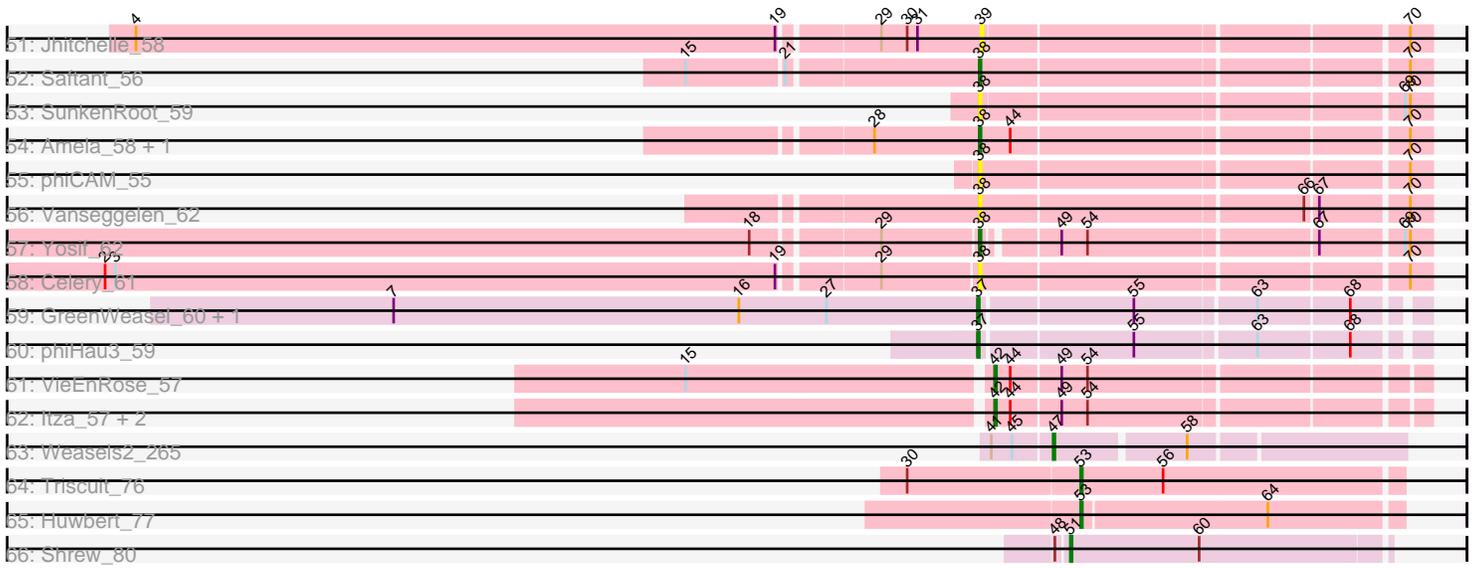


Pham 289198



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 289198 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 289198 has 123 members, 10 are drafts.

Phages represented in each track:

- Track 1 : EastWest_71
- Track 2 : Nostromo_62
- Track 3 : Sujidade_56
- Track 4 : Leviticus_54, Esperer_54
- Track 5 : Lannister_55
- Track 6 : Asten_55, Ejemplo_53, Dwayne_55, Maneekul_55, Yasdnil_55, Werner_55, Brataylor_58, Whatever_55, Emaanora_58, Hippo_55, Lorelei_56, Snorlax_55, BarryBee_58, Triste_56, SarahRose_55, TuanPN_53, Rana_57, TagePhighter_57
- Track 7 : Lika_56
- Track 8 : Legacy_53, SunsetPointe_53, Ozzie_53
- Track 9 : Toma_57, Goby_57, Dattran_58, Godpower_57
- Track 10 : BeardedLady_54, Caliburn_53, Phettuccine_54, Indigo_53, Bovely_54, Nerdos_53, Unstoppable_54, Aaronocolus_54
- Track 11 : Danzina_57
- Track 12 : Celeste_57
- Track 13 : EnochSoames_58, South40_55, Katalie_55, RedBear_56
- Track 14 : Izzy_56, Jash_56, BryanRecycles_56, Oliynyk_56, Rusticus_56, Eddasa_57
- Track 15 : Nanodon_57
- Track 16 : Chucky_55
- Track 17 : OzzyJ_57
- Track 18 : Zemlya_57
- Track 19 : Nabi_56
- Track 20 : Hydra_55
- Track 21 : Triumph_60
- Track 22 : Omar_61
- Track 23 : BartholomewSD_61, Alvy_61
- Track 24 : Haizum_58, Tefunt_58, Nishikigoi_59
- Track 25 : Amethyst_58
- Track 26 : Jevington_57
- Track 27 : Paedore_59
- Track 28 : R4_58

- Track 29 : Issmi_59
- Track 30 : TinaBelcher_58
- Track 31 : Loofah_60
- Track 32 : Caelum_60
- Track 33 : Pablito_56
- Track 34 : Bowden_58
- Track 35 : Diane_58
- Track 36 : SqueakyClean_59, Janus_59, GirlDinner_58, Animus_58
- Track 37 : Andris_58
- Track 38 : TrvxScott_57, Thestral_60
- Track 39 : Marav_59
- Track 40 : Puginator_60
- Track 41 : Paolo_60, Zainub_60
- Track 42 : Hank144_60
- Track 43 : Superstar_65
- Track 44 : Axiom_59
- Track 45 : Daudau_58
- Track 46 : ELB20_57
- Track 47 : Provolone_58, ElGato_58
- Track 48 : Verabelle_61
- Track 49 : Alsaber_58, ZamZam_61, Sudan_59, Pavo_59, Kaine_58, Conan_58, Dexers_56
- Track 50 : Speedwell_61
- Track 51 : Jhitchelle_58
- Track 52 : Saftant_56
- Track 53 : SunkenRoot_59
- Track 54 : Amela_58, Verse_59
- Track 55 : phiCAM_55
- Track 56 : Vanseggelen_62
- Track 57 : Yosif_62
- Track 58 : Celery_61
- Track 59 : GreenWeasel_60, BroPlease_58
- Track 60 : phiHau3_59
- Track 61 : VieEnRose_57
- Track 62 : Itza_57, Celia_55, Urza_56
- Track 63 : Weasels2_265
- Track 64 : Triscuit_76
- Track 65 : Huwbert_77
- Track 66 : Shrew_80

