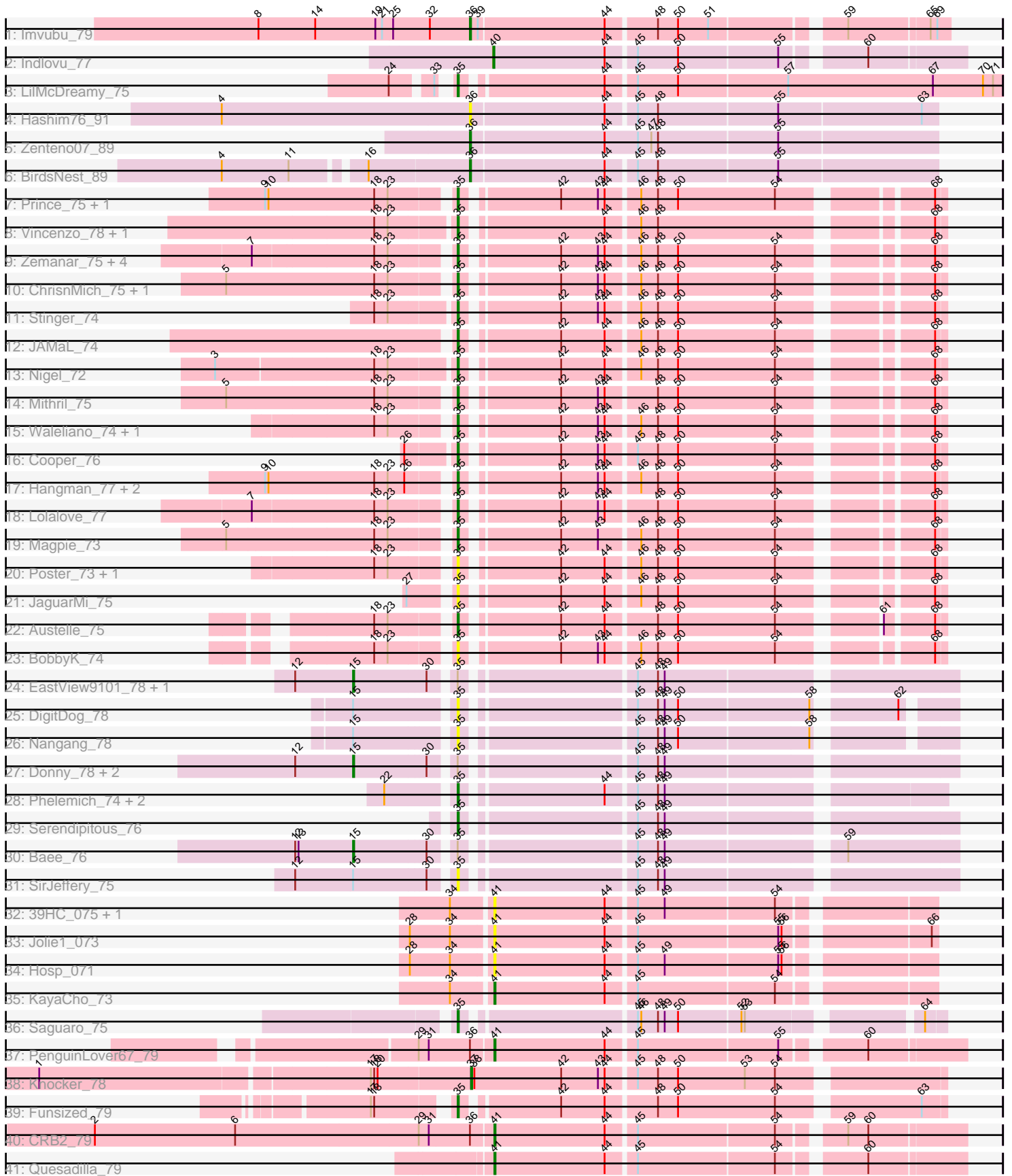


# Pham 121555



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 121555 Report

This analysis was run 04/28/24 on database version 559.

