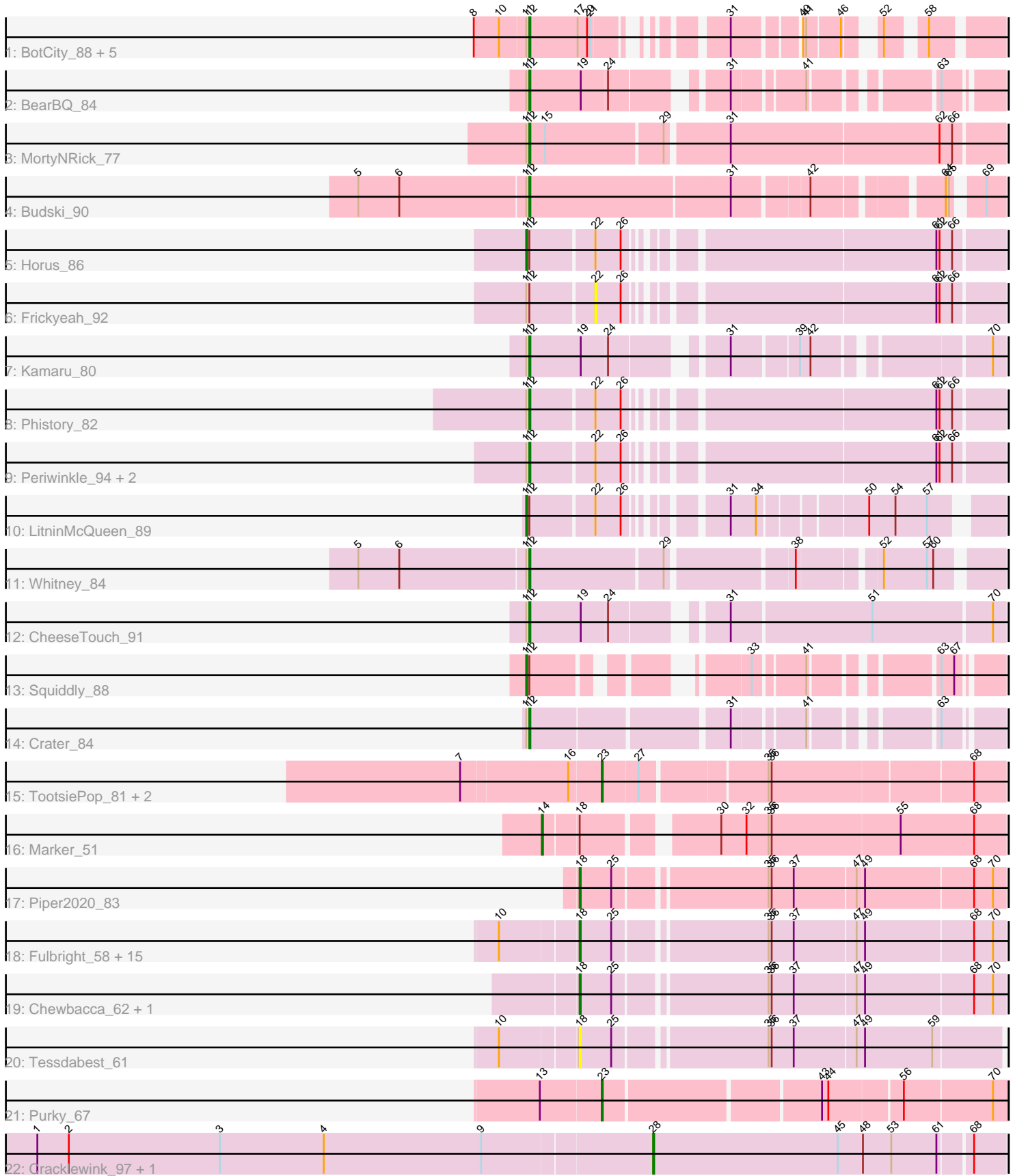


Pham 311720



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 311720 Report

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

Pham number 311720 has 48 members, 3 are drafts.

