Pham 290989

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51: GreenWeasel_42 + 1
52: BroPlease_41
53: VieEnRose_41
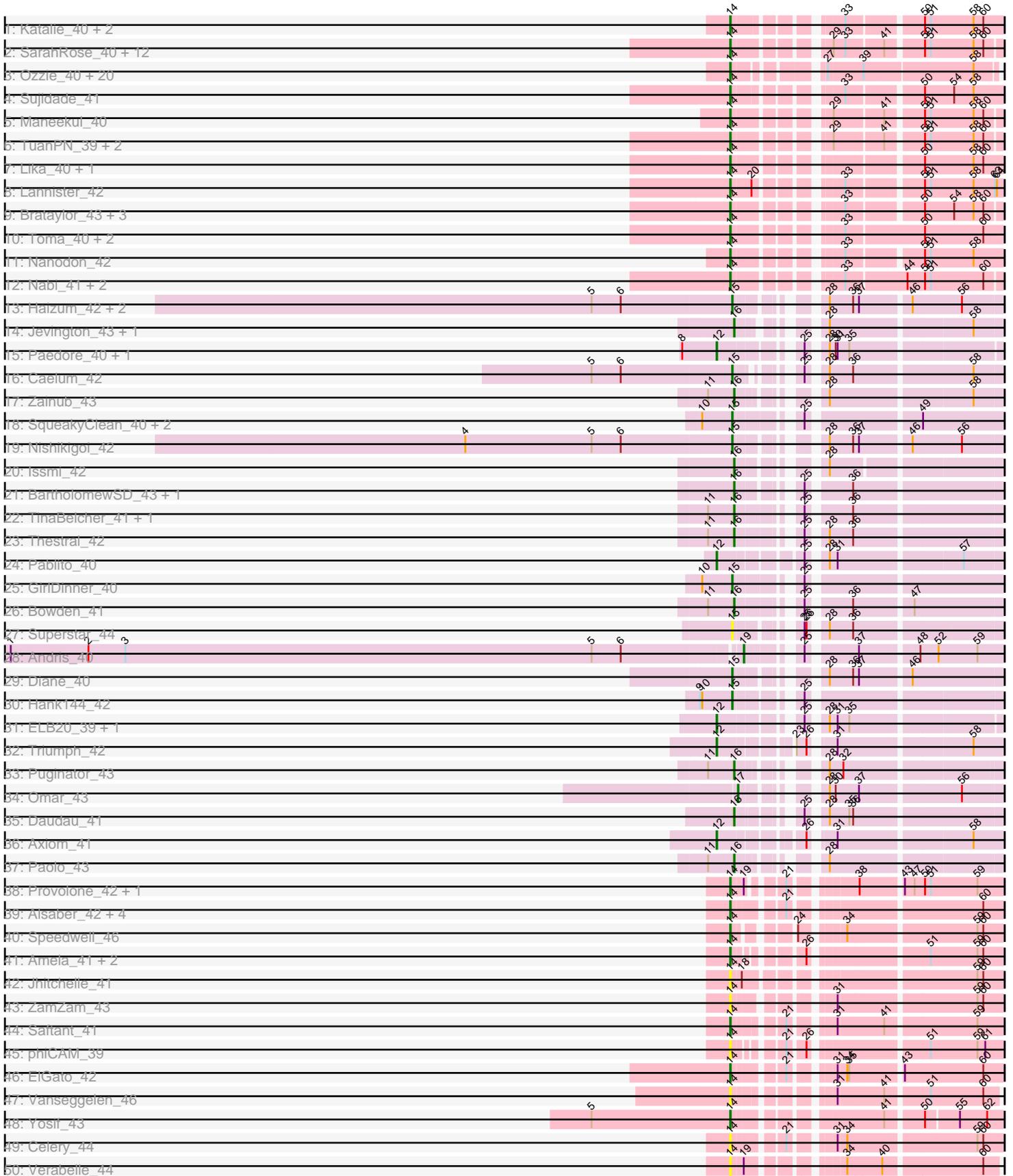
Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly 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 290989 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 290989 has 114 members, 10 are drafts.

Phages represented in each track:
• Track 1 : Katalie_40, RedBear_41, South40_40
• Track 2 : SarahRose_40, Dwayne_40, Asten_40, Whatever_40, OzzyJ_41, Hippo_40, Triste_40, Werner_40, BarryBee_43, Chucky_40, TagePhighter_42, Snorlax_40, Emaanora_43
• Track 3 : Ozzie_40, Nerdos_39, Aaronocolus_40, Jash_41, Oliynyk_41, Unstoppable_40, Izzy_41, Legacy_40, BeardedLady_41, Esperer_40, BryanRecycles_41, Eddasa_41, EnochSoames_43, Phettuccine_40, Rusticus_41, SunsetPointe_40, Caliburn_40, Hydra_42, Bovely_40, Indigo_39, Leviticus_40
• Track 4 : Sujidade_41
• Track 5 : Maneekul_40
• Track 6 : TuanPN_39, Yasdnil_40, Ejemplo_39
• Track 7 : Lika_40, Godpower_41
• Track 8 : Lannister_42
• Track 9 : Brataylor_43, Celeste_41, Danzina_42, Zemlya_42
• Track 10 : Toma_40, Dattran_42, Goby_40
• Track 11 : Nanodon_42
• Track 12 : Nabi_41, Rana_41, Lorelei_41
• Track 13 : Haizum_42, Tefunt_42, Amethyst_40
• Track 14 : Jevington_43, Marav_44
• Track 15 : Paedore_40, Loofah_41
• Track 16 : Caelum_42
• Track 17 : Zainub_43
• Track 18 : SqueakyClean_40, Animus_40, Janus_41
• Track 19 : Nishikigoi_42
• Track 20 : Issmi_42
• Track 21 : BartholomewSD_43, Alvy_43
• Track 22 : TinaBelcher_41, TrvxScott_40
• Track 23 : Thestral_42
• Track 24 : Pablito_40
• Track 25 : GirlDinner_40
• Track 26 : Bowden_41
• Track 27 : Superstar_44
• Track 28 : Andris_40

