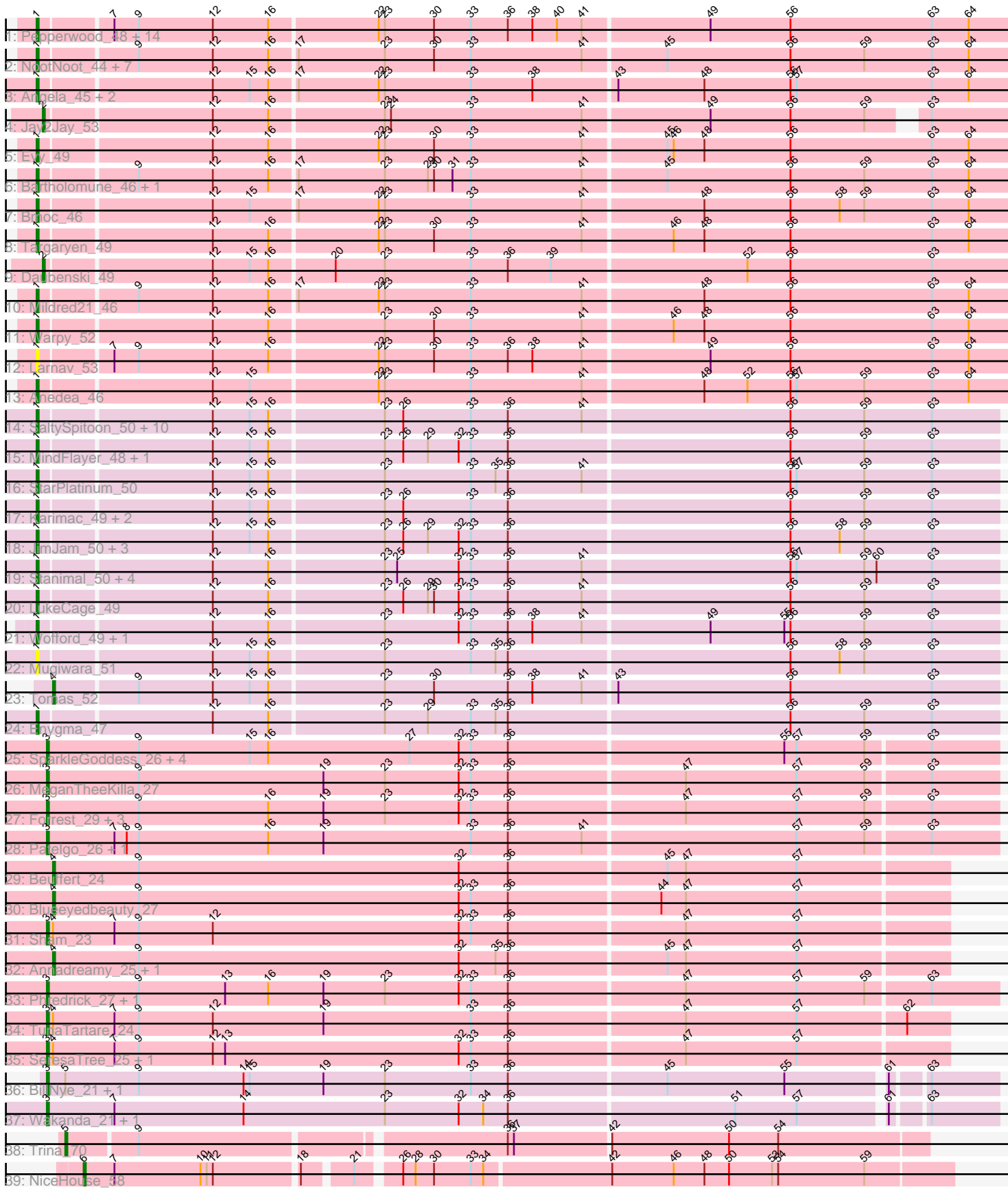


Pham 164970



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 164970 Report

This analysis was run 07/09/24 on database version 566.

Pham number 164970 has 97 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Pepperwood_48, HangryHippo_50, Tribute_46, PacManQ_49, Peebs_47, Sushi23_48, EGole_49, Cross_48, BlueOtter_50, Teutsch_48, Watermoore_48, Samisti12_48, Lululemon_49, Cursive_46, Leo04_49
- Track 2 : NootNoot_44, Liandry_47, Persimmon_44, Squillium_47, PinkiePie_46, Braelyn_47, WhereRU_47, Paradiddles_44
- Track 3 : Angela_45, MulchMansion_45, LilMartin_45
- Track 4 : Jay2Jay_53
- Track 5 : Evy_49
- Track 6 : Bartholomune_46, Navo_46
- Track 7 : Bmoc_46
- Track 8 : Targaryen_49
- Track 9 : Daubenski_49
- Track 10 : Mildred21_46
- Track 11 : Warpy_52
- Track 12 : Larnav_53
- Track 13 : Anedea_46
- Track 14 : SaltySpitoon_50, Jollison_55, TomSawyer_48, Amabiko_50, Wipeout_48, Birchlyn_47, Bordeaux_48, Starbow_48, Quaran19_50, Spelly_50, Battuta_48
- Track 15 : MindFlayer_48, PumpkinSpice_49
- Track 16 : StarPlatinum_50
- Track 17 : Karimac_49, IchabodCrane_47, Spilled_51
- Track 18 : JimJam_50, Gibbi_54, KentuckyRacer_54, CeilingFan_52
- Track 19 : Stanimal_50, BoomerJR_50, Genie2_50, Sollertia_50, Yaboi_50
- Track 20 : LukeCage_49
- Track 21 : Wofford_49, Elmer_57
- Track 22 : Mugiwara_51
- Track 23 : Tomas_52
- Track 24 : Enygma_47
- Track 25 : SparkleGoddess_26, Belfort_27, Stigma_26, Comrade_26, Karp_25
- Track 26 : MeganTheeKilla_27
- Track 27 : Forrest_29, Jada_27, Gilson_29, Emma1919_29
- Track 28 : Patelgo_26, Moab_26
- Track 29 : Beuffert_24
- Track 30 : Blueeyedbeauty_27
- Track 31 : Sham_23
- Track 32 : Annadreamy_25, Limpid_25

- Track 33 : Phredrick_27, Kenrey_29
- Track 34 : TunaTartare_24
- Track 35 : SeresaTree_25, Faust_25
- Track 36 : BillNye_21, Circinus_23
- Track 37 : Wakanda_21, Muntaha_21
- Track 38 : Trina_70
- Track 39 : NiceHouse_58

