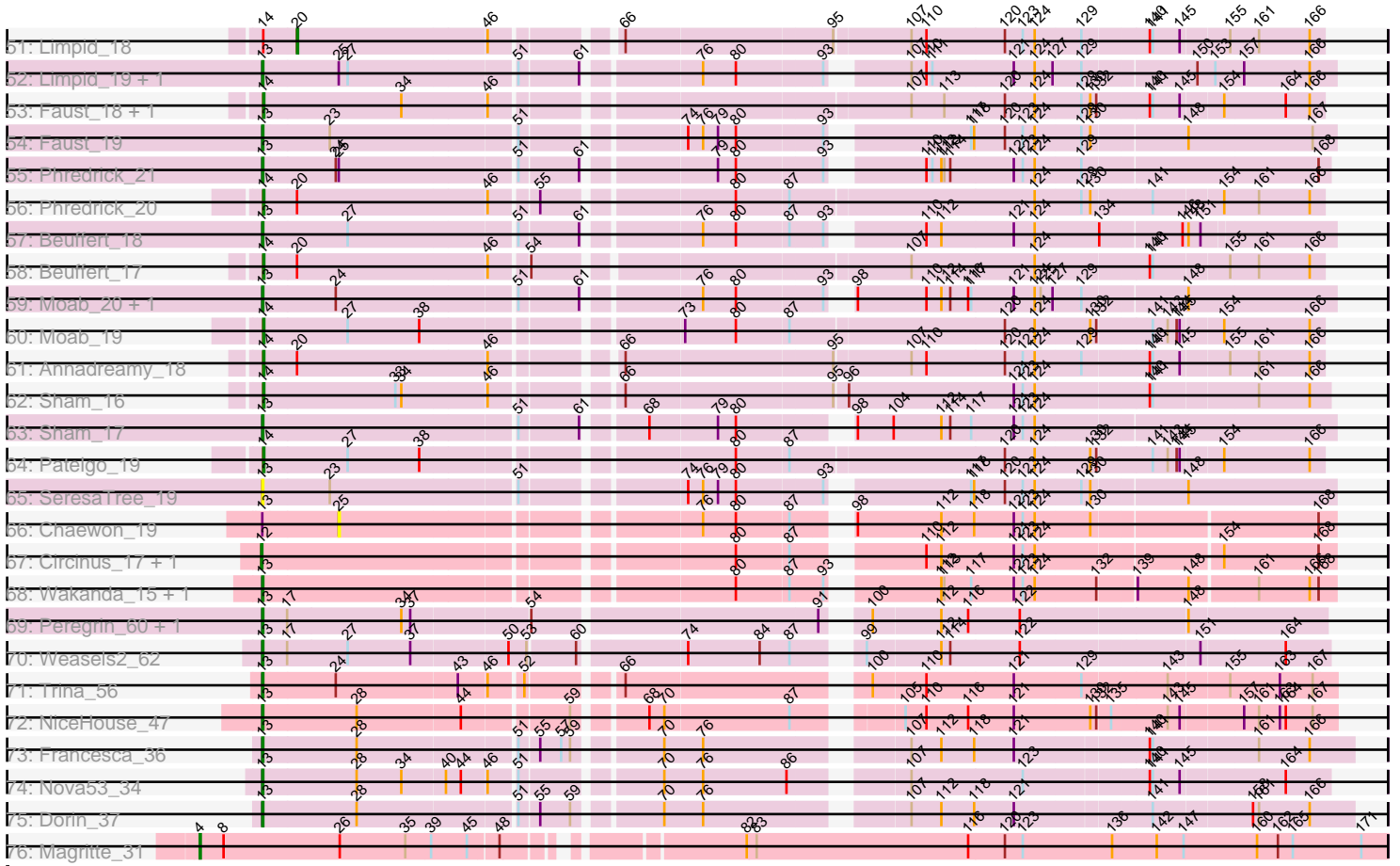




Pham 311313



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 311313 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311313 has 157 members, 13 are drafts.

Phages represented in each track:

- Track 1 : DanielleIgnace\_21
- Track 2 : Kitkat\_29, BeatusComedenti\_28
- Track 3 : KelleEzio\_28
- Track 4 : Pepperwood\_42, Teutsch\_41, Scheme\_42, WashU\_45
- Track 5 : HangryHippo\_42, PacManQ\_41, Cross\_42, BlueOtter\_42, Lululemon\_41, Watermoore\_41, Cursive\_39, Leo04\_42
- Track 6 : Coogler\_42, ArianaSWT\_45, Larnav\_42
- Track 7 : Squillium\_40, Eliot67\_39, Navo\_39, Liandry\_40, PinkiePie\_39, Paradiddles\_37, PynkPanther\_46, FreddyDRoo\_39
- Track 8 : Braelyn\_40, NootNoot\_37
- Track 9 : LilMartin\_39, Angela\_39, MulchMansion\_39
- Track 10 : Bmoc\_40
- Track 11 : Cadmus\_40, Daubenski\_43
- Track 12 : LilSaint\_41
- Track 13 : EGole\_43
- Track 14 : Sushi23\_42
- Track 15 : Shuckle\_40
- Track 16 : Jay2Jay\_46
- Track 17 : Riptide\_39, Anedea\_39
- Track 18 : Warpy\_46
- Track 19 : Davielle\_38, WhereRU\_38, Persimmon\_37
- Track 20 : Evy\_43, Targaryen\_43
- Track 21 : Bartholomune\_40
- Track 22 : Peebs\_41
- Track 23 : Mildred21\_40
- Track 24 : Marsus\_39
- Track 25 : Samisti12\_41
- Track 26 : Tribute\_40
- Track 27 : Spilled\_44, SaltySpittoon\_44, Jollison\_43, KentuckyRacer\_44, TomSawyer\_42, Rikishi\_44, Gibbi\_47, AcciDwight\_48, Wipeout\_41, JimJam\_44, Bordeaux\_42, PumpkinSpice\_43, Birchlyn\_41, Amabiko\_44, Daisy123\_48, Starbow\_42, MindFlayer\_42, CeilingFan\_43, Spelly\_44, Quaran19\_44, Battuta\_42
- Track 28 : IchabodCrane\_41, Karimac\_43, Brizzy\_43
- Track 29 : StarPlatinum\_43, LukeCage\_43
- Track 30 : AngryGiraffe\_43, Genie2\_44, Yaboi\_44
- Track 31 : Stanimal\_44, BoomerJR\_44
- Track 32 : Wofford\_42

- Track 33 : Tomas\_45
- Track 34 : Mugiwara\_43
- Track 35 : Sollertia\_44
- Track 36 : Elmer\_46
- Track 37 : Enygma\_41
- Track 38 : Francob\_18
- Track 39 : Blueeyedbeauty\_20
- Track 40 : Comrade\_20, Karp\_19, Belfort\_21, Westy\_20
- Track 41 : Blueeyedbeauty\_21
- Track 42 : Gilson\_22, MeganTheeKilla\_20, DeluluLabubu\_20, Forrest\_22, Maupel\_22, Emma1919\_22, Jada\_20
- Track 43 : Gilson\_23, MeganTheeKilla\_21, Forrest\_23, Maupel\_23, DeluluLabubu\_21, Emma1919\_23, Jada\_21
- Track 44 : SparkleGoddess\_20, Stigma\_20
- Track 45 : SparkleGoddess\_19, Comrade\_19, Karp\_18, Stigma\_19, Belfort\_20, Westy\_19
- Track 46 : TunaTartare\_17
- Track 47 : TunaTartare\_18
- Track 48 : Francob\_19
- Track 49 : Kenrey\_22
- Track 50 : Kenrey\_23
- Track 51 : Limpid\_18
- Track 52 : Limpid\_19, Annadreamy\_19
- Track 53 : Faust\_18, SeresaTree\_18
- Track 54 : Faust\_19
- Track 55 : Phredrick\_21
- Track 56 : Phredrick\_20
- Track 57 : Beuffert\_18
- Track 58 : Beuffert\_17
- Track 59 : Moab\_20, Patelgo\_20
- Track 60 : Moab\_19
- Track 61 : Annadreamy\_18
- Track 62 : Sham\_16
- Track 63 : Sham\_17
- Track 64 : Patelgo\_19
- Track 65 : SeresaTree\_19
- Track 66 : Chaewon\_19
- Track 67 : Circinus\_17, BillNye\_15
- Track 68 : Wakanda\_15, Muntaha\_15
- Track 69 : Peregrin\_60, Grayson\_62
- Track 70 : Weasels2\_62
- Track 71 : Trina\_56
- Track 72 : NiceHouse\_47
- Track 73 : Francesca\_36
- Track 74 : Nova53\_34
- Track 75 : Dorin\_37
- Track 76 : Magritte\_31

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

The start number called the most often in the published annotations is 13, it was called in 112 of the 144 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AcciDwight\_48, Amabiko\_44, Anedea\_39, Angela\_39, AngryGiraffe\_43, Annadreamy\_19, ArianaSWT\_45, Bartholomune\_40, Battuta\_42, Belfort\_21, Beuffert\_18, Birchlyn\_41, BlueOtter\_42, Blueeyedbeauty\_21, Bmoc\_40, BoomerJR\_44, Bordeaux\_42, Braelyn\_40, Brizzy\_43, Cadmus\_40, CeilingFan\_43, Comrade\_20, Coogler\_42, Cross\_42, Cursive\_39, Daisy123\_48, Daubenski\_43, Davielle\_38, DeluluLabubu\_21, Dorin\_37, EGole\_43, Eliot67\_39, Elmer\_46, Emma1919\_23, Enygma\_41, Evy\_43, Faust\_19, Forrest\_23, Francesca\_36, Francob\_19, FreddyDRoo\_39, Genie2\_44, Gibbi\_47, Gilson\_23, Grayson\_62, HangryHippo\_42, IchabodCrane\_41, Jada\_21, Jay2Jay\_46, JimJam\_44, Jollison\_43, Karimac\_43, Karp\_19, Kenrey\_23, KentuckyRacer\_44, Larnav\_42, Leo04\_42, Liandry\_40, LilMartin\_39, LilSaint\_41, Limpid\_19, LukeCage\_43, Lululemon\_41, Marsus\_39, Maupel\_23, MeganTheeKilla\_21, Mildred21\_40, MindFlayer\_42, Moab\_20, Mugiwara\_43, MulchMansion\_39, Muntaha\_15, Navo\_39, NiceHouse\_47, NootNoot\_37, Nova53\_34, PacManQ\_41, Paradiddles\_37, Patelgo\_20, Peebs\_41, Pepperwood\_42, Peregrin\_60, Persimmon\_37, Phredrick\_21, PinkiePie\_39, PumpkinSpice\_43, PynkPanther\_46, Quarant19\_44, Rikishi\_44, Riptide\_39, SaltySpittoon\_44, Samisti12\_41, Scheme\_42, SeresaTree\_19, Sham\_17, Shuckle\_40, Sollertia\_44, SparkleGoddess\_20, Spelly\_44, Spilled\_44, Squillium\_40, Stanimal\_44, StarPlatinum\_43, Starbow\_42, Stigma\_20, Sushi23\_42, Targaryen\_43, Teutsch\_41, TomSawyer\_42, Tribute\_40, Trina\_56, TunaTartare\_18, Wakanda\_15, Warpy\_46, WashU\_45, Watermoore\_41, Weasels2\_62, Westy\_20, WhereRU\_38, Wipeout\_41, Wofford\_42, Yaboi\_44,

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

- BeatusComedenti\_28, Chaewon\_19, DanielleIgnace\_21, KellEzio\_28, Kitkat\_29,

