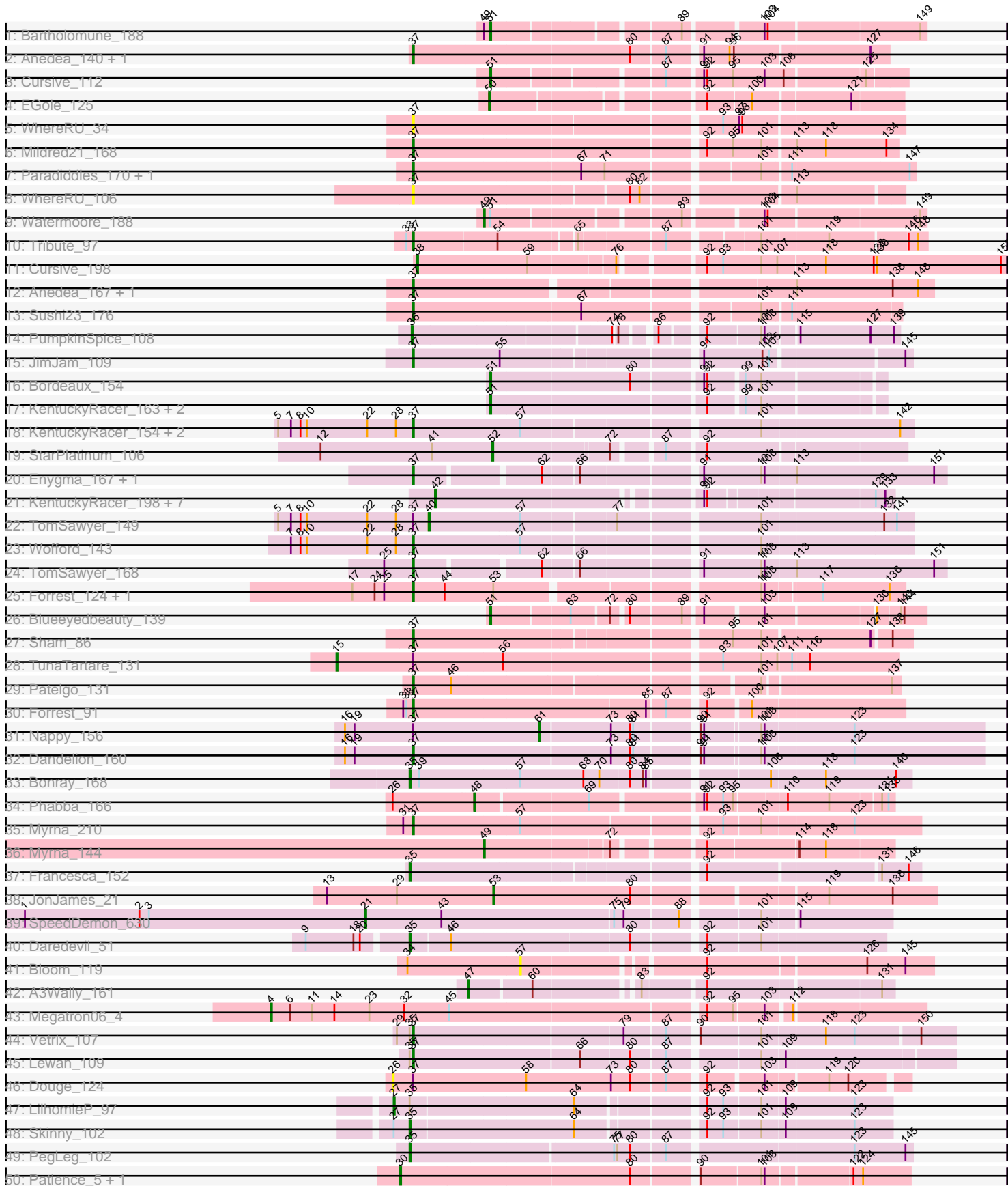


Pham 169966



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 169966 Report

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

Pham number 169966 has 67 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Bartholomune\_188
- Track 2 : Anedea\_140, Mildred21\_142
- Track 3 : Cursive\_112
- Track 4 : EGole\_125
- Track 5 : WhereRU\_34
- Track 6 : Mildred21\_168
- Track 7 : Paradiddles\_170, Leo04\_177
- Track 8 : WhereRU\_106
- Track 9 : Watermoore\_188
- Track 10 : Tribute\_97
- Track 11 : Cursive\_198
- Track 12 : Anedea\_167, Wofford\_171
- Track 13 : Sushi23\_176
- Track 14 : PumpkinSpice\_108
- Track 15 : JimJam\_109
- Track 16 : Bordeaux\_154
- Track 17 : KentuckyRacer\_163, StarPlatinum\_159, MulchMansion\_147
- Track 18 : KentuckyRacer\_154, CeilingFan\_154, JimJam\_152
- Track 19 : StarPlatinum\_106
- Track 20 : Enygma\_167, Quaran19\_166
- Track 21 : KentuckyRacer\_198, Wipeout\_181, IchabodCrane\_184, Spilled\_194, JimJam\_195, Mugiwara\_195, Amabiko\_192, TomSawyer\_193
- Track 22 : TomSawyer\_149
- Track 23 : Wofford\_143
- Track 24 : TomSawyer\_168
- Track 25 : Forrest\_124, Jada\_120
- Track 26 : Blueeyedbeauty\_139
- Track 27 : Sham\_86
- Track 28 : TunaTartare\_131
- Track 29 : Patelgo\_131
- Track 30 : Forrest\_91
- Track 31 : Nappy\_156
- Track 32 : Dandelion\_160
- Track 33 : Bonray\_168
- Track 34 : Phabba\_166
- Track 35 : Myrna\_210
- Track 36 : Myrna\_144

- Track 37 : Francesca\_152
- Track 38 : JonJames\_21
- Track 39 : SpeedDemon\_630
- Track 40 : Daredevil\_51
- Track 41 : Bloom\_119
- Track 42 : A3Wally\_161
- Track 43 : Megatron06\_4
- Track 44 : Vetrix\_107
- Track 45 : Lewan\_109
- Track 46 : Douge\_124
- Track 47 : LilhomieP\_97
- Track 48 : Skinny\_102
- Track 49 : PegLeg\_102
- Track 50 : Patience\_5, Labelle\_5

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

