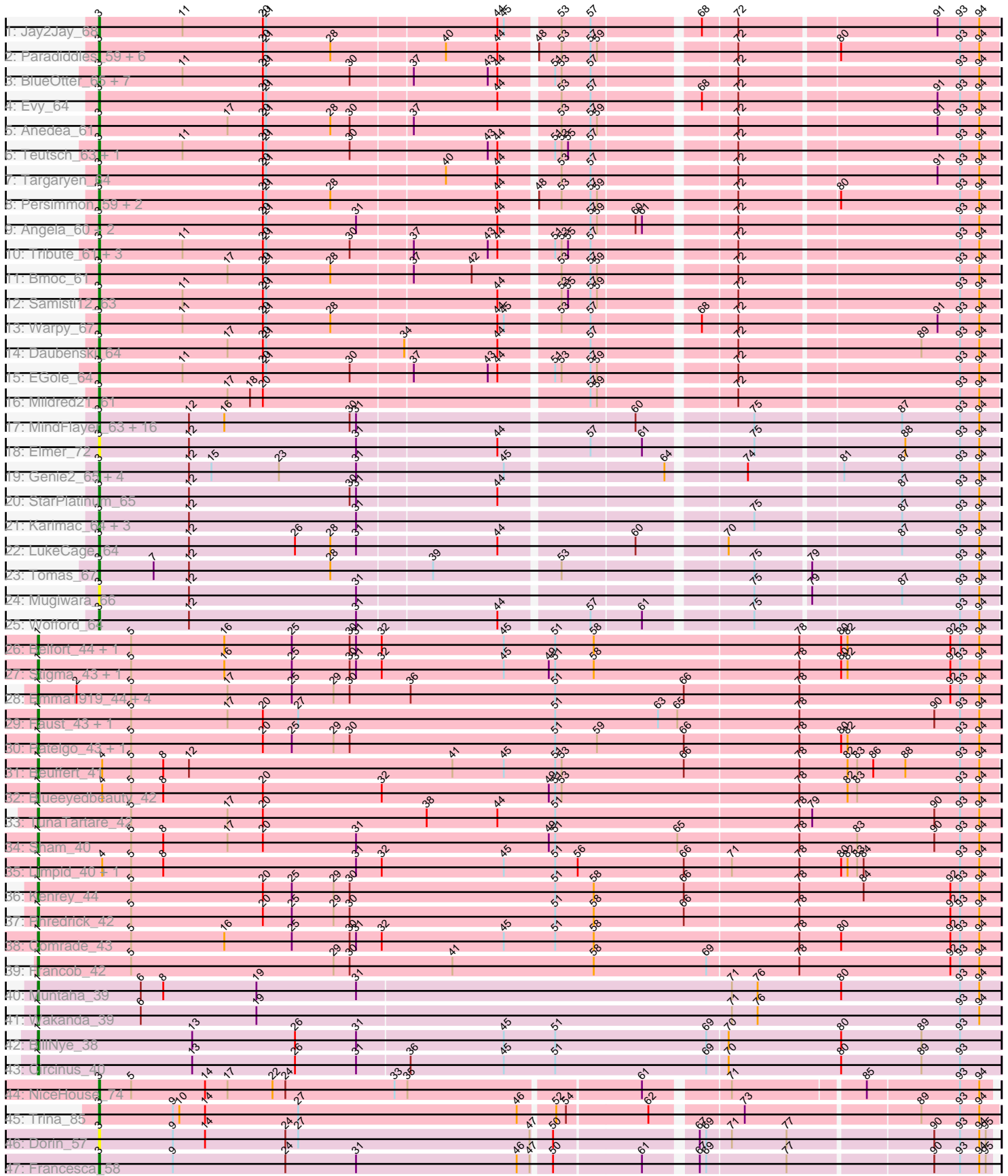


Pham 168121



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 168121 Report

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

Pham number 168121 has 100 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Jay2Jay_68
- Track 2 : Paradiddles_59, NootNoot_59, Braelyn_62, Navo_61, Squillium_62, PinkiePie_61, Liandry_62
- Track 3 : BlueOtter_65, Cursive_61, Leo04_64, HangryHippo_65, PacManQ_64, Watermoore_63, Cross_63, Lululemon_64
- Track 4 : Evy_64
- Track 5 : Anedea_61
- Track 6 : Deutsch_63, Peebs_62
- Track 7 : Targaryen_64
- Track 8 : Persimmon_59, WhereRU_62, Bartholomune_61
- Track 9 : Angela_60, MulchMansion_60, LilMartin_60
- Track 10 : Tribute_61, Pepperwood_63, Larnav_68, Sushi23_63
- Track 11 : Bmoc_61
- Track 12 : Samisti12_63
- Track 13 : Warpy_67
- Track 14 : Daubenski_64
- Track 15 : EGole_64
- Track 16 : Mildred21_61
- Track 17 : MindFlayer_63, Bordeaux_63, Battuta_63, Birchlyn_62, SaltySpitoon_65, Amabiko_65, TomSawyer_63, Spelly_65, Gibbi_69, Spilled_66, JimJam_65, PumpkinSpice_64, Wipeout_63, Jollison_70, KentuckyRacer_69, Starbow_63, Quaran19_65
- Track 18 : Elmer_72
- Track 19 : Genie2_65, Stanimal_65, Sollertia_65, Yaboi_65, BoomerJR_65
- Track 20 : StarPlatinum_65
- Track 21 : Karimac_64, IchabodCrane_62, Enygma_65, CeilingFan_67
- Track 22 : LukeCage_64
- Track 23 : Tomas_67
- Track 24 : Mugiwara_66
- Track 25 : Wofford_64
- Track 26 : Belfort_44, Karp_42
- Track 27 : Stigma_43, SparkleGoddess_43
- Track 28 : Emma1919_44, Jada_42, Gilson_44, Forrest_44, MeganTheeKilla_42
- Track 29 : Faust_43, SeresaTree_42
- Track 30 : Patelgo_43, Moab_43
- Track 31 : Beuffert_41
- Track 32 : Blueeyedbeauty_42