Pham number 121555 has 58 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Imvubu\_79
- Track 2 : Indlovu\_77
- Track 3 : LilMcDreamy\_75
- Track 4 : Hashim76\_91
- Track 5 : Zenteno07\_89
- Track 6 : BirdsNest\_89
- Track 7 : Prince\_75, Apex\_77
- Track 8 : Vincenzo\_78, AlanGrant\_79
- Track 9 : Zemanar\_75, Heath\_76, Frederick\_75, RawrgerThat\_75, Hydro\_76
- Track 10 : ChrisnMich\_75, Fortunato\_75
- Track 11 : Stinger\_74
- Track 12 : JAMaL\_74
- Track 13 : Nigel\_72
- Track 14 : Mithril\_75
- Track 15 : Waleliano\_74, BrownCNA\_76
- Track 16 : Cooper\_76
- Track 17 : Hangman\_77, VioletZ\_78, Mudslide\_75
- Track 18 : Lolalove\_77
- Track 19 : Magpie\_73
- Track 20 : Poster\_73, Nanao\_74
- Track 21 : JaguarMi\_75
- Track 22 : Austelle\_75
- Track 23 : BobbyK\_74
- Track 24 : EastView9101\_78, Acadian\_77
- Track 25 : DigitDog\_78
- Track 26 : Nangang\_78
- Track 27 : Donny\_78, Rich\_75, Suigeneris\_78
- Track 28 : Phelemich\_74, Mysterious\_77, Reprobate\_76
- Track 29 : Serendipitous\_76
- Track 30 : Baee\_76
- Track 31 : SirJeffery\_75
- Track 32 : 39HC\_075, 40BC\_075
- Track 33 : Jolie1\_073
- Track 34 : Hosp\_071
- Track 35 : KayaCho\_73
- Track 36 : Saguaro\_75
- Track 37 : Penguin Lover67\_79

- Track 38 : Knocker\_78
- Track 39 : Funsized\_79
- Track 40 : CRB2\_79
- Track 41 : Quesadilla\_79

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

The start number called the most often in the published annotations is 35, it was called in 28 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AlanGrant\_79, Apex\_77, Austelle\_75, BobbyK\_74, BrownCNA\_76, ChrisnMich\_75, Cooper\_76, DigitDog\_78, Fortunato\_75, Frederick\_75, Funsized\_79, Hangman\_77, Heath\_76, Hydro\_76, JAMaL\_74, JaguarMi\_75, LilMcDreamy\_75, Lolalove\_77, Magpie\_73, Mithril\_75, Mudslide\_75, Mysterious\_77, Nanao\_74, Nangang\_78, Nigel\_72, Phelemich\_74, Poster\_73, Prince\_75, RawrgerThat\_75, Reprobate\_76, Saguaro\_75, Serendipitous\_76, SirJeffery\_75, Stinger\_74, Vincenzo\_78, VioletZ\_78, Waleliano\_74, Zemanar\_75,

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

- Acadian\_77, Baee\_76, Donny\_78, EastView9101\_78, Rich\_75, Suigeneris\_78,

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

- 39HC\_075, 40BC\_075, BirdsNest\_89, CRB2\_79, Hashim76\_91, Hosp\_071, Imvubu\_79, Indlovu\_77, Jolie1\_073, KayaCho\_73, Knocker\_78, PenguinLover67\_79, Quesadilla\_79, Zenteno07\_89,

### **Summary by start number:**

Start 15:

- Found in 9 of 58 ( 15.5% ) of genes in pham
- Manual Annotations of this start: 5 of 42
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Acadian\_77 (B5), Baee\_76 (B5), Donny\_78 (B5), EastView9101\_78 (B5), Rich\_75 (B5), Suigeneris\_78 (B5),

Start 35:

- Found in 44 of 58 ( 75.9% ) of genes in pham
- Manual Annotations of this start: 28 of 42
- Called 86.4% of time when present
- Phage (with cluster) where this start called: AlanGrant\_79 (B4), Apex\_77 (B4), Austelle\_75 (B4), BobbyK\_74 (B4), BrownCNA\_76 (B4), ChrisnMich\_75 (B4), Cooper\_76 (B4), DigitDog\_78 (B5), Fortunato\_75 (B4), Frederick\_75 (B4), Funsized\_79 (B9), Hangman\_77 (B4), Heath\_76 (B4), Hydro\_76 (B4), JAMaL\_74 (B4), JaguarMi\_75 (B4), LilMcDreamy\_75 (B12), Lolalove\_77 (B4), Magpie\_73 (B4), Mithril\_75 (B4), Mudslide\_75 (B4), Mysterious\_77 (B5), Nanao\_74 (B4), Nangang\_78 (B5), Nigel\_72 (B4), Phelemich\_74 (B5), Poster\_73 (B4), Prince\_75 (B4), RawrgerThat\_75 (B4), Reprobate\_76 (B5), Saguaro\_75 (B7), Serendipitous\_76 (B5), SirJeffery\_75 (B5), Stinger\_74 (B4), Vincenzo\_78 (B4), VioletZ\_78 (B4), Waleliano\_74 (B4), Zemanar\_75 (B4),

