



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 290946 Report

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

Pham number 290946 has 137 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Orange_61, Petersenfast_60, Bowtie_63, Et2Brutus_61, Gilberta_63, MaCh_62, Sham4_62, Timothy_62, TinyTimmy_62, Wolpertinger_60, Bud_61, Salz_61, Saskia_62, Flaverint_63, Hutc2_61, Fibonacci_62, Insomnia_63, Mulciber_61, Kimba_61, Aneem_63, Joselito_63, Lucivia_63, Bachome_64, Snape_62, Ebony_62, Jabith_63, Munch_62
- Track 2 : Mabel_62
- Track 3 : Jeeves_66
- Track 4 : Gail_64, Sunhee_65
- Track 5 : SororFago_63
- Track 6 : Luchador_65
- Track 7 : 40AC_63
- Track 8 : Fameo_63, Heffalump_62, QueenB2_62
- Track 9 : Centaur_64, Flare16_63, WideWale_64, Piro94_63, Updawg_64, HarryHoudini_64, Terrific_64, Equemioh13_63, Gratitude_61, MiculUcigas_63, Baehexic_62, NaSiaTalie_63, Sknot_63
- Track 10 : Leogania_63, BiancaTri92_63
- Track 11 : AN9_65, ANI8_65, VC3_65
- Track 12 : Landor_63, IronMan_62
- Track 13 : Koduck_64
- Track 14 : Quokka_61, Bradman_62
- Track 15 : Jerm_65, AbbyPaige_65, LilTurb_64, Agape74_65, SemperFi_64, Turbido_64, Buggy_65, Georgie2_64, Crucio_63
- Track 16 : 20ES_66, LionsBait_64, Deloris_64, LadyBird_68, HippoHollow_62, CRB1_66, First_0065, VA6_64, Benvolio_60, BengiVuitton_64, Echild_63, AN3_66
- Track 17 : Rachaly_61, BobSwaget_58, Lokk_59
- Track 18 : Travvers_63, Pomar16_63, D29_59.1, Kerberos_64, D32_63, Tomathan_64, Naji_64, Duplo_64, DBQu4n_64, StarStuff_64
- Track 19 : Serenity_63, TopsytheTRex_60
- Track 20 : C3_59
- Track 21 : TarsusIV_60, XianYue_61
- Track 22 : Changeling_62
- Track 23 : Kalpine_61
- Track 24 : Retro23_64, DudeLittle_62, Dalmatian_64, Anselm_64
- Track 25 : SwirlSquare_67
- Track 26 : BabyBack_61
- Track 27 : Ph8s_64
- Track 28 : Tristan_61

- Track 29 : Power_62
- Track 30 : NothingSpecial_60
- Track 31 : Caraxes_63, Superchunk_62
- Track 32 : DeerParkTS_60
- Track 33 : NicoleTera_61
- Track 34 : ForesterFrank_58
- Track 35 : SnapTap_63, SweetiePie_63
- Track 36 : Miko_59
- Track 37 : Odin_62
- Track 38 : MissWhite_61
- Track 39 : Larenn_61, Malec_62
- Track 40 : Jsquared_63
- Track 41 : FiringLine_63, QueenBeesly_63
- Track 42 : Loser_64
- Track 43 : Jaan_63
- Track 44 : MajorMajor_62
- Track 45 : GaugeLDP_60
- Track 46 : EZMoney23_59
- Track 47 : Iwokeuplikedis_65
- Track 48 : Trooper_64
- Track 49 : Pukovnik_61
- Track 50 : Drake55_65
- Track 51 : Kinmap_61
- Track 52 : Chargerpower_61

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

The start number called the most often in the published annotations is 18, it was called in 44 of the 115 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 40AC_63, AbbyPaige_65, Agape74_65, BabyBack_61, Baehexic_62, BobSwaget_58, Buggy_65, Centaur_64, Changeling_62, Crucio_63, DeerParkTS_60, Drake55_65, EZMoney23_59, Equemioh13_63, FiringLine_63, Flare16_63, ForesterFrank_58, GaugeLDP_60, Georgie2_64, Gratitude_61, HarryHoudini_64, IronMan_62, Iwokeuplikedis_65, Jaan_63, Jerm_65, Landor_63, Larenn_61, LilTurb_64, Loka_59, Loser_64, Malec_62, MiculUcigas_63, Miko_59, NaSiaTalie_63, NicoleTera_61, NothingSpecial_60, Piro94_63, Pukovnik_61, QueenBeesly_63, Rachaly_61, SemperFi_64, Sknot_63, TarsusIV_60, Terrific_64, Tristan_61, Trooper_64, Turbido_64, Updawg_64, WideWale_64, XianYue_61,

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

- SnapTap_63, SweetiePie_63,

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

- 20ES_66, AN3_66, AN9_65, ANI8_65, Aneem_63, Anselm_64, Bachome_64, BengiVuitton_64, Benvolio_60, BiancaTri92_63, Bowtie_63, Bradman_62, Bud_61, C3_59, CRB1_66, Caraxes_63, Chargerpower_61, D29_59.1, D32_63, DBQu4n_64, Dalmatian_64, Deloris_64, DudeLittle_62, Duplo_64, Ebony_62, Echid_63, Et2Brutus_61, Fameo_63, Fibonacci_62, First_0065, Flaverint_63, Gail_64,