- Track 33 : TunaTartare_42
- Track 34 : Sham_40
- Track 35 : Limpid_40, Annadreamy_40
- Track 36 : Kenrey_44
- Track 37 : Phredrick_42
- Track 38 : Comrade_43
- Track 39 : Francob_42
- Track 40 : Muntaha_39
- Track 41 : Wakanda_39
- Track 42 : BillNye_38
- Track 43 : Circinus_40
- Track 44 : NiceHouse_74
- Track 45 : Trina_85
- Track 46 : Dorin_57
- Track 47 : Francesca_58

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

The start number called the most often in the published annotations is 3, it was called in 60 of the 86 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amabiko_65, Anedea_61, Angela_60, Bartholomune_61, Battuta_63, Birchlyn_62, BlueOtter_65, Bmoc_61, BoomerJR_65, Bordeaux_63, Braelyn_62, CeilingFan_67, Cross_63, Cursive_61, Daubenski_64, Dorin_57, EGole_64, Elmer_72, Enygma_65, Evy_64, Francesca_58, Genie2_65, Gibbi_69, HangryHippo_65, IchabodCrane_62, Jay2Jay_68, JimJam_65, Jollison_70, Karimac_64, KentuckyRacer_69, Larnav_68, Leo04_64, Liandry_62, LilMartin_60, LukeCage_64, Lululemon_64, Mildred21_61, MindFlayer_63, Mugiwara_66, MulchMansion_60, Navo_61, NiceHouse_74, NootNoot_59, PacManQ_64, Paradiddles_59, Peebs_62, Pepperwood_63, Persimmon_59, PinkiePie_61, PumpkinSpice_64, Quarant19_65, SaltySpittoon_65, Samisti12_63, Sollertia_65, Spelly_65, Spilled_66, Squillium_62, Stanimal_65, StarPlatinum_65, Starbow_63, Sushi23_63, Targaryen_64, Teutsch_63, TomSawyer_63, Tomas_67, Tribute_61, Trina_85, Warpy_67, Watermoore_63, WhereRU_62, Wipeout_63, Wofford_64, Yaboi_65,

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

-

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

- Annadreamy_40, Belfort_44, Beuffert_41, BillNye_38, Blueeyedbeauty_42, Circinus_40, Comrade_43, Emma1919_44, Faust_43, Forrest_44, Francob_42, Gilson_44, Jada_42, Karp_42, Kenrey_44, Limpid_40, MeganTheeKilla_42, Moab_43, Muntaha_39, Patelgo_43, Phredrick_42, SeresaTree_42, Sham_40, SparkleGoddess_43, Stigma_43, TunaTartare_42, Wakanda_39,

Summary by start number:

Start 1:

- Found in 27 of 100 (27.0%) of genes in pham

- Manual Annotations of this start: 26 of 86
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy_40 (BK1), Belfort_44 (BK1), Beuffert_41 (BK1), BillNye_38 (BK2), Blueeyedbeauty_42 (BK1), Circinus_40 (BK2), Comrade_43 (BK1), Emma1919_44 (BK1), Faust_43 (BK1), Forrest_44 (BK1), Francob_42 (BK1), Gilson_44 (BK1), Jada_42 (BK1), Karp_42 (BK1), Kenrey_44 (BK1), Limpid_40 (BK1), MeganTheeKilla_42 (BK1), Moab_43 (BK1), Muntaha_39 (BK2), Patelgo_43 (BK1), Phredrick_42 (BK1), SeresaTree_42 (BK1), Sham_40 (BK1), SparkleGoddess_43 (BK1), Stigma_43 (BK1), TunaTartare_42 (BK1), Wakanda_39 (BK2),

Start 3:

- Found in 73 of 100 (73.0%) of genes in pham
- Manual Annotations of this start: 60 of 86
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amabiko_65 (BE2), Anedea_61 (BE1), Angela_60 (BE1), Bartholomune_61 (BE1), Battuta_63 (BE2), Birchlyn_62 (BE2), BlueOtter_65 (BE1), Bmoc_61 (BE1), BoomerJR_65 (BE2), Bordeaux_63 (BE2), Braelyn_62 (BE1), CeilingFan_67 (BE2), Cross_63 (BE1), Cursive_61 (BE1), Daubenski_64 (BE1), Dorin_57 (CG), EGole_64 (BE1), Elmer_72 (BE2), Enygma_65 (BE2), Evy_64 (BE1), Francesca_58 (CG), Genie2_65 (BE2), Gibbi_69 (BE2), HangryHippo_65 (BE1), IchabodCrane_62 (BE2), Jay2Jay_68 (BE1), JimJam_65 (BE2), Jollison_70 (BE2), Karimac_64 (BE2), KentuckyRacer_69 (BE2), Larnav_68 (BE1), Leo04_64 (BE1), Liandry_62 (BE1), LilMartin_60 (BE1), LukeCage_64 (BE2), Lululemon_64 (BE1), Mildred21_61 (BE1), MindFlayer_63 (BE2), Mugiwara_66 (BE2), MulchMansion_60 (BE1), Navo_61 (BE1), NiceHouse_74 (CE), NootNoot_59 (BE1), PacManQ_64 (BE1), Paradiddles_59 (BE1), Peebs_62 (BE1), Pepperwood_63 (BE1), Persimmon_59 (BE1), PinkiePie_61 (BE1), PumpkinSpice_64 (BE2), Quarant19_65 (BE2), SaltySpittoon_65 (BE2), Samisti12_63 (BE1), Sollertia_65 (BE2), Spelly_65 (BE2), Spilled_66 (BE2), Squillium_62 (BE1), Stanimal_65 (BE2), StarPlatinum_65 (BE2), Starbow_63 (BE2), Sushi23_63 (BE1), Targaryen_64 (BE1), Teutsch_63 (BE1), TomSawyer_63 (BE2), Tomas_67 (BE2), Tribute_61 (BE1), Trina_85 (CE), Warpy_67 (BE1), Watermoore_63 (BE1), WhereRU_62 (BE1), Wipeout_63 (BE2), Wofford_64 (BE2), Yaboi_65 (BE2),

Summary by clusters:

There are 6 clusters represented in this pham: CG, CE, BK1, BK2, BE2, BE1,

Info for manual annotations of cluster BE1:

- Start number 3 was manually annotated 31 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 3 was manually annotated 26 times for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 1 was manually annotated 22 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 1 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster CE:

- Start number 3 was manually annotated 2 times for cluster CE.

Info for manual annotations of cluster CG:

•Start number 3 was manually annotated 1 time for cluster CG.