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

The start number called the most often in the published annotations is 1, it was called in 54 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amabiko_50, Anedea_46, Angela_45, Bartholomune_46, Battuta_48, Birchlyn_47, BlueOtter_50, Bmoc_46, BoomerJR_50, Bordeaux_48, Braelyn_47, CeilingFan_52, Cross_48, Cursive_46, EGole_49, Elmer_57, Enygma_47, Evy_49, Genie2_50, Gibbi_54, HangryHippo_50, IchabodCrane_47, JimJam_50, Jollison_55, Karimac_49, KentuckyRacer_54, Larnav_53, Leo04_49, Liandry_47, LilMartin_45, LukeCage_49, Lululemon_49, Mildred21_46, MindFlayer_48, Mugiwara_51, MulchMansion_45, Navo_46, NootNoot_44, PacManQ_49, Paradiddles_44, Peebs_47, Pepperwood_48, Persimmon_44, PinkiePie_46, PumpkinSpice_49, Quarant19_50, SaltySpittoon_50, Samisti12_48, Sollertia_50, Spelly_50, Spilled_51, Squillium_47, Stanimal_50, StarPlatinum_50, Starbow_48, Sushi23_48, Targaryen_49, Teutsch_48, TomSawyer_48, Tribute_46, Warpy_52, Watermoore_48, WhereRU_47, Wipeout_48, Wofford_49, Yaboi_50,

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

-

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

- Annadreamy_25, Belfort_27, Beuffert_24, BillNye_21, Blueeyedbeauty_27, Circinus_23, Comrade_26, Daubenski_49, Emma1919_29, Faust_25, Forrest_29, Gilson_29, Jada_27, Jay2Jay_53, Karp_25, Kenrey_29, Limpid_25, MeganTheeKilla_27, Moab_26, Muntaha_21, NiceHouse_58, Patelgo_26, Phredrick_27, SeresaTree_25, Sham_23, SparkleGoddess_26, Stigma_26, Tomas_52, Trina_70, TunaTartare_24, Wakanda_21,

Summary by start number:

Start 1:

- Found in 66 of 97 (68.0%) of genes in pham
- Manual Annotations of this start: 54 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amabiko_50 (BE2), Anedea_46 (BE1), Angela_45 (BE1), Bartholomune_46 (BE1), Battuta_48 (BE2), Birchlyn_47 (BE2), BlueOtter_50 (BE1), Bmoc_46 (BE1), BoomerJR_50 (BE2), Bordeaux_48 (BE2), Braelyn_47 (BE1), CeilingFan_52 (BE2), Cross_48 (BE1), Cursive_46 (BE1), EGole_49 (BE1), Elmer_57 (BE2), Enygma_47 (BE2), Evy_49 (BE1), Genie2_50 (BE2), Gibbi_54 (BE2), HangryHippo_50 (BE1), IchabodCrane_47 (BE2), JimJam_50

(BE2), Jollison_55 (BE2), Karimac_49 (BE2), KentuckyRacer_54 (BE2), Larnav_53 (BE1), Leo04_49 (BE1), Liandry_47 (BE1), LilMartin_45 (BE1), LukeCage_49 (BE2), Lululemon_49 (BE1), Mildred21_46 (BE1), MindFlayer_48 (BE2), Mugiwara_51 (BE2), MulchMansion_45 (BE1), Navo_46 (BE1), NootNoot_44 (BE1), PacManQ_49 (BE1), Paradiddles_44 (BE1), Peebs_47 (BE1), Pepperwood_48 (BE1), Persimmon_44 (BE1), PinkiePie_46 (BE1), PumpkinSpice_49 (BE2), Quarant19_50 (BE2), SaltySpittoon_50 (BE2), Samisti12_48 (BE1), Sollertia_50 (BE2), Spelly_50 (BE2), Spilled_51 (BE2), Squillium_47 (BE1), Stanimal_50 (BE2), StarPlatinum_50 (BE2), Starbow_48 (BE2), Sushi23_48 (BE1), Targaryen_49 (BE1), Teutsch_48 (BE1), TomSawyer_48 (BE2), Tribute_46 (BE1), Warpy_52 (BE1), Watermoore_48 (BE1), WhereRU_47 (BE1), Wipeout_48 (BE2), Wofford_49 (BE2), Yaboi_50 (BE2),

Start 2:

- Found in 2 of 97 (2.1%) of genes in pham
- Manual Annotations of this start: 2 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Daubenski_49 (BE1), Jay2Jay_53 (BE1),

Start 3:

- Found in 22 of 97 (22.7%) of genes in pham
- Manual Annotations of this start: 21 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belfort_27 (BK1), BillNye_21 (BK2), Circinus_23 (BK2), Comrade_26 (BK1), Emma1919_29 (BK1), Faust_25 (BK1), Forrest_29 (BK1), Gilson_29 (BK1), Jada_27 (BK1), Karp_25 (BK1), Kenrey_29 (BK1), MeganTheeKilla_27 (BK1), Moab_26 (BK1), Muntaha_21 (BK2), Patelgo_26 (BK1), Phredrick_27 (BK1), SeresaTree_25 (BK1), Sham_23 (BK1), SparkleGoddess_26 (BK1), Stigma_26 (BK1), TunaTartare_24 (BK1), Wakanda_21 (BK2),

Start 4:

- Found in 9 of 97 (9.3%) of genes in pham
- Manual Annotations of this start: 5 of 84
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Annadreamy_25 (BK1), Beuffert_24 (BK1), Blueeyedbeauty_27 (BK1), Limpid_25 (BK1), Tomas_52 (BE2),

Start 5:

- Found in 3 of 97 (3.1%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Trina_70 (CE),

Start 6:

- Found in 1 of 97 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NiceHouse_58 (CE),

Summary by clusters:

There are 5 clusters represented in this pham: BE2, BE1, CE, BK1, BK2,

Info for manual annotations of cluster BE1:

- Start number 1 was manually annotated 29 times for cluster BE1.
- Start number 2 was manually annotated 2 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 1 was manually annotated 25 times for cluster BE2.
- Start number 4 was manually annotated 1 time for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 3 was manually annotated 17 times for cluster BK1.
- Start number 4 was manually annotated 4 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 3 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster CE:

- Start number 5 was manually annotated 1 time for cluster CE.
- Start number 6 was manually annotated 1 time for cluster CE.