The start number called the most often in the published annotations is 37, it was called in 24 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anedea\_140, Anedea\_167, CeilingFan\_154, Dandelion\_160, Enygma\_167, Forrest\_124, Forrest\_91, Jada\_120, JimJam\_109, JimJam\_152, KentuckyRacer\_154, Leo04\_177, Lewan\_109, Mildred21\_142, Mildred21\_168, Myrna\_210, Paradiddles\_170, Patelgo\_131, Quaran19\_166, Sham\_86, Sushi23\_176, TomSawyer\_168, Tribute\_97, Vetrix\_107, WhereRU\_106, WhereRU\_34, Wofford\_143, Wofford\_171,

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

- Douge\_124, Nappy\_156, TomSawyer\_149, TunaTartare\_131,

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

- A3Wally\_161, Amabiko\_192, Bartholomune\_188, Bloom\_119, Blueeyedbeauty\_139, Bonray\_168, Bordeaux\_154, Cursive\_112, Cursive\_198, Daredevil\_51, EGole\_125, Francesca\_152, IchabodCrane\_184, JimJam\_195, JonJames\_21, KentuckyRacer\_163, KentuckyRacer\_198, Labelle\_5, LilhomieP\_97, Megatron06\_4, Mugiwara\_195, MulchMansion\_147, Myrna\_144, Patience\_5, PegLeg\_102, Phabba\_166, PumpkinSpice\_108, Skinny\_102, SpeedDemon\_630, Spilled\_194, StarPlatinum\_106, StarPlatinum\_159, TomSawyer\_193, Watermoore\_188, Wipeout\_181,

**Summary by start number:**

Start 4:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Megatron06\_4 (H1),

Start 15:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TunaTartare\_131 (BK1),

Start 21:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SpeedDemon\_630 (DL),

Start 26:

- Found in 2 of 67 ( 3.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Douge\_124 (L4),

Start 27:

- Found in 2 of 67 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LilhomieP\_97 (M1),

Start 30:

- Found in 2 of 67 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Labelle\_5 (U), Patience\_5 (U),

Start 35:

- Found in 8 of 67 ( 11.9% ) of genes in pham
- Manual Annotations of this start: 5 of 58
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Bonray\_168 (C1), Daredevil\_51 (DL), Francesca\_152 (CG), PegLeg\_102 (M1), Skinny\_102 (M1),

Start 36:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PumpkinSpice\_108 (BE2),

Start 37:

- Found in 32 of 67 ( 47.8% ) of genes in pham
- Manual Annotations of this start: 24 of 58
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Anedea\_140 (BE1), Anedea\_167 (BE1), CeilingFan\_154 (BE2), Dandelion\_160 (C1), Enygma\_167 (BE2), Forrest\_124 (BK1), Forrest\_91 (BK1), Jada\_120 (BK1), JimJam\_109 (BE2), JimJam\_152 (BE2), KentuckyRacer\_154 (BE2), Leo04\_177 (BE1), Lewan\_109 (L2), Mildred21\_142 (BE1), Mildred21\_168 (BE1), Myrna\_210 (C2), Paradiddles\_170 (BE1), Patelgo\_131 (BK1), Quarant19\_166 (BE2), Sham\_86 (BK1), Sushi23\_176 (BE1), TomSawyer\_168 (BE2), Tribute\_97 (BE1), Vetrix\_107 (L2), WhereRU\_106 (BE1), WhereRU\_34 (BE1),

Wofford\_143 (BE2), Wofford\_171 (BE2),

Start 38:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cursive\_198 (BE1),

Start 40:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TomSawyer\_149 (BE2),

Start 42:

- Found in 8 of 67 ( 11.9% ) of genes in pham
- Manual Annotations of this start: 6 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amabiko\_192 (BE2), IchabodCrane\_184 (BE2), JimJam\_195 (BE2), KentuckyRacer\_198 (BE2), Mugiwara\_195 (BE2), Spilled\_194 (BE2), TomSawyer\_193 (BE2), Wipeout\_181 (BE2),

Start 47:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_161 (GD1),

Start 48:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phabba\_166 (C2),

Start 49:

- Found in 3 of 67 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Myrna\_144 (C2), Watermoore\_188 (BE1),

Start 50:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EGole\_125 (BE1),

Start 51:

- Found in 8 of 67 ( 11.9% ) of genes in pham
- Manual Annotations of this start: 6 of 58
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Bartholomune\_188 (BE1), Blueeyedbeauty\_139 (BK1), Bordeaux\_154 (BE2), Cursive\_112 (BE1),

KentuckyRacer\_163 (BE2), MulchMansion\_147 (BE1), StarPlatinum\_159 (BE2),

Start 52:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StarPlatinum\_106 (BE2),

Start 53:

- Found in 3 of 67 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 33.3% of time when present
- Phage (with cluster) where this start called: JonJames\_21 (DD),

Start 57:

- Found in 8 of 67 ( 11.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Bloom\_119 (FC),

Start 61:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nappy\_156 (C1),

### **Summary by clusters:**

There are 15 clusters represented in this pham: GD1, DL, CG, DD, H1, L2, L4, FC, M1, BK1, BE2, C2, C1, BE1, U,

Info for manual annotations of cluster BE1:

- Start number 37 was manually annotated 8 times for cluster BE1.
- Start number 38 was manually annotated 1 time for cluster BE1.
- Start number 49 was manually annotated 1 time for cluster BE1.
- Start number 50 was manually annotated 1 time for cluster BE1.
- Start number 51 was manually annotated 3 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 36 was manually annotated 1 time for cluster BE2.
- Start number 37 was manually annotated 7 times for cluster BE2.
- Start number 40 was manually annotated 1 time for cluster BE2.
- Start number 42 was manually annotated 6 times for cluster BE2.
- Start number 51 was manually annotated 2 times for cluster BE2.
- Start number 52 was manually annotated 1 time for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 15 was manually annotated 1 time for cluster BK1.
- Start number 37 was manually annotated 5 times for cluster BK1.
- Start number 51 was manually annotated 1 time for cluster BK1.

Info for manual annotations of cluster C1:

- Start number 35 was manually annotated 1 time for cluster C1.

