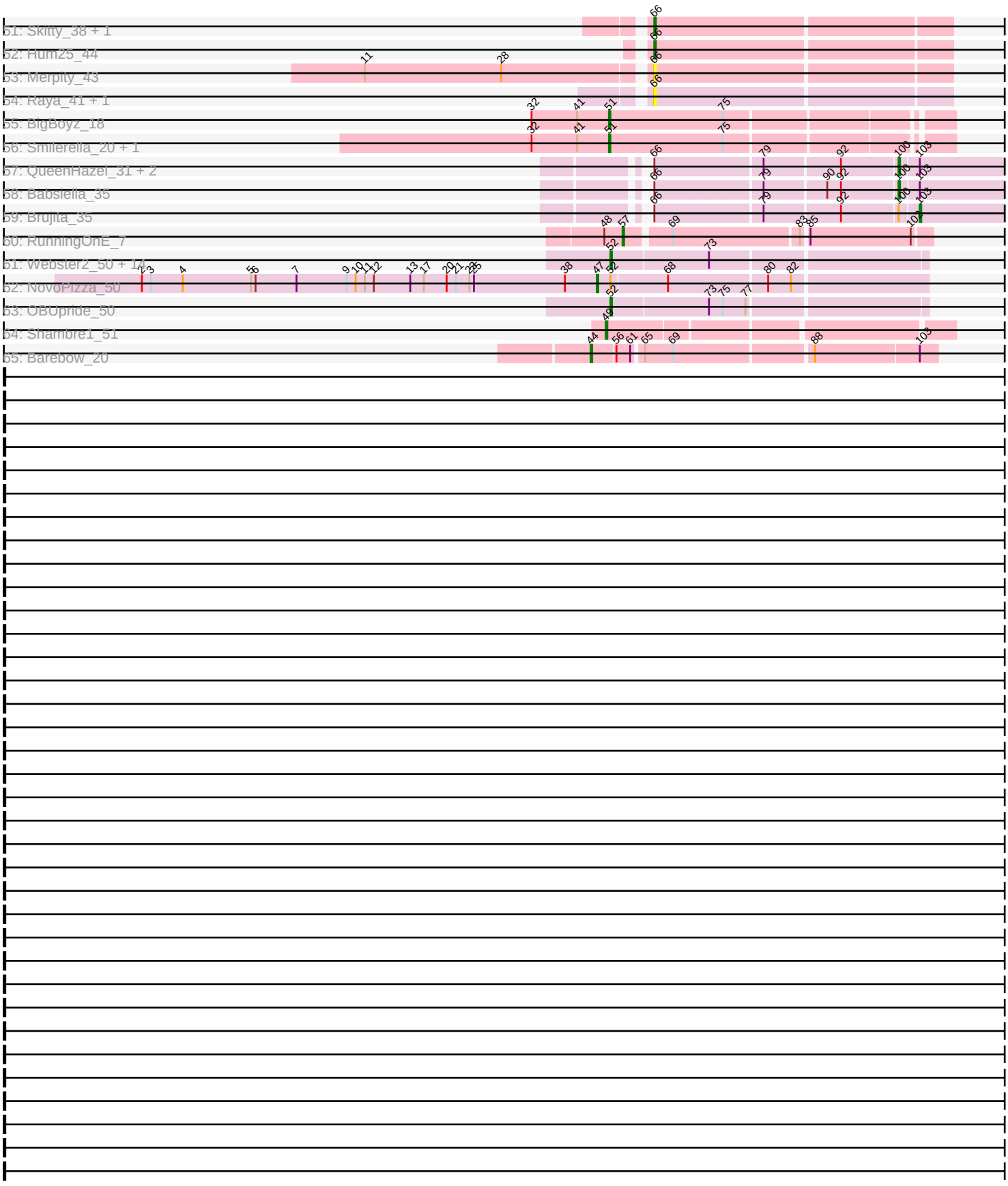
Pham 347287


1: Kimona_32
2: Mask_83 + 1
3: Don_80 + 1
4: Caterpie_88 + 1
5: WST1_38 + 1
6: Jessica_23 + 1
7: Ronnie_22 + 26
8: Taj14_22 + 2
9: StrawberryLem_19 + 2
10: Blair_22 + 5
11: Kels_19
12: FirePit_19 + 1
13: Vinye_24
14: ElectricPheel_23
15: Eyoseyas_19
16: PhirstandPhine_41 + 14
17: OtsoOtso_40 + 2
18: Daob_41
19: SPB78_44
20: Spooks_12
21: Success_12
22: SFuller_93
23: OmaThurman_37
24: ZAYM_43
25: Bunker_39
26: PatriciaStar_40
27: Ashertheman_54 + 1
28: Bibwit_53
29: Chickadee_51 + 1
30: EdmundFerry_50 + 2
31: Dexdert_52
32: GTE6_51
33: Tiamocell_52
34: APunk_56 + 4
35: ViaConiectus_55 + 1
36: Forza_191 + 1
37: Boopy_191 + 1
38: GMA2_95
39: Dogfish_34
40: Nycelrae_38
41: Daenerys_39 + 25
42: WorldChangers_18
43: Berka_22
44: Yavru_16 + 2
45: Noely_18
46: Whytu_16
47: BlueFeather_20
48: Guinevere_44 + 11
49: Julie_41
50: MrSmee_43

Pham 347287


51: Skitty_38 + 1
52: Hum25_44
53: Merpity_43
54: Raya_41 + 1
55: BigBoyz_18
56: Smilerella_20 + 1
57: QueenHazel_31 + 2
58: Babsiella_35
59: Brujita_35
60: RunningOnE_7
61: Webster2_50 + 1
62: NovoPizza_50
63: OBUpride_50
64: Shambre1_51
65: Barebow_20

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 347287 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347287 has 190 members, 18 are drafts.

Phages represented in each track:
• Track 1 : Kimona_32
• Track 2 : Mask_83, JohnLord_83
• Track 3 : Dori_80, Mao1_82
• Track 4 : Caterpie_88, Sejanus_84
• Track 5 : WST1_38, IdentityCrisis_37
• Track 6 : Jessica_23, Decurro_22
• Track 7 : Ronnie_22, Inspire2_22, Muttlie_22, Guntur_22, Sandman_22, Azathoth_22, Courtney3_22, CGermain_22, Stratus_22, Massimo_22, Maggie_22, Hunnie_22, Link_22, Seume_22, Toulouse_21, Prospero_22, TymAbreu_22, LouisXIV_22, Yank_22, Dewayne_22, Copper_22, Arby_22, Moloch_22, Chestnut_22, TinoCrisci_22, Mariposa_22, Sourignavong_23
• Track 8 : Taj14_22, Saphira_23, Swenson_22
• Track 9 : StrawberryLem_19, SerialPhiller_19, Arielagos_19
• Track 10 : Blair_22, KylieMac_23, Elkhorn_22, StewieGriff_22, Lore_22, Laila_24
• Track 11 : Kels_19
• Track 12 : FirePit_19, Ximeno_19
• Track 13 : Vinye_24
• Track 14 : ElectricPheel_23
• Track 15 : Eyoseyas_19
• Track 16 : PhirstandPhine_41, Amelia_39, Bedetta_44, Colusalem_40, GramZayde_41, Coral_39, Kepler_41, HannahPhantana_40, Melons_41, Pineda_41, Lunar_41, Damocles_43, Jerole_40, Bibble12_43, Cote_41
• Track 17 : OtsoOtso_40, BadWillHunting_46, Polka_39
• Track 18 : Daob_41
• Track 19 : SPB78_44
• Track 20 : Spooks_12
• Track 21 : Success_12
• Track 22 : SFuller_93
• Track 23 : UmaThurman_37
• Track 24 : ZAYM_43
• Track 25 : Bunker_39
• Track 26 : PatriciaStar_40
• Track 27 : Ashertheman_54, Gaea_53
• Track 28 : Bibwit_53
• Track 29 : Chickadee_51, Kwekel_51
• Track 30 : EdmundFerry_50, RoadKill_49, Twonlo_49
• Track 31 : Dexdert_52

