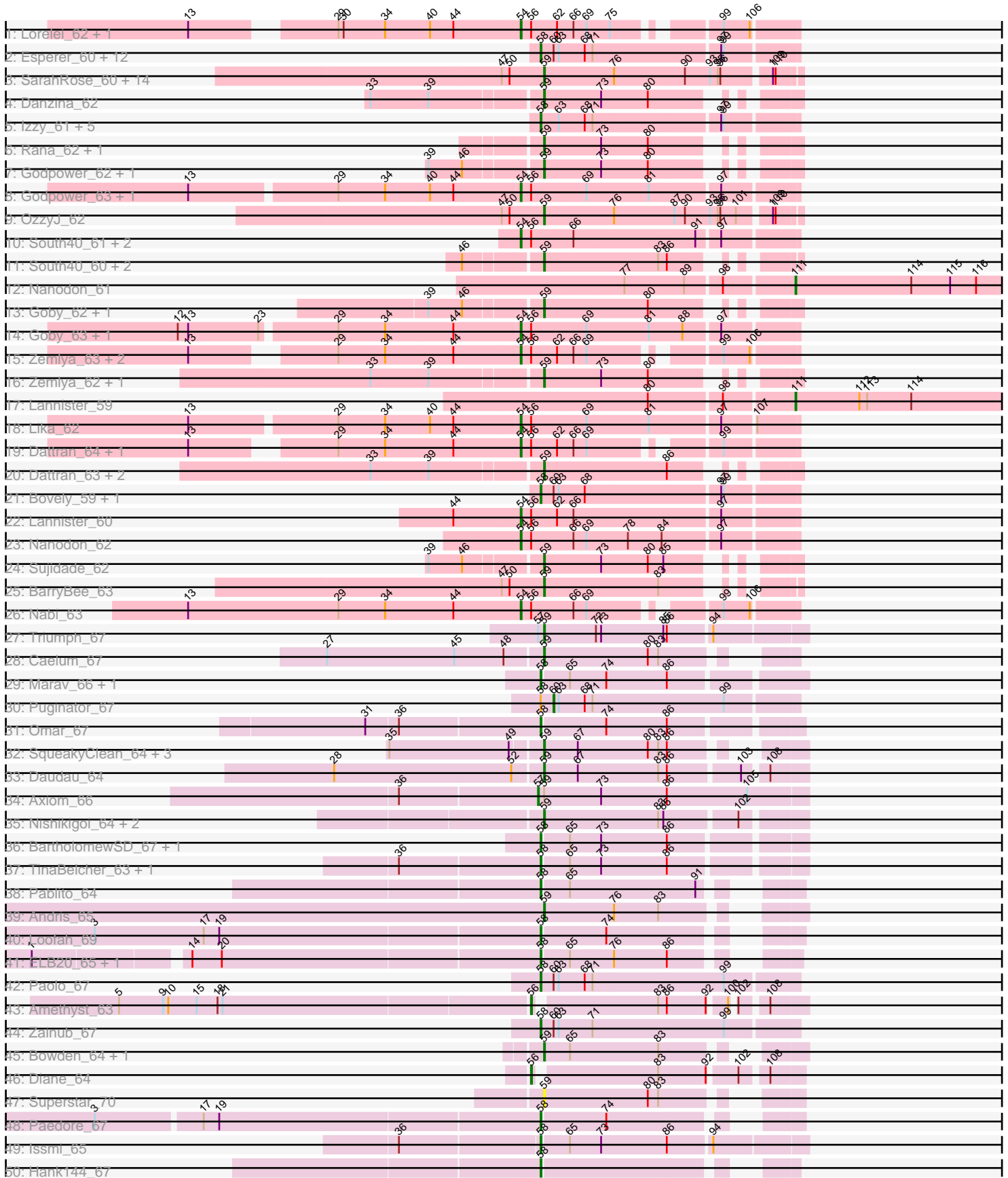


Pham 308254



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 308254 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308254 has 131 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Lorelei_62, Rana_63
- Track 2 : Esperer_60, Hydra_61, Legacy_58, BeardedLady_59, SunsetPointe_58, Phettuccine_59, Indigo_58, Leviticus_60, Nerdos_58, EnochSoames_63, Ozzie_58, Unstoppable_59, Aaronocolus_59
- Track 3 : SarahRose_60, TagePhighter_62, Whatever_60, Emaanora_63, Triste_61, Asten_60, Yasdnil_60, Ejemplo_58, Snorlax_60, Hippo_60, Werner_60, Dwayne_60, TuanPN_58, Chucky_60, Maneekul_60
- Track 4 : Danzina_62
- Track 5 : Izzy_61, BryanRecycles_61, Eddasa_62, Rusticus_61, Oliynyk_61, Jash_61
- Track 6 : Rana_62, Lorelei_61
- Track 7 : Godpower_62, Lika_61
- Track 8 : Godpower_63, Sujidade_63
- Track 9 : OzzyJ_62
- Track 10 : South40_61, Katalie_61, RedBear_62
- Track 11 : South40_60, Katalie_60, RedBear_61
- Track 12 : Nanodon_61
- Track 13 : Goby_62, Toma_62
- Track 14 : Goby_63, Toma_63
- Track 15 : Zemlya_63, Brataylor_64, Danzina_63
- Track 16 : Zemlya_62, Brataylor_63
- Track 17 : Lannister_59
- Track 18 : Lika_62
- Track 19 : Dattran_64, Celeste_63
- Track 20 : Dattran_63, Celeste_62, Nabi_62
- Track 21 : Bovely_59, Caliburn_58
- Track 22 : Lannister_60
- Track 23 : Nanodon_62
- Track 24 : Sujidade_62
- Track 25 : BarryBee_63
- Track 26 : Nabi_63
- Track 27 : Triumph_67
- Track 28 : Caelum_67
- Track 29 : Marav_66, Jevington_64
- Track 30 : Puginator_67
- Track 31 : Omar_67
- Track 32 : SqueakyClean_64, GirlDinner_63, Janus_64, Animus_63