- Start number 37 was manually annotated 1 time for cluster C1.
- Start number 61 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster C2:

- Start number 37 was manually annotated 1 time for cluster C2.
- Start number 48 was manually annotated 1 time for cluster C2.
- Start number 49 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster CG:

- Start number 35 was manually annotated 1 time for cluster CG.

Info for manual annotations of cluster DD:

- Start number 53 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DL:

- Start number 21 was manually annotated 1 time for cluster DL.
- Start number 35 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster GD1:

- Start number 47 was manually annotated 1 time for cluster GD1.

Info for manual annotations of cluster H1:

- Start number 4 was manually annotated 1 time for cluster H1.

Info for manual annotations of cluster L2:

- Start number 37 was manually annotated 2 times for cluster L2.

Info for manual annotations of cluster M1:

- Start number 27 was manually annotated 1 time for cluster M1.
- Start number 35 was manually annotated 2 times for cluster M1.

Info for manual annotations of cluster U:

- Start number 30 was manually annotated 2 times for cluster U.

### ***Gene Information:***

Gene: A3Wally\_161 Start: 93240, Stop: 93602, Start Num: 47

Candidate Starts for A3Wally\_161:

(Start: 47 @93240 has 1 MA's), (60, 93294), (83, 93381), (92, 93435), (131, 93591),

Gene: Amabiko\_192 Start: 96212, Stop: 96601, Start Num: 42

Candidate Starts for Amabiko\_192:

(Start: 42 @96212 has 6 MA's), (91, 96437), (92, 96440), (129, 96584), (133, 96593),

Gene: Anedea\_140 Start: 84644, Stop: 85069, Start Num: 37

Candidate Starts for Anedea\_140:

(Start: 37 @84644 has 24 MA's), (80, 84845), (87, 84875), (91, 84902), (94, 84926), (96, 84929), (127, 85052),

Gene: Anedea\_167 Start: 92344, Stop: 92802, Start Num: 37  
Candidate Starts for Anedea\_167:  
(Start: 37 @92344 has 24 MA's), (113, 92674), (138, 92764), (148, 92788),

Gene: Bartholomune\_188 Start: 98185, Stop: 98556, Start Num: 51  
Candidate Starts for Bartholomune\_188:  
(Start: 49 @98179 has 2 MA's), (Start: 51 @98185 has 6 MA's), (89, 98344), (103, 98410), (104, 98413), (149, 98551),

Gene: Bloom\_119 Start: 91780, Stop: 92142, Start Num: 57  
Candidate Starts for Bloom\_119:  
(34, 91675), (57, 91780), (92, 91936), (126, 92080), (145, 92116),

Gene: Blueeyedbeauty\_139 Start: 79396, Stop: 79761, Start Num: 51  
Candidate Starts for Blueeyedbeauty\_139:  
(Start: 51 @79396 has 6 MA's), (63, 79465), (72, 79498), (80, 79510), (89, 79555), (91, 79570), (103, 79621), (130, 79717), (143, 79738), (144, 79741),

Gene: Bonray\_168 Start: 94840, Stop: 95289, Start Num: 35  
Candidate Starts for Bonray\_168:  
(Start: 35 @94840 has 5 MA's), (39, 94849), (57, 94942), (68, 95002), (70, 95017), (80, 95044), (84, 95056), (85, 95059), (106, 95161), (118, 95209), (140, 95275),

Gene: Bordeaux\_154 Start: 87839, Stop: 88183, Start Num: 51  
Candidate Starts for Bordeaux\_154:  
(Start: 51 @87839 has 6 MA's), (80, 87968), (91, 88028), (92, 88031), (99, 88061), (101, 88076),

Gene: CeilingFan\_154 Start: 86515, Stop: 86958, Start Num: 37  
Candidate Starts for CeilingFan\_154:  
(5, 86389), (7, 86401), (8, 86410), (10, 86416), (22, 86473), (28, 86500), (Start: 37 @86515 has 24 MA's), (57, 86614), (101, 86821), (142, 86947),

Gene: Cursive\_112 Start: 77217, Stop: 77573, Start Num: 51  
Candidate Starts for Cursive\_112:  
(Start: 51 @77217 has 6 MA's), (87, 77361), (91, 77391), (92, 77394), (95, 77418), (103, 77448), (108, 77466), (125, 77538),