• Track 32 : GTE6_51
• Track 33 : Tiamoceli_52
• Track 34 : APunk_56, Sampson_55, Scioto_56, Natkenzie_55, Abblin_55
• Track 35 : ViaConlectus_55, Tardus_57
• Track 36 : Forza_191, BlueNGold_187
• Track 37 : Boopy_191, Mareelih_188
• Track 38 : GMA2_95
• Track 39 : Dogfish_34
• Track 40 : Nyceirae_38
• Track 41 : Daenerys_39, Inventum_39, Empress_41, Leozinho_42, Dante_40, Pollywog_41, Spoonbill_40, Job42_43, Ogopogo_43, IbOuu_42, Blexus_40, Sassafras_41, OwlsT2W_40, Veteran_40, Chuckly_41, JoeyJr_40, GUmbie_40, Royals2015_42, Tchotchke_42, Tootsieroll_44, Radiance_41, Scottish_41, Polka14_41, OlympiaSaint_40, Sandalphon_44, Eish_41
• Track 42 : WorldChangers_18
• Track 43 : Berka_22
• Track 44 : Yavru_16, Utopia_16, Piku_16
• Track 45 : Noely_18
• Track 46 : Whytu_16
• Track 47 : BlueFeather_20
• Track 48 : Guinevere_44, Ichiang_41, Obliviate_39, Zaheer_44, MillySue_43, QuinnAvery_44, GoodLuckBabe_44, Petra_40, Zarbodnamra_42, Zilla_41, Halloweekend_39, Schism_46
• Track 49 : Julie_41
• Track 50 : MrSmee_43
• Track 51 : Skitty_38, Pitbull_42
• Track 52 : Hum25_44
• Track 53 : Merpity_43
• Track 54 : Raya_41, Neroxid_41
• Track 55 : BigBoyz_18
• Track 56 : Smilerella_20, MoRicky_20
• Track 57 : QueenHazel_31, Island3_35, Xula_30
• Track 58 : Babsiella_35
• Track 59 : Brujita_35
• Track 60 : RunningOnE_7
• Track 61 : Webster2_50, Luke_50, LilHazelnut_50, Hadrien_50, BloominB_49, Gancho_49, Ubuntu_50, Forge_48, Ein37_50, Amymech_50, DeepSoil15_50, Amochick_50, Daegal_52, Evanesce_49, Kinbote_50
• Track 62 : NovoPizza_50
• Track 63 : OBUpride_50
• Track 64 : Shambre1_51
• Track 65 : Barebow_20

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

The start number called the most often in the published annotations is 40, it was called in 43 of the 172 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Arby_22, Arielagos_19, Azathoth_22, Blair_22, CGermain_22, Chestnut_22, Copper_22, Courtney3_22, Dewayne_22, ElectricPheel_23, Elkhorn_22, FirePit_19, Guntur_22, Hunnie_22, Inspire2_22, Kels_19, KylieMac_23, Laila_24, Link_22, Lore_22, LouisXIV_22, Maggie_22, Mariposa_22, Massimo_22, Moloch_22, Muttlie_22, Prospero_22, Ronnie_22, Sandman_22, Saphira_23, SerialPhiller_19, Seume_22, Sourignavong_23, StewieGriff_22, Stratus_22, StrawberryLem_19, Swenson_22, Taj14_22, TinoCrisci_22, Toulouse_21, TymAbreu_22, Ximeno_19, Yank_22,

Genes that have the "Most Annotated" start but do not call it:
• Decurro_22, Eyoseyas_19, Jessica_23,

Genes that do not have the "Most Annotated" start:
• APunk_56, Abblin_55, Amelia_39, Amochick_50, Amymech_50, Ashertheman_54, Babsiella_35, BadWillHunting_46, Barebow_20, Bedetta_44, Berka_22, Bibble12_43, Bibwit_53, BigBoyz_18, Blexus_40, BloominB_49, BlueFeather_20, BlueNGold_187, Boopy_191, Brujita_35, Bunker_39, Caterpie_88, Chickadee_51, Chuckly_41, Colusalem_40, Coral_39, Cote_41, Daegal_52, Daenerys_39, Damocles_43, Dante_40, Daob_41, DeepSoil15_50, Dexdert_52, Dogfish_34, Dori_80, EdmundFerry_50, Ein37_50, Eish_41, Empress_41, Evanesce_49, Forge_48, Forza_191, GMA2_95, GTE6_51, GUmbie_40, Gaea_53, Gancho_49, GoodLuckBabe_44, GramZayde_41, Guinevere_44, Hadrien_50, Halloweekend_39, HannahPhantana_40, Hum25_44, IbOuu_42, Ichiang_41, IdentityCrisis_37, Inventum_39, Island3_35, Jerole_40, Job42_43, JoeyJr_40, JohnLord_83, Julie_41, Kepler_41, Kimona_32, Kinbote_50, Kwekel_51, Leozinho_42, LilHazelnut_50, Luke_50, Lunar_41, Mao1_82, Mareelih_188, Mask_83, Melons_41, Merpity_43, MillySue_43, MoRicky_20, MrSmee_43, Natkenzie_55, Neroxid_41, Noely_18, NovoPizza_50, Nyceirae_38, OBUpride_50, Obliviate_39, Ogopogo_43, OlympiaSaint_40, OtsoOtso_40, OwlsT2W_40, PatriciaStar_40, Petra_40, PhirstandPhine_41, Piku_16, Pineda_41, Pitbull_42, Polka14_41, Polka_39, Pollywog_41, QueenHazel_31, QuinnAvery_44, Radiance_41, Raya_41, RoadKill_49, Royals2015_42, RunningOnE_7, SFuller_93, SPB78_44, Sampson_55, Sandalphon_44, Sassafras_41, Schism_46, Scioto_56, Scottish_41, Sejanus_84, Shambre1_51, Skitty_38, Smilerella_20, Spooks_12, Spoonbill_40, Success_12, Tardus_57, Tchotchke_42, Tiamoceli_52, Tootsieroll_44, Twonlo_49, Ubuntu_50, UmaThurman_37, Utopia_16, Veteran_40, ViaConlectus_55, Vinye_24, WST1_38, Webster2_50, Whytu_16, WorldChangers_18, Xula_30, Yavru_16, ZAYM_43, Zaheer_44, Zarbodnamra_42, Zilla_41,

Summary by start number:

Start 29:
• Found in 1 of 190 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Dogfish_34 (DT),

Start 37:
• Found in 2 of 190 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BlueFeather_20 (FE), SPB78_44 (BA),

Start 39:
• Found in 5 of 190 (2.6%) of genes in pham
• Manual Annotations of this start: 2 of 172
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Bunker_39 (DB), IdentityCrisis_37 (AJ), WST1_38 (AJ), ZAYM_43 (DB),

Start 40:
• Found in 46 of 190 (24.2%) of genes in pham
• Manual Annotations of this start: 43 of 172
• Called 93.5% of time when present
• Phage (with cluster) where this start called: Arby_22 (AN), Arielagos_19 (AN), Azathoth_22 (AN), Blair_22 (AN), CGermain_22 (AN), Chestnut_22 (AN), Copper_22 (AN), Courtney3_22 (AN), Dewayne_22 (AN), ElectricPheel_23 (AN), Elkhorn_22 (AN), FirePit_19 (AN), Guntur_22 (AN), Hunnie_22 (AN), Inspire2_22 (AN), Kels_19 (AN), KylieMac_23 (AN), Laila_24 (AN), Link_22 (AN), Lore_22 (AN), LouisXIV_22 (AN), Maggie_22 (AN), Mariposa_22 (AN), Massimo_22 (AN), Moloch_22 (AN), Muttlie_22 (AN), Prospero_22 (AN), Ronnie_22 (AN), Sandman_22 (AN), Saphira_23 (AN), SerialPhiller_19 (AN), Seume_22 (AN), Sourignavong_23 (AN), StewieGriff_22 (AN), Stratus_22 (AN), StrawberryLem_19 (AN), Swenson_22 (AN), Taj14_22 (AN), TinoCrisci_22 (AN), Toulouse_21 (AN), TymAbreu_22 (AN), Ximeno_19 (AN), Yank_22 (AN),

Start 41:
• Found in 6 of 190 (3.2%) of genes in pham
• Manual Annotations of this start: 3 of 172
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Berka_22 (FE), Dori_80 (AD), Mao1_82 (AD),

Start 43:
• Found in 2 of 190 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Caterpie_88 (AD), Sejanus_84 (AD),

Start 44:
• Found in 1 of 190 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Barebow_20 (singleton),

Start 45:
• Found in 1 of 190 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Nyceirae_38 (DT),

Start 46:
• Found in 14 of 190 (7.4%) of genes in pham
• Manual Annotations of this start: 14 of 172
• Called 100.0% of time when present

• Phage (with cluster) where this start called: GoodLuckBabe_44 (FF), Guinevere_44 (FF), Halloweekend_39 (FF), Ichiang_41 (FF), Julie_41 (FF), MillySue_43 (FF), Obliviate_39 (CV), Petra_40 (CV), QuinnAvery_44 (FF), Schism_46 (FF), UmaThurman_37 (CV), Zaheer_44 (FF), Zarbodnamra_42 (CV), Zilla_41 (CV),