- Track 29 : Diane_40
- Track 30 : Hank144_42
- Track 31 : ELB20_39, R4_41
- Track 32 : Triumph_42
- Track 33 : Puginator_43
- Track 34 : Omar_43
- Track 35 : Daudau_41
- Track 36 : Axiom_41
- Track 37 : Paolo_43
- Track 38 : Provolone_42, Pavo_42
- Track 39 : Alsaber_42, Sudan_42, Kaine_41, Dexers_40, Conan_42
- Track 40 : Speedwell_46
- Track 41 : Amela_41, SunkenRoot_42, Verse_41
- Track 42 : Jhitchelle_41
- Track 43 : ZamZam_43
- Track 44 : Saftant_41
- Track 45 : phiCAM_39
- Track 46 : ElGato_42
- Track 47 : Vanseggelen_46
- Track 48 : Yosif_43
- Track 49 : Celery_44
- Track 50 : Verabelle_44
- Track 51 : GreenWeasel_42, phiHau3_42
- Track 52 : BroPlease_41
- Track 53 : VieEnRose_41

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

The start number called the most often in the published annotations is 14, it was called in 71 of the 104 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Aaronocolus_40, Alsaber_42, Amela_41, Asten_40, BarryBee_43, BeardedLady_41, Bovely_40, Brataylor_43, BroPlease_41, BryanRecycles_41, Caliburn_40, Celery_44, Celeste_41, Chucky_40, Conan_42, Danzina_42, Dattran_42, Dexers_40, Dwayne_40, Eddasa_41, Ejemplo_39, ElGato_42, Emaanora_43, EnochSoames_43, Esperer_40, Goby_40, Godpower_41, GreenWeasel_42, Hippo_40, Hydra_42, Indigo_39, Izzy_41, Jash_41, Jhitchelle_41, Kaine_41, Katalie_40, Lannister_42, Legacy_40, Leviticus_40, Lika_40, Lorelei_41, Maneekul_40, Nabi_41, Nanodon_42, Nerdos_39, Oliynyk_41, Ozzie_40, OzzyJ_41, Pavo_42, Phettuccine_40, Provolone_42, Rana_41, RedBear_41, Rusticus_41, Saftant_41, SarahRose_40, Snorlax_40, South40_40, Speedwell_46, Sudan_42, Sujidade_41, SunkenRoot_42, SunsetPointe_40, TagePhighter_42, Toma_40, Triste_40, TuanPN_39, Unstoppable_40, Vanseggelen_46, Verabelle_44, Verse_41, VieEnRose_41, Werner_40, Whatever_40, Yasdnil_40, Yosif_43, ZamZam_43, Zemlya_42, phiCAM_39, phiHau3_42,

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

Genes that do not have the "Most Annotated" start:
• Alvy_43, Amethyst_40, Andris_40, Animus_40, Axiom_41, BartholomewSD_43, Bowden_41, Caelum_42, Daudau_41, Diane_40, ELB20_39, GirlDinner_40, Haizum_42, Hank144_42, Issmi_42, Janus_41, Jevington_43, Loofah_41, Marav_44, Nishikigoi_42, Omar_43, Pablito_40, Paedore_40, Paolo_43, Puginator_43, R4_41, SqueakyClean_40, Superstar_44, Tefunt_42, Thestral_42, TinaBelcher_41, Triumph_42, TrvxScott_40, Zainub_43,

Summary by start number:

Start 12:
• Found in 7 of 114 (6.1%) of genes in pham
• Manual Annotations of this start: 7 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Axiom_41 (BD2), ELB20_39 (BD2), Loofah_41 (BD2), Pablito_40 (BD2), Paedore_40 (BD2), R4_41 (BD2), Triumph_42 (BD2),

