: 19
Candidate Starts for Tatanka_37:
(12, 30553), (Start: 19 @30589 has 82 MA's), (27, 30673), (39, 30778),

Gene: Teacup_39 Start: 30574, Stop: 30816, Start Num: 19
Candidate Starts for Teacup_39:
(12, 30538), (Start: 19 @30574 has 82 MA's), (27, 30658), (39, 30763),

Gene: Tenney120_38 Start: 29158, Stop: 29397, Start Num: 19
Candidate Starts for Tenney120_38:
(7, 29023), (10, 29110), (17, 29143), (Start: 19 @29158 has 82 MA's), (25, 29236), (38, 29338), (39, 29347),

Gene: Tenno_38 Start: 31187, Stop: 31429, Start Num: 19
Candidate Starts for Tenno_38:
(12, 31151), (Start: 19 @31187 has 82 MA's), (27, 31271), (39, 31376), (41, 31415), (42, 31424),

Gene: Thiqqums_34 Start: 26745, Stop: 26987, Start Num: 13
Candidate Starts for Thiqqums_34:
(Start: 13 @26745 has 30 MA's), (38, 26934),

Gene: TieDye_36 Start: 27639, Stop: 27887, Start Num: 13
Candidate Starts for TieDye_36:
(Start: 11 @27627 has 2 MA's), (Start: 13 @27639 has 30 MA's), (30, 27777), (31, 27780), (38, 27840),

Gene: Tipton_40 Start: 30627, Stop: 30863, Start Num: 19
Candidate Starts for Tipton_40:
(14, 30609), (Start: 19 @30627 has 82 MA's), (35, 30777), (39, 30816),

Gene: Tokki_39 Start: 30282, Stop: 30518, Start Num: 19
Candidate Starts for Tokki_39:
(14, 30264), (Start: 19 @30282 has 82 MA's), (35, 30432), (39, 30471),

Gene: TonyStarch_36 Start: 27744, Stop: 27992, Start Num: 13
Candidate Starts for TonyStarch_36:
(Start: 11 @27732 has 2 MA's), (Start: 13 @27744 has 30 MA's), (30, 27882), (31, 27885), (38, 27945),

Gene: Tribby_37 Start: 27633, Stop: 27854, Start Num: 19
Candidate Starts for Tribby_37:
(Start: 19 @27633 has 82 MA's),

Gene: TrixiePhattel_37 Start: 28923, Stop: 29162, Start Num: 19
Candidate Starts for TrixiePhattel_37:
(17, 28908), (Start: 19 @28923 has 82 MA's), (39, 29112),

Gene: Truckee_36 Start: 30146, Stop: 30382, Start Num: 19
Candidate Starts for Truckee_36:
(Start: 19 @30146 has 82 MA's), (39, 30335),

Gene: Trustiboi_39 Start: 30978, Stop: 31220, Start Num: 19
Candidate Starts for Trustiboi_39:
(12, 30942), (Start: 19 @30978 has 82 MA's), (27, 31062), (39, 31167), (41, 31206), (42, 31215),

Gene: Uzumaki_36 Start: 29214, Stop: 29453, Start Num: 19
Candidate Starts for Uzumaki_36:
(7, 29079), (10, 29166), (17, 29199), (Start: 19 @29214 has 82 MA's), (25, 29292), (38, 29394), (39, 29403),

Gene: Westerlin_39 Start: 32070, Stop: 32312, Start Num: 19
Candidate Starts for Westerlin_39:
(12, 32034), (Start: 19 @32070 has 82 MA's), (27, 32154), (39, 32259), (41, 32298), (42, 32307),

Gene: Wigberry_37 Start: 27317, Stop: 27565, Start Num: 13
Candidate Starts for Wigberry_37:
(Start: 11 @27305 has 2 MA's), (Start: 13 @27317 has 30 MA's), (30, 27452),

Gene: Xenomorph_34 Start: 27589, Stop: 27810, Start Num: 19
Candidate Starts for Xenomorph_34:
(Start: 19 @27589 has 82 MA's),

Gene: YoshiYama_37 Start: 27854, Stop: 28075, Start Num: 19
Candidate Starts for YoshiYama_37:
(Start: 19 @27854 has 82 MA's),

Gene: Zeina_38 Start: 29069, Stop: 29308, Start Num: 19
Candidate Starts for Zeina_38:
(7, 28934), (10, 29021), (17, 29054), (Start: 19 @29069 has 82 MA's), (25, 29147), (38, 29249), (39, 29258),

Gene: Zippen_40 Start: 31377, Stop: 31604, Start Num: 19
Candidate Starts for Zippen_40:
(Start: 19 @31377 has 82 MA's), (21, 31380),