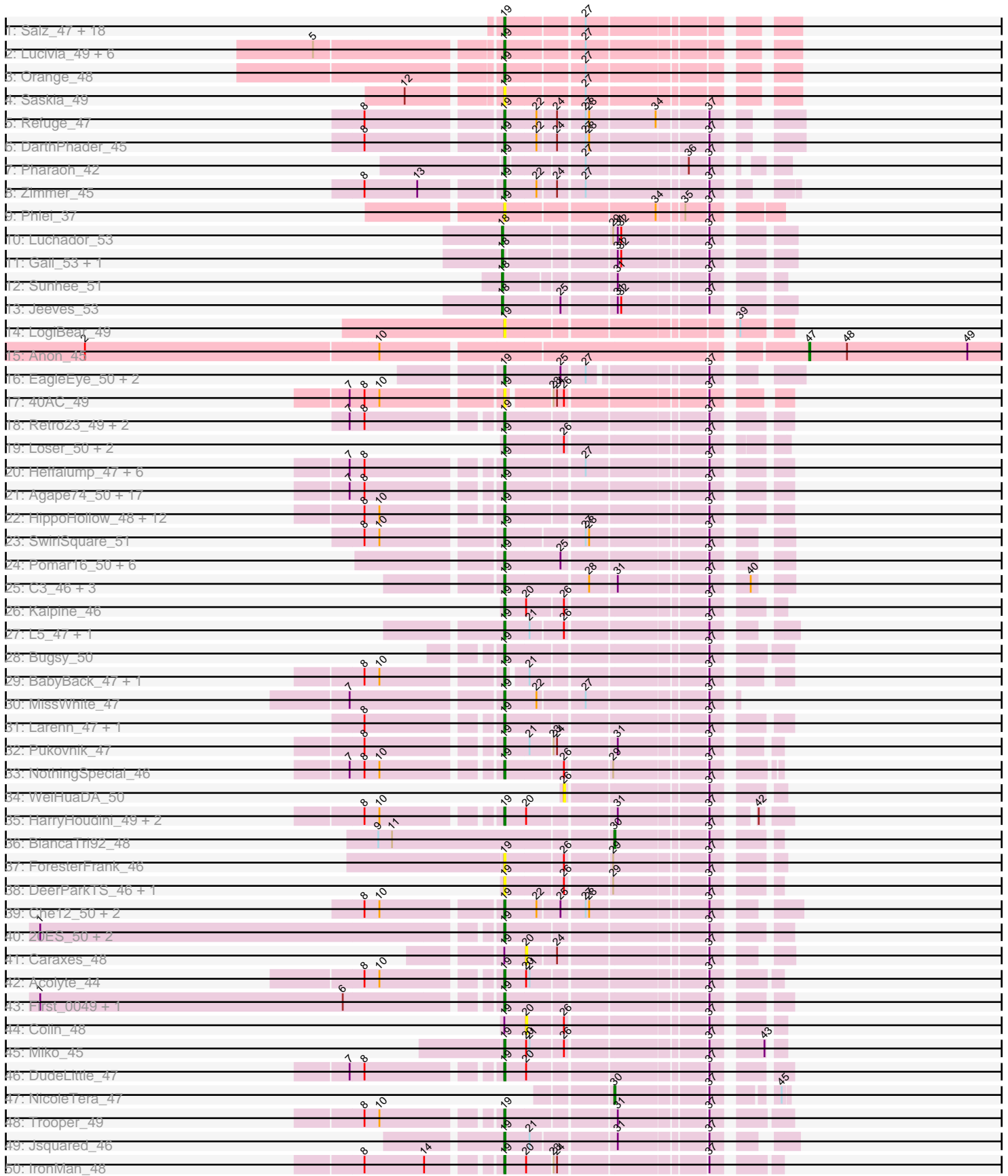
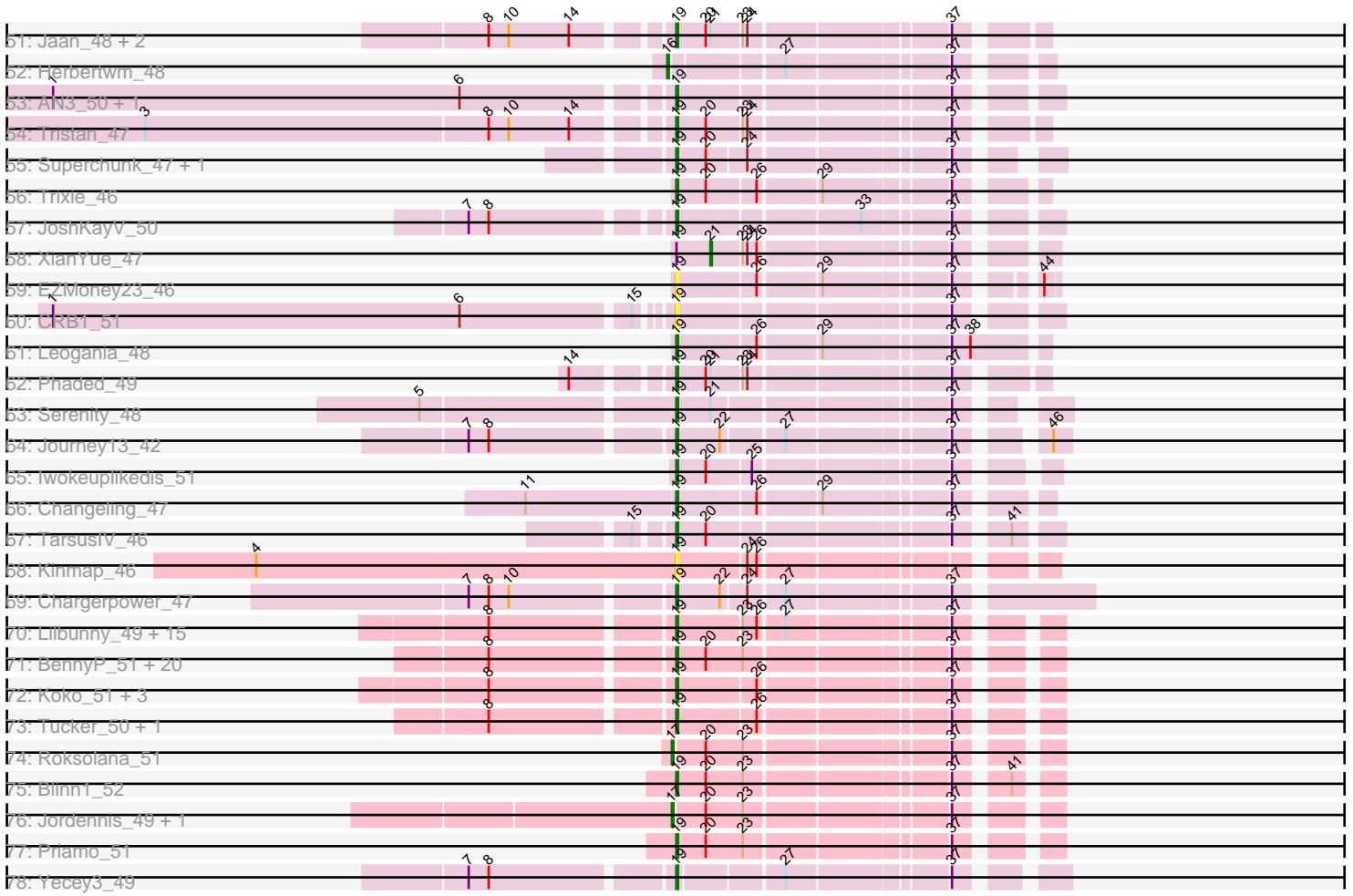


Pham 304724



Pham 304724



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 304724 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304724 has 208 members, 26 are drafts.

Phages represented in each track:

- Track 1 : Salz_47, Bachome_50, Wolpertinger_47, Fibonacci_48, Petersenfast_47, Bud_48, Insomnia_49, Hutc2_48, Mulciber_48, Snape_48, MaCh_49, Jabith_49, Timothy_48, TinyTimmy_48, Sham4_48, Ebony_48, Et2Brutus_47, Mabel_48, Kimba_48
- Track 2 : Lucivia_49, Flaverint_49, Bowtie_49, Gilberta_49, Munch_49, Aneem_49, Joselito_49
- Track 3 : Orange_48
- Track 4 : Saskia_49
- Track 5 : Refuge_47
- Track 6 : DarthPhader_45
- Track 7 : Pharaoh_42
- Track 8 : Zimmer_45
- Track 9 : Phlei_37
- Track 10 : Luchador_53
- Track 11 : Gail_53, SororFago_51
- Track 12 : Sunhee_51
- Track 13 : Jeeves_53
- Track 14 : LogiBear_49
- Track 15 : Anon_45
- Track 16 : EagleEye_50, PainterBoy_49, Lucyedi_49
- Track 17 : 40AC_49
- Track 18 : Retro23_49, Dalmatian_49, Anselm_49
- Track 19 : Loser_50, AnnaL29_50, RedRock_50
- Track 20 : Heffalump_47, Crucio_48, Echild_48, QueenB2_47, Fameo_48, Benvolio_45, Turbido_49
- Track 21 : Agape74_50, Georgie2_49, ChipMunk_50, Smeagan_51, Dignity_50, AbbyPaige_50, FiringLine_48, Leviathan_50, Whabigail7_49, Power_47, SemperFi_49, SnapTap_48, KingCyrus_50, LilTurb_49, Jerm_50, EvilGenius_50, SweetiePie_48, QueenBeesly_48
- Track 22 : HippoHollow_48, Baehexic_47, Sknot_48, MiculUcigas_48, Equemioh13_49, Updawg_49, Centaur_49, Gratitude_48, Terrific_51, NaSiaTalie_48, LionsBait_50, WideWale_49, Flare16_48
- Track 23 : SwirlSquare_51
- Track 24 : Pomar16_50, Travvers_50, DBQu4n_50, Duplo_50, Tomathan_50, Kerberos_50, StarStuff_50
- Track 25 : C3_46, VC3_51, AN9_51, ANI8_51
- Track 26 : Kalpine_46