Start 14:
• Found in 80 of 114 (70.2%) of genes in pham
• Manual Annotations of this start: 71 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aaronocolus_40 (BD1), Alsaber_42 (BD3), Amela_41 (BD3), Asten_40 (BD1), BarryBee_43 (BD1), BeardedLady_41 (BD1), Bovely_40 (BD1), Brataylor_43 (BD1), BroPlease_41 (BD4), BryanRecycles_41 (BD1), Caliburn_40 (BD1), Celery_44 (BD3), Celeste_41 (BD1), Chucky_40 (BD1), Conan_42 (BD3), Danzina_42 (BD1), Dattran_42 (BD1), Dexers_40 (BD3), Dwayne_40 (BD1), Eddasa_41 (BD1), Ejemplo_39 (BD1), ElGato_42 (BD3), Emaanora_43 (BD1), EnochSoames_43 (BD1), Esperer_40 (BD1), Goby_40 (BD1), Godpower_41 (BD1), GreenWeasel_42 (BD4), Hippo_40 (BD1), Hydra_42 (BD1), Indigo_39 (BD1), Izzy_41 (BD1), Jash_41 (BD1), Jhitchelle_41 (BD3), Kaine_41 (BD3), Katalie_40 (BD1), Lannister_42 (BD1), Legacy_40 (BD1), Leviticus_40 (BD1), Lika_40 (BD1), Lorelei_41 (BD1), Maneekul_40 (BD1), Nabi_41 (BD1), Nanodon_42 (BD1), Nerdos_39 (BD1), Oliynyk_41 (BD1), Ozzie_40 (BD1), OzzyJ_41 (BD1), Pavo_42 (BD3), Phettuccine_40 (BD1), Provolone_42 (BD3), Rana_41 (BD1), RedBear_41 (BD1), Rusticus_41 (BD1), Saftant_41 (BD3), SarahRose_40 (BD1), Snorlax_40 (BD1), South40_40 (BD1), Speedwell_46 (BD3), Sudan_42 (BD3), Sujidade_41 (BD1), SunkenRoot_42 (BD3), SunsetPointe_40 (BD1), TagePhighter_42 (BD1), Toma_40 (BD1), Triste_40 (BD1), TuanPN_39 (BD1), Unstoppable_40 (BD1), Vanseggelen_46 (BD3), Verabelle_44 (BD3), Verse_41 (BD3), VieEnRose_41 (BD6), Werner_40 (BD1), Whatever_40 (BD1), Yasdnil_40 (BD1), Yosif_43 (BD3), ZamZam_43 (BD3), Zemlya_42 (BD1), phiCAM_39 (BD3), phiHau3_42 (BD4),

Start 15:
• Found in 12 of 114 (10.5%) of genes in pham
• Manual Annotations of this start: 11 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amethyst_40 (BD2), Animus_40 (BD2), Caelum_42 (BD2), Diane_40 (BD2), GirlDinner_40 (BD2), Haizum_42 (BD2), Hank144_42 (BD2), Janus_41 (BD2), Nishikigoi_42 (BD2), SqueakyClean_40 (BD2), Superstar_44 (BD2), Tefunt_42 (BD2),

Start 16:
- Found in 13 of 114 (11.4%) of genes in pham
- Manual Annotations of this start: 13 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alvy_43 (BD2), BartholomewSD_43 (BD2), Bowden_41 (BD2), Daudau_41 (BD2), Issmi_42 (BD2), Jevington_43 (BD2), Marav_44 (BD2), Paolo_43 (BD2), Puginator_43 (BD2), Thestral_42 (BD2), TinaBelcher_41 (BD2), TrvxScott_40 (BD2), Zainub_43 (BD2),

Start 17:
- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Omar_43 (BD2),

Start 19:
- Found in 4 of 114 (3.5%) of genes in pham
- Manual Annotations of this start: 1 of 104
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Andris_40 (BD2),

Summary by clusters:

There are 5 clusters represented in this pham: BD4, BD6, BD1, BD3, BD2,

Info for manual annotations of cluster BD1:
- Start number 14 was manually annotated 55 times for cluster BD1.

Info for manual annotations of cluster BD2:
- Start number 12 was manually annotated 7 times for cluster BD2.
- Start number 15 was manually annotated 11 times for cluster BD2.
- Start number 16 was manually annotated 13 times for cluster BD2.
- Start number 17 was manually annotated 1 time for cluster BD2.
- Start number 19 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster BD3:
- Start number 14 was manually annotated 12 times for cluster BD3.

Info for manual annotations of cluster BD4:
- Start number 14 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster BD6:
- Start number 14 was manually annotated 1 time for cluster BD6.

Gene Information:

Gene: Aaronocolus_40 Start: 28479, Stop: 28826, Start Num: 14
Candidate Starts for Aaronocolus_40:
(Start: 14 @28479 has 71 MA's), (27, 28581), (39, 28632), (58, 28794),

Gene: Alsaber_42 Start: 30369, Stop: 30716, Start Num: 14

Candidate Starts for Alsaber_42:
(Start: 14 @30369 has 71 MA's), (21, 30432), (60, 30687),

Gene: Alvy_43 Start: 30032, Stop: 30367, Start Num: 16
Candidate Starts for Alvy_43:
(Start: 16 @30032 has 13 MA's), (25, 30095), (36, 30152),

Gene: Amela_41 Start: 31176, Stop: 31517, Start Num: 14
Candidate Starts for Amela_41:
(Start: 14 @31176 has 71 MA's), (26, 31251), (51, 31407), (59, 31479), (60, 31488),

Gene: Amethyst_40 Start: 29395, Stop: 29733, Start Num: 15
Candidate Starts for Amethyst_40:
(5, 29182), (6, 29227), (Start: 15 @29395 has 11 MA's), (28, 29482), (36, 29518), (37, 29527), (46, 29599), (56, 29674),

Gene: Andris_40 Start: 29457, Stop: 29789, Start Num: 19
Candidate Starts for Andris_40:
(1, 28344), (2, 28464), (3, 28521), (5, 29241), (6, 29286), (Start: 19 @29457 has 1 MA's), (25, 29514), (37, 29580), (48, 29664), (52, 29691), (59, 29751),

Gene: Animus_40 Start: 29869, Stop: 30219, Start Num: 15
Candidate Starts for Animus_40:
(10, 29824), (Start: 15 @29869 has 11 MA's), (25, 29944), (49, 30097),