Gene Information:

Gene: Amabiko_65 Start: 44090, Stop: 44887, Start Num: 3

Candidate Starts for Amabiko_65:

(Start: 3 @44090 has 60 MA's), (12, 44174), (16, 44207), (30, 44324), (31, 44330), (60, 44573), (75, 44669), (87, 44798), (93, 44852), (94, 44870),

Gene: Anedea_61 Start: 43637, Stop: 44434, Start Num: 3

Candidate Starts for Anedea_61:

(Start: 3 @43637 has 60 MA's), (17, 43757), (20, 43790), (21, 43793), (28, 43853), (30, 43871), (37, 43925), (53, 44054), (57, 44081), (59, 44087), (72, 44201), (91, 44378), (93, 44399), (94, 44417),

Gene: Angela_60 Start: 43095, Stop: 43892, Start Num: 3

Candidate Starts for Angela_60:

(Start: 3 @43095 has 60 MA's), (20, 43248), (21, 43251), (31, 43335), (44, 43461), (57, 43539), (59, 43545), (60, 43578), (61, 43584), (72, 43659), (93, 43857), (94, 43875),

Gene: Annadreamy_40 Start: 32790, Stop: 33683, Start Num: 1

Candidate Starts for Annadreamy_40:

(Start: 1 @32790 has 26 MA's), (4, 32850), (5, 32877), (8, 32907), (31, 33087), (32, 33111), (45, 33225), (51, 33273), (56, 33294), (66, 33393), (71, 33435), (78, 33498), (80, 33537), (82, 33543), (83, 33552), (84, 33558), (93, 33648), (94, 33666),

Gene: Bartholomune_61 Start: 43401, Stop: 44198, Start Num: 3

Candidate Starts for Bartholomune_61:

(Start: 3 @43401 has 60 MA's), (20, 43554), (21, 43557), (28, 43617), (44, 43767), (48, 43797), (53, 43818), (57, 43845), (59, 43851), (72, 43965), (80, 44052), (93, 44163), (94, 44181),

Gene: Battuta_63 Start: 44064, Stop: 44861, Start Num: 3

Candidate Starts for Battuta_63:

(Start: 3 @44064 has 60 MA's), (12, 44148), (16, 44181), (30, 44298), (31, 44304), (60, 44547), (75, 44643), (87, 44772), (93, 44826), (94, 44844),

Gene: Belfort_44 Start: 35282, Stop: 36178, Start Num: 1

Candidate Starts for Belfort_44:

(Start: 1 @35282 has 26 MA's), (5, 35369), (16, 35456), (25, 35519), (30, 35573), (31, 35579), (32, 35603), (45, 35717), (51, 35765), (58, 35801), (78, 35990), (80, 36029), (82, 36035), (92, 36131), (93, 36140), (94, 36158),

Gene: Beuffert_41 Start: 33886, Stop: 34779, Start Num: 1

Candidate Starts for Beuffert_41:

(Start: 1 @33886 has 26 MA's), (4, 33946), (5, 33973), (8, 34003), (12, 34027), (41, 34273), (45, 34321), (51, 34369), (53, 34375), (66, 34489), (78, 34594), (82, 34639), (83, 34648), (86, 34663), (88, 34693), (93, 34744), (94, 34762),

Gene: BillNye_38 Start: 36153, Stop: 37046, Start Num: 1

Candidate Starts for BillNye_38:

(Start: 1 @36153 has 26 MA's), (13, 36297), (26, 36393), (31, 36450), (45, 36585), (51, 36633), (69, 36774), (70, 36792), (80, 36897), (89, 36972), (93, 37008),

Gene: Birchlyn_62 Start: 41947, Stop: 42744, Start Num: 3

Candidate Starts for Birchlyn_62:

(Start: 3 @41947 has 60 MA's), (12, 42031), (16, 42064), (30, 42181), (31, 42187), (60, 42430), (75, 42526), (87, 42655), (93, 42709), (94, 42727),

Gene: BlueOtter_65 Start: 44775, Stop: 45572, Start Num: 3

Candidate Starts for BlueOtter_65:

(Start: 3 @44775 has 60 MA's), (11, 44853), (20, 44928), (21, 44931), (30, 45009), (37, 45063), (43, 45132), (44, 45141), (51, 45186), (53, 45192), (57, 45219), (72, 45339), (93, 45537), (94, 45555),

Gene: Blueeyedbeauty_42 Start: 33278, Stop: 34171, Start Num: 1

Candidate Starts for Blueeyedbeauty_42:

(Start: 1 @33278 has 26 MA's), (4, 33338), (5, 33365), (8, 33395), (20, 33488), (32, 33599), (49, 33755), (51, 33761), (53, 33767), (78, 33986), (82, 34031), (83, 34040), (93, 34136), (94, 34154),

Gene: Bmoc_61 Start: 43422, Stop: 44219, Start Num: 3

Candidate Starts for Bmoc_61:

(Start: 3 @43422 has 60 MA's), (17, 43542), (20, 43575), (21, 43578), (28, 43638), (37, 43710), (42, 43764), (53, 43839), (57, 43866), (59, 43872), (72, 43986), (93, 44184), (94, 44202),

Gene: BoomerJR_65 Start: 43941, Stop: 44738, Start Num: 3

Candidate Starts for BoomerJR_65:

(Start: 3 @43941 has 60 MA's), (12, 44025), (15, 44046), (23, 44109), (31, 44181), (45, 44313), (64, 44451), (74, 44514), (81, 44595), (87, 44649), (93, 44703), (94, 44721),

Gene: Bordeaux_63 Start: 44219, Stop: 45016, Start Num: 3

Candidate Starts for Bordeaux_63:

(Start: 3 @44219 has 60 MA's), (12, 44303), (16, 44336), (30, 44453), (31, 44459), (60, 44702), (75, 44798), (87, 44927), (93, 44981), (94, 44999),

Gene: Braelyn_62 Start: 44168, Stop: 44965, Start Num: 3

Candidate Starts for Braelyn_62:

(Start: 3 @44168 has 60 MA's), (20, 44321), (21, 44324), (28, 44384), (40, 44486), (44, 44534), (48, 44564), (53, 44585), (57, 44612), (59, 44618), (72, 44732), (80, 44819), (93, 44930), (94, 44948),