Gilberta_63, Heffalump_62, HippoHollow_62, Hutc2_61, Insomnia_63, Jabith_63, Jeeves_66, Joselito_63, Jsquared_63, Kalpine_61, Kerberos_64, Kimba_61, Kinmap_61, Koduck_64, LadyBird_68, Leogania_63, LionsBait_64, Luchador_65, Lucivia_63, MaCh_62, Mabel_62, MajorMajor_62, MissWhite_61, Mulciber_61, Munch_62, Naji_64, Odin_62, Orange_61, Petersenfast_60, Ph8s_64, Pomar16_63, Power_62, QueenB2_62, Quokka_61, Retro23_64, Salz_61, Saskia_62, Serenity_63, Sham4_62, Snape_62, SororFago_63, StarStuff_64, Sunhee_65, Superchunk_62, SwirlSquare_67, Timothy_62, TinyTimmy_62, TopsytheTRex_60, Tomathan_64, Travvers_63, VA6_64, VC3_65, Wolpertinger_60,

Summary by start number:

Start 7:

- Found in 15 of 137 (10.9%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 6.7% of time when present
- Phage (with cluster) where this start called: C3_59 (A2),

Start 8:

- Found in 5 of 137 (3.6%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: MajorMajor_62 (A2),

Start 12:

- Found in 16 of 137 (11.7%) of genes in pham
- Manual Annotations of this start: 11 of 115
- Called 87.5% of time when present
- Phage (with cluster) where this start called: AN9_65 (A2), ANI8_65 (A2), Bradman_62 (A2), Caraxes_63 (A2), Jsquared_63 (A2), Koduck_64 (A2), Odin_62 (A2), Ph8s_64 (A2), Quokka_61 (A2), Serenity_63 (A2), Superchunk_62 (A2), SwirlSquare_67 (A2), TopsytheTRex_60 (A2), VC3_65 (A2),

Start 13:

- Found in 38 of 137 (27.7%) of genes in pham
- Manual Annotations of this start: 33 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aneem_63 (A11), Bachome_64 (A11), Bowtie_63 (A11), Bud_61 (A11), D29_59.1 (A2), D32_63 (A2), DBQu4n_64 (A2), Duplo_64 (A2), Ebony_62 (A11), Et2Brutus_61 (A11), Fibonacci_62 (A11), Flaverint_63 (A11), Gilberta_63 (A11), Hutc2_61 (A11), Insomnia_63 (A11), Jabith_63 (A11), Joselito_63 (A11), Kerberos_64 (A2), Kimba_61 (A11), Lucivia_63 (A11), MaCh_62 (A11), Mabel_62 (A11), Mulciber_61 (A11), Munch_62 (A11), Naji_64 (A2), Orange_61 (A11), Petersenfast_60 (A11), Pomar16_63 (A2), Salz_61 (A11), Saskia_62 (A11), Sham4_62 (A11), Snape_62 (A11), StarStuff_64 (A2), Timothy_62 (A11), TinyTimmy_62 (A11), Tomathan_64 (A2), Travvers_63 (A2), Wolpertinger_60 (A11),

Start 14:

- Found in 7 of 137 (5.1%) of genes in pham
- Manual Annotations of this start: 4 of 115
- Called 85.7% of time when present

- Phage (with cluster) where this start called: Gail_64 (A14), Jeeves_66 (A14), Kinmap_61 (A21), Luchador_65 (A14), SororFago_63 (A14), Sunhee_65 (A14),

Start 15:

- Found in 1 of 137 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chargerpower_61 (A22),

Start 16:

- Found in 2 of 137 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MissWhite_61 (A2),

Start 18:

- Found in 52 of 137 (38.0%) of genes in pham
- Manual Annotations of this start: 44 of 115
- Called 96.2% of time when present
- Phage (with cluster) where this start called: 40AC_63 (A17), AbbyPaige_65 (A2), Agape74_65 (A2), BabyBack_61 (A2), Baehexic_62 (A2), BobSwaget_58 (A2), Buggy_65 (A2), Centaur_64 (A2), Changeling_62 (A2), Crucio_63 (A2), DeerParkTS_60 (A2), Drake55_65 (A2), EZMoney23_59 (A2), Equemioh13_63 (A2), FiringLine_63 (A2), Flare16_63 (A2), ForesterFrank_58 (A2), GaugeLDP_60 (A2), Georgie2_64 (A2), Gratitude_61 (A2), HarryHoudini_64 (A2), IronMan_62 (A2), Iwokeuplikedis_65 (A2), Jaan_63 (A2), Jerm_65 (A2), Landor_63 (A2), Larenn_61 (A2), LilTurb_64 (A2), Lökk_59 (A2), Loser_64 (A2), Malec_62 (A2), MiculUcigas_63 (A2), Miko_59 (A2), NaSiaTalie_63 (A2), NicoleTera_61 (A2), NothingSpecial_60 (A2), Piro94_63 (A2), Pukovnik_61 (A2), QueenBeesly_63 (A2), Rachaly_61 (A2), SemperFi_64 (A2), Sknot_63 (A2), TarsusIV_60 (A2), Terrific_64 (A2), Tristan_61 (A2), Trooper_64 (A2), Turbido_64 (A2), Updawg_64 (A2), WideWale_64 (A2), XianYue_61 (A2),

Start 19:

- Found in 21 of 137 (15.3%) of genes in pham
- Manual Annotations of this start: 16 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 20ES_66 (A2), AN3_66 (A2), Anselm_64 (A2), BengiVuitton_64 (A2), Benvolio_60 (A2), CRB1_66 (A2), Dalmatian_64 (A2), Deloris_64 (A2), DudeLittle_62 (A2), Echild_63 (A2), Fameo_63 (A2), First_0065 (A2), Heffalump_62 (A2), HippoHollow_62 (A2), Kalpine_61 (A2), LadyBird_68 (A2), LionsBait_64 (A2), Power_62 (A2), QueenB2_62 (A2), Retro23_64 (A2), VA6_64 (A2),

Start 20:

- Found in 21 of 137 (15.3%) of genes in pham
- Manual Annotations of this start: 4 of 115
- Called 19.0% of time when present
- Phage (with cluster) where this start called: BiancaTri92_63 (A2), Leogania_63 (A2), SnapTap_63 (A2), SweetiePie_63 (A2),

Summary by clusters:

There are 6 clusters represented in this pham: A14, A22, A11, A21, A17, A2,

Info for manual annotations of cluster A11:

- Start number 13 was manually annotated 24 times for cluster A11.

Info for manual annotations of cluster A14:

- Start number 14 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A2:

- Start number 7 was manually annotated 1 time for cluster A2.
- Start number 12 was manually annotated 11 times for cluster A2.
- Start number 13 was manually annotated 9 times for cluster A2.
- Start number 16 was manually annotated 1 time for cluster A2.
- Start number 18 was manually annotated 44 times for cluster A2.
- Start number 19 was manually annotated 16 times for cluster A2.
- Start number 20 was manually annotated 4 times for cluster A2.

Info for manual annotations of cluster A22:

- Start number 15 was manually annotated 1 time for cluster A22.

Gene Information:

Gene: 20ES_66 Start: 40354, Stop: 40241, Start Num: 19

Candidate Starts for 20ES_66:

(Start: 19 @40354 has 16 MA's),

Gene: 40AC_63 Start: 41089, Stop: 40973, Start Num: 18

Candidate Starts for 40AC_63:

(Start: 18 @41089 has 44 MA's),

Gene: AN3_66 Start: 39069, Stop: 38956, Start Num: 19

Candidate Starts for AN3_66:

(Start: 19 @39069 has 16 MA's),

Gene: AN9_65 Start: 40106, Stop: 39975, Start Num: 12

Candidate Starts for AN9_65:

(Start: 7 @40136 has 1 MA's), (Start: 12 @40106 has 11 MA's), (22, 40088), (33, 40043), (35, 40037), (40, 39983),

Gene: ANI8_65 Start: 40106, Stop: 39975, Start Num: 12

Candidate Starts for ANI8_65:

(Start: 7 @40136 has 1 MA's), (Start: 12 @40106 has 11 MA's), (22, 40088), (33, 40043), (35, 40037), (40, 39983),

Gene: AbbyPaige_65 Start: 40341, Stop: 40210, Start Num: 18

Candidate Starts for AbbyPaige_65:

(Start: 18 @40341 has 44 MA's), (Start: 20 @40332 has 4 MA's), (25, 40305),

Gene: Agape74_65 Start: 40335, Stop: 40204, Start Num: 18

Candidate Starts for Agape74_65:

(Start: 18 @40335 has 44 MA's), (Start: 20 @40326 has 4 MA's), (25, 40299),

Gene: Aneem_63 Start: 39459, Stop: 39322, Start Num: 13

Candidate Starts for Aneem_63:

(Start: 13 @39459 has 33 MA's), (35, 39387),

Gene: Anselm_64 Start: 40239, Stop: 40120, Start Num: 19

Candidate Starts for Anselm_64:

(Start: 19 @40239 has 16 MA's), (22, 40230),

Gene: BabyBack_61 Start: 40331, Stop: 40191, Start Num: 18

Candidate Starts for BabyBack_61:

(5, 40424), (10, 40349), (Start: 18 @40331 has 44 MA's), (22, 40322), (34, 40274), (43, 40199),

Gene: Bachome_64 Start: 39439, Stop: 39302, Start Num: 13

Candidate Starts for Bachome_64:

(Start: 13 @39439 has 33 MA's), (35, 39367),

Gene: Baehexic_62 Start: 39801, Stop: 39685, Start Num: 18

Candidate Starts for Baehexic_62:

(Start: 18 @39801 has 44 MA's), (36, 39744),

Gene: BengiVuitton_64 Start: 40331, Stop: 40212, Start Num: 19

Candidate Starts for BengiVuitton_64:

(Start: 19 @40331 has 16 MA's),

Gene: Benvolio_60 Start: 39343, Stop: 39227, Start Num: 19

Candidate Starts for Benvolio_60:

(Start: 19 @39343 has 16 MA's),

Gene: BiancaTri92_63 Start: 40390, Stop: 40262, Start Num: 20

Candidate Starts for BiancaTri92_63:

(Start: 20 @40390 has 4 MA's), (22, 40381), (42, 40270),

Gene: BobSwaget_58 Start: 38604, Stop: 38473, Start Num: 18

Candidate Starts for BobSwaget_58:

(Start: 18 @38604 has 44 MA's), (Start: 20 @38595 has 4 MA's), (22, 38586), (34, 38535),

Gene: Bowtie_63 Start: 39466, Stop: 39329, Start Num: 13

Candidate Starts for Bowtie_63:

(Start: 13 @39466 has 33 MA's), (35, 39394),

Gene: Bradman_62 Start: 39200, Stop: 39054, Start Num: 12

Candidate Starts for Bradman_62:

(Start: 7 @39230 has 1 MA's), (8, 39215), (Start: 12 @39200 has 11 MA's), (22, 39182), (26, 39164), (33, 39137), (34, 39134), (35, 39131),

Gene: Bud_61 Start: 39013, Stop: 38876, Start Num: 13

Candidate Starts for Bud_61:

(Start: 13 @39013 has 33 MA's), (35, 38941),

Gene: Buggy_65 Start: 40392, Stop: 40261, Start Num: 18

Candidate Starts for Buggy_65:

(Start: 18 @40392 has 44 MA's), (Start: 20 @40383 has 4 MA's), (25, 40356),

Gene: C3_59 Start: 40136, Stop: 39975, Start Num: 7

Candidate Starts for C3_59:

(Start: 7 @40136 has 1 MA's), (Start: 12 @40106 has 11 MA's), (22, 40088), (33, 40043), (35, 40037), (40, 39983),

Gene: CRB1_66 Start: 40877, Stop: 40758, Start Num: 19

Candidate Starts for CRB1_66:

(Start: 19 @40877 has 16 MA's),

Gene: Caraxes_63 Start: 38676, Stop: 38521, Start Num: 12

Candidate Starts for Caraxes_63:

(2, 39000), (3, 38934), (4, 38928), (6, 38712), (Start: 7 @38709 has 1 MA's), (Start: 12 @38676 has 11 MA's), (22, 38658), (23, 38652), (33, 38613), (34, 38610), (35, 38607),

Gene: Centaur_64 Start: 40015, Stop: 39899, Start Num: 18

Candidate Starts for Centaur_64:

(Start: 18 @40015 has 44 MA's), (36, 39958),

Gene: Changeling_62 Start: 40439, Stop: 40296, Start Num: 18

Candidate Starts for Changeling_62:

(5, 40529), (Start: 18 @40439 has 44 MA's), (27, 40391), (34, 40370), (35, 40367), (42, 40304),

Gene: Chargerpower_61 Start: 38578, Stop: 38429, Start Num: 15

Candidate Starts for Chargerpower_61:

(Start: 7 @38617 has 1 MA's), (8, 38602), (Start: 14 @38581 has 4 MA's), (Start: 15 @38578 has 1 MA's), (22, 38560), (31, 38518), (44, 38437),

Gene: Crucio_63 Start: 40018, Stop: 39887, Start Num: 18

Candidate Starts for Crucio_63:

(Start: 18 @40018 has 44 MA's), (Start: 20 @40009 has 4 MA's), (25, 39982),

Gene: D29_59.1 Start: 39706, Stop: 39563, Start Num: 13

Candidate Starts for D29_59.1:

(Start: 13 @39706 has 33 MA's), (17, 39697), (27, 39658), (35, 39634),

Gene: D32_63 Start: 39706, Stop: 39563, Start Num: 13

Candidate Starts for D32_63:

(Start: 13 @39706 has 33 MA's), (17, 39697), (27, 39658), (35, 39634),

Gene: DBQu4n_64 Start: 39687, Stop: 39544, Start Num: 13

Candidate Starts for DBQu4n_64:

(Start: 13 @39687 has 33 MA's), (17, 39678), (27, 39639), (35, 39615),

Gene: Dalmatian_64 Start: 40212, Stop: 40093, Start Num: 19

Candidate Starts for Dalmatian_64:

(Start: 19 @40212 has 16 MA's), (22, 40203),

Gene: DeerParkTS_60 Start: 39136, Stop: 39023, Start Num: 18

Candidate Starts for DeerParkTS_60:

(10, 39154), (Start: 18 @39136 has 44 MA's),

Gene: Deloris_64 Start: 40027, Stop: 39908, Start Num: 19
Candidate Starts for Deloris_64:
(Start: 19 @40027 has 16 MA's),

Gene: Drake55_65 Start: 40115, Stop: 39984, Start Num: 18
Candidate Starts for Drake55_65:
(Start: 18 @40115 has 44 MA's),

Gene: DudeLittle_62 Start: 39978, Stop: 39859, Start Num: 19
Candidate Starts for DudeLittle_62:
(Start: 19 @39978 has 16 MA's), (22, 39969),

Gene: Duplo_64 Start: 39743, Stop: 39600, Start Num: 13
Candidate Starts for Duplo_64:
(Start: 13 @39743 has 33 MA's), (17, 39734), (27, 39695), (35, 39671),

Gene: EZMoney23_59 Start: 39508, Stop: 39365, Start Num: 18
Candidate Starts for EZMoney23_59:
(Start: 18 @39508 has 44 MA's), (32, 39445), (42, 39373),

Gene: Ebony_62 Start: 39030, Stop: 38893, Start Num: 13
Candidate Starts for Ebony_62:
(Start: 13 @39030 has 33 MA's), (35, 38958),

Gene: Echild_63 Start: 39367, Stop: 39251, Start Num: 19
Candidate Starts for Echild_63:
(Start: 19 @39367 has 16 MA's),

Gene: Equemioh13_63 Start: 39920, Stop: 39804, Start Num: 18
Candidate Starts for Equemioh13_63:
(Start: 18 @39920 has 44 MA's), (36, 39863),

Gene: Et2Brutus_61 Start: 38993, Stop: 38856, Start Num: 13
Candidate Starts for Et2Brutus_61:
(Start: 13 @38993 has 33 MA's), (35, 38921),