- Track 33 : Daudau_64
- Track 34 : Axiom_66
- Track 35 : Nishikigoi_64, Tefunt_63, Haizum_63
- Track 36 : BartholomewSD_67, Alvy_67
- Track 37 : TinaBelcher_63, Thestral_65
- Track 38 : Pablito_64
- Track 39 : Andris_65
- Track 40 : Loofah_69
- Track 41 : ELB20_65, R4_66
- Track 42 : Paolo_67
- Track 43 : Amethyst_63
- Track 44 : Zainub_67
- Track 45 : Bowden_64, TrvxScott_63
- Track 46 : Diane_64
- Track 47 : Superstar_70
- Track 48 : Paedore_67
- Track 49 : Issmi_65
- Track 50 : Hank144_67
- Track 51 : ElGato_63, Conan_63, Provolone_63
- Track 52 : Verse_63
- Track 53 : Verabelle_65
- Track 54 : Speedwell_65
- Track 55 : Amela_62
- Track 56 : Jhitchelle_59
- Track 57 : Pavo_63
- Track 58 : phiCAM_59
- Track 59 : SunkenRoot_63
- Track 60 : Kaine_62
- Track 61 : Vanseggelen_66
- Track 62 : ZamZam_62
- Track 63 : Yosif_66
- Track 64 : Celery_65
- Track 65 : Saftant_60
- Track 66 : Dexers_60
- Track 67 : Alsaber_62, Sudan_62
- Track 68 : BroPlease_63
- Track 69 : GreenWeasel_65
- Track 70 : phiHau3_65

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

The start number called the most often in the published annotations is 59, it was called in 51 of the 124 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Andris_65, Animus_63, Asten_60, BarryBee_63, Bowden_64, Brataylor_63, Caelum_67, Celeste_62, Chucky_60, Conan_63, Danzina_62, Dattran_63, Daudau_64, Dwayne_60, Ejemplo_58, ElGato_63, Emaanora_63, GirlDinner_63, Goby_62, Godpower_62, Haizum_63, Hippo_60, Janus_64, Kaine_62, Katalie_60, Lika_61, Lorelei_61, Maneekul_60, Nabi_62, Nishikigoi_64, OzzyJ_62, Pavo_63,

Provolone_63, Rana_62, RedBear_61, SarahRose_60, Snorlax_60, South40_60, SqueakyClean_64, Sujidade_62, Superstar_70, TagePhighter_62, Tefunt_63, Toma_62, Triste_61, Triumph_67, TrvxScott_63, TuanPN_58, Werner_60, Whatever_60, Yasdnil_60, Zemlya_62,

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

- Axiom_66,

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

- Aaronocolus_59, Alsaber_62, Alvy_67, Amela_62, Amethyst_63, BartholomewSD_67, BeardedLady_59, Bovely_59, Brataylor_64, BroPlease_63, BryanRecycles_61, Caliburn_58, Celery_65, Celeste_63, Danzina_63, Dattran_64, Dexers_60, Diane_64, ELB20_65, Eddasa_62, EnochSoames_63, Esperer_60, Goby_63, Godpower_63, GreenWeasel_65, Hank144_67, Hydra_61, Indigo_58, Issmi_65, Izzy_61, Jash_61, Jevington_64, Jhitchelle_59, Katalie_61, Lannister_59, Lannister_60, Legacy_58, Leviticus_60, Lika_62, Loofah_69, Lorelei_62, Marav_66, Nabi_63, Nanodon_61, Nanodon_62, Nerdos_58, Oliynyk_61, Omar_67, Ozzie_58, Pablito_64, Paedore_67, Paolo_67, Phettuccine_59, Puginator_67, R4_66, Rana_63, RedBear_62, Rusticus_61, Saftant_60, South40_61, Speedwell_65, Sudan_62, Sujidade_63, SunkenRoot_63, SunsetPointe_58, Thestral_65, TinaBelcher_63, Toma_63, Unstoppable_59, Vanseggelen_66, Verabelle_65, Verse_63, Yosif_66, Zainub_67, ZamZam_62, Zemlya_63, phiCAM_59, phiHau3_65,

Summary by start number:

Start 54:

- Found in 18 of 131 (13.7%) of genes in pham
- Manual Annotations of this start: 18 of 124
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Brataylor_64 (BD1), Celeste_63 (BD1), Danzina_63 (BD1), Dattran_64 (BD1), Goby_63 (BD1), Godpower_63 (BD1), Katalie_61 (BD1), Lannister_60 (BD1), Lika_62 (BD1), Lorelei_62 (BD1), Nabi_63 (BD1), Nanodon_62 (BD1), Rana_63 (BD1), RedBear_62 (BD1), South40_61 (BD1), Sujidade_63 (BD1), Toma_63 (BD1), Zemlya_63 (BD1),

Start 56:

- Found in 20 of 131 (15.3%) of genes in pham
- Manual Annotations of this start: 2 of 124
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Amethyst_63 (BD2), Diane_64 (BD2),

Start 57:

- Found in 5 of 131 (3.8%) of genes in pham
- Manual Annotations of this start: 4 of 124
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Axiom_66 (BD2), BroPlease_63 (BD4), GreenWeasel_65 (BD4), phiHau3_65 (BD4),

Start 58:

- Found in 38 of 131 (29.0%) of genes in pham
- Manual Annotations of this start: 36 of 124
- Called 97.4% of time when present

- Phage (with cluster) where this start called: Aaronocolus_59 (BD1), Alvy_67 (BD2), BartholomewSD_67 (BD2), BeardedLady_59 (BD1), Bovely_59 (BD1), BryanRecycles_61 (BD1), Caliburn_58 (BD1), ELB20_65 (BD2), Eddasa_62 (BD1), EnochSoames_63 (BD1), Esperer_60 (BD1), Hank144_67 (BD2), Hydra_61 (BD1), Indigo_58 (BD1), Issmi_65 (BD2), Izzy_61 (BD1), Jash_61 (BD1), Jevington_64 (BD2), Legacy_58 (BD1), Leviticus_60 (BD1), Loofah_69 (BD2), Marav_66 (BD2), Nerdos_58 (BD1), Oliynyk_61 (BD1), Omar_67 (BD2), Ozzie_58 (BD1), Pablito_64 (BD2), Paedore_67 (BD2), Paolo_67 (BD2), Phettuccine_59 (BD1), R4_66 (BD2), Rusticus_61 (BD1), SunsetPointe_58 (BD1), Thestral_65 (BD2), TinaBelcher_63 (BD2), Unstoppable_59 (BD1), Zainub_67 (BD2),

Start 59:

- Found in 53 of 131 (40.5%) of genes in pham
- Manual Annotations of this start: 51 of 124
- Called 98.1% of time when present
- Phage (with cluster) where this start called: Andris_65 (BD2), Animus_63 (BD2), Asten_60 (BD1), BarryBee_63 (BD1), Bowden_64 (BD2), Brataylor_63 (BD1), Caelum_67 (BD2), Celeste_62 (BD1), Chucky_60 (BD1), Conan_63 (BD3), Danzina_62 (BD1), Dattran_63 (BD1), Daudau_64 (BD2), Dwayne_60 (BD1), Ejemplo_58 (BD1), ElGato_63 (BD3), Emaanora_63 (BD1), GirlDinner_63 (BD2), Goby_62 (BD1), Godpower_62 (BD1), Haizum_63 (BD2), Hippo_60 (BD1), Janus_64 (BD2), Kaine_62 (BD3), Katalie_60 (BD1), Lika_61 (BD1), Lorelei_61 (BD1), Maneekul_60 (BD1), Nabi_62 (BD1), Nishikigoi_64 (BD2), OzzyJ_62 (BD1), Pavo_63 (BD3), Provolone_63 (BD3), Rana_62 (BD1), RedBear_61 (BD1), SarahRose_60 (BD1), Snorlax_60 (BD1), South40_60 (BD1), SqueakyClean_64 (BD2), Sujidade_62 (BD1), Superstar_70 (BD2), TagePhighter_62 (BD1), Tefunt_63 (BD2), Toma_62 (BD1), Triste_61 (BD1), Triumph_67 (BD2), TrvxScott_63 (BD2), TuanPN_58 (BD1), Werner_60 (BD1), Whatever_60 (BD1), Yasdnil_60 (BD1), Zemlya_62 (BD1),

Start 60:

- Found in 18 of 131 (13.7%) of genes in pham
- Manual Annotations of this start: 1 of 124
- Called 5.6% of time when present
- Phage (with cluster) where this start called: Puginator_67 (BD2),

Start 61:

- Found in 1 of 131 (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: Verabelle_65 (BD3),

Start 62:

- Found in 22 of 131 (16.8%) of genes in pham
- Manual Annotations of this start: 10 of 124
- Called 63.6% of time when present
- Phage (with cluster) where this start called: Alsaber_62 (BD3), Amela_62 (BD3), Celery_65 (BD3), Dexers_60 (BD3), Jhitchelle_59 (BD3), Saftant_60 (BD3), Speedwell_65 (BD3), Sudan_62 (BD3), SunkenRoot_63 (BD3), Vanseggelen_66 (BD3), Verse_63 (BD3), Yosif_66 (BD3), ZamZam_62 (BD3), phiCAM_59 (BD3),

Start 111:

- Found in 2 of 131 (1.5%) of genes in pham
- Manual Annotations of this start: 2 of 124

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lannister_59 (BD1), Nanodon_61 (BD1),

Summary by clusters:

There are 4 clusters represented in this pham: BD4, BD1, BD3, BD2,

Info for manual annotations of cluster BD1:

- Start number 54 was manually annotated 18 times for cluster BD1.
- Start number 58 was manually annotated 20 times for cluster BD1.
- Start number 59 was manually annotated 33 times for cluster BD1.
- Start number 111 was manually annotated 2 times for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 56 was manually annotated 2 times for cluster BD2.
- Start number 57 was manually annotated 1 time for cluster BD2.
- Start number 58 was manually annotated 16 times for cluster BD2.
- Start number 59 was manually annotated 13 times for cluster BD2.
- Start number 60 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster BD3:

- Start number 59 was manually annotated 5 times for cluster BD3.
- Start number 62 was manually annotated 10 times for cluster BD3.

Info for manual annotations of cluster BD4:

- Start number 57 was manually annotated 3 times for cluster BD4.

Gene Information:

Gene: Aaronocolus_59 Start: 42586, Stop: 42305, Start Num: 58

Candidate Starts for Aaronocolus_59:

(Start: 58 @42586 has 36 MA's), (Start: 60 @42571 has 1 MA's), (63, 42565), (68, 42535), (71, 42526), (97, 42388), (99, 42385),

Gene: Alsaber_62 Start: 42249, Stop: 41989, Start Num: 62

Candidate Starts for Alsaber_62:

(43, 42363), (55, 42288), (Start: 62 @42249 has 10 MA's), (99, 42069), (104, 42045),

Gene: Alvy_67 Start: 44300, Stop: 44016, Start Num: 58

Candidate Starts for Alvy_67:

(Start: 58 @44300 has 36 MA's), (65, 44270), (73, 44234), (86, 44159),

Gene: Amela_62 Start: 43234, Stop: 42974, Start Num: 62

Candidate Starts for Amela_62:

(55, 43273), (Start: 62 @43234 has 10 MA's), (64, 43225), (99, 43054), (104, 43030), (106, 43024),

Gene: Amethyst_63 Start: 42442, Stop: 42170, Start Num: 56

Candidate Starts for Amethyst_63:

(5, 42907), (9, 42856), (10, 42850), (15, 42817), (18, 42793), (21, 42787), (Start: 56 @42442 has 2 MA's), (83, 42310), (86, 42301), (92, 42256), (100, 42238), (102, 42235), (108, 42208),

Gene: Andris_65 Start: 43276, Stop: 43028, Start Num: 59

Candidate Starts for Andris_65:

(Start: 59 @43276 has 51 MA's), (76, 43195), (83, 43144),

Gene: Animus_63 Start: 43498, Stop: 43250, Start Num: 59

Candidate Starts for Animus_63:

(35, 43666), (49, 43528), (Start: 59 @43498 has 51 MA's), (67, 43459), (80, 43378), (83, 43366), (86, 43357),

Gene: Asten_60 Start: 44843, Stop: 44562, Start Num: 59

Candidate Starts for Asten_60:

(47, 44891), (50, 44882), (Start: 59 @44843 has 51 MA's), (76, 44762), (90, 44681), (93, 44654), (95, 44645), (96, 44642), (109, 44591), (110, 44588),

Gene: Axiom_66 Start: 43697, Stop: 43389, Start Num: 57

Candidate Starts for Axiom_66:

(36, 43853), (Start: 57 @43697 has 4 MA's), (Start: 59 @43691 has 51 MA's), (73, 43625), (86, 43550), (105, 43457),

Gene: BarryBee_63 Start: 44820, Stop: 44581, Start Num: 59

Candidate Starts for BarryBee_63:

(47, 44868), (50, 44859), (Start: 59 @44820 has 51 MA's), (83, 44688),

Gene: BartholomewSD_67 Start: 43419, Stop: 43135, Start Num: 58

Candidate Starts for BartholomewSD_67:

(Start: 58 @43419 has 36 MA's), (65, 43389), (73, 43353), (86, 43278),

Gene: BeardedLady_59 Start: 42960, Stop: 42679, Start Num: 58

Candidate Starts for BeardedLady_59:

(Start: 58 @42960 has 36 MA's), (Start: 60 @42945 has 1 MA's), (63, 42939), (68, 42909), (71, 42900), (97, 42762), (99, 42759),

Gene: Bovely_59 Start: 42589, Stop: 42308, Start Num: 58

Candidate Starts for Bovely_59:

(Start: 58 @42589 has 36 MA's), (Start: 60 @42574 has 1 MA's), (63, 42568), (68, 42538), (97, 42391), (99, 42388),

Gene: Bowden_64 Start: 44219, Stop: 43971, Start Num: 59

Candidate Starts for Bowden_64:

(Start: 59 @44219 has 51 MA's), (65, 44189), (83, 44087),

Gene: Brataylor_63 Start: 44363, Stop: 44121, Start Num: 59

Candidate Starts for Brataylor_63:

(33, 44546), (39, 44480), (Start: 59 @44363 has 51 MA's), (73, 44297), (80, 44243),

Gene: Brataylor_64 Start: 44635, Stop: 44360, Start Num: 54

Candidate Starts for Brataylor_64:

(13, 44980), (29, 44842), (34, 44788), (44, 44710), (Start: 54 @44635 has 18 MA's), (Start: 56 @44623 has 2 MA's), (Start: 62 @44593 has 10 MA's), (66, 44575), (69, 44560), (99, 44440), (106, 44410),

Gene: BroPlease_63 Start: 42623, Stop: 42342, Start Num: 57

Candidate Starts for BroPlease_63:

(37, 42752), (53, 42647), (Start: 57 @42623 has 4 MA's), (72, 42557), (99, 42422), (106, 42392),

Gene: BryanRecycles_61 Start: 43076, Stop: 42795, Start Num: 58
Candidate Starts for BryanRecycles_61:
(Start: 58 @43076 has 36 MA's), (63, 43055), (68, 43025), (71, 43016), (97, 42878), (99, 42875),

Gene: Caelum_67 Start: 42912, Stop: 42673, Start Num: 59
Candidate Starts for Caelum_67:
(27, 43155), (45, 43008), (48, 42951), (Start: 59 @42912 has 51 MA's), (80, 42792), (83, 42780),

Gene: Caliburn_58 Start: 42690, Stop: 42409, Start Num: 58
Candidate Starts for Caliburn_58:
(Start: 58 @42690 has 36 MA's), (Start: 60 @42675 has 1 MA's), (63, 42669), (68, 42639), (97, 42492), (99, 42489),

Gene: Celery_65 Start: 42219, Stop: 41959, Start Num: 62
Candidate Starts for Celery_65:
(41, 42309), (Start: 62 @42219 has 10 MA's), (64, 42210), (99, 42039), (106, 42009),

Gene: Celeste_63 Start: 44100, Stop: 43825, Start Num: 54
Candidate Starts for Celeste_63:
(13, 44445), (29, 44307), (34, 44253), (44, 44175), (Start: 54 @44100 has 18 MA's), (Start: 56 @44088 has 2 MA's), (Start: 62 @44058 has 10 MA's), (66, 44040), (69, 44025), (99, 43905),

Gene: Celeste_62 Start: 43828, Stop: 43586, Start Num: 59
Candidate Starts for Celeste_62:
(33, 44011), (39, 43945), (Start: 59 @43828 has 51 MA's), (86, 43687),

Gene: Chucky_60 Start: 44882, Stop: 44601, Start Num: 59
Candidate Starts for Chucky_60:
(47, 44930), (50, 44921), (Start: 59 @44882 has 51 MA's), (76, 44801), (90, 44720), (93, 44693), (95, 44684), (96, 44681), (109, 44630), (110, 44627),

Gene: Conan_63 Start: 42705, Stop: 42436, Start Num: 59
Candidate Starts for Conan_63:
(32, 42876), (48, 42738), (Start: 59 @42705 has 51 MA's), (65, 42675),

Gene: Danzina_62 Start: 44077, Stop: 43835, Start Num: 59
Candidate Starts for Danzina_62:
(33, 44260), (39, 44194), (Start: 59 @44077 has 51 MA's), (73, 44011), (80, 43957),

Gene: Danzina_63 Start: 44349, Stop: 44074, Start Num: 54
Candidate Starts for Danzina_63:
(13, 44694), (29, 44556), (34, 44502), (44, 44424), (Start: 54 @44349 has 18 MA's), (Start: 56 @44337 has 2 MA's), (Start: 62 @44307 has 10 MA's), (66, 44289), (69, 44274), (99, 44154), (106, 44124),

Gene: Dattran_64 Start: 44491, Stop: 44216, Start Num: 54
Candidate Starts for Dattran_64:
(13, 44836), (29, 44698), (34, 44644), (44, 44566), (Start: 54 @44491 has 18 MA's), (Start: 56 @44479 has 2 MA's), (Start: 62 @44449 has 10 MA's), (66, 44431), (69, 44416), (99, 44296),

Gene: Dattran_63 Start: 44219, Stop: 43977, Start Num: 59
Candidate Starts for Dattran_63:
(33, 44402), (39, 44336), (Start: 59 @44219 has 51 MA's), (86, 44078),

Gene: Daudau_64 Start: 42829, Stop: 42545, Start Num: 59

Candidate Starts for Daudau_64:

(28, 43063), (52, 42859), (Start: 59 @42829 has 51 MA's), (67, 42790), (83, 42697), (86, 42688), (103, 42610), (108, 42586),

Gene: Dexers_60 Start: 42491, Stop: 42231, Start Num: 62

Candidate Starts for Dexers_60:

(55, 42530), (Start: 62 @42491 has 10 MA's), (79, 42401), (82, 42389), (86, 42377), (90, 42356), (99, 42311), (104, 42287), (106, 42281),

Gene: Diane_64 Start: 43528, Stop: 43250, Start Num: 56

Candidate Starts for Diane_64:

(Start: 56 @43528 has 2 MA's), (83, 43396), (92, 43342), (102, 43312), (108, 43285),

Gene: Dwayne_60 Start: 44870, Stop: 44589, Start Num: 59

Candidate Starts for Dwayne_60:

(47, 44918), (50, 44909), (Start: 59 @44870 has 51 MA's), (76, 44789), (90, 44708), (93, 44681), (95, 44672), (96, 44669), (109, 44618), (110, 44615),

Gene: ELB20_65 Start: 43636, Stop: 43394, Start Num: 58

Candidate Starts for ELB20_65:

(1, 44191), (14, 44029), (20, 43996), (Start: 58 @43636 has 36 MA's), (65, 43606), (76, 43555), (86, 43495),

Gene: Eddasa_62 Start: 43615, Stop: 43334, Start Num: 58

Candidate Starts for Eddasa_62:

(Start: 58 @43615 has 36 MA's), (63, 43594), (68, 43564), (71, 43555), (97, 43417), (99, 43414),

Gene: Ejemplo_58 Start: 44808, Stop: 44527, Start Num: 59

Candidate Starts for Ejemplo_58:

(47, 44856), (50, 44847), (Start: 59 @44808 has 51 MA's), (76, 44727), (90, 44646), (93, 44619), (95, 44610), (96, 44607), (109, 44556), (110, 44553),

Gene: ElGato_63 Start: 42576, Stop: 42307, Start Num: 59

Candidate Starts for ElGato_63:

(32, 42747), (48, 42609), (Start: 59 @42576 has 51 MA's), (65, 42546),

Gene: Emaanora_63 Start: 44793, Stop: 44512, Start Num: 59

Candidate Starts for Emaanora_63:

(47, 44841), (50, 44832), (Start: 59 @44793 has 51 MA's), (76, 44712), (90, 44631), (93, 44604), (95, 44595), (96, 44592), (109, 44541), (110, 44538),

Gene: EnochSoames_63 Start: 42872, Stop: 42591, Start Num: 58

Candidate Starts for EnochSoames_63:

(Start: 58 @42872 has 36 MA's), (Start: 60 @42857 has 1 MA's), (63, 42851), (68, 42821), (71, 42812), (97, 42674), (99, 42671),

Gene: Esperer_60 Start: 42932, Stop: 42651, Start Num: 58

Candidate Starts for Esperer_60:

(Start: 58 @42932 has 36 MA's), (Start: 60 @42917 has 1 MA's), (63, 42911), (68, 42881), (71, 42872), (97, 42734), (99, 42731),

Gene: GirlDinner_63 Start: 42999, Stop: 42751, Start Num: 59

Candidate Starts for GirlDinner_63:

(35, 43167), (49, 43029), (Start: 59 @42999 has 51 MA's), (67, 42960), (80, 42879), (83, 42867), (86, 42858),

Gene: Goby_62 Start: 44645, Stop: 44403, Start Num: 59

Candidate Starts for Goby_62:

(39, 44762), (46, 44723), (Start: 59 @44645 has 51 MA's), (80, 44525),

Gene: Goby_63 Start: 44947, Stop: 44642, Start Num: 54

Candidate Starts for Goby_63:

(12, 45328), (13, 45316), (23, 45235), (29, 45154), (34, 45100), (44, 45022), (Start: 54 @44947 has 18 MA's), (Start: 56 @44935 has 2 MA's), (69, 44872), (81, 44803), (88, 44764), (97, 44725),

Gene: Godpower_62 Start: 43921, Stop: 43679, Start Num: 59

Candidate Starts for Godpower_62:

(39, 44038), (46, 43999), (Start: 59 @43921 has 51 MA's), (73, 43855), (80, 43801),

Gene: Godpower_63 Start: 44223, Stop: 43918, Start Num: 54

Candidate Starts for Godpower_63:

(13, 44592), (29, 44430), (34, 44376), (40, 44325), (44, 44298), (Start: 54 @44223 has 18 MA's), (Start: 56 @44211 has 2 MA's), (69, 44148), (81, 44079), (97, 44001),

Gene: GreenWeasel_65 Start: 42628, Stop: 42347, Start Num: 57

Candidate Starts for GreenWeasel_65:

(37, 42757), (42, 42739), (53, 42652), (Start: 57 @42628 has 4 MA's), (72, 42562), (99, 42427), (106, 42397),

Gene: Haizum_63 Start: 43248, Stop: 42967, Start Num: 59

Candidate Starts for Haizum_63:

(Start: 59 @43248 has 51 MA's), (83, 43116), (85, 43110), (102, 43032),

Gene: Hank144_67 Start: 44032, Stop: 43793, Start Num: 58

Candidate Starts for Hank144_67:

(Start: 58 @44032 has 36 MA's),

Gene: Hippo_60 Start: 44856, Stop: 44575, Start Num: 59

Candidate Starts for Hippo_60:

(47, 44904), (50, 44895), (Start: 59 @44856 has 51 MA's), (76, 44775), (90, 44694), (93, 44667), (95, 44658), (96, 44655), (109, 44604), (110, 44601),

Gene: Hydra_61 Start: 43768, Stop: 43487, Start Num: 58

Candidate Starts for Hydra_61:

(Start: 58 @43768 has 36 MA's), (Start: 60 @43753 has 1 MA's), (63, 43747), (68, 43717), (71, 43708), (97, 43570), (99, 43567),

Gene: Indigo_58 Start: 42582, Stop: 42301, Start Num: 58

Candidate Starts for Indigo_58:

(Start: 58 @42582 has 36 MA's), (Start: 60 @42567 has 1 MA's), (63, 42561), (68, 42531), (71, 42522), (97, 42384), (99, 42381),

Gene: Issmi_65 Start: 43195, Stop: 42905, Start Num: 58

Candidate Starts for Issmi_65:

(36, 43351), (Start: 58 @43195 has 36 MA's), (65, 43165), (73, 43129), (86, 43054), (94, 43006),

Gene: Izzy_61 Start: 43123, Stop: 42842, Start Num: 58

Candidate Starts for Izzy_61:

(Start: 58 @43123 has 36 MA's), (63, 43102), (68, 43072), (71, 43063), (97, 42925), (99, 42922),

Gene: Janus_64 Start: 43339, Stop: 43091, Start Num: 59

Candidate Starts for Janus_64:

(35, 43507), (49, 43369), (Start: 59 @43339 has 51 MA's), (67, 43300), (80, 43219), (83, 43207), (86, 43198),

Gene: Jash_61 Start: 43076, Stop: 42795, Start Num: 58

Candidate Starts for Jash_61:

(Start: 58 @43076 has 36 MA's), (63, 43055), (68, 43025), (71, 43016), (97, 42878), (99, 42875),

Gene: Jevington_64 Start: 41849, Stop: 41562, Start Num: 58

Candidate Starts for Jevington_64:

(Start: 58 @41849 has 36 MA's), (65, 41819), (74, 41777), (86, 41708),

Gene: Jhitchelle_59 Start: 41879, Stop: 41619, Start Num: 62

Candidate Starts for Jhitchelle_59:

(38, 42026), (Start: 62 @41879 has 10 MA's), (79, 41789), (82, 41777), (90, 41744), (99, 41699), (104, 41675), (106, 41669),

Gene: Kaine_62 Start: 42410, Stop: 42141, Start Num: 59

Candidate Starts for Kaine_62:

(2, 42929), (7, 42881), (Start: 59 @42410 has 51 MA's), (65, 42380),

Gene: Katalie_61 Start: 45367, Stop: 45062, Start Num: 54

Candidate Starts for Katalie_61:

(Start: 54 @45367 has 18 MA's), (Start: 56 @45355 has 2 MA's), (66, 45307), (91, 45169), (97, 45145),

Gene: Katalie_60 Start: 45065, Stop: 44826, Start Num: 59

Candidate Starts for Katalie_60:

(46, 45143), (Start: 59 @45065 has 51 MA's), (83, 44933), (86, 44924),

Gene: Lannister_59 Start: 43435, Stop: 43193, Start Num: 111

Candidate Starts for Lannister_59:

(80, 43594), (98, 43513), (Start: 111 @43435 has 2 MA's), (112, 43363), (113, 43354), (114, 43303),