Gene: Asten_40 Start: 28841, Stop: 29185, Start Num: 14
Candidate Starts for Asten_40:
(Start: 14 @28841 has 71 MA's), (29, 28949), (33, 28967), (41, 29021), (50, 29072), (51, 29081), (58, 29147), (60, 29162),

Gene: Axiom_41 Start: 29618, Stop: 29989, Start Num: 12
Candidate Starts for Axiom_41:
(Start: 12 @29618 has 7 MA's), (26, 29723), (31, 29750), (58, 29945),

Gene: BarryBee_43 Start: 28851, Stop: 29195, Start Num: 14
Candidate Starts for BarryBee_43:
(Start: 14 @28851 has 71 MA's), (29, 28959), (33, 28977), (41, 29031), (50, 29082), (51, 29091), (58, 29157), (60, 29172),

Gene: BartholomewSD_43 Start: 30031, Stop: 30366, Start Num: 16
Candidate Starts for BartholomewSD_43:
(Start: 16 @30031 has 13 MA's), (25, 30094), (36, 30151),

Gene: BeardedLady_41 Start: 28732, Stop: 29079, Start Num: 14
Candidate Starts for BeardedLady_41:
(Start: 14 @28732 has 71 MA's), (27, 28834), (39, 28885), (58, 29047),

Gene: Bovely_40 Start: 28485, Stop: 28832, Start Num: 14
Candidate Starts for Bovely_40:
(Start: 14 @28485 has 71 MA's), (27, 28587), (39, 28638), (58, 28800),

Gene: Bowden_41 Start: 29946, Stop: 30287, Start Num: 16
Candidate Starts for Bowden_41:

(11, 29907), (Start: 16 @29946 has 13 MA's), (25, 30015), (36, 30072), (47, 30156),

Gene: Brataylor_43 Start: 29824, Stop: 30168, Start Num: 14
Candidate Starts for Brataylor_43:
(Start: 14 @29824 has 71 MA's), (33, 29950), (50, 30055), (54, 30100), (58, 30130), (60, 30145),

Gene: BroPlease_41 Start: 28966, Stop: 29289, Start Num: 14
Candidate Starts for BroPlease_41:
(5, 28753), (6, 28798), (7, 28804), (13, 28960), (Start: 14 @28966 has 71 MA's), (31, 29059), (59, 29254), (64, 29281),

Gene: BryanRecycles_41 Start: 28839, Stop: 29195, Start Num: 14
Candidate Starts for BryanRecycles_41:
(Start: 14 @28839 has 71 MA's), (27, 28941), (39, 28992), (58, 29154),

Gene: Caelum_42 Start: 29642, Stop: 29968, Start Num: 15
Candidate Starts for Caelum_42:
(5, 29429), (6, 29474), (Start: 15 @29642 has 11 MA's), (25, 29696), (28, 29717), (36, 29753), (58, 29927),

Gene: Caliburn_40 Start: 28462, Stop: 28809, Start Num: 14
Candidate Starts for Caliburn_40:
(Start: 14 @28462 has 71 MA's), (27, 28564), (39, 28615), (58, 28777),

Gene: Celery_44 Start: 30302, Stop: 30649, Start Num: 14
Candidate Starts for Celery_44:
(Start: 14 @30302 has 71 MA's), (21, 30365), (31, 30413), (34, 30425), (59, 30611), (60, 30620),

Gene: Celeste_41 Start: 29293, Stop: 29634, Start Num: 14
Candidate Starts for Celeste_41:
(Start: 14 @29293 has 71 MA's), (33, 29416), (50, 29521), (54, 29566), (58, 29596), (60, 29611),

Gene: Chucky_40 Start: 28855, Stop: 29199, Start Num: 14
Candidate Starts for Chucky_40:
(Start: 14 @28855 has 71 MA's), (29, 28963), (33, 28981), (41, 29035), (50, 29086), (51, 29095), (58, 29161), (60, 29176),

Gene: Conan_42 Start: 30263, Stop: 30610, Start Num: 14
Candidate Starts for Conan_42:
(Start: 14 @30263 has 71 MA's), (21, 30326), (60, 30581),

Gene: Danzina_42 Start: 29594, Stop: 29935, Start Num: 14
Candidate Starts for Danzina_42:
(Start: 14 @29594 has 71 MA's), (33, 29717), (50, 29822), (54, 29867), (58, 29897), (60, 29912),

Gene: Dattran_42 Start: 29400, Stop: 29762, Start Num: 14
Candidate Starts for Dattran_42:
(Start: 14 @29400 has 71 MA's), (33, 29526), (50, 29643), (60, 29733),

Gene: Daudau_41 Start: 29789, Stop: 30124, Start Num: 16
Candidate Starts for Daudau_41:
(Start: 16 @29789 has 13 MA's), (25, 29852), (28, 29873), (35, 29903), (36, 29909),

Gene: Dexers_40 Start: 30287, Stop: 30634, Start Num: 14
Candidate Starts for Dexers_40:
(Start: 14 @30287 has 71 MA's), (21, 30350), (60, 30605),

Gene: Diane_40 Start: 29624, Stop: 29962, Start Num: 15
Candidate Starts for Diane_40:
(Start: 15 @29624 has 11 MA's), (28, 29711), (36, 29747), (37, 29756), (46, 29828),

Gene: Dwayne_40 Start: 28842, Stop: 29186, Start Num: 14
Candidate Starts for Dwayne_40:
(Start: 14 @28842 has 71 MA's), (29, 28950), (33, 28968), (41, 29022), (50, 29073), (51, 29082), (58, 29148), (60, 29163),

