



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 296589 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296589 has 60 members, 20 are drafts.

Phages represented in each track:

- Track 1 : ModicumRichard\_9, Cafasso\_9, Aleemily\_9, ObLaDi\_9
- Track 2 : Morgana\_9
- Track 3 : Johann\_13, Goodman\_13
- Track 4 : Linayshia\_12, Htur\_12, Rasovi\_12
- Track 5 : PermaG\_13
- Track 6 : TurboVicky\_12, Jera\_13, SBlackberry\_12, Rootkit7\_12, Alove\_12, Zanella\_12
- Track 7 : Cicada\_14, Olympi\_14
- Track 8 : Benry\_12
- Track 9 : FireCastle\_12
- Track 10 : IndiRoo\_12
- Track 11 : Labella\_14
- Track 12 : Typher\_14
- Track 13 : AyoTeo\_14
- Track 14 : Milani\_13
- Track 15 : MicyPS\_8
- Track 16 : Taotie\_8, PSonyx\_8
- Track 17 : Jakelyne\_17
- Track 18 : NCRodriguez\_16
- Track 19 : Bush\_15, Winchester007\_30, MenE\_15, Mariel\_18, Antuna\_15, PhillyJawn\_15, Losacky\_16, Violeta\_16, Appa\_14
- Track 20 : CookieDog\_15
- Track 21 : Guzman\_16, Dropshot\_14
- Track 22 : Pickles13\_14
- Track 23 : ScoobySnack\_13
- Track 24 : Phingu\_17, Blett\_15, Warren\_15
- Track 25 : Phonegingi\_14
- Track 26 : Carrillo\_16
- Track 27 : Wrackline\_19
- Track 28 : Colossa\_10
- Track 29 : VanLee\_10
- Track 30 : Parvarticeps\_41
- Track 31 : BigAnti\_13
- Track 32 : Jace\_7
- Track 33 : GMA1\_8
- Track 34 : REQ3\_42
- Track 35 : TinyDot\_10

- Track 36 : DillyDally\_9

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

The start number called the most often in the published annotations is 17, it was called in 28 of the 40 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alove\_12, Antuna\_15, Appa\_14, AyoTeo\_14, Benry\_12, Blett\_15, Bush\_15, Carrillo\_16, Cicada\_14, CookieDog\_15, Dropshot\_14, FireCastle\_12, Goodman\_13, Guzman\_16, Htur\_12, IndiRoo\_12, Jera\_13, Johann\_13, Labella\_14, Linayshia\_12, Losacky\_16, Mariel\_18, MenE\_15, Milani\_13, NCRodriguez\_16, Olympi\_14, PermaG\_13, PhillyJawn\_15, Phingu\_17, Phonegingi\_14, Pickles13\_14, Rasovi\_12, Rootkit7\_12, SBlackberry\_12, ScoobySnack\_13, TurboVicky\_12, Typher\_14, Violeta\_16, Warren\_15, Winchester007\_30, Zanella\_12,

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

- Jakelyne\_17,

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

- Aleemily\_9, BigAnti\_13, Cafasso\_9, Colossa\_10, DillyDally\_9, GMA1\_8, Jace\_7, MicyPS\_8, ModicumRichard\_9, Morgana\_9, ObLaDi\_9, PSonyx\_8, Parvaparticeps\_41, REQ3\_42, Taotie\_8, TinyDot\_10, VanLee\_10, Wrackline\_19,

**Summary by start number:**

Start 14:

- Found in 3 of 60 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 2 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MicyPS\_8 (EQ), PSonyx\_8 (EQ), Taotie\_8 (EQ),

Start 16:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jakelyne\_17 (GA),

Start 17:

- Found in 42 of 60 ( 70.0% ) of genes in pham
- Manual Annotations of this start: 28 of 40
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Alove\_12 (EJ), Antuna\_15 (GA), Appa\_14 (GA), AyoTeo\_14 (EJ), Benry\_12 (EJ), Blett\_15 (GA), Bush\_15 (GA), Carrillo\_16 (GA), Cicada\_14 (EJ), CookieDog\_15 (GA), Dropshot\_14 (GA), FireCastle\_12 (EJ), Goodman\_13 (EJ), Guzman\_16 (GA), Htur\_12 (EJ), IndiRoo\_12 (EJ), Jera\_13 (EJ), Johann\_13 (EJ), Labella\_14 (EJ), Linayshia\_12 (EJ), Losacky\_16 (GA), Mariel\_18 (GA), MenE\_15 (GA), Milani\_13 (EJ), NCRodriguez\_16 (GA), Olympi\_14 (EJ), PermaG\_13 (EJ), PhillyJawn\_15 (GA), Phingu\_17 (GA),

Phonegingi\_14 (GA), Pickles13\_14 (GA), Rasovi\_12 (EJ), Rootkit7\_12 (EJ), SBlackberry\_12 (EJ), ScoobySnack\_13 (GA), TurboVicky\_12 (EJ), Typher\_14 (EJ), Violeta\_16 (GA), Warren\_15 (GA), Winchester007\_30 (GA), Zanella\_12 (EJ),

Start 18:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jace\_7 (singleton),

Start 19:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA1\_8 (singleton),

Start 20:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TinyDot\_10 (singleton),

Start 21:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Parvaparticeps\_41 (UNK),

Start 22:

- Found in 6 of 60 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 5 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily\_9 (DZ), BigAnti\_13 (singleton), Cafasso\_9 (DZ), ModicumRichard\_9 (DZ), Morgana\_9 (DZ), ObLaDi\_9 (DZ),

Start 23:

- Found in 5 of 60 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 2 of 40
- Called 60.0% of time when present
- Phage (with cluster) where this start called: DillyDally\_9 (singleton), REQ3\_42 (singleton), VanLee\_10 (KA),

Start 25:

- Found in 7 of 60 ( 11.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Colossa\_10 (KA),

Start 26:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wrackline\_19 (GF),

## Summary by clusters:

There are 8 clusters represented in this pham: singleton, EJ, KA, GF, DZ, GA, UNK, EQ,

Info for manual annotations of cluster DZ:

- Start number 22 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster EJ:

- Start number 17 was manually annotated 17 times for cluster EJ.

Info for manual annotations of cluster EQ:

- Start number 14 was manually annotated 2 times for cluster EQ.

Info for manual annotations of cluster GA:

- Start number 17 was manually annotated 11 times for cluster GA.

Info for manual annotations of cluster GF:

- Start number 26 was manually annotated 1 time for cluster GF.

Info for manual annotations of cluster KA:

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

## Gene Information:

Gene: Aleemily\_9 Start: 7322, Stop: 7741, Start Num: 22

Candidate Starts for Aleemily\_9:

(Start: 22 @7322 has 5 MA's), (25, 7331), (28, 7352), (45, 7472), (49, 7514), (52, 7529), (59, 7568), (65, 7619), (67, 7631), (72, 7664), (75, 7688), (84, 7727),

Gene: Alove\_12 Start: 10414, Stop: 10893, Start Num: 17

Candidate Starts for Alove\_12:

(Start: 17 @10414 has 28 MA's), (43, 10561), (65, 10726), (67, 10738), (76, 10807), (86, 10846),

Gene: Antuna\_15 Start: 8492, Stop: 8986, Start Num: 17

Candidate Starts for Antuna\_15:

(Start: 17 @8492 has 28 MA's), (32, 8579), (40, 8621), (45, 8669), (46, 8687), (48, 8699), (50, 8714), (63, 8786), (65, 8816), (76, 8894), (82, 8927), (88, 8951), (91, 8969),

Gene: Appa\_14 Start: 8354, Stop: 8848, Start Num: 17

Candidate Starts for Appa\_14:

(Start: 17 @8354 has 28 MA's), (32, 8441), (40, 8483), (45, 8531), (46, 8549), (48, 8561), (50, 8576), (63, 8648), (65, 8678), (76, 8756), (82, 8789), (88, 8813), (91, 8831),

