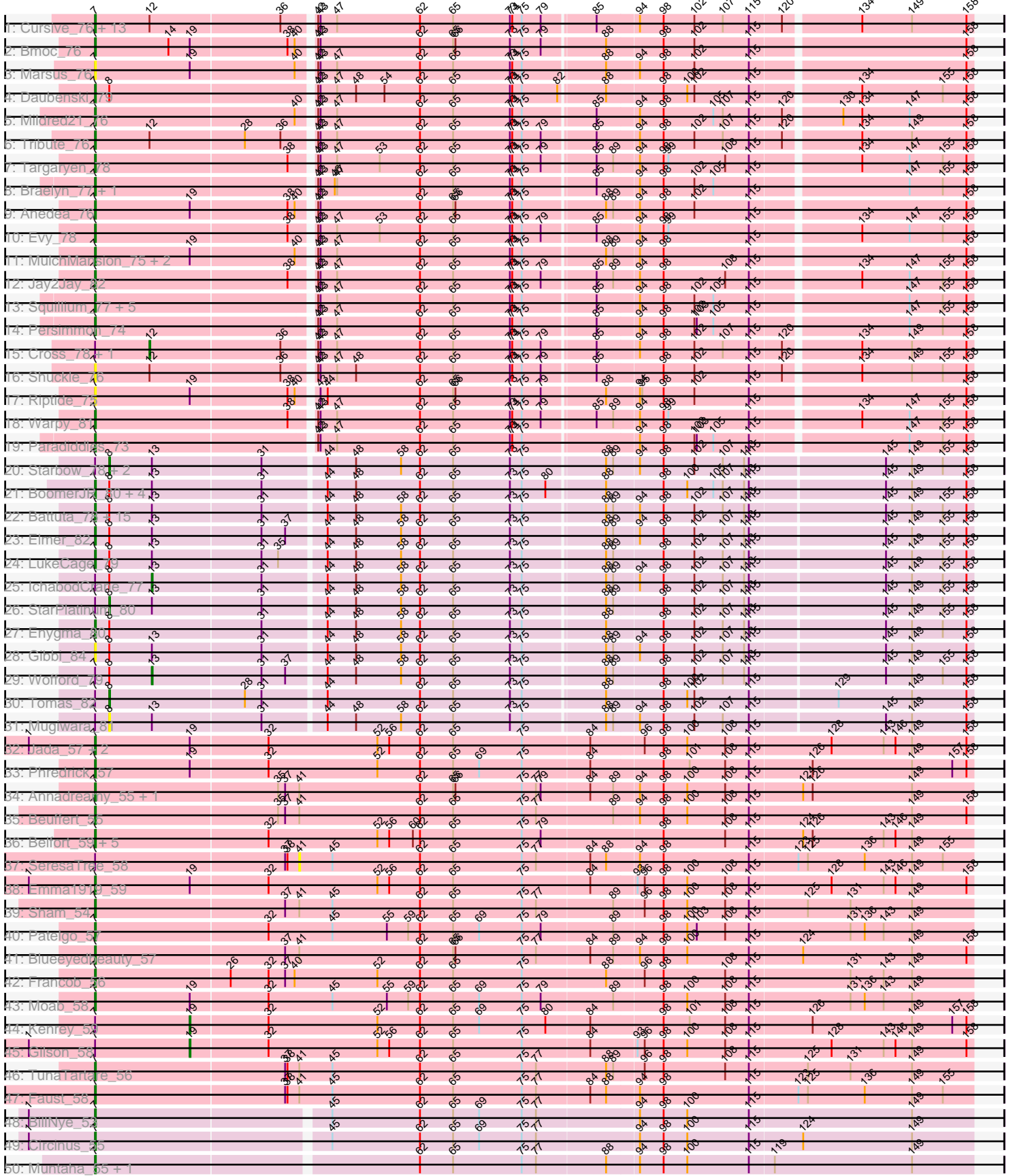
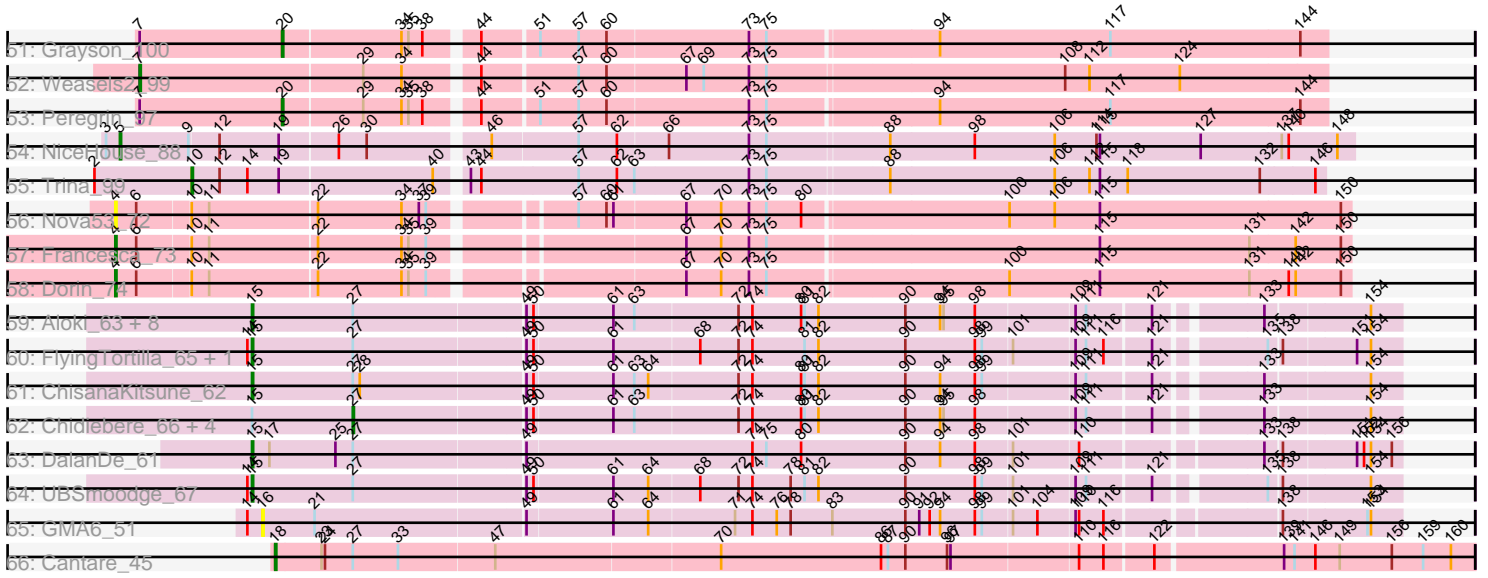


Pham 215954



Pham 215954



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 215954 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215954 has 131 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Cursive\_76, EGole\_79, HangryHippo\_78, PacManQ\_77, BlueOtter\_78, Larnav\_78, Leo04\_79, Deutsch\_78, Samisti12\_78, Scheme\_79, Lululemon\_77, Pepperwood\_78, Sushi23\_77, Watermoore\_78
- Track 2 : Bmoc\_76
- Track 3 : Marsus\_76
- Track 4 : Daubenski\_79
- Track 5 : Mildred21\_76
- Track 6 : Tribute\_76
- Track 7 : Targaryen\_78
- Track 8 : Braelyn\_77, Navo\_75
- Track 9 : Anedea\_76
- Track 10 : Evy\_78
- Track 11 : MulchMansion\_75, LilMartin\_75, Angela\_74
- Track 12 : Jay2Jay\_82
- Track 13 : Squillium\_77, NootNoot\_73, WhereRU\_74, Liandry\_76, Bartholomune\_76, PinkiePie\_76
- Track 14 : Persimmon\_74
- Track 15 : Cross\_78, Peebs\_77
- Track 16 : Shuckle\_76
- Track 17 : Riptide\_75
- Track 18 : Warpy\_81
- Track 19 : Paradiddles\_73
- Track 20 : Starbow\_78, Amabiko\_80, Wipeout\_77
- Track 21 : BoomerJR\_80, Stanimal\_80, Sollertia\_80, Genie2\_80, Yaboi\_80
- Track 22 : Battuta\_78, Birchlyn\_77, CeilingFan\_79, Quaran19\_79, SaltySpittoon\_79, Bordeaux\_78, Spelly\_80, TomSawyer\_78, Spilled\_81, KentuckyRacer\_80, Karimac\_79, JimJam\_80, PumpkinSpice\_79, Jollison\_79, MindFlayer\_77, Rikishi\_82
- Track 23 : Elmer\_82
- Track 24 : LukeCage\_79
- Track 25 : IchabodCrane\_77
- Track 26 : StarPlatinum\_80
- Track 27 : Enygma\_80
- Track 28 : Gibbi\_84
- Track 29 : Wofford\_79
- Track 30 : Tomas\_82
- Track 31 : Mugiwara\_81
- Track 32 : Jada\_57, MeganTheeKilla\_56, Forrest\_59

- Track 33 : Phredrick\_57
- Track 34 : Annadreamy\_55, Limpid\_55
- Track 35 : Beuffert\_55
- Track 36 : Belfort\_59, Westy\_56, Comrade\_58, Karp\_56, SparkleGoddess\_58, Stigma\_57
- Track 37 : SeresaTree\_58
- Track 38 : Emma1919\_59
- Track 39 : Sham\_54
- Track 40 : Patelgo\_57
- Track 41 : Blueeyedbeauty\_57
- Track 42 : Francob\_56
- Track 43 : Moab\_58
- Track 44 : Kenrey\_59
- Track 45 : Gilson\_58
- Track 46 : TunaTartare\_56
- Track 47 : Faust\_58
- Track 48 : BillNye\_53
- Track 49 : Circinus\_55
- Track 50 : Muntaha\_55, Wakanda\_54
- Track 51 : Grayson\_100
- Track 52 : Weasels2\_99
- Track 53 : Peregrin\_97
- Track 54 : NiceHouse\_88
- Track 55 : Trina\_99
- Track 56 : Nova53\_72
- Track 57 : Francesca\_73
- Track 58 : Dorin\_74
- Track 59 : Alok\_63, Gray\_66, Kabocha\_67, Toneprano\_63, MintFritos\_63, Pakusa\_63, Oogie\_65, EmoNemo\_63, Schomber\_64
- Track 60 : FlyingTortilla\_65, ScarletRaider\_64
- Track 61 : ChisanaKitsune\_62
- Track 62 : Chidiebere\_66, Beted\_65, Hanem\_65, Lenoshki\_65, Twin\_63
- Track 63 : DalanDe\_61
- Track 64 : UBSmoodge\_67
- Track 65 : GMA6\_51
- Track 66 : Cantare\_45

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

The start number called the most often in the published annotations is 7, it was called in 83 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anede\_76, Angela\_74, Annadreamy\_55, Bartholomune\_76, Battuta\_78, Belfort\_59, Beuffert\_55, BillNye\_53, Birchlyn\_77, BlueOtter\_78, Blueeyedbeauty\_57, Bmoc\_76, BoomerJR\_80, Bordeaux\_78, Braelyn\_77, CeilingFan\_79, Circinus\_55, Comrade\_58, Cursive\_76, Daubenski\_79, EGole\_79, Elmer\_82, Emma1919\_59, Enygma\_80, Evy\_78, Faust\_58, Forrest\_59, Francob\_56, Genie2\_80, Gibbi\_84, HangryHippo\_78, Jada\_57, Jay2Jay\_82, JimJam\_80, Jollison\_79, Karimac\_79, Karp\_56, KentuckyRacer\_80, Larnav\_78, Leo04\_79, Liandry\_76, LilMartin\_75,