Gene: Cursive\_198 Start: 103181, Stop: 103702, Start Num: 38  
Candidate Starts for Cursive\_198:  
(Start: 38 @103181 has 1 MA's), (59, 103283), (76, 103358), (92, 103424), (93, 103439), (101, 103475), (107, 103490), (118, 103532), (128, 103577), (130, 103580), (152, 103697),

Gene: Dandelion\_160 Start: 94845, Stop: 95354, Start Num: 37  
Candidate Starts for Dandelion\_160:  
(16, 94782), (19, 94791), (Start: 37 @94845 has 24 MA's), (73, 95025), (80, 95043), (81, 95046), (90, 95097), (91, 95100), (101, 95148), (103, 95151), (123, 95232),

Gene: Daredevil\_51 Start: 40951, Stop: 41370, Start Num: 35  
Candidate Starts for Daredevil\_51:  
(9, 40861), (18, 40906), (20, 40912), (Start: 35 @40951 has 5 MA's), (46, 40987), (80, 41149), (92, 41209), (101, 41257),

Gene: Douge\_124 Start: 66024, Stop: 66473, Start Num: 26



Candidate Starts for Douge\_124:

(26, 66024), (Start: 37 @66042 has 24 MA's), (58, 66147), (73, 66225), (80, 66243), (87, 66273), (92, 66303), (103, 66351), (119, 66405), (120, 66423),

Gene: EGole\_125 Start: 82153, Stop: 82503, Start Num: 50

Candidate Starts for EGole\_125:

(Start: 50 @82153 has 1 MA's), (92, 82330), (100, 82369), (121, 82456),

Gene: Enygma\_167 Start: 93249, Stop: 93713, Start Num: 37

Candidate Starts for Enygma\_167:

(Start: 37 @93249 has 24 MA's), (62, 93357), (66, 93387), (91, 93489), (101, 93543), (103, 93546), (113, 93573), (151, 93702),

Gene: Forrest\_124 Start: 77019, Stop: 77447, Start Num: 37

Candidate Starts for Forrest\_124:

(17, 76962), (24, 76983), (25, 76992), (Start: 37 @77019 has 24 MA's), (44, 77049), (Start: 53 @77094 has 1 MA's), (101, 77319), (103, 77322), (117, 77370), (136, 77433),

Gene: Forrest\_91 Start: 63801, Stop: 64238, Start Num: 37

Candidate Starts for Forrest\_91:

(31, 63792), (33, 63795), (Start: 37 @63801 has 24 MA's), (85, 64017), (87, 64032), (92, 64062), (100, 64098),

Gene: Francesca\_152 Start: 89986, Stop: 90429, Start Num: 35

Candidate Starts for Francesca\_152:

(Start: 35 @89986 has 5 MA's), (92, 90241), (131, 90394), (146, 90418),

Gene: IchabodCrane\_184 Start: 95913, Stop: 96302, Start Num: 42

Candidate Starts for IchabodCrane\_184:

(Start: 42 @95913 has 6 MA's), (91, 96138), (92, 96141), (129, 96285), (133, 96294),

Gene: Jada\_120 Start: 75949, Stop: 76377, Start Num: 37

Candidate Starts for Jada\_120:

(17, 75892), (24, 75913), (25, 75922), (Start: 37 @75949 has 24 MA's), (44, 75979), (Start: 53 @76024 has 1 MA's), (101, 76249), (103, 76252), (117, 76300), (136, 76363),

Gene: JimJam\_109 Start: 73736, Stop: 74164, Start Num: 37

Candidate Starts for JimJam\_109:

(Start: 37 @73736 has 24 MA's), (55, 73817), (91, 73985), (102, 74039), (105, 74045), (145, 74159),

Gene: JimJam\_152 Start: 87443, Stop: 87886, Start Num: 37

Candidate Starts for JimJam\_152:

(5, 87317), (7, 87329), (8, 87338), (10, 87344), (22, 87401), (28, 87428), (Start: 37 @87443 has 24 MA's), (57, 87542), (101, 87749), (142, 87875),

Gene: JimJam\_195 Start: 97834, Stop: 98223, Start Num: 42

Candidate Starts for JimJam\_195:

(Start: 42 @97834 has 6 MA's), (91, 98059), (92, 98062), (129, 98206), (133, 98215),