Gene Information:

Gene: Amabiko_50 Start: 26282, Stop: 26740, Start Num: 1

Candidate Starts for Amabiko_50:

(Start: 1 @26282 has 54 MA's), (12, 26363), (15, 26381), (16, 26390), (23, 26444), (26, 26453), (33, 26486), (36, 26504), (41, 26540), (56, 26639), (59, 26675), (63, 26708),

Gene: Anedea_46 Start: 25815, Stop: 26279, Start Num: 1

Candidate Starts for Anedea_46:

(Start: 1 @25815 has 54 MA's), (12, 25896), (15, 25914), (22, 25974), (23, 25977), (33, 26019), (41, 26073), (48, 26130), (52, 26151), (56, 26172), (57, 26175), (59, 26208), (63, 26241), (64, 26259),

Gene: Angela_45 Start: 25295, Stop: 25759, Start Num: 1

Candidate Starts for Angela_45:

(Start: 1 @25295 has 54 MA's), (12, 25376), (15, 25394), (16, 25403), (17, 25415), (22, 25454), (23, 25457), (33, 25499), (38, 25529), (43, 25568), (48, 25610), (56, 25652), (57, 25655), (63, 25721), (64, 25739),

Gene: Annadreamy_25 Start: 14698, Stop: 15129, Start Num: 4

Candidate Starts for Annadreamy_25:

(Start: 4 @14698 has 5 MA's), (9, 14740), (32, 14896), (35, 14914), (36, 14920), (45, 14995), (47, 15004), (57, 15058),

Gene: Bartholomune_46 Start: 25592, Stop: 26056, Start Num: 1

Candidate Starts for Bartholomune_46:

(Start: 1 @25592 has 54 MA's), (9, 25637), (12, 25673), (16, 25700), (17, 25712), (23, 25754), (29, 25775), (30, 25778), (31, 25787), (33, 25796), (41, 25850), (45, 25889), (56, 25949), (59, 25985), (63, 26018), (64, 26036),

Gene: Battuta_48 Start: 26256, Stop: 26714, Start Num: 1

Candidate Starts for Battuta_48:

(Start: 1 @26256 has 54 MA's), (12, 26337), (15, 26355), (16, 26364), (23, 26418), (26, 26427), (33, 26460), (36, 26478), (41, 26514), (56, 26613), (59, 26649), (63, 26682),

Gene: Belfort_27 Start: 15390, Stop: 15848, Start Num: 3

Candidate Starts for Belfort_27:

(Start: 3 @15390 has 21 MA's), (9, 15435), (15, 15489), (16, 15498), (27, 15567), (32, 15591), (33, 15597), (36, 15615), (55, 15747), (57, 15753), (59, 15786), (63, 15816),

Gene: Beuffert_24 Start: 14382, Stop: 14813, Start Num: 4

Candidate Starts for Beuffert_24:

(Start: 4 @14382 has 5 MA's), (9, 14424), (32, 14580), (36, 14604), (45, 14679), (47, 14688), (57, 14742),

Gene: BillNye_21 Start: 15104, Stop: 15553, Start Num: 3

Candidate Starts for BillNye_21:

(Start: 3 @15104 has 21 MA's), (Start: 5 @15113 has 1 MA's), (9, 15149), (14, 15200), (15, 15203), (19, 15239), (23, 15269), (33, 15311), (36, 15329), (45, 15404), (55, 15461), (61, 15506), (63, 15521),

Gene: Birchlyn_47 Start: 24139, Stop: 24597, Start Num: 1

Candidate Starts for Birchlyn_47:

(Start: 1 @24139 has 54 MA's), (12, 24220), (15, 24238), (16, 24247), (23, 24301), (26, 24310), (33, 24343), (36, 24361), (41, 24397), (56, 24496), (59, 24532), (63, 24565),

Gene: BlueOtter_50 Start: 26945, Stop: 27409, Start Num: 1

Candidate Starts for BlueOtter_50:

(Start: 1 @26945 has 54 MA's), (7, 26978), (9, 26990), (12, 27026), (16, 27053), (22, 27104), (23, 27107), (30, 27131), (33, 27149), (36, 27167), (38, 27179), (40, 27191), (41, 27203), (49, 27263), (56, 27302), (63, 27371), (64, 27389),

Gene: Blueeyedbeauty_27 Start: 15192, Stop: 15623, Start Num: 4

Candidate Starts for Blueeyedbeauty_27:

(Start: 4 @15192 has 5 MA's), (9, 15234), (32, 15390), (33, 15396), (36, 15414), (44, 15486), (47, 15498), (57, 15552),

Gene: Bmoc_46 Start: 25600, Stop: 26064, Start Num: 1

Candidate Starts for Bmoc_46:

(Start: 1 @25600 has 54 MA's), (12, 25681), (15, 25699), (17, 25720), (22, 25759), (23, 25762), (33, 25804), (41, 25858), (48, 25915), (56, 25957), (58, 25981), (59, 25993), (63, 26026), (64, 26044),

Gene: BoomerJR_50 Start: 26137, Stop: 26595, Start Num: 1

Candidate Starts for BoomerJR_50:

(Start: 1 @26137 has 54 MA's), (12, 26218), (16, 26245), (23, 26299), (25, 26305), (32, 26335), (33, 26341), (36, 26359), (41, 26395), (56, 26494), (57, 26497), (59, 26530), (60, 26536), (63, 26563),

Gene: Bordeaux_48 Start: 26411, Stop: 26869, Start Num: 1

Candidate Starts for Bordeaux_48:

(Start: 1 @26411 has 54 MA's), (12, 26492), (15, 26510), (16, 26519), (23, 26573), (26, 26582), (33, 26615), (36, 26633), (41, 26669), (56, 26768), (59, 26804), (63, 26837),

Gene: Braelyn_47 Start: 26359, Stop: 26823, Start Num: 1

Candidate Starts for Braelyn_47:

(Start: 1 @26359 has 54 MA's), (9, 26404), (12, 26440), (16, 26467), (17, 26479), (23, 26521), (30, 26545), (33, 26563), (41, 26617), (45, 26656), (56, 26716), (59, 26752), (63, 26785), (64, 26803),

Gene: CeilingFan_52 Start: 26171, Stop: 26629, Start Num: 1

Candidate Starts for CeilingFan_52:

(Start: 1 @26171 has 54 MA's), (12, 26252), (15, 26270), (16, 26279), (23, 26333), (26, 26342), (29, 26354), (32, 26369), (33, 26375), (36, 26393), (56, 26528), (58, 26552), (59, 26564), (63, 26597),

Gene: Circinus_23 Start: 15240, Stop: 15689, Start Num: 3

Candidate Starts for Circinus_23:

(Start: 3 @15240 has 21 MA's), (Start: 5 @15249 has 1 MA's), (9, 15285), (14, 15336), (15, 15339), (19, 15375), (23, 15405), (33, 15447), (36, 15465), (45, 15540), (55, 15597), (61, 15642), (63, 15657),

Gene: Comrade_26 Start: 15005, Stop: 15463, Start Num: 3

Candidate Starts for Comrade_26:

(Start: 3 @15005 has 21 MA's), (9, 15050), (15, 15104), (16, 15113), (27, 15182), (32, 15206), (33, 15212), (36, 15230), (55, 15362), (57, 15368), (59, 15401), (63, 15431),

Gene: Cross_48 Start: 26946, Stop: 27410, Start Num: 1

Candidate Starts for Cross_48:

(Start: 1 @26946 has 54 MA's), (7, 26979), (9, 26991), (12, 27027), (16, 27054), (22, 27105), (23, 27108), (30, 27132), (33, 27150), (36, 27168), (38, 27180), (40, 27192), (41, 27204), (49, 27264), (56, 27303), (63, 27372), (64, 27390),

Gene: Cursive_46 Start: 26471, Stop: 26935, Start Num: 1

Candidate Starts for Cursive_46:

(Start: 1 @26471 has 54 MA's), (7, 26504), (9, 26516), (12, 26552), (16, 26579), (22, 26630), (23, 26633), (30, 26657), (33, 26675), (36, 26693), (38, 26705), (40, 26717), (41, 26729), (49, 26789), (56, 26828), (63, 26897), (64, 26915),

Gene: Daubenski_49 Start: 26703, Stop: 27164, Start Num: 2

Candidate Starts for Daubenski_49:

(Start: 2 @26703 has 2 MA's), (12, 26781), (15, 26799), (16, 26808), (20, 26838), (23, 26862), (33, 26904), (36, 26922), (39, 26943), (52, 27036), (56, 27057), (63, 27126),

Gene: EGole_49 Start: 27850, Stop: 28314, Start Num: 1

Candidate Starts for EGole_49:

(Start: 1 @27850 has 54 MA's), (7, 27883), (9, 27895), (12, 27931), (16, 27958), (22, 28009), (23, 28012), (30, 28036), (33, 28054), (36, 28072), (38, 28084), (40, 28096), (41, 28108), (49, 28168), (56, 28207), (63, 28276), (64, 28294),

Gene: Elmer_57 Start: 27319, Stop: 27777, Start Num: 1

Candidate Starts for Elmer_57:

(Start: 1 @27319 has 54 MA's), (12, 27400), (16, 27427), (23, 27481), (32, 27517), (33, 27523), (36, 27541), (38, 27553), (41, 27577), (49, 27637), (55, 27673), (56, 27676), (59, 27712), (63, 27745),

Gene: Emma1919_29 Start: 15610, Stop: 16068, Start Num: 3

Candidate Starts for Emma1919_29:

(Start: 3 @15610 has 21 MA's), (9, 15655), (16, 15718), (19, 15745), (23, 15775), (32, 15811), (33, 15817), (36, 15835), (47, 15919), (57, 15973), (59, 16006), (63, 16036),

Gene: Enygma_47 Start: 26232, Stop: 26690, Start Num: 1

Candidate Starts for Enygma_47:

(Start: 1 @26232 has 54 MA's), (12, 26313), (16, 26340), (23, 26394), (29, 26415), (33, 26436), (35, 26448), (36, 26454), (56, 26589), (59, 26625), (63, 26658),

Gene: Evy_49 Start: 26954, Stop: 27418, Start Num: 1

Candidate Starts for Evy_49:

(Start: 1 @26954 has 54 MA's), (12, 27035), (16, 27062), (22, 27113), (23, 27116), (30, 27140), (33, 27158), (41, 27212), (45, 27251), (46, 27254), (48, 27269), (56, 27311), (63, 27380), (64, 27398),

Gene: Faust_25 Start: 14850, Stop: 15284, Start Num: 3

Candidate Starts for Faust_25:

(Start: 3 @14850 has 21 MA's), (Start: 4 @14853 has 5 MA's), (7, 14883), (9, 14895), (12, 14931), (13, 14937), (32, 15051), (33, 15057), (36, 15075), (47, 15159), (57, 15213),

Gene: Forrest_29 Start: 15733, Stop: 16191, Start Num: 3

Candidate Starts for Forrest_29:

(Start: 3 @15733 has 21 MA's), (9, 15778), (16, 15841), (19, 15868), (23, 15898), (32, 15934), (33, 15940), (36, 15958), (47, 16042), (57, 16096), (59, 16129), (63, 16159),

Gene: Genie2_50 Start: 26251, Stop: 26709, Start Num: 1

Candidate Starts for Genie2_50:

(Start: 1 @26251 has 54 MA's), (12, 26332), (16, 26359), (23, 26413), (25, 26419), (32, 26449), (33, 26455), (36, 26473), (41, 26509), (56, 26608), (57, 26611), (59, 26644), (60, 26650), (63, 26677),

Gene: Gibbi_54 Start: 26394, Stop: 26852, Start Num: 1

Candidate Starts for Gibbi_54:

(Start: 1 @26394 has 54 MA's), (12, 26475), (15, 26493), (16, 26502), (23, 26556), (26, 26565), (29, 26577), (32, 26592), (33, 26598), (36, 26616), (56, 26751), (58, 26775), (59, 26787), (63, 26820),

Gene: Gilson_29 Start: 15563, Stop: 16021, Start Num: 3

Candidate Starts for Gilson_29:

(Start: 3 @15563 has 21 MA's), (9, 15608), (16, 15671), (19, 15698), (23, 15728), (32, 15764), (33, 15770), (36, 15788), (47, 15872), (57, 15926), (59, 15959), (63, 15989),

Gene: HangryHippo_50 Start: 26945, Stop: 27409, Start Num: 1

Candidate Starts for HangryHippo_50:

(Start: 1 @26945 has 54 MA's), (7, 26978), (9, 26990), (12, 27026), (16, 27053), (22, 27104), (23, 27107), (30, 27131), (33, 27149), (36, 27167), (38, 27179), (40, 27191), (41, 27203), (49, 27263), (56, 27302), (63, 27371), (64, 27389),

Gene: IchabodCrane_47 Start: 25983, Stop: 26441, Start Num: 1

Candidate Starts for IchabodCrane_47:

(Start: 1 @25983 has 54 MA's), (12, 26064), (15, 26082), (16, 26091), (23, 26145), (26, 26154), (33, 26187), (36, 26205), (56, 26340), (59, 26376), (63, 26409),

Gene: Jada_27 Start: 14915, Stop: 15373, Start Num: 3

Candidate Starts for Jada_27:

(Start: 3 @14915 has 21 MA's), (9, 14960), (16, 15023), (19, 15050), (23, 15080), (32, 15116), (33, 15122), (36, 15140), (47, 15224), (57, 15278), (59, 15311), (63, 15341),

Gene: Jay2Jay_53 Start: 27777, Stop: 28226, Start Num: 2

Candidate Starts for Jay2Jay_53:

(Start: 2 @27777 has 2 MA's), (12, 27855), (16, 27882), (23, 27936), (24, 27939), (33, 27978), (41, 28032), (49, 28092), (56, 28131), (59, 28167), (63, 28188),

Gene: JimJam_50 Start: 26357, Stop: 26815, Start Num: 1

Candidate Starts for JimJam_50:

(Start: 1 @26357 has 54 MA's), (12, 26438), (15, 26456), (16, 26465), (23, 26519), (26, 26528), (29, 26540), (32, 26555), (33, 26561), (36, 26579), (56, 26714), (58, 26738), (59, 26750), (63, 26783),

Gene: Jollison_55 Start: 26239, Stop: 26697, Start Num: 1

Candidate Starts for Jollison_55:

(Start: 1 @26239 has 54 MA's), (12, 26320), (15, 26338), (16, 26347), (23, 26401), (26, 26410), (33, 26443), (36, 26461), (41, 26497), (56, 26596), (59, 26632), (63, 26665),

Gene: Karimac_49 Start: 26388, Stop: 26846, Start Num: 1

Candidate Starts for Karimac_49:

(Start: 1 @26388 has 54 MA's), (12, 26469), (15, 26487), (16, 26496), (23, 26550), (26, 26559), (33, 26592), (36, 26610), (56, 26745), (59, 26781), (63, 26814),

Gene: Karp_25 Start: 14606, Stop: 15064, Start Num: 3

Candidate Starts for Karp_25:

(Start: 3 @14606 has 21 MA's), (9, 14651), (15, 14705), (16, 14714), (27, 14783), (32, 14807), (33, 14813), (36, 14831), (55, 14963), (57, 14969), (59, 15002), (63, 15032),

Gene: Kenrey_29 Start: 15612, Stop: 16070, Start Num: 3

Candidate Starts for Kenrey_29:

(Start: 3 @15612 has 21 MA's), (9, 15657), (13, 15699), (16, 15720), (19, 15747), (23, 15777), (32, 15813), (33, 15819), (36, 15837), (47, 15921), (57, 15975), (59, 16008), (63, 16038),

Gene: KentuckyRacer_54 Start: 26172, Stop: 26630, Start Num: 1

Candidate Starts for KentuckyRacer_54:

(Start: 1 @26172 has 54 MA's), (12, 26253), (15, 26271), (16, 26280), (23, 26334), (26, 26343), (29, 26355), (32, 26370), (33, 26376), (36, 26394), (56, 26529), (58, 26553), (59, 26565), (63, 26598),

Gene: Larnav_53 Start: 26930, Stop: 27394, Start Num: 1

Candidate Starts for Larnav_53:

(Start: 1 @26930 has 54 MA's), (7, 26963), (9, 26975), (12, 27011), (16, 27038), (22, 27089), (23, 27092), (30, 27116), (33, 27134), (36, 27152), (38, 27164), (41, 27188), (49, 27248), (56, 27287), (63, 27356), (64, 27374),

Gene: Leo04_49 Start: 27445, Stop: 27909, Start Num: 1

Candidate Starts for Leo04_49:

(Start: 1 @27445 has 54 MA's), (7, 27478), (9, 27490), (12, 27526), (16, 27553), (22, 27604), (23, 27607), (30, 27631), (33, 27649), (36, 27667), (38, 27679), (40, 27691), (41, 27703), (49, 27763), (56, 27802), (63, 27871), (64, 27889),

Gene: Liandry_47 Start: 26296, Stop: 26760, Start Num: 1

Candidate Starts for Liandry_47:

(Start: 1 @26296 has 54 MA's), (9, 26341), (12, 26377), (16, 26404), (17, 26416), (23, 26458), (30, 26482), (33, 26500), (41, 26554), (45, 26593), (56, 26653), (59, 26689), (63, 26722), (64, 26740),

Gene: LilMartin_45 Start: 25243, Stop: 25707, Start Num: 1

Candidate Starts for LilMartin_45:

(Start: 1 @25243 has 54 MA's), (12, 25324), (15, 25342), (16, 25351), (17, 25363), (22, 25402), (23, 25405), (33, 25447), (38, 25477), (43, 25516), (48, 25558), (56, 25600), (57, 25603), (63, 25669), (64, 25687),

Gene: Limpid_25 Start: 14697, Stop: 15128, Start Num: 4

Candidate Starts for Limpid_25:

(Start: 4 @14697 has 5 MA's), (9, 14739), (32, 14895), (35, 14913), (36, 14919), (45, 14994), (47, 15003), (57, 15057),

Gene: LukeCage_49 Start: 26136, Stop: 26594, Start Num: 1

Candidate Starts for LukeCage_49:

(Start: 1 @26136 has 54 MA's), (12, 26217), (16, 26244), (23, 26298), (26, 26307), (29, 26319), (30, 26322), (32, 26334), (33, 26340), (36, 26358), (41, 26394), (56, 26493), (59, 26529), (63, 26562),

Gene: Lululemon_49 Start: 26326, Stop: 26790, Start Num: 1

Candidate Starts for Lululemon_49:

(Start: 1 @26326 has 54 MA's), (7, 26359), (9, 26371), (12, 26407), (16, 26434), (22, 26485), (23, 26488), (30, 26512), (33, 26530), (36, 26548), (38, 26560), (40, 26572), (41, 26584), (49, 26644), (56, 26683), (63, 26752), (64, 26770),

