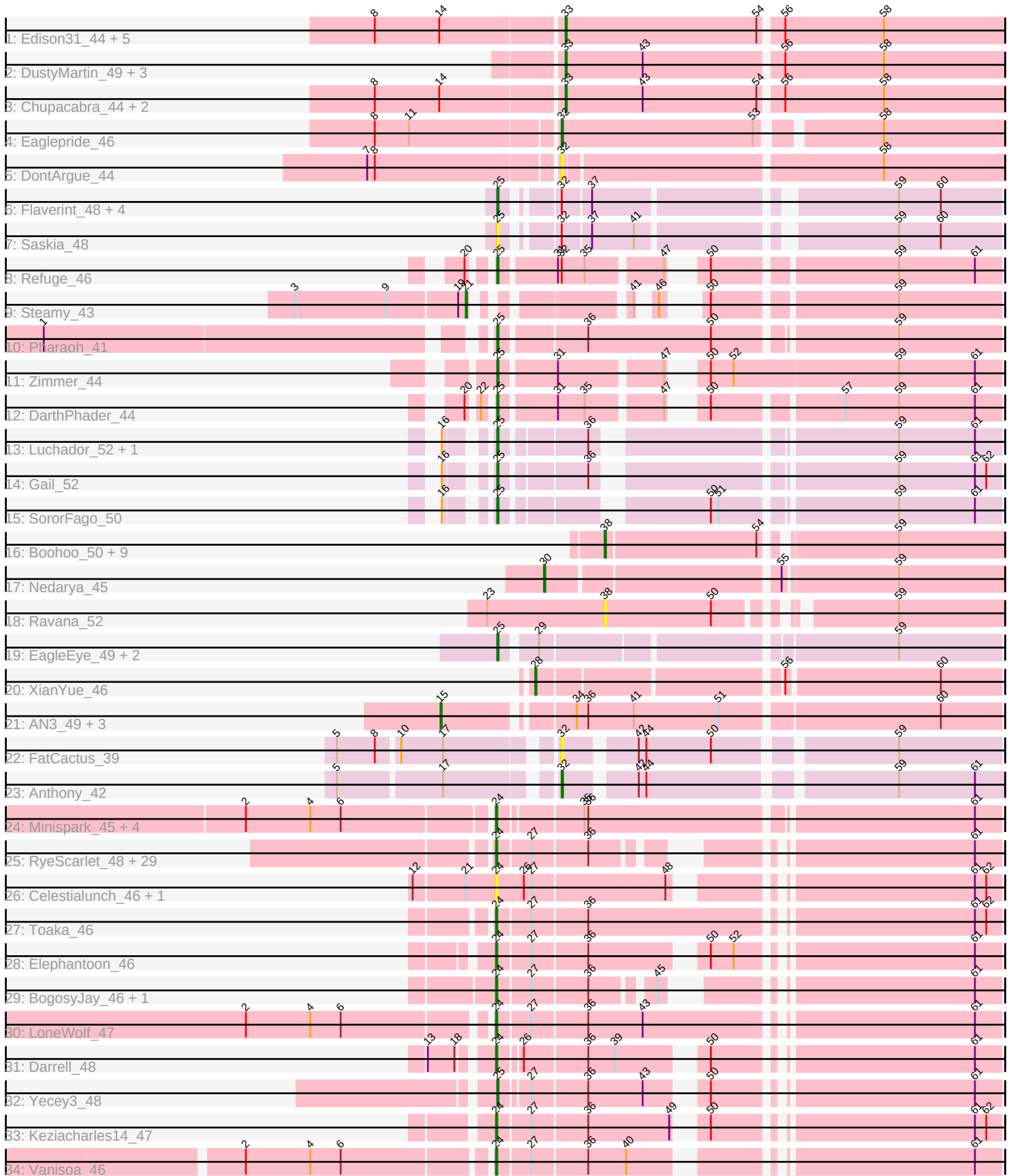


Pham 280291



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 280291 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280291 has 98 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Edison31_44, Rebeuca_45, Topanga_43, WalterMcMickey_43, Kristoff_45, Twister_43
- Track 2 : DustyMartin_49, RhynO_46, Shapes_49, Rowdy_49
- Track 3 : Chupacabra_44, OKCentral2016_44, Goose_45
- Track 4 : Eaglepride_46
- Track 5 : DontArgue_44
- Track 6 : Flaverint_48, Bowtie_48, Munch_48, Aneem_48, Joselito_48
- Track 7 : Saskia_48
- Track 8 : Refuge_46
- Track 9 : Steamy_43
- Track 10 : Pharaoh_41
- Track 11 : Zimmer_44
- Track 12 : DarthPhader_44
- Track 13 : Luchador_52, Jeeves_52
- Track 14 : Gail_52
- Track 15 : SororFago_50
- Track 16 : Boohoo_50, DekHockey33_50, ShayRa_51, LastResort_49, Soups_50, Nebulosus_49, KatherineG_51, Looper_50, ReMo_49, Anaysia_50
- Track 17 : Nedarya_45
- Track 18 : Ravana_52
- Track 19 : EagleEye_49, PainterBoy_48, Lucyedi_48
- Track 20 : XianYue_46
- Track 21 : AN3_49, VA6_47, Deloris_47, BengiVuitton_48
- Track 22 : FatCactus_39
- Track 23 : Anthony_42
- Track 24 : Minispark_45, WorldCup_45, CogOmlette_45, Rahalelujah_46, Bellris_45
- Track 25 : RyeScarlet_48, Eidsmoe_47, Phaeder_47, Halex_46, Lilleskat_45, Myxus_47, Priya_47, Beemo_47, ExplosioNervosa_47, EmyBug_46, PackMan_46, Ugenie5_44, Ayanochan_48, Hanray_45, Onglai_45, HortumSL17_47, Scherzo_47, EdogawaKiddo_45, Conquerage_47, Aliter_47, Fayely_47, Phonnegut_47, Sachima_44, Jiawan_45, Qobbit_47, Tubs_47, Pioneer_47, Alma_47, Spouty_47, Catalina_48
- Track 26 : Celestialunch_46, MegTheThird_46
- Track 27 : Toaka_46
- Track 28 : Elephantoon_46
- Track 29 : BogosyJay_46, Maminiaina_46
- Track 30 : LoneWolf_47

- Track 31 : Darrell_48
- Track 32 : Yecey3_48
- Track 33 : Keziacharles14_47
- Track 34 : Vanisoa_46

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