Phages represented in each track:

- Track 1 : BotCity\_88, Lutum\_87, Getalong\_89, Phabuloso\_93, Kenna\_81, BENTherdunthat\_86
- Track 2 : BearBQ\_84
- Track 3 : MortyNRick\_77
- Track 4 : Budski\_90
- Track 5 : Horus\_86
- Track 6 : Frickyeah\_92
- Track 7 : Kamaru\_80
- Track 8 : Phistory\_82
- Track 9 : Periwinkle\_94, Leroy\_85, ShawBrad\_90
- Track 10 : LitninMcQueen\_89
- Track 11 : Whitney\_84
- Track 12 : CheeseTouch\_91
- Track 13 : Squiddly\_88
- Track 14 : Crater\_84
- Track 15 : TootsiePop\_81, Misha28\_81, Awesomesauce\_81
- Track 16 : Marker\_51
- Track 17 : Piper2020\_83
- Track 18 : Fulbright\_58, Melville\_65, Frankie\_78, Duplicity\_58, Silvy\_56, Parmesanjohn\_60, Schnauzer\_61, Pipsqueaks\_61, Philonius\_60, Smurph\_60, Aggie\_56, Silvafighter\_61, Xerxes\_60, Phloss\_58, Gex\_61, Carcharodon\_60
- Track 19 : Chewbacca\_62, FirstPlacePfu\_61
- Track 20 : Tessdabest\_61
- Track 21 : Purky\_67
- Track 22 : Cracklewink\_97, Bipper\_97

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

The start number called the most often in the published annotations is 18, it was called in 19 of the 45 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aggie\_56, Carcharodon\_60, Chewbacca\_62, Duplicity\_58, FirstPlacePfu\_61, Frankie\_78, Fulbright\_58, Gex\_61, Melville\_65, Parmesanjohn\_60, Philonius\_60,

Phloss\_58, Piper2020\_83, Pipsqueaks\_61, Schnauzer\_61, Silvafighter\_61, Silvy\_56, Smurph\_60, Tessdabest\_61, Xerxes\_60,

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

- Marker\_51,

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

- Awesomesauce\_81, BENtherdunthat\_86, BearBQ\_84, Bipper\_97, BotCity\_88, Budski\_90, CheeseTouch\_91, Cracklewink\_97, Crater\_84, Frickyeah\_92, Getalong\_89, Horus\_86, Kamaru\_80, Kenna\_81, Leroy\_85, LitninMcQueen\_89, Lutum\_87, Misha28\_81, MortyNRick\_77, Periwinkle\_94, Phabuloso\_93, Phistory\_82, Purky\_67, ShawBrad\_90, Squiddly\_88, TootsiePop\_81, Whitney\_84,

### Summary by start number:

Start 11:

- Found in 21 of 48 ( 43.8% ) of genes in pham
- Manual Annotations of this start: 3 of 45
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Horus\_86 (DN1), LitninMcQueen\_89 (DN1), Squiddly\_88 (DN2),

Start 12:

- Found in 21 of 48 ( 43.8% ) of genes in pham
- Manual Annotations of this start: 16 of 45
- Called 81.0% of time when present
- Phage (with cluster) where this start called: BENtherdunthat\_86 (DN1), BearBQ\_84 (DN), BotCity\_88 (DN), Budski\_90 (DN), CheeseTouch\_91 (DN1), Crater\_84 (DN3), Getalong\_89 (DN1), Kamaru\_80 (DN1), Kenna\_81 (DN1), Leroy\_85 (DN1), Lutum\_87 (DN1), MortyNRick\_77 (DN), Periwinkle\_94 (DN1), Phabuloso\_93 (DN1), Phistory\_82 (DN1), ShawBrad\_90 (DN1), Whitney\_84 (DN1),

Start 14:

- Found in 1 of 48 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marker\_51 (F1),

Start 18:

- Found in 21 of 48 ( 43.8% ) of genes in pham
- Manual Annotations of this start: 19 of 45
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Aggie\_56 (N), Carcharodon\_60 (N), Chewbacca\_62 (N), Duplicity\_58 (N), FirstPlacePfu\_61 (P1), Frankie\_78 (F1), Fulbright\_58 (N), Gex\_61 (N), Melville\_65 (N), Parmesanjohn\_60 (N), Philonius\_60 (N), Phloss\_58 (N), Piper2020\_83 (F1), Pipsqueaks\_61 (N), Schnauzer\_61 (N), Silvafighter\_61 (N), Silvy\_56 (N), Smurph\_60 (N), Tessdabest\_61 (N), Xerxes\_60 (N),

Start 22:

- Found in 7 of 48 ( 14.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Frickyeah\_92 (DN1),

Start 23:

- Found in 4 of 48 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 4 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Awesomesauce\_81 (F1), Misha28\_81 (F1), Purky\_67 (P6), TootsiePop\_81 (F1),

Start 28:

- Found in 2 of 48 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bipper\_97 (Y), Cracklewink\_97 (Y),

**Summary by clusters:**

There are 9 clusters represented in this pham: DN, F1, P1, P6, N, DN1, DN3, DN2, Y,

Info for manual annotations of cluster DN:

- Start number 12 was manually annotated 4 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 11 was manually annotated 2 times for cluster DN1.
- Start number 12 was manually annotated 11 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 11 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 12 was manually annotated 1 time for cluster DN3.