Gene: MeganTheeKilla_27 Start: 14924, Stop: 15382, Start Num: 3

Candidate Starts for MeganTheeKilla_27:

(Start: 3 @14924 has 21 MA's), (9, 14969), (19, 15059), (23, 15089), (32, 15125), (33, 15131), (36, 15149), (47, 15233), (57, 15287), (59, 15320), (63, 15350),

Gene: Mildred21_46 Start: 25428, Stop: 25892, Start Num: 1

Candidate Starts for Mildred21_46:

(Start: 1 @25428 has 54 MA's), (9, 25473), (12, 25509), (16, 25536), (17, 25548), (22, 25587), (23, 25590), (33, 25632), (41, 25686), (48, 25743), (56, 25785), (63, 25854), (64, 25872),

Gene: MindFlayer_48 Start: 25890, Stop: 26348, Start Num: 1

Candidate Starts for MindFlayer_48:

(Start: 1 @25890 has 54 MA's), (12, 25971), (15, 25989), (16, 25998), (23, 26052), (26, 26061), (29, 26073), (32, 26088), (33, 26094), (36, 26112), (56, 26247), (59, 26283), (63, 26316),

Gene: Moab_26 Start: 14949, Stop: 15407, Start Num: 3

Candidate Starts for Moab_26:

(Start: 3 @14949 has 21 MA's), (7, 14982), (8, 14988), (9, 14994), (16, 15057), (19, 15084), (33, 15156), (36, 15174), (41, 15210), (57, 15312), (59, 15345), (63, 15375),

Gene: Mugiwara_51 Start: 26635, Stop: 27093, Start Num: 1

Candidate Starts for Mugiwara_51:

(Start: 1 @26635 has 54 MA's), (12, 26716), (15, 26734), (16, 26743), (23, 26797), (33, 26839), (35, 26851), (36, 26857), (56, 26992), (58, 27016), (59, 27028), (63, 27061),

Gene: MulchMansion_45 Start: 25243, Stop: 25707, Start Num: 1

Candidate Starts for MulchMansion_45:

(Start: 1 @25243 has 54 MA's), (12, 25324), (15, 25342), (16, 25351), (17, 25363), (22, 25402), (23, 25405), (33, 25447), (38, 25477), (43, 25516), (48, 25558), (56, 25600), (57, 25603), (63, 25669), (64, 25687),

Gene: Muntaha_21 Start: 14529, Stop: 14978, Start Num: 3

Candidate Starts for Muntaha_21:

(Start: 3 @14529 has 21 MA's), (7, 14562), (14, 14625), (23, 14694), (32, 14730), (34, 14742), (36, 14754), (51, 14862), (57, 14892), (61, 14931), (63, 14946),

Gene: Navo_46 Start: 26254, Stop: 26718, Start Num: 1

Candidate Starts for Navo_46:

(Start: 1 @26254 has 54 MA's), (9, 26299), (12, 26335), (16, 26362), (17, 26374), (23, 26416), (29, 26437), (30, 26440), (31, 26449), (33, 26458), (41, 26512), (45, 26551), (56, 26611), (59, 26647), (63, 26680), (64, 26698),

Gene: NiceHouse_58 Start: 32121, Stop: 32525, Start Num: 6

Candidate Starts for NiceHouse_58:

(Start: 6 @32121 has 1 MA's), (7, 32136), (10, 32178), (11, 32181), (12, 32184), (18, 32223), (21, 32244), (26, 32262), (28, 32268), (30, 32277), (33, 32295), (34, 32301), (42, 32361), (46, 32391), (48, 32406), (50, 32418), (53, 32439), (54, 32442), (59, 32484),

Gene: NootNoot_44 Start: 25210, Stop: 25674, Start Num: 1

Candidate Starts for NootNoot_44:

(Start: 1 @25210 has 54 MA's), (9, 25255), (12, 25291), (16, 25318), (17, 25330), (23, 25372), (30, 25396), (33, 25414), (41, 25468), (45, 25507), (56, 25567), (59, 25603), (63, 25636), (64, 25654),

Gene: PacManQ_49 Start: 26326, Stop: 26790, Start Num: 1

Candidate Starts for PacManQ_49:

(Start: 1 @26326 has 54 MA's), (7, 26359), (9, 26371), (12, 26407), (16, 26434), (22, 26485), (23, 26488), (30, 26512), (33, 26530), (36, 26548), (38, 26560), (40, 26572), (41, 26584), (49, 26644), (56, 26683), (63, 26752), (64, 26770),

Gene: Paradiddles_44 Start: 25471, Stop: 25935, Start Num: 1

Candidate Starts for Paradiddles_44:

(Start: 1 @25471 has 54 MA's), (9, 25516), (12, 25552), (16, 25579), (17, 25591), (23, 25633), (30, 25657), (33, 25675), (41, 25729), (45, 25768), (56, 25828), (59, 25864), (63, 25897), (64, 25915),

Gene: Patelgo_26 Start: 14563, Stop: 15021, Start Num: 3

Candidate Starts for Patelgo_26:

(Start: 3 @14563 has 21 MA's), (7, 14596), (8, 14602), (9, 14608), (16, 14671), (19, 14698), (33, 14770), (36, 14788), (41, 14824), (57, 14926), (59, 14959), (63, 14989),

Gene: Peebs_47 Start: 26683, Stop: 27147, Start Num: 1

Candidate Starts for Peebs_47:

(Start: 1 @26683 has 54 MA's), (7, 26716), (9, 26728), (12, 26764), (16, 26791), (22, 26842), (23, 26845), (30, 26869), (33, 26887), (36, 26905), (38, 26917), (40, 26929), (41, 26941), (49, 27001), (56, 27040), (63, 27109), (64, 27127),

Gene: Pepperwood_48 Start: 26816, Stop: 27280, Start Num: 1

Candidate Starts for Pepperwood_48:

(Start: 1 @26816 has 54 MA's), (7, 26849), (9, 26861), (12, 26897), (16, 26924), (22, 26975), (23, 26978), (30, 27002), (33, 27020), (36, 27038), (38, 27050), (40, 27062), (41, 27074), (49, 27134), (56, 27173), (63, 27242), (64, 27260),

Gene: Persimmon_44 Start: 25185, Stop: 25649, Start Num: 1

Candidate Starts for Persimmon_44:

(Start: 1 @25185 has 54 MA's), (9, 25230), (12, 25266), (16, 25293), (17, 25305), (23, 25347), (30, 25371), (33, 25389), (41, 25443), (45, 25482), (56, 25542), (59, 25578), (63, 25611), (64, 25629),

Gene: Phredrick_27 Start: 14818, Stop: 15276, Start Num: 3

Candidate Starts for Phredrick_27:

(Start: 3 @14818 has 21 MA's), (9, 14863), (13, 14905), (16, 14926), (19, 14953), (23, 14983), (32, 15019), (33, 15025), (36, 15043), (47, 15127), (57, 15181), (59, 15214), (63, 15244),

Gene: PinkiePie_46 Start: 26296, Stop: 26760, Start Num: 1

Candidate Starts for PinkiePie_46:

(Start: 1 @26296 has 54 MA's), (9, 26341), (12, 26377), (16, 26404), (17, 26416), (23, 26458), (30, 26482), (33, 26500), (41, 26554), (45, 26593), (56, 26653), (59, 26689), (63, 26722), (64, 26740),

Gene: PumpkinSpice_49 Start: 26282, Stop: 26740, Start Num: 1

Candidate Starts for PumpkinSpice_49:

(Start: 1 @26282 has 54 MA's), (12, 26363), (15, 26381), (16, 26390), (23, 26444), (26, 26453), (29, 26465), (32, 26480), (33, 26486), (36, 26504), (56, 26639), (59, 26675), (63, 26708),

Gene: Quaran19_50 Start: 26273, Stop: 26731, Start Num: 1

Candidate Starts for Quaran19_50:

(Start: 1 @26273 has 54 MA's), (12, 26354), (15, 26372), (16, 26381), (23, 26435), (26, 26444), (33, 26477), (36, 26495), (41, 26531), (56, 26630), (59, 26666), (63, 26699),

Gene: SaltySpittoon_50 Start: 26282, Stop: 26740, Start Num: 1

Candidate Starts for SaltySpittoon_50:

(Start: 1 @26282 has 54 MA's), (12, 26363), (15, 26381), (16, 26390), (23, 26444), (26, 26453), (33, 26486), (36, 26504), (41, 26540), (56, 26639), (59, 26675), (63, 26708),

Gene: Samisti12_48 Start: 28119, Stop: 28583, Start Num: 1

Candidate Starts for Samisti12_48:

(Start: 1 @28119 has 54 MA's), (7, 28152), (9, 28164), (12, 28200), (16, 28227), (22, 28278), (23, 28281), (30, 28305), (33, 28323), (36, 28341), (38, 28353), (40, 28365), (41, 28377), (49, 28437), (56, 28476), (63, 28545), (64, 28563),

Gene: SeresaTree_25 Start: 14240, Stop: 14674, Start Num: 3

Candidate Starts for SeresaTree_25:

(Start: 3 @14240 has 21 MA's), (Start: 4 @14243 has 5 MA's), (7, 14273), (9, 14285), (12, 14321), (13, 14327), (32, 14441), (33, 14447), (36, 14465), (47, 14549), (57, 14603),

Gene: Sham_23 Start: 15299, Stop: 15733, Start Num: 3

Candidate Starts for Sham_23:

(Start: 3 @15299 has 21 MA's), (Start: 4 @15302 has 5 MA's), (7, 15332), (9, 15344), (12, 15380), (32, 15500), (33, 15506), (36, 15524), (47, 15608), (57, 15662),

Gene: Sollertia_50 Start: 26251, Stop: 26709, Start Num: 1

Candidate Starts for Sollertia_50:

(Start: 1 @26251 has 54 MA's), (12, 26332), (16, 26359), (23, 26413), (25, 26419), (32, 26449), (33, 26455), (36, 26473), (41, 26509), (56, 26608), (57, 26611), (59, 26644), (60, 26650), (63, 26677),

Gene: SparkleGoddess_26 Start: 15007, Stop: 15465, Start Num: 3

Candidate Starts for SparkleGoddess_26:

(Start: 3 @15007 has 21 MA's), (9, 15052), (15, 15106), (16, 15115), (27, 15184), (32, 15208), (33, 15214), (36, 15232), (55, 15364), (57, 15370), (59, 15403), (63, 15433),

Gene: Spelly_50 Start: 26237, Stop: 26695, Start Num: 1

Candidate Starts for Spelly_50:

(Start: 1 @26237 has 54 MA's), (12, 26318), (15, 26336), (16, 26345), (23, 26399), (26, 26408), (33, 26441), (36, 26459), (41, 26495), (56, 26594), (59, 26630), (63, 26663),

Gene: Spilled_51 Start: 26354, Stop: 26812, Start Num: 1

Candidate Starts for Spilled_51:

(Start: 1 @26354 has 54 MA's), (12, 26435), (15, 26453), (16, 26462), (23, 26516), (26, 26525), (33, 26558), (36, 26576), (56, 26711), (59, 26747), (63, 26780),

Gene: Squillium_47 Start: 26297, Stop: 26761, Start Num: 1

Candidate Starts for Squillium_47:

(Start: 1 @26297 has 54 MA's), (9, 26342), (12, 26378), (16, 26405), (17, 26417), (23, 26459), (30, 26483), (33, 26501), (41, 26555), (45, 26594), (56, 26654), (59, 26690), (63, 26723), (64, 26741),

Gene: Stanimal_50 Start: 26140, Stop: 26598, Start Num: 1

Candidate Starts for Stanimal_50:

(Start: 1 @26140 has 54 MA's), (12, 26221), (16, 26248), (23, 26302), (25, 26308), (32, 26338), (33, 26344), (36, 26362), (41, 26398), (56, 26497), (57, 26500), (59, 26533), (60, 26539), (63, 26566),

Gene: StarPlatinum_50 Start: 26778, Stop: 27236, Start Num: 1

Candidate Starts for StarPlatinum_50:

(Start: 1 @26778 has 54 MA's), (12, 26859), (15, 26877), (16, 26886), (23, 26940), (33, 26982), (35, 26994), (36, 27000), (41, 27036), (56, 27135), (57, 27138), (59, 27171), (63, 27204),

Gene: Starbow_48 Start: 26258, Stop: 26716, Start Num: 1

Candidate Starts for Starbow_48:

(Start: 1 @26258 has 54 MA's), (12, 26339), (15, 26357), (16, 26366), (23, 26420), (26, 26429), (33, 26462), (36, 26480), (41, 26516), (56, 26615), (59, 26651), (63, 26684),