Gene: CeilingFan_67 Start: 43979, Stop: 44776, Start Num: 3

Candidate Starts for CeilingFan_67:

(Start: 3 @43979 has 60 MA's), (12, 44063), (31, 44219), (75, 44558), (87, 44687), (93, 44741), (94, 44759),

Gene: Circinus_40 Start: 36289, Stop: 37182, Start Num: 1

Candidate Starts for Circinus_40:

(Start: 1 @36289 has 26 MA's), (13, 36433), (26, 36529), (31, 36586), (36, 36634), (45, 36721), (51, 36769), (69, 36910), (70, 36928), (80, 37033), (89, 37108), (93, 37144),

Gene: Comrade_43 Start: 34897, Stop: 35793, Start Num: 1

Candidate Starts for Comrade_43:

(Start: 1 @34897 has 26 MA's), (5, 34984), (16, 35071), (25, 35134), (30, 35188), (31, 35194), (32, 35218), (45, 35332), (51, 35380), (58, 35416), (78, 35605), (80, 35644), (92, 35746), (93, 35755), (94, 35773),

Gene: Cross_63 Start: 44776, Stop: 45573, Start Num: 3

Candidate Starts for Cross_63:

(Start: 3 @44776 has 60 MA's), (11, 44854), (20, 44929), (21, 44932), (30, 45010), (37, 45064), (43, 45133), (44, 45142), (51, 45187), (53, 45193), (57, 45220), (72, 45340), (93, 45538), (94, 45556),

Gene: Cursive_61 Start: 44301, Stop: 45098, Start Num: 3

Candidate Starts for Cursive_61:

(Start: 3 @44301 has 60 MA's), (11, 44379), (20, 44454), (21, 44457), (30, 44535), (37, 44589), (43, 44658), (44, 44667), (51, 44712), (53, 44718), (57, 44745), (72, 44865), (93, 45063), (94, 45081),

Gene: Daubenski_64 Start: 44506, Stop: 45303, Start Num: 3

Candidate Starts for Daubenski_64:

(Start: 3 @44506 has 60 MA's), (17, 44626), (20, 44659), (21, 44662), (34, 44788), (44, 44872), (57, 44950), (72, 45070), (89, 45232), (93, 45268), (94, 45286),

Gene: Dorin_57 Start: 46441, Stop: 47238, Start Num: 3

Candidate Starts for Dorin_57:

(Start: 3 @46441 has 60 MA's), (9, 46510), (14, 46540), (24, 46615), (27, 46627), (47, 46843), (50, 46858), (67, 46978), (69, 46984), (71, 47005), (77, 47056), (90, 47185), (93, 47209), (94, 47227), (95, 47233),

Gene: EGole_64 Start: 45725, Stop: 46522, Start Num: 3

Candidate Starts for EGole_64:

(Start: 3 @45725 has 60 MA's), (11, 45803), (20, 45878), (21, 45881), (30, 45959), (37, 46013), (43, 46082), (44, 46091), (51, 46136), (53, 46142), (57, 46169), (59, 46175), (72, 46289), (93, 46487), (94, 46505),

Gene: Elmer_72 Start: 45154, Stop: 45951, Start Num: 3

Candidate Starts for Elmer_72:

(Start: 3 @45154 has 60 MA's), (12, 45238), (31, 45394), (44, 45520), (57, 45598), (61, 45643), (75, 45733), (88, 45865), (93, 45916), (94, 45934),

Gene: Emma1919_44 Start: 33688, Stop: 34584, Start Num: 1

Candidate Starts for Emma1919_44:

(Start: 1 @33688 has 26 MA's), (2, 33724), (5, 33775), (17, 33865), (25, 33925), (29, 33964), (30, 33979), (36, 34036), (51, 34171), (66, 34291), (78, 34396), (92, 34537), (93, 34546), (94, 34564),

Gene: Enygma_65 Start: 45891, Stop: 46688, Start Num: 3

Candidate Starts for Enygma_65:

(Start: 3 @45891 has 60 MA's), (12, 45975), (31, 46131), (75, 46470), (87, 46599), (93, 46653), (94, 46671),

Gene: Evy_64 Start: 44764, Stop: 45561, Start Num: 3

Candidate Starts for Evy_64:

(Start: 3 @44764 has 60 MA's), (20, 44917), (21, 44920), (44, 45130), (53, 45181), (57, 45208), (68, 45298), (72, 45328), (91, 45505), (93, 45526), (94, 45544),

Gene: Faust_43 Start: 34266, Stop: 35162, Start Num: 1

Candidate Starts for Faust_43:

(Start: 1 @34266 has 26 MA's), (5, 34353), (17, 34443), (20, 34476), (27, 34509), (51, 34749), (63, 34845), (65, 34863), (78, 34974), (90, 35100), (93, 35124), (94, 35142),

Gene: Forrest_44 Start: 33823, Stop: 34719, Start Num: 1

Candidate Starts for Forrest_44:

(Start: 1 @33823 has 26 MA's), (2, 33859), (5, 33910), (17, 34000), (25, 34060), (29, 34099), (30, 34114), (36, 34171), (51, 34306), (66, 34426), (78, 34531), (92, 34672), (93, 34681), (94, 34699),

Gene: Francesca_58 Start: 46582, Stop: 47379, Start Num: 3

Candidate Starts for Francesca_58:

(Start: 3 @46582 has 60 MA's), (9, 46651), (24, 46756), (31, 46822), (46, 46972), (47, 46984), (50, 46999), (61, 47077), (67, 47119), (69, 47125), (77, 47197), (90, 47326), (93, 47350), (94, 47368), (95, 47374),

Gene: Francob_42 Start: 33811, Stop: 34707, Start Num: 1

Candidate Starts for Francob_42:

(Start: 1 @33811 has 26 MA's), (5, 33898), (29, 34087), (30, 34102), (41, 34198), (58, 34330), (69, 34435), (78, 34519), (92, 34660), (93, 34669), (94, 34687),

Gene: Genie2_65 Start: 44055, Stop: 44852, Start Num: 3

Candidate Starts for Genie2_65:

(Start: 3 @44055 has 60 MA's), (12, 44139), (15, 44160), (23, 44223), (31, 44295), (45, 44427), (64, 44565), (74, 44628), (81, 44709), (87, 44763), (93, 44817), (94, 44835),