Gene: Lannister_60 Start: 43737, Stop: 43432, Start Num: 54

Candidate Starts for Lannister_60:

(44, 43812), (Start: 54 @43737 has 18 MA's), (Start: 56 @43725 has 2 MA's), (Start: 62 @43695 has 10 MA's), (66, 43677), (97, 43515),

Gene: Legacy_58 Start: 42681, Stop: 42400, Start Num: 58

Candidate Starts for Legacy_58:

(Start: 58 @42681 has 36 MA's), (Start: 60 @42666 has 1 MA's), (63, 42660), (68, 42630), (71, 42621), (97, 42483), (99, 42480),

Gene: Leviticus_60 Start: 43119, Stop: 42838, Start Num: 58

Candidate Starts for Leviticus_60:

(Start: 58 @43119 has 36 MA's), (Start: 60 @43104 has 1 MA's), (63, 43098), (68, 43068), (71, 43059), (97, 42921), (99, 42918),

Gene: Lika_62 Start: 44776, Stop: 44471, Start Num: 54

Candidate Starts for Lika_62:

(13, 45145), (29, 44983), (34, 44929), (40, 44878), (44, 44851), (Start: 54 @44776 has 18 MA's), (Start: 56 @44764 has 2 MA's), (69, 44701), (81, 44632), (97, 44554), (107, 44518),

Gene: Lika_61 Start: 44474, Stop: 44232, Start Num: 59

Candidate Starts for Lika_61:

(39, 44591), (46, 44552), (Start: 59 @44474 has 51 MA's), (73, 44408), (80, 44354),

Gene: Loofah_69 Start: 44483, Stop: 44238, Start Num: 58

Candidate Starts for Loofah_69:

(3, 44990), (17, 44864), (19, 44846), (Start: 58 @44483 has 36 MA's), (74, 44411),

Gene: Lorelei_62 Start: 44107, Stop: 43832, Start Num: 54

Candidate Starts for Lorelei_62:

(13, 44452), (29, 44314), (30, 44308), (34, 44260), (40, 44209), (44, 44182), (Start: 54 @44107 has 18 MA's), (Start: 56 @44095 has 2 MA's), (Start: 62 @44065 has 10 MA's), (66, 44047), (69, 44032), (75, 44008), (99, 43912), (106, 43882),

Gene: Lorelei_61 Start: 43835, Stop: 43593, Start Num: 59

Candidate Starts for Lorelei_61:

(Start: 59 @43835 has 51 MA's), (73, 43769), (80, 43715),

Gene: Maneekul_60 Start: 44886, Stop: 44605, Start Num: 59

Candidate Starts for Maneekul_60:

(47, 44934), (50, 44925), (Start: 59 @44886 has 51 MA's), (76, 44805), (90, 44724), (93, 44697), (95, 44688), (96, 44685), (109, 44634), (110, 44631),

Gene: Marav_66 Start: 42372, Stop: 42085, Start Num: 58

Candidate Starts for Marav_66:

(Start: 58 @42372 has 36 MA's), (65, 42342), (74, 42300), (86, 42231),

Gene: Nabi_63 Start: 44640, Stop: 44365, Start Num: 54

Candidate Starts for Nabi_63:

(13, 45021), (29, 44847), (34, 44793), (44, 44715), (Start: 54 @44640 has 18 MA's), (Start: 56 @44628 has 2 MA's), (66, 44580), (69, 44565), (99, 44445), (106, 44415),

Gene: Nabi_62 Start: 44368, Stop: 44129, Start Num: 59

Candidate Starts for Nabi_62:

(33, 44551), (39, 44485), (Start: 59 @44368 has 51 MA's), (86, 44227),

Gene: Nanodon_61 Start: 43459, Stop: 43217, Start Num: 111

Candidate Starts for Nanodon_61:

(77, 43645), (89, 43576), (98, 43537), (Start: 111 @43459 has 2 MA's), (114, 43327), (115, 43282), (116, 43252),

Gene: Nanodon_62 Start: 43761, Stop: 43456, Start Num: 54

Candidate Starts for Nanodon_62:

(Start: 54 @43761 has 18 MA's), (Start: 56 @43749 has 2 MA's), (66, 43701), (69, 43686), (78, 43641), (84, 43602), (97, 43539),

Gene: Nerdos_58 Start: 42581, Stop: 42300, Start Num: 58

Candidate Starts for Nerdos_58:

(Start: 58 @42581 has 36 MA's), (Start: 60 @42566 has 1 MA's), (63, 42560), (68, 42530), (71, 42521), (97, 42383), (99, 42380),

Gene: Nishikigoi_64 Start: 43248, Stop: 42967, Start Num: 59

Candidate Starts for Nishikigoi_64:

(Start: 59 @43248 has 51 MA's), (83, 43116), (85, 43110), (102, 43032),

Gene: Oliynyk_61 Start: 43076, Stop: 42795, Start Num: 58

Candidate Starts for Oliynyk_61:

(Start: 58 @43076 has 36 MA's), (63, 43055), (68, 43025), (71, 43016), (97, 42878), (99, 42875),

Gene: Omar_67 Start: 41635, Stop: 41354, Start Num: 58

Candidate Starts for Omar_67:

(31, 41830), (36, 41794), (Start: 58 @41635 has 36 MA's), (74, 41563), (86, 41494),

Gene: Ozzie_58 Start: 42690, Stop: 42409, Start Num: 58

Candidate Starts for Ozzie_58:

(Start: 58 @42690 has 36 MA's), (Start: 60 @42675 has 1 MA's), (63, 42669), (68, 42639), (71, 42630), (97, 42492), (99, 42489),

Gene: OzzyJ_62 Start: 44783, Stop: 44502, Start Num: 59

Candidate Starts for OzzyJ_62:

(47, 44831), (50, 44822), (Start: 59 @44783 has 51 MA's), (76, 44702), (87, 44633), (90, 44621), (93, 44594), (95, 44585), (96, 44582), (101, 44564), (109, 44531), (110, 44528),

Gene: Pablito_64 Start: 42647, Stop: 42402, Start Num: 58

Candidate Starts for Pablito_64:

(Start: 58 @42647 has 36 MA's), (65, 42617), (91, 42473),

Gene: Paedore_67 Start: 44040, Stop: 43795, Start Num: 58

Candidate Starts for Paedore_67:

(3, 44538), (17, 44421), (19, 44403), (Start: 58 @44040 has 36 MA's), (74, 43968),

Gene: Paolo_67 Start: 43540, Stop: 43253, Start Num: 58

Candidate Starts for Paolo_67:

(Start: 58 @43540 has 36 MA's), (Start: 60 @43525 has 1 MA's), (63, 43519), (68, 43489), (71, 43480), (99, 43333),