Gene: JonJames\_21 Start: 7188, Stop: 7577, Start Num: 53

Candidate Starts for JonJames\_21:

(13, 7032), (29, 7098), (Start: 53 @7188 has 1 MA's), (80, 7314), (119, 7476), (138, 7536),

Gene: KentuckyRacer\_163 Start: 88711, Stop: 89055, Start Num: 51  
Candidate Starts for KentuckyRacer\_163:  
(Start: 51 @88711 has 6 MA's), (92, 88903), (99, 88933), (101, 88948),

Gene: KentuckyRacer\_154 Start: 87011, Stop: 87454, Start Num: 37  
Candidate Starts for KentuckyRacer\_154:  
(5, 86885), (7, 86897), (8, 86906), (10, 86912), (22, 86969), (28, 86996), (Start: 37 @87011 has 24 MA's), (57, 87110), (101, 87317), (142, 87443),

Gene: KentuckyRacer\_198 Start: 97580, Stop: 97969, Start Num: 42  
Candidate Starts for KentuckyRacer\_198:  
(Start: 42 @97580 has 6 MA's), (91, 97805), (92, 97808), (129, 97952), (133, 97961),

Gene: Labelle\_5 Start: 2590, Stop: 3042, Start Num: 30  
Candidate Starts for Labelle\_5:  
(Start: 30 @2590 has 2 MA's), (80, 2803), (90, 2857), (101, 2911), (103, 2914), (122, 2989), (124, 2998),

Gene: Leo04\_177 Start: 96224, Stop: 96667, Start Num: 37  
Candidate Starts for Leo04\_177:  
(Start: 37 @96224 has 24 MA's), (67, 96377), (71, 96398), (101, 96530), (111, 96554), (147, 96662),

Gene: Lewan\_109 Start: 63302, Stop: 63781, Start Num: 37  
Candidate Starts for Lewan\_109:  
(Start: 35 @63299 has 5 MA's), (Start: 37 @63302 has 24 MA's), (66, 63455), (80, 63500), (87, 63530), (101, 63608), (109, 63629),

Gene: LilhomieP\_97 Start: 57511, Stop: 57948, Start Num: 27  
Candidate Starts for LilhomieP\_97:  
(Start: 27 @57511 has 1 MA's), (Start: 35 @57526 has 5 MA's), (64, 57676), (92, 57781), (93, 57796), (101, 57829), (109, 57850), (123, 57913),

Gene: Megatron06\_4 Start: 2094, Stop: 2681, Start Num: 4  
Candidate Starts for Megatron06\_4:  
(Start: 4 @2094 has 1 MA's), (6, 2112), (11, 2133), (14, 2154), (23, 2187), (32, 2220), (45, 2262), (92, 2490), (95, 2514), (103, 2541), (112, 2562),

Gene: Mildred21\_168 Start: 90931, Stop: 91365, Start Num: 37  
Candidate Starts for Mildred21\_168:  
(Start: 37 @90931 has 24 MA's), (92, 91192), (95, 91216), (101, 91243), (113, 91270), (118, 91297), (134, 91354),

Gene: Mildred21\_142 Start: 85401, Stop: 85826, Start Num: 37  
Candidate Starts for Mildred21\_142:  
(Start: 37 @85401 has 24 MA's), (80, 85602), (87, 85632), (91, 85659), (94, 85683), (96, 85686), (127, 85809),

Gene: Mugiwara\_195 Start: 97213, Stop: 97602, Start Num: 42  
Candidate Starts for Mugiwara\_195:  
(Start: 42 @97213 has 6 MA's), (91, 97438), (92, 97441), (129, 97585), (133, 97594),

Gene: MulchMansion\_147 Start: 87054, Stop: 87398, Start Num: 51  
Candidate Starts for MulchMansion\_147:

(Start: 51 @87054 has 6 MA's), (92, 87246), (99, 87276), (101, 87291),

Gene: Myrna\_210 Start: 122711, Stop: 123163, Start Num: 37

Candidate Starts for Myrna\_210:

(31, 122702), (Start: 37 @122711 has 24 MA's), (57, 122810), (93, 122984), (101, 123017), (123, 123101),