Start 47:
• Found in 1 of 190 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: NovoPizza_50 (Q),

Start 48:
• Found in 3 of 190 (1.6%) of genes in pham
• No Manual Annotations of this start.
• Called 33.3% of time when present
• Phage (with cluster) where this start called: WorldChangers_18 (FE),

Start 49:
• Found in 3 of 190 (1.6%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 66.7% of time when present
• Phage (with cluster) where this start called: PatriciaStar_40 (DB), Shambre1_51 (singleton),

Start 50:
• Found in 6 of 190 (3.2%) of genes in pham
• Manual Annotations of this start: 3 of 172
• Called 50.0% of time when present
• Phage (with cluster) where this start called: EdmundFerry_50 (DE3), RoadKill_49 (DE3), Twonlo_49 (DE3),

Start 51:
• Found in 3 of 190 (1.6%) of genes in pham
• Manual Annotations of this start: 3 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BigBoyz_18 (GH), MoRicky_20 (GH), Smilerella_20 (GH),

Start 52:
• Found in 17 of 190 (8.9%) of genes in pham
• Manual Annotations of this start: 16 of 172
• Called 94.1% of time when present
• Phage (with cluster) where this start called: Amochick_50 (Q), Amymech_50 (Q), BloominB_49 (Q), Daegal_52 (Q), DeepSoil15_50 (Q), Ein37_50 (Q), Evanesce_49 (Q), Forge_48 (Q), Gancho_49 (Q), Hadrien_50 (Q), Kinbote_50 (Q), LilHazelnut_50 (Q), Luke_50 (Q), OBUpride_50 (Q), Ubuntu_50 (Q), Webster2_50 (Q),

Start 53:
• Found in 1 of 190 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Spooks_12 (BT),

Start 55:
• Found in 47 of 190 (24.7%) of genes in pham
• Manual Annotations of this start: 3 of 172
• Called 8.5% of time when present
• Phage (with cluster) where this start called: Decurro_22 (AN), Eyoseyas_19 (AN), Jessica_23 (AN), Vinye_24 (AN),

Start 57:
• Found in 13 of 190 (6.8%) of genes in pham
• Manual Annotations of this start: 8 of 172
• Called 69.2% of time when present
• Phage (with cluster) where this start called: Ashertheman_54 (DE1), Bibwit_53 (DE1), Chickadee_51 (DE3), Dexdert_52 (DE3), GTE6_51 (DE3), Gaea_53 (DE1), Kwekel_51 (DE3), RunningOnE_7 (JN), Tiamoceli_52 (DE3),

Start 58:
• Found in 29 of 190 (15.3%) of genes in pham
• Manual Annotations of this start: 28 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Blexus_40 (F1), Chuckly_41 (F1), Daenerys_39 (F1), Dante_40 (F1), Eish_41 (F1), Empress_41 (F1), GUmbie_40 (F1), IbOuu_42 (F1), Inventum_39 (F1), Job42_43 (F1), JoeyJr_40 (F1), JohnLord_83 (AD), Leozinho_42 (F1), Mask_83 (AD), Ogopogo_43 (F1), OlympiaSaint_40 (F1), OwlsT2W_40 (F1), Polka14_41 (F1), Pollywog_41 (F1), Radiance_41 (F1), Royals2015_42 (F1), SFuller_93 (CF), Sandalphon_44 (F1), Sassafras_41 (F1), Scottish_41 (F1), Spoonbill_40 (F1), Tchotchke_42 (F1), Tootsieroll_44 (F1), Veteran_40 (F1),

Start 59:
• Found in 1 of 190 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Noely_18 (FE),

Start 60:
• Found in 21 of 190 (11.1%) of genes in pham
• Manual Annotations of this start: 15 of 172
• Called 95.2% of time when present
• Phage (with cluster) where this start called: Amelia_39 (AS2), BadWillHunting_46 (AS2), Bedetta_44 (AS2), Bibble12_43 (AS2), Colusalem_40 (AS2), Coral_39 (AS2), Cote_41 (AS2), Damocles_43 (AS2), Daob_41 (AS2), GramZayde_41 (AS2), HannahPhantana_40 (AS2), Jerole_40 (AS2), Kepler_41 (AS2), Lunar_41 (AS2), Melons_41 (AS2), OtsoOtso_40 (AS2), PhirstandPhine_41 (AS2), Pineda_41 (AS2), Polka_39 (AS2), Success_12 (BT),

Start 62:
• Found in 1 of 190 (0.5%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GMA2_95 (DS),

Start 63:
• Found in 8 of 190 (4.2%) of genes in pham

• Manual Annotations of this start: 7 of 172
• Called 87.5% of time when present
• Phage (with cluster) where this start called: APunk_56 (DE4), Abblin_55 (DE4), Natkenzie_55 (DE4), Sampson_55 (DE4), Scioto_56 (DE4), Tardus_57 (DE4), ViaConlectus_55 (DE4),

Start 66:
• Found in 20 of 190 (10.5%) of genes in pham
• Manual Annotations of this start: 6 of 172
• Called 45.0% of time when present
• Phage (with cluster) where this start called: Boopy_191 (DS), Hum25_44 (FQ1), Mareelih_188 (DS), Merpity_43 (FQ1), MrSmee_43 (FQ1), Neroxid_41 (FQ2), Pitbull_42 (FQ1), Raya_41 (FQ2), Skitty_38 (FQ1),

Start 68:
• Found in 2 of 190 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Kimona_32 (A19),

Start 69:
• Found in 34 of 190 (17.9%) of genes in pham
• Manual Annotations of this start: 2 of 172
• Called 5.9% of time when present
• Phage (with cluster) where this start called: BlueNGold_187 (DS), Forza_191 (DS),

Start 70:
• Found in 6 of 190 (3.2%) of genes in pham
• Manual Annotations of this start: 4 of 172
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Piku_16 (FE), Utopia_16 (FE), Whytu_16 (FE), Yavru_16 (FE),

Start 100:
• Found in 33 of 190 (17.4%) of genes in pham
• Manual Annotations of this start: 4 of 172
• Called 12.1% of time when present
• Phage (with cluster) where this start called: Babsiella_35 (I1), Island3_35 (I1), QueenHazel_31 (I1), Xula_30 (I1),

Start 103:
• Found in 10 of 190 (5.3%) of genes in pham
• Manual Annotations of this start: 1 of 172
• Called 10.0% of time when present
• Phage (with cluster) where this start called: Brujita_35 (I1),

Summary by clusters:

There are 25 clusters represented in this pham: singleton, BA, DB, BT, JN, FE, FF, DT, DS, I1, A19, AS2, AD, AJ, CF, AN, Q, CV, GH, F1, DE1, DE3, DE4, FQ2, FQ1,

Info for manual annotations of cluster A19:
•Start number 68 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster AD:
•Start number 41 was manually annotated 2 times for cluster AD.
•Start number 43 was manually annotated 1 time for cluster AD.
•Start number 58 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster AJ:
•Start number 39 was manually annotated 1 time for cluster AJ.

Info for manual annotations of cluster AN:
•Start number 40 was manually annotated 43 times for cluster AN.
•Start number 55 was manually annotated 3 times for cluster AN.

Info for manual annotations of cluster AS2:
•Start number 60 was manually annotated 14 times for cluster AS2.

Info for manual annotations of cluster BT:
•Start number 53 was manually annotated 1 time for cluster BT.
•Start number 60 was manually annotated 1 time for cluster BT.

Info for manual annotations of cluster CF:
•Start number 58 was manually annotated 1 time for cluster CF.

Info for manual annotations of cluster CV:
•Start number 46 was manually annotated 5 times for cluster CV.

Info for manual annotations of cluster DB:
•Start number 39 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DE1:
•Start number 57 was manually annotated 3 times for cluster DE1.

Info for manual annotations of cluster DE3:
•Start number 50 was manually annotated 3 times for cluster DE3.
•Start number 57 was manually annotated 4 times for cluster DE3.

Info for manual annotations of cluster DE4:
•Start number 63 was manually annotated 7 times for cluster DE4.

Info for manual annotations of cluster DS:
•Start number 66 was manually annotated 2 times for cluster DS.
•Start number 69 was manually annotated 2 times for cluster DS.

Info for manual annotations of cluster DT:
•Start number 29 was manually annotated 1 time for cluster DT.
•Start number 45 was manually annotated 1 time for cluster DT.

Info for manual annotations of cluster F1:
•Start number 58 was manually annotated 26 times for cluster F1.