Start 36:

- Found in 6 of 58 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 3 of 42
- Called 66.7% of time when present
- Phage (with cluster) where this start called: BirdsNest\_89 (B13), Hashim76\_91 (B13), Imvubu\_79 (B10), Zenteno07\_89 (B13),

Start 37:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Knocker\_78 (B9),

Start 40:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlovu\_77 (B11),

Start 41:

- Found in 8 of 58 ( 13.8% ) of genes in pham
- Manual Annotations of this start: 4 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 39HC\_075 (B6), 40BC\_075 (B6), CRB2\_79 (B9), Hosp\_071 (B6), Jolie1\_073 (B6), KayaCho\_73 (B6), PenguinLover67\_79 (B9), Quesadilla\_79 (B9),

**Summary by clusters:**

There are 9 clusters represented in this pham: B4, B5, B6, B7, B12, B13, B10, B11, B9,

Info for manual annotations of cluster B10:

- Start number 36 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 40 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 35 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:

- Start number 36 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B4:

- Start number 35 was manually annotated 22 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 15 was manually annotated 5 times for cluster B5.
- Start number 35 was manually annotated 3 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 41 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:

- Start number 35 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 35 was manually annotated 1 time for cluster B9.
- Start number 37 was manually annotated 1 time for cluster B9.
- Start number 41 was manually annotated 3 times for cluster B9.

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

Gene: 39HC\_075 Start: 62227, Stop: 61859, Start Num: 41

Candidate Starts for 39HC\_075:

(34, 62260), (Start: 41 @62227 has 4 MA's), (44, 62128), (45, 62104), (49, 62080), (54, 61984),

Gene: 40BC\_075 Start: 62227, Stop: 61859, Start Num: 41

Candidate Starts for 40BC\_075:

(34, 62260), (Start: 41 @62227 has 4 MA's), (44, 62128), (45, 62104), (49, 62080), (54, 61984),

Gene: Acadian\_77 Start: 62254, Stop: 61766, Start Num: 15

Candidate Starts for Acadian\_77:

(12, 62305), (Start: 15 @62254 has 5 MA's), (30, 62191), (Start: 35 @62173 has 28 MA's), (45, 62032), (48, 62014), (49, 62008),

Gene: AlanGrant\_79 Start: 64544, Stop: 64158, Start Num: 35

Candidate Starts for AlanGrant\_79:

(18, 64610), (23, 64598), (Start: 35 @64544 has 28 MA's), (44, 64427), (46, 64400), (48, 64385), (68, 64166),

Gene: Apex\_77 Start: 63483, Stop: 63097, Start Num: 35

Candidate Starts for Apex\_77:

(9, 63639), (10, 63636), (18, 63543), (23, 63531), (Start: 35 @63483 has 28 MA's), (42, 63405), (43, 63372), (44, 63366), (46, 63339), (48, 63324), (50, 63306), (54, 63219), (68, 63105),

Gene: Austelle\_75 Start: 63800, Stop: 63414, Start Num: 35

Candidate Starts for Austelle\_75:

(18, 63860), (23, 63848), (Start: 35 @63800 has 28 MA's), (42, 63722), (44, 63683), (48, 63641), (50, 63623), (54, 63536), (61, 63461), (68, 63422),

Gene: Baee\_76 Start: 62953, Stop: 62465, Start Num: 15

Candidate Starts for Baee\_76:

(12, 63004), (13, 63001), (Start: 15 @62953 has 5 MA's), (30, 62890), (Start: 35 @62872 has 28 MA's), (45, 62731), (48, 62713), (49, 62707), (59, 62563),

Gene: BirdsNest\_89 Start: 65386, Stop: 64982, Start Num: 36

Candidate Starts for BirdsNest\_89:

(4, 65590), (11, 65530), (16, 65473), (Start: 36 @65386 has 3 MA's), (44, 65269), (45, 65245), (48, 65227), (55, 65122),

Gene: BobbyK\_74 Start: 62954, Stop: 62568, Start Num: 35

Candidate Starts for BobbyK\_74:

(18, 63014), (23, 63002), (Start: 35 @62954 has 28 MA's), (42, 62876), (43, 62843), (44, 62837), (46, 62810), (48, 62795), (50, 62777), (54, 62690), (68, 62576),

Gene: BrownCNA\_76 Start: 63158, Stop: 62772, Start Num: 35

Candidate Starts for BrownCNA\_76:

(18, 63218), (23, 63206), (Start: 35 @63158 has 28 MA's), (42, 63080), (43, 63047), (44, 63041), (46, 63014), (48, 62999), (50, 62981), (54, 62894), (68, 62780),

Gene: CRB2\_79 Start: 65196, Stop: 64804, Start Num: 41

Candidate Starts for CRB2\_79:

(2, 65547), (6, 65421), (29, 65259), (31, 65250), (Start: 36 @65214 has 3 MA's), (Start: 41 @65196 has 4 MA's), (44, 65097), (45, 65073), (54, 64953), (59, 64905), (60, 64887),

Gene: ChrisnMich\_75 Start: 62154, Stop: 61768, Start Num: 35

Candidate Starts for ChrisnMich\_75:

(5, 62343), (18, 62214), (23, 62202), (Start: 35 @62154 has 28 MA's), (42, 62076), (43, 62043), (44, 62037), (46, 62010), (48, 61995), (50, 61977), (54, 61890), (68, 61776),

Gene: Cooper\_76 Start: 62632, Stop: 62246, Start Num: 35

Candidate Starts for Cooper\_76:

(26, 62671), (Start: 35 @62632 has 28 MA's), (42, 62554), (43, 62521), (44, 62515), (45, 62491), (48, 62473), (50, 62455), (54, 62368), (68, 62254),

Gene: DigitDog\_78 Start: 62457, Stop: 62062, Start Num: 35

Candidate Starts for DigitDog\_78:

(Start: 15 @62538 has 5 MA's), (Start: 35 @62457 has 28 MA's), (45, 62316), (48, 62298), (49, 62292), (50, 62280), (58, 62166), (62, 62103),

Gene: Donny\_78 Start: 62294, Stop: 61806, Start Num: 15

Candidate Starts for Donny\_78:

(12, 62345), (Start: 15 @62294 has 5 MA's), (30, 62231), (Start: 35 @62213 has 28 MA's), (45, 62072), (48, 62054), (49, 62048),

Gene: EastView9101\_78 Start: 61998, Stop: 61510, Start Num: 15

Candidate Starts for EastView9101\_78:

(12, 62049), (Start: 15 @61998 has 5 MA's), (30, 61935), (Start: 35 @61917 has 28 MA's), (45, 61776), (48, 61758), (49, 61752),

Gene: Fortunato\_75 Start: 62924, Stop: 62538, Start Num: 35

Candidate Starts for Fortunato\_75:

(5, 63113), (18, 62984), (23, 62972), (Start: 35 @62924 has 28 MA's), (42, 62846), (43, 62813), (44, 62807), (46, 62780), (48, 62765), (50, 62747), (54, 62660), (68, 62546),

Gene: Frederick\_75 Start: 63228, Stop: 62842, Start Num: 35

Candidate Starts for Frederick\_75:

(7, 63393), (18, 63288), (23, 63276), (Start: 35 @63228 has 28 MA's), (42, 63150), (43, 63117), (44, 63111), (46, 63084), (48, 63069), (50, 63051), (54, 62964), (68, 62850),

Gene: Funsized\_79 Start: 65641, Stop: 65243, Start Num: 35

Candidate Starts for Funsized\_79:

(17, 65701), (18, 65698), (Start: 35 @65641 has 28 MA's), (42, 65563), (44, 65524), (48, 65482), (50, 65464), (54, 65377), (63, 65263),

Gene: Hangman\_77 Start: 63694, Stop: 63308, Start Num: 35

Candidate Starts for Hangman\_77:

(9, 63850), (10, 63847), (18, 63754), (23, 63742), (26, 63727), (Start: 35 @63694 has 28 MA's), (42, 63616), (43, 63583), (44, 63577), (46, 63550), (48, 63535), (50, 63517), (54, 63430), (68, 63316),

Gene: Hashim76\_91 Start: 65419, Stop: 65015, Start Num: 36

Candidate Starts for Hashim76\_91:

(4, 65641), (Start: 36 @65419 has 3 MA's), (44, 65302), (45, 65278), (48, 65260), (55, 65155), (63, 65029),

Gene: Heath\_76 Start: 63439, Stop: 63053, Start Num: 35

Candidate Starts for Heath\_76:

(7, 63604), (18, 63499), (23, 63487), (Start: 35 @63439 has 28 MA's), (42, 63361), (43, 63328), (44, 63322), (46, 63295), (48, 63280), (50, 63262), (54, 63175), (68, 63061),

Gene: Hosp\_071 Start: 59697, Stop: 59329, Start Num: 41

Candidate Starts for Hosp\_071:

(28, 59766), (34, 59730), (Start: 41 @59697 has 4 MA's), (44, 59598), (45, 59574), (49, 59550), (55, 59451), (56, 59448),

Gene: Hydro\_76 Start: 63357, Stop: 62971, Start Num: 35

Candidate Starts for Hydro\_76:

(7, 63522), (18, 63417), (23, 63405), (Start: 35 @63357 has 28 MA's), (42, 63279), (43, 63246), (44, 63240), (46, 63213), (48, 63198), (50, 63180), (54, 63093), (68, 62979),

Gene: Imvubu\_79 Start: 62691, Stop: 62296, Start Num: 36

Candidate Starts for Imvubu\_79:

(8, 62880), (14, 62829), (19, 62775), (21, 62769), (25, 62760), (32, 62727), (Start: 36 @62691 has 3 MA's), (39, 62685), (44, 62574), (48, 62532), (50, 62514), (51, 62487), (59, 62382), (65, 62313), (69, 62307),

Gene: Indlovu\_77 Start: 63524, Stop: 63132, Start Num: 40

Candidate Starts for Indlovu\_77:

(Start: 40 @63524 has 1 MA's), (44, 63425), (45, 63401), (50, 63365), (55, 63278), (60, 63215),

Gene: JAMaL\_74 Start: 62677, Stop: 62291, Start Num: 35

Candidate Starts for JAMaL\_74:

(Start: 35 @62677 has 28 MA's), (42, 62599), (44, 62560), (46, 62533), (48, 62518), (50, 62500), (54, 62413), (68, 62299),

Gene: JaguarMi\_75 Start: 64365, Stop: 63979, Start Num: 35

Candidate Starts for JaguarMi\_75:

(27, 64398), (Start: 35 @64365 has 28 MA's), (42, 64287), (44, 64248), (46, 64221), (48, 64206), (50, 64188), (54, 64101), (68, 63987),

Gene: Jolie1\_073 Start: 61731, Stop: 61363, Start Num: 41

Candidate Starts for Jolie1\_073:

(28, 61800), (34, 61764), (Start: 41 @61731 has 4 MA's), (44, 61632), (45, 61608), (55, 61485), (56, 61482), (66, 61368),

Gene: KayaCho\_73 Start: 61898, Stop: 61530, Start Num: 41

Candidate Starts for KayaCho\_73:

(34, 61931), (Start: 41 @61898 has 4 MA's), (44, 61799), (45, 61775), (54, 61655),

Gene: Klocker\_78 Start: 64121, Stop: 63720, Start Num: 37

Candidate Starts for Klocker\_78:

(1, 64493), (17, 64208), (18, 64205), (20, 64202), (Start: 37 @64121 has 1 MA's), (38, 64118), (42, 64040), (43, 64007), (44, 64001), (45, 63977), (48, 63959), (50, 63941), (53, 63881), (54, 63854),

Gene: LilMcDreamy\_75 Start: 62248, Stop: 61784, Start Num: 35

Candidate Starts for LilMcDreamy\_75:

(24, 62284), (33, 62254), (Start: 35 @62248 has 28 MA's), (44, 62131), (45, 62107), (50, 62071), (57, 61975), (67, 61846), (70, 61801), (71, 61792),

Gene: Lolalove\_77 Start: 63280, Stop: 62894, Start Num: 35

Candidate Starts for Lolalove\_77:

(7, 63445), (18, 63340), (23, 63328), (Start: 35 @63280 has 28 MA's), (42, 63202), (43, 63169), (44, 63163), (48, 63121), (50, 63103), (54, 63016), (68, 62902),

Gene: Magpie\_73 Start: 62892, Stop: 62506, Start Num: 35

Candidate Starts for Magpie\_73:

(5, 63081), (18, 62952), (23, 62940), (Start: 35 @62892 has 28 MA's), (42, 62814), (43, 62781), (46, 62748), (48, 62733), (50, 62715), (54, 62628), (68, 62514),

Gene: Mithril\_75 Start: 63279, Stop: 62893, Start Num: 35

Candidate Starts for Mithril\_75:

(5, 63468), (18, 63339), (23, 63327), (Start: 35 @63279 has 28 MA's), (42, 63201), (43, 63168), (44, 63162), (48, 63120), (50, 63102), (54, 63015), (68, 62901),

Gene: Mudslide\_75 Start: 63316, Stop: 62930, Start Num: 35

Candidate Starts for Mudslide\_75:

(9, 63472), (10, 63469), (18, 63376), (23, 63364), (26, 63349), (Start: 35 @63316 has 28 MA's), (42, 63238), (43, 63205), (44, 63199), (46, 63172), (48, 63157), (50, 63139), (54, 63052), (68, 62938),

Gene: Mysterious\_77 Start: 62158, Stop: 61763, Start Num: 35

Candidate Starts for Mysterious\_77:

(22, 62212), (Start: 35 @62158 has 28 MA's), (44, 62041), (45, 62017), (48, 61999), (49, 61993),

Gene: Nanao\_74 Start: 62190, Stop: 61804, Start Num: 35

Candidate Starts for Nanao\_74:

(18, 62250), (23, 62238), (Start: 35 @62190 has 28 MA's), (42, 62112), (44, 62073), (46, 62046), (48, 62031), (50, 62013), (54, 61926), (68, 61812),

Gene: Nangang\_78 Start: 62728, Stop: 62333, Start Num: 35

Candidate Starts for Nangang\_78:

(Start: 15 @62809 has 5 MA's), (Start: 35 @62728 has 28 MA's), (45, 62587), (48, 62569), (49, 62563), (50, 62551), (58, 62437),

Gene: Nigel\_72 Start: 61700, Stop: 61314, Start Num: 35

Candidate Starts for Nigel\_72:

(3, 61904), (18, 61766), (23, 61754), (Start: 35 @61700 has 28 MA's), (42, 61622), (44, 61583), (46, 61556), (48, 61541), (50, 61523), (54, 61436), (68, 61322),

Gene: PenguinLover67\_79 Start: 62948, Stop: 62556, Start Num: 41

Candidate Starts for PenguinLover67\_79:



(29, 63011), (31, 63002), (Start: 36 @62966 has 3 MA's), (Start: 41 @62948 has 4 MA's), (44, 62849), (45, 62825), (55, 62702), (60, 62639),

Gene: Phelemich\_74 Start: 62284, Stop: 61889, Start Num: 35

Candidate Starts for Phelemich\_74:

(22, 62338), (Start: 35 @62284 has 28 MA's), (44, 62167), (45, 62143), (48, 62125), (49, 62119),

Gene: Poster\_73 Start: 62191, Stop: 61805, Start Num: 35

Candidate Starts for Poster\_73:

(18, 62251), (23, 62239), (Start: 35 @62191 has 28 MA's), (42, 62113), (44, 62074), (46, 62047), (48, 62032), (50, 62014), (54, 61927), (68, 61813),

Gene: Prince\_75 Start: 63386, Stop: 63000, Start Num: 35

Candidate Starts for Prince\_75:

(9, 63542), (10, 63539), (18, 63446), (23, 63434), (Start: 35 @63386 has 28 MA's), (42, 63308), (43, 63275), (44, 63269), (46, 63242), (48, 63227), (50, 63209), (54, 63122), (68, 63008),

Gene: Quesadilla\_79 Start: 63413, Stop: 63021, Start Num: 41

Candidate Starts for Quesadilla\_79:

(Start: 41 @63413 has 4 MA's), (44, 63314), (45, 63290), (54, 63170), (60, 63104),

