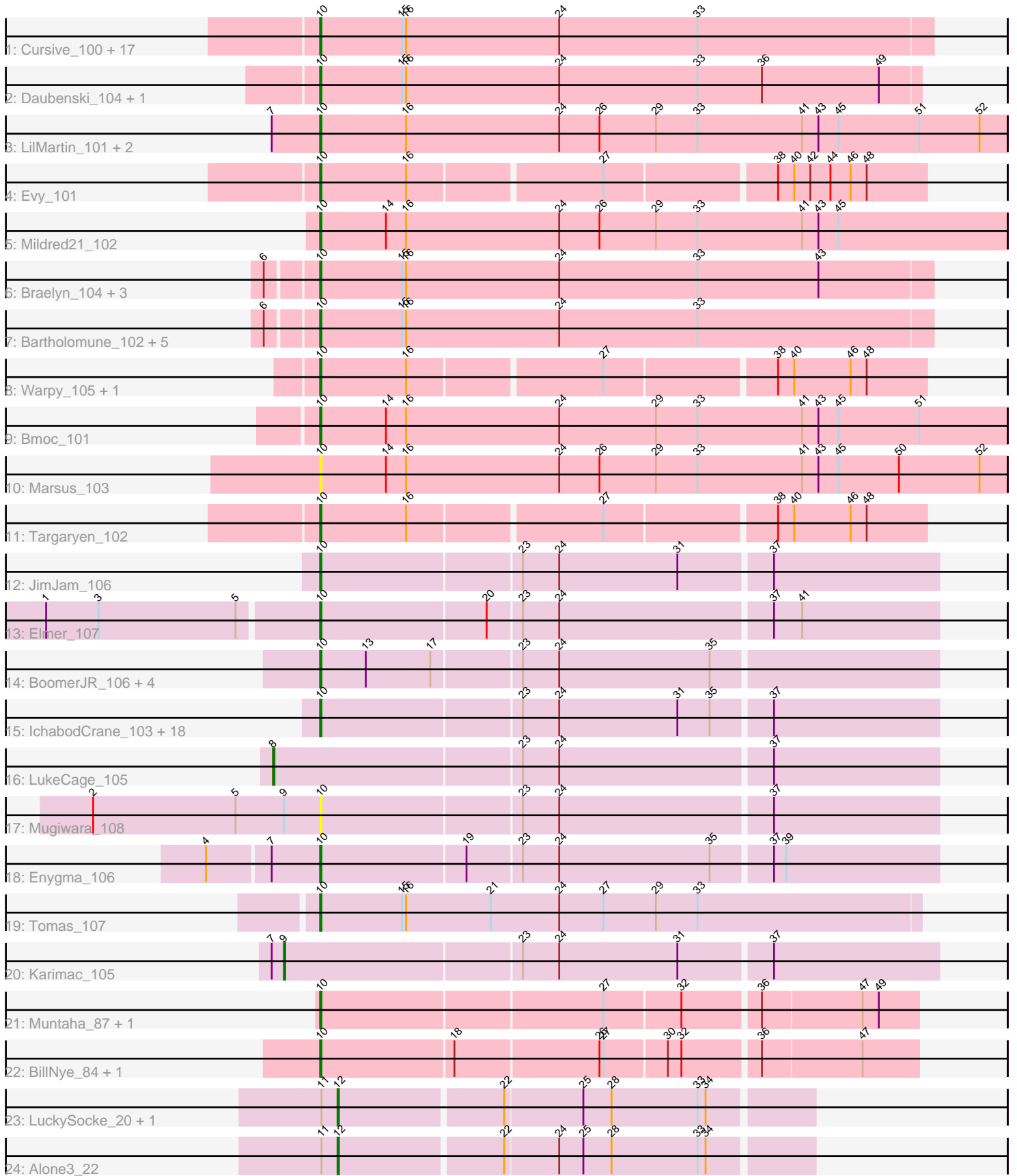


Pham 224525



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 224525 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224525 has 78 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Cursive\_100, Sushi23\_101, PacManQ\_101, BlueOtter\_102, EGole\_103, Cross\_102, Samisti12\_102, Tribute\_101, Scheme\_103, Larnav\_102, Watermoore\_101, Leo04\_103, Peebs\_101, Shuckle\_100, HangryHippo\_102, Lululemon\_101, Deutsch\_102, Pepperwood\_102
- Track 2 : Daubenski\_104, Cadmus\_102
- Track 3 : LilMartin\_101, MulchMansion\_101, Angela\_101
- Track 4 : Evy\_101
- Track 5 : Mildred21\_102
- Track 6 : Braelyn\_104, Navo\_100, Persimmon\_102, WhereRU\_99
- Track 7 : Bartholomune\_102, Paradiddles\_99, Liandry\_102, Squillium\_103, NootNoot\_99, PinkiePie\_102
- Track 8 : Warpy\_105, Jay2Jay\_106
- Track 9 : Bmoc\_101
- Track 10 : Marsus\_103
- Track 11 : Targaryen\_102
- Track 12 : JimJam\_106
- Track 13 : Elmer\_107
- Track 14 : BoomerJR\_106, Genie2\_106, Sollertia\_106, Stanimal\_106, Yaboi\_106
- Track 15 : IchabodCrane\_103, Jollison\_105, CeilingFan\_105, SaltySpittoon\_105, TomSawyer\_104, Birchlyn\_103, PumpkinSpice\_105, Starbow\_104, Bordeaux\_104, Amabiko\_106, KentuckyRacer\_106, Spelly\_106, Quarant19\_105, Rikishi\_108, Battuta\_104, MindFlayer\_103, Wipeout\_103, Gibbi\_110, Spilled\_107
- Track 16 : LukeCage\_105
- Track 17 : Mugiwara\_108
- Track 18 : Enygma\_106
- Track 19 : Tomas\_107
- Track 20 : Karimac\_105
- Track 21 : Muntaha\_87, Wakanda\_85
- Track 22 : BillNye\_84, Circinus\_85
- Track 23 : LuckySocke\_20, Beleetus\_20
- Track 24 : Alone3\_22