Gene: Myrna\_144 Start: 92033, Stop: 92380, Start Num: 49

Candidate Starts for Myrna\_144:

(Start: 49 @92033 has 2 MA's), (72, 92141), (92, 92213), (114, 92294), (118, 92318),

Gene: Nappy\_156 Start: 92836, Stop: 93228, Start Num: 61

Candidate Starts for Nappy\_156:

(16, 92656), (19, 92665), (Start: 37 @92719 has 24 MA's), (Start: 61 @92836 has 1 MA's), (73, 92899), (80, 92917), (81, 92920), (90, 92971), (91, 92974), (101, 93022), (103, 93025), (123, 93106),

Gene: Paradiddles\_170 Start: 96596, Stop: 97039, Start Num: 37

Candidate Starts for Paradiddles\_170:

(Start: 37 @96596 has 24 MA's), (67, 96749), (71, 96770), (101, 96902), (111, 96926), (147, 97034),

Gene: Patelgo\_131 Start: 78593, Stop: 79012, Start Num: 37

Candidate Starts for Patelgo\_131:

(Start: 37 @78593 has 24 MA's), (46, 78629), (101, 78893), (137, 79004),

Gene: Patience\_5 Start: 2590, Stop: 3042, Start Num: 30

Candidate Starts for Patience\_5:

(Start: 30 @2590 has 2 MA's), (80, 2803), (90, 2857), (101, 2911), (103, 2914), (122, 2989), (124, 2998),

Gene: PegLeg\_102 Start: 57809, Stop: 58258, Start Num: 35

Candidate Starts for PegLeg\_102:

(Start: 35 @57809 has 5 MA's), (75, 57995), (77, 57998), (80, 58010), (87, 58040), (123, 58205), (145, 58253),

Gene: Phabba\_166 Start: 92816, Stop: 93178, Start Num: 48

Candidate Starts for Phabba\_166:

(26, 92741), (Start: 48 @92816 has 1 MA's), (69, 92915), (91, 93011), (92, 93014), (93, 93029), (95, 93038), (110, 93083), (119, 93122), (131, 93167), (135, 93173),

Gene: PumpkinSpice\_108 Start: 73788, Stop: 74195, Start Num: 36

Candidate Starts for PumpkinSpice\_108:

(Start: 36 @73788 has 1 MA's), (74, 73965), (78, 73968), (86, 73992), (92, 74025), (101, 74073), (103, 74076), (115, 74103), (127, 74169), (139, 74190),

Gene: Quaran19\_166 Start: 91061, Stop: 91525, Start Num: 37

Candidate Starts for Quaran19\_166:

(Start: 37 @91061 has 24 MA's), (62, 91169), (66, 91199), (91, 91301), (101, 91355), (103, 91358), (113, 91385), (151, 91514),

Gene: Sham\_86 Start: 65422, Stop: 65853, Start Num: 37

Candidate Starts for Sham\_86:

(Start: 37 @65422 has 24 MA's), (95, 65698), (101, 65725), (127, 65821), (138, 65836),

Gene: Skinny\_102 Start: 57955, Stop: 58377, Start Num: 35  
Candidate Starts for Skinny\_102:  
(Start: 27 @57940 has 1 MA's), (Start: 35 @57955 has 5 MA's), (64, 58105), (92, 58210), (93, 58225),  
(101, 58258), (109, 58279), (123, 58342),

Gene: SpeedDemon\_630 Start: 48321, Stop: 48788, Start Num: 21  
Candidate Starts for SpeedDemon\_630:  
(1, 48000), (2, 48108), (3, 48117), (Start: 21 @48321 has 1 MA's), (43, 48393), (75, 48549), (79,  
48558), (88, 48606), (101, 48672), (115, 48702),

Gene: Spilled\_194 Start: 96766, Stop: 97155, Start Num: 42  
Candidate Starts for Spilled\_194:  
(Start: 42 @96766 has 6 MA's), (91, 96991), (92, 96994), (129, 97138), (133, 97147),

Gene: StarPlatinum\_106 Start: 73373, Stop: 73726, Start Num: 52  
Candidate Starts for StarPlatinum\_106:  
(12, 73211), (41, 73316), (Start: 52 @73373 has 1 MA's), (72, 73475), (87, 73514), (92, 73547),