Gene: Fameo_63 Start: 40337, Stop: 40218, Start Num: 19
Candidate Starts for Fameo_63:
(5, 40430), (Start: 19 @40337 has 16 MA's), (22, 40328),

Gene: Fibonacci_62 Start: 38999, Stop: 38862, Start Num: 13
Candidate Starts for Fibonacci_62:
(Start: 13 @38999 has 33 MA's), (35, 38927),

Gene: FiringLine_63 Start: 39999, Stop: 39868, Start Num: 18
Candidate Starts for FiringLine_63:
(Start: 18 @39999 has 44 MA's), (Start: 20 @39990 has 4 MA's), (25, 39963),

Gene: First_0065 Start: 40254, Stop: 40141, Start Num: 19
Candidate Starts for First_0065:
(Start: 19 @40254 has 16 MA's),

Gene: Flare16_63 Start: 39676, Stop: 39560, Start Num: 18

Candidate Starts for Flare16_63:

(Start: 18 @39676 has 44 MA's), (36, 39619),

Gene: Flaverint_63 Start: 39457, Stop: 39320, Start Num: 13

Candidate Starts for Flaverint_63:

(Start: 13 @39457 has 33 MA's), (35, 39385),

Gene: ForesterFrank_58 Start: 40183, Stop: 40052, Start Num: 18

Candidate Starts for ForesterFrank_58:

(5, 40273), (Start: 18 @40183 has 44 MA's),

Gene: Gail_64 Start: 40781, Stop: 40653, Start Num: 14

Candidate Starts for Gail_64:

(11, 40787), (Start: 14 @40781 has 4 MA's),

Gene: GaugeLDP_60 Start: 39857, Stop: 39732, Start Num: 18

Candidate Starts for GaugeLDP_60:

(5, 39950), (10, 39875), (Start: 16 @39860 has 1 MA's), (Start: 18 @39857 has 44 MA's), (33, 39803), (38, 39752),

Gene: Georgie2_64 Start: 40044, Stop: 39913, Start Num: 18

Candidate Starts for Georgie2_64:

(Start: 18 @40044 has 44 MA's), (Start: 20 @40035 has 4 MA's), (25, 40008),

Gene: Gilberta_63 Start: 39450, Stop: 39313, Start Num: 13

Candidate Starts for Gilberta_63:

(Start: 13 @39450 has 33 MA's), (35, 39378),

Gene: Gratitude_61 Start: 39920, Stop: 39804, Start Num: 18

Candidate Starts for Gratitude_61:

(Start: 18 @39920 has 44 MA's), (36, 39863),

Gene: HarryHoudini_64 Start: 40119, Stop: 40003, Start Num: 18

Candidate Starts for HarryHoudini_64:

(Start: 18 @40119 has 44 MA's), (36, 40062),

Gene: Heffalump_62 Start: 40805, Stop: 40686, Start Num: 19

Candidate Starts for Heffalump_62:

(5, 40898), (Start: 19 @40805 has 16 MA's), (22, 40796),

Gene: HippoHollow_62 Start: 41430, Stop: 41302, Start Num: 19

Candidate Starts for HippoHollow_62:

(Start: 19 @41430 has 16 MA's),

Gene: Hutc2_61 Start: 38999, Stop: 38862, Start Num: 13

Candidate Starts for Hutc2_61:

(Start: 13 @38999 has 33 MA's), (35, 38927),

Gene: Insomnia_63 Start: 39510, Stop: 39373, Start Num: 13

Candidate Starts for Insomnia_63:

(Start: 13 @39510 has 33 MA's), (35, 39438),

Gene: IronMan_62 Start: 40812, Stop: 40687, Start Num: 18
Candidate Starts for IronMan_62:
(10, 40830), (Start: 18 @40812 has 44 MA's), (24, 40791), (41, 40695),

Gene: Iwokeuplikedis_65 Start: 39836, Stop: 39705, Start Num: 18
Candidate Starts for Iwokeuplikedis_65:
(1, 40247), (5, 39926), (Start: 18 @39836 has 44 MA's), (26, 39809), (27, 39800), (28, 39797), (29, 39794), (30, 39788),

Gene: Jaan_63 Start: 40984, Stop: 40859, Start Num: 18
Candidate Starts for Jaan_63:
(10, 41002), (Start: 18 @40984 has 44 MA's), (24, 40963), (34, 40927),

Gene: Jabith_63 Start: 39511, Stop: 39374, Start Num: 13
Candidate Starts for Jabith_63:
(Start: 13 @39511 has 33 MA's), (35, 39439),

Gene: Jeeves_66 Start: 39766, Stop: 39632, Start Num: 14
Candidate Starts for Jeeves_66:
(Start: 14 @39766 has 4 MA's),

Gene: Jerm_65 Start: 40407, Stop: 40276, Start Num: 18
Candidate Starts for Jerm_65:
(Start: 18 @40407 has 44 MA's), (Start: 20 @40398 has 4 MA's), (25, 40371),

Gene: Joselito_63 Start: 39459, Stop: 39322, Start Num: 13
Candidate Starts for Joselito_63:
(Start: 13 @39459 has 33 MA's), (35, 39387),

Gene: Jsquared_63 Start: 39358, Stop: 39215, Start Num: 12
Candidate Starts for Jsquared_63:
(Start: 7 @39388 has 1 MA's), (8, 39373), (Start: 12 @39358 has 11 MA's), (22, 39340), (26, 39322), (28, 39310), (33, 39295), (34, 39292), (35, 39289),