Limpid\_55, LukeCage\_79, Lululemon\_77, Marsus\_76, MeganTheeKilla\_56, Mildred21\_76, MindFlayer\_77, Moab\_58, MulchMansion\_75, Muntaha\_55, Navo\_75, NootNoot\_73, PacManQ\_77, Paradiddles\_73, Patelgo\_57, Pepperwood\_78, Persimmon\_74, Phredrick\_57, PinkiePie\_76, PumpkinSpice\_79, Quarant19\_79, Rikishi\_82, Riptide\_75, SaltySpittoon\_79, Samisti12\_78, Scheme\_79, Sham\_54, Shuckle\_76, Sollertia\_80, SparkleGoddess\_58, Spelly\_80, Spilled\_81, Squillium\_77, Stanimal\_80, Stigma\_57, Sushi23\_77, Targaryen\_78, Teutsch\_78, TomSawyer\_78, Tribute\_76, TunaTartare\_56, Wakanda\_54, Warpy\_81, Watermoore\_78, Weasels2\_99, Westy\_56, WhereRU\_74, Yaboi\_80,

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

- Amabiko\_80, Cross\_78, Gilson\_58, Grayson\_100, IchabodCrane\_77, Kenrey\_59, Mugiwara\_81, Peebs\_77, Peregrin\_97, SeresaTree\_58, StarPlatinum\_80, Starbow\_78, Tomas\_82, Wipeout\_77, Wofford\_79,

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

- Alok\_63, Beted\_65, Cantare\_45, Chidiebere\_66, ChisanaKitsune\_62, DalanDe\_61, Dorin\_74, EmoNemo\_63, FlyingTortilla\_65, Francesca\_73, GMA6\_51, Gray\_66, Hanem\_65, Kabocha\_67, Lenoshki\_65, MintFritos\_63, NiceHouse\_88, Nova53\_72, Oogie\_65, Pakusa\_63, ScarletRaider\_64, Schomber\_64, Toneprano\_63, Trina\_99, Twin\_63, UBSmoodge\_67,

### Summary by start number:

Start 4:

- Found in 3 of 131 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dorin\_74 (CG), Francesca\_73 (CG), Nova53\_72 (CG),

Start 5:

- Found in 1 of 131 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NiceHouse\_88 (CE),

Start 7:

- Found in 105 of 131 ( 80.2% ) of genes in pham
- Manual Annotations of this start: 83 of 111
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Anedea\_76 (BE1), Angela\_74 (BE1), Annadreamy\_55 (BK1), Bartholomune\_76 (BE1), Battuta\_78 (BE2), Belfort\_59 (BK1), Beuffert\_55 (BK1), BillNye\_53 (BK2), Birchlyn\_77 (BE2), BlueOtter\_78 (BE1), Blueeyedbeauty\_57 (BK1), Bmoc\_76 (BE1), BoomerJR\_80 (BE2), Bordeaux\_78 (BE2), Braelyn\_77 (BE1), CeilingFan\_79 (BE2), Circinus\_55 (BK2), Comrade\_58 (BK1), Cursive\_76 (BE1), Daubenski\_79 (BE1), EGole\_79 (BE1), Elmer\_82 (BE2), Emma1919\_59 (BK1), Enygma\_80 (BE2), Evy\_78 (BE1), Faust\_58 (BK1), Forrest\_59 (BK1), Francob\_56 (BK1), Genie2\_80 (BE2), Gibbi\_84 (BE2), HangryHippo\_78 (BE1), Jada\_57 (BK1), Jay2Jay\_82 (BE1), JimJam\_80 (BE2), Jollison\_79 (BE2), Karimac\_79 (BE2), Karp\_56 (BK1), KentuckyRacer\_80 (BE2), Larnav\_78 (BE1), Leo04\_79 (BE1), Liandry\_76 (BE1), LilMartin\_75 (BE1), Limpid\_55 (BK1), LukeCage\_79 (BE2), Lululemon\_77 (BE1), Marsus\_76 (BE1), MeganTheeKilla\_56

(BK1), Mildred21\_76 (BE1), MindFlayer\_77 (BE2), Moab\_58 (BK1), MulchMansion\_75 (BE1), Muntaha\_55 (BK2), Navo\_75 (BE1), NootNoot\_73 (BE1), PacManQ\_77 (BE1), Paradiddles\_73 (BE1), Patelgo\_57 (BK1), Pepperwood\_78 (BE1), Persimmon\_74 (BE1), Phredrick\_57 (BK1), PinkiePie\_76 (BE1), PumpkinSpice\_79 (BE2), Quarant19\_79 (BE2), Rikishi\_82 (BE2), Riptide\_75 (BE1), SaltySpittoon\_79 (BE2), Samisti12\_78 (BE1), Scheme\_79 (BE1), Sham\_54 (BK1), Shuckle\_76 (BE1), Sollertia\_80 (BE2), SparkleGoddess\_58 (BK1), Spelly\_80 (BE2), Spilled\_81 (BE2), Squillium\_77 (BE1), Stanimal\_80 (BE2), Stigma\_57 (BK1), Sushi23\_77 (BE1), Targaryen\_78 (BE1), Teutsch\_78 (BE1), TomSawyer\_78 (BE2), Tribute\_76 (BE1), TunaTartare\_56 (BK1), Wakanda\_54 (BK2), Warpy\_81 (BE1), Watermoore\_78 (BE1), Weasels2\_99 (CB), Westy\_56 (BK1), WhereRU\_74 (BE1), Yaboi\_80 (BE2),

#### Start 8:

- Found in 34 of 131 ( 26.0% ) of genes in pham
- Manual Annotations of this start: 5 of 111
- Called 17.6% of time when present
- Phage (with cluster) where this start called: Amabiko\_80 (BE2), Mugiwara\_81 (BE2), StarPlatinum\_80 (BE2), Starbow\_78 (BE2), Tomas\_82 (BE2), Wipeout\_77 (BE2),

#### Start 10:

- Found in 4 of 131 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Trina\_99 (CE),

#### Start 12:

- Found in 20 of 131 ( 15.3% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Cross\_78 (BE1), Peebs\_77 (BE1),

#### Start 13:

- Found in 31 of 131 ( 23.7% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 6.5% of time when present
- Phage (with cluster) where this start called: IchabodCrane\_77 (BE2), Wofford\_79 (BE2),

#### Start 15:

- Found in 19 of 131 ( 14.5% ) of genes in pham
- Manual Annotations of this start: 8 of 111
- Called 73.7% of time when present
- Phage (with cluster) where this start called: Aloki\_63 (DQ), ChisanaKitsune\_62 (DQ), DalanDe\_61 (DQ), EmoNemo\_63 (DQ), FlyingTortilla\_65 (DQ), Gray\_66 (DQ), Kabocha\_67 (DQ), MintFritos\_63 (DQ), Oogie\_65 (DQ), Pakusa\_63 (DQ), ScarletRaider\_64 (DQ), Schomber\_64 (DQ), Toneprano\_63 (DQ), UBSmoodge\_67 (DQ),

#### Start 16:

- Found in 1 of 131 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present

- Phage (with cluster) where this start called: GMA6\_51 (DQ),

Start 18:

- Found in 1 of 131 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cantare\_45 (singleton),

Start 19:

- Found in 17 of 131 ( 13.0% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 11.8% of time when present
- Phage (with cluster) where this start called: Gilson\_58 (BK1), Kenrey\_59 (BK1),

Start 20:

- Found in 2 of 131 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson\_100 (CB), Peregrin\_97 (CB),

Start 27:

- Found in 20 of 131 ( 15.3% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Beted\_65 (DQ), Chidiebere\_66 (DQ), Hanem\_65 (DQ), Lenoshki\_65 (DQ), Twin\_63 (DQ),

Start 41:

- Found in 8 of 131 ( 6.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: SeresaTree\_58 (BK1),

### **Summary by clusters:**

There are 9 clusters represented in this pham: singleton, CB, CG, CE, BK1, BK2, BE2, BE1, DQ,

Info for manual annotations of cluster BE1:

- Start number 7 was manually annotated 35 times for cluster BE1.
- Start number 12 was manually annotated 2 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 7 was manually annotated 23 times for cluster BE2.
- Start number 8 was manually annotated 5 times for cluster BE2.
- Start number 13 was manually annotated 2 times for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 7 was manually annotated 20 times for cluster BK1.
- Start number 19 was manually annotated 2 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 7 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster CB:

- Start number 7 was manually annotated 1 time for cluster CB.
- Start number 20 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CE:

- Start number 5 was manually annotated 1 time for cluster CE.
- Start number 10 was manually annotated 1 time for cluster CE.

Info for manual annotations of cluster CG:

- Start number 4 was manually annotated 2 times for cluster CG.

Info for manual annotations of cluster DQ:

- Start number 15 was manually annotated 8 times for cluster DQ.
- Start number 27 was manually annotated 2 times for cluster DQ.

### **Gene Information:**

Gene: Alok\_i\_63 Start: 52730, Stop: 51792, Start Num: 15

Candidate Starts for Alok\_i\_63:

(Start: 15 @52730 has 8 MA's), (Start: 27 @52643 has 2 MA's), (49, 52502), (50, 52496), (61, 52430), (63, 52412), (72, 52325), (74, 52313), (80, 52271), (81, 52268), (82, 52256), (90, 52181), (94, 52151), (95, 52148), (98, 52121), (109, 52040), (111, 52031), (121, 51980), (133, 51902), (154, 51818),

Gene: Amabiko\_80 Start: 56400, Stop: 57458, Start Num: 8

Candidate Starts for Amabiko\_80:

(Start: 7 @56382 has 83 MA's), (Start: 8 @56400 has 5 MA's), (Start: 13 @56454 has 2 MA's), (31, 56589), (44, 56664), (48, 56700), (58, 56757), (62, 56781), (65, 56823), (73, 56895), (75, 56910), (88, 57006), (89, 57015), (94, 57045), (98, 57075), (102, 57114), (107, 57150), (113, 57177), (115, 57183), (145, 57348), (149, 57381), (155, 57420), (158, 57450),

Gene: Anedea\_76 Start: 55980, Stop: 57044, Start Num: 7

Candidate Starts for Anedea\_76:

(Start: 7 @55980 has 83 MA's), (Start: 19 @56100 has 2 MA's), (38, 56220), (40, 56229), (42, 56244), (43, 56247), (62, 56373), (65, 56415), (66, 56418), (73, 56487), (74, 56490), (75, 56502), (88, 56598), (89, 56607), (94, 56637), (98, 56667), (102, 56706), (115, 56775), (158, 57036),

Gene: Angela\_74 Start: 55439, Stop: 56503, Start Num: 7

Candidate Starts for Angela\_74:

(Start: 7 @55439 has 83 MA's), (Start: 19 @55559 has 2 MA's), (40, 55688), (42, 55703), (43, 55706), (47, 55727), (62, 55832), (65, 55874), (73, 55946), (74, 55949), (75, 55961), (88, 56057), (89, 56066), (94, 56096), (98, 56126), (115, 56234), (158, 56495),

Gene: Annadreamy\_55 Start: 45380, Stop: 46477, Start Num: 7

Candidate Starts for Annadreamy\_55:

(Start: 7 @45380 has 83 MA's), (35, 45608), (37, 45617), (41, 45635), (62, 45788), (65, 45830), (66, 45833), (75, 45917), (77, 45935), (79, 45941), (84, 46001), (89, 46028), (94, 46058), (98, 46088), (100, 46118), (108, 46166), (115, 46196), (124, 46262), (126, 46274), (149, 46400),

Gene: Bartholomune\_76 Start: 55796, Stop: 56860, Start Num: 7

Candidate Starts for Bartholomune\_76:



(Start: 7 @55796 has 83 MA's), (42, 56060), (43, 56063), (47, 56084), (62, 56189), (65, 56231), (73, 56303), (74, 56306), (75, 56318), (85, 56402), (94, 56453), (98, 56483), (102, 56522), (105, 56546), (115, 56591), (147, 56780), (155, 56822), (158, 56852),

Gene: Battuta\_78 Start: 56356, Stop: 57432, Start Num: 7

Candidate Starts for Battuta\_78:

(Start: 7 @56356 has 83 MA's), (Start: 8 @56374 has 5 MA's), (Start: 13 @56428 has 2 MA's), (31, 56563), (44, 56638), (48, 56674), (58, 56731), (62, 56755), (65, 56797), (73, 56869), (75, 56884), (88, 56980), (89, 56989), (94, 57019), (98, 57049), (102, 57088), (107, 57124), (113, 57151), (115, 57157), (145, 57322), (149, 57355), (155, 57394), (158, 57424),

Gene: Belfort\_59 Start: 47917, Stop: 49014, Start Num: 7

Candidate Starts for Belfort\_59:

(Start: 7 @47917 has 83 MA's), (32, 48133), (52, 48271), (56, 48286), (60, 48316), (62, 48325), (65, 48367), (75, 48454), (79, 48478), (98, 48625), (108, 48703), (115, 48733), (124, 48799), (126, 48811), (143, 48901), (146, 48916), (149, 48937),

Gene: Beted\_65 Start: 54338, Stop: 53487, Start Num: 27

Candidate Starts for Beted\_65:

(Start: 15 @54425 has 8 MA's), (Start: 27 @54338 has 2 MA's), (49, 54197), (50, 54191), (61, 54125), (63, 54107), (72, 54020), (74, 54008), (80, 53966), (81, 53963), (82, 53951), (90, 53876), (94, 53846), (95, 53843), (98, 53816), (109, 53735), (111, 53726), (121, 53675), (133, 53597), (154, 53513),

Gene: Beuffert\_55 Start: 46518, Stop: 47615, Start Num: 7

Candidate Starts for Beuffert\_55:

(Start: 7 @46518 has 83 MA's), (35, 46746), (37, 46755), (41, 46773), (62, 46926), (65, 46968), (75, 47055), (77, 47073), (89, 47166), (94, 47196), (98, 47226), (100, 47256), (108, 47304), (115, 47334), (149, 47538), (158, 47607),

Gene: BillNye\_53 Start: 49370, Stop: 50452, Start Num: 7

Candidate Starts for BillNye\_53:

(1, 49286), (Start: 7 @49370 has 83 MA's), (45, 49652), (62, 49763), (65, 49805), (69, 49838), (75, 49892), (77, 49910), (94, 50033), (98, 50063), (100, 50093), (115, 50171), (149, 50375),

Gene: Birchlyn\_77 Start: 54239, Stop: 55315, Start Num: 7

Candidate Starts for Birchlyn\_77:

(Start: 7 @54239 has 83 MA's), (Start: 8 @54257 has 5 MA's), (Start: 13 @54311 has 2 MA's), (31, 54446), (44, 54521), (48, 54557), (58, 54614), (62, 54638), (65, 54680), (73, 54752), (75, 54767), (88, 54863), (89, 54872), (94, 54902), (98, 54932), (102, 54971), (107, 55007), (113, 55034), (115, 55040), (145, 55205), (149, 55238), (155, 55277), (158, 55307),

Gene: BlueOtter\_78 Start: 57170, Stop: 58234, Start Num: 7

Candidate Starts for BlueOtter\_78:

(Start: 7 @57170 has 83 MA's), (Start: 12 @57239 has 2 MA's), (36, 57401), (42, 57434), (43, 57437), (47, 57458), (62, 57563), (65, 57605), (73, 57677), (74, 57680), (75, 57692), (79, 57716), (85, 57776), (94, 57827), (98, 57857), (102, 57896), (107, 57932), (115, 57965), (120, 58004), (134, 58094), (149, 58157), (158, 58226),

Gene: Blueeyedbeauty\_57 Start: 45892, Stop: 46989, Start Num: 7

Candidate Starts for Blueeyedbeauty\_57:

(Start: 7 @45892 has 83 MA's), (37, 46129), (41, 46147), (62, 46300), (65, 46342), (66, 46345), (75, 46429), (77, 46447), (84, 46513), (89, 46540), (94, 46570), (98, 46600), (100, 46630), (115, 46708), (124, 46774), (149, 46912), (158, 46981),

Gene: Bmoc\_76 Start: 55817, Stop: 56881, Start Num: 7

Candidate Starts for Bmoc\_76:

(Start: 7 @55817 has 83 MA's), (14, 55910), (Start: 19 @55937 has 2 MA's), (38, 56057), (40, 56066), (42, 56081), (43, 56084), (62, 56210), (65, 56252), (66, 56255), (73, 56324), (75, 56339), (79, 56363), (88, 56435), (98, 56504), (102, 56543), (115, 56612), (158, 56873),

Gene: BoomerJR\_80 Start: 56222, Stop: 57298, Start Num: 7

Candidate Starts for BoomerJR\_80:

(Start: 7 @56222 has 83 MA's), (Start: 8 @56240 has 5 MA's), (Start: 13 @56294 has 2 MA's), (31, 56429), (44, 56504), (48, 56540), (62, 56621), (65, 56663), (73, 56735), (75, 56750), (80, 56780), (88, 56846), (98, 56915), (100, 56945), (105, 56978), (107, 56990), (113, 57017), (115, 57023), (145, 57188), (149, 57221), (158, 57290),

Gene: Bordeaux\_78 Start: 56511, Stop: 57587, Start Num: 7

Candidate Starts for Bordeaux\_78:

(Start: 7 @56511 has 83 MA's), (Start: 8 @56529 has 5 MA's), (Start: 13 @56583 has 2 MA's), (31, 56718), (44, 56793), (48, 56829), (58, 56886), (62, 56910), (65, 56952), (73, 57024), (75, 57039), (88, 57135), (89, 57144), (94, 57174), (98, 57204), (102, 57243), (107, 57279), (113, 57306), (115, 57312), (145, 57477), (149, 57510), (155, 57549), (158, 57579),

Gene: Braelyn\_77 Start: 56563, Stop: 57627, Start Num: 7

Candidate Starts for Braelyn\_77:

(Start: 7 @56563 has 83 MA's), (42, 56827), (43, 56830), (46, 56848), (47, 56851), (62, 56956), (65, 56998), (73, 57070), (74, 57073), (75, 57085), (85, 57169), (94, 57220), (98, 57250), (102, 57289), (105, 57313), (115, 57358), (147, 57547), (155, 57589), (158, 57619),

Gene: Cantare\_45 Start: 41518, Stop: 40511, Start Num: 18

Candidate Starts for Cantare\_45:

(Start: 18 @41518 has 1 MA's), (23, 41479), (24, 41476), (Start: 27 @41452 has 2 MA's), (33, 41413), (47, 41332), (70, 41143), (86, 41005), (87, 40999), (90, 40984), (96, 40948), (97, 40945), (110, 40840), (116, 40819), (122, 40780), (139, 40675), (141, 40666), (146, 40648), (149, 40627), (156, 40582), (159, 40555), (160, 40531),

Gene: CeilingFan\_79 Start: 56271, Stop: 57347, Start Num: 7

Candidate Starts for CeilingFan\_79:

(Start: 7 @56271 has 83 MA's), (Start: 8 @56289 has 5 MA's), (Start: 13 @56343 has 2 MA's), (31, 56478), (44, 56553), (48, 56589), (58, 56646), (62, 56670), (65, 56712), (73, 56784), (75, 56799), (88, 56895), (89, 56904), (94, 56934), (98, 56964), (102, 57003), (107, 57039), (113, 57066), (115, 57072), (145, 57237), (149, 57270), (155, 57309), (158, 57339),

Gene: Chidiebere\_66 Start: 53174, Stop: 52323, Start Num: 27

Candidate Starts for Chidiebere\_66:

(Start: 15 @53261 has 8 MA's), (Start: 27 @53174 has 2 MA's), (49, 53033), (50, 53027), (61, 52961), (63, 52943), (72, 52856), (74, 52844), (80, 52802), (81, 52799), (82, 52787), (90, 52712), (94, 52682), (95, 52679), (98, 52652), (109, 52571), (111, 52562), (121, 52511), (133, 52433), (154, 52349),

Gene: ChisanaKitsune\_62 Start: 52034, Stop: 51096, Start Num: 15

Candidate Starts for ChisanaKitsune\_62:

(Start: 15 @52034 has 8 MA's), (Start: 27 @51947 has 2 MA's), (28, 51941), (49, 51806), (50, 51800), (61, 51734), (63, 51716), (64, 51704), (72, 51629), (74, 51617), (80, 51575), (81, 51572), (82, 51560), (90, 51485), (94, 51455), (98, 51425), (99, 51419), (109, 51344), (111, 51335), (121, 51284), (133, 51206), (154, 51122),

Gene: Circinus\_55 Start: 49509, Stop: 50591, Start Num: 7

Candidate Starts for Circinus\_55:

(1, 49425), (Start: 7 @49509 has 83 MA's), (45, 49791), (62, 49902), (65, 49944), (69, 49977), (75, 50031), (77, 50049), (94, 50172), (98, 50202), (100, 50232), (115, 50310), (124, 50376), (149, 50514),

Gene: Comrade\_58 Start: 47533, Stop: 48630, Start Num: 7

Candidate Starts for Comrade\_58:

(Start: 7 @47533 has 83 MA's), (32, 47749), (52, 47887), (56, 47902), (60, 47932), (62, 47941), (65, 47983), (75, 48070), (79, 48094), (98, 48241), (108, 48319), (115, 48349), (124, 48415), (126, 48427), (143, 48517), (146, 48532), (149, 48553),

Gene: Cross\_78 Start: 57240, Stop: 58235, Start Num: 12

Candidate Starts for Cross\_78:

(Start: 7 @57171 has 83 MA's), (Start: 12 @57240 has 2 MA's), (36, 57402), (42, 57435), (43, 57438), (47, 57459), (62, 57564), (65, 57606), (73, 57678), (74, 57681), (75, 57693), (79, 57717), (85, 57777), (94, 57828), (98, 57858), (102, 57897), (107, 57933), (115, 57966), (120, 58005), (134, 58095), (149, 58158), (158, 58227),

Gene: Cursive\_76 Start: 56696, Stop: 57760, Start Num: 7

Candidate Starts for Cursive\_76:

(Start: 7 @56696 has 83 MA's), (Start: 12 @56765 has 2 MA's), (36, 56927), (42, 56960), (43, 56963), (47, 56984), (62, 57089), (65, 57131), (73, 57203), (74, 57206), (75, 57218), (79, 57242), (85, 57302), (94, 57353), (98, 57383), (102, 57422), (107, 57458), (115, 57491), (120, 57530), (134, 57620), (149, 57683), (158, 57752),