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

- Annadreamy\_18, Belfort\_20, Beuffert\_17, BillNye\_15, Blueeyedbeauty\_20, Circinus\_17, Comrade\_19, DeluluLabubu\_20, Emma1919\_22, Faust\_18, Forrest\_22, Francob\_18, Gilson\_22, Jada\_20, Karp\_18, Kenrey\_22, Limpid\_18, Magritte\_31, Maupel\_22, MeganTheeKilla\_20, Moab\_19, Patelgo\_19, Phredrick\_20, SeresaTree\_18, Sham\_16, SparkleGoddess\_19, Stigma\_19, Tomas\_45, TunaTartare\_17, Westy\_19,

### Summary by start number:

Start 4:

- Found in 5 of 157 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 4 of 144
- Called 80.0% of time when present
- Phage (with cluster) where this start called: BeatusComedenti\_28 (AT), KellEzio\_28 (AT), Kitkat\_29 (AT), Magritte\_31 (singleton),

Start 5:

- Found in 4 of 157 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 144
- Called 25.0% of time when present
- Phage (with cluster) where this start called: DanielleIgnace\_21 (AT),

#### Start 12:

- Found in 3 of 157 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 3 of 144
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BillNye\_15 (BK2), Circinus\_17 (BK2), Tomas\_45 (BE2),

#### Start 13:

- Found in 127 of 157 ( 80.9% ) of genes in pham
- Manual Annotations of this start: 112 of 144
- Called 96.1% of time when present
- Phage (with cluster) where this start called: AcciDwight\_48 (BE2), Amabiko\_44 (BE2), Anedea\_39 (BE1), Angela\_39 (BE1), AngryGiraffe\_43 (BE2), Annadreamy\_19 (BK1), ArianaSWT\_45 (BE1), Bartholomune\_40 (BE1), Battuta\_42 (BE2), Belfort\_21 (BK1), Beuffert\_18 (BK1), Birchlyn\_41 (BE2), BlueOtter\_42 (BE1), Blueeyedbeauty\_21 (BK1), Bmoc\_40 (BE1), BoomerJR\_44 (BE2), Bordeaux\_42 (BE2), Braelyn\_40 (BE1), Brizzy\_43 (BE2), Cadmus\_40 (BE1), CeilingFan\_43 (BE2), Comrade\_20 (BK1), Coogler\_42 (BE1), Cross\_42 (BE1), Cursive\_39 (BE1), Daisy123\_48 (BE2), Daubenski\_43 (BE1), Davielle\_38 (BE1), DeluluLabubu\_21 (BK1), Dorin\_37 (CG), EGole\_43 (BE1), Eliot67\_39 (BE1), Elmer\_46 (BE2), Emma1919\_23 (BK1), Enygma\_41 (BE2), Evy\_43 (BE1), Faust\_19 (BK1), Forrest\_23 (BK1), Francesca\_36 (CG), Francob\_19 (BK1), FreddyDRoo\_39 (BE1), Genie2\_44 (BE2), Gibbi\_47 (BE2), Gilson\_23 (BK1), Grayson\_62 (CB), HangryHippo\_42 (BE1), IchabodCrane\_41 (BE2), Jada\_21 (BK1), Jay2Jay\_46 (BE1), JimJam\_44 (BE2), Jollison\_43 (BE2), Karimac\_43 (BE2), Karp\_19 (BK1), Kenrey\_23 (BK1), KentuckyRacer\_44 (BE2), Larnav\_42 (BE1), Leo04\_42 (BE1), Liandry\_40 (BE1), LilMartin\_39 (BE1), LilSaint\_41 (BE1), Limpid\_19 (BK1), LukeCage\_43 (BE2), Lululemon\_41 (BE1), Marsus\_39 (BE1), Maupel\_23 (BK1), MeganTheeKilla\_21 (BK1), Mildred21\_40 (BE1), MindFlayer\_42 (BE2), Moab\_20 (BK1), Mugiwara\_43 (BE2), MulchMansion\_39 (BE1), Muntaha\_15 (BK2), Navo\_39 (BE1), NiceHouse\_47 (CE), NootNoot\_37 (BE1), Nova53\_34 (CG), PacManQ\_41 (BE1), Paradiddles\_37 (BE1), Patelgo\_20 (BK1), Peebs\_41 (BE1), Pepperwood\_42 (BE1), Peregrin\_60 (CB), Persimmon\_37 (BE1), Phredrick\_21 (BK1), PinkiePie\_39 (BE1), PumpkinSpice\_43 (BE2), PynkPanther\_46 (BE1), Quarant19\_44 (BE2), Rikishi\_44 (BE2), Riptide\_39 (BE1), SaltySpittoon\_44 (BE2), Samisti12\_41 (BE1), Scheme\_42 (BE1), SeresaTree\_19 (BK1), Sham\_17 (BK1), Shuckle\_40 (BE1), Sollertia\_44 (BE2), SparkleGoddess\_20 (BK1), Spelly\_44 (BE2), Spilled\_44 (BE2), Squillum\_40 (BE1), Stanimal\_44 (BE2), StarPlatinum\_43 (BE2), Starbow\_42 (BE2), Stigma\_20 (BK1), Sushi23\_42 (BE1), Targaryen\_43 (BE1), Teutsch\_41 (BE1), TomSawyer\_42 (BE2), Tribute\_40 (BE1), Trina\_56 (CE), TunaTartare\_18 (BK1), Wakanda\_15 (BK2), Warpy\_46 (BE1), WashU\_45 (BE1), Watermoore\_41 (BE1), Weasels2\_62 (CB), Westy\_20 (BK1), WhereRU\_38 (BE1), Wipeout\_41 (BE2), Wofford\_42 (BE2), Yaboi\_44 (BE2),

#### Start 14:

- Found in 26 of 157 ( 16.6% ) of genes in pham
- Manual Annotations of this start: 23 of 144
- Called 96.2% of time when present
- Phage (with cluster) where this start called: Annadreamy\_18 (BK1), Belfort\_20 (BK1), Beuffert\_17 (BK1), Blueeyedbeauty\_20 (BK1), Comrade\_19 (BK1), DeluluLabubu\_20 (BK1), Emma1919\_22 (BK1), Faust\_18 (BK1), Forrest\_22 (BK1), Francob\_18 (BK1), Gilson\_22 (BK1), Jada\_20 (BK1), Karp\_18 (BK1), Kenrey\_22 (BK1), Maupel\_22 (BK1), MeganTheeKilla\_20 (BK1), Moab\_19 (BK1), Patelgo\_19

(BK1), Phredrick\_20 (BK1), SeresaTree\_18 (BK1), Sham\_16 (BK1), SparkleGoddess\_19 (BK1), Stigma\_19 (BK1), TunaTartare\_17 (BK1), Westy\_19 (BK1),

Start 20:

- Found in 70 of 157 ( 44.6% ) of genes in pham
- Manual Annotations of this start: 1 of 144
- Called 1.4% of time when present
- Phage (with cluster) where this start called: Limpid\_18 (BK1),

Start 25:

- Found in 6 of 157 ( 3.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Chaewon\_19 (BK2),

### **Summary by clusters:**

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

Info for manual annotations of cluster AT:

- Start number 4 was manually annotated 3 times for cluster AT.
- Start number 5 was manually annotated 1 time for cluster AT.

Info for manual annotations of cluster BE1:

- Start number 13 was manually annotated 45 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 12 was manually annotated 1 time for cluster BE2.
- Start number 13 was manually annotated 33 times for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 13 was manually annotated 24 times for cluster BK1.
- Start number 14 was manually annotated 23 times for cluster BK1.
- Start number 20 was manually annotated 1 time for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 12 was manually annotated 2 times for cluster BK2.
- Start number 13 was manually annotated 2 times for cluster BK2.

Info for manual annotations of cluster CB:

- Start number 13 was manually annotated 3 times for cluster CB.

Info for manual annotations of cluster CE:

- Start number 13 was manually annotated 2 times for cluster CE.

Info for manual annotations of cluster CG:

- Start number 13 was manually annotated 3 times for cluster CG.

### **Gene Information:**

Gene: AcciDwight\_48 Start: 18442, Stop: 19410, Start Num: 13

Candidate Starts for AcciDwight\_48:

(Start: 13 @18442 has 112 MA's), (24, 18514), (51, 18688), (62, 18754), (74, 18829), (76, 18844), (80, 18877), (98, 18967), (115, 19060), (117, 19078), (124, 19141), (141, 19252), (166, 19402),

Gene: Amabiko\_44 Start: 18487, Stop: 19455, Start Num: 13

Candidate Starts for Amabiko\_44:

(Start: 13 @18487 has 112 MA's), (24, 18559), (51, 18733), (62, 18799), (74, 18874), (76, 18889), (80, 18922), (98, 19012), (115, 19105), (117, 19123), (124, 19186), (141, 19297), (166, 19447),

Gene: Anedea\_39 Start: 17361, Stop: 18329, Start Num: 13

Candidate Starts for Anedea\_39:

(Start: 13 @17361 has 112 MA's), (Start: 20 @17394 has 1 MA's), (22, 17418), (24, 17433), (46, 17583), (51, 17607), (62, 17673), (74, 17748), (75, 17757), (76, 17763), (80, 17796), (98, 17886), (110, 17952), (115, 17979), (116, 17994), (117, 17997), (124, 18060), (139, 18156), (141, 18171), (144, 18195), (145, 18198), (154, 18237), (161, 18270), (166, 18321),

Gene: Angela\_39 Start: 17342, Stop: 18310, Start Num: 13

Candidate Starts for Angela\_39:

(Start: 13 @17342 has 112 MA's), (Start: 20 @17375 has 1 MA's), (22, 17399), (24, 17414), (46, 17564), (51, 17588), (56, 17624), (62, 17654), (74, 17729), (76, 17744), (80, 17777), (117, 17978), (124, 18041), (139, 18137), (141, 18152), (144, 18176), (161, 18251), (164, 18278), (166, 18302),

Gene: AngryGiraffe\_43 Start: 18430, Stop: 19398, Start Num: 13

Candidate Starts for AngryGiraffe\_43:

(Start: 13 @18430 has 112 MA's), (24, 18502), (46, 18652), (51, 18676), (56, 18712), (62, 18742), (74, 18817), (76, 18832), (80, 18865), (98, 18955), (101, 18973), (108, 19009), (113, 19039), (117, 19066), (124, 19129), (141, 19240), (161, 19339), (166, 19390),

Gene: Annadreamy\_19 Start: 6675, Stop: 7664, Start Num: 13

Candidate Starts for Annadreamy\_19:

(Start: 13 @6675 has 112 MA's), (25, 6750), (27, 6759), (51, 6918), (61, 6975), (76, 7077), (80, 7110), (93, 7191), (107, 7251), (110, 7266), (111, 7272), (121, 7353), (124, 7374), (127, 7392), (129, 7419), (150, 7527), (153, 7545), (157, 7572), (166, 7638),

Gene: Annadreamy\_18 Start: 5683, Stop: 6678, Start Num: 14

Candidate Starts for Annadreamy\_18:

(Start: 14 @5683 has 23 MA's), (Start: 20 @5716 has 1 MA's), (46, 5902), (66, 6007), (95, 6208), (107, 6280), (110, 6295), (120, 6373), (123, 6391), (124, 6403), (129, 6448), (140, 6511), (141, 6514), (145, 6541), (155, 6586), (161, 6613), (166, 6664),

Gene: ArianaSWT\_45 Start: 18556, Stop: 19524, Start Num: 13

Candidate Starts for ArianaSWT\_45:

(Start: 13 @18556 has 112 MA's), (Start: 20 @18589 has 1 MA's), (22, 18613), (24, 18628), (51, 18802), (62, 18868), (74, 18943), (76, 18958), (80, 18991), (115, 19174), (117, 19192), (123, 19243), (124, 19255), (137, 19330), (139, 19351), (141, 19366), (161, 19465), (166, 19516),