Gene: Gibbi_69 Start: 44202, Stop: 44999, Start Num: 3

Candidate Starts for Gibbi_69:

(Start: 3 @44202 has 60 MA's), (12, 44286), (16, 44319), (30, 44436), (31, 44442), (60, 44685), (75, 44781), (87, 44910), (93, 44964), (94, 44982),

Gene: Gilson_44 Start: 33641, Stop: 34537, Start Num: 1

Candidate Starts for Gilson_44:

(Start: 1 @33641 has 26 MA's), (2, 33677), (5, 33728), (17, 33818), (25, 33878), (29, 33917), (30, 33932), (36, 33989), (51, 34124), (66, 34244), (78, 34349), (92, 34490), (93, 34499), (94, 34517),

Gene: HangryHippo_65 Start: 44775, Stop: 45572, Start Num: 3

Candidate Starts for HangryHippo_65:

(Start: 3 @44775 has 60 MA's), (11, 44853), (20, 44928), (21, 44931), (30, 45009), (37, 45063), (43, 45132), (44, 45141), (51, 45186), (53, 45192), (57, 45219), (72, 45339), (93, 45537), (94, 45555),

Gene: IchabodCrane_62 Start: 43791, Stop: 44588, Start Num: 3

Candidate Starts for IchabodCrane_62:

(Start: 3 @43791 has 60 MA's), (12, 43875), (31, 44031), (75, 44370), (87, 44499), (93, 44553), (94, 44571),

Gene: Jada_42 Start: 33005, Stop: 33901, Start Num: 1

Candidate Starts for Jada_42:

(Start: 1 @33005 has 26 MA's), (2, 33041), (5, 33092), (17, 33182), (25, 33242), (29, 33281), (30, 33296), (36, 33353), (51, 33488), (66, 33608), (78, 33713), (92, 33854), (93, 33863), (94, 33881),

Gene: Jay2Jay_68 Start: 45617, Stop: 46414, Start Num: 3

Candidate Starts for Jay2Jay_68:

(Start: 3 @45617 has 60 MA's), (11, 45695), (20, 45770), (21, 45773), (44, 45983), (45, 45989), (53, 46034), (57, 46061), (68, 46151), (72, 46181), (91, 46358), (93, 46379), (94, 46397),

Gene: JimJam_65 Start: 44165, Stop: 44962, Start Num: 3

Candidate Starts for JimJam_65:

(Start: 3 @44165 has 60 MA's), (12, 44249), (16, 44282), (30, 44399), (31, 44405), (60, 44648), (75, 44744), (87, 44873), (93, 44927), (94, 44945),

Gene: Jollison_70 Start: 44047, Stop: 44844, Start Num: 3

Candidate Starts for Jollison_70:

(Start: 3 @44047 has 60 MA's), (12, 44131), (16, 44164), (30, 44281), (31, 44287), (60, 44530), (75, 44626), (87, 44755), (93, 44809), (94, 44827),

Gene: Karimac_64 Start: 44196, Stop: 44993, Start Num: 3

Candidate Starts for Karimac_64:

(Start: 3 @44196 has 60 MA's), (12, 44280), (31, 44436), (75, 44775), (87, 44904), (93, 44958), (94, 44976),

Gene: Karp_42 Start: 34497, Stop: 35393, Start Num: 1

Candidate Starts for Karp_42:

(Start: 1 @34497 has 26 MA's), (5, 34584), (16, 34671), (25, 34734), (30, 34788), (31, 34794), (32, 34818), (45, 34932), (51, 34980), (58, 35016), (78, 35205), (80, 35244), (82, 35250), (92, 35346), (93, 35355), (94, 35373),

Gene: Kenrey_44 Start: 33834, Stop: 34730, Start Num: 1

Candidate Starts for Kenrey_44:

(Start: 1 @33834 has 26 MA's), (5, 33921), (20, 34044), (25, 34071), (29, 34110), (30, 34125), (51, 34317), (58, 34353), (66, 34437), (78, 34542), (84, 34602), (92, 34683), (93, 34692), (94, 34710),

Gene: KentuckyRacer_69 Start: 43980, Stop: 44777, Start Num: 3

Candidate Starts for KentuckyRacer_69:

(Start: 3 @43980 has 60 MA's), (12, 44064), (16, 44097), (30, 44214), (31, 44220), (60, 44463), (75, 44559), (87, 44688), (93, 44742), (94, 44760),

Gene: Larnav_68 Start: 44760, Stop: 45557, Start Num: 3

Candidate Starts for Larnav_68:

(Start: 3 @44760 has 60 MA's), (11, 44838), (20, 44913), (21, 44916), (30, 44994), (37, 45048), (43, 45117), (44, 45126), (51, 45171), (53, 45177), (55, 45183), (57, 45204), (72, 45324), (93, 45522), (94, 45540),

Gene: Leo04_64 Start: 45275, Stop: 46072, Start Num: 3

Candidate Starts for Leo04_64:

(Start: 3 @45275 has 60 MA's), (11, 45353), (20, 45428), (21, 45431), (30, 45509), (37, 45563), (43, 45632), (44, 45641), (51, 45686), (53, 45692), (57, 45719), (72, 45839), (93, 46037), (94, 46055),

Gene: Liandry_62 Start: 44150, Stop: 44947, Start Num: 3

Candidate Starts for Liandry_62:

(Start: 3 @44150 has 60 MA's), (20, 44303), (21, 44306), (28, 44366), (40, 44468), (44, 44516), (48, 44546), (53, 44567), (57, 44594), (59, 44600), (72, 44714), (80, 44801), (93, 44912), (94, 44930),

Gene: LilMartin_60 Start: 43043, Stop: 43840, Start Num: 3

Candidate Starts for LilMartin_60:

(Start: 3 @43043 has 60 MA's), (20, 43196), (21, 43199), (31, 43283), (44, 43409), (57, 43487), (59, 43493), (60, 43526), (61, 43532), (72, 43607), (93, 43805), (94, 43823),

Gene: Limpid_40 Start: 32789, Stop: 33682, Start Num: 1

Candidate Starts for Limpid_40:

(Start: 1 @32789 has 26 MA's), (4, 32849), (5, 32876), (8, 32906), (31, 33086), (32, 33110), (45, 33224), (51, 33272), (56, 33293), (66, 33392), (71, 33434), (78, 33497), (80, 33536), (82, 33542), (83, 33551), (84, 33557), (93, 33647), (94, 33665),