Info for manual annotations of cluster FE:
•Start number 37 was manually annotated 1 time for cluster FE.

•Start number 41 was manually annotated 1 time for cluster FE.
•Start number 59 was manually annotated 1 time for cluster FE.
•Start number 70 was manually annotated 4 times for cluster FE.

Info for manual annotations of cluster FF:
•Start number 46 was manually annotated 9 times for cluster FF.

Info for manual annotations of cluster FQ1:
•Start number 66 was manually annotated 4 times for cluster FQ1.

Info for manual annotations of cluster GH:
•Start number 51 was manually annotated 3 times for cluster GH.

Info for manual annotations of cluster I1:
•Start number 100 was manually annotated 4 times for cluster I1.
•Start number 103 was manually annotated 1 time for cluster I1.

Info for manual annotations of cluster JN:
•Start number 57 was manually annotated 1 time for cluster JN.

Info for manual annotations of cluster Q:
•Start number 47 was manually annotated 1 time for cluster Q.
•Start number 52 was manually annotated 16 times for cluster Q.

Gene Information:

Gene: APunk_56 Start: 45016, Stop: 45216, Start Num: 63
Candidate Starts for APunk_56:
(Start: 63 @45016 has 7 MA's), (79, 45094), (93, 45148),

Gene: Abblin_55 Start: 45502, Stop: 45702, Start Num: 63
Candidate Starts for Abblin_55:
(Start: 63 @45502 has 7 MA's), (79, 45580), (93, 45634),

Gene: Amelia_39 Start: 24861, Stop: 25067, Start Num: 60
Candidate Starts for Amelia_39:
(22, 24756), (Start: 60 @24861 has 15 MA's), (Start: 69 @24891 has 2 MA's), (73, 24915), (78, 24942),

Gene: Amochick_50 Start: 36955, Stop: 37152, Start Num: 52
Candidate Starts for Amochick_50:
(Start: 52 @36955 has 16 MA's), (73, 37018),

Gene: Amymech_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Amymech_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Arby_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Arby_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Arielagos_19 Start: 13063, Stop: 13281, Start Num: 40
Candidate Starts for Arielagos_19:
(Start: 40 @13063 has 43 MA's), (Start: 55 @13090 has 3 MA's), (76, 13159),

Gene: Ashertheman_54 Start: 44467, Stop: 44664, Start Num: 57
Candidate Starts for Ashertheman_54:
(1, 44074), (35, 44416), (Start: 57 @44467 has 8 MA's), (77, 44548), (86, 44587), (Start: 103 @44650 has 1 MA's),

Gene: Azathoth_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Azathoth_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Babsiella_35 Start: 28713, Stop: 28880, Start Num: 100
Candidate Starts for Babsiella_35:
(Start: 66 @28563 has 6 MA's), (79, 28629), (90, 28668), (92, 28677), (Start: 100 @28713 has 4 MA's), (Start: 103 @28725 has 1 MA's),

Gene: BadWillHunting_46 Start: 25340, Stop: 25546, Start Num: 60
Candidate Starts for BadWillHunting_46:
(Start: 60 @25340 has 15 MA's), (Start: 69 @25370 has 2 MA's), (73, 25394), (78, 25421),

Gene: Barebow_20 Start: 15759, Stop: 15971, Start Num: 44
Candidate Starts for Barebow_20:
(Start: 44 @15759 has 1 MA's), (56, 15774), (61, 15783), (65, 15789), (Start: 69 @15807 has 2 MA's), (88, 15894), (Start: 103 @15960 has 1 MA's),

Gene: Bedetta_44 Start: 25008, Stop: 25214, Start Num: 60
Candidate Starts for Bedetta_44:
(22, 24903), (Start: 60 @25008 has 15 MA's), (Start: 69 @25038 has 2 MA's), (73, 25062), (78, 25089),

Gene: Berka_22 Start: 13026, Stop: 13250, Start Num: 41
Candidate Starts for Berka_22:
(14, 12918), (24, 12957), (Start: 41 @13026 has 3 MA's), (48, 13044), (Start: 63 @13068 has 7 MA's), (73, 13113), (94, 13206), (101, 13233), (Start: 103 @13239 has 1 MA's),

Gene: Bibble12_43 Start: 24856, Stop: 25062, Start Num: 60
Candidate Starts for Bibble12_43:
(22, 24751), (Start: 60 @24856 has 15 MA's), (Start: 69 @24886 has 2 MA's), (73, 24910), (78, 24937),

Gene: Bibwit_53 Start: 43981, Stop: 44178, Start Num: 57
Candidate Starts for Bibwit_53:
(35, 43930), (Start: 57 @43981 has 8 MA's), (77, 44062), (86, 44101), (Start: 103 @44164 has 1 MA's),

Gene: BigBoyz_18 Start: 13745, Stop: 13954, Start Num: 51
Candidate Starts for BigBoyz_18:
(32, 13694), (Start: 41 @13724 has 3 MA's), (Start: 51 @13745 has 3 MA's), (75, 13820),

Gene: Blair_22 Start: 13883, Stop: 14116, Start Num: 40
Candidate Starts for Blair_22:

(Start: 40 @13883 has 43 MA's), (Start: 55 @13910 has 3 MA's), (72, 13964), (74, 13970), (77, 13991), (97, 14078),

Gene: Blexus_40 Start: 31585, Stop: 31391, Start Num: 58
Candidate Starts for Blexus_40:
(Start: 58 @31585 has 28 MA's), (79, 31498), (95, 31438), (Start: 100 @31417 has 4 MA's),

Gene: BloominB_49 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for BloominB_49:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: BlueFeather_20 Start: 14165, Stop: 14407, Start Num: 37
Candidate Starts for BlueFeather_20:
(Start: 37 @14165 has 1 MA's), (42, 14177), (Start: 50 @14195 has 3 MA's),

Gene: BlueNGold_187 Start: 109354, Stop: 109548, Start Num: 69
Candidate Starts for BlueNGold_187:
(Start: 66 @109342 has 6 MA's), (Start: 69 @109354 has 2 MA's), (77, 109402), (89, 109447),

Gene: Boopy_191 Start: 109353, Stop: 109559, Start Num: 66
Candidate Starts for Boopy_191:
(Start: 66 @109353 has 6 MA's), (Start: 69 @109365 has 2 MA's), (77, 109413), (89, 109458),

Gene: Brujita_35 Start: 29623, Stop: 29778, Start Num: 103
Candidate Starts for Brujita_35:
(Start: 66 @29461 has 6 MA's), (79, 29527), (92, 29575), (Start: 100 @29611 has 4 MA's), (Start: 103 @29623 has 1 MA's),

Gene: Bunker_39 Start: 31881, Stop: 32090, Start Num: 39
Candidate Starts for Bunker_39:
(31, 31854), (Start: 39 @31881 has 2 MA's), (99, 32055),

Gene: CGermain_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for CGermain_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Caterpie_88 Start: 56710, Stop: 56919, Start Num: 43
Candidate Starts for Caterpie_88:
(19, 56611), (27, 56650), (Start: 43 @56710 has 1 MA's), (98, 56887),

Gene: Chestnut_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Chestnut_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Chickadee_51 Start: 41286, Stop: 41495, Start Num: 57
Candidate Starts for Chickadee_51:
(Start: 57 @41286 has 8 MA's), (Start: 69 @41319 has 2 MA's), (79, 41376), (81, 41391), (84, 41403), (93, 41430),

Gene: Chuckly_41 Start: 31551, Stop: 31357, Start Num: 58
Candidate Starts for Chuckly_41:

(Start: 58 @31551 has 28 MA's), (79, 31464), (95, 31404), (Start: 100 @31383 has 4 MA's),

Gene: Colusalem_40 Start: 24838, Stop: 25044, Start Num: 60
Candidate Starts for Colusalem_40:
(22, 24733), (Start: 60 @24838 has 15 MA's), (Start: 69 @24868 has 2 MA's), (73, 24892), (78, 24919),

Gene: Copper_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Copper_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Coral_39 Start: 24709, Stop: 24915, Start Num: 60
Candidate Starts for Coral_39:
(22, 24604), (Start: 60 @24709 has 15 MA's), (Start: 69 @24739 has 2 MA's), (73, 24763), (78, 24790),

Gene: Cote_41 Start: 25186, Stop: 25392, Start Num: 60
Candidate Starts for Cote_41:
(22, 25081), (Start: 60 @25186 has 15 MA's), (Start: 69 @25216 has 2 MA's), (73, 25240), (78, 25267),