Gene: Bartholomune\_40 Start: 17250, Stop: 18218, Start Num: 13

Candidate Starts for Bartholomune\_40:

(Start: 13 @17250 has 112 MA's), (Start: 20 @17283 has 1 MA's), (22, 17307), (24, 17322), (49, 17487), (51, 17496), (62, 17562), (74, 17637), (76, 17652), (80, 17685), (115, 17868), (117, 17886), (124, 17949), (141, 18060), (145, 18087), (161, 18159), (166, 18210),

Gene: Battuta\_42 Start: 18463, Stop: 19431, Start Num: 13

Candidate Starts for Battuta\_42:

(Start: 13 @18463 has 112 MA's), (24, 18535), (51, 18709), (62, 18775), (74, 18850), (76, 18865), (80, 18898), (98, 18988), (115, 19081), (117, 19099), (124, 19162), (141, 19273), (166, 19423),

Gene: BeatusComedenti\_28 Start: 15501, Stop: 16601, Start Num: 4

Candidate Starts for BeatusComedenti\_28:

(Start: 4 @15501 has 4 MA's), (Start: 5 @15507 has 1 MA's), (11, 15558), (Start: 13 @15564 has 112 MA's), (16, 15585), (31, 15690), (45, 15765), (48, 15798), (63, 15903), (64, 15906), (69, 15957), (78, 16008), (83, 16053), (88, 16101), (90, 16113), (103, 16179), (109, 16215), (121, 16305), (123, 16314), (125, 16332), (126, 16335), (128, 16359), (138, 16407), (170, 16596),

Gene: Belfort\_20 Start: 6432, Stop: 7430, Start Num: 14

Candidate Starts for Belfort\_20:

(Start: 14 @6432 has 23 MA's), (46, 6651), (80, 6867), (87, 6918), (94, 6954), (124, 7155), (129, 7200), (130, 7209), (135, 7227), (141, 7266), (143, 7281), (154, 7332), (166, 7416),

Gene: Belfort\_21 Start: 7427, Stop: 8410, Start Num: 13

Candidate Starts for Belfort\_21:

(Start: 13 @7427 has 112 MA's), (24, 7499), (49, 7661), (51, 7670), (61, 7727), (76, 7829), (79, 7844), (80, 7862), (84, 7886), (87, 7913), (93, 7943), (110, 8018), (112, 8033), (114, 8042), (116, 8060), (117, 8063), (123, 8114), (124, 8126), (125, 8132), (129, 8171), (167, 8393),

Gene: Beuffert\_18 Start: 6325, Stop: 7311, Start Num: 13

Candidate Starts for Beuffert\_18:

(Start: 13 @6325 has 112 MA's), (27, 6409), (51, 6568), (61, 6625), (76, 6727), (80, 6760), (87, 6811), (93, 6841), (110, 6916), (112, 6931), (121, 7003), (124, 7024), (134, 7087), (146, 7165), (148, 7171), (151, 7183),

Gene: Beuffert\_17 Start: 5333, Stop: 6328, Start Num: 14

Candidate Starts for Beuffert\_17:

(Start: 14 @5333 has 23 MA's), (Start: 20 @5366 has 1 MA's), (46, 5552), (54, 5585), (107, 5930), (124, 6053), (140, 6161), (141, 6164), (155, 6236), (161, 6263), (166, 6314),

Gene: BillNye\_15 Start: 6124, Stop: 7107, Start Num: 12

Candidate Starts for BillNye\_15:

(Start: 12 @6124 has 3 MA's), (80, 6559), (87, 6610), (110, 6715), (112, 6730), (121, 6802), (123, 6811), (124, 6823), (154, 6997), (168, 7090),

Gene: Birchlyn\_41 Start: 16344, Stop: 17312, Start Num: 13

Candidate Starts for Birchlyn\_41:

(Start: 13 @16344 has 112 MA's), (24, 16416), (51, 16590), (62, 16656), (74, 16731), (76, 16746), (80, 16779), (98, 16869), (115, 16962), (117, 16980), (124, 17043), (141, 17154), (166, 17304),

Gene: BlueOtter\_42 Start: 18593, Stop: 19561, Start Num: 13

Candidate Starts for BlueOtter\_42:

(Start: 13 @18593 has 112 MA's), (Start: 20 @18626 has 1 MA's), (22, 18650), (24, 18665), (51, 18839), (62, 18905), (74, 18980), (76, 18995), (80, 19028), (117, 19229), (123, 19280), (124, 19292), (137, 19367), (139, 19388), (141, 19403), (144, 19427), (154, 19469), (161, 19502), (166, 19553),

Gene: Blueeyedbeauty\_20 Start: 6177, Stop: 7172, Start Num: 14

Candidate Starts for Blueeyedbeauty\_20:

(Start: 14 @6177 has 23 MA's), (Start: 20 @6210 has 1 MA's), (46, 6396), (124, 6897), (140, 7005), (141, 7008), (155, 7080), (161, 7107), (166, 7158),

Gene: Blueeyedbeauty\_21 Start: 7169, Stop: 8152, Start Num: 13

Candidate Starts for Blueeyedbeauty\_21:

(Start: 13 @7169 has 112 MA's), (25, 7244), (27, 7253), (36, 7313), (51, 7412), (61, 7469), (68, 7520), (79, 7586), (80, 7604), (87, 7655), (93, 7685), (110, 7760), (111, 7766), (112, 7775), (114, 7784), (121, 7847), (123, 7856), (124, 7868), (129, 7913), (145, 8003), (152, 8036), (166, 8132),

Gene: Bmoc\_40 Start: 17645, Stop: 18613, Start Num: 13

Candidate Starts for Bmoc\_40:

(3, 17468), (7, 17603), (Start: 13 @17645 has 112 MA's), (Start: 20 @17678 has 1 MA's), (22, 17702), (24, 17717), (46, 17867), (51, 17891), (62, 17957), (74, 18032), (76, 18047), (80, 18080), (98, 18170), (110, 18236), (115, 18263), (116, 18278), (117, 18281), (124, 18344), (139, 18440), (141, 18455), (144, 18479), (145, 18482), (161, 18554), (166, 18605),

Gene: BoomerJR\_44 Start: 18319, Stop: 19287, Start Num: 13

Candidate Starts for BoomerJR\_44:

(Start: 13 @18319 has 112 MA's), (24, 18391), (46, 18541), (51, 18565), (56, 18601), (62, 18631), (74, 18706), (76, 18721), (80, 18754), (98, 18844), (101, 18862), (108, 18898), (113, 18928), (117, 18955), (124, 19018), (141, 19129), (161, 19228), (166, 19279),

Gene: Bordeaux\_42 Start: 18616, Stop: 19584, Start Num: 13

Candidate Starts for Bordeaux\_42:

(Start: 13 @18616 has 112 MA's), (24, 18688), (51, 18862), (62, 18928), (74, 19003), (76, 19018), (80, 19051), (98, 19141), (115, 19234), (117, 19252), (124, 19315), (141, 19426), (166, 19576),

Gene: Braelyn\_40 Start: 17513, Stop: 18481, Start Num: 13

Candidate Starts for Braelyn\_40:

(Start: 13 @17513 has 112 MA's), (Start: 20 @17546 has 1 MA's), (22, 17570), (24, 17585), (49, 17750), (51, 17759), (55, 17777), (62, 17825), (74, 17900), (76, 17915), (80, 17948), (115, 18131), (117, 18149), (124, 18212), (141, 18323), (145, 18350), (161, 18422), (166, 18473),

Gene: Brizzy\_43 Start: 18137, Stop: 19105, Start Num: 13

Candidate Starts for Brizzy\_43:

(Start: 13 @18137 has 112 MA's), (24, 18209), (51, 18383), (56, 18419), (62, 18449), (74, 18524), (76, 18539), (80, 18572), (98, 18662), (115, 18755), (117, 18773), (124, 18836), (141, 18947), (166, 19097),

Gene: Cadmus\_40 Start: 18112, Stop: 19080, Start Num: 13

Candidate Starts for Cadmus\_40:

(9, 18082), (Start: 13 @18112 has 112 MA's), (Start: 20 @18145 has 1 MA's), (22, 18169), (24, 18184), (29, 18217), (46, 18334), (51, 18358), (62, 18424), (74, 18499), (76, 18514), (80, 18547), (117, 18748), (123, 18799), (124, 18811), (137, 18886), (139, 18907), (141, 18922), (161, 19021), (166, 19072),

Gene: CeilingFan\_43 Start: 18376, Stop: 19344, Start Num: 13

Candidate Starts for CeilingFan\_43:

(Start: 13 @18376 has 112 MA's), (24, 18448), (51, 18622), (62, 18688), (74, 18763), (76, 18778), (80, 18811), (98, 18901), (115, 18994), (117, 19012), (124, 19075), (141, 19186), (166, 19336),

Gene: Chaewon\_19 Start: 5977, Stop: 6885, Start Num: 25

Candidate Starts for Chaewon\_19:

(Start: 13 @5902 has 112 MA's), (25, 5977), (76, 6304), (80, 6337), (87, 6388), (98, 6424), (112, 6508), (118, 6541), (121, 6580), (123, 6589), (124, 6601), (130, 6655), (168, 6868),

Gene: Circinus\_17 Start: 6264, Stop: 7247, Start Num: 12

Candidate Starts for Circinus\_17:

(Start: 12 @6264 has 3 MA's), (80, 6699), (87, 6750), (110, 6855), (112, 6870), (121, 6942), (123, 6951), (124, 6963), (154, 7137), (168, 7230),

Gene: Comrade\_20 Start: 7042, Stop: 8025, Start Num: 13

Candidate Starts for Comrade\_20:

(Start: 13 @7042 has 112 MA's), (24, 7114), (49, 7276), (51, 7285), (61, 7342), (76, 7444), (79, 7459), (80, 7477), (84, 7501), (87, 7528), (93, 7558), (110, 7633), (112, 7648), (114, 7657), (116, 7675), (117, 7678), (123, 7729), (124, 7741), (125, 7747), (129, 7786), (167, 8008),

Gene: Comrade\_19 Start: 6047, Stop: 7045, Start Num: 14

Candidate Starts for Comrade\_19:

(Start: 14 @6047 has 23 MA's), (46, 6266), (80, 6482), (87, 6533), (94, 6569), (124, 6770), (129, 6815), (130, 6824), (135, 6842), (141, 6881), (143, 6896), (154, 6947), (166, 7031),

Gene: Coogler\_42 Start: 18620, Stop: 19588, Start Num: 13

Candidate Starts for Coogler\_42:

(Start: 13 @18620 has 112 MA's), (Start: 20 @18653 has 1 MA's), (22, 18677), (24, 18692), (51, 18866), (62, 18932), (74, 19007), (76, 19022), (80, 19055), (115, 19238), (117, 19256), (123, 19307), (124, 19319), (137, 19394), (139, 19415), (141, 19430), (161, 19529), (166, 19580),

Gene: Cross\_42 Start: 18594, Stop: 19562, Start Num: 13

Candidate Starts for Cross\_42:

(Start: 13 @18594 has 112 MA's), (Start: 20 @18627 has 1 MA's), (22, 18651), (24, 18666), (51, 18840), (62, 18906), (74, 18981), (76, 18996), (80, 19029), (117, 19230), (123, 19281), (124, 19293), (137, 19368), (139, 19389), (141, 19404), (144, 19428), (154, 19470), (161, 19503), (166, 19554),

Gene: Cursive\_39 Start: 17411, Stop: 18379, Start Num: 13

Candidate Starts for Cursive\_39:

(Start: 13 @17411 has 112 MA's), (Start: 20 @17444 has 1 MA's), (22, 17468), (24, 17483), (51, 17657), (62, 17723), (74, 17798), (76, 17813), (80, 17846), (117, 18047), (123, 18098), (124, 18110), (137, 18185), (139, 18206), (141, 18221), (144, 18245), (154, 18287), (161, 18320), (166, 18371),