Gene: LukeCage_64 Start: 43953, Stop: 44750, Start Num: 3

Candidate Starts for LukeCage_64:

(Start: 3 @43953 has 60 MA's), (12, 44037), (26, 44136), (28, 44169), (31, 44193), (44, 44319), (60, 44436), (70, 44508), (87, 44661), (93, 44715), (94, 44733),

Gene: Lululemon_64 Start: 44156, Stop: 44953, Start Num: 3

Candidate Starts for Lululemon_64:

(Start: 3 @44156 has 60 MA's), (11, 44234), (20, 44309), (21, 44312), (30, 44390), (37, 44444), (43, 44513), (44, 44522), (51, 44567), (53, 44573), (57, 44600), (72, 44720), (93, 44918), (94, 44936),

Gene: MeganTheeKilla_42 Start: 33002, Stop: 33898, Start Num: 1

Candidate Starts for MeganTheeKilla_42:

(Start: 1 @33002 has 26 MA's), (2, 33038), (5, 33089), (17, 33179), (25, 33239), (29, 33278), (30, 33293), (36, 33350), (51, 33485), (66, 33605), (78, 33710), (92, 33851), (93, 33860), (94, 33878),

Gene: Mildred21_61 Start: 43235, Stop: 44032, Start Num: 3

Candidate Starts for Mildred21_61:

(Start: 3 @43235 has 60 MA's), (17, 43355), (18, 43376), (20, 43388), (57, 43679), (59, 43685), (72, 43799), (93, 43997), (94, 44015),

Gene: MindFlayer_63 Start: 43698, Stop: 44495, Start Num: 3

Candidate Starts for MindFlayer_63:

(Start: 3 @43698 has 60 MA's), (12, 43782), (16, 43815), (30, 43932), (31, 43938), (60, 44181), (75, 44277), (87, 44406), (93, 44460), (94, 44478),

Gene: Moab_43 Start: 34860, Stop: 35756, Start Num: 1

Candidate Starts for Moab_43:

(Start: 1 @34860 has 26 MA's), (5, 34947), (20, 35070), (25, 35097), (29, 35136), (30, 35151), (51, 35343), (59, 35382), (66, 35463), (78, 35568), (80, 35607), (82, 35613), (93, 35718), (94, 35736),

Gene: Mugiwara_66 Start: 44434, Stop: 45231, Start Num: 3

Candidate Starts for Mugiwara_66:

(Start: 3 @44434 has 60 MA's), (12, 44518), (31, 44674), (75, 45013), (79, 45061), (87, 45142), (93, 45196), (94, 45214),

Gene: MulchMansion_60 Start: 43043, Stop: 43840, Start Num: 3

Candidate Starts for MulchMansion_60:

(Start: 3 @43043 has 60 MA's), (20, 43196), (21, 43199), (31, 43283), (44, 43409), (57, 43487), (59, 43493), (60, 43526), (61, 43532), (72, 43607), (93, 43805), (94, 43823),

Gene: Muntaha_39 Start: 34605, Stop: 35501, Start Num: 1

Candidate Starts for Muntaha_39:

(Start: 1 @34605 has 26 MA's), (6, 34701), (8, 34722), (19, 34809), (31, 34902), (71, 35250), (76, 35274), (80, 35352), (93, 35463), (94, 35481),

Gene: Navo_61 Start: 44069, Stop: 44866, Start Num: 3

Candidate Starts for Navo_61:

(Start: 3 @44069 has 60 MA's), (20, 44222), (21, 44225), (28, 44285), (40, 44387), (44, 44435), (48, 44465), (53, 44486), (57, 44513), (59, 44519), (72, 44633), (80, 44720), (93, 44831), (94, 44849),

Gene: NiceHouse_74 Start: 51836, Stop: 52630, Start Num: 3

Candidate Starts for NiceHouse_74:

(Start: 3 @51836 has 60 MA's), (5, 51866), (14, 51935), (17, 51956), (22, 51998), (24, 52010), (33, 52112), (35, 52124), (61, 52331), (71, 52400), (85, 52517), (93, 52601), (94, 52619),

Gene: NootNoot_59 Start: 43064, Stop: 43861, Start Num: 3

Candidate Starts for NootNoot_59:

(Start: 3 @43064 has 60 MA's), (20, 43217), (21, 43220), (28, 43280), (40, 43382), (44, 43430), (48, 43460), (53, 43481), (57, 43508), (59, 43514), (72, 43628), (80, 43715), (93, 43826), (94, 43844),

Gene: PacManQ_64 Start: 44156, Stop: 44953, Start Num: 3

Candidate Starts for PacManQ_64:

(Start: 3 @44156 has 60 MA's), (11, 44234), (20, 44309), (21, 44312), (30, 44390), (37, 44444), (43, 44513), (44, 44522), (51, 44567), (53, 44573), (57, 44600), (72, 44720), (93, 44918), (94, 44936),

Gene: Paradiddles_59 Start: 43325, Stop: 44122, Start Num: 3

Candidate Starts for Paradiddles_59:

(Start: 3 @43325 has 60 MA's), (20, 43478), (21, 43481), (28, 43541), (40, 43643), (44, 43691), (48, 43721), (53, 43742), (57, 43769), (59, 43775), (72, 43889), (80, 43976), (93, 44087), (94, 44105),

Gene: Patelgo_43 Start: 35050, Stop: 35946, Start Num: 1

Candidate Starts for Patelgo_43:

(Start: 1 @35050 has 26 MA's), (5, 35137), (20, 35260), (25, 35287), (29, 35326), (30, 35341), (51, 35533), (59, 35572), (66, 35653), (78, 35758), (80, 35797), (82, 35803), (93, 35908), (94, 35926),

Gene: Peebs_62 Start: 44513, Stop: 45310, Start Num: 3

Candidate Starts for Peebs_62:

(Start: 3 @44513 has 60 MA's), (11, 44591), (20, 44666), (21, 44669), (30, 44747), (43, 44870), (44, 44879), (51, 44924), (53, 44930), (55, 44936), (57, 44957), (72, 45077), (93, 45275), (94, 45293),

Gene: Pepperwood_63 Start: 44646, Stop: 45443, Start Num: 3

Candidate Starts for Pepperwood_63:

(Start: 3 @44646 has 60 MA's), (11, 44724), (20, 44799), (21, 44802), (30, 44880), (37, 44934), (43, 45003), (44, 45012), (51, 45057), (53, 45063), (55, 45069), (57, 45090), (72, 45210), (93, 45408), (94, 45426),

Gene: Persimmon_59 Start: 42994, Stop: 43791, Start Num: 3

Candidate Starts for Persimmon_59:

(Start: 3 @42994 has 60 MA's), (20, 43147), (21, 43150), (28, 43210), (44, 43360), (48, 43390), (53, 43411), (57, 43438), (59, 43444), (72, 43558), (80, 43645), (93, 43756), (94, 43774),

Gene: Phredrick_42 Start: 32908, Stop: 33804, Start Num: 1

Candidate Starts for Phredrick_42:

(Start: 1 @32908 has 26 MA's), (5, 32995), (20, 33118), (25, 33145), (29, 33184), (30, 33199), (51, 33391), (58, 33427), (66, 33511), (78, 33616), (92, 33757), (93, 33766), (94, 33784),

Gene: PinkiePie_61 Start: 44150, Stop: 44947, Start Num: 3

Candidate Starts for PinkiePie_61:

(Start: 3 @44150 has 60 MA's), (20, 44303), (21, 44306), (28, 44366), (40, 44468), (44, 44516), (48, 44546), (53, 44567), (57, 44594), (59, 44600), (72, 44714), (80, 44801), (93, 44912), (94, 44930),

Gene: PumpkinSpice_64 Start: 44090, Stop: 44887, Start Num: 3

Candidate Starts for PumpkinSpice_64:

(Start: 3 @44090 has 60 MA's), (12, 44174), (16, 44207), (30, 44324), (31, 44330), (60, 44573), (75, 44669), (87, 44798), (93, 44852), (94, 44870),

Gene: Quaran19_65 Start: 44081, Stop: 44878, Start Num: 3

Candidate Starts for Quaran19_65:

(Start: 3 @44081 has 60 MA's), (12, 44165), (16, 44198), (30, 44315), (31, 44321), (60, 44564), (75, 44660), (87, 44789), (93, 44843), (94, 44861),

Gene: SaltySpittoon_65 Start: 44090, Stop: 44887, Start Num: 3

Candidate Starts for SaltySpittoon_65:

(Start: 3 @44090 has 60 MA's), (12, 44174), (16, 44207), (30, 44324), (31, 44330), (60, 44573), (75, 44669), (87, 44798), (93, 44852), (94, 44870),

Gene: Samisti12_63 Start: 45950, Stop: 46747, Start Num: 3

Candidate Starts for Samisti12_63:

(Start: 3 @45950 has 60 MA's), (11, 46028), (20, 46103), (21, 46106), (44, 46316), (53, 46367), (55, 46373), (57, 46394), (59, 46400), (72, 46514), (93, 46712), (94, 46730),

Gene: SeresaTree_42 Start: 33656, Stop: 34552, Start Num: 1

Candidate Starts for SeresaTree_42:

(Start: 1 @33656 has 26 MA's), (5, 33743), (17, 33833), (20, 33866), (27, 33899), (51, 34139), (63, 34235), (65, 34253), (78, 34364), (90, 34490), (93, 34514), (94, 34532),

Gene: Sham_40 Start: 34781, Stop: 35677, Start Num: 1

Candidate Starts for Sham_40:

(Start: 1 @34781 has 26 MA's), (5, 34868), (8, 34898), (17, 34958), (20, 34991), (31, 35078), (49, 35258), (51, 35264), (65, 35378), (78, 35489), (83, 35543), (90, 35615), (93, 35639), (94, 35657),

Gene: Sollertia_65 Start: 44055, Stop: 44852, Start Num: 3

Candidate Starts for Sollertia_65:

(Start: 3 @44055 has 60 MA's), (12, 44139), (15, 44160), (23, 44223), (31, 44295), (45, 44427), (64, 44565), (74, 44628), (81, 44709), (87, 44763), (93, 44817), (94, 44835),

Gene: SparkleGoddess_43 Start: 34899, Stop: 35795, Start Num: 1

Candidate Starts for SparkleGoddess_43:

(Start: 1 @34899 has 26 MA's), (5, 34986), (16, 35073), (25, 35136), (30, 35190), (31, 35196), (32, 35220), (45, 35334), (49, 35376), (51, 35382), (58, 35418), (78, 35607), (80, 35646), (82, 35652), (92, 35748), (93, 35757), (94, 35775),

Gene: Spelly_65 Start: 44045, Stop: 44842, Start Num: 3

Candidate Starts for Spelly_65:

(Start: 3 @44045 has 60 MA's), (12, 44129), (16, 44162), (30, 44279), (31, 44285), (60, 44528), (75, 44624), (87, 44753), (93, 44807), (94, 44825),

Gene: Spilled_66 Start: 44162, Stop: 44959, Start Num: 3

Candidate Starts for Spilled_66:

(Start: 3 @44162 has 60 MA's), (12, 44246), (16, 44279), (30, 44396), (31, 44402), (60, 44645), (75, 44741), (87, 44870), (93, 44924), (94, 44942),

Gene: Squillium_62 Start: 44151, Stop: 44948, Start Num: 3

Candidate Starts for Squillium_62:

(Start: 3 @44151 has 60 MA's), (20, 44304), (21, 44307), (28, 44367), (40, 44469), (44, 44517), (48, 44547), (53, 44568), (57, 44595), (59, 44601), (72, 44715), (80, 44802), (93, 44913), (94, 44931),

Gene: Stanimal_65 Start: 43944, Stop: 44741, Start Num: 3

Candidate Starts for Stanimal_65:

(Start: 3 @43944 has 60 MA's), (12, 44028), (15, 44049), (23, 44112), (31, 44184), (45, 44316), (64, 44454), (74, 44517), (81, 44598), (87, 44652), (93, 44706), (94, 44724),

Gene: StarPlatinum_65 Start: 44593, Stop: 45390, Start Num: 3

Candidate Starts for StarPlatinum_65:

(Start: 3 @44593 has 60 MA's), (12, 44677), (30, 44827), (31, 44833), (44, 44959), (87, 45301), (93, 45355), (94, 45373),