Gene: AyoTeo\_14 Start: 10545, Stop: 11024, Start Num: 17

Candidate Starts for AyoTeo\_14:

(6, 10329), (7, 10365), (Start: 17 @10545 has 28 MA's), (31, 10611), (43, 10692), (65, 10857), (67, 10869), (80, 10959),

Gene: Benry\_12 Start: 8598, Stop: 9080, Start Num: 17

Candidate Starts for Benry\_12:

(Start: 17 @8598 has 28 MA's), (42, 8736), (43, 8745), (65, 8910), (84, 9027), (86, 9030),

Gene: BigAnti\_13 Start: 11145, Stop: 11603, Start Num: 22

Candidate Starts for BigAnti\_13:

(Start: 22 @11145 has 5 MA's), (Start: 23 @11148 has 2 MA's), (24, 11151), (34, 11229), (37, 11241), (40, 11262), (55, 11379), (56, 11388), (61, 11421), (62, 11430), (63, 11433), (65, 11463), (66, 11469), (69, 11499), (71, 11508), (77, 11544), (86, 11583),

Gene: Blett\_15 Start: 8507, Stop: 9001, Start Num: 17

Candidate Starts for Blett\_15:

(Start: 17 @8507 has 28 MA's), (32, 8594), (40, 8636), (45, 8684), (46, 8702), (48, 8714), (50, 8729), (63, 8801), (65, 8831), (76, 8909), (82, 8942), (88, 8966), (91, 8984),

Gene: Bush\_15 Start: 8488, Stop: 8982, Start Num: 17

Candidate Starts for Bush\_15:

(Start: 17 @8488 has 28 MA's), (32, 8575), (40, 8617), (45, 8665), (46, 8683), (48, 8695), (50, 8710), (63, 8782), (65, 8812), (76, 8890), (82, 8923), (88, 8947), (91, 8965),

Gene: Cafasso\_9 Start: 7322, Stop: 7741, Start Num: 22

Candidate Starts for Cafasso\_9:

(Start: 22 @7322 has 5 MA's), (25, 7331), (28, 7352), (45, 7472), (49, 7514), (52, 7529), (59, 7568), (65, 7619), (67, 7631), (72, 7664), (75, 7688), (84, 7727),

Gene: Carrillo\_16 Start: 8461, Stop: 8955, Start Num: 17

Candidate Starts for Carrillo\_16:

(Start: 17 @8461 has 28 MA's), (32, 8548), (40, 8590), (45, 8638), (46, 8656), (48, 8668), (50, 8683), (65, 8785), (76, 8863), (82, 8896), (88, 8920), (91, 8938),

Gene: Cicada\_14 Start: 10667, Stop: 11149, Start Num: 17

Candidate Starts for Cicada\_14:

(Start: 17 @10667 has 28 MA's), (31, 10733), (32, 10739), (42, 10805), (65, 10982), (86, 11102),

Gene: Colossa\_10 Start: 7212, Stop: 7625, Start Num: 25

Candidate Starts for Colossa\_10:

(Start: 23 @7206 has 2 MA's), (25, 7212), (33, 7269), (39, 7299), (49, 7392), (65, 7497), (74, 7560), (75, 7566), (78, 7587), (79, 7590),

Gene: CookieDog\_15 Start: 8488, Stop: 8982, Start Num: 17

Candidate Starts for CookieDog\_15:

(Start: 17 @8488 has 28 MA's), (28, 8536), (32, 8575), (40, 8617), (45, 8665), (46, 8683), (48, 8695), (50, 8710), (63, 8782), (65, 8812), (76, 8890), (82, 8923), (88, 8947), (91, 8965),

Gene: DillyDally\_9 Start: 7083, Stop: 7502, Start Num: 23

Candidate Starts for DillyDally\_9:

(Start: 23 @7083 has 2 MA's), (30, 7122), (49, 7272), (58, 7320), (60, 7335), (82, 7488), (84, 7491),

Gene: Dropshot\_14 Start: 8354, Stop: 8848, Start Num: 17

Candidate Starts for Dropshot\_14:

(Start: 17 @8354 has 28 MA's), (32, 8441), (40, 8483), (45, 8531), (46, 8549), (48, 8561), (50, 8576), (63, 8648), (65, 8678), (82, 8789), (88, 8813), (91, 8831),

Gene: FireCastle\_12 Start: 10331, Stop: 10810, Start Num: 17

Candidate Starts for FireCastle\_12:

(Start: 17 @10331 has 28 MA's), (32, 10403), (43, 10478), (65, 10643), (76, 10724),

Gene: GMA1\_8 Start: 6454, Stop: 6870, Start Num: 19

Candidate Starts for GMA1\_8:

(10, 6400), (19, 6454), (27, 6475), (53, 6667),

Gene: Goodman\_13 Start: 10579, Stop: 11061, Start Num: 17

Candidate Starts for Goodman\_13:

(Start: 17 @10579 has 28 MA's), (31, 10645), (32, 10651), (42, 10717), (65, 10894), (80, 10996), (86, 11014),

Gene: Guzman\_16 Start: 8769, Stop: 9263, Start Num: 17

Candidate Starts for Guzman\_16:

(Start: 17 @8769 has 28 MA's), (32, 8856), (40, 8898), (45, 8946), (46, 8964), (48, 8976), (50, 8991), (63, 9063), (65, 9093), (82, 9204), (88, 9228), (91, 9246),

Gene: Htur\_12 Start: 10585, Stop: 11064, Start Num: 17

Candidate Starts for Htur\_12:

(7, 10405), (15, 10570), (Start: 17 @10585 has 28 MA's), (31, 10651), (43, 10732), (65, 10897), (67, 10909), (76, 10978), (86, 11017),

Gene: IndiRoo\_12 Start: 8606, Stop: 9088, Start Num: 17

Candidate Starts for IndiRoo\_12:

(Start: 17 @8606 has 28 MA's), (43, 8753), (65, 8918), (84, 9035), (86, 9038),

Gene: Jace\_7 Start: 6635, Stop: 7051, Start Num: 18

Candidate Starts for Jace\_7:

(Start: 18 @6635 has 1 MA's), (40, 6734), (45, 6782), (46, 6800), (54, 6848), (84, 7040), (85, 7043),

Gene: Jakelyne\_17 Start: 8498, Stop: 9004, Start Num: 16

Candidate Starts for Jakelyne\_17:

(11, 8471), (16, 8498), (Start: 17 @8504 has 28 MA's), (29, 8558), (30, 8564), (42, 8657), (45, 8681), (50, 8726), (63, 8798), (76, 8912), (82, 8945), (91, 8987),

Gene: Jera\_13 Start: 9661, Stop: 10140, Start Num: 17

Candidate Starts for Jera\_13:

(Start: 17 @9661 has 28 MA's), (43, 9808), (65, 9973), (67, 9985), (76, 10054), (86, 10093),

Gene: Johann\_13 Start: 10579, Stop: 11061, Start Num: 17

Candidate Starts for Johann\_13:

(Start: 17 @10579 has 28 MA's), (31, 10645), (32, 10651), (42, 10717), (65, 10894), (80, 10996), (86, 11014),

Gene: Labella\_14 Start: 10549, Stop: 11028, Start Num: 17

Candidate Starts for Labella\_14:

(6, 10333), (7, 10369), (Start: 17 @10549 has 28 MA's), (43, 10696), (65, 10861), (67, 10873),

Gene: Linayshia\_12 Start: 10577, Stop: 11056, Start Num: 17

Candidate Starts for Linayshia\_12:

(7, 10397), (15, 10562), (Start: 17 @10577 has 28 MA's), (31, 10643), (43, 10724), (65, 10889), (67, 10901), (76, 10970), (86, 11009),

Gene: Losacky\_16 Start: 8634, Stop: 9128, Start Num: 17

Candidate Starts for Losacky\_16:

(Start: 17 @8634 has 28 MA's), (32, 8721), (40, 8763), (45, 8811), (46, 8829), (48, 8841), (50, 8856), (63, 8928), (65, 8958), (76, 9036), (82, 9069), (88, 9093), (91, 9111),