Gene: DalanDe\_61 Start: 55926, Stop: 54979, Start Num: 15

Candidate Starts for DalanDe\_61:

(Start: 15 @55926 has 8 MA's), (17, 55911), (25, 55854), (Start: 27 @55839 has 2 MA's), (49, 55698), (74, 55506), (75, 55494), (80, 55464), (90, 55374), (94, 55344), (98, 55314), (101, 55284), (110, 55230), (133, 55089), (138, 55077), (151, 55017), (152, 55011), (154, 55005), (156, 54987),

Gene: Daubenski\_79 Start: 56909, Stop: 57973, Start Num: 7

Candidate Starts for Daubenski\_79:

(Start: 7 @56909 has 83 MA's), (Start: 8 @56927 has 5 MA's), (42, 57173), (43, 57176), (47, 57197), (48, 57221), (54, 57257), (62, 57302), (65, 57344), (73, 57416), (74, 57419), (75, 57431), (82, 57476), (88, 57527), (98, 57596), (100, 57626), (102, 57635), (115, 57704), (134, 57833), (155, 57935), (158, 57965),

Gene: Dorin\_74 Start: 58073, Stop: 59086, Start Num: 4

Candidate Starts for Dorin\_74:

(Start: 4 @58073 has 2 MA's), (6, 58091), (Start: 10 @58133 has 1 MA's), (11, 58148), (22, 58238), (34, 58310), (35, 58316), (39, 58331), (67, 58526), (70, 58556), (73, 58580), (75, 58595), (100, 58793), (115, 58871), (131, 59000), (140, 59033), (142, 59039), (150, 59078),

Gene: EGole\_79 Start: 58117, Stop: 59181, Start Num: 7

Candidate Starts for EGole\_79:

(Start: 7 @58117 has 83 MA's), (Start: 12 @58186 has 2 MA's), (36, 58348), (42, 58381), (43, 58384), (47, 58405), (62, 58510), (65, 58552), (73, 58624), (74, 58627), (75, 58639), (79, 58663), (85, 58723), (94, 58774), (98, 58804), (102, 58843), (107, 58879), (115, 58912), (120, 58951), (134, 59041), (149, 59104), (158, 59173),

Gene: Elmer\_82 Start: 57463, Stop: 58539, Start Num: 7

Candidate Starts for Elmer\_82:

(Start: 7 @57463 has 83 MA's), (Start: 8 @57481 has 5 MA's), (Start: 13 @57535 has 2 MA's), (31, 57670), (37, 57700), (44, 57745), (48, 57781), (58, 57838), (62, 57862), (65, 57904), (73, 57976), (75, 57991), (88, 58087), (89, 58096), (94, 58126), (98, 58156), (102, 58195), (107, 58231), (113, 58258), (115, 58264), (145, 58429), (149, 58462), (155, 58501), (158, 58531),

Gene: Emma1919\_59 Start: 46318, Stop: 47415, Start Num: 7

Candidate Starts for Emma1919\_59:

(1, 46234), (Start: 7 @46318 has 83 MA's), (Start: 19 @46438 has 2 MA's), (32, 46534), (52, 46672), (56, 46687), (62, 46726), (65, 46768), (75, 46855), (84, 46939), (93, 46993), (96, 47002), (98, 47026), (100, 47056), (108, 47104), (115, 47134), (128, 47236), (143, 47302), (146, 47317), (149, 47338), (158, 47407),

Gene: EmoNemo\_63 Start: 52730, Stop: 51792, Start Num: 15

Candidate Starts for EmoNemo\_63:

(Start: 15 @52730 has 8 MA's), (Start: 27 @52643 has 2 MA's), (49, 52502), (50, 52496), (61, 52430), (63, 52412), (72, 52325), (74, 52313), (80, 52271), (81, 52268), (82, 52256), (90, 52181), (94, 52151), (95, 52148), (98, 52121), (109, 52040), (111, 52031), (121, 51980), (133, 51902), (154, 51818),

Gene: Enygma\_80 Start: 58165, Stop: 59241, Start Num: 7

Candidate Starts for Enygma\_80:

(Start: 7 @58165 has 83 MA's), (Start: 8 @58183 has 5 MA's), (31, 58372), (44, 58447), (48, 58483), (58, 58540), (62, 58564), (65, 58606), (73, 58678), (75, 58693), (88, 58789), (98, 58858), (102, 58897), (107, 58933), (113, 58960), (115, 58966), (145, 59131), (149, 59164), (155, 59203), (158, 59233),

Gene: Evy\_78 Start: 57067, Stop: 58131, Start Num: 7

Candidate Starts for Evy\_78:

(Start: 7 @57067 has 83 MA's), (38, 57307), (42, 57331), (43, 57334), (47, 57355), (53, 57409), (62, 57460), (65, 57502), (73, 57574), (74, 57577), (75, 57589), (79, 57613), (85, 57673), (94, 57724), (98, 57754), (99, 57760), (115, 57862), (134, 57991), (147, 58051), (155, 58093), (158, 58123),

Gene: Faust\_58 Start: 47454, Stop: 48551, Start Num: 7

Candidate Starts for Faust\_58:

(Start: 7 @47454 has 83 MA's), (37, 47691), (38, 47694), (41, 47709), (45, 47751), (62, 47862), (65, 47904), (75, 47991), (77, 48009), (84, 48075), (88, 48093), (94, 48132), (98, 48162), (115, 48270), (123, 48330), (125, 48342), (136, 48414), (149, 48474), (155, 48513),

Gene: FlyingTortilla\_65 Start: 56355, Stop: 55417, Start Num: 15

Candidate Starts for FlyingTortilla\_65:

(14, 56358), (Start: 15 @56355 has 8 MA's), (Start: 27 @56268 has 2 MA's), (49, 56127), (50, 56121), (61, 56055), (68, 55983), (72, 55950), (74, 55938), (81, 55893), (82, 55881), (90, 55806), (98, 55746), (99, 55740), (101, 55716), (109, 55665), (111, 55656), (116, 55641), (121, 55605), (135, 55524), (138, 55515), (151, 55455), (154, 55443),

Gene: Forrest\_59 Start: 47015, Stop: 48112, Start Num: 7

Candidate Starts for Forrest\_59:

(1, 46931), (Start: 7 @47015 has 83 MA's), (Start: 19 @47135 has 2 MA's), (32, 47231), (52, 47369), (56, 47384), (62, 47423), (65, 47465), (75, 47552), (84, 47636), (96, 47699), (98, 47723), (100, 47753), (108, 47801), (115, 47831), (128, 47933), (143, 47999), (146, 48014), (149, 48035), (158, 48104),

Gene: Francesca\_73 Start: 58256, Stop: 59269, Start Num: 4

Candidate Starts for Francesca\_73:

(Start: 4 @58256 has 2 MA's), (6, 58274), (Start: 10 @58316 has 1 MA's), (11, 58331), (22, 58421), (34, 58493), (35, 58499), (39, 58514), (67, 58709), (70, 58739), (73, 58763), (75, 58778), (115, 59054), (131, 59183), (142, 59222), (150, 59261),

Gene: Francob\_56 Start: 46379, Stop: 47476, Start Num: 7

Candidate Starts for Francob\_56:

(Start: 7 @46379 has 83 MA's), (26, 46547), (32, 46595), (37, 46616), (40, 46628), (52, 46733), (62, 46787), (65, 46829), (75, 46916), (88, 47018), (96, 47063), (98, 47087), (108, 47165), (115, 47195), (131, 47321), (143, 47363), (149, 47399),

Gene: GMA6\_51 Start: 44602, Stop: 43667, Start Num: 16

Candidate Starts for GMA6\_51:

(14, 44614), (16, 44602), (21, 44557), (49, 44383), (61, 44311), (64, 44281), (71, 44209), (74, 44194), (76, 44173), (78, 44161), (83, 44125), (90, 44062), (91, 44050), (92, 44041), (94, 44032), (98, 44002), (99, 43996), (101, 43972), (104, 43951), (109, 43921), (110, 43918), (116, 43897), (138, 43765), (153, 43696), (154, 43693),

Gene: Genie2\_80 Start: 56336, Stop: 57412, Start Num: 7

Candidate Starts for Genie2\_80:

(Start: 7 @56336 has 83 MA's), (Start: 8 @56354 has 5 MA's), (Start: 13 @56408 has 2 MA's), (31, 56543), (44, 56618), (48, 56654), (62, 56735), (65, 56777), (73, 56849), (75, 56864), (80, 56894), (88, 56960), (98, 57029), (100, 57059), (105, 57092), (107, 57104), (113, 57131), (115, 57137), (145, 57302), (149, 57335), (158, 57404),

Gene: Gibbi\_84 Start: 56494, Stop: 57570, Start Num: 7

Candidate Starts for Gibbi\_84:

(Start: 7 @56494 has 83 MA's), (Start: 8 @56512 has 5 MA's), (Start: 13 @56566 has 2 MA's), (31, 56701), (44, 56776), (48, 56812), (58, 56869), (62, 56893), (65, 56935), (73, 57007), (75, 57022), (88, 57118), (89, 57127), (94, 57157), (98, 57187), (102, 57226), (107, 57262), (113, 57289), (115, 57295), (145, 57460), (149, 57493), (158, 57562),

Gene: Gilson\_58 Start: 46391, Stop: 47368, Start Num: 19

Candidate Starts for Gilson\_58:

(1, 46187), (Start: 7 @46271 has 83 MA's), (Start: 19 @46391 has 2 MA's), (32, 46487), (52, 46625), (56, 46640), (62, 46679), (65, 46721), (75, 46808), (84, 46892), (93, 46946), (96, 46955), (98, 46979), (100, 47009), (108, 47057), (115, 47087), (128, 47189), (143, 47255), (146, 47270), (149, 47291), (158, 47360),

Gene: Gray\_66 Start: 53261, Stop: 52323, Start Num: 15

Candidate Starts for Gray\_66:

(Start: 15 @53261 has 8 MA's), (Start: 27 @53174 has 2 MA's), (49, 53033), (50, 53027), (61, 52961), (63, 52943), (72, 52856), (74, 52844), (80, 52802), (81, 52799), (82, 52787), (90, 52712), (94, 52682), (95, 52679), (98, 52652), (109, 52571), (111, 52562), (121, 52511), (133, 52433), (154, 52349),

Gene: Grayson\_100 Start: 60346, Stop: 61206, Start Num: 20

Candidate Starts for Grayson\_100:

(Start: 7 @60223 has 83 MA's), (Start: 20 @60346 has 2 MA's), (34, 60445), (35, 60451), (38, 60463), (44, 60499), (51, 60544), (57, 60577), (60, 60601), (73, 60721), (75, 60736), (94, 60874), (117, 61021), (144, 61183),

Gene: Hanem\_65 Start: 52643, Stop: 51792, Start Num: 27

Candidate Starts for Hanem\_65:

(Start: 15 @52730 has 8 MA's), (Start: 27 @52643 has 2 MA's), (49, 52502), (50, 52496), (61, 52430), (63, 52412), (72, 52325), (74, 52313), (80, 52271), (81, 52268), (82, 52256), (90, 52181), (94, 52151), (95, 52148), (98, 52121), (109, 52040), (111, 52031), (121, 51980), (133, 51902), (154, 51818),