Info for manual annotations of cluster F1:

- Start number 14 was manually annotated 1 time for cluster F1.
- Start number 18 was manually annotated 2 times for cluster F1.
- Start number 23 was manually annotated 3 times for cluster F1.

Info for manual annotations of cluster N:

- Start number 18 was manually annotated 16 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 18 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P6:

- Start number 23 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster Y:

- Start number 28 was manually annotated 2 times for cluster Y.

**Gene Information:**

Gene: Aggie\_56 Start: 38873, Stop: 39247, Start Num: 18

Candidate Starts for Aggie\_56:

(10, 38804), (Start: 18 @38873 has 19 MA's), (25, 38903), (35, 39035), (36, 39038), (37, 39059), (47, 39116), (49, 39122), (68, 39218), (70, 39236),

Gene: Awesomesauce\_81 Start: 49905, Stop: 50261, Start Num: 23

Candidate Starts for Awesomesauce\_81:

(7, 49779), (16, 49875), (Start: 23 @49905 has 4 MA's), (27, 49938), (35, 50049), (36, 50052), (68, 50232),

Gene: BENtherdunthat\_86 Start: 47569, Stop: 47898, Start Num: 12

Candidate Starts for BENtherdunthat\_86:

(8, 47518), (10, 47542), (Start: 11 @47566 has 3 MA's), (Start: 12 @47569 has 16 MA's), (17, 47614), (20, 47623), (21, 47626), (31, 47707), (40, 47761), (41, 47764), (46, 47794), (52, 47812), (58, 47839),

Gene: BearBQ\_84 Start: 48483, Stop: 48842, Start Num: 12

Candidate Starts for BearBQ\_84:

(Start: 11 @48480 has 3 MA's), (Start: 12 @48483 has 16 MA's), (19, 48531), (24, 48555), (31, 48639), (41, 48699), (63, 48795),

Gene: Bipper\_97 Start: 61646, Stop: 61966, Start Num: 28

Candidate Starts for Bipper\_97:

(1, 61067), (2, 61097), (3, 61241), (4, 61340), (9, 61490), (Start: 28 @61646 has 2 MA's), (45, 61820), (48, 61841), (53, 61868), (61, 61910), (68, 61937),

Gene: BotCity\_88 Start: 49098, Stop: 49427, Start Num: 12

Candidate Starts for BotCity\_88:

(8, 49047), (10, 49071), (Start: 11 @49095 has 3 MA's), (Start: 12 @49098 has 16 MA's), (17, 49143), (20, 49152), (21, 49155), (31, 49236), (40, 49290), (41, 49293), (46, 49323), (52, 49341), (58, 49368),

Gene: Budski\_90 Start: 49904, Stop: 50302, Start Num: 12

Candidate Starts for Budski\_90:

(5, 49745), (6, 49784), (Start: 11 @49901 has 3 MA's), (Start: 12 @49904 has 16 MA's), (31, 50090), (42, 50156), (64, 50261), (65, 50264), (69, 50285),

Gene: Carcharodon\_60 Start: 38217, Stop: 38591, Start Num: 18

Candidate Starts for Carcharodon\_60:

(10, 38148), (Start: 18 @38217 has 19 MA's), (25, 38247), (35, 38379), (36, 38382), (37, 38403), (47, 38460), (49, 38466), (68, 38562), (70, 38580),

Gene: CheeseTouch\_91 Start: 45223, Stop: 45627, Start Num: 12

Candidate Starts for CheeseTouch\_91:

(Start: 11 @45220 has 3 MA's), (Start: 12 @45223 has 16 MA's), (19, 45271), (24, 45295), (31, 45379), (51, 45508), (70, 45616),

Gene: Chewbacca\_62 Start: 38112, Stop: 38486, Start Num: 18

Candidate Starts for Chewbacca\_62:

(Start: 18 @38112 has 19 MA's), (25, 38142), (35, 38274), (36, 38277), (37, 38298), (47, 38355), (49, 38361), (68, 38457), (70, 38475),

Gene: Cracklewink\_97 Start: 60881, Stop: 61201, Start Num: 28

Candidate Starts for Cracklewink\_97:

(1, 60302), (2, 60332), (3, 60476), (4, 60575), (9, 60725), (Start: 28 @60881 has 2 MA's), (45, 61055), (48, 61076), (53, 61103), (61, 61145), (68, 61172),

Gene: Crater\_84 Start: 46668, Stop: 47045, Start Num: 12

Candidate Starts for Crater\_84:

(Start: 11 @46665 has 3 MA's), (Start: 12 @46668 has 16 MA's), (31, 46842), (41, 46902), (63, 46998),

Gene: Duplicity\_58 Start: 37474, Stop: 37848, Start Num: 18

Candidate Starts for Duplicity\_58:

(10, 37405), (Start: 18 @37474 has 19 MA's), (25, 37504), (35, 37636), (36, 37639), (37, 37660), (47, 37717), (49, 37723), (68, 37819), (70, 37837),

Gene: FirstPlacePfu\_61 Start: 38017, Stop: 38391, Start Num: 18

Candidate Starts for FirstPlacePfu\_61:

(Start: 18 @38017 has 19 MA's), (25, 38047), (35, 38179), (36, 38182), (37, 38203), (47, 38260), (49, 38266), (68, 38362), (70, 38380),

Gene: Frankie\_78 Start: 46606, Stop: 46980, Start Num: 18

Candidate Starts for Frankie\_78:

(10, 46537), (Start: 18 @46606 has 19 MA's), (25, 46636), (35, 46768), (36, 46771), (37, 46792), (47, 46849), (49, 46855), (68, 46951), (70, 46969),

Gene: Frickyeah\_92 Start: 48610, Stop: 48948, Start Num: 22

Candidate Starts for Frickyeah\_92:

(Start: 11 @48550 has 3 MA's), (Start: 12 @48553 has 16 MA's), (22, 48610), (26, 48634), (61, 48889), (62, 48892), (66, 48904),

Gene: Fulbright\_58 Start: 36911, Stop: 37285, Start Num: 18

Candidate Starts for Fulbright\_58:

(10, 36842), (Start: 18 @36911 has 19 MA's), (25, 36941), (35, 37073), (36, 37076), (37, 37097), (47, 37154), (49, 37160), (68, 37256), (70, 37274),

Gene: Getalong\_89 Start: 50024, Stop: 50353, Start Num: 12

Candidate Starts for Getalong\_89:

(8, 49973), (10, 49997), (Start: 11 @50021 has 3 MA's), (Start: 12 @50024 has 16 MA's), (17, 50069), (20, 50078), (21, 50081), (31, 50162), (40, 50216), (41, 50219), (46, 50249), (52, 50267), (58, 50294),

Gene: Gex\_61 Start: 38233, Stop: 38607, Start Num: 18

Candidate Starts for Gex\_61:

(10, 38164), (Start: 18 @38233 has 19 MA's), (25, 38263), (35, 38395), (36, 38398), (37, 38419), (47, 38476), (49, 38482), (68, 38578), (70, 38596),

Gene: Horus\_86 Start: 48825, Stop: 49223, Start Num: 11

Candidate Starts for Horus\_86:

(Start: 11 @48825 has 3 MA's), (Start: 12 @48828 has 16 MA's), (22, 48885), (26, 48909), (61, 49164), (62, 49167), (66, 49179),

Gene: Kamaru\_80 Start: 46524, Stop: 46901, Start Num: 12

Candidate Starts for Kamaru\_80:

(Start: 11 @46521 has 3 MA's), (Start: 12 @46524 has 16 MA's), (19, 46572), (24, 46596), (31, 46680), (39, 46737), (42, 46746), (70, 46890),

Gene: Kenna\_81 Start: 46842, Stop: 47171, Start Num: 12

Candidate Starts for Kenna\_81:

(8, 46791), (10, 46815), (Start: 11 @46839 has 3 MA's), (Start: 12 @46842 has 16 MA's), (17, 46887), (20, 46896), (21, 46899), (31, 46980), (40, 47034), (41, 47037), (46, 47067), (52, 47085), (58, 47112),