The start number called the most often in the published annotations is 24, it was called in 30 of the 76 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aliter_47, Alma_47, Ayanochan_48, Beemo_47, Bellris_45, BogosyJay_46, Catalina_48, Celestiallunch_46, CogOmlette_45, Conquerage_47, Darrell_48, EdogawaKiddo_45, Eidsmoe_47, Elephantoon_46, EmyBug_46, ExplosioNervosa_47, Fayely_47, Hanray_45, Halex_46, HortumSL17_47, Jiawan_45, Keziacharles14_47, Lilleskat_45, LoneWolf_47, Maminaiaina_46, MegTheThird_46, Minispark_45, Myxus_47, Onglai_45, PackMan_46, Phaeder_47, Phonnegut_47, Pioneer_47, Priya_47, Qobbit_47, Rahalelujah_46, RyeScarlet_48, Sachima_44, Scherzo_47, Spouty_47, Toaka_46, Tubs_47, Ugenie5_44, Vanisoa_46, WorldCup_45,

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

-

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

- AN3_49, Anaysia_50, Aneem_48, Anthony_42, BengiVuitton_48, Boohoo_50, Bowtie_48, Chupacabra_44, DarthPhader_44, DekHockey33_50, Deloris_47, DontArgue_44, DustyMartin_49, EagleEye_49, Eaglepride_46, Edison31_44, FatCactus_39, Flaverint_48, Gail_52, Goose_45, Jeeves_52, Joselito_48, KatherineG_51, Kristoff_45, LastResort_49, Looper_50, Luchador_52, Lucyedi_48, Munch_48, Nebulosus_49, Nedarya_45, OKCentral2016_44, PainterBoy_48, Pharaoh_41, Ravana_52, ReMo_49, Rebeuca_45, Refuge_46, RhynO_46, Rowdy_49, Saskia_48, Shapes_49, ShayRa_51, SororFago_50, Soups_50, Steamy_43, Topanga_43, Twister_43, VA6_47, WalterMcMickey_43, XianYue_46, Yecey3_48, Zimmer_44,

Summary by start number:

Start 15:

- Found in 4 of 98 (4.1%) of genes in pham
- Manual Annotations of this start: 4 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AN3_49 (A2), BengiVuitton_48 (A2), Deloris_47 (A2), VA6_47 (A2),

Start 21:

- Found in 3 of 98 (3.1%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Steamy_43 (A12),

Start 24:

- Found in 45 of 98 (45.9%) of genes in pham
- Manual Annotations of this start: 30 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter_47 (A9), Alma_47 (A9), Ayanochan_48 (A9), Beemo_47 (A9), Bellris_45 (A9), BogosyJay_46 (A9), Catalina_48 (A9), Celestiallunch_46 (A9), CogOmlette_45 (A9), Conquerage_47 (A9), Darrell_48 (A9), EdogawaKiddo_45 (A9), Eidsmoe_47 (A9), Elephantoon_46 (A9), EmyBug_46 (A9), ExplosioNervosa_47 (A9), Fayely_47 (A9), Hanray_45 (A9), Horex_46 (A9), HortumSL17_47 (A9), Jiawan_45 (A9), Keziacharles14_47 (A9), Lilleskat_45 (A9), LoneWolf_47 (A9), Maminiaina_46 (A9), MegTheThird_46 (A9), Minispark_45 (A9), Myxus_47 (A9), Onglai_45 (A9), PackMan_46 (A9), Phaeder_47 (A9), Phonnegut_47 (A9), Pioneer_47 (A9), Priya_47 (A9), Qobbit_47 (A9), Rahalelujah_46 (A9), RyeScarlet_48 (A9), Sachima_44 (A9), Scherzo_47 (A9), Spouty_47 (A9), Toaka_46 (A9), Tubs_47 (A9), Ugenie5_44 (A9), Vanisoa_46 (A9), WorldCup_45 (A9),

Start 25:

- Found in 18 of 98 (18.4%) of genes in pham
- Manual Annotations of this start: 17 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aneem_48 (A11), Bowtie_48 (A11), DarthPhader_44 (A12), EagleEye_49 (A16), Flaverint_48 (A11), Gail_52 (A14), Jeeves_52 (A14), Joselito_48 (A11), Luchador_52 (A14), Lucyedi_48 (A16), Munch_48 (A11), PainterBoy_48 (A16), Pharaoh_41 (A12), Refuge_46 (A12), Saskia_48 (A11), SororFago_50 (A14), Yecey3_48 (A9), Zimmer_44 (A12),

Start 28:

- Found in 1 of 98 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: XianYue_46 (A2),

Start 30:

- Found in 1 of 98 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nedarya_45 (A15),

Start 32:

- Found in 11 of 98 (11.2%) of genes in pham
- Manual Annotations of this start: 2 of 76
- Called 36.4% of time when present
- Phage (with cluster) where this start called: Anthony_42 (A20), DontArgue_44 (A10), Eaglepride_46 (A10), FatCactus_39 (A20),

Start 33:

- Found in 13 of 98 (13.3%) of genes in pham
- Manual Annotations of this start: 10 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chupacabra_44 (A10), DustyMartin_49 (A10), Edison31_44 (A10), Goose_45 (A10), Kristoff_45 (A10), OKCentral2016_44

(A10), Rebeuca_45 (A10), RhynO_46 (A10), Rowdy_49 (A10), Shapes_49 (A10), Topanga_43 (A10), Twister_43 (A10), WalterMcMickey_43 (A10),

Start 38:

- Found in 11 of 98 (11.2%) of genes in pham
- Manual Annotations of this start: 10 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anaysia_50 (A15), Boohoo_50 (A15), DekHockey33_50 (A15), KatherineG_51 (A15), LastResort_49 (A15), Looper_50 (A15), Nebulosus_49 (A15), Ravana_52 (A15), ReMo_49 (A15), ShayRa_51 (A15), Soups_50 (A15),

Summary by clusters:

There are 9 clusters represented in this pham: A15, A14, A16, A11, A10, A12, A20, A2, A9,

Info for manual annotations of cluster A10:

- Start number 32 was manually annotated 1 time for cluster A10.
- Start number 33 was manually annotated 10 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 25 was manually annotated 5 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 21 was manually annotated 1 time for cluster A12.
- Start number 25 was manually annotated 4 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 25 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 30 was manually annotated 1 time for cluster A15.
- Start number 38 was manually annotated 10 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 25 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 15 was manually annotated 4 times for cluster A2.
- Start number 28 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 32 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A9:

- Start number 24 was manually annotated 30 times for cluster A9.
- Start number 25 was manually annotated 1 time for cluster A9.

Gene Information:

Gene: AN3_49 Start: 32806, Stop: 32393, Start Num: 15

Candidate Starts for AN3_49:

(Start: 15 @32806 has 4 MA's), (34, 32716), (36, 32707), (41, 32671), (51, 32605), (60, 32440),

Gene: Aliter_47 Start: 32037, Stop: 31711, Start Num: 24

Candidate Starts for Aliter_47:

(Start: 24 @32037 has 30 MA's), (27, 32013), (36, 31971), (61, 31731),

Gene: Alma_47 Start: 32160, Stop: 31834, Start Num: 24

Candidate Starts for Alma_47:

(Start: 24 @32160 has 30 MA's), (27, 32136), (36, 32094), (61, 31854),

Gene: Anaysia_50 Start: 30853, Stop: 30560, Start Num: 38

Candidate Starts for Anaysia_50:

(Start: 38 @30853 has 10 MA's), (54, 30736), (59, 30643),

Gene: Aneem_48 Start: 31705, Stop: 31358, Start Num: 25

Candidate Starts for Aneem_48:

(Start: 25 @31705 has 17 MA's), (Start: 32 @31672 has 2 MA's), (37, 31651), (59, 31438), (60, 31405),

Gene: Anthony_42 Start: 29795, Stop: 29478, Start Num: 32

Candidate Starts for Anthony_42:

(5, 29948), (17, 29870), (Start: 32 @29795 has 2 MA's), (42, 29747), (44, 29741), (59, 29561), (61, 29501),

Gene: Ayanochan_48 Start: 32164, Stop: 31838, Start Num: 24

Candidate Starts for Ayanochan_48:

(Start: 24 @32164 has 30 MA's), (27, 32140), (36, 32098), (61, 31858),

Gene: Beemo_47 Start: 32159, Stop: 31833, Start Num: 24

Candidate Starts for Beemo_47:

(Start: 24 @32159 has 30 MA's), (27, 32135), (36, 32093), (61, 31853),

Gene: Bellris_45 Start: 31402, Stop: 31031, Start Num: 24

Candidate Starts for Bellris_45:

(2, 31588), (4, 31537), (6, 31513), (Start: 24 @31402 has 30 MA's), (35, 31342), (36, 31339), (61, 31051),

Gene: BengiVuitton_48 Start: 32388, Stop: 31975, Start Num: 15

Candidate Starts for BengiVuitton_48:

(Start: 15 @32388 has 4 MA's), (34, 32298), (36, 32289), (41, 32253), (51, 32187), (60, 32022),

Gene: BogosyJay_46 Start: 31869, Stop: 31543, Start Num: 24

Candidate Starts for BogosyJay_46:

(Start: 24 @31869 has 30 MA's), (27, 31845), (36, 31803), (45, 31761), (61, 31563),

Gene: Boohoo_50 Start: 30853, Stop: 30560, Start Num: 38

Candidate Starts for Boohoo_50:

(Start: 38 @30853 has 10 MA's), (54, 30736), (59, 30643),

Gene: Bowtie_48 Start: 31712, Stop: 31365, Start Num: 25

Candidate Starts for Bowtie_48:

(Start: 25 @31712 has 17 MA's), (Start: 32 @31679 has 2 MA's), (37, 31658), (59, 31445), (60, 31412),

Gene: Catalina_48 Start: 32110, Stop: 31784, Start Num: 24
Candidate Starts for Catalina_48:
(Start: 24 @32110 has 30 MA's), (27, 32086), (36, 32044), (61, 31804),

Gene: Celestiallunch_46 Start: 31680, Stop: 31330, Start Num: 24
Candidate Starts for Celestiallunch_46:
(12, 31743), (Start: 21 @31704 has 1 MA's), (Start: 24 @31680 has 30 MA's), (26, 31659), (27, 31653),
(48, 31551), (61, 31350), (62, 31341),

Gene: Chupacabra_44 Start: 31467, Stop: 31129, Start Num: 33
Candidate Starts for Chupacabra_44:
(8, 31611), (14, 31560), (Start: 33 @31467 has 10 MA's), (43, 31407), (54, 31317), (56, 31302), (58, 31224),

Gene: CogOmlette_45 Start: 31399, Stop: 31028, Start Num: 24
Candidate Starts for CogOmlette_45:
(2, 31585), (4, 31534), (6, 31510), (Start: 24 @31399 has 30 MA's), (35, 31339), (36, 31336), (61, 31048),

Gene: Conquerage_47 Start: 32133, Stop: 31807, Start Num: 24
Candidate Starts for Conquerage_47:
(Start: 24 @32133 has 30 MA's), (27, 32109), (36, 32067), (61, 31827),

Gene: Darrell_48 Start: 32497, Stop: 32153, Start Num: 24
Candidate Starts for Darrell_48:
(13, 32539), (18, 32518), (Start: 24 @32497 has 30 MA's), (26, 32482), (36, 32434), (39, 32413), (50, 32359), (61, 32173),

Gene: DarthPhader_44 Start: 32954, Stop: 32610, Start Num: 25
Candidate Starts for DarthPhader_44:
(20, 32966), (22, 32960), (Start: 25 @32954 has 17 MA's), (31, 32912), (35, 32891), (47, 32837), (50, 32825), (57, 32732), (59, 32690), (61, 32630),

Gene: DekHockey33_50 Start: 31068, Stop: 30775, Start Num: 38
Candidate Starts for DekHockey33_50:
(Start: 38 @31068 has 10 MA's), (54, 30951), (59, 30858),

Gene: Deloris_47 Start: 32057, Stop: 31644, Start Num: 15
Candidate Starts for Deloris_47:
(Start: 15 @32057 has 4 MA's), (34, 31967), (36, 31958), (41, 31922), (51, 31856), (60, 31691),