Gene: Daisy123\_48 Start: 18235, Stop: 19203, Start Num: 13

Candidate Starts for Daisy123\_48:

(Start: 13 @18235 has 112 MA's), (24, 18307), (51, 18481), (62, 18547), (74, 18622), (76, 18637), (80, 18670), (98, 18760), (115, 18853), (117, 18871), (124, 18934), (141, 19045), (166, 19195),

Gene: DanielleIgnace\_21 Start: 14674, Stop: 15762, Start Num: 5

Candidate Starts for DanielleIgnace\_21:

(1, 14479), (2, 14482), (Start: 4 @14668 has 4 MA's), (Start: 5 @14674 has 1 MA's), (6, 14680), (11, 14725), (Start: 13 @14731 has 112 MA's), (15, 14737), (16, 14752), (18, 14758), (19, 14764), (21, 14773), (30, 14851), (31, 14857), (32, 14860), (41, 14914), (42, 14920), (45, 14932), (58, 15031), (63, 15064), (64, 15067), (65, 15070), (67, 15088), (69, 15118), (71, 15130), (77, 15166), (90, 15274), (97, 15304), (106, 15361), (119, 15427), (121, 15466), (123, 15475), (125, 15493), (126, 15496), (127, 15505), (128, 15520), (133, 15550), (138, 15568), (142, 15604), (149, 15640), (156, 15679), (167, 15745), (169, 15754), (170, 15757),

Gene: Daubenski\_43 Start: 18876, Stop: 19844, Start Num: 13

Candidate Starts for Daubenski\_43:

(9, 18846), (Start: 13 @18876 has 112 MA's), (Start: 20 @18909 has 1 MA's), (22, 18933), (24, 18948), (29, 18981), (46, 19098), (51, 19122), (62, 19188), (74, 19263), (76, 19278), (80, 19311), (117, 19512), (123, 19563), (124, 19575), (137, 19650), (139, 19671), (141, 19686), (161, 19785), (166, 19836),

Gene: Davielle\_38 Start: 16933, Stop: 17901, Start Num: 13

Candidate Starts for Davielle\_38:

(Start: 13 @16933 has 112 MA's), (Start: 20 @16966 has 1 MA's), (22, 16990), (24, 17005), (49, 17170), (51, 17179), (55, 17197), (62, 17245), (74, 17320), (76, 17335), (80, 17368), (117, 17569), (124, 17632), (141, 17743), (145, 17770), (161, 17842), (166, 17893),

Gene: DeluluLabubu\_20 Start: 5928, Stop: 6926, Start Num: 14

Candidate Starts for DeluluLabubu\_20:

(Start: 14 @5928 has 23 MA's), (Start: 20 @5961 has 1 MA's), (46, 6147), (80, 6363), (87, 6414), (102, 6498), (108, 6531), (124, 6651), (126, 6660), (129, 6696), (130, 6705), (135, 6723), (141, 6762), (154, 6828), (161, 6861), (166, 6912),

Gene: DeluluLabubu\_21 Start: 6923, Stop: 7903, Start Num: 13

Candidate Starts for DeluluLabubu\_21:

(Start: 13 @6923 has 112 MA's), (Start: 20 @6956 has 1 MA's), (24, 6995), (51, 7166), (61, 7223), (73, 7307), (76, 7325), (80, 7358), (93, 7439), (110, 7514), (113, 7532), (123, 7610), (124, 7622), (129, 7667), (131, 7679), (134, 7685), (139, 7718), (146, 7763), (148, 7769), (151, 7781), (163, 7853),

Gene: Dorin\_37 Start: 15814, Stop: 16821, Start Num: 13

Candidate Starts for Dorin\_37:

(Start: 13 @15814 has 112 MA's), (28, 15907), (51, 16057), (55, 16075), (59, 16105), (70, 16180), (76, 16219), (107, 16396), (112, 16426), (118, 16459), (121, 16498), (141, 16627), (158, 16720), (161, 16726), (166, 16777),

Gene: EGole\_43 Start: 19491, Stop: 20459, Start Num: 13

Candidate Starts for EGole\_43:

(Start: 13 @19491 has 112 MA's), (Start: 20 @19524 has 1 MA's), (22, 19548), (24, 19563), (29, 19596), (51, 19737), (62, 19803), (74, 19878), (76, 19893), (80, 19926), (89, 19998), (92, 20007), (108, 20070), (117, 20127), (124, 20190), (141, 20301), (161, 20400), (166, 20451),

Gene: Eliot67\_39 Start: 17248, Stop: 18216, Start Num: 13

Candidate Starts for Eliot67\_39:

(Start: 13 @17248 has 112 MA's), (Start: 20 @17281 has 1 MA's), (22, 17305), (24, 17320), (49, 17485), (51, 17494), (55, 17512), (62, 17560), (74, 17635), (76, 17650), (80, 17683), (87, 17734), (117, 17884), (124, 17947), (141, 18058), (145, 18085), (161, 18157), (166, 18208),

Gene: Elmer\_46 Start: 19386, Stop: 20354, Start Num: 13

Candidate Starts for Elmer\_46:

(Start: 13 @19386 has 112 MA's), (24, 19458), (46, 19608), (51, 19632), (62, 19698), (74, 19773), (76, 19788), (80, 19821), (92, 19902), (101, 19929), (113, 19995), (117, 20022), (124, 20085), (130, 20139), (141, 20196), (154, 20262), (161, 20295), (166, 20346),

Gene: Emma1919\_22 Start: 6623, Stop: 7621, Start Num: 14

Candidate Starts for Emma1919\_22:

(Start: 14 @6623 has 23 MA's), (Start: 20 @6656 has 1 MA's), (46, 6842), (80, 7058), (87, 7109), (102, 7193), (108, 7226), (124, 7346), (126, 7355), (129, 7391), (130, 7400), (135, 7418), (141, 7457), (154, 7523), (161, 7556), (166, 7607),

Gene: Emma1919\_23 Start: 7618, Stop: 8598, Start Num: 13

Candidate Starts for Emma1919\_23:

(Start: 13 @7618 has 112 MA's), (Start: 20 @7651 has 1 MA's), (24, 7690), (51, 7861), (61, 7918), (73, 8002), (76, 8020), (80, 8053), (93, 8134), (110, 8209), (113, 8227), (123, 8305), (124, 8317), (129, 8362), (131, 8374), (134, 8380), (139, 8413), (146, 8458), (148, 8464), (151, 8476), (163, 8548),

Gene: Enygma\_41 Start: 17886, Stop: 18854, Start Num: 13

Candidate Starts for Enygma\_41:

(Start: 13 @17886 has 112 MA's), (24, 17958), (46, 18108), (51, 18132), (56, 18168), (62, 18198), (74, 18273), (76, 18288), (80, 18321), (98, 18411), (101, 18429), (117, 18522), (124, 18585), (132, 18645), (141, 18696), (148, 18729), (161, 18795), (166, 18846),

Gene: Evy\_43 Start: 18609, Stop: 19577, Start Num: 13

Candidate Starts for Evy\_43:

(Start: 13 @18609 has 112 MA's), (Start: 20 @18642 has 1 MA's), (24, 18681), (29, 18714), (46, 18831), (51, 18855), (62, 18921), (74, 18996), (76, 19011), (80, 19044), (89, 19116), (105, 19179), (108, 19188), (117, 19245), (124, 19308), (141, 19419), (157, 19503), (161, 19518), (164, 19545), (166, 19569),

Gene: Faust\_18 Start: 5942, Stop: 6940, Start Num: 14

Candidate Starts for Faust\_18:

(Start: 14 @5942 has 23 MA's), (34, 6080), (46, 6161), (107, 6542), (113, 6575), (120, 6635), (124, 6665), (129, 6710), (130, 6719), (132, 6725), (140, 6773), (141, 6776), (145, 6803), (154, 6842), (164, 6902), (166, 6926),

Gene: Faust\_19 Start: 6937, Stop: 7926, Start Num: 13

Candidate Starts for Faust\_19:

(Start: 13 @6937 has 112 MA's), (23, 7003), (51, 7180), (74, 7324), (76, 7339), (79, 7354), (80, 7372), (93, 7453), (117, 7573), (118, 7576), (120, 7606), (123, 7624), (124, 7636), (129, 7681), (130, 7690), (148, 7780), (167, 7903),

Gene: Forrest\_23 Start: 7741, Stop: 8721, Start Num: 13

Candidate Starts for Forrest\_23:

(Start: 13 @7741 has 112 MA's), (Start: 20 @7774 has 1 MA's), (24, 7813), (51, 7984), (61, 8041), (73, 8125), (76, 8143), (80, 8176), (93, 8257), (110, 8332), (113, 8350), (123, 8428), (124, 8440), (129, 8485), (131, 8497), (134, 8503), (139, 8536), (146, 8581), (148, 8587), (151, 8599), (163, 8671),

Gene: Forrest\_22 Start: 6746, Stop: 7744, Start Num: 14

Candidate Starts for Forrest\_22:

(Start: 14 @6746 has 23 MA's), (Start: 20 @6779 has 1 MA's), (46, 6965), (80, 7181), (87, 7232), (102, 7316), (108, 7349), (124, 7469), (126, 7478), (129, 7514), (130, 7523), (135, 7541), (141, 7580), (154, 7646), (161, 7679), (166, 7730),

Gene: Francesca\_36 Start: 15936, Stop: 16943, Start Num: 13

Candidate Starts for Francesca\_36:

(Start: 13 @15936 has 112 MA's), (28, 16029), (51, 16179), (55, 16197), (57, 16218), (59, 16227), (70, 16302), (76, 16341), (107, 16518), (112, 16548), (118, 16581), (121, 16620), (140, 16746), (141, 16749), (161, 16848), (166, 16899),

Gene: Francob\_18 Start: 5541, Stop: 6542, Start Num: 14

Candidate Starts for Francob\_18:

(Start: 14 @5541 has 23 MA's), (95, 6066), (102, 6108), (107, 6138), (113, 6171), (116, 6195), (121, 6240), (124, 6261), (137, 6336), (140, 6369), (141, 6372), (148, 6405), (154, 6438), (161, 6471), (164,

6498), (166, 6522),

Gene: Francob\_19 Start: 6539, Stop: 7519, Start Num: 13

Candidate Starts for Francob\_19:

(Start: 13 @6539 has 112 MA's), (24, 6611), (51, 6782), (61, 6839), (76, 6941), (80, 6974), (110, 7130), (111, 7136), (112, 7145), (114, 7154), (123, 7226), (124, 7238), (129, 7283), (131, 7295), (134, 7301), (144, 7373), (146, 7379), (148, 7385), (151, 7397),

Gene: FreddyDRoo\_39 Start: 17248, Stop: 18216, Start Num: 13

Candidate Starts for FreddyDRoo\_39:

(Start: 13 @17248 has 112 MA's), (Start: 20 @17281 has 1 MA's), (22, 17305), (24, 17320), (49, 17485), (51, 17494), (55, 17512), (62, 17560), (74, 17635), (76, 17650), (80, 17683), (87, 17734), (117, 17884), (124, 17947), (141, 18058), (145, 18085), (161, 18157), (166, 18208),

Gene: Genie2\_44 Start: 18433, Stop: 19401, Start Num: 13

Candidate Starts for Genie2\_44:

(Start: 13 @18433 has 112 MA's), (24, 18505), (46, 18655), (51, 18679), (56, 18715), (62, 18745), (74, 18820), (76, 18835), (80, 18868), (98, 18958), (101, 18976), (108, 19012), (113, 19042), (117, 19069), (124, 19132), (141, 19243), (161, 19342), (166, 19393),

Gene: Gibbi\_47 Start: 18236, Stop: 19204, Start Num: 13

Candidate Starts for Gibbi\_47:

(Start: 13 @18236 has 112 MA's), (24, 18308), (51, 18482), (62, 18548), (74, 18623), (76, 18638), (80, 18671), (98, 18761), (115, 18854), (117, 18872), (124, 18935), (141, 19046), (166, 19196),

Gene: Gilson\_22 Start: 6576, Stop: 7574, Start Num: 14

Candidate Starts for Gilson\_22:

(Start: 14 @6576 has 23 MA's), (Start: 20 @6609 has 1 MA's), (46, 6795), (80, 7011), (87, 7062), (102, 7146), (108, 7179), (124, 7299), (126, 7308), (129, 7344), (130, 7353), (135, 7371), (141, 7410), (154, 7476), (161, 7509), (166, 7560),

Gene: Gilson\_23 Start: 7571, Stop: 8551, Start Num: 13

Candidate Starts for Gilson\_23:

(Start: 13 @7571 has 112 MA's), (Start: 20 @7604 has 1 MA's), (24, 7643), (51, 7814), (61, 7871), (73, 7955), (76, 7973), (80, 8006), (93, 8087), (110, 8162), (113, 8180), (123, 8258), (124, 8270), (129, 8315), (131, 8327), (134, 8333), (139, 8366), (146, 8411), (148, 8417), (151, 8429), (163, 8501),

Gene: Grayson\_62 Start: 23169, Stop: 24161, Start Num: 13

Candidate Starts for Grayson\_62:

(Start: 13 @23169 has 112 MA's), (17, 23193), (34, 23307), (37, 23316), (54, 23427), (91, 23697), (100, 23724), (112, 23790), (116, 23817), (122, 23868), (148, 24027),

Gene: HangryHippo\_42 Start: 18593, Stop: 19561, Start Num: 13

Candidate Starts for HangryHippo\_42:

(Start: 13 @18593 has 112 MA's), (Start: 20 @18626 has 1 MA's), (22, 18650), (24, 18665), (51, 18839), (62, 18905), (74, 18980), (76, 18995), (80, 19028), (117, 19229), (123, 19280), (124, 19292), (137, 19367), (139, 19388), (141, 19403), (144, 19427), (154, 19469), (161, 19502), (166, 19553),

Gene: IchabodCrane\_41 Start: 18190, Stop: 19158, Start Num: 13

Candidate Starts for IchabodCrane\_41:

(Start: 13 @18190 has 112 MA's), (24, 18262), (51, 18436), (56, 18472), (62, 18502), (74, 18577), (76, 18592), (80, 18625), (98, 18715), (115, 18808), (117, 18826), (124, 18889), (141, 19000), (166, 19150),

Gene: Jada\_20 Start: 5928, Stop: 6926, Start Num: 14

Candidate Starts for Jada\_20:

(Start: 14 @5928 has 23 MA's), (Start: 20 @5961 has 1 MA's), (46, 6147), (80, 6363), (87, 6414), (102, 6498), (108, 6531), (124, 6651), (126, 6660), (129, 6696), (130, 6705), (135, 6723), (141, 6762), (154, 6828), (161, 6861), (166, 6912),

Gene: Jada\_21 Start: 6923, Stop: 7903, Start Num: 13

Candidate Starts for Jada\_21:

(Start: 13 @6923 has 112 MA's), (Start: 20 @6956 has 1 MA's), (24, 6995), (51, 7166), (61, 7223), (73, 7307), (76, 7325), (80, 7358), (93, 7439), (110, 7514), (113, 7532), (123, 7610), (124, 7622), (129, 7667), (131, 7679), (134, 7685), (139, 7718), (146, 7763), (148, 7769), (151, 7781), (163, 7853),

Gene: Jay2Jay\_46 Start: 18907, Stop: 19875, Start Num: 13

Candidate Starts for Jay2Jay\_46:

(Start: 13 @18907 has 112 MA's), (Start: 20 @18940 has 1 MA's), (24, 18979), (29, 19012), (46, 19129), (51, 19153), (62, 19219), (72, 19282), (74, 19294), (76, 19309), (80, 19342), (89, 19414), (105, 19477), (108, 19486), (117, 19543), (124, 19606), (130, 19660), (141, 19717), (157, 19801), (161, 19816), (164, 19843), (166, 19867),

Gene: JimJam\_44 Start: 18564, Stop: 19532, Start Num: 13

Candidate Starts for JimJam\_44:

(Start: 13 @18564 has 112 MA's), (24, 18636), (51, 18810), (62, 18876), (74, 18951), (76, 18966), (80, 18999), (98, 19089), (115, 19182), (117, 19200), (124, 19263), (141, 19374), (166, 19524),

Gene: Jollison\_43 Start: 18444, Stop: 19412, Start Num: 13

Candidate Starts for Jollison\_43:

(Start: 13 @18444 has 112 MA's), (24, 18516), (51, 18690), (62, 18756), (74, 18831), (76, 18846), (80, 18879), (98, 18969), (115, 19062), (117, 19080), (124, 19143), (141, 19254), (166, 19404),

Gene: Karimac\_43 Start: 18593, Stop: 19561, Start Num: 13

Candidate Starts for Karimac\_43:

(Start: 13 @18593 has 112 MA's), (24, 18665), (51, 18839), (56, 18875), (62, 18905), (74, 18980), (76, 18995), (80, 19028), (98, 19118), (115, 19211), (117, 19229), (124, 19292), (141, 19403), (166, 19553),

Gene: Karp\_19 Start: 6643, Stop: 7626, Start Num: 13

Candidate Starts for Karp\_19:

(Start: 13 @6643 has 112 MA's), (24, 6715), (49, 6877), (51, 6886), (61, 6943), (76, 7045), (79, 7060), (80, 7078), (84, 7102), (87, 7129), (93, 7159), (110, 7234), (112, 7249), (114, 7258), (116, 7276), (117, 7279), (123, 7330), (124, 7342), (125, 7348), (129, 7387), (167, 7609),

Gene: Karp\_18 Start: 5648, Stop: 6646, Start Num: 14

Candidate Starts for Karp\_18:

(Start: 14 @5648 has 23 MA's), (46, 5867), (80, 6083), (87, 6134), (94, 6170), (124, 6371), (129, 6416), (130, 6425), (135, 6443), (141, 6482), (143, 6497), (154, 6548), (166, 6632),

Gene: KellEzio\_28 Start: 15503, Stop: 16603, Start Num: 4

Candidate Starts for KellEzio\_28:

(Start: 4 @15503 has 4 MA's), (Start: 5 @15509 has 1 MA's), (Start: 13 @15566 has 112 MA's), (16, 15587), (31, 15692), (45, 15767), (48, 15800), (63, 15905), (64, 15908), (69, 15959), (78, 16010), (83, 16055), (88, 16103), (90, 16115), (103, 16181), (109, 16217), (121, 16307), (123, 16316), (125, 16334), (126, 16337), (128, 16361), (138, 16409), (170, 16598),

Gene: Kenrey\_22 Start: 6628, Stop: 7626, Start Num: 14

Candidate Starts for Kenrey\_22:

(Start: 14 @6628 has 23 MA's), (Start: 20 @6661 has 1 MA's), (46, 6847), (55, 6889), (80, 7063), (81, 7069), (87, 7114), (124, 7351), (130, 7405), (141, 7462), (154, 7528), (161, 7561), (166, 7612),

Gene: Kenrey\_23 Start: 7623, Stop: 8606, Start Num: 13

Candidate Starts for Kenrey\_23:

(Start: 13 @7623 has 112 MA's), (24, 7695), (51, 7866), (61, 7923), (79, 8040), (80, 8058), (93, 8139), (98, 8145), (110, 8214), (112, 8229), (113, 8232), (114, 8238), (121, 8301), (123, 8310), (124, 8322), (129, 8367), (168, 8595),

Gene: KentuckyRacer\_44 Start: 18377, Stop: 19345, Start Num: 13

Candidate Starts for KentuckyRacer\_44:

(Start: 13 @18377 has 112 MA's), (24, 18449), (51, 18623), (62, 18689), (74, 18764), (76, 18779), (80, 18812), (98, 18902), (115, 18995), (117, 19013), (124, 19076), (141, 19187), (166, 19337),

Gene: Kitkat\_29 Start: 15621, Stop: 16721, Start Num: 4

Candidate Starts for Kitkat\_29:

(Start: 4 @15621 has 4 MA's), (Start: 5 @15627 has 1 MA's), (11, 15678), (Start: 13 @15684 has 112 MA's), (16, 15705), (31, 15810), (45, 15885), (48, 15918), (63, 16023), (64, 16026), (69, 16077), (78, 16128), (83, 16173), (88, 16221), (90, 16233), (103, 16299), (109, 16335), (121, 16425), (123, 16434), (125, 16452), (126, 16455), (128, 16479), (138, 16527), (170, 16716),

Gene: Larnav\_42 Start: 18579, Stop: 19547, Start Num: 13

Candidate Starts for Larnav\_42:

(Start: 13 @18579 has 112 MA's), (Start: 20 @18612 has 1 MA's), (22, 18636), (24, 18651), (51, 18825), (62, 18891), (74, 18966), (76, 18981), (80, 19014), (115, 19197), (117, 19215), (123, 19266), (124, 19278), (137, 19353), (139, 19374), (141, 19389), (161, 19488), (166, 19539),

Gene: Leo04\_42 Start: 18592, Stop: 19560, Start Num: 13

Candidate Starts for Leo04\_42:

(Start: 13 @18592 has 112 MA's), (Start: 20 @18625 has 1 MA's), (22, 18649), (24, 18664), (51, 18838), (62, 18904), (74, 18979), (76, 18994), (80, 19027), (117, 19228), (123, 19279), (124, 19291), (137, 19366), (139, 19387), (141, 19402), (144, 19426), (154, 19468), (161, 19501), (166, 19552),

Gene: Liandry\_40 Start: 17247, Stop: 18215, Start Num: 13

Candidate Starts for Liandry\_40:

(Start: 13 @17247 has 112 MA's), (Start: 20 @17280 has 1 MA's), (22, 17304), (24, 17319), (49, 17484), (51, 17493), (55, 17511), (62, 17559), (74, 17634), (76, 17649), (80, 17682), (87, 17733), (117, 17883), (124, 17946), (141, 18057), (145, 18084), (161, 18156), (166, 18207),

Gene: LilMartin\_39 Start: 17290, Stop: 18258, Start Num: 13

Candidate Starts for LilMartin\_39:

(Start: 13 @17290 has 112 MA's), (Start: 20 @17323 has 1 MA's), (22, 17347), (24, 17362), (46, 17512), (51, 17536), (56, 17572), (62, 17602), (74, 17677), (76, 17692), (80, 17725), (117, 17926), (124, 17989), (139, 18085), (141, 18100), (144, 18124), (161, 18199), (164, 18226), (166, 18250),

Gene: LilSaint\_41 Start: 17536, Stop: 18504, Start Num: 13

Candidate Starts for LilSaint\_41:

(Start: 13 @17536 has 112 MA's), (Start: 20 @17569 has 1 MA's), (22, 17593), (24, 17608), (46, 17758), (51, 17782), (62, 17848), (74, 17923), (75, 17932), (76, 17938), (80, 17971), (98, 18061), (115, 18154), (116, 18169), (117, 18172), (124, 18235), (139, 18331), (141, 18346), (144, 18370), (145,

18373), (154, 18412), (161, 18445), (166, 18496),

Gene: Limpid\_18 Start: 5715, Stop: 6677, Start Num: 20

Candidate Starts for Limpid\_18:

(Start: 14 @5682 has 23 MA's), (Start: 20 @5715 has 1 MA's), (46, 5901), (66, 6006), (95, 6207), (107, 6279), (110, 6294), (120, 6372), (123, 6390), (124, 6402), (129, 6447), (140, 6510), (141, 6513), (145, 6540), (155, 6585), (161, 6612), (166, 6663),