Gene: HangryHippo\_78 Start: 57170, Stop: 58234, Start Num: 7

Candidate Starts for HangryHippo\_78:

(Start: 7 @57170 has 83 MA's), (Start: 12 @57239 has 2 MA's), (36, 57401), (42, 57434), (43, 57437), (47, 57458), (62, 57563), (65, 57605), (73, 57677), (74, 57680), (75, 57692), (79, 57716), (85, 57776), (94, 57827), (98, 57857), (102, 57896), (107, 57932), (115, 57965), (120, 58004), (134, 58094), (149, 58157), (158, 58226),

Gene: IchabodCrane\_77 Start: 56155, Stop: 57159, Start Num: 13

Candidate Starts for IchabodCrane\_77:

(Start: 7 @56083 has 83 MA's), (Start: 8 @56101 has 5 MA's), (Start: 13 @56155 has 2 MA's), (31, 56290), (44, 56365), (48, 56401), (58, 56458), (62, 56482), (65, 56524), (73, 56596), (75, 56611), (88, 56707), (89, 56716), (94, 56746), (98, 56776), (102, 56815), (107, 56851), (113, 56878), (115, 56884), (145, 57049), (149, 57082), (155, 57121), (158, 57151),

Gene: Jada\_57 Start: 46197, Stop: 47294, Start Num: 7

Candidate Starts for Jada\_57:

(1, 46113), (Start: 7 @46197 has 83 MA's), (Start: 19 @46317 has 2 MA's), (32, 46413), (52, 46551), (56, 46566), (62, 46605), (65, 46647), (75, 46734), (84, 46818), (96, 46881), (98, 46905), (100, 46935), (108, 46983), (115, 47013), (128, 47115), (143, 47181), (146, 47196), (149, 47217), (158, 47286),

Gene: Jay2Jay\_82 Start: 57920, Stop: 58984, Start Num: 7

Candidate Starts for Jay2Jay\_82:

(Start: 7 @57920 has 83 MA's), (38, 58160), (42, 58184), (43, 58187), (47, 58208), (62, 58313), (65, 58355), (73, 58427), (74, 58430), (75, 58442), (79, 58466), (85, 58526), (89, 58547), (94, 58577), (98, 58607), (108, 58685), (115, 58715), (134, 58844), (147, 58904), (155, 58946), (158, 58976),

Gene: JimJam\_80 Start: 56457, Stop: 57533, Start Num: 7

Candidate Starts for JimJam\_80:

(Start: 7 @56457 has 83 MA's), (Start: 8 @56475 has 5 MA's), (Start: 13 @56529 has 2 MA's), (31, 56664), (44, 56739), (48, 56775), (58, 56832), (62, 56856), (65, 56898), (73, 56970), (75, 56985), (88, 57081), (89, 57090), (94, 57120), (98, 57150), (102, 57189), (107, 57225), (113, 57252), (115, 57258), (145, 57423), (149, 57456), (155, 57495), (158, 57525),

Gene: Jollison\_79 Start: 56339, Stop: 57415, Start Num: 7

Candidate Starts for Jollison\_79:

(Start: 7 @56339 has 83 MA's), (Start: 8 @56357 has 5 MA's), (Start: 13 @56411 has 2 MA's), (31, 56546), (44, 56621), (48, 56657), (58, 56714), (62, 56738), (65, 56780), (73, 56852), (75, 56867), (88, 56963), (89, 56972), (94, 57002), (98, 57032), (102, 57071), (107, 57107), (113, 57134), (115, 57140), (145, 57305), (149, 57338), (155, 57377), (158, 57407),

Gene: Kabocha\_67 Start: 54073, Stop: 53135, Start Num: 15

Candidate Starts for Kabocha\_67:

(Start: 15 @54073 has 8 MA's), (Start: 27 @53986 has 2 MA's), (49, 53845), (50, 53839), (61, 53773), (63, 53755), (72, 53668), (74, 53656), (80, 53614), (81, 53611), (82, 53599), (90, 53524), (94, 53494), (95, 53491), (98, 53464), (109, 53383), (111, 53374), (121, 53323), (133, 53245), (154, 53161),

Gene: Karimac\_79 Start: 56488, Stop: 57564, Start Num: 7

Candidate Starts for Karimac\_79:

(Start: 7 @56488 has 83 MA's), (Start: 8 @56506 has 5 MA's), (Start: 13 @56560 has 2 MA's), (31, 56695), (44, 56770), (48, 56806), (58, 56863), (62, 56887), (65, 56929), (73, 57001), (75, 57016), (88, 57112), (89, 57121), (94, 57151), (98, 57181), (102, 57220), (107, 57256), (113, 57283), (115, 57289), (145, 57454), (149, 57487), (155, 57526), (158, 57556),

Gene: Karp\_56 Start: 47132, Stop: 48229, Start Num: 7

Candidate Starts for Karp\_56:

(Start: 7 @47132 has 83 MA's), (32, 47348), (52, 47486), (56, 47501), (60, 47531), (62, 47540), (65, 47582), (75, 47669), (79, 47693), (98, 47840), (108, 47918), (115, 47948), (124, 48014), (126, 48026), (143, 48116), (146, 48131), (149, 48152),

Gene: Kenrey\_59 Start: 46586, Stop: 47563, Start Num: 19

Candidate Starts for Kenrey\_59:

(Start: 7 @46466 has 83 MA's), (Start: 19 @46586 has 2 MA's), (32, 46682), (52, 46820), (62, 46874), (65, 46916), (69, 46949), (75, 47003), (80, 47033), (84, 47087), (98, 47174), (101, 47207), (108, 47252), (115, 47282), (126, 47360), (149, 47486), (157, 47537), (158, 47555),

Gene: KentuckyRacer\_80 Start: 56272, Stop: 57348, Start Num: 7

Candidate Starts for KentuckyRacer\_80:

(Start: 7 @56272 has 83 MA's), (Start: 8 @56290 has 5 MA's), (Start: 13 @56344 has 2 MA's), (31, 56479), (44, 56554), (48, 56590), (58, 56647), (62, 56671), (65, 56713), (73, 56785), (75, 56800), (88, 56896), (89, 56905), (94, 56935), (98, 56965), (102, 57004), (107, 57040), (113, 57067), (115, 57073), (145, 57238), (149, 57271), (155, 57310), (158, 57340),

Gene: Larnav\_78 Start: 57155, Stop: 58219, Start Num: 7

Candidate Starts for Larnav\_78:

(Start: 7 @57155 has 83 MA's), (Start: 12 @57224 has 2 MA's), (36, 57386), (42, 57419), (43, 57422), (47, 57443), (62, 57548), (65, 57590), (73, 57662), (74, 57665), (75, 57677), (79, 57701), (85, 57761), (94, 57812), (98, 57842), (102, 57881), (107, 57917), (115, 57950), (120, 57989), (134, 58079), (149, 58142), (158, 58211),

Gene: Lenoshki\_65 Start: 54338, Stop: 53487, Start Num: 27

Candidate Starts for Lenoshki\_65:

(Start: 15 @54425 has 8 MA's), (Start: 27 @54338 has 2 MA's), (49, 54197), (50, 54191), (61, 54125), (63, 54107), (72, 54020), (74, 54008), (80, 53966), (81, 53963), (82, 53951), (90, 53876), (94, 53846), (95, 53843), (98, 53816), (109, 53735), (111, 53726), (121, 53675), (133, 53597), (154, 53513),

Gene: Leo04\_79 Start: 57670, Stop: 58734, Start Num: 7

Candidate Starts for Leo04\_79:

(Start: 7 @57670 has 83 MA's), (Start: 12 @57739 has 2 MA's), (36, 57901), (42, 57934), (43, 57937), (47, 57958), (62, 58063), (65, 58105), (73, 58177), (74, 58180), (75, 58192), (79, 58216), (85, 58276), (94, 58327), (98, 58357), (102, 58396), (107, 58432), (115, 58465), (120, 58504), (134, 58594), (149, 58657), (158, 58726),

Gene: Liandry\_76 Start: 56545, Stop: 57609, Start Num: 7

Candidate Starts for Liandry\_76:

(Start: 7 @56545 has 83 MA's), (42, 56809), (43, 56812), (47, 56833), (62, 56938), (65, 56980), (73, 57052), (74, 57055), (75, 57067), (85, 57151), (94, 57202), (98, 57232), (102, 57271), (105, 57295), (115, 57340), (147, 57529), (155, 57571), (158, 57601),

Gene: LilMartin\_75 Start: 55387, Stop: 56451, Start Num: 7

Candidate Starts for LilMartin\_75:

(Start: 7 @55387 has 83 MA's), (Start: 19 @55507 has 2 MA's), (40, 55636), (42, 55651), (43, 55654), (47, 55675), (62, 55780), (65, 55822), (73, 55894), (74, 55897), (75, 55909), (88, 56005), (89, 56014), (94, 56044), (98, 56074), (115, 56182), (158, 56443),

Gene: Limpid\_55 Start: 45379, Stop: 46476, Start Num: 7

Candidate Starts for Limpid\_55:

(Start: 7 @45379 has 83 MA's), (35, 45607), (37, 45616), (41, 45634), (62, 45787), (65, 45829), (66, 45832), (75, 45916), (77, 45934), (79, 45940), (84, 46000), (89, 46027), (94, 46057), (98, 46087), (100, 46117), (108, 46165), (115, 46195), (124, 46261), (126, 46273), (149, 46399),

Gene: LukeCage\_79 Start: 56251, Stop: 57327, Start Num: 7

Candidate Starts for LukeCage\_79:

(Start: 7 @56251 has 83 MA's), (Start: 8 @56269 has 5 MA's), (Start: 13 @56323 has 2 MA's), (31, 56458), (35, 56479), (44, 56533), (48, 56569), (58, 56626), (62, 56650), (65, 56692), (73, 56764), (75, 56779), (88, 56875), (89, 56884), (98, 56944), (102, 56983), (107, 57019), (113, 57046), (115, 57052), (145, 57217), (149, 57250), (155, 57289), (158, 57319),

Gene: Lululemon\_77 Start: 56551, Stop: 57615, Start Num: 7

Candidate Starts for Lululemon\_77:

(Start: 7 @56551 has 83 MA's), (Start: 12 @56620 has 2 MA's), (36, 56782), (42, 56815), (43, 56818), (47, 56839), (62, 56944), (65, 56986), (73, 57058), (74, 57061), (75, 57073), (79, 57097), (85, 57157), (94, 57208), (98, 57238), (102, 57277), (107, 57313), (115, 57346), (120, 57385), (134, 57475), (149, 57538), (158, 57607),

Gene: Marsus\_76 Start: 55659, Stop: 56723, Start Num: 7

Candidate Starts for Marsus\_76:

(Start: 7 @55659 has 83 MA's), (Start: 19 @55779 has 2 MA's), (40, 55908), (42, 55923), (43, 55926), (47, 55947), (62, 56052), (65, 56094), (73, 56166), (74, 56169), (75, 56181), (88, 56277), (94, 56316), (98, 56346), (102, 56385), (115, 56454), (158, 56715),

Gene: MeganTheeKilla\_56 Start: 45632, Stop: 46729, Start Num: 7

Candidate Starts for MeganTheeKilla\_56:

(1, 45548), (Start: 7 @45632 has 83 MA's), (Start: 19 @45752 has 2 MA's), (32, 45848), (52, 45986), (56, 46001), (62, 46040), (65, 46082), (75, 46169), (84, 46253), (96, 46316), (98, 46340), (100, 46370), (108, 46418), (115, 46448), (128, 46550), (143, 46616), (146, 46631), (149, 46652), (158, 46721),