- Track 27 : L5_47, Koduck_49
- Track 28 : Buggy_50
- Track 29 : BabyBack_47, GaugeLDP_46
- Track 30 : MissWhite_47
- Track 31 : Larenn_47, Malec_48
- Track 32 : Pukovnik_47
- Track 33 : NothingSpecial_46
- Track 34 : WeiHuaDA_50
- Track 35 : HarryHoudini_49, Piro94_48, Drake55_50
- Track 36 : BiancaTri92_48
- Track 37 : ForesterFrank_46
- Track 38 : DeerParkTS_46, Prudy_46
- Track 39 : Che12_50, Ph8s_50, Adzzy_50
- Track 40 : 20ES_50, BengiVuitton_49, Deloris_48
- Track 41 : Caraxes_48
- Track 42 : Acolyte_44
- Track 43 : First_0049, LadyBird_52
- Track 44 : Colin_48
- Track 45 : Miko_45
- Track 46 : DudeLittle_47
- Track 47 : NicoleTera_47
- Track 48 : Trooper_49
- Track 49 : Jsquared_46
- Track 50 : IronMan_48
- Track 51 : Jaan_48, Landor_48, Bactobuster_47
- Track 52 : Herbertwm_48
- Track 53 : AN3_50, VA6_48
- Track 54 : Tristan_47
- Track 55 : Superchunk_47, Odin_47
- Track 56 : Trixie_46
- Track 57 : JoshKayV_50
- Track 58 : XianYue_47
- Track 59 : EZMoney23_46
- Track 60 : CRB1_51
- Track 61 : Leogania_48
- Track 62 : Phaded_49
- Track 63 : Serenity_48
- Track 64 : Journey13_42
- Track 65 : Iwokeuplikedis_51
- Track 66 : Changeling_47
- Track 67 : TarsusIV_46
- Track 68 : Kinmap_46
- Track 69 : Chargerpower_47
- Track 70 : Lilbunny_49, Artemis2UCLA_50, Wiks_49, WunderPhul_50, Garak_52, ToneTone_47, Gruunaga_50, Temprado_51, Helmet_52, Zaka_50, Yokurt_50, BlessJoy_51, Indra_53, Rifter_51, Hexamo_50, Jeffabunny_50
- Track 71 : BennyP_51, SmellyB_50, Isiphiwo_48, DelvinSonDorr_48, SuperAwesome_50, Candra_50, GreedyLawyer_50, Kipper29_50, Gladiator_48, SuperCallie99_49, VohminGhazi_50, Cookiedough_50, Newrala_50, McFly_50, Kazan_51, EricB_50, Pmask_50, Chartreuse_49, Neeharika16_49, DaVinci_49, Dorothea_50
- Track 72 : Koko_51, CloudWang3_50, Hammer_51, Blue7_52
- Track 73 : Tucker_50, Zulu_50

- Track 74 : Roksolana_51
- Track 75 : Blinn1_52
- Track 76 : Jordennis_49, Polyphemos_51
- Track 77 : Priamo_51
- Track 78 : Yecey3_49

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

The start number called the most often in the published annotations is 19, it was called in 169 of the 182 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES_50, 40AC_49, AN3_50, AN9_51, AN18_51, AbbyPaige_50, Acolyte_44, Adzzy_50, Agape74_50, Aneem_49, AnnaL29_50, Anselm_49, Artemis2UCLA_50, BabyBack_47, Bachome_50, Bactobuster_47, Baehexic_47, BengiVuitton_49, BennyP_51, Benvolio_45, BlessJoy_51, Blinn1_52, Blue7_52, Bowtie_49, Bud_48, Buggy_50, C3_46, CRB1_51, Candra_50, Centaur_49, Changeling_47, Chargerpower_47, Chartreuse_49, Che12_50, ChipMunk_50, CloudWang3_50, Cookiedough_50, Crucio_48, DBQu4n_50, DaVinci_49, Dalmatian_49, DarthPhader_45, DeerParkTS_46, Deloris_48, DelvinSonDorr_48, Dignity_50, Dorothea_50, Drake55_50, DudeLittle_47, Duplo_50, EZMoney23_46, EagleEye_50, Ebony_48, Echild_48, Equemioh13_49, EricB_50, Et2Brutus_47, EvilGenius_50, Fameo_48, Fibonacci_48, FiringLine_48, First_0049, Flare16_48, Flaverint_49, ForesterFrank_46, Garak_52, GaugeLDP_46, Georgie2_49, Gilberta_49, Gladiator_48, Gratitude_48, GreedyLawyer_50, Gruunaga_50, Hammer_51, HarryHoudini_49, Heffalump_47, Helmet_52, Hexamo_50, HippoHollow_48, Hutc2_48, Indra_53, Insomnia_49, IronMan_48, Isiphiwo_48, Iwokeuplikedis_51, Jaan_48, Jabith_49, Jeffabunny_50, Jerm_50, Joselito_49, JoshKayV_50, Journey13_42, Jsquared_46, Kalpine_46, Kazan_51, Kerberos_50, Kimba_48, KingCyrus_50, Kinmap_46, Kipper29_50, Koduck_49, Koko_51, L5_47, LadyBird_52, Landor_48, Larenn_47, Leogania_48, Leviathan_50, LilTurb_49, Lilbunny_49, LionsBait_50, LogiBear_49, Loser_50, Lucivia_49, Lucyedi_49, MaCh_49, Mabel_48, Malec_48, McFly_50, MiculUcigas_48, Miko_45, MissWhite_47, Mulciber_48, Munch_49, NaSiaTalie_48, Neeharika16_49, Newrala_50, NothingSpecial_46, Odin_47, Orange_48, PainterBoy_49, Petersenfast_47, Ph8s_50, Phaded_49, Pharaoh_42, Phlei_37, Piro94_48, Pmask_50, Pomar16_50, Power_47, Priamo_51, Prudy_46, Pukovnik_47, QueenB2_47, QueenBeesly_48, RedRock_50, Refuge_47, Retro23_49, Rifter_51, Salz_47, Saskia_49, SemperFi_49, Serenity_48, Sham4_48, Sknot_48, Smeagan_51, SmellyB_50, SnapTap_48, Snape_48, StarStuff_50, SuperAwesome_50, SuperCallie99_49, Superchunk_47, SweetiePie_48, SwirlSquare_51, TarsusIV_46, Temprado_51, Terrific_51, Timothy_48, TinyTimmy_48, Tomathan_50, ToneTone_47, Travvers_50, Tristan_47, Trixie_46, Trooper_49, Tucker_50, Turbido_49, Updawg_49, VA6_48, VC3_51, VohminGhazi_50, Whabigail7_49, WideWale_49, Wiks_49, Wolpertinger_47, WunderPhul_50, Yecey3_49, Yokurt_50, Zaka_50, Zimmer_45, Zulu_50,

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

- Caraxes_48, Colin_48, XianYue_47,

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

- Anon_45, BiancaTri92_48, Gail_53, Herbertwm_48, Jeeves_53, Jordennis_49, Luchador_53, NicoleTera_47, Polyphemus_51, Roksolana_51, SororFago_51, Sunhee_51, WeiHuaDA_50,

Summary by start number:

Start 16:

- Found in 1 of 208 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 182
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Herbertwm_48 (A2),

Start 17:

- Found in 3 of 208 (1.4%) of genes in pham
- Manual Annotations of this start: 3 of 182
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jordennis_49 (A6), Polyphemus_51 (A6), Roksolana_51 (A6),

Start 18:

- Found in 5 of 208 (2.4%) of genes in pham
- Manual Annotations of this start: 5 of 182
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gail_53 (A14), Jeeves_53 (A14), Luchador_53 (A14), SororFago_51 (A14), Sunhee_51 (A14),

Start 19:

- Found in 195 of 208 (93.8%) of genes in pham
- Manual Annotations of this start: 169 of 182
- Called 98.5% of time when present
- Phage (with cluster) where this start called: 20ES_50 (A2), 40AC_49 (A17), AN3_50 (A2), AN9_51 (A2), ANI8_51 (A2), AbbyPaige_50 (A2), Acolyte_44 (A2), Adzzy_50 (A2), Agape74_50 (A2), Aneem_49 (A11), AnnaL29_50 (A2), Anselm_49 (A2), Artemis2UCLA_50 (A6), BabyBack_47 (A2), Bachome_50 (A11), Bactobuster_47 (A2), Baehexic_47 (A2), BengiVuitton_49 (A2), BennyP_51 (A6), Benvolio_45 (A2), BlessJoy_51 (A6), Blinn1_52 (A6), Blue7_52 (A6), Bowtie_49 (A11), Bud_48 (A11), Buggy_50 (A2), C3_46 (A2), CRB1_51 (A2), Candra_50 (A6), Centaur_49 (A2), Changeling_47 (A2), Chargerpower_47 (A22), Chartreuse_49 (A6), Che12_50 (A2), ChipMunk_50 (A2), CloudWang3_50 (A6), Cookiedough_50 (A6), Crucio_48 (A2), DBQu4n_50 (A2), DaVinci_49 (A6), Dalmatian_49 (A2), DarthPhader_45 (A12), DeerParkTS_46 (A2), Deloris_48 (A2), DelvinSonDorr_48 (A6), Dignity_50 (A2), Dorothea_50 (A6), Drake55_50 (A2), DudeLittle_47 (A2), Duplo_50 (A2), EZMoney23_46 (A2), EagleEye_50 (A16), Ebony_48 (A11), Echild_48 (A2), Equemioh13_49 (A2), EricB_50 (A6), Et2Brutus_47 (A11), EvilGenius_50 (A2), Fameo_48 (A2), Fibonacci_48 (A11), FiringLine_48 (A2), First_0049 (A2), Flare16_48 (A2), Flaverint_49 (A11), ForesterFrank_46 (A2), Garak_52 (A6), GaugeLDP_46 (A2), Georgie2_49 (A2), Gilberta_49 (A11), Gladiator_48 (A6), Gratitude_48 (A2), GreedyLawyer_50 (A6), Gruunaga_50 (A6), Hammer_51 (A6), HarryHoudini_49 (A2), Heffalump_47 (A2), Helmet_52 (A6), Hexamo_50 (A6), HippoHollow_48 (A2), Hutc2_48 (A11), Indra_53 (A6), Insomnia_49 (A11), IronMan_48 (A2), Isiphiwo_48 (A6), Iwokeuplikedis_51 (A2), Jaan_48 (A2), Jabith_49 (A11), Jeffabunny_50 (A6), Jerm_50 (A2), Joselito_49 (A11), JoshKayV_50 (A2), Journey13_42 (A2), Jsquared_46 (A2), Kalpine_46 (A2), Kazan_51 (A6), Kerberos_50 (A2), Kimba_48

(A11), KingCyrus_50 (A2), Kinmap_46 (A21), Kipper29_50 (A6), Koduck_49 (A2), Koko_51 (A6), L5_47 (A2), LadyBird_52 (A2), Landor_48 (A2), Larenn_47 (A2), Leogania_48 (A2), Leviathan_50 (A2), LilTurb_49 (A2), Lilbunny_49 (A6), LionsBait_50 (A2), LogiBear_49 (A15), Loser_50 (A2), Lucivia_49 (A11), Lucyedi_49 (A16), MaCh_49 (A11), Mabel_48 (A11), Malec_48 (A2), McFly_50 (A6), MiculUcigas_48 (A2), Miko_45 (A2), MissWhite_47 (A2), Mulciber_48 (A11), Munch_49 (A11), NaSiaTalie_48 (A2), Neeharika16_49 (A6), Newrala_50 (A6), NothingSpecial_46 (A2), Odin_47 (A2), Orange_48 (A11), PainterBoy_49 (A16), Petersenfast_47 (A11), Ph8s_50 (A2), Phaded_49 (A2), Pharaoh_42 (A12), Phlei_37 (A13), Piro94_48 (A2), Pmask_50 (A6), Pomar16_50 (A2), Power_47 (A2), Priamo_51 (A6), Prudy_46 (A2), Pukovnik_47 (A2), QueenB2_47 (A2), QueenBeesly_48 (A2), RedRock_50 (A2), Refuge_47 (A12), Retro23_49 (A2), Rifter_51 (A6), Salz_47 (A11), Saskia_49 (A11), SemperFi_49 (A2), Serenity_48 (A2), Sham4_48 (A11), Sknot_48 (A2), Smeagan_51 (A2), SmellyB_50 (A6), SnapTap_48 (A2), Snape_48 (A11), StarStuff_50 (A2), SuperAwesome_50 (A6), SuperCallie99_49 (A6), Superchunk_47 (A2), SweetiePie_48 (A2), SwirlSquare_51 (A2), TarsusIV_46 (A2), Temprado_51 (A6), Terrific_51 (A2), Timothy_48 (A11), TinyTimmy_48 (A11), Tomathan_50 (A2), ToneTone_47 (A6), Travvers_50 (A2), Tristan_47 (A2), Trixie_46 (A2), Trooper_49 (A2), Tucker_50 (A6), Turbido_49 (A2), Updawg_49 (A2), VA6_48 (A2), VC3_51 (A2), VohminGhazi_50 (A6), Whabigail7_49 (A2), WideWale_49 (A2), Wiks_49 (A6), Wolpertinger_47 (A11), WunderPhul_50 (A6), Yecey3_49 (A9), Yokurt_50 (A6), Zaka_50 (A6), Zimmer_45 (A12), Zulu_50 (A6),

Start 20:

- Found in 46 of 208 (22.1%) of genes in pham
- No Manual Annotations of this start.
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Caraxes_48 (A2), Colin_48 (A2),

Start 21:

- Found in 14 of 208 (6.7%) of genes in pham
- Manual Annotations of this start: 1 of 182
- Called 7.1% of time when present
- Phage (with cluster) where this start called: XianYue_47 (A2),

Start 26:

- Found in 42 of 208 (20.2%) of genes in pham
- No Manual Annotations of this start.
- Called 2.4% of time when present
- Phage (with cluster) where this start called: WeiHuaDA_50 (A2),

Start 30:

- Found in 2 of 208 (1.0%) of genes in pham
- Manual Annotations of this start: 2 of 182
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BiancaTri92_48 (A2), NicoleTera_48 (A2),

Start 47:

- Found in 1 of 208 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 182
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Anon_45 (A15),

Summary by clusters:

There are 12 clusters represented in this pham: A15, A21, A17, A16, A11, A13, A14, A12, A22, A2, A6, A9,

Info for manual annotations of cluster A11:

- Start number 19 was manually annotated 24 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 19 was manually annotated 4 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 18 was manually annotated 5 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 47 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster A16:

- Start number 19 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 16 was manually annotated 1 time for cluster A2.
- Start number 19 was manually annotated 94 times for cluster A2.
- Start number 21 was manually annotated 1 time for cluster A2.
- Start number 30 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A22:

- Start number 19 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A6:

- Start number 17 was manually annotated 3 times for cluster A6.
- Start number 19 was manually annotated 42 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 19 was manually annotated 1 time for cluster A9.

Gene Information:

Gene: 20ES_50 Start: 32641, Stop: 32432, Start Num: 19

Candidate Starts for 20ES_50:

(1, 33025), (Start: 19 @32641 has 169 MA's), (37, 32485),

Gene: 40AC_49 Start: 33650, Stop: 33450, Start Num: 19

Candidate Starts for 40AC_49:

(7, 33770), (8, 33758), (10, 33746), (Start: 19 @33650 has 169 MA's), (23, 33617), (24, 33614), (26, 33608), (37, 33500),

Gene: AN3_50 Start: 33012, Stop: 32803, Start Num: 19
Candidate Starts for AN3_50:
(1, 33396), (6, 33132), (Start: 19 @33012 has 169 MA's), (37, 32856),

Gene: AN9_51 Start: 32552, Stop: 32346, Start Num: 19
Candidate Starts for AN9_51:
(Start: 19 @32552 has 169 MA's), (28, 32483), (31, 32462), (37, 32393), (40, 32369),

Gene: ANI8_51 Start: 32552, Stop: 32346, Start Num: 19
Candidate Starts for ANI8_51:
(Start: 19 @32552 has 169 MA's), (28, 32483), (31, 32462), (37, 32393), (40, 32369),

Gene: AbbyPaige_50 Start: 32822, Stop: 32613, Start Num: 19
Candidate Starts for AbbyPaige_50:
(7, 32936), (8, 32924), (Start: 19 @32822 has 169 MA's), (37, 32666),

Gene: Acolyte_44 Start: 31789, Stop: 31586, Start Num: 19
Candidate Starts for Acolyte_44:
(8, 31891), (10, 31879), (Start: 19 @31789 has 169 MA's), (20, 31771), (Start: 21 @31768 has 1 MA's),
(37, 31633),

Gene: Adzzy_50 Start: 31273, Stop: 31064, Start Num: 19
Candidate Starts for Adzzy_50:
(8, 31381), (10, 31369), (Start: 19 @31273 has 169 MA's), (22, 31246), (25, 31228), (27, 31210), (28,
31207), (37, 31117),

Gene: Agape74_50 Start: 32807, Stop: 32598, Start Num: 19
Candidate Starts for Agape74_50:
(7, 32921), (8, 32909), (Start: 19 @32807 has 169 MA's), (37, 32651),

Gene: Aneem_49 Start: 31910, Stop: 31698, Start Num: 19
Candidate Starts for Aneem_49:
(5, 32057), (Start: 19 @31910 has 169 MA's), (27, 31847),

Gene: AnnaL29_50 Start: 33346, Stop: 33143, Start Num: 19
Candidate Starts for AnnaL29_50:
(Start: 19 @33346 has 169 MA's), (26, 33298), (37, 33190),

Gene: Anon_45 Start: 29822, Stop: 29640, Start Num: 47
Candidate Starts for Anon_45:
(2, 30416), (10, 30164), (Start: 47 @29822 has 1 MA's), (48, 29789), (49, 29684),