Gene: StarPlatinum\_159 Start: 89611, Stop: 89955, Start Num: 51  
Candidate Starts for StarPlatinum\_159:  
(Start: 51 @89611 has 6 MA's), (92, 89803), (99, 89833), (101, 89848),

Gene: Sushi23\_176 Start: 96586, Stop: 97014, Start Num: 37  
Candidate Starts for Sushi23\_176:  
(Start: 37 @96586 has 24 MA's), (67, 96739), (101, 96892), (111, 96916),

Gene: TomSawyer\_149 Start: 86660, Stop: 87088, Start Num: 40  
Candidate Starts for TomSawyer\_149:  
(5, 86519), (7, 86531), (8, 86540), (10, 86546), (22, 86603), (28, 86630), (Start: 37 @86645 has 24  
MA's), (Start: 40 @86660 has 1 MA's), (57, 86744), (77, 86828), (101, 86951), (132, 87062), (141,  
87074),

Gene: TomSawyer\_168 Start: 92075, Stop: 92539, Start Num: 37  
Candidate Starts for TomSawyer\_168:  
(25, 92048), (Start: 37 @92075 has 24 MA's), (62, 92183), (66, 92213), (91, 92315), (101, 92369),  
(103, 92372), (113, 92399), (151, 92528),

Gene: TomSawyer\_193 Start: 97685, Stop: 98074, Start Num: 42  
Candidate Starts for TomSawyer\_193:  
(Start: 42 @97685 has 6 MA's), (91, 97910), (92, 97913), (129, 98057), (133, 98066),

Gene: Tribute\_97 Start: 71749, Stop: 72189, Start Num: 37  
Candidate Starts for Tribute\_97:  
(33, 71743), (Start: 37 @71749 has 24 MA's), (54, 71827), (65, 71893), (87, 71968), (101, 72043),  
(119, 72103), (146, 72172), (148, 72181),

Gene: TunaTartare\_131 Start: 79206, Stop: 79715, Start Num: 15  
Candidate Starts for TunaTartare\_131:  
(Start: 15 @79206 has 1 MA's), (Start: 37 @79278 has 24 MA's), (56, 79362), (93, 79554), (101,  
79590), (107, 79605), (111, 79617), (116, 79632),

Gene: Vetrrix\_107 Start: 63521, Stop: 64000, Start Num: 37  
Candidate Starts for Vetrrix\_107:

(29, 63506), (Start: 35 @63518 has 5 MA's), (Start: 37 @63521 has 24 MA's), (79, 63713), (87, 63749), (90, 63773), (101, 63827), (118, 63884), (123, 63911), (150, 63968),

Gene: Watermoore\_188 Start: 100639, Stop: 101016, Start Num: 49

Candidate Starts for Watermoore\_188:

(Start: 49 @100639 has 2 MA's), (Start: 51 @100645 has 6 MA's), (89, 100804), (103, 100870), (104, 100873), (149, 101011),

Gene: WhereRU\_34 Start: 14821, Stop: 14384, Start Num: 37

Candidate Starts for WhereRU\_34:

(Start: 37 @14821 has 24 MA's), (93, 14548), (97, 14533), (98, 14530),

Gene: WhereRU\_106 Start: 73218, Stop: 73643, Start Num: 37

Candidate Starts for WhereRU\_106:

(Start: 37 @73218 has 24 MA's), (80, 73410), (82, 73419), (113, 73548),

Gene: Wipeout\_181 Start: 97029, Stop: 97418, Start Num: 42

Candidate Starts for Wipeout\_181:

(Start: 42 @97029 has 6 MA's), (91, 97254), (92, 97257), (129, 97401), (133, 97410),

Gene: Wofford\_143 Start: 88534, Stop: 88977, Start Num: 37

Candidate Starts for Wofford\_143:

(7, 88420), (8, 88429), (10, 88435), (22, 88492), (28, 88519), (Start: 37 @88534 has 24 MA's), (57, 88633), (101, 88840),

Gene: Wofford\_171 Start: 96384, Stop: 96842, Start Num: 37

Candidate Starts for Wofford\_171:

(Start: 37 @96384 has 24 MA's), (113, 96714), (138, 96804), (148, 96828),