Gene: ELB20_39 Start: 30032, Stop: 30394, Start Num: 12
Candidate Starts for ELB20_39:
(Start: 12 @30032 has 7 MA's), (25, 30128), (28, 30149), (31, 30161), (35, 30179),

Gene: Eddasa_41 Start: 28839, Stop: 29195, Start Num: 14
Candidate Starts for Eddasa_41:
(Start: 14 @28839 has 71 MA's), (27, 28941), (39, 28992), (58, 29154),

Gene: Ejemplo_39 Start: 28786, Stop: 29130, Start Num: 14
Candidate Starts for Ejemplo_39:
(Start: 14 @28786 has 71 MA's), (29, 28894), (41, 28966), (50, 29017), (51, 29026), (58, 29092), (60, 29107),

Gene: ElGato_42 Start: 29927, Stop: 30274, Start Num: 14
Candidate Starts for ElGato_42:
(Start: 14 @29927 has 71 MA's), (21, 29990), (31, 30038), (34, 30050), (35, 30053), (43, 30125), (60, 30245),

Gene: Emaanora_43 Start: 28800, Stop: 29144, Start Num: 14
Candidate Starts for Emaanora_43:
(Start: 14 @28800 has 71 MA's), (29, 28908), (33, 28926), (41, 28980), (50, 29031), (51, 29040), (58, 29106), (60, 29121),

Gene: EnochSoames_43 Start: 28834, Stop: 29190, Start Num: 14
Candidate Starts for EnochSoames_43:
(Start: 14 @28834 has 71 MA's), (27, 28936), (39, 28987), (58, 29149),

Gene: Esperer_40 Start: 28298, Stop: 28645, Start Num: 14
Candidate Starts for Esperer_40:
(Start: 14 @28298 has 71 MA's), (27, 28400), (39, 28451), (58, 28613),

Gene: GirlDinner_40 Start: 29370, Stop: 29720, Start Num: 15
Candidate Starts for GirlDinner_40:
(10, 29325), (Start: 15 @29370 has 11 MA's), (25, 29445),

Gene: Goby_40 Start: 29299, Stop: 29661, Start Num: 14
Candidate Starts for Goby_40:
(Start: 14 @29299 has 71 MA's), (33, 29425), (50, 29542), (60, 29632),

Gene: Godpower_41 Start: 29294, Stop: 29644, Start Num: 14

Candidate Starts for Godpower_41:
(Start: 14 @29294 has 71 MA's), (50, 29525), (58, 29600), (60, 29615),

Gene: GreenWeasel_42 Start: 28973, Stop: 29296, Start Num: 14
Candidate Starts for GreenWeasel_42:
(13, 28967), (Start: 14 @28973 has 71 MA's), (31, 29066), (59, 29261), (64, 29288),

Gene: Haizum_42 Start: 29739, Stop: 30077, Start Num: 15
Candidate Starts for Haizum_42:
(5, 29526), (6, 29571), (Start: 15 @29739 has 11 MA's), (28, 29826), (36, 29862), (37, 29871), (46, 29943), (56, 30018),

Gene: Hank144_42 Start: 29734, Stop: 30075, Start Num: 15
Candidate Starts for Hank144_42:
(9, 29686), (10, 29689), (Start: 15 @29734 has 11 MA's), (25, 29806),

Gene: Hippo_40 Start: 28854, Stop: 29198, Start Num: 14
Candidate Starts for Hippo_40:
(Start: 14 @28854 has 71 MA's), (29, 28962), (33, 28980), (41, 29034), (50, 29085), (51, 29094), (58, 29160), (60, 29175),

Gene: Hydra_42 Start: 29010, Stop: 29357, Start Num: 14
Candidate Starts for Hydra_42:
(Start: 14 @29010 has 71 MA's), (27, 29112), (39, 29163), (58, 29325),

Gene: Indigo_39 Start: 28478, Stop: 28825, Start Num: 14
Candidate Starts for Indigo_39:
(Start: 14 @28478 has 71 MA's), (27, 28580), (39, 28631), (58, 28793),

Gene: Issmi_42 Start: 30341, Stop: 30664, Start Num: 16
Candidate Starts for Issmi_42:
(Start: 16 @30341 has 13 MA's), (28, 30425),

Gene: Izzy_41 Start: 28886, Stop: 29242, Start Num: 14
Candidate Starts for Izzy_41:
(Start: 14 @28886 has 71 MA's), (27, 28988), (39, 29039), (58, 29201),

Gene: Janus_41 Start: 29710, Stop: 30060, Start Num: 15
Candidate Starts for Janus_41:
(10, 29665), (Start: 15 @29710 has 11 MA's), (25, 29785), (49, 29938),

Gene: Jash_41 Start: 28839, Stop: 29195, Start Num: 14
Candidate Starts for Jash_41:
(Start: 14 @28839 has 71 MA's), (27, 28941), (39, 28992), (58, 29154),

Gene: Jevington_43 Start: 30131, Stop: 30454, Start Num: 16
Candidate Starts for Jevington_43:
(Start: 16 @30131 has 13 MA's), (28, 30206), (58, 30413),

Gene: Jhitchelle_41 Start: 29800, Stop: 30153, Start Num: 14
Candidate Starts for Jhitchelle_41:
(Start: 14 @29800 has 71 MA's), (18, 29815), (59, 30115), (60, 30124),