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

The start number called the most often in the published annotations is 42, it was called in 58 of the 113 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Aaronocolus_54, Asten_55, BarryBee_58, BeardedLady_54, Bovely_54, Brataylor_58, BryanRecycles_56, Caliburn_53, Celeste_57, Celia_55, Danzina_57, Dattran_58, Dwayne_55, Eddasa_57, Ejemplo_53, Emaanora_58, EnochSoames_58, Esperer_54, Goby_57, Godpower_57, Hippo_55, Hydra_55,

Indigo_53, Itza_57, Izzy_56, Jash_56, Katalie_55, Lannister_55, Legacy_53, Leviticus_54, Lika_56, Lorelei_56, Maneekul_55, Nabi_56, Nanodon_57, Nerdos_53, Oliynyk_56, Ozzie_53, OzzyJ_57, Phettuccine_54, Rana_57, RedBear_56, Rusticus_56, SarahRose_55, Snorlax_55, South40_55, Sujidade_56, SunsetPointe_53, TagePhighter_57, Toma_57, Triste_56, TuanPN_53, Unstoppable_54, Urza_56, VieEnRose_57, Werner_55, Whatever_55, Yasdnil_55, Zemlya_57,

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

- Chucky_55,

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

- Alsaber_58, Alvy_61, Amela_58, Amethyst_58, Andris_58, Animus_58, Axiom_59, BartholomewSD_61, Bowden_58, BroPlease_58, Caelum_60, Celery_61, Conan_58, Daudau_58, Dexers_56, Diane_58, ELB20_57, EastWest_71, ElGato_58, GirlDinner_58, GreenWeasel_60, Haizum_58, Hank144_60, Huwburt_77, Issmi_59, Janus_59, Jevington_57, Jhitchelle_58, Kaine_58, Loofah_60, Marav_59, Nishikigoi_59, Nostromo_62, Omar_61, Pablito_56, Paedore_59, Paolo_60, Pavo_59, Provolone_58, Puginator_60, R4_58, Saftant_56, Shrew_80, Speedwell_61, SqueakyClean_59, Sudan_59, SunkenRoot_59, Superstar_65, Tefunt_58, Thestral_60, TinaBelcher_58, Triscuit_76, Triumph_60, TrvxScott_57, Vanseggelen_62, Verabelle_61, Verse_59, Weasels2_265, Yosif_62, Zainub_60, ZamZam_61, phiCAM_55, phiHau3_59,

Summary by start number:

Start 35:

- Found in 2 of 123 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Issmi_59 (BD2),

Start 36:

- Found in 30 of 123 (24.4%) of genes in pham
- Manual Annotations of this start: 25 of 113
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Alvy_61 (BD2), Amethyst_58 (BD2), Andris_58 (BD2), Animus_58 (BD2), Axiom_59 (BD2), BartholomewSD_61 (BD2), Bowden_58 (BD2), Caelum_60 (BD2), Daudau_58 (BD2), ELB20_57 (BD2), GirlDinner_58 (BD2), Janus_59 (BD2), Jevington_57 (BD2), Marav_59 (BD2), Pablito_56 (BD2), Paedore_59 (BD2), Paolo_60 (BD2), Puginator_60 (BD2), R4_58 (BD2), SqueakyClean_59 (BD2), Thestral_60 (BD2), TinaBelcher_58 (BD2), Triumph_60 (BD2), TrvxScott_57 (BD2), Zainub_60 (BD2),

Start 37:

- Found in 3 of 123 (2.4%) of genes in pham
- Manual Annotations of this start: 3 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BroPlease_58 (BD4), GreenWeasel_60 (BD4), phiHau3_59 (BD4),

Start 38:

- Found in 19 of 123 (15.4%) of genes in pham

- Manual Annotations of this start: 12 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alsaber_58 (BD3), Amela_58 (BD3), Celery_61 (BD3), Conan_58 (BD3), Dexers_56 (BD3), ElGato_58 (BD3), Kaine_58 (BD3), Pavo_59 (BD3), Provolone_58 (BD3), Saftant_56 (BD3), Speedwell_61 (BD3), Sudan_59 (BD3), SunkenRoot_59 (BD3), Vanseggelen_62 (BD3), Verabelle_61 (BD3), Verse_59 (BD3), Yosif_62 (BD3), ZamZam_61 (BD3), phiCAM_55 (BD3),

Start 39:

- Found in 1 of 123 (0.8%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jhitchelle_58 (BD3),

Start 40:

- Found in 1 of 123 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Loofah_60 (BD2),

Start 42:

- Found in 60 of 123 (48.8%) of genes in pham
- Manual Annotations of this start: 58 of 113
- Called 98.3% of time when present
- Phage (with cluster) where this start called: Aaronocolus_54 (BD1), Asten_55 (BD1), BarryBee_58 (BD1), BeardedLady_54 (BD1), Bovely_54 (BD1), Brataylor_58 (BD1), BryanRecycles_56 (BD1), Caliburn_53 (BD1), Celeste_57 (BD1), Celia_55 (BD6), Danzina_57 (BD1), Dattran_58 (BD1), Dwayne_55 (BD1), Eddasa_57 (BD1), Ejemplo_53 (BD1), Emaanora_58 (BD1), EnochSoames_58 (BD1), Esperer_54 (BD1), Goby_57 (BD1), Godpower_57 (BD1), Hippo_55 (BD1), Hydra_55 (BD1), Indigo_53 (BD1), Itza_57 (BD6), Izzy_56 (BD1), Jash_56 (BD1), Katalie_55 (BD1), Lannister_55 (BD1), Legacy_53 (BD1), Leviticus_54 (BD1), Lika_56 (BD1), Lorelei_56 (BD1), Maneekul_55 (BD1), Nabi_56 (BD1), Nanodon_57 (BD1), Nerdos_53 (BD1), Oliynyk_56 (BD1), Ozzie_53 (BD1), OzzyJ_57 (BD1), Phettuccine_54 (BD1), Rana_57 (BD1), RedBear_56 (BD1), Rusticus_56 (BD1), SarahRose_55 (BD1), Snorlax_55 (BD1), South40_55 (BD1), Sujidade_56 (BD1), SunsetPointe_53 (BD1), TagePhighter_57 (BD1), Toma_57 (BD1), Triste_56 (BD1), TuanPN_53 (BD1), Unstoppable_54 (BD1), Urza_56 (BD6), VieEnRose_57 (BD6), Werner_55 (BD1), Whatever_55 (BD1), Yasdnil_55 (BD1), Zemlya_57 (BD1),

Start 43:

- Found in 1 of 123 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hank144_60 (BD2),

Start 47:

- Found in 1 of 123 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Weasels2_265 (CB),

Start 49:

- Found in 66 of 123 (53.7%) of genes in pham
- Manual Annotations of this start: 6 of 113
- Called 10.6% of time when present
- Phage (with cluster) where this start called: Chucky_55 (BD1), Diane_58 (BD2), Haizum_58 (BD2), Nishikigoi_59 (BD2), Omar_61 (BD2), Superstar_65 (BD2), Tefunt_58 (BD2),

Start 50:

- Found in 1 of 123 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EastWest_71 (AO),

Start 51:

- Found in 1 of 123 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shrew_80 (singleton),

Start 52:

- Found in 1 of 123 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nostromo_62 (AO3),

Start 53:

- Found in 2 of 123 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 113
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Huwbert_77 (GG), Triscuit_76 (GG),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, CB, AO, GG, BD4, BD6, BD1, BD3, BD2, AO3,

Info for manual annotations of cluster AO:

- Start number 50 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO3:

- Start number 52 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster BD1:

- Start number 42 was manually annotated 54 times for cluster BD1.
- Start number 49 was manually annotated 1 time for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 35 was manually annotated 1 time for cluster BD2.
- Start number 36 was manually annotated 25 times for cluster BD2.
- Start number 40 was manually annotated 1 time for cluster BD2.
- Start number 43 was manually annotated 1 time for cluster BD2.
- Start number 49 was manually annotated 5 times for cluster BD2.

Info for manual annotations of cluster BD3:

- Start number 38 was manually annotated 12 times for cluster BD3.

Info for manual annotations of cluster BD4:

- Start number 37 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster BD6:

- Start number 42 was manually annotated 4 times for cluster BD6.

Info for manual annotations of cluster CB:

- Start number 47 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster GG:

- Start number 53 was manually annotated 2 times for cluster GG.

Gene Information:

Gene: Aaronocolus_54 Start: 40469, Stop: 40233, Start Num: 42

Candidate Starts for Aaronocolus_54:

(Start: 42 @40469 has 58 MA's), (44, 40460), (Start: 49 @40433 has 6 MA's),

Gene: Alsaber_58 Start: 40437, Stop: 40192, Start Num: 38

Candidate Starts for Alsaber_58:

(Start: 38 @40437 has 12 MA's), (70, 40203),

Gene: Alvy_61 Start: 42035, Stop: 41802, Start Num: 36

Candidate Starts for Alvy_61:

(12, 42197), (16, 42146), (24, 42125), (Start: 36 @42035 has 25 MA's), (54, 41984),

Gene: Amela_58 Start: 41420, Stop: 41175, Start Num: 38

Candidate Starts for Amela_58:

(28, 41480), (Start: 38 @41420 has 12 MA's), (44, 41402), (70, 41186),

Gene: Amethyst_58 Start: 40610, Stop: 40371, Start Num: 36

Candidate Starts for Amethyst_58:

(Start: 36 @40610 has 25 MA's), (61, 40478), (63, 40463),

Gene: Andris_58 Start: 40956, Stop: 40702, Start Num: 36

Candidate Starts for Andris_58:

(Start: 36 @40956 has 25 MA's),

Gene: Animus_58 Start: 41572, Stop: 41315, Start Num: 36

Candidate Starts for Animus_58:

(Start: 36 @41572 has 25 MA's), (71, 41332),

Gene: Asten_55 Start: 42688, Stop: 42452, Start Num: 42

Candidate Starts for Asten_55:

(21, 42793), (28, 42748), (Start: 42 @42688 has 58 MA's), (Start: 49 @42652 has 6 MA's),

Gene: Axiom_59 Start: 41223, Stop: 40963, Start Num: 36

Candidate Starts for Axiom_59:

(20, 41337), (Start: 36 @41223 has 25 MA's), (71, 40983), (74, 40971),

Gene: BarryBee_58 Start: 42710, Stop: 42474, Start Num: 42

Candidate Starts for BarryBee_58:

(21, 42815), (28, 42770), (Start: 42 @42710 has 58 MA's), (Start: 49 @42674 has 6 MA's),

Gene: BartholomewSD_61 Start: 41154, Stop: 40921, Start Num: 36

Candidate Starts for BartholomewSD_61:

(12, 41316), (16, 41265), (24, 41244), (Start: 36 @41154 has 25 MA's), (54, 41103),

Gene: BeardedLady_54 Start: 40843, Stop: 40607, Start Num: 42

Candidate Starts for BeardedLady_54:

(Start: 42 @40843 has 58 MA's), (44, 40834), (Start: 49 @40807 has 6 MA's),

Gene: Bovely_54 Start: 40472, Stop: 40236, Start Num: 42

Candidate Starts for Bovely_54:

(Start: 42 @40472 has 58 MA's), (44, 40463), (Start: 49 @40436 has 6 MA's),

Gene: Bowden_58 Start: 41991, Stop: 41758, Start Num: 36

Candidate Starts for Bowden_58:

(16, 42102), (Start: 36 @41991 has 25 MA's), (54, 41940),

Gene: Brataylor_58 Start: 42252, Stop: 42016, Start Num: 42

Candidate Starts for Brataylor_58:

(21, 42357), (28, 42312), (Start: 42 @42252 has 58 MA's), (Start: 49 @42216 has 6 MA's),

Gene: BroPlease_58 Start: 40749, Stop: 40513, Start Num: 37

Candidate Starts for BroPlease_58:

(7, 41088), (16, 40887), (27, 40836), (Start: 37 @40749 has 3 MA's), (55, 40665), (63, 40599), (68, 40548),

Gene: BryanRecycles_56 Start: 40959, Stop: 40723, Start Num: 42

Candidate Starts for BryanRecycles_56:

(23, 41058), (Start: 42 @40959 has 58 MA's), (Start: 49 @40923 has 6 MA's), (69, 40734),

Gene: Caelum_60 Start: 40694, Stop: 40458, Start Num: 36

Candidate Starts for Caelum_60:

(Start: 36 @40694 has 25 MA's),

Gene: Caliburn_53 Start: 40573, Stop: 40337, Start Num: 42

Candidate Starts for Caliburn_53:

(Start: 42 @40573 has 58 MA's), (44, 40564), (Start: 49 @40537 has 6 MA's),

Gene: Celery_61 Start: 40408, Stop: 40163, Start Num: 38

Candidate Starts for Celery_61:

(2, 40903), (3, 40897), (19, 40513), (29, 40462), (Start: 38 @40408 has 12 MA's), (70, 40174),

Gene: Celeste_57 Start: 41721, Stop: 41485, Start Num: 42

Candidate Starts for Celeste_57:

(21, 41826), (28, 41781), (Start: 42 @41721 has 58 MA's), (69, 41496),

Gene: Celia_55 Start: 40296, Stop: 40063, Start Num: 42

Candidate Starts for Celia_55:

(Start: 42 @40296 has 58 MA's), (44, 40287), (Start: 49 @40260 has 6 MA's), (54, 40245),

Gene: Chucky_55 Start: 42691, Stop: 42491, Start Num: 49

Candidate Starts for Chucky_55:

(21, 42832), (28, 42787), (Start: 42 @42727 has 58 MA's), (Start: 49 @42691 has 6 MA's),

Gene: Conan_58 Start: 40397, Stop: 40152, Start Num: 38

Candidate Starts for Conan_58:

(Start: 38 @40397 has 12 MA's), (70, 40163),

Gene: Danzina_57 Start: 41966, Stop: 41730, Start Num: 42

Candidate Starts for Danzina_57:

(21, 42071), (26, 42056), (28, 42026), (Start: 42 @41966 has 58 MA's), (Start: 49 @41930 has 6 MA's),

Gene: Dattran_58 Start: 42112, Stop: 41876, Start Num: 42

Candidate Starts for Dattran_58:

(21, 42217), (28, 42172), (Start: 42 @42112 has 58 MA's), (Start: 49 @42076 has 6 MA's), (69, 41887),

Gene: Daudau_58 Start: 40574, Stop: 40341, Start Num: 36

Candidate Starts for Daudau_58:

(10, 40763), (12, 40736), (16, 40685), (Start: 36 @40574 has 25 MA's), (61, 40445),

Gene: Dexers_56 Start: 40679, Stop: 40434, Start Num: 38

Candidate Starts for Dexers_56:

(Start: 38 @40679 has 12 MA's), (70, 40445),

Gene: Diane_58 Start: 41306, Stop: 41106, Start Num: 49

Candidate Starts for Diane_58:

(12, 41507), (16, 41456), (22, 41441), (Start: 36 @41342 has 25 MA's), (Start: 49 @41306 has 6 MA's), (61, 41213), (63, 41198),

Gene: Dwayne_55 Start: 42715, Stop: 42479, Start Num: 42

Candidate Starts for Dwayne_55:

(21, 42820), (28, 42775), (Start: 42 @42715 has 58 MA's), (Start: 49 @42679 has 6 MA's),

Gene: ELB20_57 Start: 40920, Stop: 40693, Start Num: 36

Candidate Starts for ELB20_57:

(12, 41079), (16, 41028), (22, 41013), (Start: 36 @40920 has 25 MA's), (54, 40869), (69, 40704),

Gene: EastWest_71 Start: 42488, Stop: 42676, Start Num: 50

Candidate Starts for EastWest_71:

(Start: 50 @42488 has 1 MA's), (63, 42596),

Gene: Eddasa_57 Start: 41498, Stop: 41262, Start Num: 42

Candidate Starts for Eddasa_57:

(23, 41597), (Start: 42 @41498 has 58 MA's), (Start: 49 @41462 has 6 MA's), (69, 41273),

Gene: Ejemplo_53 Start: 42653, Stop: 42417, Start Num: 42

Candidate Starts for Ejemplo_53:

(21, 42758), (28, 42713), (Start: 42 @42653 has 58 MA's), (Start: 49 @42617 has 6 MA's),

Gene: ElGato_58 Start: 40268, Stop: 40023, Start Num: 38

Candidate Starts for ElGato_58:

(32, 40301), (Start: 38 @40268 has 12 MA's), (70, 40034),

Gene: Emaanora_58 Start: 42638, Stop: 42402, Start Num: 42

Candidate Starts for Emaanora_58:

(21, 42743), (28, 42698), (Start: 42 @42638 has 58 MA's), (Start: 49 @42602 has 6 MA's),

Gene: EnochSoames_58 Start: 40755, Stop: 40519, Start Num: 42

Candidate Starts for EnochSoames_58:

(Start: 42 @40755 has 58 MA's), (Start: 49 @40719 has 6 MA's), (69, 40530),

Gene: Esperer_54 Start: 40288, Stop: 40049, Start Num: 42

Candidate Starts for Esperer_54:

(Start: 42 @40288 has 58 MA's), (44, 40279), (Start: 49 @40249 has 6 MA's),

Gene: GirlDinner_58 Start: 41073, Stop: 40816, Start Num: 36

Candidate Starts for GirlDinner_58:

(Start: 36 @41073 has 25 MA's), (71, 40833),

Gene: Goby_57 Start: 42538, Stop: 42302, Start Num: 42

Candidate Starts for Goby_57:

(21, 42643), (28, 42598), (Start: 42 @42538 has 58 MA's), (Start: 49 @42502 has 6 MA's), (69, 42313),

Gene: Godpower_57 Start: 41991, Stop: 41755, Start Num: 42

Candidate Starts for Godpower_57:

(21, 42096), (28, 42051), (Start: 42 @41991 has 58 MA's), (Start: 49 @41955 has 6 MA's), (69, 41766),

Gene: GreenWeasel_60 Start: 40754, Stop: 40518, Start Num: 37

Candidate Starts for GreenWeasel_60:

(7, 41093), (16, 40892), (27, 40841), (Start: 37 @40754 has 3 MA's), (55, 40670), (63, 40604), (68, 40553),

Gene: Haizum_58 Start: 41371, Stop: 41171, Start Num: 49

Candidate Starts for Haizum_58:

(12, 41572), (16, 41521), (22, 41506), (Start: 36 @41407 has 25 MA's), (Start: 49 @41371 has 6 MA's), (61, 41278), (63, 41263),

Gene: Hank144_60 Start: 41455, Stop: 41225, Start Num: 43

Candidate Starts for Hank144_60:

(33, 41491), (Start: 43 @41455 has 1 MA's), (46, 41440), (65, 41305),

Gene: Hippo_55 Start: 42701, Stop: 42465, Start Num: 42

Candidate Starts for Hippo_55:

(21, 42806), (28, 42761), (Start: 42 @42701 has 58 MA's), (Start: 49 @42665 has 6 MA's),

Gene: Huwbert_77 Start: 47906, Stop: 48085, Start Num: 53

Candidate Starts for Huwbert_77:

(Start: 53 @47906 has 2 MA's), (64, 48011),

Gene: Hydra_55 Start: 41124, Stop: 40885, Start Num: 42

Candidate Starts for Hydra_55:

(Start: 42 @41124 has 58 MA's), (44, 41115), (Start: 49 @41085 has 6 MA's), (69, 40896),

Gene: Indigo_53 Start: 40465, Stop: 40229, Start Num: 42

Candidate Starts for Indigo_53:

(Start: 42 @40465 has 58 MA's), (44, 40456), (Start: 49 @40429 has 6 MA's),

Gene: Issmi_59 Start: 40976, Stop: 40734, Start Num: 35

Candidate Starts for Issmi_59:

(25, 41057), (Start: 35 @40976 has 1 MA's), (54, 40928), (61, 40850), (73, 40745),

Gene: Itza_57 Start: 40229, Stop: 39996, Start Num: 42

Candidate Starts for Itza_57:

(Start: 42 @40229 has 58 MA's), (44, 40220), (Start: 49 @40193 has 6 MA's), (54, 40178),

Gene: Izzy_56 Start: 41006, Stop: 40770, Start Num: 42

Candidate Starts for Izzy_56:

(23, 41105), (Start: 42 @41006 has 58 MA's), (Start: 49 @40970 has 6 MA's), (69, 40781),

Gene: Janus_59 Start: 41413, Stop: 41156, Start Num: 36

Candidate Starts for Janus_59:

(Start: 36 @41413 has 25 MA's), (71, 41173),

Gene: Jash_56 Start: 40959, Stop: 40723, Start Num: 42

Candidate Starts for Jash_56:

(23, 41058), (Start: 42 @40959 has 58 MA's), (Start: 49 @40923 has 6 MA's), (69, 40734),

Gene: Jevington_57 Start: 39340, Stop: 39107, Start Num: 36

Candidate Starts for Jevington_57:

(Start: 36 @39340 has 25 MA's), (54, 39289),

Gene: Jhitchelle_58 Start: 40061, Stop: 39819, Start Num: 39

Candidate Starts for Jhitchelle_58:

(4, 40541), (19, 40169), (29, 40118), (30, 40103), (31, 40097), (39, 40061), (70, 39830),

Gene: Kaine_58 Start: 40589, Stop: 40344, Start Num: 38

Candidate Starts for Kaine_58:

(Start: 38 @40589 has 12 MA's), (70, 40355),

Gene: Katalie_55 Start: 42970, Stop: 42737, Start Num: 42

Candidate Starts for Katalie_55:

(Start: 42 @42970 has 58 MA's), (Start: 49 @42934 has 6 MA's), (69, 42748),

Gene: Lannister_55 Start: 41666, Stop: 41430, Start Num: 42

Candidate Starts for Lannister_55:

(9, 41960), (19, 41774), (31, 41702), (34, 41681), (Start: 42 @41666 has 58 MA's), (Start: 49 @41630 has 6 MA's), (59, 41555),

Gene: Legacy_53 Start: 40564, Stop: 40328, Start Num: 42

Candidate Starts for Legacy_53:

(Start: 42 @40564 has 58 MA's), (Start: 49 @40528 has 6 MA's),

Gene: Leviticus_54 Start: 40475, Stop: 40236, Start Num: 42

Candidate Starts for Leviticus_54:

(Start: 42 @40475 has 58 MA's), (44, 40466), (Start: 49 @40436 has 6 MA's),

Gene: Lika_56 Start: 42546, Stop: 42313, Start Num: 42

Candidate Starts for Lika_56:

(19, 42651), (31, 42579), (Start: 42 @42546 has 58 MA's), (Start: 49 @42510 has 6 MA's), (67, 42369),

Gene: Loofah_60 Start: 41340, Stop: 41113, Start Num: 40

Candidate Starts for Loofah_60:

(5, 41775), (6, 41688), (8, 41649), (14, 41514), (30, 41385), (Start: 35 @41355 has 1 MA's), (Start: 40 @41340 has 1 MA's), (54, 41289), (69, 41124),

Gene: Lorelei_56 Start: 41728, Stop: 41492, Start Num: 42

Candidate Starts for Lorelei_56:

(21, 41833), (28, 41788), (Start: 42 @41728 has 58 MA's), (Start: 49 @41692 has 6 MA's),

Gene: Maneekul_55 Start: 42731, Stop: 42495, Start Num: 42

Candidate Starts for Maneekul_55:

(21, 42836), (28, 42791), (Start: 42 @42731 has 58 MA's), (Start: 49 @42695 has 6 MA's),

Gene: Marav_59 Start: 39879, Stop: 39634, Start Num: 36

Candidate Starts for Marav_59:

(12, 40041), (16, 39990), (24, 39969), (Start: 36 @39879 has 25 MA's), (Start: 49 @39846 has 6 MA's), (54, 39831), (62, 39744), (69, 39660),

Gene: Nabi_56 Start: 41728, Stop: 41489, Start Num: 42

Candidate Starts for Nabi_56:

(Start: 42 @41728 has 58 MA's), (44, 41719),

Gene: Nanodon_57 Start: 41658, Stop: 41422, Start Num: 42

Candidate Starts for Nanodon_57:

(28, 41718), (Start: 42 @41658 has 58 MA's),

Gene: Nerdos_53 Start: 40464, Stop: 40228, Start Num: 42

Candidate Starts for Nerdos_53:

(Start: 42 @40464 has 58 MA's), (44, 40455), (Start: 49 @40428 has 6 MA's),

Gene: Nishikigoi_59 Start: 41371, Stop: 41171, Start Num: 49

Candidate Starts for Nishikigoi_59:

(12, 41572), (16, 41521), (22, 41506), (Start: 36 @41407 has 25 MA's), (Start: 49 @41371 has 6 MA's), (61, 41278), (63, 41263),

Gene: Nostromo_62 Start: 41307, Stop: 41489, Start Num: 52

Candidate Starts for Nostromo_62:

(Start: 52 @41307 has 1 MA's), (57, 41358),

Gene: Oliynyk_56 Start: 40959, Stop: 40723, Start Num: 42

Candidate Starts for Oliynyk_56:

(23, 41058), (Start: 42 @40959 has 58 MA's), (Start: 49 @40923 has 6 MA's), (69, 40734),

Gene: Omar_61 Start: 39650, Stop: 39450, Start Num: 49

Candidate Starts for Omar_61:

(16, 39800), (22, 39785), (Start: 36 @39686 has 25 MA's), (Start: 49 @39650 has 6 MA's), (54, 39635), (61, 39557),

Gene: Ozzie_53 Start: 40573, Stop: 40337, Start Num: 42

Candidate Starts for Ozzie_53:

(Start: 42 @40573 has 58 MA's), (Start: 49 @40537 has 6 MA's),

Gene: OzzyJ_57 Start: 42627, Stop: 42391, Start Num: 42

Candidate Starts for OzzyJ_57:

(1, 43152), (3, 43119), (19, 42735), (31, 42663), (Start: 42 @42627 has 58 MA's), (Start: 49 @42591 has 6 MA's),

Gene: Pablito_56 Start: 39942, Stop: 39703, Start Num: 36

Candidate Starts for Pablito_56:

(Start: 36 @39942 has 25 MA's), (46, 39921),

Gene: Paedore_59 Start: 41325, Stop: 41098, Start Num: 36

Candidate Starts for Paedore_59:

(12, 41484), (13, 41469), (16, 41433), (22, 41418), (Start: 36 @41325 has 25 MA's), (54, 41274), (69, 41109),

Gene: Paolo_60 Start: 41043, Stop: 40813, Start Num: 36

Candidate Starts for Paolo_60:

(Start: 36 @41043 has 25 MA's), (54, 40995),

Gene: Pavo_59 Start: 40640, Stop: 40395, Start Num: 38

Candidate Starts for Pavo_59:

(Start: 38 @40640 has 12 MA's), (70, 40406),

Gene: Phettuccine_54 Start: 40465, Stop: 40229, Start Num: 42

Candidate Starts for Phettuccine_54:

(Start: 42 @40465 has 58 MA's), (44, 40456), (Start: 49 @40429 has 6 MA's),

Gene: Provolone_58 Start: 40480, Stop: 40235, Start Num: 38

Candidate Starts for Provolone_58:

(32, 40513), (Start: 38 @40480 has 12 MA's), (70, 40246),

Gene: Puginator_60 Start: 41089, Stop: 40859, Start Num: 36

Candidate Starts for Puginator_60:

(Start: 36 @41089 has 25 MA's), (Start: 49 @41056 has 6 MA's), (54, 41041),

Gene: R4_58 Start: 41080, Stop: 40853, Start Num: 36

Candidate Starts for R4_58:

(12, 41239), (16, 41188), (22, 41173), (Start: 36 @41080 has 25 MA's), (54, 41029), (69, 40864),

Gene: Rana_57 Start: 42150, Stop: 41905, Start Num: 42

Candidate Starts for Rana_57:

(21, 42255), (28, 42210), (Start: 42 @42150 has 58 MA's), (Start: 49 @42114 has 6 MA's),

Gene: RedBear_56 Start: 42970, Stop: 42737, Start Num: 42

Candidate Starts for RedBear_56:

(Start: 42 @42970 has 58 MA's), (Start: 49 @42934 has 6 MA's), (69, 42748),

Gene: Rusticus_56 Start: 40959, Stop: 40723, Start Num: 42

Candidate Starts for Rusticus_56:

(23, 41058), (Start: 42 @40959 has 58 MA's), (Start: 49 @40923 has 6 MA's), (69, 40734),

Gene: Saftant_56 Start: 40553, Stop: 40308, Start Num: 38

Candidate Starts for Saftant_56:
(15, 40712), (21, 40658), (Start: 38 @40553 has 12 MA's), (70, 40319),

Gene: SarahRose_55 Start: 42700, Stop: 42464, Start Num: 42
Candidate Starts for SarahRose_55:
(21, 42805), (28, 42760), (Start: 42 @42700 has 58 MA's), (Start: 49 @42664 has 6 MA's),

Gene: Shrew_80 Start: 49126, Stop: 49305, Start Num: 51
Candidate Starts for Shrew_80:
(48, 49120), (Start: 51 @49126 has 1 MA's), (60, 49201),

Gene: Snorlax_55 Start: 42725, Stop: 42489, Start Num: 42
Candidate Starts for Snorlax_55:
(21, 42830), (28, 42785), (Start: 42 @42725 has 58 MA's), (Start: 49 @42689 has 6 MA's),

Gene: South40_55 Start: 42970, Stop: 42737, Start Num: 42
Candidate Starts for South40_55:
(Start: 42 @42970 has 58 MA's), (Start: 49 @42934 has 6 MA's), (69, 42748),

Gene: Speedwell_61 Start: 41596, Stop: 41351, Start Num: 38
Candidate Starts for Speedwell_61:
(21, 41701), (Start: 38 @41596 has 12 MA's), (70, 41362),

Gene: SqueakyClean_59 Start: 41591, Stop: 41334, Start Num: 36
Candidate Starts for SqueakyClean_59:
(Start: 36 @41591 has 25 MA's), (71, 41351),

Gene: Sudan_59 Start: 40444, Stop: 40199, Start Num: 38
Candidate Starts for Sudan_59:
(Start: 38 @40444 has 12 MA's), (70, 40210),

Gene: Sujidade_56 Start: 42279, Stop: 42043, Start Num: 42
Candidate Starts for Sujidade_56:
(Start: 42 @42279 has 58 MA's), (Start: 49 @42243 has 6 MA's),

Gene: SunkenRoot_59 Start: 41146, Stop: 40904, Start Num: 38
Candidate Starts for SunkenRoot_59:
(Start: 38 @41146 has 12 MA's), (69, 40918), (70, 40915),

Gene: SunsetPointe_53 Start: 40580, Stop: 40344, Start Num: 42
Candidate Starts for SunsetPointe_53:
(Start: 42 @40580 has 58 MA's), (Start: 49 @40544 has 6 MA's),

Gene: Superstar_65 Start: 41700, Stop: 41482, Start Num: 49
Candidate Starts for Superstar_65:
(Start: 49 @41700 has 6 MA's), (54, 41685), (63, 41592), (72, 41502),

Gene: TagePighter_57 Start: 42701, Stop: 42465, Start Num: 42
Candidate Starts for TagePighter_57:
(21, 42806), (28, 42761), (Start: 42 @42701 has 58 MA's), (Start: 49 @42665 has 6 MA's),

Gene: Tefunt_58 Start: 41285, Stop: 41085, Start Num: 49
Candidate Starts for Tefunt_58:

(12, 41486), (16, 41435), (22, 41420), (Start: 36 @41321 has 25 MA's), (Start: 49 @41285 has 6 MA's), (61, 41192), (63, 41177),

Gene: Thestral_60 Start: 41982, Stop: 41749, Start Num: 36
Candidate Starts for Thestral_60:
(16, 42093), (Start: 36 @41982 has 25 MA's), (54, 41931),