Gene: DontArgue_44 Start: 30703, Stop: 30368, Start Num: 32
Candidate Starts for DontArgue_44:
(7, 30847), (8, 30841), (Start: 32 @30703 has 2 MA's), (58, 30463),

Gene: DustyMartin_49 Start: 31547, Stop: 31209, Start Num: 33
Candidate Starts for DustyMartin_49:
(Start: 33 @31547 has 10 MA's), (43, 31487), (56, 31382), (58, 31304),

Gene: EagleEye_49 Start: 31670, Stop: 31308, Start Num: 25
Candidate Starts for EagleEye_49:
(Start: 25 @31670 has 17 MA's), (29, 31646), (59, 31388),

Gene: Eaglepride_46 Start: 31543, Stop: 31214, Start Num: 32

Candidate Starts for Eaglepride_46:

(8, 31681), (11, 31654), (Start: 32 @31543 has 2 MA's), (53, 31393), (58, 31309),

Gene: Edison31_44 Start: 31487, Stop: 31149, Start Num: 33

Candidate Starts for Edison31_44:

(8, 31631), (14, 31580), (Start: 33 @31487 has 10 MA's), (54, 31337), (56, 31322), (58, 31244),

Gene: EdogawaKiddo_45 Start: 32110, Stop: 31784, Start Num: 24

Candidate Starts for EdogawaKiddo_45:

(Start: 24 @32110 has 30 MA's), (27, 32086), (36, 32044), (61, 31804),

Gene: Eidsmoe_47 Start: 32173, Stop: 31847, Start Num: 24

Candidate Starts for Eidsmoe_47:

(Start: 24 @32173 has 30 MA's), (27, 32149), (36, 32107), (61, 31867),

Gene: Elephantoon_46 Start: 31477, Stop: 31130, Start Num: 24

Candidate Starts for Elephantoon_46:

(Start: 24 @31477 has 30 MA's), (27, 31453), (36, 31411), (50, 31336), (52, 31318), (61, 31150),

Gene: EmyBug_46 Start: 32175, Stop: 31849, Start Num: 24

Candidate Starts for EmyBug_46:

(Start: 24 @32175 has 30 MA's), (27, 32151), (36, 32109), (61, 31869),

Gene: ExplosioNervosa_47 Start: 32193, Stop: 31867, Start Num: 24

Candidate Starts for ExplosioNervosa_47:

(Start: 24 @32193 has 30 MA's), (27, 32169), (36, 32127), (61, 31887),

Gene: FatCactus_39 Start: 29455, Stop: 29141, Start Num: 32

Candidate Starts for FatCactus_39:

(5, 29608), (8, 29578), (10, 29563), (17, 29530), (Start: 32 @29455 has 2 MA's), (42, 29407), (44, 29401), (50, 29350), (59, 29221),

Gene: Fayely_47 Start: 32142, Stop: 31816, Start Num: 24

Candidate Starts for Fayely_47:

(Start: 24 @32142 has 30 MA's), (27, 32118), (36, 32076), (61, 31836),

Gene: Flaverint_48 Start: 31706, Stop: 31359, Start Num: 25

Candidate Starts for Flaverint_48:

(Start: 25 @31706 has 17 MA's), (Start: 32 @31673 has 2 MA's), (37, 31652), (59, 31439), (60, 31406),

Gene: Gail_52 Start: 33875, Stop: 33528, Start Num: 25

Candidate Starts for Gail_52:

(16, 33899), (Start: 25 @33875 has 17 MA's), (36, 33815), (59, 33608), (61, 33548), (62, 33539),

Gene: Goose_45 Start: 31271, Stop: 30933, Start Num: 33

Candidate Starts for Goose_45:

(8, 31415), (14, 31364), (Start: 33 @31271 has 10 MA's), (43, 31211), (54, 31121), (56, 31106), (58, 31028),

Gene: Hanray_45 Start: 32114, Stop: 31788, Start Num: 24

Candidate Starts for Hanray_45:

(Start: 24 @32114 has 30 MA's), (27, 32090), (36, 32048), (61, 31808),

Gene: Horex_46 Start: 32133, Stop: 31807, Start Num: 24

Candidate Starts for Horex_46:

(Start: 24 @32133 has 30 MA's), (27, 32109), (36, 32067), (61, 31827),

Gene: HortumSL17_47 Start: 32109, Stop: 31783, Start Num: 24

Candidate Starts for HortumSL17_47:

(Start: 24 @32109 has 30 MA's), (27, 32085), (36, 32043), (61, 31803),

Gene: Jeeves_52 Start: 32647, Stop: 32300, Start Num: 25

Candidate Starts for Jeeves_52:

(16, 32671), (Start: 25 @32647 has 17 MA's), (36, 32587), (59, 32380), (61, 32320),