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

The start number called the most often in the published annotations is 10, it was called in 66 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amabiko\_106, Angela\_101, Bartholomune\_102, Battuta\_104, BillNye\_84, Birchlyn\_103, BlueOtter\_102, Bmoc\_101, BoomerJR\_106, Bordeaux\_104, Braelyn\_104, Cadmus\_102, CeilingFan\_105, Circinus\_85, Cross\_102, Cursive\_100, Daubenski\_104, EGole\_103, Elmer\_107, Enygma\_106, Evy\_101, Genie2\_106, Gibbi\_110, HangryHippo\_102, IchabodCrane\_103, Jay2Jay\_106, JimJam\_106, Jollison\_105, KentuckyRacer\_106, Larnav\_102, Leo04\_103, Liandry\_102, LilMartin\_101, Lululemon\_101, Marsus\_103, Mildred21\_102, MindFlayer\_103, Mugiwara\_108, MulchMansion\_101, Muntaha\_87, Navo\_100, NootNoot\_99, PacManQ\_101, Paradiddles\_99, Peebs\_101, Pepperwood\_102, Persimmon\_102, PinkiePie\_102, PumpkinSpice\_105, Quarant19\_105, Rikishi\_108, SaltySpittoon\_105, Samisti12\_102, Scheme\_103, Shuckle\_100, Sollertia\_106, Spelly\_106, Spilled\_107, Squillium\_103, Stanimal\_106, Starbow\_104, Sushi23\_101, Targaryen\_102, Teutsch\_102, TomSawyer\_104, Tomas\_107, Tribute\_101, Wakanda\_85, Warpy\_105, Watermoore\_101, WhereRU\_99, Wipeout\_103, Yaboi\_106,

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

- 

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

- Alone3\_22, Beleetus\_20, Karimac\_105, LuckySocke\_20, LukeCage\_105,

### Summary by start number:

Start 8:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LukeCage\_105 (BE2),

Start 9:

- Found in 2 of 78 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Karimac\_105 (BE2),

Start 10:

- Found in 73 of 78 ( 93.6% ) of genes in pham
- Manual Annotations of this start: 66 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amabiko\_106 (BE2), Angela\_101 (BE1), Bartholomune\_102 (BE1), Battuta\_104 (BE2), BillNye\_84 (BK2), Birchlyn\_103 (BE2), BlueOtter\_102 (BE1), Bmoc\_101 (BE1), BoomerJR\_106 (BE2), Bordeaux\_104 (BE2), Braelyn\_104 (BE1), Cadmus\_102 (BE1), CeilingFan\_105 (BE2), Circinus\_85 (BK2), Cross\_102 (BE1), Cursive\_100 (BE1), Daubenski\_104 (BE1), EGole\_103 (BE1), Elmer\_107 (BE2), Enygma\_106 (BE2), Evy\_101 (BE1), Genie2\_106 (BE2), Gibbi\_110 (BE2), HangryHippo\_102 (BE1), IchabodCrane\_103 (BE2), Jay2Jay\_106 (BE1), JimJam\_106 (BE2), Jollison\_105 (BE2), KentuckyRacer\_106 (BE2), Larnav\_102 (BE1), Leo04\_103 (BE1), Liandry\_102 (BE1), LilMartin\_101 (BE1), Lululemon\_101 (BE1), Marsus\_103 (BE1), Mildred21\_102 (BE1), MindFlayer\_103

(BE2), Mugiwara\_108 (BE2), MulchMansion\_101 (BE1), Muntaha\_87 (BK2), Navo\_100 (BE1), NootNoot\_99 (BE1), PacManQ\_101 (BE1), Paradiddles\_99 (BE1), Peebs\_101 (BE1), Pepperwood\_102 (BE1), Persimmon\_102 (BE1), PinkiePie\_102 (BE1), PumpkinSpice\_105 (BE2), Quarant19\_105 (BE2), Rikishi\_108 (BE2), SaltySpittoon\_105 (BE2), Samisti12\_102 (BE1), Scheme\_103 (BE1), Shuckle\_100 (BE1), Sollertia\_106 (BE2), Spelly\_106 (BE2), Spilled\_107 (BE2), Squillium\_103 (BE1), Stanimal\_106 (BE2), Starbow\_104 (BE2), Sushi23\_101 (BE1), Targaryen\_102 (BE1), Teutsch\_102 (BE1), TomSawyer\_104 (BE2), Tomas\_107 (BE2), Tribute\_101 (BE1), Wakanda\_85 (BK2), Warpy\_105 (BE1), Watermoore\_101 (BE1), WhereRU\_99 (BE1), Wipeout\_103 (BE2), Yaboi\_106 (BE2),

Start 12:

- Found in 3 of 78 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alone3\_22 (BS), Beleetus\_20 (BS), LuckySocke\_20 (BS),

### **Summary by clusters:**

There are 4 clusters represented in this pham: BE2, BE1, BK2, BS,

Info for manual annotations of cluster BE1:

- Start number 10 was manually annotated 36 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 8 was manually annotated 1 time for cluster BE2.
- Start number 9 was manually annotated 1 time for cluster BE2.
- Start number 10 was manually annotated 26 times for cluster BE2.

Info for manual annotations of cluster BK2:

- Start number 10 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster BS:

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

### **Gene Information:**

Gene: Alone3\_22 Start: 7489, Stop: 7827, Start Num: 12

Candidate Starts for Alone3\_22:

(11, 7477), (Start: 12 @7489 has 2 MA's), (22, 7606), (24, 7645), (25, 7663), (28, 7684), (33, 7747), (34, 7753),

Gene: Amabiko\_106 Start: 72868, Stop: 73314, Start Num: 10

Candidate Starts for Amabiko\_106:

(Start: 10 @72868 has 66 MA's), (23, 73012), (24, 73039), (31, 73126), (35, 73150), (37, 73192),

Gene: Angela\_101 Start: 72019, Stop: 72528, Start Num: 10

Candidate Starts for Angela\_101:

(7, 71983), (Start: 10 @72019 has 66 MA's), (16, 72082), (24, 72196), (26, 72226), (29, 72268), (33, 72298), (41, 72376), (43, 72388), (45, 72403), (51, 72463), (52, 72508),

Gene: Bartholomune\_102 Start: 72412, Stop: 72864, Start Num: 10  
Candidate Starts for Bartholomune\_102:  
(6, 72379), (Start: 10 @72412 has 66 MA's), (15, 72472), (16, 72475), (24, 72589), (33, 72691),