Gene: Mildred21\_76 Start: 55591, Stop: 56655, Start Num: 7

Candidate Starts for Mildred21\_76:

(Start: 7 @55591 has 83 MA's), (40, 55840), (42, 55855), (43, 55858), (47, 55879), (62, 55984), (65, 56026), (73, 56098), (74, 56101), (75, 56113), (85, 56197), (94, 56248), (98, 56278), (105, 56341), (107, 56353), (115, 56386), (120, 56425), (130, 56491), (134, 56515), (147, 56575), (158, 56647),

Gene: MindFlayer\_77 Start: 55990, Stop: 57066, Start Num: 7

Candidate Starts for MindFlayer\_77:

(Start: 7 @55990 has 83 MA's), (Start: 8 @56008 has 5 MA's), (Start: 13 @56062 has 2 MA's), (31, 56197), (44, 56272), (48, 56308), (58, 56365), (62, 56389), (65, 56431), (73, 56503), (75, 56518), (88, 56614), (89, 56623), (94, 56653), (98, 56683), (102, 56722), (107, 56758), (113, 56785), (115, 56791), (145, 56956), (149, 56989), (155, 57028), (158, 57058),

Gene: MintFritos\_63 Start: 52731, Stop: 51793, Start Num: 15

Candidate Starts for MintFritos\_63:

(Start: 15 @52731 has 8 MA's), (Start: 27 @52644 has 2 MA's), (49, 52503), (50, 52497), (61, 52431), (63, 52413), (72, 52326), (74, 52314), (80, 52272), (81, 52269), (82, 52257), (90, 52182), (94, 52152),



(95, 52149), (98, 52122), (109, 52041), (111, 52032), (121, 51981), (133, 51903), (154, 51819),

Gene: Moab\_58 Start: 47488, Stop: 48585, Start Num: 7

Candidate Starts for Moab\_58:

(Start: 7 @47488 has 83 MA's), (Start: 19 @47608 has 2 MA's), (32, 47704), (45, 47785), (55, 47854), (59, 47881), (62, 47896), (65, 47938), (69, 47971), (75, 48025), (79, 48049), (89, 48136), (98, 48196), (100, 48226), (108, 48274), (115, 48304), (131, 48430), (136, 48448), (143, 48472), (149, 48508),

Gene: Mugiwara\_81 Start: 56768, Stop: 57826, Start Num: 8

Candidate Starts for Mugiwara\_81:

(Start: 7 @56750 has 83 MA's), (Start: 8 @56768 has 5 MA's), (Start: 13 @56822 has 2 MA's), (31, 56957), (44, 57032), (48, 57068), (58, 57125), (62, 57149), (65, 57191), (73, 57263), (75, 57278), (88, 57374), (89, 57383), (94, 57413), (98, 57443), (102, 57482), (107, 57518), (115, 57551), (145, 57716), (149, 57749), (158, 57818),

Gene: MulchMansion\_75 Start: 55387, Stop: 56451, Start Num: 7

Candidate Starts for MulchMansion\_75:

(Start: 7 @55387 has 83 MA's), (Start: 19 @55507 has 2 MA's), (40, 55636), (42, 55651), (43, 55654), (47, 55675), (62, 55780), (65, 55822), (73, 55894), (74, 55897), (75, 55909), (88, 56005), (89, 56014), (94, 56044), (98, 56074), (115, 56182), (158, 56443),

Gene: Muntaha\_55 Start: 47745, Stop: 48827, Start Num: 7

Candidate Starts for Muntaha\_55:

(Start: 7 @47745 has 83 MA's), (62, 48138), (65, 48180), (75, 48267), (77, 48285), (88, 48369), (94, 48408), (98, 48438), (100, 48468), (115, 48546), (119, 48576), (149, 48750),

Gene: Navo\_75 Start: 56467, Stop: 57531, Start Num: 7

Candidate Starts for Navo\_75:

(Start: 7 @56467 has 83 MA's), (42, 56731), (43, 56734), (46, 56752), (47, 56755), (62, 56860), (65, 56902), (73, 56974), (74, 56977), (75, 56989), (85, 57073), (94, 57124), (98, 57154), (102, 57193), (105, 57217), (115, 57262), (147, 57451), (155, 57493), (158, 57523),

Gene: NiceHouse\_88 Start: 62950, Stop: 63975, Start Num: 5

Candidate Starts for NiceHouse\_88:

(3, 62938), (Start: 5 @62950 has 1 MA's), (9, 63007), (Start: 12 @63031 has 2 MA's), (Start: 19 @63082 has 2 MA's), (26, 63130), (30, 63154), (46, 63247), (57, 63319), (62, 63352), (66, 63394), (73, 63463), (75, 63478), (88, 63577), (98, 63649), (106, 63718), (114, 63754), (115, 63757), (127, 63844), (137, 63913), (140, 63919), (148, 63961),

Gene: NootNoot\_73 Start: 55459, Stop: 56523, Start Num: 7

Candidate Starts for NootNoot\_73:

(Start: 7 @55459 has 83 MA's), (42, 55723), (43, 55726), (47, 55747), (62, 55852), (65, 55894), (73, 55966), (74, 55969), (75, 55981), (85, 56065), (94, 56116), (98, 56146), (102, 56185), (105, 56209), (115, 56254), (147, 56443), (155, 56485), (158, 56515),

Gene: Nova53\_72 Start: 57651, Stop: 58664, Start Num: 4

Candidate Starts for Nova53\_72:

(Start: 4 @57651 has 2 MA's), (6, 57669), (Start: 10 @57711 has 1 MA's), (11, 57726), (22, 57816), (34, 57888), (37, 57903), (39, 57909), (57, 58014), (60, 58038), (61, 58044), (67, 58104), (70, 58134), (73, 58158), (75, 58173), (80, 58203), (100, 58371), (106, 58410), (115, 58449), (150, 58656),

Gene: Oogie\_65 Start: 54451, Stop: 53513, Start Num: 15

Candidate Starts for Oogie\_65:

(Start: 15 @54451 has 8 MA's), (Start: 27 @54364 has 2 MA's), (49, 54223), (50, 54217), (61, 54151), (63, 54133), (72, 54046), (74, 54034), (80, 53992), (81, 53989), (82, 53977), (90, 53902), (94, 53872), (95, 53869), (98, 53842), (109, 53761), (111, 53752), (121, 53701), (133, 53623), (154, 53539),

Gene: PacManQ\_77 Start: 56551, Stop: 57615, Start Num: 7

Candidate Starts for PacManQ\_77:

(Start: 7 @56551 has 83 MA's), (Start: 12 @56620 has 2 MA's), (36, 56782), (42, 56815), (43, 56818), (47, 56839), (62, 56944), (65, 56986), (73, 57058), (74, 57061), (75, 57073), (79, 57097), (85, 57157), (94, 57208), (98, 57238), (102, 57277), (107, 57313), (115, 57346), (120, 57385), (134, 57475), (149, 57538), (158, 57607),

Gene: Pakusa\_63 Start: 52472, Stop: 51534, Start Num: 15

Candidate Starts for Pakusa\_63:

(Start: 15 @52472 has 8 MA's), (Start: 27 @52385 has 2 MA's), (49, 52244), (50, 52238), (61, 52172), (63, 52154), (72, 52067), (74, 52055), (80, 52013), (81, 52010), (82, 51998), (90, 51923), (94, 51893), (95, 51890), (98, 51863), (109, 51782), (111, 51773), (121, 51722), (133, 51644), (154, 51560),

Gene: Paradiddles\_73 Start: 55723, Stop: 56787, Start Num: 7

Candidate Starts for Paradiddles\_73:

(Start: 7 @55723 has 83 MA's), (42, 55987), (43, 55990), (47, 56011), (62, 56116), (65, 56158), (73, 56230), (74, 56233), (75, 56245), (94, 56380), (98, 56410), (102, 56449), (103, 56452), (105, 56473), (115, 56518), (147, 56707), (155, 56749), (158, 56779),

Gene: Patelgo\_57 Start: 47675, Stop: 48772, Start Num: 7

Candidate Starts for Patelgo\_57:

(Start: 7 @47675 has 83 MA's), (32, 47891), (45, 47972), (55, 48041), (59, 48068), (62, 48083), (65, 48125), (69, 48158), (75, 48212), (79, 48236), (89, 48323), (98, 48383), (100, 48413), (103, 48425), (108, 48461), (115, 48491), (131, 48617), (136, 48635), (143, 48659), (149, 48695),

Gene: Peebs\_77 Start: 56974, Stop: 57969, Start Num: 12

Candidate Starts for Peebs\_77:

(Start: 7 @56905 has 83 MA's), (Start: 12 @56974 has 2 MA's), (36, 57136), (42, 57169), (43, 57172), (47, 57193), (62, 57298), (65, 57340), (73, 57412), (74, 57415), (75, 57427), (79, 57451), (85, 57511), (94, 57562), (98, 57592), (102, 57631), (107, 57667), (115, 57700), (120, 57739), (134, 57829), (149, 57892), (158, 57961),

Gene: Pepperwood\_78 Start: 57038, Stop: 58102, Start Num: 7

Candidate Starts for Pepperwood\_78:

(Start: 7 @57038 has 83 MA's), (Start: 12 @57107 has 2 MA's), (36, 57269), (42, 57302), (43, 57305), (47, 57326), (62, 57431), (65, 57473), (73, 57545), (74, 57548), (75, 57560), (79, 57584), (85, 57644), (94, 57695), (98, 57725), (102, 57764), (107, 57800), (115, 57833), (120, 57872), (134, 57962), (149, 58025), (158, 58094),

Gene: Peregrin\_97 Start: 58713, Stop: 59573, Start Num: 20

Candidate Starts for Peregrin\_97:

(Start: 7 @58590 has 83 MA's), (Start: 20 @58713 has 2 MA's), (29, 58779), (34, 58812), (35, 58818), (38, 58830), (44, 58866), (51, 58911), (57, 58944), (60, 58968), (73, 59088), (75, 59103), (94, 59241), (117, 59388), (144, 59550),

Gene: Persimmon\_74 Start: 55392, Stop: 56456, Start Num: 7

Candidate Starts for Persimmon\_74:

(Start: 7 @55392 has 83 MA's), (42, 55656), (43, 55659), (47, 55680), (62, 55785), (65, 55827), (73, 55899), (74, 55902), (75, 55914), (85, 55998), (94, 56049), (98, 56079), (102, 56118), (103, 56121),

(105, 56142), (115, 56187), (147, 56376), (155, 56418), (158, 56448),

Gene: Phredrick\_57 Start: 45537, Stop: 46634, Start Num: 7

Candidate Starts for Phredrick\_57:

(Start: 7 @45537 has 83 MA's), (Start: 19 @45657 has 2 MA's), (32, 45753), (52, 45891), (62, 45945), (65, 45987), (69, 46020), (75, 46074), (84, 46158), (98, 46245), (101, 46278), (108, 46323), (115, 46353), (126, 46431), (149, 46557), (157, 46608), (158, 46626),

Gene: PinkiePie\_76 Start: 56545, Stop: 57609, Start Num: 7

Candidate Starts for PinkiePie\_76:

(Start: 7 @56545 has 83 MA's), (42, 56809), (43, 56812), (47, 56833), (62, 56938), (65, 56980), (73, 57052), (74, 57055), (75, 57067), (85, 57151), (94, 57202), (98, 57232), (102, 57271), (105, 57295), (115, 57340), (147, 57529), (155, 57571), (158, 57601),

Gene: PumpkinSpice\_79 Start: 56382, Stop: 57458, Start Num: 7

Candidate Starts for PumpkinSpice\_79:

(Start: 7 @56382 has 83 MA's), (Start: 8 @56400 has 5 MA's), (Start: 13 @56454 has 2 MA's), (31, 56589), (44, 56664), (48, 56700), (58, 56757), (62, 56781), (65, 56823), (73, 56895), (75, 56910), (88, 57006), (89, 57015), (94, 57045), (98, 57075), (102, 57114), (107, 57150), (113, 57177), (115, 57183), (145, 57348), (149, 57381), (155, 57420), (158, 57450),

Gene: Quaran19\_79 Start: 56373, Stop: 57449, Start Num: 7

Candidate Starts for Quaran19\_79:

(Start: 7 @56373 has 83 MA's), (Start: 8 @56391 has 5 MA's), (Start: 13 @56445 has 2 MA's), (31, 56580), (44, 56655), (48, 56691), (58, 56748), (62, 56772), (65, 56814), (73, 56886), (75, 56901), (88, 56997), (89, 57006), (94, 57036), (98, 57066), (102, 57105), (107, 57141), (113, 57168), (115, 57174), (145, 57339), (149, 57372), (155, 57411), (158, 57441),

Gene: Rikishi\_82 Start: 56288, Stop: 57364, Start Num: 7

Candidate Starts for Rikishi\_82:

(Start: 7 @56288 has 83 MA's), (Start: 8 @56306 has 5 MA's), (Start: 13 @56360 has 2 MA's), (31, 56495), (44, 56570), (48, 56606), (58, 56663), (62, 56687), (65, 56729), (73, 56801), (75, 56816), (88, 56912), (89, 56921), (94, 56951), (98, 56981), (102, 57020), (107, 57056), (113, 57083), (115, 57089), (145, 57254), (149, 57287), (155, 57326), (158, 57356),

Gene: Riptide\_75 Start: 55196, Stop: 56260, Start Num: 7

Candidate Starts for Riptide\_75:

(Start: 7 @55196 has 83 MA's), (Start: 19 @55316 has 2 MA's), (38, 55436), (40, 55445), (43, 55463), (44, 55472), (62, 55589), (65, 55631), (66, 55634), (73, 55703), (75, 55718), (79, 55742), (88, 55814), (94, 55853), (95, 55856), (98, 55883), (102, 55922), (115, 55991), (158, 56252),

Gene: SaltySpittoon\_79 Start: 56382, Stop: 57458, Start Num: 7

Candidate Starts for SaltySpittoon\_79:

(Start: 7 @56382 has 83 MA's), (Start: 8 @56400 has 5 MA's), (Start: 13 @56454 has 2 MA's), (31, 56589), (44, 56664), (48, 56700), (58, 56757), (62, 56781), (65, 56823), (73, 56895), (75, 56910), (88, 57006), (89, 57015), (94, 57045), (98, 57075), (102, 57114), (107, 57150), (113, 57177), (115, 57183), (145, 57348), (149, 57381), (155, 57420), (158, 57450),

Gene: Samisti12\_78 Start: 58348, Stop: 59412, Start Num: 7

Candidate Starts for Samisti12\_78:

(Start: 7 @58348 has 83 MA's), (Start: 12 @58417 has 2 MA's), (36, 58579), (42, 58612), (43, 58615), (47, 58636), (62, 58741), (65, 58783), (73, 58855), (74, 58858), (75, 58870), (79, 58894), (85, 58954), (94, 59005), (98, 59035), (102, 59074), (107, 59110), (115, 59143), (120, 59182), (134, 59272), (149,

59335), (158, 59404),

Gene: ScarletRaider\_64 Start: 55642, Stop: 54704, Start Num: 15

Candidate Starts for ScarletRaider\_64:

(14, 55645), (Start: 15 @55642 has 8 MA's), (Start: 27 @55555 has 2 MA's), (49, 55414), (50, 55408), (61, 55342), (68, 55270), (72, 55237), (74, 55225), (81, 55180), (82, 55168), (90, 55093), (98, 55033), (99, 55027), (101, 55003), (109, 54952), (111, 54943), (116, 54928), (121, 54892), (135, 54811), (138, 54802), (151, 54742), (154, 54730),

Gene: Scheme\_79 Start: 57752, Stop: 58816, Start Num: 7

Candidate Starts for Scheme\_79:

(Start: 7 @57752 has 83 MA's), (Start: 12 @57821 has 2 MA's), (36, 57983), (42, 58016), (43, 58019), (47, 58040), (62, 58145), (65, 58187), (73, 58259), (74, 58262), (75, 58274), (79, 58298), (85, 58358), (94, 58409), (98, 58439), (102, 58478), (107, 58514), (115, 58547), (120, 58586), (134, 58676), (149, 58739), (158, 58808),

Gene: Schomber\_64 Start: 52480, Stop: 51542, Start Num: 15

Candidate Starts for Schomber\_64:

(Start: 15 @52480 has 8 MA's), (Start: 27 @52393 has 2 MA's), (49, 52252), (50, 52246), (61, 52180), (63, 52162), (72, 52075), (74, 52063), (80, 52021), (81, 52018), (82, 52006), (90, 51931), (94, 51901), (95, 51898), (98, 51871), (109, 51790), (111, 51781), (121, 51730), (133, 51652), (154, 51568),

Gene: SeresaTree\_58 Start: 47099, Stop: 47941, Start Num: 41

Candidate Starts for SeresaTree\_58:

(Start: 7 @46844 has 83 MA's), (37, 47081), (38, 47084), (41, 47099), (45, 47141), (62, 47252), (65, 47294), (75, 47381), (77, 47399), (84, 47465), (88, 47483), (94, 47522), (98, 47552), (115, 47660), (123, 47720), (125, 47732), (136, 47804), (149, 47864), (155, 47903),

Gene: Sham\_54 Start: 47385, Stop: 48482, Start Num: 7

Candidate Starts for Sham\_54:

(Start: 7 @47385 has 83 MA's), (37, 47622), (41, 47640), (45, 47682), (62, 47793), (65, 47835), (75, 47922), (77, 47940), (89, 48033), (96, 48069), (98, 48093), (100, 48123), (108, 48171), (115, 48201), (125, 48273), (131, 48327), (149, 48405),

Gene: Shuckle\_76 Start: 57362, Stop: 58426, Start Num: 7

Candidate Starts for Shuckle\_76:

(Start: 7 @57362 has 83 MA's), (Start: 12 @57431 has 2 MA's), (36, 57593), (42, 57626), (43, 57629), (47, 57650), (48, 57674), (62, 57755), (65, 57797), (73, 57869), (74, 57872), (75, 57884), (79, 57908), (85, 57968), (98, 58049), (102, 58088), (115, 58157), (120, 58196), (134, 58286), (149, 58349), (155, 58388), (158, 58418),

Gene: Sollertia\_80 Start: 56336, Stop: 57412, Start Num: 7

Candidate Starts for Sollertia\_80:

(Start: 7 @56336 has 83 MA's), (Start: 8 @56354 has 5 MA's), (Start: 13 @56408 has 2 MA's), (31, 56543), (44, 56618), (48, 56654), (62, 56735), (65, 56777), (73, 56849), (75, 56864), (80, 56894), (88, 56960), (98, 57029), (100, 57059), (105, 57092), (107, 57104), (113, 57131), (115, 57137), (145, 57302), (149, 57335), (158, 57404),

Gene: SparkleGoddess\_58 Start: 47534, Stop: 48631, Start Num: 7

Candidate Starts for SparkleGoddess\_58:

(Start: 7 @47534 has 83 MA's), (32, 47750), (52, 47888), (56, 47903), (60, 47933), (62, 47942), (65, 47984), (75, 48071), (79, 48095), (98, 48242), (108, 48320), (115, 48350), (124, 48416), (126, 48428), (143, 48518), (146, 48533), (149, 48554),

Gene: Spelly\_80 Start: 56337, Stop: 57413, Start Num: 7

Candidate Starts for Spelly\_80:

(Start: 7 @56337 has 83 MA's), (Start: 8 @56355 has 5 MA's), (Start: 13 @56409 has 2 MA's), (31, 56544), (44, 56619), (48, 56655), (58, 56712), (62, 56736), (65, 56778), (73, 56850), (75, 56865), (88, 56961), (89, 56970), (94, 57000), (98, 57030), (102, 57069), (107, 57105), (113, 57132), (115, 57138), (145, 57303), (149, 57336), (155, 57375), (158, 57405),

Gene: Spilled\_81 Start: 56454, Stop: 57530, Start Num: 7

Candidate Starts for Spilled\_81:

(Start: 7 @56454 has 83 MA's), (Start: 8 @56472 has 5 MA's), (Start: 13 @56526 has 2 MA's), (31, 56661), (44, 56736), (48, 56772), (58, 56829), (62, 56853), (65, 56895), (73, 56967), (75, 56982), (88, 57078), (89, 57087), (94, 57117), (98, 57147), (102, 57186), (107, 57222), (113, 57249), (115, 57255), (145, 57420), (149, 57453), (155, 57492), (158, 57522),

Gene: Squillum\_77 Start: 56546, Stop: 57610, Start Num: 7

Candidate Starts for Squillum\_77:

(Start: 7 @56546 has 83 MA's), (42, 56810), (43, 56813), (47, 56834), (62, 56939), (65, 56981), (73, 57053), (74, 57056), (75, 57068), (85, 57152), (94, 57203), (98, 57233), (102, 57272), (105, 57296), (115, 57341), (147, 57530), (155, 57572), (158, 57602),

Gene: Stanimal\_80 Start: 56225, Stop: 57301, Start Num: 7

Candidate Starts for Stanimal\_80:

(Start: 7 @56225 has 83 MA's), (Start: 8 @56243 has 5 MA's), (Start: 13 @56297 has 2 MA's), (31, 56432), (44, 56507), (48, 56543), (62, 56624), (65, 56666), (73, 56738), (75, 56753), (80, 56783), (88, 56849), (98, 56918), (100, 56948), (105, 56981), (107, 56993), (113, 57020), (115, 57026), (145, 57191), (149, 57224), (158, 57293),

Gene: StarPlatinum\_80 Start: 56915, Stop: 57973, Start Num: 8

Candidate Starts for StarPlatinum\_80:

(Start: 7 @56897 has 83 MA's), (Start: 8 @56915 has 5 MA's), (Start: 13 @56969 has 2 MA's), (31, 57104), (44, 57179), (48, 57215), (58, 57272), (62, 57296), (65, 57338), (73, 57410), (75, 57425), (88, 57521), (89, 57530), (98, 57590), (102, 57629), (107, 57665), (113, 57692), (115, 57698), (145, 57863), (149, 57896), (155, 57935), (158, 57965),

Gene: Starbow\_78 Start: 56376, Stop: 57434, Start Num: 8

Candidate Starts for Starbow\_78:

(Start: 7 @56358 has 83 MA's), (Start: 8 @56376 has 5 MA's), (Start: 13 @56430 has 2 MA's), (31, 56565), (44, 56640), (48, 56676), (58, 56733), (62, 56757), (65, 56799), (73, 56871), (75, 56886), (88, 56982), (89, 56991), (94, 57021), (98, 57051), (102, 57090), (107, 57126), (113, 57153), (115, 57159), (145, 57324), (149, 57357), (155, 57396), (158, 57426),