Gene: Jiawan_45 Start: 32146, Stop: 31820, Start Num: 24

Candidate Starts for Jiawan_45:

(Start: 24 @32146 has 30 MA's), (27, 32122), (36, 32080), (61, 31840),

Gene: Joselito_48 Start: 31705, Stop: 31358, Start Num: 25

Candidate Starts for Joselito_48:

(Start: 25 @31705 has 17 MA's), (Start: 32 @31672 has 2 MA's), (37, 31651), (59, 31438), (60, 31405),

Gene: KatherineG_51 Start: 31068, Stop: 30775, Start Num: 38

Candidate Starts for KatherineG_51:

(Start: 38 @31068 has 10 MA's), (54, 30951), (59, 30858),

Gene: Keziacharles14_47 Start: 33144, Stop: 32797, Start Num: 24

Candidate Starts for Keziacharles14_47:

(Start: 24 @33144 has 30 MA's), (27, 33120), (36, 33078), (49, 33015), (50, 33003), (61, 32817), (62, 32808),

Gene: Kristoff_45 Start: 31839, Stop: 31501, Start Num: 33

Candidate Starts for Kristoff_45:

(8, 31983), (14, 31932), (Start: 33 @31839 has 10 MA's), (54, 31689), (56, 31674), (58, 31596),

Gene: LastResort_49 Start: 30629, Stop: 30336, Start Num: 38

Candidate Starts for LastResort_49:

(Start: 38 @30629 has 10 MA's), (54, 30512), (59, 30419),

Gene: Lilleskat_45 Start: 32063, Stop: 31737, Start Num: 24

Candidate Starts for Lilleskat_45:

(Start: 24 @32063 has 30 MA's), (27, 32039), (36, 31997), (61, 31757),

Gene: LoneWolf_47 Start: 31870, Stop: 31502, Start Num: 24

Candidate Starts for LoneWolf_47:

(2, 32050), (4, 31999), (6, 31975), (Start: 24 @31870 has 30 MA's), (27, 31846), (36, 31804), (43, 31762), (61, 31522),

Gene: Looper_50 Start: 30606, Stop: 30313, Start Num: 38

Candidate Starts for Looper_50:

(Start: 38 @30606 has 10 MA's), (54, 30489), (59, 30396),

Gene: Luchador_52 Start: 34435, Stop: 34088, Start Num: 25

Candidate Starts for Luchador_52:

(16, 34459), (Start: 25 @34435 has 17 MA's), (36, 34375), (59, 34168), (61, 34108),

Gene: Lucyedi_48 Start: 31865, Stop: 31503, Start Num: 25

Candidate Starts for Lucyedi_48:

(Start: 25 @31865 has 17 MA's), (29, 31841), (59, 31583),

Gene: Maminiaina_46 Start: 31851, Stop: 31525, Start Num: 24

Candidate Starts for Maminiaina_46:

(Start: 24 @31851 has 30 MA's), (27, 31827), (36, 31785), (45, 31743), (61, 31545),

Gene: MegTheThird_46 Start: 31679, Stop: 31329, Start Num: 24

Candidate Starts for MegTheThird_46:

(12, 31742), (Start: 21 @31703 has 1 MA's), (Start: 24 @31679 has 30 MA's), (26, 31658), (27, 31652), (48, 31550), (61, 31349), (62, 31340),

Gene: Minispark_45 Start: 31396, Stop: 31025, Start Num: 24

Candidate Starts for Minispark_45:

(2, 31582), (4, 31531), (6, 31507), (Start: 24 @31396 has 30 MA's), (35, 31336), (36, 31333), (61, 31045),

Gene: Munch_48 Start: 31705, Stop: 31358, Start Num: 25

Candidate Starts for Munch_48:

(Start: 25 @31705 has 17 MA's), (Start: 32 @31672 has 2 MA's), (37, 31651), (59, 31438), (60, 31405),

Gene: Myxus_47 Start: 32109, Stop: 31783, Start Num: 24

Candidate Starts for Myxus_47:

(Start: 24 @32109 has 30 MA's), (27, 32085), (36, 32043), (61, 31803),

Gene: Nebulosus_49 Start: 30625, Stop: 30332, Start Num: 38

Candidate Starts for Nebulosus_49:

(Start: 38 @30625 has 10 MA's), (54, 30508), (59, 30415),

Gene: Nedarya_45 Start: 30054, Stop: 29713, Start Num: 30

Candidate Starts for Nedarya_45:

(Start: 30 @30054 has 1 MA's), (55, 29883), (59, 29796),

Gene: OKCentral2016_44 Start: 31174, Stop: 30836, Start Num: 33

Candidate Starts for OKCentral2016_44:

(8, 31318), (14, 31267), (Start: 33 @31174 has 10 MA's), (43, 31114), (54, 31024), (56, 31009), (58, 30931),