Gene: Kalpine_61 Start: 40096, Stop: 39965, Start Num: 19
Candidate Starts for Kalpine_61:
(10, 40117), (Start: 19 @40096 has 16 MA's), (37, 40030), (42, 39973),

Gene: Kerberos_64 Start: 39705, Stop: 39562, Start Num: 13
Candidate Starts for Kerberos_64:
(Start: 13 @39705 has 33 MA's), (17, 39696), (27, 39657), (35, 39633),

Gene: Kimba_61 Start: 39031, Stop: 38894, Start Num: 13
Candidate Starts for Kimba_61:
(Start: 13 @39031 has 33 MA's), (35, 38959),

Gene: Kinmap_61 Start: 38456, Stop: 38328, Start Num: 14
Candidate Starts for Kinmap_61:
(Start: 14 @38456 has 4 MA's), (34, 38402), (35, 38399),

Gene: Koduck_64 Start: 39295, Stop: 39152, Start Num: 12
Candidate Starts for Koduck_64:

(Start: 7 @39316 has 1 MA's), (Start: 12 @39295 has 11 MA's), (22, 39277), (33, 39232), (34, 39229), (35, 39226),

Gene: LadyBird_68 Start: 40839, Stop: 40720, Start Num: 19
Candidate Starts for LadyBird_68:
(Start: 19 @40839 has 16 MA's),

Gene: Landor_63 Start: 40890, Stop: 40765, Start Num: 18
Candidate Starts for Landor_63:
(10, 40908), (Start: 18 @40890 has 44 MA's), (24, 40869), (41, 40773),

Gene: Larenn_61 Start: 39953, Stop: 39837, Start Num: 18
Candidate Starts for Larenn_61:
(Start: 18 @39953 has 44 MA's), (36, 39896),

Gene: Leogania_63 Start: 40768, Stop: 40640, Start Num: 20
Candidate Starts for Leogania_63:
(Start: 20 @40768 has 4 MA's), (22, 40759), (42, 40648),

Gene: LilTurb_64 Start: 40289, Stop: 40158, Start Num: 18
Candidate Starts for LilTurb_64:
(Start: 18 @40289 has 44 MA's), (Start: 20 @40280 has 4 MA's), (25, 40253),

Gene: LionsBait_64 Start: 41431, Stop: 41303, Start Num: 19
Candidate Starts for LionsBait_64:
(Start: 19 @41431 has 16 MA's),

Gene: Lokk_59 Start: 39228, Stop: 39097, Start Num: 18
Candidate Starts for Lokk_59:
(Start: 18 @39228 has 44 MA's), (Start: 20 @39219 has 4 MA's), (22, 39210), (34, 39159),

Gene: Loser_64 Start: 40496, Stop: 40356, Start Num: 18
Candidate Starts for Loser_64:
(Start: 18 @40496 has 44 MA's), (Start: 20 @40487 has 4 MA's), (34, 40427), (35, 40424), (42, 40364),

Gene: Luchador_65 Start: 41349, Stop: 41215, Start Num: 14
Candidate Starts for Luchador_65:
(Start: 14 @41349 has 4 MA's),

Gene: Lucivia_63 Start: 39508, Stop: 39371, Start Num: 13
Candidate Starts for Lucivia_63:
(Start: 13 @39508 has 33 MA's), (35, 39436),

Gene: MaCh_62 Start: 39438, Stop: 39301, Start Num: 13
Candidate Starts for MaCh_62:
(Start: 13 @39438 has 33 MA's), (35, 39366),

Gene: Mabel_62 Start: 39455, Stop: 39318, Start Num: 13
Candidate Starts for Mabel_62:
(Start: 13 @39455 has 33 MA's), (35, 39383), (39, 39341),

Gene: MajorMajor_62 Start: 39215, Stop: 39054, Start Num: 8
Candidate Starts for MajorMajor_62:

(Start: 7 @39230 has 1 MA's), (8, 39215), (Start: 12 @39200 has 11 MA's), (22, 39182), (26, 39164), (33, 39137), (34, 39134), (35, 39131),

Gene: Malec_62 Start: 40520, Stop: 40404, Start Num: 18

Candidate Starts for Malec_62:

(Start: 18 @40520 has 44 MA's), (36, 40463),

Gene: MiculUcigas_63 Start: 39579, Stop: 39463, Start Num: 18

Candidate Starts for MiculUcigas_63:

(Start: 18 @39579 has 44 MA's), (36, 39522),

Gene: Miko_59 Start: 40006, Stop: 39875, Start Num: 18

Candidate Starts for Miko_59:

(Start: 18 @40006 has 44 MA's), (Start: 20 @39997 has 4 MA's), (34, 39937),

Gene: MissWhite_61 Start: 38488, Stop: 38360, Start Num: 16

Candidate Starts for MissWhite_61:

(9, 38506), (Start: 16 @38488 has 1 MA's), (22, 38479),

Gene: Mulciber_61 Start: 38996, Stop: 38859, Start Num: 13

Candidate Starts for Mulciber_61:

(Start: 13 @38996 has 33 MA's), (35, 38924),

Gene: Munch_62 Start: 39459, Stop: 39322, Start Num: 13

Candidate Starts for Munch_62:

(Start: 13 @39459 has 33 MA's), (35, 39387),

Gene: NaSiaTalie_63 Start: 39673, Stop: 39557, Start Num: 18

Candidate Starts for NaSiaTalie_63:

(Start: 18 @39673 has 44 MA's), (36, 39616),

Gene: Naji_64 Start: 39706, Stop: 39563, Start Num: 13

Candidate Starts for Naji_64:

(Start: 13 @39706 has 33 MA's), (17, 39697), (27, 39658), (35, 39634),

Gene: NicoleTera_61 Start: 39996, Stop: 39865, Start Num: 18

Candidate Starts for NicoleTera_61:

(Start: 18 @39996 has 44 MA's), (32, 39933),

Gene: NothingSpecial_60 Start: 40211, Stop: 40077, Start Num: 18

Candidate Starts for NothingSpecial_60:

(5, 40301), (10, 40229), (Start: 18 @40211 has 44 MA's), (34, 40154), (43, 40085),

Gene: Odin_62 Start: 39060, Stop: 38905, Start Num: 12

Candidate Starts for Odin_62:

(6, 39096), (Start: 7 @39093 has 1 MA's), (Start: 12 @39060 has 11 MA's), (22, 39042), (23, 39036), (33, 38997), (34, 38994), (35, 38991),

Gene: Orange_61 Start: 39008, Stop: 38871, Start Num: 13

Candidate Starts for Orange_61:

(Start: 13 @39008 has 33 MA's), (35, 38936),

Gene: Petersenfast_60 Start: 39007, Stop: 38870, Start Num: 13

Candidate Starts for Petersenfast_60:
(Start: 13 @39007 has 33 MA's), (35, 38935),

Gene: Ph8s_64 Start: 39243, Stop: 39100, Start Num: 12
Candidate Starts for Ph8s_64:
(6, 39267), (Start: 7 @39264 has 1 MA's), (Start: 12 @39243 has 11 MA's), (17, 39231), (22, 39225),
(33, 39180), (35, 39174),

Gene: Piro94_63 Start: 40026, Stop: 39910, Start Num: 18
Candidate Starts for Piro94_63:
(Start: 18 @40026 has 44 MA's), (36, 39969),

Gene: Pomar16_63 Start: 39746, Stop: 39603, Start Num: 13
Candidate Starts for Pomar16_63:
(Start: 13 @39746 has 33 MA's), (17, 39737), (27, 39698), (35, 39674),

Gene: Power_62 Start: 40040, Stop: 39921, Start Num: 19
Candidate Starts for Power_62:
(Start: 19 @40040 has 16 MA's), (22, 40031),

Gene: Pukovnik_61 Start: 40533, Stop: 40414, Start Num: 18
Candidate Starts for Pukovnik_61:
(5, 40626), (10, 40551), (Start: 18 @40533 has 44 MA's), (24, 40512), (34, 40476),

Gene: QueenB2_62 Start: 40018, Stop: 39899, Start Num: 19
Candidate Starts for QueenB2_62:
(5, 40111), (Start: 19 @40018 has 16 MA's), (22, 40009),

Gene: QueenBeesly_63 Start: 39999, Stop: 39868, Start Num: 18
Candidate Starts for QueenBeesly_63:
(Start: 18 @39999 has 44 MA's), (Start: 20 @39990 has 4 MA's), (25, 39963),

Gene: Quokka_61 Start: 39200, Stop: 39054, Start Num: 12
Candidate Starts for Quokka_61:
(Start: 7 @39230 has 1 MA's), (8, 39215), (Start: 12 @39200 has 11 MA's), (22, 39182), (26, 39164),
(33, 39137), (34, 39134), (35, 39131),

Gene: Rachaly_61 Start: 40151, Stop: 40020, Start Num: 18
Candidate Starts for Rachaly_61:
(Start: 18 @40151 has 44 MA's), (Start: 20 @40142 has 4 MA's), (22, 40133), (34, 40082),

Gene: Retro23_64 Start: 40232, Stop: 40113, Start Num: 19
Candidate Starts for Retro23_64:
(Start: 19 @40232 has 16 MA's), (22, 40223),

Gene: Salz_61 Start: 38978, Stop: 38841, Start Num: 13
Candidate Starts for Salz_61:
(Start: 13 @38978 has 33 MA's), (35, 38906),

Gene: Saskia_62 Start: 39006, Stop: 38869, Start Num: 13
Candidate Starts for Saskia_62:
(Start: 13 @39006 has 33 MA's), (35, 38934),

Gene: SemperFi_64 Start: 40267, Stop: 40136, Start Num: 18
Candidate Starts for SemperFi_64:
(Start: 18 @40267 has 44 MA's), (Start: 20 @40258 has 4 MA's), (25, 40231),

Gene: Serenity_63 Start: 39413, Stop: 39267, Start Num: 12
Candidate Starts for Serenity_63:
(Start: 12 @39413 has 11 MA's), (22, 39395), (33, 39350), (34, 39347), (35, 39344),

Gene: Sham4_62 Start: 39006, Stop: 38869, Start Num: 13
Candidate Starts for Sham4_62:
(Start: 13 @39006 has 33 MA's), (35, 38934),

Gene: Sknot_63 Start: 39676, Stop: 39560, Start Num: 18
Candidate Starts for Sknot_63:
(Start: 18 @39676 has 44 MA's), (36, 39619),