Gene: Courtney3_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Courtney3_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Daegal_52 Start: 37533, Stop: 37730, Start Num: 52
Candidate Starts for Daegal_52:
(Start: 52 @37533 has 16 MA's), (73, 37596),

Gene: Daenerys_39 Start: 31164, Stop: 30970, Start Num: 58
Candidate Starts for Daenerys_39:
(Start: 58 @31164 has 28 MA's), (79, 31077), (95, 31017), (Start: 100 @30996 has 4 MA's),

Gene: Damocles_43 Start: 24997, Stop: 25203, Start Num: 60
Candidate Starts for Damocles_43:
(22, 24892), (Start: 60 @24997 has 15 MA's), (Start: 69 @25027 has 2 MA's), (73, 25051), (78, 25078),

Gene: Dante_40 Start: 31281, Stop: 31087, Start Num: 58
Candidate Starts for Dante_40:
(Start: 58 @31281 has 28 MA's), (79, 31194), (95, 31134), (Start: 100 @31113 has 4 MA's),

Gene: Daob_41 Start: 25194, Stop: 25400, Start Num: 60
Candidate Starts for Daob_41:
(Start: 60 @25194 has 15 MA's), (Start: 69 @25224 has 2 MA's), (73, 25248), (78, 25275),

Gene: Decurro_22 Start: 13881, Stop: 14087, Start Num: 55
Candidate Starts for Decurro_22:
(Start: 40 @13854 has 43 MA's), (Start: 55 @13881 has 3 MA's), (77, 13962), (97, 14049), (104, 14076),

Gene: DeepSoil15_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for DeepSoil15_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Dewayne_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Dewayne_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Dexdert_52 Start: 41572, Stop: 41766, Start Num: 57
Candidate Starts for Dexdert_52:
(Start: 57 @41572 has 8 MA's), (75, 41638), (77, 41653), (84, 41689), (86, 41692),

Gene: Dogfish_34 Start: 29638, Stop: 29883, Start Num: 29
Candidate Starts for Dogfish_34:
(Start: 29 @29638 has 1 MA's), (Start: 39 @29674 has 2 MA's), (77, 29776),

Gene: Dori_80 Start: 57490, Stop: 57729, Start Num: 41
Candidate Starts for Dori_80:
(Start: 41 @57490 has 3 MA's), (64, 57523), (98, 57673),

Gene: EdmundFerry_50 Start: 41346, Stop: 41549, Start Num: 50
Candidate Starts for EdmundFerry_50:
(Start: 50 @41346 has 3 MA's), (Start: 57 @41355 has 8 MA's), (Start: 69 @41385 has 2 MA's), (80, 41445), (81, 41457),

Gene: Ein37_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Ein37_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Eish_41 Start: 31869, Stop: 31675, Start Num: 58
Candidate Starts for Eish_41:
(Start: 58 @31869 has 28 MA's), (79, 31782), (95, 31722), (Start: 100 @31701 has 4 MA's),

Gene: ElectricPheel_23 Start: 13927, Stop: 14160, Start Num: 40
Candidate Starts for ElectricPheel_23:
(Start: 40 @13927 has 43 MA's), (Start: 55 @13954 has 3 MA's), (77, 14035), (97, 14122), (104, 14149),

Gene: Elkhorn_22 Start: 13883, Stop: 14116, Start Num: 40
Candidate Starts for Elkhorn_22:
(Start: 40 @13883 has 43 MA's), (Start: 55 @13910 has 3 MA's), (72, 13964), (74, 13970), (77, 13991), (97, 14078),

Gene: Empress_41 Start: 32577, Stop: 32383, Start Num: 58
Candidate Starts for Empress_41:
(Start: 58 @32577 has 28 MA's), (79, 32490), (95, 32430), (Start: 100 @32409 has 4 MA's),

Gene: Evanesce_49 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Evanesce_49:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Eyoseyas_19 Start: 13090, Stop: 13281, Start Num: 55
Candidate Starts for Eyoseyas_19:
(Start: 40 @13063 has 43 MA's), (Start: 55 @13090 has 3 MA's), (76, 13159),

Gene: FirePit_19 Start: 13076, Stop: 13294, Start Num: 40

Candidate Starts for FirePit_19:
(Start: 40 @13076 has 43 MA's), (Start: 55 @13103 has 3 MA's), (76, 13172),

Gene: Forge_48 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Forge_48:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Forza_191 Start: 109282, Stop: 109476, Start Num: 69
Candidate Starts for Forza_191:
(Start: 66 @109270 has 6 MA's), (Start: 69 @109282 has 2 MA's), (77, 109330), (89, 109375),

Gene: GMA2_95 Start: 87367, Stop: 87170, Start Num: 62
Candidate Starts for GMA2_95:
(62, 87367), (Start: 69 @87349 has 2 MA's),

Gene: GTE6_51 Start: 41823, Stop: 42017, Start Num: 57
Candidate Starts for GTE6_51:
(Start: 50 @41814 has 3 MA's), (Start: 57 @41823 has 8 MA's), (Start: 69 @41853 has 2 MA's), (80, 41913), (81, 41925),

Gene: GUmbie_40 Start: 31183, Stop: 30989, Start Num: 58
Candidate Starts for GUmbie_40:
(Start: 58 @31183 has 28 MA's), (79, 31096), (95, 31036), (Start: 100 @31015 has 4 MA's),

Gene: Gaea_53 Start: 43767, Stop: 43964, Start Num: 57
Candidate Starts for Gaea_53:
(1, 43374), (35, 43716), (Start: 57 @43767 has 8 MA's), (77, 43848), (86, 43887), (Start: 103 @43950 has 1 MA's),

Gene: Gancho_49 Start: 36672, Stop: 36869, Start Num: 52
Candidate Starts for Gancho_49:
(Start: 52 @36672 has 16 MA's), (73, 36735),

Gene: GoodLuckBabe_44 Start: 30575, Stop: 30790, Start Num: 46
Candidate Starts for GoodLuckBabe_44:
(Start: 46 @30575 has 14 MA's),

Gene: GramZayde_41 Start: 25022, Stop: 25228, Start Num: 60
Candidate Starts for GramZayde_41:
(22, 24917), (Start: 60 @25022 has 15 MA's), (Start: 69 @25052 has 2 MA's), (73, 25076), (78, 25103),

Gene: Guinevere_44 Start: 30166, Stop: 30381, Start Num: 46
Candidate Starts for Guinevere_44:
(Start: 46 @30166 has 14 MA's),

Gene: Guntur_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Guntur_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Hadrien_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Hadrien_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Halloweekend_39 Start: 29574, Stop: 29789, Start Num: 46
Candidate Starts for Halloweekend_39:
(Start: 46 @29574 has 14 MA's),

Gene: HannahPhantana_40 Start: 24856, Stop: 25062, Start Num: 60
Candidate Starts for HannahPhantana_40:
(22, 24751), (Start: 60 @24856 has 15 MA's), (Start: 69 @24886 has 2 MA's), (73, 24910), (78, 24937),

Gene: Hum25_44 Start: 27639, Stop: 27827, Start Num: 66
Candidate Starts for Hum25_44:
(Start: 66 @27639 has 6 MA's),

Gene: Hunnie_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Hunnie_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: IbOuu_42 Start: 31738, Stop: 31544, Start Num: 58
Candidate Starts for IbOuu_42:
(Start: 58 @31738 has 28 MA's), (79, 31651), (95, 31591), (Start: 100 @31570 has 4 MA's),

Gene: Ichiang_41 Start: 29593, Stop: 29808, Start Num: 46
Candidate Starts for Ichiang_41:
(Start: 46 @29593 has 14 MA's),

Gene: IdentityCrisis_37 Start: 27479, Stop: 27703, Start Num: 39
Candidate Starts for IdentityCrisis_37:
(Start: 39 @27479 has 2 MA's),

Gene: Inspire2_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Inspire2_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Inventum_39 Start: 31844, Stop: 31650, Start Num: 58
Candidate Starts for Inventum_39:
(Start: 58 @31844 has 28 MA's), (79, 31757), (95, 31697), (Start: 100 @31676 has 4 MA's),

Gene: Island3_35 Start: 29611, Stop: 29778, Start Num: 100
Candidate Starts for Island3_35:
(Start: 66 @29461 has 6 MA's), (79, 29527), (92, 29575), (Start: 100 @29611 has 4 MA's), (Start: 103 @29623 has 1 MA's),

Gene: Jerole_40 Start: 24980, Stop: 25186, Start Num: 60
Candidate Starts for Jerole_40:
(22, 24875), (Start: 60 @24980 has 15 MA's), (Start: 69 @25010 has 2 MA's), (73, 25034), (78, 25061),