Gene: Onglai_45 Start: 30450, Stop: 30124, Start Num: 24

Candidate Starts for Onglai_45:

(Start: 24 @30450 has 30 MA's), (27, 30426), (36, 30384), (61, 30144),

Gene: PackMan_46 Start: 32109, Stop: 31783, Start Num: 24

Candidate Starts for PackMan_46:

(Start: 24 @32109 has 30 MA's), (27, 32085), (36, 32043), (61, 31803),

Gene: PainterBoy_48 Start: 31801, Stop: 31439, Start Num: 25

Candidate Starts for PainterBoy_48:

(Start: 25 @31801 has 17 MA's), (29, 31777), (59, 31519),

Gene: Phaeder_47 Start: 32109, Stop: 31783, Start Num: 24
Candidate Starts for Phaeder_47:
(Start: 24 @32109 has 30 MA's), (27, 32085), (36, 32043), (61, 31803),

Gene: Pharaoh_41 Start: 31682, Stop: 31311, Start Num: 25
Candidate Starts for Pharaoh_41:
(1, 32006), (Start: 25 @31682 has 17 MA's), (36, 31619), (50, 31523), (59, 31391),

Gene: Phonnegut_47 Start: 32158, Stop: 31832, Start Num: 24
Candidate Starts for Phonnegut_47:
(Start: 24 @32158 has 30 MA's), (27, 32134), (36, 32092), (61, 31852),

Gene: Pioneer_47 Start: 32158, Stop: 31832, Start Num: 24
Candidate Starts for Pioneer_47:
(Start: 24 @32158 has 30 MA's), (27, 32134), (36, 32092), (61, 31852),

Gene: Priya_47 Start: 32176, Stop: 31850, Start Num: 24
Candidate Starts for Priya_47:
(Start: 24 @32176 has 30 MA's), (27, 32152), (36, 32110), (61, 31870),

Gene: Qobbit_47 Start: 32138, Stop: 31812, Start Num: 24
Candidate Starts for Qobbit_47:
(Start: 24 @32138 has 30 MA's), (27, 32114), (36, 32072), (61, 31832),

Gene: Rahalelujah_46 Start: 31411, Stop: 31040, Start Num: 24
Candidate Starts for Rahalelujah_46:
(2, 31597), (4, 31546), (6, 31522), (Start: 24 @31411 has 30 MA's), (35, 31351), (36, 31348), (61, 31060),

Gene: Ravana_52 Start: 31221, Stop: 30943, Start Num: 38
Candidate Starts for Ravana_52:
(23, 31314), (Start: 38 @31221 has 10 MA's), (50, 31137), (59, 31026),

Gene: ReMo_49 Start: 30626, Stop: 30333, Start Num: 38
Candidate Starts for ReMo_49:
(Start: 38 @30626 has 10 MA's), (54, 30509), (59, 30416),

Gene: Rebeuca_45 Start: 31840, Stop: 31502, Start Num: 33
Candidate Starts for Rebeuca_45:
(8, 31984), (14, 31933), (Start: 33 @31840 has 10 MA's), (54, 31690), (56, 31675), (58, 31597),

Gene: Refuge_46 Start: 33330, Stop: 32986, Start Num: 25
Candidate Starts for Refuge_46:
(20, 33342), (Start: 25 @33330 has 17 MA's), (31, 33288), (Start: 32 @33285 has 2 MA's), (35, 33267), (47, 33213), (50, 33201), (59, 33066), (61, 33006),

Gene: RhynO_46 Start: 31639, Stop: 31301, Start Num: 33
Candidate Starts for RhynO_46:
(Start: 33 @31639 has 10 MA's), (43, 31579), (56, 31474), (58, 31396),

Gene: Rowdy_49 Start: 31547, Stop: 31209, Start Num: 33
Candidate Starts for Rowdy_49:

(Start: 33 @31547 has 10 MA's), (43, 31487), (56, 31382), (58, 31304),

Gene: RyeScarlet_48 Start: 32133, Stop: 31807, Start Num: 24

Candidate Starts for RyeScarlet_48:

(Start: 24 @32133 has 30 MA's), (27, 32109), (36, 32067), (61, 31827),

Gene: Sachima_44 Start: 32043, Stop: 31717, Start Num: 24

Candidate Starts for Sachima_44:

(Start: 24 @32043 has 30 MA's), (27, 32019), (36, 31977), (61, 31737),

Gene: Saskia_48 Start: 31226, Stop: 30879, Start Num: 25

Candidate Starts for Saskia_48:

(Start: 25 @31226 has 17 MA's), (Start: 32 @31193 has 2 MA's), (37, 31172), (41, 31139), (59, 30959), (60, 30926),