Gene: Stigma_26 Start: 15008, Stop: 15466, Start Num: 3

Candidate Starts for Stigma_26:

(Start: 3 @15008 has 21 MA's), (9, 15053), (15, 15107), (16, 15116), (27, 15185), (32, 15209), (33, 15215), (36, 15233), (55, 15365), (57, 15371), (59, 15404), (63, 15434),

Gene: Sushi23_48 Start: 27041, Stop: 27505, Start Num: 1

Candidate Starts for Sushi23_48:

(Start: 1 @27041 has 54 MA's), (7, 27074), (9, 27086), (12, 27122), (16, 27149), (22, 27200), (23, 27203), (30, 27227), (33, 27245), (36, 27263), (38, 27275), (40, 27287), (41, 27299), (49, 27359), (56, 27398), (63, 27467), (64, 27485),

Gene: Targaryen_49 Start: 27811, Stop: 28275, Start Num: 1

Candidate Starts for Targaryen_49:

(Start: 1 @27811 has 54 MA's), (12, 27892), (16, 27919), (22, 27970), (23, 27973), (30, 27997), (33, 28015), (41, 28069), (46, 28111), (48, 28126), (56, 28168), (63, 28237), (64, 28255),

Gene: Teutsch_48 Start: 27310, Stop: 27774, Start Num: 1

Candidate Starts for Teutsch_48:

(Start: 1 @27310 has 54 MA's), (7, 27343), (9, 27355), (12, 27391), (16, 27418), (22, 27469), (23, 27472), (30, 27496), (33, 27514), (36, 27532), (38, 27544), (40, 27556), (41, 27568), (49, 27628), (56, 27667), (63, 27736), (64, 27754),

Gene: TomSawyer_48 Start: 25876, Stop: 26334, Start Num: 1

Candidate Starts for TomSawyer_48:

(Start: 1 @25876 has 54 MA's), (12, 25957), (15, 25975), (16, 25984), (23, 26038), (26, 26047), (33, 26080), (36, 26098), (41, 26134), (56, 26233), (59, 26269), (63, 26302),

Gene: Tomas_52 Start: 28603, Stop: 29055, Start Num: 4

Candidate Starts for Tomas_52:

(Start: 4 @28603 has 5 MA's), (9, 28642), (12, 28678), (15, 28696), (16, 28705), (23, 28759), (30, 28783), (36, 28819), (38, 28831), (41, 28855), (43, 28870), (56, 28954), (63, 29023),

Gene: Tribute_46 Start: 26510, Stop: 26974, Start Num: 1

Candidate Starts for Tribute_46:

(Start: 1 @26510 has 54 MA's), (7, 26543), (9, 26555), (12, 26591), (16, 26618), (22, 26669), (23, 26672), (30, 26696), (33, 26714), (36, 26732), (38, 26744), (40, 26756), (41, 26768), (49, 26828), (56, 26867), (63, 26936), (64, 26954),

Gene: Trina_70 Start: 35890, Stop: 36291, Start Num: 5

Candidate Starts for Trina_70:

(Start: 5 @35890 has 1 MA's), (9, 35923), (36, 36091), (37, 36094), (42, 36139), (50, 36196), (54, 36220),

Gene: TunaTartare_24 Start: 15589, Stop: 16023, Start Num: 3

Candidate Starts for TunaTartare_24:

(Start: 3 @15589 has 21 MA's), (Start: 4 @15592 has 5 MA's), (7, 15622), (9, 15634), (12, 15670), (19, 15724), (33, 15796), (36, 15814), (47, 15898), (57, 15952), (62, 16003),

Gene: Wakanda_21 Start: 14455, Stop: 14904, Start Num: 3

Candidate Starts for Wakanda_21:

(Start: 3 @14455 has 21 MA's), (7, 14488), (14, 14551), (23, 14620), (32, 14656), (34, 14668), (36, 14680), (51, 14788), (57, 14818), (61, 14857), (63, 14872),

Gene: Warpy_52 Start: 27275, Stop: 27739, Start Num: 1

Candidate Starts for Warpy_52:

(Start: 1 @27275 has 54 MA's), (12, 27356), (16, 27383), (23, 27437), (30, 27461), (33, 27479), (41, 27533), (46, 27575), (48, 27590), (56, 27632), (63, 27701), (64, 27719),

Gene: Watermoore_48 Start: 27517, Stop: 27981, Start Num: 1

Candidate Starts for Watermoore_48:

(Start: 1 @27517 has 54 MA's), (7, 27550), (9, 27562), (12, 27598), (16, 27625), (22, 27676), (23, 27679), (30, 27703), (33, 27721), (36, 27739), (38, 27751), (40, 27763), (41, 27775), (49, 27835), (56, 27874), (63, 27943), (64, 27961),

Gene: WhereRU_47 Start: 25776, Stop: 26240, Start Num: 1

Candidate Starts for WhereRU_47:

(Start: 1 @25776 has 54 MA's), (9, 25821), (12, 25857), (16, 25884), (17, 25896), (23, 25938), (30, 25962), (33, 25980), (41, 26034), (45, 26073), (56, 26133), (59, 26169), (63, 26202), (64, 26220),

Gene: Wipeout_48 Start: 26627, Stop: 27085, Start Num: 1

Candidate Starts for Wipeout_48:

(Start: 1 @26627 has 54 MA's), (12, 26708), (15, 26726), (16, 26735), (23, 26789), (26, 26798), (33, 26831), (36, 26849), (41, 26885), (56, 26984), (59, 27020), (63, 27053),

Gene: Wofford_49 Start: 27282, Stop: 27740, Start Num: 1

Candidate Starts for Wofford_49:

(Start: 1 @27282 has 54 MA's), (12, 27363), (16, 27390), (23, 27444), (32, 27480), (33, 27486), (36, 27504), (38, 27516), (41, 27540), (49, 27600), (55, 27636), (56, 27639), (59, 27675), (63, 27708),

Gene: Yaboi_50 Start: 26228, Stop: 26686, Start Num: 1

Candidate Starts for Yaboi_50:

(Start: 1 @26228 has 54 MA's), (12, 26309), (16, 26336), (23, 26390), (25, 26396), (32, 26426), (33, 26432), (36, 26450), (41, 26486), (56, 26585), (57, 26588), (59, 26621), (60, 26627), (63, 26654),