Gene: Limpid\_19 Start: 6674, Stop: 7663, Start Num: 13

Candidate Starts for Limpid\_19:

(Start: 13 @6674 has 112 MA's), (25, 6749), (27, 6758), (51, 6917), (61, 6974), (76, 7076), (80, 7109), (93, 7190), (107, 7250), (110, 7265), (111, 7271), (121, 7352), (124, 7373), (127, 7391), (129, 7418), (150, 7526), (153, 7544), (157, 7571), (166, 7637),

Gene: LukeCage\_43 Start: 18229, Stop: 19197, Start Num: 13

Candidate Starts for LukeCage\_43:

(Start: 13 @18229 has 112 MA's), (24, 18301), (46, 18451), (51, 18475), (62, 18541), (74, 18616), (76, 18631), (80, 18664), (113, 18838), (117, 18865), (124, 18928), (135, 19000), (141, 19039), (154, 19105), (161, 19138), (166, 19189),

Gene: Lululemon\_41 Start: 17973, Stop: 18941, Start Num: 13

Candidate Starts for Lululemon\_41:

(Start: 13 @17973 has 112 MA's), (Start: 20 @18006 has 1 MA's), (22, 18030), (24, 18045), (51, 18219), (62, 18285), (74, 18360), (76, 18375), (80, 18408), (117, 18609), (123, 18660), (124, 18672), (137, 18747), (139, 18768), (141, 18783), (144, 18807), (154, 18849), (161, 18882), (166, 18933),

Gene: Magritte\_31 Start: 28204, Stop: 29334, Start Num: 4

Candidate Starts for Magritte\_31:

(Start: 4 @28204 has 4 MA's), (8, 28228), (26, 28345), (35, 28411), (39, 28435), (45, 28471), (48, 28498), (82, 28693), (83, 28702), (116, 28915), (120, 28951), (123, 28969), (136, 29059), (142, 29104), (147, 29131), (160, 29203), (162, 29224), (165, 29239), (171, 29308),

Gene: Marsus\_39 Start: 17060, Stop: 18028, Start Num: 13

Candidate Starts for Marsus\_39:

(Start: 13 @17060 has 112 MA's), (Start: 20 @17093 has 1 MA's), (22, 17117), (24, 17132), (51, 17306), (56, 17342), (62, 17372), (74, 17447), (76, 17462), (80, 17495), (85, 17540), (117, 17696), (124, 17759), (139, 17855), (141, 17870), (145, 17897), (161, 17969), (164, 17996), (166, 18020),

Gene: Maupel\_22 Start: 6576, Stop: 7574, Start Num: 14

Candidate Starts for Maupel\_22:

(Start: 14 @6576 has 23 MA's), (Start: 20 @6609 has 1 MA's), (46, 6795), (80, 7011), (87, 7062), (102, 7146), (108, 7179), (124, 7299), (126, 7308), (129, 7344), (130, 7353), (135, 7371), (141, 7410), (154, 7476), (161, 7509), (166, 7560),

Gene: Maupel\_23 Start: 7571, Stop: 8551, Start Num: 13

Candidate Starts for Maupel\_23:

(Start: 13 @7571 has 112 MA's), (Start: 20 @7604 has 1 MA's), (24, 7643), (51, 7814), (61, 7871), (73, 7955), (76, 7973), (80, 8006), (93, 8087), (110, 8162), (113, 8180), (123, 8258), (124, 8270), (129, 8315), (131, 8327), (134, 8333), (139, 8366), (146, 8411), (148, 8417), (151, 8429), (163, 8501),

Gene: MeganTheeKilla\_21 Start: 6932, Stop: 7912, Start Num: 13

Candidate Starts for MeganTheeKilla\_21:

(Start: 13 @6932 has 112 MA's), (Start: 20 @6965 has 1 MA's), (24, 7004), (51, 7175), (61, 7232), (73, 7316), (76, 7334), (80, 7367), (93, 7448), (110, 7523), (113, 7541), (123, 7619), (124, 7631), (129, 7676), (131, 7688), (134, 7694), (139, 7727), (146, 7772), (148, 7778), (151, 7790), (163, 7862),

Gene: MeganTheeKilla\_20 Start: 5937, Stop: 6935, Start Num: 14

Candidate Starts for MeganTheeKilla\_20:

(Start: 14 @5937 has 23 MA's), (Start: 20 @5970 has 1 MA's), (46, 6156), (80, 6372), (87, 6423), (102, 6507), (108, 6540), (124, 6660), (126, 6669), (129, 6705), (130, 6714), (135, 6732), (141, 6771), (154, 6837), (161, 6870), (166, 6921),

Gene: Mildred21\_40 Start: 17494, Stop: 18462, Start Num: 13

Candidate Starts for Mildred21\_40:

(10, 17473), (Start: 13 @17494 has 112 MA's), (Start: 20 @17527 has 1 MA's), (22, 17551), (24, 17566), (51, 17740), (55, 17758), (62, 17806), (74, 17881), (76, 17896), (80, 17929), (98, 18019), (115, 18112), (117, 18130), (124, 18193), (141, 18304), (145, 18331), (154, 18370), (161, 18403), (166, 18454),

Gene: MindFlayer\_42 Start: 18097, Stop: 19065, Start Num: 13

Candidate Starts for MindFlayer\_42:

(Start: 13 @18097 has 112 MA's), (24, 18169), (51, 18343), (62, 18409), (74, 18484), (76, 18499), (80, 18532), (98, 18622), (115, 18715), (117, 18733), (124, 18796), (141, 18907), (166, 19057),

Gene: Moab\_20 Start: 7083, Stop: 8072, Start Num: 13

Candidate Starts for Moab\_20:

(Start: 13 @7083 has 112 MA's), (24, 7155), (51, 7326), (61, 7383), (76, 7485), (80, 7518), (93, 7599), (98, 7605), (110, 7674), (112, 7689), (114, 7698), (116, 7716), (117, 7719), (121, 7761), (124, 7782), (125, 7788), (127, 7800), (129, 7827), (148, 7926),

Gene: Moab\_19 Start: 6088, Stop: 7086, Start Num: 14

Candidate Starts for Moab\_19:

(Start: 14 @6088 has 23 MA's), (27, 6172), (38, 6244), (73, 6472), (80, 6523), (87, 6574), (120, 6781), (124, 6811), (130, 6865), (132, 6871), (141, 6922), (143, 6937), (144, 6946), (145, 6949), (154, 6988), (166, 7072),

Gene: Mugiwara\_43 Start: 18292, Stop: 19260, Start Num: 13

Candidate Starts for Mugiwara\_43:

(Start: 13 @18292 has 112 MA's), (24, 18364), (51, 18538), (62, 18604), (74, 18679), (76, 18694), (80, 18727), (98, 18817), (117, 18928), (124, 18991), (141, 19102), (154, 19168), (159, 19198), (166, 19252),

Gene: MulchMansion\_39 Start: 17290, Stop: 18258, Start Num: 13

Candidate Starts for MulchMansion\_39:

(Start: 13 @17290 has 112 MA's), (Start: 20 @17323 has 1 MA's), (22, 17347), (24, 17362), (46, 17512), (51, 17536), (56, 17572), (62, 17602), (74, 17677), (76, 17692), (80, 17725), (117, 17926), (124, 17989), (139, 18085), (141, 18100), (144, 18124), (161, 18199), (164, 18226), (166, 18250),

Gene: Muntaha\_15 Start: 5791, Stop: 6774, Start Num: 13

Candidate Starts for Muntaha\_15:

(Start: 13 @5791 has 112 MA's), (80, 6226), (87, 6277), (93, 6307), (112, 6397), (113, 6400), (117, 6427), (121, 6469), (123, 6478), (124, 6490), (132, 6550), (139, 6583), (148, 6634), (161, 6697), (166, 6748), (168, 6757),

Gene: Navo\_39 Start: 17409, Stop: 18377, Start Num: 13

Candidate Starts for Navo\_39:

(Start: 13 @17409 has 112 MA's), (Start: 20 @17442 has 1 MA's), (22, 17466), (24, 17481), (49, 17646), (51, 17655), (55, 17673), (62, 17721), (74, 17796), (76, 17811), (80, 17844), (87, 17895), (117, 18045), (124, 18108), (141, 18219), (145, 18246), (161, 18318), (166, 18369),

Gene: NiceHouse\_47 Start: 19185, Stop: 20171, Start Num: 13

Candidate Starts for NiceHouse\_47:

(Start: 13 @19185 has 112 MA's), (28, 19278), (44, 19380), (59, 19476), (68, 19536), (70, 19551), (87, 19674), (105, 19755), (110, 19776), (116, 19818), (121, 19863), (130, 19938), (132, 19944), (135, 19956), (143, 20010), (145, 20022), (157, 20079), (161, 20094), (163, 20115), (164, 20121), (167, 20148),

Gene: NootNoot\_37 Start: 16295, Stop: 17263, Start Num: 13

Candidate Starts for NootNoot\_37:

(Start: 13 @16295 has 112 MA's), (Start: 20 @16328 has 1 MA's), (22, 16352), (24, 16367), (49, 16532), (51, 16541), (55, 16559), (62, 16607), (74, 16682), (76, 16697), (80, 16730), (115, 16913), (117, 16931), (124, 16994), (141, 17105), (145, 17132), (161, 17204), (166, 17255),

Gene: Nova53\_34 Start: 15961, Stop: 16944, Start Num: 13

Candidate Starts for Nova53\_34:

(Start: 13 @15961 has 112 MA's), (28, 16054), (34, 16099), (40, 16141), (44, 16156), (46, 16180), (51, 16204), (70, 16327), (76, 16366), (86, 16450), (107, 16543), (123, 16654), (140, 16771), (141, 16774), (145, 16801), (164, 16900),

Gene: PacManQ\_41 Start: 17973, Stop: 18941, Start Num: 13

Candidate Starts for PacManQ\_41:

(Start: 13 @17973 has 112 MA's), (Start: 20 @18006 has 1 MA's), (22, 18030), (24, 18045), (51, 18219), (62, 18285), (74, 18360), (76, 18375), (80, 18408), (117, 18609), (123, 18660), (124, 18672), (137, 18747), (139, 18768), (141, 18783), (144, 18807), (154, 18849), (161, 18882), (166, 18933),

Gene: Paradiddles\_37 Start: 16420, Stop: 17388, Start Num: 13

Candidate Starts for Paradiddles\_37:

(Start: 13 @16420 has 112 MA's), (Start: 20 @16453 has 1 MA's), (22, 16477), (24, 16492), (49, 16657), (51, 16666), (55, 16684), (62, 16732), (74, 16807), (76, 16822), (80, 16855), (87, 16906), (117, 17056), (124, 17119), (141, 17230), (145, 17257), (161, 17329), (166, 17380),

Gene: Patelgo\_20 Start: 6697, Stop: 7686, Start Num: 13

Candidate Starts for Patelgo\_20:

(Start: 13 @6697 has 112 MA's), (24, 6769), (51, 6940), (61, 6997), (76, 7099), (80, 7132), (93, 7213), (98, 7219), (110, 7288), (112, 7303), (114, 7312), (116, 7330), (117, 7333), (121, 7375), (124, 7396), (125, 7402), (127, 7414), (129, 7441), (148, 7540),

Gene: Patelgo\_19 Start: 5702, Stop: 6700, Start Num: 14

Candidate Starts for Patelgo\_19:

(Start: 14 @5702 has 23 MA's), (27, 5786), (38, 5858), (80, 6137), (87, 6188), (120, 6395), (124, 6425), (130, 6479), (132, 6485), (141, 6536), (143, 6551), (144, 6560), (145, 6563), (154, 6602), (166, 6686),