Gene: Battuta\_104 Start: 72842, Stop: 73288, Start Num: 10  
Candidate Starts for Battuta\_104:  
(Start: 10 @72842 has 66 MA's), (23, 72986), (24, 73013), (31, 73100), (35, 73124), (37, 73166),

Gene: Beleetus\_20 Start: 6988, Stop: 7326, Start Num: 12  
Candidate Starts for Beleetus\_20:  
(11, 6976), (Start: 12 @6988 has 2 MA's), (22, 7105), (25, 7162), (28, 7183), (33, 7246), (34, 7252),

Gene: BillNye\_84 Start: 67275, Stop: 67700, Start Num: 10  
Candidate Starts for BillNye\_84:  
(Start: 10 @67275 has 66 MA's), (18, 67371), (26, 67476), (27, 67479), (30, 67524), (32, 67533), (36, 67587), (47, 67659),

Gene: Birchlyn\_103 Start: 70728, Stop: 71174, Start Num: 10  
Candidate Starts for Birchlyn\_103:  
(Start: 10 @70728 has 66 MA's), (23, 70872), (24, 70899), (31, 70986), (35, 71010), (37, 71052),

Gene: BlueOtter\_102 Start: 72816, Stop: 73268, Start Num: 10  
Candidate Starts for BlueOtter\_102:  
(Start: 10 @72816 has 66 MA's), (15, 72876), (16, 72879), (24, 72993), (33, 73095),

Gene: Bmoc\_101 Start: 72064, Stop: 72573, Start Num: 10  
Candidate Starts for Bmoc\_101:  
(Start: 10 @72064 has 66 MA's), (14, 72112), (16, 72127), (24, 72241), (29, 72313), (33, 72343), (41, 72421), (43, 72433), (45, 72448), (51, 72508),

Gene: BoomerJR\_106 Start: 72816, Stop: 73262, Start Num: 10  
Candidate Starts for BoomerJR\_106:  
(Start: 10 @72816 has 66 MA's), (13, 72849), (17, 72897), (23, 72960), (24, 72987), (35, 73098),

Gene: Bordeaux\_104 Start: 72997, Stop: 73443, Start Num: 10  
Candidate Starts for Bordeaux\_104:  
(Start: 10 @72997 has 66 MA's), (23, 73141), (24, 73168), (31, 73255), (35, 73279), (37, 73321),

Gene: Braelyn\_104 Start: 73301, Stop: 73753, Start Num: 10  
Candidate Starts for Braelyn\_104:  
(6, 73268), (Start: 10 @73301 has 66 MA's), (15, 73361), (16, 73364), (24, 73478), (33, 73580), (43, 73670),

Gene: Cadmus\_102 Start: 71667, Stop: 72110, Start Num: 10  
Candidate Starts for Cadmus\_102:  
(Start: 10 @71667 has 66 MA's), (15, 71727), (16, 71730), (24, 71844), (33, 71946), (36, 71994), (49, 72081),

Gene: CeilingFan\_105 Start: 72760, Stop: 73206, Start Num: 10  
Candidate Starts for CeilingFan\_105:  
(Start: 10 @72760 has 66 MA's), (23, 72904), (24, 72931), (31, 73018), (35, 73042), (37, 73084),

Gene: Circinus\_85 Start: 67263, Stop: 67688, Start Num: 10  
Candidate Starts for Circinus\_85:  
(Start: 10 @67263 has 66 MA's), (18, 67359), (26, 67464), (27, 67467), (30, 67512), (32, 67521), (36, 67575), (47, 67647),

Gene: Cross\_102 Start: 72817, Stop: 73269, Start Num: 10  
Candidate Starts for Cross\_102:  
(Start: 10 @72817 has 66 MA's), (15, 72877), (16, 72880), (24, 72994), (33, 73096),

Gene: Cursive\_100 Start: 72342, Stop: 72794, Start Num: 10  
Candidate Starts for Cursive\_100:  
(Start: 10 @72342 has 66 MA's), (15, 72402), (16, 72405), (24, 72519), (33, 72621),