Gene: Jessica_23 Start: 13913, Stop: 14119, Start Num: 55
Candidate Starts for Jessica_23:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Job42_43 Start: 33160, Stop: 32966, Start Num: 58
Candidate Starts for Job42_43:
(Start: 58 @33160 has 28 MA's), (79, 33073), (95, 33013), (Start: 100 @32992 has 4 MA's),

Gene: JoeyJr_40 Start: 31332, Stop: 31138, Start Num: 58
Candidate Starts for JoeyJr_40:
(Start: 58 @31332 has 28 MA's), (79, 31245), (95, 31185), (Start: 100 @31164 has 4 MA's),

Gene: JohnLord_83 Start: 55802, Stop: 56005, Start Num: 58
Candidate Starts for JohnLord_83:
(27, 55715), (Start: 58 @55802 has 28 MA's), (98, 55967),

Gene: Julie_41 Start: 30591, Stop: 30806, Start Num: 46
Candidate Starts for Julie_41:
(Start: 46 @30591 has 14 MA's), (67, 30624), (Start: 70 @30636 has 4 MA's), (74, 30657),

Gene: Kels_19 Start: 13001, Stop: 13219, Start Num: 40
Candidate Starts for Kels_19:
(Start: 40 @13001 has 43 MA's), (Start: 55 @13028 has 3 MA's), (75, 13091), (101, 13202),

Gene: Kepler_41 Start: 25604, Stop: 25810, Start Num: 60
Candidate Starts for Kepler_41:
(22, 25499), (Start: 60 @25604 has 15 MA's), (Start: 69 @25634 has 2 MA's), (73, 25658), (78, 25685),

Gene: Kimona_32 Start: 25489, Stop: 25322, Start Num: 68
Candidate Starts for Kimona_32:
(Start: 68 @25489 has 1 MA's), (77, 25438), (Start: 100 @25348 has 4 MA's),

Gene: Kinbote_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Kinbote_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Kwekel_51 Start: 41247, Stop: 41456, Start Num: 57
Candidate Starts for Kwekel_51:
(Start: 57 @41247 has 8 MA's), (Start: 69 @41280 has 2 MA's), (79, 41337), (81, 41352), (84, 41364), (93, 41391),

Gene: KylieMac_23 Start: 13870, Stop: 14103, Start Num: 40
Candidate Starts for KylieMac_23:
(Start: 40 @13870 has 43 MA's), (Start: 55 @13897 has 3 MA's), (72, 13951), (74, 13957), (77, 13978), (97, 14065),

Gene: Laila_24 Start: 13883, Stop: 14116, Start Num: 40
Candidate Starts for Laila_24:
(Start: 40 @13883 has 43 MA's), (Start: 55 @13910 has 3 MA's), (72, 13964), (74, 13970), (77, 13991), (97, 14078),

Gene: Leozinho_42 Start: 31585, Stop: 31391, Start Num: 58
Candidate Starts for Leozinho_42:
(Start: 58 @31585 has 28 MA's), (79, 31498), (95, 31438), (Start: 100 @31417 has 4 MA's),

Gene: LilHazelnut_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for LilHazelnut_50:

(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Link_22 Start: 13851, Stop: 14084, Start Num: 40
Candidate Starts for Link_22:
(Start: 40 @13851 has 43 MA's), (Start: 55 @13878 has 3 MA's), (77, 13959), (97, 14046), (104, 14073),

Gene: Lore_22 Start: 13883, Stop: 14116, Start Num: 40
Candidate Starts for Lore_22:
(Start: 40 @13883 has 43 MA's), (Start: 55 @13910 has 3 MA's), (72, 13964), (74, 13970), (77, 13991), (97, 14078),

Gene: LouisXIV_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for LouisXIV_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Luke_50 Start: 36904, Stop: 37101, Start Num: 52
Candidate Starts for Luke_50:
(Start: 52 @36904 has 16 MA's), (73, 36967),

Gene: Lunar_41 Start: 25520, Stop: 25726, Start Num: 60
Candidate Starts for Lunar_41:
(22, 25415), (Start: 60 @25520 has 15 MA's), (Start: 69 @25550 has 2 MA's), (73, 25574), (78, 25601),

Gene: Maggie_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Maggie_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Mao1_82 Start: 56379, Stop: 56618, Start Num: 41
Candidate Starts for Mao1_82:
(Start: 41 @56379 has 3 MA's), (64, 56412), (98, 56562),

Gene: Mareelih_188 Start: 108788, Stop: 108994, Start Num: 66
Candidate Starts for Mareelih_188:
(Start: 66 @108788 has 6 MA's), (Start: 69 @108800 has 2 MA's), (77, 108848), (89, 108893),

Gene: Mariposa_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Mariposa_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Mask_83 Start: 58809, Stop: 59012, Start Num: 58
Candidate Starts for Mask_83:
(27, 58722), (Start: 58 @58809 has 28 MA's), (98, 58974),

Gene: Massimo_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Massimo_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Melons_41 Start: 25334, Stop: 25540, Start Num: 60

Candidate Starts for Melons_41:
(22, 25229), (Start: 60 @25334 has 15 MA's), (Start: 69 @25364 has 2 MA's), (73, 25388), (78, 25415),

Gene: Merpity_43 Start: 28039, Stop: 28227, Start Num: 66
Candidate Starts for Merpity_43:
(11, 27859), (28, 27949), (Start: 66 @28039 has 6 MA's),

Gene: MillySue_43 Start: 30420, Stop: 30635, Start Num: 46
Candidate Starts for MillySue_43:
(Start: 46 @30420 has 14 MA's),

Gene: MoRicky_20 Start: 14364, Stop: 14573, Start Num: 51
Candidate Starts for MoRicky_20:
(32, 14313), (Start: 41 @14343 has 3 MA's), (Start: 51 @14364 has 3 MA's), (75, 14439),

Gene: Moloch_22 Start: 13960, Stop: 14193, Start Num: 40
Candidate Starts for Moloch_22:
(Start: 40 @13960 has 43 MA's), (Start: 55 @13987 has 3 MA's), (77, 14068), (97, 14155), (104, 14182),

Gene: MrSmee_43 Start: 28469, Stop: 28657, Start Num: 66
Candidate Starts for MrSmee_43:
(Start: 66 @28469 has 6 MA's),

Gene: Muttlie_22 Start: 13854, Stop: 14087, Start Num: 40
Candidate Starts for Muttlie_22:
(Start: 40 @13854 has 43 MA's), (Start: 55 @13881 has 3 MA's), (77, 13962), (97, 14049), (104, 14076),

Gene: Natkenzie_55 Start: 45502, Stop: 45702, Start Num: 63
Candidate Starts for Natkenzie_55:
(Start: 63 @45502 has 7 MA's), (79, 45580), (93, 45634),

Gene: Neroxid_41 Start: 26871, Stop: 27059, Start Num: 66
Candidate Starts for Neroxid_41:
(Start: 66 @26871 has 6 MA's),

Gene: Noely_18 Start: 12900, Stop: 13088, Start Num: 59
Candidate Starts for Noely_18:
(Start: 59 @12900 has 1 MA's), (75, 12954), (77, 12969), (80, 12981), (91, 13026),

Gene: NovoPizza_50 Start: 37432, Stop: 37641, Start Num: 47
Candidate Starts for NovoPizza_50:
(2, 37132), (3, 37138), (4, 37159), (5, 37204), (6, 37207), (7, 37234), (9, 37267), (10, 37273), (11, 37279), (12, 37285), (13, 37309), (17, 37318), (20, 37333), (21, 37339), (23, 37348), (25, 37351), (38, 37411), (Start: 47 @37432 has 1 MA's), (Start: 52 @37441 has 16 MA's), (Start: 68 @37477 has 1 MA's), (80, 37540), (82, 37555),

Gene: Nyceirae_38 Start: 30354, Stop: 30581, Start Num: 45
Candidate Starts for Nyceirae_38:
(30, 30303), (36, 30327), (Start: 45 @30354 has 1 MA's), (Start: 49 @30363 has 1 MA's), (81, 30477), (87, 30495),

Gene: OBUpride_50 Start: 36945, Stop: 37142, Start Num: 52
Candidate Starts for OBUpride_50:
(Start: 52 @36945 has 16 MA's), (73, 37008), (75, 37017), (77, 37032),

Gene: Obliviate_39 Start: 31330, Stop: 31524, Start Num: 46
Candidate Starts for Obliviate_39:
(Start: 46 @31330 has 14 MA's),