Gene: Anselm_49 Start: 32738, Stop: 32529, Start Num: 19
Candidate Starts for Anselm_49:
(7, 32852), (8, 32840), (Start: 19 @32738 has 169 MA's), (37, 32582),

Gene: Artemis2UCLA_50 Start: 31040, Stop: 30834, Start Num: 19
Candidate Starts for Artemis2UCLA_50:
(8, 31148), (Start: 19 @31040 has 169 MA's), (23, 31001), (26, 30992), (27, 30977), (37, 30884),

Gene: BabyBack_47 Start: 33062, Stop: 32862, Start Num: 19
Candidate Starts for BabyBack_47:

(8, 33170), (10, 33158), (Start: 19 @33062 has 169 MA's), (Start: 21 @33047 has 1 MA's), (37, 32912),

Gene: Bachome_50 Start: 31898, Stop: 31686, Start Num: 19

Candidate Starts for Bachome_50:

(Start: 19 @31898 has 169 MA's), (27, 31835),

Gene: Bactobuster_47 Start: 33296, Stop: 33093, Start Num: 19

Candidate Starts for Bactobuster_47:

(8, 33398), (10, 33386), (14, 33347), (Start: 19 @33296 has 169 MA's), (20, 33278), (Start: 21 @33275 has 1 MA's), (23, 33257), (24, 33254), (37, 33140),

Gene: Baehexic_47 Start: 32512, Stop: 32300, Start Num: 19

Candidate Starts for Baehexic_47:

(8, 32614), (10, 32602), (Start: 19 @32512 has 169 MA's), (37, 32356),

Gene: BengiVuitton_49 Start: 32594, Stop: 32385, Start Num: 19

Candidate Starts for BengiVuitton_49:

(1, 32978), (Start: 19 @32594 has 169 MA's), (37, 32438),

Gene: BennyP_51 Start: 31491, Stop: 31282, Start Num: 19

Candidate Starts for BennyP_51:

(8, 31599), (Start: 19 @31491 has 169 MA's), (20, 31473), (23, 31449), (37, 31332),

Gene: Benvolio_45 Start: 31769, Stop: 31560, Start Num: 19

Candidate Starts for Benvolio_45:

(7, 31883), (8, 31871), (Start: 19 @31769 has 169 MA's), (27, 31706), (37, 31613),

Gene: BiancaTri92_48 Start: 33044, Stop: 32928, Start Num: 30

Candidate Starts for BiancaTri92_48:

(9, 33239), (11, 33227), (Start: 30 @33044 has 2 MA's), (37, 32972),

Gene: BlessJoy_51 Start: 31501, Stop: 31295, Start Num: 19

Candidate Starts for BlessJoy_51:

(8, 31609), (Start: 19 @31501 has 169 MA's), (23, 31462), (26, 31453), (27, 31438), (37, 31345),

Gene: Blinn1_52 Start: 31303, Stop: 31094, Start Num: 19

Candidate Starts for Blinn1_52:

(Start: 19 @31303 has 169 MA's), (20, 31285), (23, 31261), (37, 31144), (41, 31117),

Gene: Blue7_52 Start: 31136, Stop: 30930, Start Num: 19

Candidate Starts for Blue7_52:

(8, 31244), (Start: 19 @31136 has 169 MA's), (26, 31088), (37, 30980),

Gene: Bowtie_49 Start: 31917, Stop: 31705, Start Num: 19

Candidate Starts for Bowtie_49:

(5, 32064), (Start: 19 @31917 has 169 MA's), (27, 31854),

Gene: Bud_48 Start: 31472, Stop: 31260, Start Num: 19

Candidate Starts for Bud_48:

(Start: 19 @31472 has 169 MA's), (27, 31409),

Gene: Buggy_50 Start: 32882, Stop: 32670, Start Num: 19

Candidate Starts for Buggy_50:

(Start: 19 @32882 has 169 MA's), (37, 32726),

Gene: C3_46 Start: 32552, Stop: 32346, Start Num: 19

Candidate Starts for C3_46:

(Start: 19 @32552 has 169 MA's), (28, 32483), (31, 32462), (37, 32393), (40, 32369),

Gene: CRB1_51 Start: 32987, Stop: 32778, Start Num: 19

Candidate Starts for CRB1_51:

(1, 33368), (6, 33104), (15, 33002), (Start: 19 @32987 has 169 MA's), (37, 32831),

Gene: Candra_50 Start: 31382, Stop: 31173, Start Num: 19

Candidate Starts for Candra_50:

(8, 31490), (Start: 19 @31382 has 169 MA's), (20, 31364), (23, 31340), (37, 31223),

Gene: Caraxes_48 Start: 30908, Stop: 30723, Start Num: 20

Candidate Starts for Caraxes_48:

(Start: 19 @30926 has 169 MA's), (20, 30908), (24, 30884), (37, 30770),

Gene: Centaur_49 Start: 32729, Stop: 32517, Start Num: 19

Candidate Starts for Centaur_49:

(8, 32831), (10, 32819), (Start: 19 @32729 has 169 MA's), (37, 32573),

Gene: Changeling_47 Start: 32928, Stop: 32725, Start Num: 19

Candidate Starts for Changeling_47:

(11, 33024), (Start: 19 @32928 has 169 MA's), (26, 32880), (29, 32844), (37, 32772),

Gene: Chargerpower_47 Start: 31274, Stop: 31038, Start Num: 19

Candidate Starts for Chargerpower_47:

(7, 31394), (8, 31382), (10, 31370), (Start: 19 @31274 has 169 MA's), (22, 31247), (24, 31232), (27, 31211), (37, 31118),

Gene: Chartreuse_49 Start: 30742, Stop: 30533, Start Num: 19

Candidate Starts for Chartreuse_49:

(8, 30850), (Start: 19 @30742 has 169 MA's), (20, 30724), (23, 30700), (37, 30583),

Gene: Che12_50 Start: 31360, Stop: 31148, Start Num: 19

Candidate Starts for Che12_50:

(8, 31468), (10, 31456), (Start: 19 @31360 has 169 MA's), (22, 31333), (25, 31315), (27, 31297), (28, 31294), (37, 31201),

Gene: ChipMunk_50 Start: 34079, Stop: 33870, Start Num: 19

Candidate Starts for ChipMunk_50:

(7, 34193), (8, 34181), (Start: 19 @34079 has 169 MA's), (37, 33923),

Gene: CloudWang3_50 Start: 31140, Stop: 30934, Start Num: 19

Candidate Starts for CloudWang3_50:

(8, 31248), (Start: 19 @31140 has 169 MA's), (26, 31092), (37, 30984),

Gene: Colin_48 Start: 32679, Stop: 32494, Start Num: 20

Candidate Starts for Colin_48:

(Start: 19 @32697 has 169 MA's), (20, 32679), (26, 32649), (37, 32541),

Gene: Cookie dough_50 Start: 31358, Stop: 31149, Start Num: 19

Candidate Starts for Cookiedough_50:
(8, 31466), (Start: 19 @31358 has 169 MA's), (20, 31340), (23, 31316), (37, 31199),

Gene: Crucio_48 Start: 32322, Stop: 32113, Start Num: 19
Candidate Starts for Crucio_48:
(7, 32436), (8, 32424), (Start: 19 @32322 has 169 MA's), (27, 32259), (37, 32166),

Gene: DBQu4n_50 Start: 32112, Stop: 31906, Start Num: 19
Candidate Starts for DBQu4n_50:
(Start: 19 @32112 has 169 MA's), (25, 32064), (37, 31953),

Gene: DaVinci_49 Start: 30796, Stop: 30587, Start Num: 19
Candidate Starts for DaVinci_49:
(8, 30904), (Start: 19 @30796 has 169 MA's), (20, 30778), (23, 30754), (37, 30637),

Gene: Dalmatian_49 Start: 32714, Stop: 32505, Start Num: 19
Candidate Starts for Dalmatian_49:
(7, 32828), (8, 32816), (Start: 19 @32714 has 169 MA's), (37, 32558),

Gene: DarthPhader_45 Start: 33153, Stop: 32947, Start Num: 19
Candidate Starts for DarthPhader_45:
(8, 33261), (Start: 19 @33153 has 169 MA's), (22, 33126), (24, 33111), (27, 33090), (28, 33087), (37, 32997),

Gene: DeerParkTS_46 Start: 31840, Stop: 31640, Start Num: 19
Candidate Starts for DeerParkTS_46:
(Start: 19 @31840 has 169 MA's), (26, 31792), (29, 31756), (37, 31684),

Gene: Deloris_48 Start: 32263, Stop: 32054, Start Num: 19
Candidate Starts for Deloris_48:
(1, 32647), (Start: 19 @32263 has 169 MA's), (37, 32107),

Gene: DelvinSonDorr_48 Start: 31234, Stop: 31025, Start Num: 19
Candidate Starts for DelvinSonDorr_48:
(8, 31342), (Start: 19 @31234 has 169 MA's), (20, 31216), (23, 31192), (37, 31075),

Gene: Dignity_50 Start: 32887, Stop: 32678, Start Num: 19
Candidate Starts for Dignity_50:
(7, 33001), (8, 32989), (Start: 19 @32887 has 169 MA's), (37, 32731),