Gene: RawrgerThat\_75 Start: 62971, Stop: 62585, Start Num: 35

Candidate Starts for RawrgerThat\_75:

(7, 63136), (18, 63031), (23, 63019), (Start: 35 @62971 has 28 MA's), (42, 62893), (43, 62860), (44, 62854), (46, 62827), (48, 62812), (50, 62794), (54, 62707), (68, 62593),

Gene: Reprobate\_76 Start: 62289, Stop: 61894, Start Num: 35

Candidate Starts for Reprobate\_76:

(22, 62343), (Start: 35 @62289 has 28 MA's), (44, 62172), (45, 62148), (48, 62130), (49, 62124),

Gene: Rich\_75 Start: 62998, Stop: 62510, Start Num: 15

Candidate Starts for Rich\_75:

(12, 63049), (Start: 15 @62998 has 5 MA's), (30, 62935), (Start: 35 @62917 has 28 MA's), (45, 62776), (48, 62758), (49, 62752),

Gene: Saguaro\_75 Start: 62202, Stop: 61816, Start Num: 35

Candidate Starts for Saguaro\_75:

(Start: 35 @62202 has 28 MA's), (45, 62061), (46, 62058), (48, 62043), (49, 62037), (50, 62025), (52, 61971), (53, 61968), (64, 61833),

Gene: Serendipitous\_76 Start: 61875, Stop: 61468, Start Num: 35

Candidate Starts for Serendipitous\_76:

(Start: 35 @61875 has 28 MA's), (45, 61734), (48, 61716), (49, 61710),

Gene: SirJeffery\_75 Start: 61957, Stop: 61550, Start Num: 35

Candidate Starts for SirJeffery\_75:

(12, 62089), (Start: 15 @62038 has 5 MA's), (30, 61975), (Start: 35 @61957 has 28 MA's), (45, 61816), (48, 61798), (49, 61792),

Gene: Stinger\_74 Start: 61821, Stop: 61435, Start Num: 35

Candidate Starts for Stinger\_74:

(18, 61887), (23, 61875), (Start: 35 @61821 has 28 MA's), (42, 61743), (43, 61710), (44, 61704), (46, 61677), (48, 61662), (50, 61644), (54, 61557), (68, 61443),

Gene: Suigeneris\_78 Start: 62476, Stop: 61988, Start Num: 15

Candidate Starts for Suigeneris\_78:

(12, 62527), (Start: 15 @62476 has 5 MA's), (30, 62413), (Start: 35 @62395 has 28 MA's), (45, 62254), (48, 62236), (49, 62230),

Gene: Vincenzo\_78 Start: 64574, Stop: 64188, Start Num: 35

Candidate Starts for Vincenzo\_78:

(18, 64640), (23, 64628), (Start: 35 @64574 has 28 MA's), (44, 64457), (46, 64430), (48, 64415), (68, 64196),

Gene: VioletZ\_78 Start: 63482, Stop: 63096, Start Num: 35

Candidate Starts for VioletZ\_78:

(9, 63638), (10, 63635), (18, 63542), (23, 63530), (26, 63515), (Start: 35 @63482 has 28 MA's), (42, 63404), (43, 63371), (44, 63365), (46, 63338), (48, 63323), (50, 63305), (54, 63218), (68, 63104),

Gene: Waleliano\_74 Start: 62911, Stop: 62525, Start Num: 35

Candidate Starts for Waleliano\_74:

(18, 62971), (23, 62959), (Start: 35 @62911 has 28 MA's), (42, 62833), (43, 62800), (44, 62794), (46, 62767), (48, 62752), (50, 62734), (54, 62647), (68, 62533),

Gene: Zemanar\_75 Start: 63148, Stop: 62762, Start Num: 35

Candidate Starts for Zemanar\_75:

(7, 63313), (18, 63208), (23, 63196), (Start: 35 @63148 has 28 MA's), (42, 63070), (43, 63037), (44, 63031), (46, 63004), (48, 62989), (50, 62971), (54, 62884), (68, 62770),

Gene: Zenteno07\_89 Start: 65034, Stop: 64624, Start Num: 36

Candidate Starts for Zenteno07\_89:

(Start: 36 @65034 has 3 MA's), (44, 64917), (45, 64887), (47, 64875), (48, 64869), (55, 64764),