Gene: Ogopogo_43 Start: 31095, Stop: 30901, Start Num: 58
Candidate Starts for Ogopogo_43:
(Start: 58 @31095 has 28 MA's), (79, 31008), (95, 30948), (Start: 100 @30927 has 4 MA's),

Gene: OlympiaSaint_40 Start: 31613, Stop: 31419, Start Num: 58
Candidate Starts for OlympiaSaint_40:
(Start: 58 @31613 has 28 MA's), (79, 31526), (95, 31466), (Start: 100 @31445 has 4 MA's),

Gene: OtsoOtso_40 Start: 24710, Stop: 24916, Start Num: 60
Candidate Starts for OtsoOtso_40:
(Start: 60 @24710 has 15 MA's), (Start: 69 @24740 has 2 MA's), (73, 24764), (78, 24791),

Gene: OwlsT2W_40 Start: 31588, Stop: 31394, Start Num: 58
Candidate Starts for OwlsT2W_40:
(Start: 58 @31588 has 28 MA's), (79, 31501), (95, 31441), (Start: 100 @31420 has 4 MA's),

Gene: PatriciaStar_40 Start: 32550, Stop: 32774, Start Num: 49
Candidate Starts for PatriciaStar_40:
(36, 32514), (Start: 49 @32550 has 1 MA's), (80, 32652), (87, 32682),

Gene: Petra_40 Start: 31689, Stop: 31883, Start Num: 46
Candidate Starts for Petra_40:
(Start: 46 @31689 has 14 MA's),

Gene: PhirstandPhine_41 Start: 25480, Stop: 25686, Start Num: 60
Candidate Starts for PhirstandPhine_41:
(22, 25375), (Start: 60 @25480 has 15 MA's), (Start: 69 @25510 has 2 MA's), (73, 25534), (78, 25561),

Gene: Piku_16 Start: 12727, Stop: 12912, Start Num: 70
Candidate Starts for Piku_16:
(Start: 66 @12712 has 6 MA's), (Start: 70 @12727 has 4 MA's), (106, 12898),

Gene: Pineda_41 Start: 25006, Stop: 25212, Start Num: 60
Candidate Starts for Pineda_41:
(22, 24901), (Start: 60 @25006 has 15 MA's), (Start: 69 @25036 has 2 MA's), (73, 25060), (78, 25087),

Gene: Pitbull_42 Start: 26865, Stop: 27053, Start Num: 66
Candidate Starts for Pitbull_42:
(Start: 66 @26865 has 6 MA's),

Gene: Polka_39 Start: 24710, Stop: 24916, Start Num: 60
Candidate Starts for Polka_39:
(Start: 60 @24710 has 15 MA's), (Start: 69 @24740 has 2 MA's), (73, 24764), (78, 24791),

Gene: Polka14_41 Start: 31785, Stop: 31591, Start Num: 58

Candidate Starts for Polka14_41:
(Start: 58 @31785 has 28 MA's), (79, 31698), (95, 31638), (Start: 100 @31617 has 4 MA's),

Gene: Pollywog_41 Start: 31707, Stop: 31513, Start Num: 58
Candidate Starts for Pollywog_41:
(Start: 58 @31707 has 28 MA's), (79, 31620), (95, 31560), (Start: 100 @31539 has 4 MA's),

Gene: Prospero_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Prospero_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: QueenHazel_31 Start: 27647, Stop: 27814, Start Num: 100
Candidate Starts for QueenHazel_31:
(Start: 66 @27497 has 6 MA's), (79, 27563), (92, 27611), (Start: 100 @27647 has 4 MA's), (Start: 103 @27659 has 1 MA's),

Gene: QuinnAvery_44 Start: 31024, Stop: 31239, Start Num: 46
Candidate Starts for QuinnAvery_44:
(Start: 46 @31024 has 14 MA's),

Gene: Radiance_41 Start: 31335, Stop: 31141, Start Num: 58
Candidate Starts for Radiance_41:
(Start: 58 @31335 has 28 MA's), (79, 31248), (95, 31188), (Start: 100 @31167 has 4 MA's),

Gene: Raya_41 Start: 26871, Stop: 27059, Start Num: 66
Candidate Starts for Raya_41:
(Start: 66 @26871 has 6 MA's),

Gene: RoadKill_49 Start: 40844, Stop: 41047, Start Num: 50
Candidate Starts for RoadKill_49:
(Start: 50 @40844 has 3 MA's), (Start: 57 @40853 has 8 MA's), (Start: 69 @40883 has 2 MA's), (80, 40943), (81, 40955),

Gene: Ronnie_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for Ronnie_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Royals2015_42 Start: 31621, Stop: 31427, Start Num: 58
Candidate Starts for Royals2015_42:
(Start: 58 @31621 has 28 MA's), (79, 31534), (95, 31474), (Start: 100 @31453 has 4 MA's),

Gene: RunningOnE_7 Start: 3413, Stop: 3225, Start Num: 57
Candidate Starts for RunningOnE_7:
(48, 3425), (Start: 57 @3413 has 8 MA's), (Start: 69 @3386 has 2 MA's), (83, 3305), (85, 3302), (102, 3236),

Gene: SFuller_93 Start: 52330, Stop: 52539, Start Num: 58
Candidate Starts for SFuller_93:
(33, 52285), (Start: 58 @52330 has 28 MA's), (Start: 70 @52366 has 4 MA's), (96, 52486), (Start: 100 @52498 has 4 MA's), (105, 52528),

Gene: SPB78_44 Start: 32113, Stop: 32337, Start Num: 37
Candidate Starts for SPB78_44:
(Start: 37 @32113 has 1 MA's), (81, 32239),

Gene: Sampson_55 Start: 45447, Stop: 45647, Start Num: 63
Candidate Starts for Sampson_55:
(Start: 63 @45447 has 7 MA's), (79, 45525), (93, 45579),

Gene: Sandalphon_44 Start: 32523, Stop: 32329, Start Num: 58
Candidate Starts for Sandalphon_44:
(Start: 58 @32523 has 28 MA's), (79, 32436), (95, 32376), (Start: 100 @32355 has 4 MA's),

Gene: Sandman_22 Start: 13960, Stop: 14193, Start Num: 40
Candidate Starts for Sandman_22:
(Start: 40 @13960 has 43 MA's), (Start: 55 @13987 has 3 MA's), (77, 14068), (97, 14155), (104, 14182),

Gene: Saphira_23 Start: 13885, Stop: 14118, Start Num: 40
Candidate Starts for Saphira_23:
(Start: 40 @13885 has 43 MA's), (Start: 55 @13912 has 3 MA's), (72, 13966), (77, 13993), (97, 14080),

Gene: Sassafras_41 Start: 31844, Stop: 31650, Start Num: 58
Candidate Starts for Sassafras_41:
(Start: 58 @31844 has 28 MA's), (79, 31757), (95, 31697), (Start: 100 @31676 has 4 MA's),

Gene: Schism_46 Start: 30955, Stop: 31170, Start Num: 46
Candidate Starts for Schism_46:
(Start: 46 @30955 has 14 MA's),

Gene: Scioto_56 Start: 45503, Stop: 45703, Start Num: 63
Candidate Starts for Scioto_56:
(Start: 63 @45503 has 7 MA's), (79, 45581), (93, 45635),

Gene: Scottish_41 Start: 32465, Stop: 32271, Start Num: 58
Candidate Starts for Scottish_41:
(Start: 58 @32465 has 28 MA's), (79, 32378), (95, 32318), (Start: 100 @32297 has 4 MA's),

Gene: Sejanus_84 Start: 57638, Stop: 57847, Start Num: 43
Candidate Starts for Sejanus_84:
(19, 57539), (27, 57578), (Start: 43 @57638 has 1 MA's), (98, 57815),

Gene: SerialPhiller_19 Start: 13063, Stop: 13281, Start Num: 40
Candidate Starts for SerialPhiller_19:
(Start: 40 @13063 has 43 MA's), (Start: 55 @13090 has 3 MA's), (76, 13159),

Gene: Seume_22 Start: 13649, Stop: 13882, Start Num: 40
Candidate Starts for Seume_22:
(Start: 40 @13649 has 43 MA's), (Start: 55 @13676 has 3 MA's), (77, 13757), (97, 13844), (104, 13871),

Gene: Shambre1_51 Start: 32314, Stop: 32526, Start Num: 49
Candidate Starts for Shambre1_51:
(Start: 49 @32314 has 1 MA's),

Gene: Skitty_38 Start: 26378, Stop: 26566, Start Num: 66
Candidate Starts for Skitty_38:
(Start: 66 @26378 has 6 MA's),