Gene: Scherzo_47 Start: 32347, Stop: 32021, Start Num: 24

Candidate Starts for Scherzo_47:

(Start: 24 @32347 has 30 MA's), (27, 32323), (36, 32281), (61, 32041),

Gene: Shapes_49 Start: 31547, Stop: 31209, Start Num: 33

Candidate Starts for Shapes_49:

(Start: 33 @31547 has 10 MA's), (43, 31487), (56, 31382), (58, 31304),

Gene: ShayRa_51 Start: 30830, Stop: 30537, Start Num: 38

Candidate Starts for ShayRa_51:

(Start: 38 @30830 has 10 MA's), (54, 30713), (59, 30620),

Gene: SororFago_50 Start: 33759, Stop: 33412, Start Num: 25

Candidate Starts for SororFago_50:

(16, 33783), (Start: 25 @33759 has 17 MA's), (50, 33624), (51, 33618), (59, 33492), (61, 33432),

Gene: Soups_50 Start: 30829, Stop: 30536, Start Num: 38

Candidate Starts for Soups_50:

(Start: 38 @30829 has 10 MA's), (54, 30712), (59, 30619),

Gene: Spouty_47 Start: 32175, Stop: 31849, Start Num: 24

Candidate Starts for Spouty_47:

(Start: 24 @32175 has 30 MA's), (27, 32151), (36, 32109), (61, 31869),

Gene: Steamy_43 Start: 31608, Stop: 31282, Start Num: 21

Candidate Starts for Steamy_43:

(3, 31740), (9, 31668), (19, 31614), (Start: 21 @31608 has 1 MA's), (41, 31515), (46, 31509), (50, 31497), (59, 31362),

Gene: Toaka_46 Start: 31676, Stop: 31308, Start Num: 24

Candidate Starts for Toaka_46:

(Start: 24 @31676 has 30 MA's), (27, 31652), (36, 31610), (61, 31328), (62, 31319),

Gene: Topanga_43 Start: 31489, Stop: 31151, Start Num: 33

Candidate Starts for Topanga_43:

(8, 31633), (14, 31582), (Start: 33 @31489 has 10 MA's), (54, 31339), (56, 31324), (58, 31246),

Gene: Tubs_47 Start: 32109, Stop: 31783, Start Num: 24

Candidate Starts for Tubs_47:

(Start: 24 @32109 has 30 MA's), (27, 32085), (36, 32043), (61, 31803),

Gene: Twister_43 Start: 31400, Stop: 31062, Start Num: 33

Candidate Starts for Twister_43:

(8, 31544), (14, 31493), (Start: 33 @31400 has 10 MA's), (54, 31250), (56, 31235), (58, 31157),

Gene: Ugenie5_44 Start: 32346, Stop: 32020, Start Num: 24

Candidate Starts for Ugenie5_44:

(Start: 24 @32346 has 30 MA's), (27, 32322), (36, 32280), (61, 32040),

Gene: VA6_47 Start: 32280, Stop: 31867, Start Num: 15

Candidate Starts for VA6_47:

(Start: 15 @32280 has 4 MA's), (34, 32190), (36, 32181), (41, 32145), (51, 32079), (60, 31914),

Gene: Vanisoa_46 Start: 32705, Stop: 32358, Start Num: 24

Candidate Starts for Vanisoa_46:

(2, 32888), (4, 32837), (6, 32813), (Start: 24 @32705 has 30 MA's), (27, 32681), (36, 32639), (40, 32609), (61, 32378),

Gene: WalterMcMickey_43 Start: 31400, Stop: 31062, Start Num: 33

Candidate Starts for WalterMcMickey_43:

(8, 31544), (14, 31493), (Start: 33 @31400 has 10 MA's), (54, 31250), (56, 31235), (58, 31157),

Gene: WorldCup_45 Start: 31405, Stop: 31034, Start Num: 24

Candidate Starts for WorldCup_45:

(2, 31591), (4, 31540), (6, 31516), (Start: 24 @31405 has 30 MA's), (35, 31345), (36, 31342), (61, 31054),

Gene: XianYue_46 Start: 31886, Stop: 31548, Start Num: 28

Candidate Starts for XianYue_46:

(Start: 28 @31886 has 1 MA's), (56, 31712), (60, 31595),

Gene: Yecey3_48 Start: 31582, Stop: 31238, Start Num: 25

Candidate Starts for Yecey3_48:

(Start: 25 @31582 has 17 MA's), (27, 31561), (36, 31519), (43, 31477), (50, 31444), (61, 31258),

Gene: Zimmer_44 Start: 32823, Stop: 32467, Start Num: 25

Candidate Starts for Zimmer_44:

(Start: 25 @32823 has 17 MA's), (31, 32781), (47, 32706), (50, 32694), (52, 32676), (59, 32547), (61, 32487),