Gene: Starbow_63 Start: 44066, Stop: 44863, Start Num: 3

Candidate Starts for Starbow_63:

(Start: 3 @44066 has 60 MA's), (12, 44150), (16, 44183), (30, 44300), (31, 44306), (60, 44549), (75, 44645), (87, 44774), (93, 44828), (94, 44846),

Gene: Stigma_43 Start: 34912, Stop: 35808, Start Num: 1

Candidate Starts for Stigma_43:

(Start: 1 @34912 has 26 MA's), (5, 34999), (16, 35086), (25, 35149), (30, 35203), (31, 35209), (32, 35233), (45, 35347), (49, 35389), (51, 35395), (58, 35431), (78, 35620), (80, 35659), (82, 35665), (92, 35761), (93, 35770), (94, 35788),

Gene: Sushi23_63 Start: 44871, Stop: 45668, Start Num: 3

Candidate Starts for Sushi23_63:

(Start: 3 @44871 has 60 MA's), (11, 44949), (20, 45024), (21, 45027), (30, 45105), (37, 45159), (43, 45228), (44, 45237), (51, 45282), (53, 45288), (55, 45294), (57, 45315), (72, 45435), (93, 45633), (94, 45651),

Gene: Targaryen_64 Start: 45666, Stop: 46463, Start Num: 3

Candidate Starts for Targaryen_64:

(Start: 3 @45666 has 60 MA's), (20, 45819), (21, 45822), (40, 45984), (44, 46032), (53, 46083), (57, 46110), (72, 46230), (91, 46407), (93, 46428), (94, 46446),

Gene: Teutsch_63 Start: 45134, Stop: 45931, Start Num: 3

Candidate Starts for Teutsch_63:

(Start: 3 @45134 has 60 MA's), (11, 45212), (20, 45287), (21, 45290), (30, 45368), (43, 45491), (44, 45500), (51, 45545), (53, 45551), (55, 45557), (57, 45578), (72, 45698), (93, 45896), (94, 45914),

Gene: TomSawyer_63 Start: 43684, Stop: 44481, Start Num: 3

Candidate Starts for TomSawyer_63:

(Start: 3 @43684 has 60 MA's), (12, 43768), (16, 43801), (30, 43918), (31, 43924), (60, 44167), (75, 44263), (87, 44392), (93, 44446), (94, 44464),

Gene: Tomas_67 Start: 46390, Stop: 47187, Start Num: 3

Candidate Starts for Tomas_67:

(Start: 3 @46390 has 60 MA's), (7, 46441), (12, 46474), (28, 46606), (39, 46696), (53, 46807), (75, 46969), (79, 47017), (93, 47152), (94, 47170),

Gene: Tribute_61 Start: 44340, Stop: 45137, Start Num: 3

Candidate Starts for Tribute_61:

(Start: 3 @44340 has 60 MA's), (11, 44418), (20, 44493), (21, 44496), (30, 44574), (37, 44628), (43, 44697), (44, 44706), (51, 44751), (53, 44757), (55, 44763), (57, 44784), (72, 44904), (93, 45102), (94, 45120),

Gene: Trina_85 Start: 55545, Stop: 56348, Start Num: 3

Candidate Starts for Trina_85:

(Start: 3 @55545 has 60 MA's), (9, 55614), (10, 55620), (14, 55644), (27, 55731), (46, 55935), (52, 55965), (54, 55974), (62, 56046), (73, 56121), (89, 56277), (93, 56313), (94, 56331),

Gene: TunaTartare_42 Start: 35073, Stop: 35969, Start Num: 1

Candidate Starts for TunaTartare_42:

(Start: 1 @35073 has 26 MA's), (5, 35160), (17, 35250), (20, 35283), (38, 35436), (44, 35502), (51, 35556), (78, 35781), (79, 35793), (90, 35907), (93, 35931), (94, 35949),

Gene: Wakanda_39 Start: 34543, Stop: 35439, Start Num: 1

Candidate Starts for Wakanda_39:

(Start: 1 @34543 has 26 MA's), (6, 34639), (19, 34747), (71, 35188), (76, 35212), (93, 35401), (94, 35419),

Gene: Warpy_67 Start: 45130, Stop: 45927, Start Num: 3

Candidate Starts for Warpy_67:

(Start: 3 @45130 has 60 MA's), (11, 45208), (20, 45283), (21, 45286), (28, 45346), (44, 45496), (45, 45502), (53, 45547), (57, 45574), (68, 45664), (72, 45694), (91, 45871), (93, 45892), (94, 45910),

Gene: Watermoore_63 Start: 45347, Stop: 46144, Start Num: 3

Candidate Starts for Watermoore_63:

(Start: 3 @45347 has 60 MA's), (11, 45425), (20, 45500), (21, 45503), (30, 45581), (37, 45635), (43, 45704), (44, 45713), (51, 45758), (53, 45764), (57, 45791), (72, 45911), (93, 46109), (94, 46127),

Gene: WhereRU_62 Start: 43585, Stop: 44382, Start Num: 3

Candidate Starts for WhereRU_62:

(Start: 3 @43585 has 60 MA's), (20, 43738), (21, 43741), (28, 43801), (44, 43951), (48, 43981), (53, 44002), (57, 44029), (59, 44035), (72, 44149), (80, 44236), (93, 44347), (94, 44365),

Gene: Wipeout_63 Start: 44435, Stop: 45232, Start Num: 3

Candidate Starts for Wipeout_63:

(Start: 3 @44435 has 60 MA's), (12, 44519), (16, 44552), (30, 44669), (31, 44675), (60, 44918), (75, 45014), (87, 45143), (93, 45197), (94, 45215),

Gene: Wofford_64 Start: 45117, Stop: 45914, Start Num: 3

Candidate Starts for Wofford_64:

(Start: 3 @45117 has 60 MA's), (12, 45201), (31, 45357), (44, 45483), (57, 45561), (61, 45606), (75, 45696), (93, 45879), (94, 45897),

Gene: Yaboi_65 Start: 44032, Stop: 44829, Start Num: 3

Candidate Starts for Yaboi_65:

(Start: 3 @44032 has 60 MA's), (12, 44116), (15, 44137), (23, 44200), (31, 44272), (45, 44404), (64, 44542), (74, 44605), (81, 44686), (87, 44740), (93, 44794), (94, 44812),