Gene: Daubenski\_104 Start: 72431, Stop: 72874, Start Num: 10  
Candidate Starts for Daubenski\_104:  
(Start: 10 @72431 has 66 MA's), (15, 72491), (16, 72494), (24, 72608), (33, 72710), (36, 72758), (49, 72845),

Gene: EGole\_103 Start: 73664, Stop: 74116, Start Num: 10  
Candidate Starts for EGole\_103:  
(Start: 10 @73664 has 66 MA's), (15, 73724), (16, 73727), (24, 73841), (33, 73943),

Gene: Elmer\_107 Start: 73295, Stop: 73741, Start Num: 10  
Candidate Starts for Elmer\_107:  
(1, 73097), (3, 73136), (5, 73238), (Start: 10 @73295 has 66 MA's), (20, 73415), (23, 73439), (24, 73466), (37, 73619), (41, 73640),

Gene: Enygma\_106 Start: 74654, Stop: 75100, Start Num: 10  
Candidate Starts for Enygma\_106:  
(4, 74573), (7, 74618), (Start: 10 @74654 has 66 MA's), (19, 74759), (23, 74798), (24, 74825), (35, 74936), (37, 74978), (39, 74987),

Gene: Evy\_101 Start: 72801, Stop: 73232, Start Num: 10  
Candidate Starts for Evy\_101:  
(Start: 10 @72801 has 66 MA's), (16, 72864), (27, 73002), (38, 73122), (40, 73134), (42, 73146), (44, 73161), (46, 73176), (48, 73188),

Gene: Genie2\_106 Start: 72930, Stop: 73376, Start Num: 10  
Candidate Starts for Genie2\_106:  
(Start: 10 @72930 has 66 MA's), (13, 72963), (17, 73011), (23, 73074), (24, 73101), (35, 73212),

Gene: Gibbi\_110 Start: 72980, Stop: 73426, Start Num: 10  
Candidate Starts for Gibbi\_110:  
(Start: 10 @72980 has 66 MA's), (23, 73124), (24, 73151), (31, 73238), (35, 73262), (37, 73304),

Gene: HangryHippo\_102 Start: 72816, Stop: 73268, Start Num: 10  
Candidate Starts for HangryHippo\_102:  
(Start: 10 @72816 has 66 MA's), (15, 72876), (16, 72879), (24, 72993), (33, 73095),

Gene: IchabodCrane\_103 Start: 72569, Stop: 73015, Start Num: 10  
Candidate Starts for IchabodCrane\_103:  
(Start: 10 @72569 has 66 MA's), (23, 72713), (24, 72740), (31, 72827), (35, 72851), (37, 72893),

Gene: Jay2Jay\_106 Start: 73654, Stop: 74085, Start Num: 10  
Candidate Starts for Jay2Jay\_106:  
(Start: 10 @73654 has 66 MA's), (16, 73717), (27, 73855), (38, 73975), (40, 73987), (46, 74029), (48, 74041),

Gene: JimJam\_106 Start: 72946, Stop: 73392, Start Num: 10  
Candidate Starts for JimJam\_106:  
(Start: 10 @72946 has 66 MA's), (23, 73090), (24, 73117), (31, 73204), (37, 73270),

Gene: Jollison\_105 Start: 72825, Stop: 73271, Start Num: 10  
Candidate Starts for Jollison\_105:  
(Start: 10 @72825 has 66 MA's), (23, 72969), (24, 72996), (31, 73083), (35, 73107), (37, 73149),

Gene: Karimac\_105 Start: 73077, Stop: 73550, Start Num: 9  
Candidate Starts for Karimac\_105:  
(7, 73068), (Start: 9 @73077 has 1 MA's), (23, 73248), (24, 73275), (31, 73362), (37, 73428),

Gene: KentuckyRacer\_106 Start: 72761, Stop: 73207, Start Num: 10  
Candidate Starts for KentuckyRacer\_106:  
(Start: 10 @72761 has 66 MA's), (23, 72905), (24, 72932), (31, 73019), (35, 73043), (37, 73085),

Gene: Larnav\_102 Start: 72801, Stop: 73253, Start Num: 10  
Candidate Starts for Larnav\_102:  
(Start: 10 @72801 has 66 MA's), (15, 72861), (16, 72864), (24, 72978), (33, 73080),