Gene: Pavo_63 Start: 42461, Stop: 42192, Start Num: 59

Candidate Starts for Pavo_63:

(51, 42497), (Start: 59 @42461 has 51 MA's), (65, 42431),

Gene: Phettuccine_59 Start: 42582, Stop: 42301, Start Num: 58

Candidate Starts for Phettuccine_59:

(Start: 58 @42582 has 36 MA's), (Start: 60 @42567 has 1 MA's), (63, 42561), (68, 42531), (71, 42522), (97, 42384), (99, 42381),

Gene: Provolone_63 Start: 42788, Stop: 42519, Start Num: 59

Candidate Starts for Provolone_63:

(32, 42959), (48, 42821), (Start: 59 @42788 has 51 MA's), (65, 42758),

Gene: Puginator_67 Start: 43574, Stop: 43302, Start Num: 60

Candidate Starts for Puginator_67:

(Start: 58 @43589 has 36 MA's), (Start: 60 @43574 has 1 MA's), (63, 43568), (68, 43538), (71, 43529), (99, 43382),

Gene: R4_66 Start: 43796, Stop: 43554, Start Num: 58

Candidate Starts for R4_66:

(1, 44351), (14, 44189), (20, 44156), (Start: 58 @43796 has 36 MA's), (65, 43766), (76, 43715), (86, 43655),

Gene: Rana_63 Start: 44529, Stop: 44254, Start Num: 54

Candidate Starts for Rana_63:

(13, 44874), (29, 44736), (30, 44730), (34, 44682), (40, 44631), (44, 44604), (Start: 54 @44529 has 18 MA's), (Start: 56 @44517 has 2 MA's), (Start: 62 @44487 has 10 MA's), (66, 44469), (69, 44454), (75, 44430), (99, 44334), (106, 44304),

Gene: Rana_62 Start: 44257, Stop: 44015, Start Num: 59

Candidate Starts for Rana_62:

(Start: 59 @44257 has 51 MA's), (73, 44191), (80, 44137),

Gene: RedBear_61 Start: 45065, Stop: 44826, Start Num: 59

Candidate Starts for RedBear_61:

(46, 45143), (Start: 59 @45065 has 51 MA's), (83, 44933), (86, 44924),

Gene: RedBear_62 Start: 45367, Stop: 45062, Start Num: 54

Candidate Starts for RedBear_62:

(Start: 54 @45367 has 18 MA's), (Start: 56 @45355 has 2 MA's), (66, 45307), (91, 45169), (97, 45145),

Gene: Rusticus_61 Start: 43076, Stop: 42795, Start Num: 58

Candidate Starts for Rusticus_61:

(Start: 58 @43076 has 36 MA's), (63, 43055), (68, 43025), (71, 43016), (97, 42878), (99, 42875),

Gene: Saftant_60 Start: 42366, Stop: 42106, Start Num: 62

Candidate Starts for Saftant_60:

(41, 42477), (Start: 62 @42366 has 10 MA's), (64, 42357), (79, 42276), (82, 42264), (90, 42231), (99, 42186), (104, 42162), (106, 42156),

Gene: SarahRose_60 Start: 44855, Stop: 44574, Start Num: 59

Candidate Starts for SarahRose_60:

(47, 44903), (50, 44894), (Start: 59 @44855 has 51 MA's), (76, 44774), (90, 44693), (93, 44666), (95, 44657), (96, 44654), (109, 44603), (110, 44600),

Gene: Snorlax_60 Start: 44880, Stop: 44599, Start Num: 59

Candidate Starts for Snorlax_60:

(47, 44928), (50, 44919), (Start: 59 @44880 has 51 MA's), (76, 44799), (90, 44718), (93, 44691), (95, 44682), (96, 44679), (109, 44628), (110, 44625),

Gene: South40_61 Start: 45367, Stop: 45062, Start Num: 54

Candidate Starts for South40_61:

(Start: 54 @45367 has 18 MA's), (Start: 56 @45355 has 2 MA's), (66, 45307), (91, 45169), (97, 45145),

Gene: South40_60 Start: 45065, Stop: 44826, Start Num: 59

Candidate Starts for South40_60:

(46, 45143), (Start: 59 @45065 has 51 MA's), (83, 44933), (86, 44924),

Gene: Speedwell_65 Start: 43422, Stop: 43162, Start Num: 62

Candidate Starts for Speedwell_65:

(24, 43668), (Start: 62 @43422 has 10 MA's), (99, 43242), (104, 43218), (106, 43212),

Gene: SqueakyClean_64 Start: 43517, Stop: 43269, Start Num: 59

Candidate Starts for SqueakyClean_64:

(35, 43685), (49, 43547), (Start: 59 @43517 has 51 MA's), (67, 43478), (80, 43397), (83, 43385), (86, 43376),

Gene: Sudan_62 Start: 42256, Stop: 41996, Start Num: 62

Candidate Starts for Sudan_62:

(43, 42370), (55, 42295), (Start: 62 @42256 has 10 MA's), (99, 42076), (104, 42052),

Gene: Sujidade_62 Start: 44709, Stop: 44467, Start Num: 59

Candidate Starts for Sujidade_62:

(39, 44826), (46, 44787), (Start: 59 @44709 has 51 MA's), (73, 44643), (80, 44589), (85, 44571),

Gene: Sujidade_63 Start: 45011, Stop: 44706, Start Num: 54

Candidate Starts for Sujidade_63:

(13, 45380), (29, 45218), (34, 45164), (40, 45113), (44, 45086), (Start: 54 @45011 has 18 MA's), (Start: 56 @44999 has 2 MA's), (69, 44936), (81, 44867), (97, 44789),

Gene: SunkenRoot_63 Start: 42961, Stop: 42701, Start Num: 62

Candidate Starts for SunkenRoot_63:

(43, 43075), (55, 43000), (Start: 62 @42961 has 10 MA's), (64, 42952), (99, 42781), (104, 42757), (106, 42751),

Gene: SunsetPointe_58 Start: 42697, Stop: 42416, Start Num: 58

Candidate Starts for SunsetPointe_58:

(Start: 58 @42697 has 36 MA's), (Start: 60 @42682 has 1 MA's), (63, 42676), (68, 42646), (71, 42637), (97, 42499), (99, 42496),

Gene: Superstar_70 Start: 43430, Stop: 43185, Start Num: 59

Candidate Starts for Superstar_70:

(Start: 59 @43430 has 51 MA's), (80, 43310), (83, 43298),

Gene: TagePhighter_62 Start: 44856, Stop: 44575, Start Num: 59

Candidate Starts for TagePhighter_62:

(47, 44904), (50, 44895), (Start: 59 @44856 has 51 MA's), (76, 44775), (90, 44694), (93, 44667), (95, 44658), (96, 44655), (109, 44604), (110, 44601),