Gene: Dorothea_50 Start: 31365, Stop: 31156, Start Num: 19
Candidate Starts for Dorothea_50:
(8, 31473), (Start: 19 @31365 has 169 MA's), (20, 31347), (23, 31323), (37, 31206),

Gene: Drake55_50 Start: 32805, Stop: 32602, Start Num: 19
Candidate Starts for Drake55_50:
(8, 32907), (10, 32895), (Start: 19 @32805 has 169 MA's), (20, 32787), (31, 32718), (37, 32649), (42, 32625),

Gene: DudeLittle_47 Start: 32456, Stop: 32247, Start Num: 19
Candidate Starts for DudeLittle_47:
(7, 32570), (8, 32558), (Start: 19 @32456 has 169 MA's), (20, 32438), (37, 32300),

Gene: Duplo_50 Start: 32150, Stop: 31944, Start Num: 19
Candidate Starts for Duplo_50:
(Start: 19 @32150 has 169 MA's), (25, 32102), (37, 31991),

Gene: EZMoney23_46 Start: 32252, Stop: 32052, Start Num: 19
Candidate Starts for EZMoney23_46:
(Start: 19 @32252 has 169 MA's), (26, 32204), (29, 32168), (37, 32096), (44, 32060),

Gene: EagleEye_50 Start: 31872, Stop: 31663, Start Num: 19
Candidate Starts for EagleEye_50:
(Start: 19 @31872 has 169 MA's), (25, 31824), (27, 31806), (37, 31719),

Gene: Ebony_48 Start: 31489, Stop: 31277, Start Num: 19
Candidate Starts for Ebony_48:
(Start: 19 @31489 has 169 MA's), (27, 31426),

Gene: Echild_48 Start: 31793, Stop: 31584, Start Num: 19
Candidate Starts for Echild_48:
(7, 31907), (8, 31895), (Start: 19 @31793 has 169 MA's), (27, 31730), (37, 31637),

Gene: Equemioh13_49 Start: 32631, Stop: 32419, Start Num: 19
Candidate Starts for Equemioh13_49:
(8, 32733), (10, 32721), (Start: 19 @32631 has 169 MA's), (37, 32475),

Gene: EricB_50 Start: 31339, Stop: 31130, Start Num: 19
Candidate Starts for EricB_50:
(8, 31447), (Start: 19 @31339 has 169 MA's), (20, 31321), (23, 31297), (37, 31180),

Gene: Et2Brutus_47 Start: 31449, Stop: 31237, Start Num: 19
Candidate Starts for Et2Brutus_47:
(Start: 19 @31449 has 169 MA's), (27, 31386),

Gene: EvilGenius_50 Start: 34083, Stop: 33874, Start Num: 19
Candidate Starts for EvilGenius_50:
(7, 34197), (8, 34185), (Start: 19 @34083 has 169 MA's), (37, 33927),

Gene: Fameo_48 Start: 32632, Stop: 32423, Start Num: 19
Candidate Starts for Fameo_48:
(7, 32746), (8, 32734), (Start: 19 @32632 has 169 MA's), (27, 32569), (37, 32476),

Gene: Fibonacci_48 Start: 31464, Stop: 31252, Start Num: 19
Candidate Starts for Fibonacci_48:
(Start: 19 @31464 has 169 MA's), (27, 31401),

Gene: FiringLine_48 Start: 32303, Stop: 32094, Start Num: 19
Candidate Starts for FiringLine_48:
(7, 32417), (8, 32405), (Start: 19 @32303 has 169 MA's), (37, 32147),

Gene: First_0049 Start: 32517, Stop: 32308, Start Num: 19
Candidate Starts for First_0049:
(1, 32901), (6, 32637), (Start: 19 @32517 has 169 MA's), (37, 32361),

Gene: Flare16_48 Start: 32390, Stop: 32178, Start Num: 19

Candidate Starts for Flare16_48:
(8, 32492), (10, 32480), (Start: 19 @32390 has 169 MA's), (37, 32234),

Gene: Flaverint_49 Start: 31911, Stop: 31699, Start Num: 19
Candidate Starts for Flaverint_49:
(5, 32058), (Start: 19 @31911 has 169 MA's), (27, 31848),

Gene: ForesterFrank_46 Start: 32997, Stop: 32794, Start Num: 19
Candidate Starts for ForesterFrank_46:
(Start: 19 @32997 has 169 MA's), (26, 32949), (29, 32913), (37, 32841),

Gene: Gail_53 Start: 34071, Stop: 33859, Start Num: 18
Candidate Starts for Gail_53:
(Start: 18 @34071 has 5 MA's), (31, 33984), (32, 33981), (37, 33915),

Gene: Garak_52 Start: 31507, Stop: 31301, Start Num: 19
Candidate Starts for Garak_52:
(8, 31615), (Start: 19 @31507 has 169 MA's), (23, 31468), (26, 31459), (27, 31444), (37, 31351),

Gene: GaugeLDP_46 Start: 32685, Stop: 32485, Start Num: 19
Candidate Starts for GaugeLDP_46:
(8, 32793), (10, 32781), (Start: 19 @32685 has 169 MA's), (Start: 21 @32670 has 1 MA's), (37, 32535),

Gene: Georgie2_49 Start: 32348, Stop: 32139, Start Num: 19
Candidate Starts for Georgie2_49:
(7, 32462), (8, 32450), (Start: 19 @32348 has 169 MA's), (37, 32192),

Gene: Gilberta_49 Start: 31901, Stop: 31689, Start Num: 19
Candidate Starts for Gilberta_49:
(5, 32048), (Start: 19 @31901 has 169 MA's), (27, 31838),

Gene: Gladiator_48 Start: 30670, Stop: 30461, Start Num: 19
Candidate Starts for Gladiator_48:
(8, 30778), (Start: 19 @30670 has 169 MA's), (20, 30652), (23, 30628), (37, 30511),

Gene: Gratitude_48 Start: 32631, Stop: 32419, Start Num: 19
Candidate Starts for Gratitude_48:
(8, 32733), (10, 32721), (Start: 19 @32631 has 169 MA's), (37, 32475),

Gene: GreedyLawyer_50 Start: 31346, Stop: 31137, Start Num: 19
Candidate Starts for GreedyLawyer_50:
(8, 31454), (Start: 19 @31346 has 169 MA's), (20, 31328), (23, 31304), (37, 31187),

Gene: Gruunaga_50 Start: 31343, Stop: 31137, Start Num: 19
Candidate Starts for Gruunaga_50:
(8, 31451), (Start: 19 @31343 has 169 MA's), (23, 31304), (26, 31295), (27, 31280), (37, 31187),

Gene: Hammer_51 Start: 30946, Stop: 30740, Start Num: 19
Candidate Starts for Hammer_51:
(8, 31054), (Start: 19 @30946 has 169 MA's), (26, 30898), (37, 30790),

Gene: HarryHoudini_49 Start: 32814, Stop: 32611, Start Num: 19
Candidate Starts for HarryHoudini_49:

(8, 32916), (10, 32904), (Start: 19 @32814 has 169 MA's), (20, 32796), (31, 32727), (37, 32658), (42, 32634),

Gene: Heffalump_47 Start: 33100, Stop: 32891, Start Num: 19

Candidate Starts for Heffalump_47:

(7, 33214), (8, 33202), (Start: 19 @33100 has 169 MA's), (27, 33037), (37, 32944),

Gene: Helmet_52 Start: 31507, Stop: 31301, Start Num: 19

Candidate Starts for Helmet_52:

(8, 31615), (Start: 19 @31507 has 169 MA's), (23, 31468), (26, 31459), (27, 31444), (37, 31351),

Gene: Herbertwm_48 Start: 32176, Stop: 31973, Start Num: 16

Candidate Starts for Herbertwm_48:

(Start: 16 @32176 has 1 MA's), (27, 32113), (37, 32020),

Gene: Hexamo_50 Start: 31128, Stop: 30922, Start Num: 19

Candidate Starts for Hexamo_50:

(8, 31236), (Start: 19 @31128 has 169 MA's), (23, 31089), (26, 31080), (27, 31065), (37, 30972),

Gene: HippoHollow_48 Start: 33853, Stop: 33644, Start Num: 19

Candidate Starts for HippoHollow_48:

(8, 33955), (10, 33943), (Start: 19 @33853 has 169 MA's), (37, 33697),

Gene: Hutc2_48 Start: 31464, Stop: 31252, Start Num: 19

Candidate Starts for Hutc2_48:

(Start: 19 @31464 has 169 MA's), (27, 31401),

Gene: Indra_53 Start: 31508, Stop: 31302, Start Num: 19

Candidate Starts for Indra_53:

(8, 31616), (Start: 19 @31508 has 169 MA's), (23, 31469), (26, 31460), (27, 31445), (37, 31352),

Gene: Insomnia_49 Start: 31969, Stop: 31757, Start Num: 19

Candidate Starts for Insomnia_49:

(Start: 19 @31969 has 169 MA's), (27, 31906),

Gene: IronMan_48 Start: 33479, Stop: 33276, Start Num: 19

Candidate Starts for IronMan_48:

(8, 33581), (14, 33530), (Start: 19 @33479 has 169 MA's), (20, 33461), (23, 33440), (24, 33437), (37, 33323),

Gene: Isiphiwo_48 Start: 30883, Stop: 30674, Start Num: 19

Candidate Starts for Isiphiwo_48:

(8, 30991), (Start: 19 @30883 has 169 MA's), (20, 30865), (23, 30841), (37, 30724),

Gene: Iwokeuplikedis_51 Start: 32416, Stop: 32213, Start Num: 19

Candidate Starts for Iwokeuplikedis_51:

(Start: 19 @32416 has 169 MA's), (20, 32398), (25, 32371), (37, 32260),

Gene: Jaan_48 Start: 33645, Stop: 33442, Start Num: 19

Candidate Starts for Jaan_48:

(8, 33747), (10, 33735), (14, 33696), (Start: 19 @33645 has 169 MA's), (20, 33627), (Start: 21 @33624 has 1 MA's), (23, 33606), (24, 33603), (37, 33489),

Gene: Jabith_49 Start: 31970, Stop: 31758, Start Num: 19

Candidate Starts for Jabith_49:

(Start: 19 @31970 has 169 MA's), (27, 31907),

Gene: Jeeves_53 Start: 32846, Stop: 32631, Start Num: 18

Candidate Starts for Jeeves_53:

(Start: 18 @32846 has 5 MA's), (25, 32798), (31, 32756), (32, 32753), (37, 32687),

Gene: Jeffabunny_50 Start: 31164, Stop: 30958, Start Num: 19

Candidate Starts for Jeffabunny_50:

(8, 31272), (Start: 19 @31164 has 169 MA's), (23, 31125), (26, 31116), (27, 31101), (37, 31008),

Gene: Jerm_50 Start: 32880, Stop: 32671, Start Num: 19

Candidate Starts for Jerm_50:

(7, 32994), (8, 32982), (Start: 19 @32880 has 169 MA's), (37, 32724),

Gene: Jordennis_49 Start: 30803, Stop: 30594, Start Num: 17

Candidate Starts for Jordennis_49:

(Start: 17 @30803 has 3 MA's), (20, 30785), (23, 30761), (37, 30644),

Gene: Joselito_49 Start: 31910, Stop: 31698, Start Num: 19

Candidate Starts for Joselito_49:

(5, 32057), (Start: 19 @31910 has 169 MA's), (27, 31847),

Gene: JoshKayV_50 Start: 32961, Stop: 32752, Start Num: 19

Candidate Starts for JoshKayV_50:

(7, 33075), (8, 33063), (Start: 19 @32961 has 169 MA's), (33, 32853), (37, 32805),

Gene: Journey13_42 Start: 30735, Stop: 30526, Start Num: 19

Candidate Starts for Journey13_42:

(7, 30855), (8, 30843), (Start: 19 @30735 has 169 MA's), (22, 30708), (27, 30672), (37, 30579), (46, 30537),

Gene: Jsquared_46 Start: 31228, Stop: 31022, Start Num: 19

Candidate Starts for Jsquared_46:

(Start: 19 @31228 has 169 MA's), (Start: 21 @31207 has 1 MA's), (31, 31141), (37, 31072),

Gene: Kalpine_46 Start: 32595, Stop: 32392, Start Num: 19

Candidate Starts for Kalpine_46:

(Start: 19 @32595 has 169 MA's), (20, 32577), (26, 32547), (37, 32439),

Gene: Kazan_51 Start: 31352, Stop: 31143, Start Num: 19

Candidate Starts for Kazan_51:

(8, 31460), (Start: 19 @31352 has 169 MA's), (20, 31334), (23, 31310), (37, 31193),

Gene: Kerberos_50 Start: 32112, Stop: 31906, Start Num: 19

Candidate Starts for Kerberos_50:

(Start: 19 @32112 has 169 MA's), (25, 32064), (37, 31953),

Gene: Kimba_48 Start: 31490, Stop: 31278, Start Num: 19

Candidate Starts for Kimba_48:

(Start: 19 @31490 has 169 MA's), (27, 31427),

Gene: KingCyrus_50 Start: 34078, Stop: 33869, Start Num: 19
Candidate Starts for KingCyrus_50:
(7, 34192), (8, 34180), (Start: 19 @34078 has 169 MA's), (37, 33922),

Gene: Kinmap_46 Start: 31629, Stop: 31423, Start Num: 19
Candidate Starts for Kinmap_46:
(4, 31902), (Start: 19 @31629 has 169 MA's), (24, 31587), (26, 31581),

Gene: Kipper29_50 Start: 31365, Stop: 31156, Start Num: 19
Candidate Starts for Kipper29_50:
(8, 31473), (Start: 19 @31365 has 169 MA's), (20, 31347), (23, 31323), (37, 31206),

Gene: Koduck_49 Start: 31520, Stop: 31314, Start Num: 19
Candidate Starts for Koduck_49:
(Start: 19 @31520 has 169 MA's), (Start: 21 @31499 has 1 MA's), (26, 31472), (37, 31364),

Gene: Koko_51 Start: 31485, Stop: 31279, Start Num: 19
Candidate Starts for Koko_51:
(8, 31593), (Start: 19 @31485 has 169 MA's), (26, 31437), (37, 31329),

Gene: L5_47 Start: 31595, Stop: 31386, Start Num: 19
Candidate Starts for L5_47:
(Start: 19 @31595 has 169 MA's), (Start: 21 @31574 has 1 MA's), (26, 31547), (37, 31436),

Gene: LadyBird_52 Start: 32952, Stop: 32743, Start Num: 19
Candidate Starts for LadyBird_52:
(1, 33336), (6, 33072), (Start: 19 @32952 has 169 MA's), (37, 32796),

Gene: Landor_48 Start: 33557, Stop: 33354, Start Num: 19
Candidate Starts for Landor_48:
(8, 33659), (10, 33647), (14, 33608), (Start: 19 @33557 has 169 MA's), (20, 33539), (Start: 21 @33536 has 1 MA's), (23, 33518), (24, 33515), (37, 33401),

Gene: Larenn_47 Start: 32493, Stop: 32284, Start Num: 19
Candidate Starts for Larenn_47:
(8, 32595), (Start: 19 @32493 has 169 MA's), (37, 32337),

Gene: Leogania_48 Start: 33507, Stop: 33295, Start Num: 19
Candidate Starts for Leogania_48:
(Start: 19 @33507 has 169 MA's), (26, 33459), (29, 33423), (37, 33351), (38, 33339),

Gene: Leviathan_50 Start: 32936, Stop: 32727, Start Num: 19
Candidate Starts for Leviathan_50:
(7, 33050), (8, 33038), (Start: 19 @32936 has 169 MA's), (37, 32780),

Gene: LilTurb_49 Start: 32769, Stop: 32560, Start Num: 19
Candidate Starts for LilTurb_49:
(7, 32883), (8, 32871), (Start: 19 @32769 has 169 MA's), (37, 32613),

Gene: Lilbunny_49 Start: 31138, Stop: 30932, Start Num: 19
Candidate Starts for Lilbunny_49:
(8, 31246), (Start: 19 @31138 has 169 MA's), (23, 31099), (26, 31090), (27, 31075), (37, 30982),

Gene: LionsBait_50 Start: 33854, Stop: 33645, Start Num: 19
Candidate Starts for LionsBait_50:
(8, 33956), (10, 33944), (Start: 19 @33854 has 169 MA's), (37, 33698),

Gene: LogiBear_49 Start: 30587, Stop: 30378, Start Num: 19
Candidate Starts for LogiBear_49:
(Start: 19 @30587 has 169 MA's), (39, 30416),

Gene: Loser_50 Start: 33295, Stop: 33092, Start Num: 19
Candidate Starts for Loser_50:
(Start: 19 @33295 has 169 MA's), (26, 33247), (37, 33139),

Gene: Luchador_53 Start: 34634, Stop: 34419, Start Num: 18
Candidate Starts for Luchador_53:
(Start: 18 @34634 has 5 MA's), (29, 34547), (31, 34544), (32, 34541), (37, 34475),

Gene: Lucivia_49 Start: 31959, Stop: 31747, Start Num: 19
Candidate Starts for Lucivia_49:
(5, 32106), (Start: 19 @31959 has 169 MA's), (27, 31896),

Gene: Lucyedi_49 Start: 32067, Stop: 31858, Start Num: 19
Candidate Starts for Lucyedi_49:
(Start: 19 @32067 has 169 MA's), (25, 32019), (27, 32001), (37, 31914),

Gene: MaCh_49 Start: 31897, Stop: 31685, Start Num: 19
Candidate Starts for MaCh_49:
(Start: 19 @31897 has 169 MA's), (27, 31834),

Gene: Mabel_48 Start: 31499, Stop: 31287, Start Num: 19
Candidate Starts for Mabel_48:
(Start: 19 @31499 has 169 MA's), (27, 31436),

Gene: Malec_48 Start: 33057, Stop: 32848, Start Num: 19
Candidate Starts for Malec_48:
(8, 33159), (Start: 19 @33057 has 169 MA's), (37, 32901),

Gene: McFly_50 Start: 31346, Stop: 31137, Start Num: 19
Candidate Starts for McFly_50:
(8, 31454), (Start: 19 @31346 has 169 MA's), (20, 31328), (23, 31304), (37, 31187),

Gene: MiculUcigas_48 Start: 32290, Stop: 32078, Start Num: 19
Candidate Starts for MiculUcigas_48:
(8, 32392), (10, 32380), (Start: 19 @32290 has 169 MA's), (37, 32134),