Gene: Leo04\_103 Start: 73316, Stop: 73768, Start Num: 10  
Candidate Starts for Leo04\_103:  
(Start: 10 @73316 has 66 MA's), (15, 73376), (16, 73379), (24, 73493), (33, 73595),

Gene: Liandry\_102 Start: 73161, Stop: 73613, Start Num: 10  
Candidate Starts for Liandry\_102:  
(6, 73128), (Start: 10 @73161 has 66 MA's), (15, 73221), (16, 73224), (24, 73338), (33, 73440),

Gene: LilMartin\_101 Start: 71967, Stop: 72476, Start Num: 10  
Candidate Starts for LilMartin\_101:  
(7, 71931), (Start: 10 @71967 has 66 MA's), (16, 72030), (24, 72144), (26, 72174), (29, 72216), (33, 72246), (41, 72324), (43, 72336), (45, 72351), (51, 72411), (52, 72456),

Gene: LuckySocke\_20 Start: 7145, Stop: 7483, Start Num: 12  
Candidate Starts for LuckySocke\_20:  
(11, 7133), (Start: 12 @7145 has 2 MA's), (22, 7262), (25, 7319), (28, 7340), (33, 7403), (34, 7409),

Gene: LukeCage\_105 Start: 72820, Stop: 73302, Start Num: 8  
Candidate Starts for LukeCage\_105:  
(Start: 8 @72820 has 1 MA's), (23, 73000), (24, 73027), (37, 73180),

Gene: Lululemon\_101 Start: 72197, Stop: 72649, Start Num: 10  
Candidate Starts for Lululemon\_101:  
(Start: 10 @72197 has 66 MA's), (15, 72257), (16, 72260), (24, 72374), (33, 72476),

Gene: Marsus\_103 Start: 72308, Stop: 72817, Start Num: 10  
Candidate Starts for Marsus\_103:

(Start: 10 @72308 has 66 MA's), (14, 72356), (16, 72371), (24, 72485), (26, 72515), (29, 72557), (33, 72587), (41, 72665), (43, 72677), (45, 72692), (50, 72737), (52, 72797),

Gene: Mildred21\_102 Start: 72145, Stop: 72654, Start Num: 10

Candidate Starts for Mildred21\_102:

(Start: 10 @72145 has 66 MA's), (14, 72193), (16, 72208), (24, 72322), (26, 72352), (29, 72394), (33, 72424), (41, 72502), (43, 72514), (45, 72529),

Gene: MindFlayer\_103 Start: 72476, Stop: 72922, Start Num: 10

Candidate Starts for MindFlayer\_103:

(Start: 10 @72476 has 66 MA's), (23, 72620), (24, 72647), (31, 72734), (35, 72758), (37, 72800),

Gene: Mugiwara\_108 Start: 73360, Stop: 73806, Start Num: 10

Candidate Starts for Mugiwara\_108:

(2, 73192), (5, 73297), (Start: 9 @73333 has 1 MA's), (Start: 10 @73360 has 66 MA's), (23, 73504), (24, 73531), (37, 73684),

Gene: MulchMansion\_101 Start: 71967, Stop: 72476, Start Num: 10

Candidate Starts for MulchMansion\_101:

(7, 71931), (Start: 10 @71967 has 66 MA's), (16, 72030), (24, 72144), (26, 72174), (29, 72216), (33, 72246), (41, 72324), (43, 72336), (45, 72351), (51, 72411), (52, 72456),

Gene: Muntaha\_87 Start: 66081, Stop: 66506, Start Num: 10

Candidate Starts for Muntaha\_87:

(Start: 10 @66081 has 66 MA's), (27, 66285), (32, 66339), (36, 66393), (47, 66465), (49, 66477),

Gene: Navo\_100 Start: 72963, Stop: 73415, Start Num: 10

Candidate Starts for Navo\_100:

(6, 72930), (Start: 10 @72963 has 66 MA's), (15, 73023), (16, 73026), (24, 73140), (33, 73242), (43, 73332),

Gene: NootNoot\_99 Start: 72075, Stop: 72527, Start Num: 10

Candidate Starts for NootNoot\_99:

(6, 72042), (Start: 10 @72075 has 66 MA's), (15, 72135), (16, 72138), (24, 72252), (33, 72354),