Gene: Peebs\_41 Start: 18331, Stop: 19299, Start Num: 13

Candidate Starts for Peebs\_41:

(Start: 13 @18331 has 112 MA's), (Start: 20 @18364 has 1 MA's), (22, 18388), (24, 18403), (51, 18577), (74, 18718), (76, 18733), (80, 18766), (87, 18817), (115, 18949), (117, 18967), (123, 19018), (124, 19030), (137, 19105), (139, 19126), (141, 19141), (154, 19207), (161, 19240), (166, 19291),

Gene: Pepperwood\_42 Start: 18468, Stop: 19436, Start Num: 13

Candidate Starts for Pepperwood\_42:

(Start: 13 @18468 has 112 MA's), (Start: 20 @18501 has 1 MA's), (22, 18525), (24, 18540), (51, 18714), (62, 18780), (74, 18855), (76, 18870), (80, 18903), (115, 19086), (117, 19104), (123, 19155), (124, 19167), (137, 19242), (139, 19263), (141, 19278), (154, 19344), (161, 19377), (166, 19428),

Gene: Peregrin\_60 Start: 22335, Stop: 23327, Start Num: 13

Candidate Starts for Peregrin\_60:

(Start: 13 @22335 has 112 MA's), (17, 22359), (34, 22473), (37, 22482), (54, 22593), (91, 22863), (100, 22890), (112, 22956), (116, 22983), (122, 23034), (148, 23193),

Gene: Persimmon\_37 Start: 16343, Stop: 17311, Start Num: 13

Candidate Starts for Persimmon\_37:

(Start: 13 @16343 has 112 MA's), (Start: 20 @16376 has 1 MA's), (22, 16400), (24, 16415), (49, 16580), (51, 16589), (55, 16607), (62, 16655), (74, 16730), (76, 16745), (80, 16778), (117, 16979), (124, 17042), (141, 17153), (145, 17180), (161, 17252), (166, 17303),

Gene: Phredrick\_21 Start: 6829, Stop: 7812, Start Num: 13

Candidate Starts for Phredrick\_21:

(Start: 13 @6829 has 112 MA's), (24, 6901), (25, 6904), (51, 7072), (61, 7129), (79, 7246), (80, 7264), (93, 7345), (110, 7420), (111, 7426), (112, 7435), (113, 7438), (114, 7444), (121, 7507), (123, 7516), (124, 7528), (129, 7573), (168, 7801),

Gene: Phredrick\_20 Start: 5834, Stop: 6832, Start Num: 14

Candidate Starts for Phredrick\_20:

(Start: 14 @5834 has 23 MA's), (Start: 20 @5867 has 1 MA's), (46, 6053), (55, 6095), (80, 6269), (87, 6320), (124, 6557), (129, 6602), (130, 6611), (141, 6668), (154, 6734), (161, 6767), (166, 6818),

Gene: PinkiePie\_39 Start: 17247, Stop: 18215, Start Num: 13

Candidate Starts for PinkiePie\_39:

(Start: 13 @17247 has 112 MA's), (Start: 20 @17280 has 1 MA's), (22, 17304), (24, 17319), (49, 17484), (51, 17493), (55, 17511), (62, 17559), (74, 17634), (76, 17649), (80, 17682), (87, 17733), (117, 17883), (124, 17946), (141, 18057), (145, 18084), (161, 18156), (166, 18207),

Gene: PumpkinSpice\_43 Start: 18487, Stop: 19455, Start Num: 13

Candidate Starts for PumpkinSpice\_43:

(Start: 13 @18487 has 112 MA's), (24, 18559), (51, 18733), (62, 18799), (74, 18874), (76, 18889), (80, 18922), (98, 19012), (115, 19105), (117, 19123), (124, 19186), (141, 19297), (166, 19447),

Gene: PynkPanther\_46 Start: 17461, Stop: 18429, Start Num: 13

Candidate Starts for PynkPanther\_46:

(Start: 13 @17461 has 112 MA's), (Start: 20 @17494 has 1 MA's), (22, 17518), (24, 17533), (49, 17698), (51, 17707), (55, 17725), (62, 17773), (74, 17848), (76, 17863), (80, 17896), (87, 17947), (117, 18097), (124, 18160), (141, 18271), (145, 18298), (161, 18370), (166, 18421),

Gene: Quaran19\_44 Start: 18478, Stop: 19446, Start Num: 13

Candidate Starts for Quaran19\_44:

(Start: 13 @18478 has 112 MA's), (24, 18550), (51, 18724), (62, 18790), (74, 18865), (76, 18880), (80, 18913), (98, 19003), (115, 19096), (117, 19114), (124, 19177), (141, 19288), (166, 19438),

Gene: Rikishi\_44 Start: 18393, Stop: 19361, Start Num: 13

Candidate Starts for Rikishi\_44:

(Start: 13 @18393 has 112 MA's), (24, 18465), (51, 18639), (62, 18705), (74, 18780), (76, 18795), (80, 18828), (98, 18918), (115, 19011), (117, 19029), (124, 19092), (141, 19203), (166, 19353),

Gene: Riptide\_39 Start: 17087, Stop: 18055, Start Num: 13

Candidate Starts for Riptide\_39:

(Start: 13 @17087 has 112 MA's), (Start: 20 @17120 has 1 MA's), (22, 17144), (24, 17159), (46, 17309), (51, 17333), (62, 17399), (74, 17474), (75, 17483), (76, 17489), (80, 17522), (98, 17612), (110, 17678), (115, 17705), (116, 17720), (117, 17723), (124, 17786), (139, 17882), (141, 17897), (144, 17921), (145, 17924), (154, 17963), (161, 17996), (166, 18047),

Gene: SaltySpittoon\_44 Start: 18487, Stop: 19455, Start Num: 13

Candidate Starts for SaltySpittoon\_44:

(Start: 13 @18487 has 112 MA's), (24, 18559), (51, 18733), (62, 18799), (74, 18874), (76, 18889), (80, 18922), (98, 19012), (115, 19105), (117, 19123), (124, 19186), (141, 19297), (166, 19447),

Gene: Samisti12\_41 Start: 19060, Stop: 20028, Start Num: 13

Candidate Starts for Samisti12\_41:

(Start: 13 @19060 has 112 MA's), (Start: 20 @19093 has 1 MA's), (22, 19117), (24, 19132), (51, 19306), (62, 19372), (74, 19447), (76, 19462), (80, 19495), (115, 19678), (117, 19696), (123, 19747), (124, 19759), (130, 19813), (137, 19834), (139, 19855), (141, 19870), (154, 19936), (161, 19969), (166, 20020),

Gene: Scheme\_42 Start: 18479, Stop: 19447, Start Num: 13

Candidate Starts for Scheme\_42:

(Start: 13 @18479 has 112 MA's), (Start: 20 @18512 has 1 MA's), (22, 18536), (24, 18551), (51, 18725), (62, 18791), (74, 18866), (76, 18881), (80, 18914), (115, 19097), (117, 19115), (123, 19166), (124, 19178), (137, 19253), (139, 19274), (141, 19289), (154, 19355), (161, 19388), (166, 19439),

Gene: SeresaTree\_19 Start: 6327, Stop: 7316, Start Num: 13

Candidate Starts for SeresaTree\_19:

(Start: 13 @6327 has 112 MA's), (23, 6393), (51, 6570), (74, 6714), (76, 6729), (79, 6744), (80, 6762), (93, 6843), (117, 6963), (118, 6966), (120, 6996), (123, 7014), (124, 7026), (129, 7071), (130, 7080), (148, 7170),

Gene: SeresaTree\_18 Start: 5332, Stop: 6330, Start Num: 14

Candidate Starts for SeresaTree\_18:

(Start: 14 @5332 has 23 MA's), (34, 5470), (46, 5551), (107, 5932), (113, 5965), (120, 6025), (124, 6055), (129, 6100), (130, 6109), (132, 6115), (140, 6163), (141, 6166), (145, 6193), (154, 6232), (164, 6292), (166, 6316),

Gene: Sham\_16 Start: 5125, Stop: 6132, Start Num: 14

Candidate Starts for Sham\_16:

(Start: 14 @5125 has 23 MA's), (33, 5257), (34, 5263), (46, 5344), (66, 5452), (95, 5653), (96, 5665), (121, 5830), (123, 5839), (124, 5851), (140, 5959), (141, 5962), (161, 6061), (166, 6112),

Gene: Sham\_17 Start: 6129, Stop: 7118, Start Num: 13

Candidate Starts for Sham\_17:

(Start: 13 @6129 has 112 MA's), (51, 6372), (61, 6429), (68, 6480), (79, 6546), (80, 6564), (98, 6651), (104, 6687), (112, 6735), (114, 6744), (117, 6765), (121, 6807), (123, 6816), (124, 6828),

Gene: Shuckle\_40 Start: 18784, Stop: 19752, Start Num: 13

Candidate Starts for Shuckle\_40:

(Start: 13 @18784 has 112 MA's), (Start: 20 @18817 has 1 MA's), (22, 18841), (24, 18856), (51, 19030), (62, 19096), (74, 19171), (76, 19186), (80, 19219), (87, 19270), (115, 19402), (117, 19420), (123, 19471), (124, 19483), (137, 19558), (139, 19579), (141, 19594), (154, 19660), (161, 19693), (166, 19744),

Gene: Sollertia\_44 Start: 18433, Stop: 19401, Start Num: 13

Candidate Starts for Sollertia\_44:

(Start: 13 @18433 has 112 MA's), (24, 18505), (46, 18655), (51, 18679), (56, 18715), (62, 18745), (72, 18808), (74, 18820), (76, 18835), (80, 18868), (98, 18958), (101, 18976), (108, 19012), (113, 19042), (117, 19069), (124, 19132), (141, 19243), (161, 19342), (166, 19393),

Gene: SparkleGoddess\_20 Start: 7041, Stop: 8024, Start Num: 13

Candidate Starts for SparkleGoddess\_20:

(Start: 13 @7041 has 112 MA's), (24, 7113), (49, 7275), (51, 7284), (61, 7341), (76, 7443), (79, 7458), (80, 7476), (84, 7500), (93, 7557), (105, 7611), (110, 7632), (112, 7647), (114, 7656), (116, 7674), (117, 7677), (123, 7728), (124, 7740), (125, 7746), (129, 7785), (167, 8007),

Gene: SparkleGoddess\_19 Start: 6046, Stop: 7044, Start Num: 14

Candidate Starts for SparkleGoddess\_19:

(Start: 14 @6046 has 23 MA's), (46, 6265), (80, 6481), (87, 6532), (94, 6568), (124, 6769), (129, 6814), (130, 6823), (135, 6841), (141, 6880), (143, 6895), (154, 6946), (166, 7030),

Gene: Spelly\_44 Start: 18442, Stop: 19410, Start Num: 13

Candidate Starts for Spelly\_44:

(Start: 13 @18442 has 112 MA's), (24, 18514), (51, 18688), (62, 18754), (74, 18829), (76, 18844), (80, 18877), (98, 18967), (115, 19060), (117, 19078), (124, 19141), (141, 19252), (166, 19402),

Gene: Spilled\_44 Start: 18196, Stop: 19164, Start Num: 13

Candidate Starts for Spilled\_44:

(Start: 13 @18196 has 112 MA's), (24, 18268), (51, 18442), (62, 18508), (74, 18583), (76, 18598), (80, 18631), (98, 18721), (115, 18814), (117, 18832), (124, 18895), (141, 19006), (166, 19156),

Gene: Squillium\_40 Start: 17248, Stop: 18216, Start Num: 13

Candidate Starts for Squillium\_40:

(Start: 13 @17248 has 112 MA's), (Start: 20 @17281 has 1 MA's), (22, 17305), (24, 17320), (49, 17485), (51, 17494), (55, 17512), (62, 17560), (74, 17635), (76, 17650), (80, 17683), (87, 17734), (117, 17884), (124, 17947), (141, 18058), (145, 18085), (161, 18157), (166, 18208),