Gene: Kaine_41 Start: 30078, Stop: 30425, Start Num: 14
Candidate Starts for Kaine_41:
(Start: 14 @30078 has 71 MA's), (21, 30141), (60, 30396),

Gene: Katalie_40 Start: 29025, Stop: 29372, Start Num: 14
Candidate Starts for Katalie_40:
(Start: 14 @29025 has 71 MA's), (33, 29148), (50, 29253), (51, 29262), (58, 29328), (60, 29343),

Gene: Lannister_42 Start: 29502, Stop: 29852, Start Num: 14
Candidate Starts for Lannister_42:
(Start: 14 @29502 has 71 MA's), (20, 29532), (33, 29628), (50, 29733), (51, 29742), (58, 29808), (63, 29841), (64, 29844),

Gene: Legacy_40 Start: 28453, Stop: 28800, Start Num: 14
Candidate Starts for Legacy_40:
(Start: 14 @28453 has 71 MA's), (27, 28555), (39, 28606), (58, 28768),

Gene: Leviticus_40 Start: 28482, Stop: 28829, Start Num: 14
Candidate Starts for Leviticus_40:
(Start: 14 @28482 has 71 MA's), (27, 28584), (39, 28635), (58, 28797),

Gene: Lika_40 Start: 29297, Stop: 29647, Start Num: 14
Candidate Starts for Lika_40:
(Start: 14 @29297 has 71 MA's), (50, 29528), (58, 29603), (60, 29618),

Gene: Loofah_41 Start: 29902, Stop: 30264, Start Num: 12
Candidate Starts for Loofah_41:
(8, 29851), (Start: 12 @29902 has 7 MA's), (25, 29998), (28, 30019), (30, 30028), (31, 30031), (35, 30049),

Gene: Lorelei_41 Start: 29357, Stop: 29713, Start Num: 14
Candidate Starts for Lorelei_41:
(Start: 14 @29357 has 71 MA's), (33, 29483), (44, 29573), (50, 29600), (51, 29609), (60, 29690),

Gene: Maneekul_40 Start: 28876, Stop: 29220, Start Num: 14
Candidate Starts for Maneekul_40:
(Start: 14 @28876 has 71 MA's), (29, 28984), (41, 29056), (50, 29107), (51, 29116), (58, 29182), (60, 29197),

Gene: Marav_44 Start: 30456, Stop: 30779, Start Num: 16
Candidate Starts for Marav_44:
(Start: 16 @30456 has 13 MA's), (28, 30531), (58, 30738),

Gene: Nabi_41 Start: 29357, Stop: 29713, Start Num: 14
Candidate Starts for Nabi_41:
(Start: 14 @29357 has 71 MA's), (33, 29483), (44, 29573), (50, 29600), (51, 29609), (60, 29690),

Gene: Nanodon_42 Start: 29128, Stop: 29478, Start Num: 14
Candidate Starts for Nanodon_42:
(Start: 14 @29128 has 71 MA's), (33, 29254), (50, 29359), (51, 29368), (58, 29434),

Gene: Nerdos_39 Start: 28477, Stop: 28824, Start Num: 14
Candidate Starts for Nerdos_39:

(Start: 14 @28477 has 71 MA's), (27, 28579), (39, 28630), (58, 28792),

Gene: Nishikigoi_42 Start: 29739, Stop: 30077, Start Num: 15
Candidate Starts for Nishikigoi_42:
(4, 29331), (5, 29526), (6, 29571), (Start: 15 @29739 has 11 MA's), (28, 29826), (36, 29862), (37, 29871), (46, 29943), (56, 30018),

Gene: Oliynyk_41 Start: 28839, Stop: 29195, Start Num: 14
Candidate Starts for Oliynyk_41:
(Start: 14 @28839 has 71 MA's), (27, 28941), (39, 28992), (58, 29154),

Gene: Omar_43 Start: 29969, Stop: 30301, Start Num: 17
Candidate Starts for Omar_43:
(Start: 17 @29969 has 1 MA's), (28, 30050), (30, 30059), (37, 30095), (56, 30242),

Gene: Ozzie_40 Start: 28462, Stop: 28809, Start Num: 14
Candidate Starts for Ozzie_40:
(Start: 14 @28462 has 71 MA's), (27, 28564), (39, 28615), (58, 28777),

Gene: OzzyJ_41 Start: 28842, Stop: 29186, Start Num: 14
Candidate Starts for OzzyJ_41:
(Start: 14 @28842 has 71 MA's), (29, 28950), (33, 28968), (41, 29022), (50, 29073), (51, 29082), (58, 29148), (60, 29163),

Gene: Pablito_40 Start: 29276, Stop: 29650, Start Num: 12
Candidate Starts for Pablito_40:
(Start: 12 @29276 has 7 MA's), (25, 29381), (28, 29402), (31, 29414), (57, 29594),

Gene: Paedore_40 Start: 29887, Stop: 30249, Start Num: 12
Candidate Starts for Paedore_40:
(8, 29836), (Start: 12 @29887 has 7 MA's), (25, 29983), (28, 30004), (30, 30013), (31, 30016), (35, 30034),

Gene: Paolo_43 Start: 30313, Stop: 30642, Start Num: 16
Candidate Starts for Paolo_43:
(11, 30274), (Start: 16 @30313 has 13 MA's), (28, 30394),