Gene: TinaBelcher_58 Start: 41930, Stop: 41697, Start Num: 36
Candidate Starts for TinaBelcher_58:
(16, 42041), (Start: 36 @41930 has 25 MA's), (54, 41879),

Gene: Toma_57 Start: 42541, Stop: 42305, Start Num: 42
Candidate Starts for Toma_57:
(21, 42646), (28, 42601), (Start: 42 @42541 has 58 MA's), (Start: 49 @42505 has 6 MA's), (69, 42316),

Gene: Triscuit_76 Start: 47863, Stop: 48045, Start Num: 53
Candidate Starts for Triscuit_76:
(30, 47764), (Start: 53 @47863 has 2 MA's), (56, 47911),

Gene: Triste_56 Start: 42700, Stop: 42464, Start Num: 42
Candidate Starts for Triste_56:
(21, 42805), (28, 42760), (Start: 42 @42700 has 58 MA's), (Start: 49 @42664 has 6 MA's),

Gene: Triumph_60 Start: 41299, Stop: 41039, Start Num: 36
Candidate Starts for Triumph_60:
(20, 41413), (Start: 36 @41299 has 25 MA's), (71, 41059),

Gene: TrvxScott_57 Start: 41976, Stop: 41743, Start Num: 36
Candidate Starts for TrvxScott_57:
(16, 42087), (Start: 36 @41976 has 25 MA's), (54, 41925),

Gene: TuanPN_53 Start: 42653, Stop: 42417, Start Num: 42
Candidate Starts for TuanPN_53:
(21, 42758), (28, 42713), (Start: 42 @42653 has 58 MA's), (Start: 49 @42617 has 6 MA's),

Gene: Unstoppable_54 Start: 40463, Stop: 40227, Start Num: 42
Candidate Starts for Unstoppable_54:
(Start: 42 @40463 has 58 MA's), (44, 40454), (Start: 49 @40427 has 6 MA's),

Gene: Urza_56 Start: 40250, Stop: 40017, Start Num: 42
Candidate Starts for Urza_56:
(Start: 42 @40250 has 58 MA's), (44, 40241), (Start: 49 @40214 has 6 MA's), (54, 40199),

Gene: Vanseggelen_62 Start: 40293, Stop: 40048, Start Num: 38
Candidate Starts for Vanseggelen_62:
(Start: 38 @40293 has 12 MA's), (66, 40113), (67, 40107), (70, 40059),

Gene: Verabelle_61 Start: 40129, Stop: 39887, Start Num: 38
Candidate Starts for Verabelle_61:
(11, 40327), (17, 40255), (18, 40252), (19, 40237), (29, 40186), (31, 40165), (Start: 38 @40129 has 12 MA's), (62, 39985), (70, 39898),

Gene: Verse_59 Start: 41411, Stop: 41166, Start Num: 38

Candidate Starts for Verse_59:

(28, 41471), (Start: 38 @41411 has 12 MA's), (44, 41393), (70, 41177),

Gene: VieEnRose_57 Start: 40308, Stop: 40075, Start Num: 42

Candidate Starts for VieEnRose_57:

(15, 40479), (Start: 42 @40308 has 58 MA's), (44, 40299), (Start: 49 @40272 has 6 MA's), (54, 40257),

Gene: Weasels2_265 Start: 124741, Stop: 124550, Start Num: 47

Candidate Starts for Weasels2_265:

(41, 124774), (45, 124762), (Start: 47 @124741 has 1 MA's), (58, 124669),

Gene: Werner_55 Start: 42698, Stop: 42462, Start Num: 42

Candidate Starts for Werner_55:

(21, 42803), (28, 42758), (Start: 42 @42698 has 58 MA's), (Start: 49 @42662 has 6 MA's),

Gene: Whatever_55 Start: 42724, Stop: 42488, Start Num: 42

Candidate Starts for Whatever_55:

(21, 42829), (28, 42784), (Start: 42 @42724 has 58 MA's), (Start: 49 @42688 has 6 MA's),

Gene: Yasdnii_55 Start: 42750, Stop: 42514, Start Num: 42

Candidate Starts for Yasdnii_55:

(21, 42855), (28, 42810), (Start: 42 @42750 has 58 MA's), (Start: 49 @42714 has 6 MA's),

Gene: Yosif_62 Start: 41552, Stop: 41316, Start Num: 38

Candidate Starts for Yosif_62:

(18, 41672), (29, 41606), (Start: 38 @41552 has 12 MA's), (Start: 49 @41516 has 6 MA's), (54, 41501), (67, 41375), (69, 41330), (70, 41327),

Gene: Zainub_60 Start: 41018, Stop: 40788, Start Num: 36

Candidate Starts for Zainub_60:

(Start: 36 @41018 has 25 MA's), (54, 40970),

Gene: ZamZam_61 Start: 40867, Stop: 40622, Start Num: 38

Candidate Starts for ZamZam_61:

(Start: 38 @40867 has 12 MA's), (70, 40633),

Gene: Zemlya_57 Start: 42273, Stop: 42040, Start Num: 42

Candidate Starts for Zemlya_57:

(19, 42378), (29, 42327), (30, 42312), (Start: 42 @42273 has 58 MA's), (Start: 49 @42237 has 6 MA's), (67, 42096),

Gene: phiCAM_55 Start: 42218, Stop: 41973, Start Num: 38

Candidate Starts for phiCAM_55:

(Start: 38 @42218 has 12 MA's), (70, 41984),

Gene: phiHau3_59 Start: 40712, Stop: 40476, Start Num: 37

Candidate Starts for phiHau3_59:

(Start: 37 @40712 has 3 MA's), (55, 40628), (63, 40562), (68, 40511),