Gene: Stanimal\_44 Start: 18322, Stop: 19290, Start Num: 13

Candidate Starts for Stanimal\_44:

(Start: 13 @18322 has 112 MA's), (24, 18394), (46, 18544), (51, 18568), (56, 18604), (62, 18634), (74, 18709), (76, 18724), (80, 18757), (98, 18847), (101, 18865), (108, 18901), (113, 18931), (117, 18958), (124, 19021), (141, 19132), (161, 19231), (166, 19282),

Gene: StarPlatinum\_43 Start: 18438, Stop: 19406, Start Num: 13

Candidate Starts for StarPlatinum\_43:

(Start: 13 @18438 has 112 MA's), (24, 18510), (46, 18660), (51, 18684), (62, 18750), (74, 18825), (76, 18840), (80, 18873), (113, 19047), (117, 19074), (124, 19137), (135, 19209), (141, 19248), (154, 19314), (161, 19347), (166, 19398),

Gene: Starbow\_42 Start: 18463, Stop: 19431, Start Num: 13

Candidate Starts for Starbow\_42:

(Start: 13 @18463 has 112 MA's), (24, 18535), (51, 18709), (62, 18775), (74, 18850), (76, 18865), (80, 18898), (98, 18988), (115, 19081), (117, 19099), (124, 19162), (141, 19273), (166, 19423),

Gene: Stigma\_20 Start: 7045, Stop: 8028, Start Num: 13

Candidate Starts for Stigma\_20:

(Start: 13 @7045 has 112 MA's), (24, 7117), (49, 7279), (51, 7288), (61, 7345), (76, 7447), (79, 7462), (80, 7480), (84, 7504), (93, 7561), (105, 7615), (110, 7636), (112, 7651), (114, 7660), (116, 7678), (117, 7681), (123, 7732), (124, 7744), (125, 7750), (129, 7789), (167, 8011),

Gene: Stigma\_19 Start: 6050, Stop: 7048, Start Num: 14

Candidate Starts for Stigma\_19:

(Start: 14 @6050 has 23 MA's), (46, 6269), (80, 6485), (87, 6536), (94, 6572), (124, 6773), (129, 6818), (130, 6827), (135, 6845), (141, 6884), (143, 6899), (154, 6950), (166, 7034),

Gene: Sushi23\_42 Start: 18693, Stop: 19661, Start Num: 13

Candidate Starts for Sushi23\_42:

(Start: 13 @18693 has 112 MA's), (Start: 20 @18726 has 1 MA's), (22, 18750), (24, 18765), (51, 18939), (62, 19005), (74, 19080), (76, 19095), (80, 19128), (115, 19311), (117, 19329), (123, 19380), (124, 19392), (137, 19467), (139, 19488), (141, 19503), (144, 19527), (154, 19569), (161, 19602), (166, 19653),

Gene: Targaryen\_43 Start: 19465, Stop: 20433, Start Num: 13

Candidate Starts for Targaryen\_43:

(Start: 13 @19465 has 112 MA's), (Start: 20 @19498 has 1 MA's), (24, 19537), (29, 19570), (46, 19687), (51, 19711), (62, 19777), (74, 19852), (76, 19867), (80, 19900), (89, 19972), (105, 20035), (108, 20044), (117, 20101), (124, 20164), (141, 20275), (157, 20359), (161, 20374), (164, 20401), (166, 20425),

Gene: Teutsch\_41 Start: 18386, Stop: 19354, Start Num: 13

Candidate Starts for Teutsch\_41:

(Start: 13 @18386 has 112 MA's), (Start: 20 @18419 has 1 MA's), (22, 18443), (24, 18458), (51, 18632), (62, 18698), (74, 18773), (76, 18788), (80, 18821), (115, 19004), (117, 19022), (123, 19073), (124, 19085), (137, 19160), (139, 19181), (141, 19196), (154, 19262), (161, 19295), (166, 19346),

Gene: TomSawyer\_42 Start: 18081, Stop: 19049, Start Num: 13

Candidate Starts for TomSawyer\_42:

(Start: 13 @18081 has 112 MA's), (24, 18153), (51, 18327), (62, 18393), (74, 18468), (76, 18483), (80, 18516), (98, 18606), (115, 18699), (117, 18717), (124, 18780), (141, 18891), (166, 19041),

Gene: Tomas\_45 Start: 20307, Stop: 21275, Start Num: 12

Candidate Starts for Tomas\_45:

(Start: 12 @20307 has 3 MA's), (24, 20379), (25, 20382), (46, 20529), (47, 20532), (51, 20553), (62, 20619), (75, 20703), (76, 20709), (80, 20742), (89, 20814), (98, 20832), (115, 20925), (117, 20943), (124, 21006), (141, 21117), (154, 21183), (166, 21267),

Gene: Tribute\_40 Start: 18159, Stop: 19127, Start Num: 13

Candidate Starts for Tribute\_40:

(Start: 13 @18159 has 112 MA's), (Start: 20 @18192 has 1 MA's), (22, 18216), (24, 18231), (51, 18405), (62, 18471), (74, 18546), (76, 18561), (80, 18594), (115, 18777), (117, 18795), (123, 18846), (124, 18858), (137, 18933), (139, 18954), (141, 18969), (154, 19035), (166, 19119),

Gene: Trina\_56 Start: 22621, Stop: 23610, Start Num: 13

Candidate Starts for Trina\_56:

(Start: 13 @22621 has 112 MA's), (24, 22693), (43, 22813), (46, 22840), (52, 22870), (66, 22948), (100, 23164), (110, 23215), (121, 23302), (129, 23368), (143, 23449), (155, 23506), (163, 23554), (167, 23587),

Gene: TunaTartare\_17 Start: 5406, Stop: 6413, Start Num: 14

Candidate Starts for TunaTartare\_17:

(Start: 14 @5406 has 23 MA's), (33, 5538), (38, 5562), (46, 5625), (66, 5733), (95, 5934), (96, 5946), (124, 6132), (140, 6240), (141, 6243), (145, 6270), (148, 6276), (161, 6342), (164, 6369), (166, 6393),

Gene: TunaTartare\_18 Start: 6410, Stop: 7399, Start Num: 13

Candidate Starts for TunaTartare\_18:

(Start: 13 @6410 has 112 MA's), (51, 6653), (55, 6671), (61, 6710), (68, 6761), (79, 6827), (80, 6845), (93, 6926), (104, 6968), (110, 7001), (112, 7016), (114, 7025), (117, 7046), (121, 7088), (123, 7097), (124, 7109), (150, 7262),

Gene: Wakanda\_15 Start: 5948, Stop: 6931, Start Num: 13

Candidate Starts for Wakanda\_15:

(Start: 13 @5948 has 112 MA's), (80, 6383), (87, 6434), (93, 6464), (112, 6554), (113, 6557), (117, 6584), (121, 6626), (123, 6635), (124, 6647), (132, 6707), (139, 6740), (148, 6791), (161, 6854), (166, 6905), (168, 6914),

Gene: Warpy\_46 Start: 18928, Stop: 19896, Start Num: 13

Candidate Starts for Warpy\_46:

(Start: 13 @18928 has 112 MA's), (Start: 20 @18961 has 1 MA's), (24, 19000), (29, 19033), (51, 19174), (62, 19240), (72, 19303), (74, 19315), (76, 19330), (80, 19363), (89, 19435), (105, 19498), (108, 19507), (117, 19564), (124, 19627), (130, 19681), (141, 19738), (157, 19822), (161, 19837), (164, 19864), (166, 19888),

Gene: WashU\_45 Start: 18471, Stop: 19439, Start Num: 13

Candidate Starts for WashU\_45:

(Start: 13 @18471 has 112 MA's), (Start: 20 @18504 has 1 MA's), (22, 18528), (24, 18543), (51, 18717), (62, 18783), (74, 18858), (76, 18873), (80, 18906), (115, 19089), (117, 19107), (123, 19158), (124, 19170), (137, 19245), (139, 19266), (141, 19281), (154, 19347), (161, 19380), (166, 19431),

Gene: Watermoore\_41 Start: 18594, Stop: 19562, Start Num: 13

Candidate Starts for Watermoore\_41:

(Start: 13 @18594 has 112 MA's), (Start: 20 @18627 has 1 MA's), (22, 18651), (24, 18666), (51, 18840), (62, 18906), (74, 18981), (76, 18996), (80, 19029), (117, 19230), (123, 19281), (124, 19293), (137, 19368), (139, 19389), (141, 19404), (144, 19428), (154, 19470), (161, 19503), (166, 19554),

Gene: Weasels2\_62 Start: 22742, Stop: 23737, Start Num: 13

Candidate Starts for Weasels2\_62:

(Start: 13 @22742 has 112 MA's), (17, 22766), (27, 22826), (37, 22889), (50, 22982), (53, 23000), (60, 23045), (74, 23141), (84, 23213), (87, 23243), (99, 23291), (112, 23363), (114, 23372), (122, 23441), (151, 23612), (164, 23693),

Gene: Westy\_20 Start: 7045, Stop: 8028, Start Num: 13

Candidate Starts for Westy\_20:

(Start: 13 @7045 has 112 MA's), (24, 7117), (49, 7279), (51, 7288), (61, 7345), (76, 7447), (79, 7462), (80, 7480), (84, 7504), (87, 7531), (93, 7561), (110, 7636), (112, 7651), (114, 7660), (116, 7678), (117, 7681), (123, 7732), (124, 7744), (125, 7750), (129, 7789), (167, 8011),

Gene: Westy\_19 Start: 6050, Stop: 7048, Start Num: 14

Candidate Starts for Westy\_19:

(Start: 14 @6050 has 23 MA's), (46, 6269), (80, 6485), (87, 6536), (94, 6572), (124, 6773), (129, 6818), (130, 6827), (135, 6845), (141, 6884), (143, 6899), (154, 6950), (166, 7034),

Gene: WhereRU\_38 Start: 16933, Stop: 17901, Start Num: 13

Candidate Starts for WhereRU\_38:

(Start: 13 @16933 has 112 MA's), (Start: 20 @16966 has 1 MA's), (22, 16990), (24, 17005), (49, 17170), (51, 17179), (55, 17197), (62, 17245), (74, 17320), (76, 17335), (80, 17368), (117, 17569), (124, 17632), (141, 17743), (145, 17770), (161, 17842), (166, 17893),

Gene: Wipeout\_41 Start: 18241, Stop: 19209, Start Num: 13

Candidate Starts for Wipeout\_41:

(Start: 13 @18241 has 112 MA's), (24, 18313), (51, 18487), (62, 18553), (74, 18628), (76, 18643), (80, 18676), (98, 18766), (115, 18859), (117, 18877), (124, 18940), (141, 19051), (166, 19201),

Gene: Wofford\_42 Start: 18864, Stop: 19832, Start Num: 13

Candidate Starts for Wofford\_42:

(Start: 13 @18864 has 112 MA's), (24, 18936), (46, 19086), (51, 19110), (62, 19176), (74, 19251), (76, 19266), (80, 19299), (92, 19380), (113, 19473), (117, 19500), (124, 19563), (130, 19617), (141, 19674), (154, 19740), (161, 19773), (166, 19824),

Gene: Yaboi\_44 Start: 18410, Stop: 19378, Start Num: 13

Candidate Starts for Yaboi\_44:

(Start: 13 @18410 has 112 MA's), (24, 18482), (46, 18632), (51, 18656), (56, 18692), (62, 18722), (74, 18797), (76, 18812), (80, 18845), (98, 18935), (101, 18953), (108, 18989), (113, 19019), (117, 19046), (124, 19109), (141, 19220), (161, 19319), (166, 19370),