Gene: Pavo_42 Start: 30536, Stop: 30874, Start Num: 14
Candidate Starts for Pavo_42:
(Start: 14 @30536 has 71 MA's), (Start: 19 @30551 has 1 MA's), (21, 30590), (38, 30668), (43, 30725), (47, 30740), (50, 30755), (51, 30764), (59, 30836),

Gene: Phettuccine_40 Start: 28478, Stop: 28825, Start Num: 14
Candidate Starts for Phettuccine_40:
(Start: 14 @28478 has 71 MA's), (27, 28580), (39, 28631), (58, 28793),

Gene: Provolone_42 Start: 29918, Stop: 30256, Start Num: 14
Candidate Starts for Provolone_42:
(Start: 14 @29918 has 71 MA's), (Start: 19 @29933 has 1 MA's), (21, 29972), (38, 30050), (43, 30107), (47, 30122), (50, 30137), (51, 30146), (59, 30218),

Gene: Puginator_43 Start: 30334, Stop: 30660, Start Num: 16
Candidate Starts for Puginator_43:

(11, 30295), (Start: 16 @30334 has 13 MA's), (28, 30415), (32, 30436),

Gene: R4_41 Start: 30042, Stop: 30404, Start Num: 12
Candidate Starts for R4_41:
(Start: 12 @30042 has 7 MA's), (25, 30138), (28, 30159), (31, 30171), (35, 30189),

Gene: Rana_41 Start: 29357, Stop: 29713, Start Num: 14
Candidate Starts for Rana_41:
(Start: 14 @29357 has 71 MA's), (33, 29483), (44, 29573), (50, 29600), (51, 29609), (60, 29690),

Gene: RedBear_41 Start: 29025, Stop: 29372, Start Num: 14
Candidate Starts for RedBear_41:
(Start: 14 @29025 has 71 MA's), (33, 29148), (50, 29253), (51, 29262), (58, 29328), (60, 29343),

Gene: Rusticus_41 Start: 28839, Stop: 29195, Start Num: 14
Candidate Starts for Rusticus_41:
(Start: 14 @28839 has 71 MA's), (27, 28941), (39, 28992), (58, 29154),

Gene: Saftant_41 Start: 30490, Stop: 30834, Start Num: 14
Candidate Starts for Saftant_41:
(Start: 14 @30490 has 71 MA's), (21, 30550), (31, 30598), (41, 30664), (59, 30796),

Gene: SarahRose_40 Start: 28850, Stop: 29194, Start Num: 14
Candidate Starts for SarahRose_40:
(Start: 14 @28850 has 71 MA's), (29, 28958), (33, 28976), (41, 29030), (50, 29081), (51, 29090), (58, 29156), (60, 29171),

Gene: Snorlax_40 Start: 28854, Stop: 29198, Start Num: 14
Candidate Starts for Snorlax_40:
(Start: 14 @28854 has 71 MA's), (29, 28962), (33, 28980), (41, 29034), (50, 29085), (51, 29094), (58, 29160), (60, 29175),

Gene: South40_40 Start: 29025, Stop: 29372, Start Num: 14
Candidate Starts for South40_40:
(Start: 14 @29025 has 71 MA's), (33, 29148), (50, 29253), (51, 29262), (58, 29328), (60, 29343),

Gene: Speedwell_46 Start: 31786, Stop: 32124, Start Num: 14
Candidate Starts for Speedwell_46:
(Start: 14 @31786 has 71 MA's), (24, 31849), (34, 31900), (59, 32086), (60, 32095),

Gene: SqueakyClean_40 Start: 29801, Stop: 30151, Start Num: 15
Candidate Starts for SqueakyClean_40:
(10, 29756), (Start: 15 @29801 has 11 MA's), (25, 29876), (49, 30029),

Gene: Sudan_42 Start: 30365, Stop: 30712, Start Num: 14
Candidate Starts for Sudan_42:
(Start: 14 @30365 has 71 MA's), (21, 30428), (60, 30683),

Gene: Sujidade_41 Start: 29582, Stop: 29929, Start Num: 14
Candidate Starts for Sujidade_41:
(Start: 14 @29582 has 71 MA's), (33, 29705), (50, 29810), (54, 29855), (58, 29885),

Gene: SunkenRoot_42 Start: 30976, Stop: 31317, Start Num: 14

Candidate Starts for SunkenRoot_42:
(Start: 14 @30976 has 71 MA's), (26, 31051), (51, 31207), (59, 31279), (60, 31288),

Gene: SunsetPointe_40 Start: 28469, Stop: 28816, Start Num: 14
Candidate Starts for SunsetPointe_40:
(Start: 14 @28469 has 71 MA's), (27, 28571), (39, 28622), (58, 28784),

Gene: Superstar_44 Start: 30847, Stop: 31182, Start Num: 15
Candidate Starts for Superstar_44:
(Start: 15 @30847 has 11 MA's), (25, 30913), (26, 30916), (28, 30934), (36, 30970),

Gene: TagePhighter_42 Start: 28854, Stop: 29198, Start Num: 14
Candidate Starts for TagePhighter_42:
(Start: 14 @28854 has 71 MA's), (29, 28962), (33, 28980), (41, 29034), (50, 29085), (51, 29094), (58, 29160), (60, 29175),

Gene: Tefunt_42 Start: 29741, Stop: 30079, Start Num: 15
Candidate Starts for Tefunt_42:
(5, 29528), (6, 29573), (Start: 15 @29741 has 11 MA's), (28, 29828), (36, 29864), (37, 29873), (46, 29945), (56, 30020),