Gene: Miko_45 Start: 32443, Stop: 32240, Start Num: 19
Candidate Starts for Miko_45:
(Start: 19 @32443 has 169 MA's), (20, 32425), (Start: 21 @32422 has 1 MA's), (26, 32395), (37, 32287), (43, 32251),

Gene: MissWhite_47 Start: 30815, Stop: 30645, Start Num: 19
Candidate Starts for MissWhite_47:
(7, 30935), (Start: 19 @30815 has 169 MA's), (22, 30788), (27, 30752), (37, 30659),

Gene: Mulciber_48 Start: 31461, Stop: 31249, Start Num: 19
Candidate Starts for Mulciber_48:
(Start: 19 @31461 has 169 MA's), (27, 31398),

Gene: Munch_49 Start: 31910, Stop: 31698, Start Num: 19
Candidate Starts for Munch_49:
(5, 32057), (Start: 19 @31910 has 169 MA's), (27, 31847),

Gene: NaSiaTalie_48 Start: 32387, Stop: 32175, Start Num: 19
Candidate Starts for NaSiaTalie_48:
(8, 32489), (10, 32477), (Start: 19 @32387 has 169 MA's), (37, 32231),

Gene: Neeharika16_49 Start: 30806, Stop: 30597, Start Num: 19
Candidate Starts for Neeharika16_49:
(8, 30914), (Start: 19 @30806 has 169 MA's), (20, 30788), (23, 30764), (37, 30647),

Gene: Newrala_50 Start: 31357, Stop: 31148, Start Num: 19
Candidate Starts for Newrala_50:
(8, 31465), (Start: 19 @31357 has 169 MA's), (20, 31339), (23, 31315), (37, 31198),

Gene: NicoleTera_47 Start: 32562, Stop: 32446, Start Num: 30
Candidate Starts for NicoleTera_47:
(Start: 30 @32562 has 2 MA's), (37, 32490), (45, 32451),

Gene: NothingSpecial_46 Start: 32902, Stop: 32702, Start Num: 19
Candidate Starts for NothingSpecial_46:
(7, 33016), (8, 33004), (10, 32992), (Start: 19 @32902 has 169 MA's), (26, 32854), (29, 32818), (37, 32746),

Gene: Odin_47 Start: 31075, Stop: 30872, Start Num: 19
Candidate Starts for Odin_47:
(Start: 19 @31075 has 169 MA's), (20, 31057), (24, 31033), (37, 30919),

Gene: Orange_48 Start: 31459, Stop: 31247, Start Num: 19
Candidate Starts for Orange_48:
(Start: 19 @31459 has 169 MA's), (27, 31396),

Gene: PainterBoy_49 Start: 32003, Stop: 31794, Start Num: 19
Candidate Starts for PainterBoy_49:
(Start: 19 @32003 has 169 MA's), (25, 31955), (27, 31937), (37, 31850),

Gene: Petersenfast_47 Start: 31466, Stop: 31254, Start Num: 19
Candidate Starts for Petersenfast_47:
(Start: 19 @31466 has 169 MA's), (27, 31403),

Gene: Ph8s_50 Start: 31708, Stop: 31499, Start Num: 19
Candidate Starts for Ph8s_50:
(8, 31816), (10, 31804), (Start: 19 @31708 has 169 MA's), (22, 31681), (25, 31663), (27, 31645), (28, 31642), (37, 31552),

Gene: Phaded_49 Start: 33539, Stop: 33336, Start Num: 19
Candidate Starts for Phaded_49:

(14, 33590), (Start: 19 @33539 has 169 MA's), (20, 33521), (Start: 21 @33518 has 1 MA's), (23, 33500), (24, 33497), (37, 33383),

Gene: Pharaoh_42 Start: 31876, Stop: 31682, Start Num: 19

Candidate Starts for Pharaoh_42:

(Start: 19 @31876 has 169 MA's), (27, 31816), (36, 31738), (37, 31723),

Gene: Phlei_37 Start: 31812, Stop: 31606, Start Num: 19

Candidate Starts for Phlei_37:

(Start: 19 @31812 has 169 MA's), (34, 31692), (35, 31674), (37, 31656),

Gene: Piro94_48 Start: 32731, Stop: 32528, Start Num: 19

Candidate Starts for Piro94_48:

(8, 32833), (10, 32821), (Start: 19 @32731 has 169 MA's), (20, 32713), (31, 32644), (37, 32575), (42, 32551),

Gene: Pmask_50 Start: 31358, Stop: 31149, Start Num: 19

Candidate Starts for Pmask_50:

(8, 31466), (Start: 19 @31358 has 169 MA's), (20, 31340), (23, 31316), (37, 31199),

Gene: Polyphemus_51 Start: 31501, Stop: 31292, Start Num: 17

Candidate Starts for Polyphemus_51:

(Start: 17 @31501 has 3 MA's), (20, 31483), (23, 31459), (37, 31342),

Gene: Pomar16_50 Start: 32153, Stop: 31947, Start Num: 19

Candidate Starts for Pomar16_50:

(Start: 19 @32153 has 169 MA's), (25, 32105), (37, 31994),

Gene: Power_47 Start: 32356, Stop: 32147, Start Num: 19

Candidate Starts for Power_47:

(7, 32470), (8, 32458), (Start: 19 @32356 has 169 MA's), (37, 32200),

Gene: Priamo_51 Start: 30975, Stop: 30766, Start Num: 19

Candidate Starts for Priamo_51:

(Start: 19 @30975 has 169 MA's), (20, 30957), (23, 30933), (37, 30816),

Gene: Prudy_46 Start: 32829, Stop: 32629, Start Num: 19

Candidate Starts for Prudy_46:

(Start: 19 @32829 has 169 MA's), (26, 32781), (29, 32745), (37, 32673),

Gene: Pukovnik_47 Start: 33141, Stop: 32941, Start Num: 19

Candidate Starts for Pukovnik_47:

(8, 33243), (Start: 19 @33141 has 169 MA's), (Start: 21 @33120 has 1 MA's), (23, 33102), (24, 33099), (31, 33054), (37, 32985),

Gene: QueenB2_47 Start: 32316, Stop: 32107, Start Num: 19

Candidate Starts for QueenB2_47:

(7, 32430), (8, 32418), (Start: 19 @32316 has 169 MA's), (27, 32253), (37, 32160),

Gene: QueenBeesly_48 Start: 32303, Stop: 32094, Start Num: 19

Candidate Starts for QueenBeesly_48:

(7, 32417), (8, 32405), (Start: 19 @32303 has 169 MA's), (37, 32147),

Gene: RedRock_50 Start: 33508, Stop: 33305, Start Num: 19

Candidate Starts for RedRock_50:

(Start: 19 @33508 has 169 MA's), (26, 33460), (37, 33352),

Gene: Refuge_47 Start: 33529, Stop: 33323, Start Num: 19

Candidate Starts for Refuge_47:

(8, 33637), (Start: 19 @33529 has 169 MA's), (22, 33502), (24, 33487), (27, 33466), (28, 33463), (34, 33409), (37, 33373),

Gene: Retro23_49 Start: 32710, Stop: 32501, Start Num: 19

Candidate Starts for Retro23_49:

(7, 32824), (8, 32812), (Start: 19 @32710 has 169 MA's), (37, 32554),

Gene: Rifter_51 Start: 30909, Stop: 30703, Start Num: 19

Candidate Starts for Rifter_51:

(8, 31017), (Start: 19 @30909 has 169 MA's), (23, 30870), (26, 30861), (27, 30846), (37, 30753),

Gene: Roksolana_51 Start: 31394, Stop: 31185, Start Num: 17

Candidate Starts for Roksolana_51:

(Start: 17 @31394 has 3 MA's), (20, 31376), (23, 31352), (37, 31235),

Gene: Salz_47 Start: 31437, Stop: 31225, Start Num: 19

Candidate Starts for Salz_47:

(Start: 19 @31437 has 169 MA's), (27, 31374),

Gene: Saskia_49 Start: 31431, Stop: 31219, Start Num: 19

Candidate Starts for Saskia_49:

(12, 31503), (Start: 19 @31431 has 169 MA's), (27, 31368),

Gene: SemperFi_49 Start: 32571, Stop: 32362, Start Num: 19

Candidate Starts for SemperFi_49:

(7, 32685), (8, 32673), (Start: 19 @32571 has 169 MA's), (37, 32415),

Gene: Serenity_48 Start: 31452, Stop: 31246, Start Num: 19

Candidate Starts for Serenity_48:

(5, 31605), (Start: 19 @31452 has 169 MA's), (Start: 21 @31431 has 1 MA's), (37, 31296),

Gene: Sham4_48 Start: 31465, Stop: 31253, Start Num: 19

Candidate Starts for Sham4_48:

(Start: 19 @31465 has 169 MA's), (27, 31402),

Gene: Sknot_48 Start: 32390, Stop: 32178, Start Num: 19

Candidate Starts for Sknot_48:

(8, 32492), (10, 32480), (Start: 19 @32390 has 169 MA's), (37, 32234),

Gene: Smeagan_51 Start: 33023, Stop: 32814, Start Num: 19

Candidate Starts for Smeagan_51:

(7, 33137), (8, 33125), (Start: 19 @33023 has 169 MA's), (37, 32867),

Gene: SmellyB_50 Start: 31346, Stop: 31137, Start Num: 19

Candidate Starts for SmellyB_50:

(8, 31454), (Start: 19 @31346 has 169 MA's), (20, 31328), (23, 31304), (37, 31187),

Gene: SnapTap_48 Start: 32382, Stop: 32173, Start Num: 19
Candidate Starts for SnapTap_48:
(7, 32496), (8, 32484), (Start: 19 @32382 has 169 MA's), (37, 32226),

Gene: Snape_48 Start: 31463, Stop: 31251, Start Num: 19
Candidate Starts for Snape_48:
(Start: 19 @31463 has 169 MA's), (27, 31400),

Gene: SororFago_51 Start: 33958, Stop: 33743, Start Num: 18
Candidate Starts for SororFago_51:
(Start: 18 @33958 has 5 MA's), (31, 33868), (32, 33865), (37, 33799),

Gene: StarStuff_50 Start: 32115, Stop: 31909, Start Num: 19
Candidate Starts for StarStuff_50:
(Start: 19 @32115 has 169 MA's), (25, 32067), (37, 31956),

Gene: Sunhee_51 Start: 32274, Stop: 32071, Start Num: 18
Candidate Starts for Sunhee_51:
(Start: 18 @32274 has 5 MA's), (31, 32187), (37, 32118),

Gene: SuperAwesome_50 Start: 31357, Stop: 31148, Start Num: 19
Candidate Starts for SuperAwesome_50:
(8, 31465), (Start: 19 @31357 has 169 MA's), (20, 31339), (23, 31315), (37, 31198),

Gene: SuperCallie99_49 Start: 31230, Stop: 31021, Start Num: 19
Candidate Starts for SuperCallie99_49:
(8, 31338), (Start: 19 @31230 has 169 MA's), (20, 31212), (23, 31188), (37, 31071),

Gene: Superchunk_47 Start: 30926, Stop: 30723, Start Num: 19
Candidate Starts for Superchunk_47:
(Start: 19 @30926 has 169 MA's), (20, 30908), (24, 30884), (37, 30770),

Gene: SweetiePie_48 Start: 32511, Stop: 32302, Start Num: 19
Candidate Starts for SweetiePie_48:
(7, 32625), (8, 32613), (Start: 19 @32511 has 169 MA's), (37, 32355),

Gene: SwirlSquare_51 Start: 31593, Stop: 31390, Start Num: 19
Candidate Starts for SwirlSquare_51:
(8, 31701), (10, 31689), (Start: 19 @31593 has 169 MA's), (27, 31530), (28, 31527), (37, 31437),

Gene: TarsusIV_46 Start: 32170, Stop: 31961, Start Num: 19
Candidate Starts for TarsusIV_46:
(15, 32188), (Start: 19 @32170 has 169 MA's), (20, 32152), (37, 32014), (41, 31987),

Gene: Temprado_51 Start: 31507, Stop: 31301, Start Num: 19
Candidate Starts for Temprado_51:
(8, 31615), (Start: 19 @31507 has 169 MA's), (23, 31468), (26, 31459), (27, 31444), (37, 31351),

Gene: Terrific_51 Start: 32744, Stop: 32532, Start Num: 19
Candidate Starts for Terrific_51:
(8, 32846), (10, 32834), (Start: 19 @32744 has 169 MA's), (37, 32588),

Gene: Timothy_48 Start: 31440, Stop: 31228, Start Num: 19

Candidate Starts for Timothy_48:
(Start: 19 @31440 has 169 MA's), (27, 31377),

Gene: TinyTimmy_48 Start: 31483, Stop: 31271, Start Num: 19
Candidate Starts for TinyTimmy_48:
(Start: 19 @31483 has 169 MA's), (27, 31420),

Gene: Tomathan_50 Start: 32112, Stop: 31906, Start Num: 19
Candidate Starts for Tomathan_50:
(Start: 19 @32112 has 169 MA's), (25, 32064), (37, 31953),

Gene: ToneTone_47 Start: 31070, Stop: 30864, Start Num: 19
Candidate Starts for ToneTone_47:
(8, 31178), (Start: 19 @31070 has 169 MA's), (23, 31031), (26, 31022), (27, 31007), (37, 30914),

Gene: Travvers_50 Start: 32112, Stop: 31906, Start Num: 19
Candidate Starts for Travvers_50:
(Start: 19 @32112 has 169 MA's), (25, 32064), (37, 31953),

Gene: Tristan_47 Start: 33343, Stop: 33140, Start Num: 19
Candidate Starts for Tristan_47:
(3, 33664), (8, 33445), (10, 33433), (14, 33394), (Start: 19 @33343 has 169 MA's), (20, 33325), (23, 33304), (24, 33301), (37, 33187),

Gene: Trixie_46 Start: 32430, Stop: 32230, Start Num: 19
Candidate Starts for Trixie_46:
(Start: 19 @32430 has 169 MA's), (20, 32412), (26, 32382), (29, 32346), (37, 32274),

Gene: Trooper_49 Start: 32735, Stop: 32523, Start Num: 19
Candidate Starts for Trooper_49:
(8, 32837), (10, 32825), (Start: 19 @32735 has 169 MA's), (31, 32648), (37, 32579),

Gene: Tucker_50 Start: 30957, Stop: 30751, Start Num: 19
Candidate Starts for Tucker_50:
(8, 31065), (Start: 19 @30957 has 169 MA's), (26, 30909), (37, 30801),

Gene: Turbido_49 Start: 32766, Stop: 32557, Start Num: 19
Candidate Starts for Turbido_49:
(7, 32880), (8, 32868), (Start: 19 @32766 has 169 MA's), (27, 32703), (37, 32610),

Gene: Updawg_49 Start: 32631, Stop: 32419, Start Num: 19
Candidate Starts for Updawg_49:
(8, 32733), (10, 32721), (Start: 19 @32631 has 169 MA's), (37, 32475),

Gene: VA6_48 Start: 32486, Stop: 32277, Start Num: 19
Candidate Starts for VA6_48:
(1, 32870), (6, 32606), (Start: 19 @32486 has 169 MA's), (37, 32330),

Gene: VC3_51 Start: 32552, Stop: 32346, Start Num: 19
Candidate Starts for VC3_51:
(Start: 19 @32552 has 169 MA's), (28, 32483), (31, 32462), (37, 32393), (40, 32369),

Gene: VohminGhazi_50 Start: 31347, Stop: 31138, Start Num: 19

Candidate Starts for VohminGhazi_50:
(8, 31455), (Start: 19 @31347 has 169 MA's), (20, 31329), (23, 31305), (37, 31188),

Gene: WeiHuaDA_50 Start: 33271, Stop: 33116, Start Num: 26
Candidate Starts for WeiHuaDA_50:
(26, 33271), (37, 33163),

Gene: Whabigail7_49 Start: 32751, Stop: 32542, Start Num: 19
Candidate Starts for Whabigail7_49:
(7, 32865), (8, 32853), (Start: 19 @32751 has 169 MA's), (37, 32595),

Gene: WideWale_49 Start: 32631, Stop: 32419, Start Num: 19
Candidate Starts for WideWale_49:
(8, 32733), (10, 32721), (Start: 19 @32631 has 169 MA's), (37, 32475),

Gene: Wiks_49 Start: 31138, Stop: 30932, Start Num: 19
Candidate Starts for Wiks_49:
(8, 31246), (Start: 19 @31138 has 169 MA's), (23, 31099), (26, 31090), (27, 31075), (37, 30982),

Gene: Wolpertinger_47 Start: 31466, Stop: 31254, Start Num: 19
Candidate Starts for Wolpertinger_47:
(Start: 19 @31466 has 169 MA's), (27, 31403),

Gene: WunderPhul_50 Start: 31136, Stop: 30930, Start Num: 19
Candidate Starts for WunderPhul_50:
(8, 31244), (Start: 19 @31136 has 169 MA's), (23, 31097), (26, 31088), (27, 31073), (37, 30980),

Gene: XianYue_47 Start: 32071, Stop: 31886, Start Num: 21
Candidate Starts for XianYue_47:
(Start: 19 @32092 has 169 MA's), (Start: 21 @32071 has 1 MA's), (23, 32053), (24, 32050), (26, 32044), (37, 31936),

Gene: Yecey3_49 Start: 31785, Stop: 31579, Start Num: 19
Candidate Starts for Yecey3_49:
(7, 31905), (8, 31893), (Start: 19 @31785 has 169 MA's), (27, 31725), (37, 31632),

Gene: Yokurt_50 Start: 31138, Stop: 30932, Start Num: 19
Candidate Starts for Yokurt_50:
(8, 31246), (Start: 19 @31138 has 169 MA's), (23, 31099), (26, 31090), (27, 31075), (37, 30982),

Gene: Zaka_50 Start: 31138, Stop: 30932, Start Num: 19
Candidate Starts for Zaka_50:
(8, 31246), (Start: 19 @31138 has 169 MA's), (23, 31099), (26, 31090), (27, 31075), (37, 30982),

Gene: Zimmer_45 Start: 33020, Stop: 32820, Start Num: 19
Candidate Starts for Zimmer_45:
(8, 33128), (13, 33083), (Start: 19 @33020 has 169 MA's), (22, 32993), (24, 32978), (27, 32957), (37, 32864),

Gene: Zulu_50 Start: 30938, Stop: 30732, Start Num: 19
Candidate Starts for Zulu_50:
(8, 31046), (Start: 19 @30938 has 169 MA's), (26, 30890), (37, 30782),