Gene: SnapTap_63 Start: 40069, Stop: 39947, Start Num: 20
Candidate Starts for SnapTap_63:
(Start: 18 @40078 has 44 MA's), (Start: 20 @40069 has 4 MA's), (25, 40042),

Gene: Snape_62 Start: 38998, Stop: 38861, Start Num: 13
Candidate Starts for Snape_62:
(Start: 13 @38998 has 33 MA's), (35, 38926),

Gene: SororFago_63 Start: 40687, Stop: 40544, Start Num: 14
Candidate Starts for SororFago_63:
(Start: 14 @40687 has 4 MA's),

Gene: StarStuff_64 Start: 39708, Stop: 39565, Start Num: 13
Candidate Starts for StarStuff_64:
(Start: 13 @39708 has 33 MA's), (17, 39699), (27, 39660), (35, 39636),

Gene: Sunhee_65 Start: 39237, Stop: 39109, Start Num: 14
Candidate Starts for Sunhee_65:
(11, 39243), (Start: 14 @39237 has 4 MA's),

Gene: Superchunk_62 Start: 38676, Stop: 38521, Start Num: 12
Candidate Starts for Superchunk_62:
(2, 39000), (3, 38934), (4, 38928), (6, 38712), (Start: 7 @38709 has 1 MA's), (Start: 12 @38676 has 11 MA's), (22, 38658), (23, 38652), (33, 38613), (34, 38610), (35, 38607),

Gene: SweetiePie_63 Start: 40201, Stop: 40079, Start Num: 20
Candidate Starts for SweetiePie_63:
(Start: 18 @40210 has 44 MA's), (Start: 20 @40201 has 4 MA's), (25, 40174),

Gene: SwirlSquare_67 Start: 39598, Stop: 39446, Start Num: 12
Candidate Starts for SwirlSquare_67:
(Start: 7 @39631 has 1 MA's), (Start: 12 @39598 has 11 MA's), (22, 39580), (33, 39535), (34, 39532), (35, 39529), (45, 39454),

Gene: TarsusIV_60 Start: 39672, Stop: 39541, Start Num: 18
Candidate Starts for TarsusIV_60:
(Start: 18 @39672 has 44 MA's), (34, 39603),

Gene: Terrific_64 Start: 40030, Stop: 39914, Start Num: 18

Candidate Starts for Terrific_64:

(Start: 18 @40030 has 44 MA's), (36, 39973),

Gene: Timothy_62 Start: 38975, Stop: 38838, Start Num: 13

Candidate Starts for Timothy_62:

(Start: 13 @38975 has 33 MA's), (35, 38903),

Gene: TinyTimmy_62 Start: 39024, Stop: 38887, Start Num: 13

Candidate Starts for TinyTimmy_62:

(Start: 13 @39024 has 33 MA's), (35, 38952),

Gene: TipsytheTRex_60 Start: 39483, Stop: 39337, Start Num: 12

Candidate Starts for TipsytheTRex_60:

(Start: 12 @39483 has 11 MA's), (22, 39465), (33, 39420), (34, 39417), (35, 39414),

Gene: Tomathan_64 Start: 39755, Stop: 39612, Start Num: 13

Candidate Starts for Tomathan_64:

(Start: 13 @39755 has 33 MA's), (17, 39746), (27, 39707), (35, 39683),

Gene: Travvers_63 Start: 39705, Stop: 39562, Start Num: 13

Candidate Starts for Travvers_63:

(Start: 13 @39705 has 33 MA's), (17, 39696), (27, 39657), (35, 39633),

Gene: Tristan_61 Start: 40709, Stop: 40584, Start Num: 18

Candidate Starts for Tristan_61:

(10, 40727), (Start: 18 @40709 has 44 MA's), (24, 40688),

Gene: Trooper_64 Start: 40399, Stop: 40268, Start Num: 18

Candidate Starts for Trooper_64:

(Start: 18 @40399 has 44 MA's), (Start: 20 @40390 has 4 MA's), (21, 40384), (25, 40363), (33, 40333), (34, 40330),

Gene: Turbido_64 Start: 40285, Stop: 40154, Start Num: 18

Candidate Starts for Turbido_64:

(Start: 18 @40285 has 44 MA's), (Start: 20 @40276 has 4 MA's), (25, 40249),

Gene: Updawg_64 Start: 39920, Stop: 39804, Start Num: 18

Candidate Starts for Updawg_64:

(Start: 18 @39920 has 44 MA's), (36, 39863),

Gene: VA6_64 Start: 40247, Stop: 40134, Start Num: 19

Candidate Starts for VA6_64:

(Start: 19 @40247 has 16 MA's),

Gene: VC3_65 Start: 40106, Stop: 39975, Start Num: 12

Candidate Starts for VC3_65:

(Start: 7 @40136 has 1 MA's), (Start: 12 @40106 has 11 MA's), (22, 40088), (33, 40043), (35, 40037), (40, 39983),

Gene: WideWale_64 Start: 39920, Stop: 39804, Start Num: 18

Candidate Starts for WideWale_64:

(Start: 18 @39920 has 44 MA's), (36, 39863),

Gene: Wolpertinger_60 Start: 39007, Stop: 38870, Start Num: 13

Candidate Starts for Wolpertinger_60:

(Start: 13 @39007 has 33 MA's), (35, 38935),

Gene: XianYue_61 Start: 39423, Stop: 39307, Start Num: 18

Candidate Starts for XianYue_61:

(Start: 18 @39423 has 44 MA's), (34, 39369),