Gene: Thestral_42 Start: 29938, Stop: 30279, Start Num: 16
Candidate Starts for Thestral_42:
(11, 29899), (Start: 16 @29938 has 13 MA's), (25, 30007), (28, 30028), (36, 30064),

Gene: TinaBelcher_41 Start: 29885, Stop: 30226, Start Num: 16
Candidate Starts for TinaBelcher_41:
(11, 29846), (Start: 16 @29885 has 13 MA's), (25, 29954), (36, 30011),

Gene: Toma_40 Start: 29299, Stop: 29661, Start Num: 14
Candidate Starts for Toma_40:
(Start: 14 @29299 has 71 MA's), (33, 29425), (50, 29542), (60, 29632),

Gene: Triste_40 Start: 28842, Stop: 29186, Start Num: 14
Candidate Starts for Triste_40:
(Start: 14 @28842 has 71 MA's), (29, 28950), (33, 28968), (41, 29022), (50, 29073), (51, 29082), (58, 29148), (60, 29163),

Gene: Triumph_42 Start: 29635, Stop: 30006, Start Num: 12
Candidate Starts for Triumph_42:
(Start: 12 @29635 has 7 MA's), (23, 29725), (26, 29740), (31, 29767), (58, 29962),

Gene: TrvxScott_40 Start: 29931, Stop: 30272, Start Num: 16
Candidate Starts for TrvxScott_40:
(11, 29892), (Start: 16 @29931 has 13 MA's), (25, 30000), (36, 30057),

Gene: TuanPN_39 Start: 28786, Stop: 29130, Start Num: 14
Candidate Starts for TuanPN_39:
(Start: 14 @28786 has 71 MA's), (29, 28894), (41, 28966), (50, 29017), (51, 29026), (58, 29092), (60, 29107),

Gene: Unstoppable_40 Start: 28473, Stop: 28820, Start Num: 14
Candidate Starts for Unstoppable_40:

(Start: 14 @28473 has 71 MA's), (27, 28575), (39, 28626), (58, 28788),

Gene: Vanseggelen_46 Start: 30019, Stop: 30357, Start Num: 14
Candidate Starts for Vanseggelen_46:
(Start: 14 @30019 has 71 MA's), (31, 30127), (41, 30193), (51, 30253), (60, 30334),

Gene: Verabelle_44 Start: 30428, Stop: 30769, Start Num: 14
Candidate Starts for Verabelle_44:
(Start: 14 @30428 has 71 MA's), (Start: 19 @30443 has 1 MA's), (34, 30551), (40, 30602), (60, 30746),

Gene: Verse_41 Start: 31170, Stop: 31511, Start Num: 14
Candidate Starts for Verse_41:
(Start: 14 @31170 has 71 MA's), (26, 31245), (51, 31401), (59, 31473), (60, 31482),

Gene: VieEnRose_41 Start: 29253, Stop: 29663, Start Num: 14
Candidate Starts for VieEnRose_41:
(Start: 14 @29253 has 71 MA's), (22, 29352), (42, 29505), (45, 29520), (53, 29577), (57, 29601), (59, 29622), (64, 29652),

Gene: Werner_40 Start: 28852, Stop: 29196, Start Num: 14
Candidate Starts for Werner_40:
(Start: 14 @28852 has 71 MA's), (29, 28960), (33, 28978), (41, 29032), (50, 29083), (51, 29092), (58, 29158), (60, 29173),

Gene: Whatever_40 Start: 28852, Stop: 29196, Start Num: 14
Candidate Starts for Whatever_40:
(Start: 14 @28852 has 71 MA's), (29, 28960), (33, 28978), (41, 29032), (50, 29083), (51, 29092), (58, 29158), (60, 29173),

Gene: Yasdnil_40 Start: 28904, Stop: 29248, Start Num: 14
Candidate Starts for Yasdnil_40:
(Start: 14 @28904 has 71 MA's), (29, 29012), (41, 29084), (50, 29135), (51, 29144), (58, 29210), (60, 29225),

Gene: Yosif_43 Start: 30966, Stop: 31310, Start Num: 14
Candidate Starts for Yosif_43:
(5, 30753), (Start: 14 @30966 has 71 MA's), (41, 31149), (50, 31200), (55, 31248), (62, 31290),

Gene: Zainub_43 Start: 30274, Stop: 30603, Start Num: 16
Candidate Starts for Zainub_43:
(11, 30235), (Start: 16 @30274 has 13 MA's), (28, 30355), (58, 30562),

Gene: ZamZam_43 Start: 30463, Stop: 30807, Start Num: 14
Candidate Starts for ZamZam_43:
(Start: 14 @30463 has 71 MA's), (31, 30571), (59, 30769), (60, 30778),

Gene: Zemlya_42 Start: 29400, Stop: 29735, Start Num: 14
Candidate Starts for Zemlya_42:
(Start: 14 @29400 has 71 MA's), (33, 29517), (50, 29622), (54, 29667), (58, 29697), (60, 29712),

Gene: phiCAM_39 Start: 32321, Stop: 32662, Start Num: 14
Candidate Starts for phiCAM_39:
(Start: 14 @32321 has 71 MA's), (21, 32375), (26, 32396), (51, 32552), (59, 32624), (61, 32636),

Gene: phiHau3_42 Start: 28938, Stop: 29264, Start Num: 14
Candidate Starts for phiHau3_42:
(13, 28932), (Start: 14 @28938 has 71 MA's), (31, 29034), (59, 29229), (64, 29256),