Gene: Stigma\_57 Start: 47548, Stop: 48645, Start Num: 7

Candidate Starts for Stigma\_57:

(Start: 7 @47548 has 83 MA's), (32, 47764), (52, 47902), (56, 47917), (60, 47947), (62, 47956), (65, 47998), (75, 48085), (79, 48109), (98, 48256), (108, 48334), (115, 48364), (124, 48430), (126, 48442), (143, 48532), (146, 48547), (149, 48568),

Gene: Sushi23\_77 Start: 57263, Stop: 58327, Start Num: 7

Candidate Starts for Sushi23\_77:

(Start: 7 @57263 has 83 MA's), (Start: 12 @57332 has 2 MA's), (36, 57494), (42, 57527), (43, 57530), (47, 57551), (62, 57656), (65, 57698), (73, 57770), (74, 57773), (75, 57785), (79, 57809), (85, 57869), (94, 57920), (98, 57950), (102, 57989), (107, 58025), (115, 58058), (120, 58097), (134, 58187), (149,

58250), (158, 58319),

Gene: Targaryen\_78 Start: 57969, Stop: 59033, Start Num: 7

Candidate Starts for Targaryen\_78:

(Start: 7 @57969 has 83 MA's), (38, 58209), (42, 58233), (43, 58236), (47, 58257), (53, 58311), (62, 58362), (65, 58404), (73, 58476), (74, 58479), (75, 58491), (79, 58515), (85, 58575), (89, 58596), (94, 58626), (98, 58656), (99, 58662), (108, 58734), (115, 58764), (134, 58893), (147, 58953), (155, 58995), (158, 59025),

Gene: Teutsch\_78 Start: 57526, Stop: 58590, Start Num: 7

Candidate Starts for Teutsch\_78:

(Start: 7 @57526 has 83 MA's), (Start: 12 @57595 has 2 MA's), (36, 57757), (42, 57790), (43, 57793), (47, 57814), (62, 57919), (65, 57961), (73, 58033), (74, 58036), (75, 58048), (79, 58072), (85, 58132), (94, 58183), (98, 58213), (102, 58252), (107, 58288), (115, 58321), (120, 58360), (134, 58450), (149, 58513), (158, 58582),

Gene: TomSawyer\_78 Start: 55976, Stop: 57052, Start Num: 7

Candidate Starts for TomSawyer\_78:

(Start: 7 @55976 has 83 MA's), (Start: 8 @55994 has 5 MA's), (Start: 13 @56048 has 2 MA's), (31, 56183), (44, 56258), (48, 56294), (58, 56351), (62, 56375), (65, 56417), (73, 56489), (75, 56504), (88, 56600), (89, 56609), (94, 56639), (98, 56669), (102, 56708), (107, 56744), (113, 56771), (115, 56777), (145, 56942), (149, 56975), (155, 57014), (158, 57044),

Gene: Tomas\_82 Start: 58734, Stop: 59792, Start Num: 8

Candidate Starts for Tomas\_82:

(Start: 7 @58716 has 83 MA's), (Start: 8 @58734 has 5 MA's), (28, 58902), (31, 58923), (44, 58998), (62, 59115), (65, 59157), (73, 59229), (75, 59244), (88, 59340), (98, 59409), (100, 59439), (102, 59448), (115, 59517), (129, 59622), (149, 59715), (158, 59784),

Gene: Toneprano\_63 Start: 52745, Stop: 51807, Start Num: 15

Candidate Starts for Toneprano\_63:

(Start: 15 @52745 has 8 MA's), (Start: 27 @52658 has 2 MA's), (49, 52517), (50, 52511), (61, 52445), (63, 52427), (72, 52340), (74, 52328), (80, 52286), (81, 52283), (82, 52271), (90, 52196), (94, 52166), (95, 52163), (98, 52136), (109, 52055), (111, 52046), (121, 51995), (133, 51917), (154, 51833),

Gene: Tribute\_76 Start: 56732, Stop: 57796, Start Num: 7

Candidate Starts for Tribute\_76:

(Start: 7 @56732 has 83 MA's), (Start: 12 @56801 has 2 MA's), (28, 56918), (36, 56963), (42, 56996), (43, 56999), (47, 57020), (62, 57125), (65, 57167), (73, 57239), (74, 57242), (75, 57254), (79, 57278), (85, 57338), (94, 57389), (98, 57419), (102, 57458), (107, 57494), (115, 57527), (120, 57566), (134, 57656), (149, 57719), (158, 57788),

Gene: Trina\_99 Start: 66025, Stop: 66966, Start Num: 10

Candidate Starts for Trina\_99:

(2, 65941), (Start: 10 @66025 has 1 MA's), (Start: 12 @66049 has 2 MA's), (14, 66073), (Start: 19 @66100 has 2 MA's), (40, 66229), (43, 66247), (44, 66256), (57, 66337), (62, 66370), (63, 66385), (73, 66481), (75, 66496), (88, 66595), (106, 66736), (112, 66766), (115, 66775), (118, 66799), (132, 66913), (146, 66958),

Gene: TunaTartare\_56 Start: 47688, Stop: 48785, Start Num: 7

Candidate Starts for TunaTartare\_56:

(Start: 7 @47688 has 83 MA's), (37, 47925), (38, 47928), (41, 47943), (45, 47985), (62, 48096), (65, 48138), (75, 48225), (77, 48243), (88, 48327), (89, 48336), (96, 48372), (98, 48396), (108, 48474),

(115, 48504), (125, 48576), (131, 48630), (149, 48708),

Gene: Twin\_63 Start: 52643, Stop: 51792, Start Num: 27

Candidate Starts for Twin\_63:

(Start: 15 @52730 has 8 MA's), (Start: 27 @52643 has 2 MA's), (49, 52502), (50, 52496), (61, 52430), (63, 52412), (72, 52325), (74, 52313), (80, 52271), (81, 52268), (82, 52256), (90, 52181), (94, 52151), (95, 52148), (98, 52121), (109, 52040), (111, 52031), (121, 51980), (133, 51902), (154, 51818),

Gene: UBSmoodge\_67 Start: 56124, Stop: 55186, Start Num: 15

Candidate Starts for UBSmoodge\_67:

(14, 56127), (Start: 15 @56124 has 8 MA's), (Start: 27 @56037 has 2 MA's), (49, 55896), (50, 55890), (61, 55824), (64, 55794), (68, 55752), (72, 55719), (74, 55707), (78, 55674), (81, 55662), (82, 55650), (90, 55575), (98, 55515), (99, 55509), (101, 55485), (109, 55434), (111, 55425), (121, 55374), (135, 55293), (138, 55284), (154, 55212),

Gene: Wakanda\_54 Start: 47682, Stop: 48764, Start Num: 7

Candidate Starts for Wakanda\_54:

(Start: 7 @47682 has 83 MA's), (62, 48075), (65, 48117), (75, 48204), (77, 48222), (88, 48306), (94, 48345), (98, 48375), (100, 48405), (115, 48483), (119, 48513), (149, 48687),

Gene: Warpy\_81 Start: 57433, Stop: 58497, Start Num: 7

Candidate Starts for Warpy\_81:

(Start: 7 @57433 has 83 MA's), (38, 57673), (42, 57697), (43, 57700), (47, 57721), (62, 57826), (65, 57868), (73, 57940), (74, 57943), (75, 57955), (79, 57979), (85, 58039), (89, 58060), (94, 58090), (98, 58120), (99, 58126), (115, 58228), (134, 58357), (147, 58417), (155, 58459), (158, 58489),

Gene: Watermoore\_78 Start: 57742, Stop: 58806, Start Num: 7

Candidate Starts for Watermoore\_78:

(Start: 7 @57742 has 83 MA's), (Start: 12 @57811 has 2 MA's), (36, 57973), (42, 58006), (43, 58009), (47, 58030), (62, 58135), (65, 58177), (73, 58249), (74, 58252), (75, 58264), (79, 58288), (85, 58348), (94, 58399), (98, 58429), (102, 58468), (107, 58504), (115, 58537), (120, 58576), (134, 58666), (149, 58729), (158, 58798),

Gene: Weasels2\_99 Start: 59743, Stop: 60729, Start Num: 7

Candidate Starts for Weasels2\_99:

(Start: 7 @59743 has 83 MA's), (29, 59932), (34, 59965), (44, 60019), (57, 60097), (60, 60121), (67, 60187), (69, 60202), (73, 60241), (75, 60256), (108, 60505), (112, 60526), (124, 60604),

Gene: Westy\_56 Start: 47535, Stop: 48632, Start Num: 7

Candidate Starts for Westy\_56:

(Start: 7 @47535 has 83 MA's), (32, 47751), (52, 47889), (56, 47904), (60, 47934), (62, 47943), (65, 47985), (75, 48072), (79, 48096), (98, 48243), (108, 48321), (115, 48351), (124, 48417), (126, 48429), (143, 48519), (146, 48534), (149, 48555),

Gene: WhereRU\_74 Start: 55983, Stop: 57047, Start Num: 7

Candidate Starts for WhereRU\_74:

(Start: 7 @55983 has 83 MA's), (42, 56247), (43, 56250), (47, 56271), (62, 56376), (65, 56418), (73, 56490), (74, 56493), (75, 56505), (85, 56589), (94, 56640), (98, 56670), (102, 56709), (105, 56733), (115, 56778), (147, 56967), (155, 57009), (158, 57039),

Gene: Wipeout\_77 Start: 56745, Stop: 57803, Start Num: 8

Candidate Starts for Wipeout\_77:

(Start: 7 @56727 has 83 MA's), (Start: 8 @56745 has 5 MA's), (Start: 13 @56799 has 2 MA's), (31, 56934), (44, 57009), (48, 57045), (58, 57102), (62, 57126), (65, 57168), (73, 57240), (75, 57255), (88, 57351), (89, 57360), (94, 57390), (98, 57420), (102, 57459), (107, 57495), (113, 57522), (115, 57528), (145, 57693), (149, 57726), (155, 57765), (158, 57795),

Gene: Wofford\_79 Start: 57498, Stop: 58502, Start Num: 13

Candidate Starts for Wofford\_79:

(Start: 7 @57426 has 83 MA's), (Start: 8 @57444 has 5 MA's), (Start: 13 @57498 has 2 MA's), (31, 57633), (37, 57663), (44, 57708), (48, 57744), (58, 57801), (62, 57825), (65, 57867), (73, 57939), (75, 57954), (88, 58050), (89, 58059), (98, 58119), (102, 58158), (107, 58194), (113, 58221), (115, 58227), (145, 58392), (149, 58425), (155, 58464), (158, 58494),

Gene: Yaboi\_80 Start: 56313, Stop: 57389, Start Num: 7

Candidate Starts for Yaboi\_80:

(Start: 7 @56313 has 83 MA's), (Start: 8 @56331 has 5 MA's), (Start: 13 @56385 has 2 MA's), (31, 56520), (44, 56595), (48, 56631), (62, 56712), (65, 56754), (73, 56826), (75, 56841), (80, 56871), (88, 56937), (98, 57006), (100, 57036), (105, 57069), (107, 57081), (113, 57108), (115, 57114), (145, 57279), (149, 57312), (158, 57381),