Gene: Smilerella_20 Start: 14454, Stop: 14663, Start Num: 51
Candidate Starts for Smilerella_20:
(32, 14403), (Start: 41 @14433 has 3 MA's), (Start: 51 @14454 has 3 MA's), (75, 14529),

Gene: Sourignavong_23 Start: 13955, Stop: 14188, Start Num: 40
Candidate Starts for Sourignavong_23:
(Start: 40 @13955 has 43 MA's), (Start: 55 @13982 has 3 MA's), (77, 14063), (97, 14150), (104, 14177),

Gene: Spooks_12 Start: 9089, Stop: 8904, Start Num: 53
Candidate Starts for Spooks_12:
(Start: 53 @9089 has 1 MA's), (Start: 69 @9062 has 2 MA's), (75, 9029), (89, 8972),

Gene: Spoonbill_40 Start: 31424, Stop: 31230, Start Num: 58
Candidate Starts for Spoonbill_40:
(Start: 58 @31424 has 28 MA's), (79, 31337), (95, 31277), (Start: 100 @31256 has 4 MA's),

Gene: StewieGriff_22 Start: 13883, Stop: 14116, Start Num: 40
Candidate Starts for StewieGriff_22:
(Start: 40 @13883 has 43 MA's), (Start: 55 @13910 has 3 MA's), (72, 13964), (74, 13970), (77, 13991), (97, 14078),

Gene: Stratus_22 Start: 13960, Stop: 14193, Start Num: 40
Candidate Starts for Stratus_22:
(Start: 40 @13960 has 43 MA's), (Start: 55 @13987 has 3 MA's), (77, 14068), (97, 14155), (104, 14182),

Gene: StrawberryLem_19 Start: 12988, Stop: 13206, Start Num: 40
Candidate Starts for StrawberryLem_19:
(Start: 40 @12988 has 43 MA's), (Start: 55 @13015 has 3 MA's), (76, 13084),

Gene: Success_12 Start: 8329, Stop: 8147, Start Num: 60
Candidate Starts for Success_12:
(Start: 60 @8329 has 15 MA's), (73, 8281), (74, 8278), (78, 8254), (85, 8221),

Gene: Swenson_22 Start: 14007, Stop: 14240, Start Num: 40
Candidate Starts for Swenson_22:
(Start: 40 @14007 has 43 MA's), (Start: 55 @14034 has 3 MA's), (72, 14088), (77, 14115), (97, 14202),

Gene: Taj14_22 Start: 13882, Stop: 14115, Start Num: 40
Candidate Starts for Taj14_22:
(Start: 40 @13882 has 43 MA's), (Start: 55 @13909 has 3 MA's), (72, 13963), (77, 13990), (97, 14077),

Gene: Tardus_57 Start: 45204, Stop: 45404, Start Num: 63
Candidate Starts for Tardus_57:
(Start: 63 @45204 has 7 MA's), (75, 45258), (79, 45282), (93, 45336),

Gene: Tchotchke_42 Start: 31300, Stop: 31106, Start Num: 58

Candidate Starts for Tchotchke_42:
(Start: 58 @31300 has 28 MA's), (79, 31213), (95, 31153), (Start: 100 @31132 has 4 MA's),

Gene: Tiamoceli_52 Start: 42144, Stop: 42338, Start Num: 57
Candidate Starts for Tiamoceli_52:
(Start: 50 @42135 has 3 MA's), (Start: 57 @42144 has 8 MA's), (Start: 69 @42174 has 2 MA's), (80, 42234), (81, 42246),

Gene: TinoCrisci_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for TinoCrisci_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Tootsieroll_44 Start: 31573, Stop: 31379, Start Num: 58
Candidate Starts for Tootsieroll_44:
(Start: 58 @31573 has 28 MA's), (79, 31486), (95, 31426), (Start: 100 @31405 has 4 MA's),

Gene: Toulouse_21 Start: 13649, Stop: 13882, Start Num: 40
Candidate Starts for Toulouse_21:
(Start: 40 @13649 has 43 MA's), (Start: 55 @13676 has 3 MA's), (77, 13757), (97, 13844), (104, 13871),

Gene: Twonlo_49 Start: 40765, Stop: 40968, Start Num: 50
Candidate Starts for Twonlo_49:
(Start: 50 @40765 has 3 MA's), (Start: 57 @40774 has 8 MA's), (Start: 69 @40804 has 2 MA's), (80, 40864), (81, 40876),

Gene: TymAbreu_22 Start: 13886, Stop: 14119, Start Num: 40
Candidate Starts for TymAbreu_22:
(Start: 40 @13886 has 43 MA's), (Start: 55 @13913 has 3 MA's), (77, 13994), (97, 14081), (104, 14108),

Gene: Ubuntu_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Ubuntu_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: UmaThurman_37 Start: 31748, Stop: 31954, Start Num: 46
Candidate Starts for UmaThurman_37:
(8, 31565), (18, 31640), (26, 31670), (34, 31712), (Start: 46 @31748 has 14 MA's), (54, 31760), (74, 31826), (97, 31934), (98, 31937),

Gene: Utopia_16 Start: 12698, Stop: 12883, Start Num: 70
Candidate Starts for Utopia_16:
(Start: 66 @12683 has 6 MA's), (Start: 70 @12698 has 4 MA's), (106, 12869),

Gene: Veteran_40 Start: 31183, Stop: 30989, Start Num: 58
Candidate Starts for Veteran_40:
(Start: 58 @31183 has 28 MA's), (79, 31096), (95, 31036), (Start: 100 @31015 has 4 MA's),

Gene: ViaConlectus_55 Start: 44156, Stop: 44356, Start Num: 63
Candidate Starts for ViaConlectus_55:
(Start: 63 @44156 has 7 MA's), (75, 44210), (79, 44234), (93, 44288),

Gene: Vinye_24 Start: 14391, Stop: 14597, Start Num: 55
Candidate Starts for Vinye_24:
(Start: 55 @14391 has 3 MA's), (97, 14562),

Gene: WST1_38 Start: 27336, Stop: 27560, Start Num: 39
Candidate Starts for WST1_38:
(Start: 39 @27336 has 2 MA's),

Gene: Webster2_50 Start: 36949, Stop: 37146, Start Num: 52
Candidate Starts for Webster2_50:
(Start: 52 @36949 has 16 MA's), (73, 37012),

Gene: Whytu_16 Start: 12793, Stop: 12978, Start Num: 70
Candidate Starts for Whytu_16:
(Start: 57 @12757 has 8 MA's), (Start: 66 @12778 has 6 MA's), (Start: 70 @12793 has 4 MA's), (106, 12964),

Gene: WorldChangers_18 Start: 12884, Stop: 13108, Start Num: 48
Candidate Starts for WorldChangers_18:
(15, 12761), (16, 12764), (48, 12884), (Start: 60 @12899 has 15 MA's), (71, 12944), (75, 12962), (77, 12977),

Gene: Ximeno_19 Start: 13076, Stop: 13294, Start Num: 40
Candidate Starts for Ximeno_19:
(Start: 40 @13076 has 43 MA's), (Start: 55 @13103 has 3 MA's), (76, 13172),

Gene: Xula_30 Start: 27171, Stop: 27338, Start Num: 100
Candidate Starts for Xula_30:
(Start: 66 @27021 has 6 MA's), (79, 27087), (92, 27135), (Start: 100 @27171 has 4 MA's), (Start: 103 @27183 has 1 MA's),

Gene: Yank_22 Start: 13854, Stop: 14087, Start Num: 40
Candidate Starts for Yank_22:
(Start: 40 @13854 has 43 MA's), (Start: 55 @13881 has 3 MA's), (77, 13962), (97, 14049), (104, 14076),

Gene: Yavru_16 Start: 12688, Stop: 12873, Start Num: 70
Candidate Starts for Yavru_16:
(Start: 66 @12673 has 6 MA's), (Start: 70 @12688 has 4 MA's), (106, 12859),

Gene: ZAYM_43 Start: 32247, Stop: 32456, Start Num: 39
Candidate Starts for ZAYM_43:
(31, 32220), (Start: 39 @32247 has 2 MA's),

Gene: Zaheer_44 Start: 31390, Stop: 31605, Start Num: 46
Candidate Starts for Zaheer_44:
(Start: 46 @31390 has 14 MA's),

Gene: Zarbodnamra_42 Start: 32451, Stop: 32645, Start Num: 46
Candidate Starts for Zarbodnamra_42:
(Start: 46 @32451 has 14 MA's),

Gene: Zilla_41 Start: 32198, Stop: 32392, Start Num: 46

Candidate Starts for Zilla_41:
(Start: 46 @32198 has 14 MA's),