Gene: PacManQ\_101 Start: 72197, Stop: 72649, Start Num: 10

Candidate Starts for PacManQ\_101:

(Start: 10 @72197 has 66 MA's), (15, 72257), (16, 72260), (24, 72374), (33, 72476),

Gene: Paradiddles\_99 Start: 72224, Stop: 72676, Start Num: 10

Candidate Starts for Paradiddles\_99:

(6, 72191), (Start: 10 @72224 has 66 MA's), (15, 72284), (16, 72287), (24, 72401), (33, 72503),

Gene: Peebs\_101 Start: 72615, Stop: 73067, Start Num: 10

Candidate Starts for Peebs\_101:

(Start: 10 @72615 has 66 MA's), (15, 72675), (16, 72678), (24, 72792), (33, 72894),

Gene: Pepperwood\_102 Start: 72748, Stop: 73200, Start Num: 10

Candidate Starts for Pepperwood\_102:

(Start: 10 @72748 has 66 MA's), (15, 72808), (16, 72811), (24, 72925), (33, 73027),

Gene: Persimmon\_102 Start: 72009, Stop: 72461, Start Num: 10

Candidate Starts for Persimmon\_102:



(6, 71976), (Start: 10 @72009 has 66 MA's), (15, 72069), (16, 72072), (24, 72186), (33, 72288), (43, 72378),

Gene: PinkiePie\_102 Start: 73161, Stop: 73613, Start Num: 10

Candidate Starts for PinkiePie\_102:

(6, 73128), (Start: 10 @73161 has 66 MA's), (15, 73221), (16, 73224), (24, 73338), (33, 73440),

Gene: PumpkinSpice\_105 Start: 72868, Stop: 73314, Start Num: 10

Candidate Starts for PumpkinSpice\_105:

(Start: 10 @72868 has 66 MA's), (23, 73012), (24, 73039), (31, 73126), (35, 73150), (37, 73192),

Gene: Quaran19\_105 Start: 72859, Stop: 73305, Start Num: 10

Candidate Starts for Quaran19\_105:

(Start: 10 @72859 has 66 MA's), (23, 73003), (24, 73030), (31, 73117), (35, 73141), (37, 73183),

Gene: Rikishi\_108 Start: 72774, Stop: 73220, Start Num: 10

Candidate Starts for Rikishi\_108:

(Start: 10 @72774 has 66 MA's), (23, 72918), (24, 72945), (31, 73032), (35, 73056), (37, 73098),

Gene: SaltySpittoon\_105 Start: 72871, Stop: 73317, Start Num: 10

Candidate Starts for SaltySpittoon\_105:

(Start: 10 @72871 has 66 MA's), (23, 73015), (24, 73042), (31, 73129), (35, 73153), (37, 73195),

Gene: Samisti12\_102 Start: 73993, Stop: 74445, Start Num: 10

Candidate Starts for Samisti12\_102:

(Start: 10 @73993 has 66 MA's), (15, 74053), (16, 74056), (24, 74170), (33, 74272),

Gene: Scheme\_103 Start: 73398, Stop: 73850, Start Num: 10

Candidate Starts for Scheme\_103:

(Start: 10 @73398 has 66 MA's), (15, 73458), (16, 73461), (24, 73575), (33, 73677),

Gene: Shuckle\_100 Start: 72997, Stop: 73449, Start Num: 10

Candidate Starts for Shuckle\_100:

(Start: 10 @72997 has 66 MA's), (15, 73057), (16, 73060), (24, 73174), (33, 73276),

Gene: Sollertia\_106 Start: 72930, Stop: 73376, Start Num: 10

Candidate Starts for Sollertia\_106:

(Start: 10 @72930 has 66 MA's), (13, 72963), (17, 73011), (23, 73074), (24, 73101), (35, 73212),

Gene: Spelly\_106 Start: 72823, Stop: 73269, Start Num: 10

Candidate Starts for Spelly\_106:

(Start: 10 @72823 has 66 MA's), (23, 72967), (24, 72994), (31, 73081), (35, 73105), (37, 73147),

Gene: Spilled\_107 Start: 72940, Stop: 73386, Start Num: 10

Candidate Starts for Spilled\_107:

(Start: 10 @72940 has 66 MA's), (23, 73084), (24, 73111), (31, 73198), (35, 73222), (37, 73264),

Gene: Squillium\_103 Start: 73162, Stop: 73614, Start Num: 10

Candidate Starts for Squillium\_103:

(6, 73129), (Start: 10 @73162 has 66 MA's), (15, 73222), (16, 73225), (24, 73339), (33, 73441),

Gene: Stanimal\_106 Start: 72819, Stop: 73265, Start Num: 10

Candidate Starts for Stanimal\_106:

(Start: 10 @72819 has 66 MA's), (13, 72852), (17, 72900), (23, 72963), (24, 72990), (35, 73101),

Gene: Starbow\_104 Start: 72844, Stop: 73290, Start Num: 10

Candidate Starts for Starbow\_104:

(Start: 10 @72844 has 66 MA's), (23, 72988), (24, 73015), (31, 73102), (35, 73126), (37, 73168),

Gene: Sushi23\_101 Start: 72973, Stop: 73425, Start Num: 10

Candidate Starts for Sushi23\_101:

(Start: 10 @72973 has 66 MA's), (15, 73033), (16, 73036), (24, 73150), (33, 73252),

Gene: Targaryen\_102 Start: 73703, Stop: 74134, Start Num: 10

Candidate Starts for Targaryen\_102:

(Start: 10 @73703 has 66 MA's), (16, 73766), (27, 73904), (38, 74024), (40, 74036), (46, 74078), (48, 74090),

Gene: Teutsch\_102 Start: 73172, Stop: 73624, Start Num: 10

Candidate Starts for Teutsch\_102:

(Start: 10 @73172 has 66 MA's), (15, 73232), (16, 73235), (24, 73349), (33, 73451),

Gene: TomSawyer\_104 Start: 72462, Stop: 72908, Start Num: 10

Candidate Starts for TomSawyer\_104:

(Start: 10 @72462 has 66 MA's), (23, 72606), (24, 72633), (31, 72720), (35, 72744), (37, 72786),

Gene: Tomas\_107 Start: 74941, Stop: 75384, Start Num: 10

Candidate Starts for Tomas\_107:

(Start: 10 @74941 has 66 MA's), (15, 75001), (16, 75004), (21, 75067), (24, 75118), (27, 75151), (29, 75190), (33, 75220),

Gene: Tribute\_101 Start: 72859, Stop: 73311, Start Num: 10

Candidate Starts for Tribute\_101:

(Start: 10 @72859 has 66 MA's), (15, 72919), (16, 72922), (24, 73036), (33, 73138),

Gene: Wakanda\_85 Start: 65673, Stop: 66098, Start Num: 10

Candidate Starts for Wakanda\_85:

(Start: 10 @65673 has 66 MA's), (27, 65877), (32, 65931), (36, 65985), (47, 66057), (49, 66069),

Gene: Warpy\_105 Start: 73167, Stop: 73598, Start Num: 10

Candidate Starts for Warpy\_105:

(Start: 10 @73167 has 66 MA's), (16, 73230), (27, 73368), (38, 73488), (40, 73500), (46, 73542), (48, 73554),

Gene: Watermoore\_101 Start: 73388, Stop: 73840, Start Num: 10

Candidate Starts for Watermoore\_101:

(Start: 10 @73388 has 66 MA's), (15, 73448), (16, 73451), (24, 73565), (33, 73667),

Gene: WhereRU\_99 Start: 72355, Stop: 72807, Start Num: 10

Candidate Starts for WhereRU\_99:

(6, 72322), (Start: 10 @72355 has 66 MA's), (15, 72415), (16, 72418), (24, 72532), (33, 72634), (43, 72724),

Gene: Wipeout\_103 Start: 73213, Stop: 73659, Start Num: 10

Candidate Starts for Wipeout\_103:

(Start: 10 @73213 has 66 MA's), (23, 73357), (24, 73384), (31, 73471), (35, 73495), (37, 73537),

Gene: Yaboi\_106 Start: 72907, Stop: 73353, Start Num: 10

Candidate Starts for Yaboi\_106:

(Start: 10 @72907 has 66 MA's), (13, 72940), (17, 72988), (23, 73051), (24, 73078), (35, 73189),