Gene: Tefunt_63 Start: 43162, Stop: 42881, Start Num: 59

Candidate Starts for Tefunt_63:

(Start: 59 @43162 has 51 MA's), (83, 43030), (85, 43024), (102, 42946),

Gene: Thestral_65 Start: 43960, Stop: 43676, Start Num: 58

Candidate Starts for Thestral_65:

(36, 44119), (Start: 58 @43960 has 36 MA's), (65, 43930), (73, 43894), (86, 43819),

Gene: TinaBelcher_63 Start: 43827, Stop: 43543, Start Num: 58

Candidate Starts for TinaBelcher_63:

(36, 43986), (Start: 58 @43827 has 36 MA's), (65, 43797), (73, 43761), (86, 43686),

Gene: Toma_62 Start: 44648, Stop: 44406, Start Num: 59

Candidate Starts for Toma_62:

(39, 44765), (46, 44726), (Start: 59 @44648 has 51 MA's), (80, 44528),

Gene: Toma_63 Start: 44950, Stop: 44645, Start Num: 54

Candidate Starts for Toma_63:

(12, 45331), (13, 45319), (23, 45238), (29, 45157), (34, 45103), (44, 45025), (Start: 54 @44950 has 18 MA's), (Start: 56 @44938 has 2 MA's), (69, 44875), (81, 44806), (88, 44767), (97, 44728),

Gene: Triste_61 Start: 44855, Stop: 44574, Start Num: 59

Candidate Starts for Triste_61:

(47, 44903), (50, 44894), (Start: 59 @44855 has 51 MA's), (76, 44774), (90, 44693), (93, 44666), (95, 44657), (96, 44654), (109, 44603), (110, 44600),

Gene: Triumph_67 Start: 43755, Stop: 43465, Start Num: 59

Candidate Starts for Triumph_67:

(Start: 57 @43761 has 4 MA's), (Start: 59 @43755 has 51 MA's), (72, 43695), (73, 43689), (85, 43617), (86, 43614), (94, 43566),

Gene: TrvxScott_63 Start: 44213, Stop: 43965, Start Num: 59

Candidate Starts for TrvxScott_63:

(Start: 59 @44213 has 51 MA's), (65, 44183), (83, 44081),

Gene: TuanPN_58 Start: 44808, Stop: 44527, Start Num: 59

Candidate Starts for TuanPN_58:

(47, 44856), (50, 44847), (Start: 59 @44808 has 51 MA's), (76, 44727), (90, 44646), (93, 44619), (95, 44610), (96, 44607), (109, 44556), (110, 44553),

Gene: Unstoppable_59 Start: 42580, Stop: 42299, Start Num: 58

Candidate Starts for Unstoppable_59:

(Start: 58 @42580 has 36 MA's), (Start: 60 @42565 has 1 MA's), (63, 42559), (68, 42529), (71, 42520), (97, 42382), (99, 42379),

Gene: Vanseggelen_66 Start: 42112, Stop: 41849, Start Num: 62

Candidate Starts for Vanseggelen_66:

(22, 42472), (38, 42259), (Start: 62 @42112 has 10 MA's), (70, 42076), (99, 41929),

Gene: Verabelle_65 Start: 41980, Stop: 41723, Start Num: 61

Candidate Starts for Verabelle_65:

(61, 41980), (99, 41803), (104, 41779), (106, 41773),

Gene: Verse_63 Start: 43225, Stop: 42965, Start Num: 62

Candidate Starts for Verse_63:

(55, 43264), (Start: 62 @43225 has 10 MA's), (64, 43216), (99, 43045), (104, 43021), (106, 43015),

Gene: Werner_60 Start: 44853, Stop: 44572, Start Num: 59

Candidate Starts for Werner_60:

(47, 44901), (50, 44892), (Start: 59 @44853 has 51 MA's), (76, 44772), (90, 44691), (93, 44664), (95, 44655), (96, 44652), (109, 44601), (110, 44598),

Gene: Whatever_60 Start: 44879, Stop: 44598, Start Num: 59

Candidate Starts for Whatever_60:

(47, 44927), (50, 44918), (Start: 59 @44879 has 51 MA's), (76, 44798), (90, 44717), (93, 44690), (95, 44681), (96, 44678), (109, 44627), (110, 44624),

Gene: Yasdni_60 Start: 44905, Stop: 44624, Start Num: 59

Candidate Starts for Yasdni_60:

(47, 44953), (50, 44944), (Start: 59 @44905 has 51 MA's), (76, 44824), (90, 44743), (93, 44716), (95, 44707), (96, 44704), (109, 44653), (110, 44650),

Gene: Yosif_66 Start: 43401, Stop: 43141, Start Num: 62

Candidate Starts for Yosif_66:

(43, 43479), (Start: 62 @43401 has 10 MA's), (99, 43221), (104, 43197), (106, 43191),

Gene: Zainub_67 Start: 43515, Stop: 43228, Start Num: 58

Candidate Starts for Zainub_67:

(Start: 58 @43515 has 36 MA's), (Start: 60 @43500 has 1 MA's), (63, 43494), (71, 43455), (99, 43308),

Gene: ZamZam_62 Start: 42681, Stop: 42421, Start Num: 62

Candidate Starts for ZamZam_62:

(55, 42720), (Start: 62 @42681 has 10 MA's), (64, 42672), (79, 42591), (82, 42579), (90, 42546), (99, 42501), (104, 42477), (106, 42471),

Gene: Zemlya_63 Start: 44654, Stop: 44379, Start Num: 54

Candidate Starts for Zemlya_63:

(13, 44999), (29, 44861), (34, 44807), (44, 44729), (Start: 54 @44654 has 18 MA's), (Start: 56 @44642 has 2 MA's), (Start: 62 @44612 has 10 MA's), (66, 44594), (69, 44579), (99, 44459), (106, 44429),

Gene: Zemlya_62 Start: 44382, Stop: 44140, Start Num: 59

Candidate Starts for Zemlya_62:

(33, 44565), (39, 44499), (Start: 59 @44382 has 51 MA's), (73, 44316), (80, 44262),

Gene: phiCAM_59 Start: 44024, Stop: 43770, Start Num: 62

Candidate Starts for phiCAM_59:

(4, 44528), (6, 44498), (8, 44468), (11, 44435), (16, 44405), (25, 44270), (26, 44267), (Start: 62 @44024 has 10 MA's), (64, 44015), (99, 43850), (104, 43826), (106, 43820),

Gene: phiHau3_65 Start: 43045, Stop: 42764, Start Num: 57

Candidate Starts for phiHau3_65:

(53, 43069), (Start: 57 @43045 has 4 MA's), (72, 42979), (99, 42844), (106, 42814),