Gene: Leroy\_85 Start: 47023, Stop: 47418, Start Num: 12

Candidate Starts for Leroy\_85:

(Start: 11 @47020 has 3 MA's), (Start: 12 @47023 has 16 MA's), (22, 47080), (26, 47104), (61, 47359), (62, 47362), (66, 47374),

Gene: LitninMcQueen\_89 Start: 48138, Stop: 48506, Start Num: 11

Candidate Starts for LitninMcQueen\_89:

(Start: 11 @48138 has 3 MA's), (Start: 12 @48141 has 16 MA's), (22, 48198), (26, 48222), (31, 48285), (34, 48309), (50, 48399), (54, 48423), (57, 48453),

Gene: Lutum\_87 Start: 48004, Stop: 48333, Start Num: 12

Candidate Starts for Lutum\_87:

(8, 47953), (10, 47977), (Start: 11 @48001 has 3 MA's), (Start: 12 @48004 has 16 MA's), (17, 48049), (20, 48058), (21, 48061), (31, 48142), (40, 48196), (41, 48199), (46, 48229), (52, 48247), (58, 48274),

Gene: Marker\_51 Start: 36567, Stop: 36971, Start Num: 14

Candidate Starts for Marker\_51:

(Start: 14 @36567 has 1 MA's), (Start: 18 @36597 has 19 MA's), (30, 36705), (32, 36729), (35, 36750), (36, 36753), (55, 36873), (68, 36942),

Gene: Melville\_65 Start: 37788, Stop: 38162, Start Num: 18

Candidate Starts for Melville\_65:

(10, 37719), (Start: 18 @37788 has 19 MA's), (25, 37818), (35, 37950), (36, 37953), (37, 37974), (47, 38031), (49, 38037), (68, 38133), (70, 38151),

Gene: Misha28\_81 Start: 50604, Stop: 50960, Start Num: 23

Candidate Starts for Misha28\_81:

(7, 50478), (16, 50574), (Start: 23 @50604 has 4 MA's), (27, 50637), (35, 50748), (36, 50751), (68, 50931),

Gene: MortyNRick\_77 Start: 46661, Stop: 47086, Start Num: 12

Candidate Starts for MortyNRick\_77:

(Start: 11 @46658 has 3 MA's), (Start: 12 @46661 has 16 MA's), (15, 46676), (29, 46781), (31, 46835), (62, 47030), (66, 47042),

Gene: Parmesanjohn\_60 Start: 38237, Stop: 38611, Start Num: 18

Candidate Starts for Parmesanjohn\_60:

(10, 38168), (Start: 18 @38237 has 19 MA's), (25, 38267), (35, 38399), (36, 38402), (37, 38423), (47, 38480), (49, 38486), (68, 38582), (70, 38600),

Gene: Periwinkle\_94 Start: 49830, Stop: 50225, Start Num: 12

Candidate Starts for Periwinkle\_94:

(Start: 11 @49827 has 3 MA's), (Start: 12 @49830 has 16 MA's), (22, 49887), (26, 49911), (61, 50166), (62, 50169), (66, 50181),

Gene: Phabuloso\_93 Start: 49496, Stop: 49825, Start Num: 12

Candidate Starts for Phabuloso\_93:

(8, 49445), (10, 49469), (Start: 11 @49493 has 3 MA's), (Start: 12 @49496 has 16 MA's), (17, 49541), (20, 49550), (21, 49553), (31, 49634), (40, 49688), (41, 49691), (46, 49721), (52, 49739), (58, 49766),

Gene: Philonius\_60 Start: 38402, Stop: 38776, Start Num: 18

Candidate Starts for Philonius\_60:

(10, 38333), (Start: 18 @38402 has 19 MA's), (25, 38432), (35, 38564), (36, 38567), (37, 38588), (47, 38645), (49, 38651), (68, 38747), (70, 38765),

Gene: Phistory\_82 Start: 45926, Stop: 46321, Start Num: 12

Candidate Starts for Phistory\_82:

(Start: 11 @45923 has 3 MA's), (Start: 12 @45926 has 16 MA's), (22, 45983), (26, 46007), (61, 46262), (62, 46265), (66, 46277),

Gene: Phloss\_58 Start: 37644, Stop: 38018, Start Num: 18

Candidate Starts for Phloss\_58:

(10, 37575), (Start: 18 @37644 has 19 MA's), (25, 37674), (35, 37806), (36, 37809), (37, 37830), (47, 37887), (49, 37893), (68, 37989), (70, 38007),

Gene: Piper2020\_83 Start: 51001, Stop: 51375, Start Num: 18

Candidate Starts for Piper2020\_83:

(Start: 18 @51001 has 19 MA's), (25, 51031), (35, 51163), (36, 51166), (37, 51187), (47, 51244), (49, 51250), (68, 51346), (70, 51364),

Gene: Pipsqueaks\_61 Start: 38215, Stop: 38589, Start Num: 18

Candidate Starts for Pipsqueaks\_61:

(10, 38146), (Start: 18 @38215 has 19 MA's), (25, 38245), (35, 38377), (36, 38380), (37, 38401), (47, 38458), (49, 38464), (68, 38560), (70, 38578),

Gene: Purky\_67 Start: 42925, Stop: 43284, Start Num: 23

Candidate Starts for Purky\_67:

(13, 42868), (Start: 23 @42925 has 4 MA's), (43, 43117), (44, 43123), (56, 43189), (70, 43270),

Gene: Schnauzer\_61 Start: 38237, Stop: 38611, Start Num: 18

Candidate Starts for Schnauzer\_61:

(10, 38168), (Start: 18 @38237 has 19 MA's), (25, 38267), (35, 38399), (36, 38402), (37, 38423), (47, 38480), (49, 38486), (68, 38582), (70, 38600),

Gene: ShawBrad\_90 Start: 47079, Stop: 47474, Start Num: 12

Candidate Starts for ShawBrad\_90:

(Start: 11 @47076 has 3 MA's), (Start: 12 @47079 has 16 MA's), (22, 47136), (26, 47160), (61, 47415), (62, 47418), (66, 47430),

Gene: Silvafighter\_61 Start: 37780, Stop: 38154, Start Num: 18

Candidate Starts for Silvafighter\_61:

(10, 37711), (Start: 18 @37780 has 19 MA's), (25, 37810), (35, 37942), (36, 37945), (37, 37966), (47, 38023), (49, 38029), (68, 38125), (70, 38143),

Gene: Silvy\_56 Start: 38873, Stop: 39247, Start Num: 18

Candidate Starts for Silvy\_56:

(10, 38804), (Start: 18 @38873 has 19 MA's), (25, 38903), (35, 39035), (36, 39038), (37, 39059), (47, 39116), (49, 39122), (68, 39218), (70, 39236),

Gene: Smurph\_60 Start: 38237, Stop: 38611, Start Num: 18

Candidate Starts for Smurph\_60:

(10, 38168), (Start: 18 @38237 has 19 MA's), (25, 38267), (35, 38399), (36, 38402), (37, 38423), (47, 38480), (49, 38486), (68, 38582), (70, 38600),

Gene: Squiddly\_88 Start: 51488, Stop: 51823, Start Num: 11

Candidate Starts for Squiddly\_88:

(Start: 11 @51488 has 3 MA's), (Start: 12 @51491 has 16 MA's), (33, 51638), (41, 51680), (63, 51776), (67, 51788),

Gene: Tessdabest\_61 Start: 38370, Stop: 38741, Start Num: 18

Candidate Starts for Tessdabest\_61:

(10, 38301), (Start: 18 @38370 has 19 MA's), (25, 38400), (35, 38532), (36, 38535), (37, 38556), (47, 38613), (49, 38619), (59, 38682),

Gene: TootsiePop\_81 Start: 50604, Stop: 50960, Start Num: 23

Candidate Starts for TootsiePop\_81:

(7, 50478), (16, 50574), (Start: 23 @50604 has 4 MA's), (27, 50637), (35, 50748), (36, 50751), (68, 50931),

Gene: Whitney\_84 Start: 49207, Stop: 49602, Start Num: 12

Candidate Starts for Whitney\_84:

(5, 49048), (6, 49087), (Start: 11 @49204 has 3 MA's), (Start: 12 @49207 has 16 MA's), (29, 49327), (38, 49435), (52, 49504), (57, 49543), (60, 49549),

Gene: Xerxes\_60 Start: 38234, Stop: 38608, Start Num: 18

Candidate Starts for Xerxes\_60:

(10, 38165), (Start: 18 @38234 has 19 MA's), (25, 38264), (35, 38396), (36, 38399), (37, 38420), (47, 38477), (49, 38483), (68, 38579), (70, 38597),