Gene: Mariel\_18 Start: 8665, Stop: 9159, Start Num: 17

Candidate Starts for Mariel\_18:

(Start: 17 @8665 has 28 MA's), (32, 8752), (40, 8794), (45, 8842), (46, 8860), (48, 8872), (50, 8887), (63, 8959), (65, 8989), (76, 9067), (82, 9100), (88, 9124), (91, 9142),

Gene: MenE\_15 Start: 8622, Stop: 9116, Start Num: 17

Candidate Starts for MenE\_15:

(Start: 17 @8622 has 28 MA's), (32, 8709), (40, 8751), (45, 8799), (46, 8817), (48, 8829), (50, 8844), (63, 8916), (65, 8946), (76, 9024), (82, 9057), (88, 9081), (91, 9099),

Gene: MicyPS\_8 Start: 7128, Stop: 7565, Start Num: 14

Candidate Starts for MicyPS\_8:

(13, 7125), (Start: 14 @7128 has 2 MA's), (65, 7449),

Gene: Milani\_13 Start: 9257, Stop: 9739, Start Num: 17

Candidate Starts for Milani\_13:

(Start: 17 @9257 has 28 MA's), (65, 9569), (67, 9581), (76, 9650), (84, 9686), (86, 9689),

Gene: ModicumRichard\_9 Start: 7322, Stop: 7741, Start Num: 22

Candidate Starts for ModicumRichard\_9:

(Start: 22 @7322 has 5 MA's), (25, 7331), (28, 7352), (45, 7472), (49, 7514), (52, 7529), (59, 7568), (65, 7619), (67, 7631), (72, 7664), (75, 7688), (84, 7727),

Gene: Morgana\_9 Start: 7326, Stop: 7745, Start Num: 22

Candidate Starts for Morgana\_9:

(Start: 22 @7326 has 5 MA's), (25, 7335), (28, 7356), (45, 7476), (49, 7518), (59, 7572), (65, 7623), (67, 7635), (72, 7668), (84, 7731),

Gene: NCRodriguez\_16 Start: 8623, Stop: 9117, Start Num: 17

Candidate Starts for NCRodriguez\_16:

(Start: 17 @8623 has 28 MA's), (32, 8710), (45, 8800), (46, 8818), (48, 8830), (50, 8845), (63, 8917), (65, 8947), (76, 9025), (82, 9058), (88, 9082), (91, 9100),

Gene: ObLaDi\_9 Start: 7322, Stop: 7741, Start Num: 22

Candidate Starts for ObLaDi\_9:

(Start: 22 @7322 has 5 MA's), (25, 7331), (28, 7352), (45, 7472), (49, 7514), (52, 7529), (59, 7568), (65, 7619), (67, 7631), (72, 7664), (75, 7688), (84, 7727),

Gene: Olympi\_14 Start: 10570, Stop: 11052, Start Num: 17

Candidate Starts for Olympi\_14:

(Start: 17 @10570 has 28 MA's), (31, 10636), (32, 10642), (42, 10708), (65, 10885), (86, 11005),

Gene: PSonyx\_8 Start: 7275, Stop: 7712, Start Num: 14

Candidate Starts for PSonyx\_8:

(12, 7266), (Start: 14 @7275 has 2 MA's), (37, 7380), (65, 7596),

Gene: Parvaparticeps\_41 Start: 29683, Stop: 29165, Start Num: 21



Candidate Starts for Parvaparticeps\_41:

(21, 29683), (33, 29611), (35, 29602), (38, 29578), (40, 29572), (48, 29491), (75, 29293), (80, 29266), (82, 29254), (86, 29248), (89, 29218),

Gene: PermaG\_13 Start: 10645, Stop: 11124, Start Num: 17

Candidate Starts for PermaG\_13:

(1, 10093), (2, 10099), (3, 10108), (4, 10111), (5, 10147), (7, 10465), (15, 10630), (Start: 17 @10645 has 28 MA's), (42, 10783), (43, 10792), (59, 10906), (65, 10957), (76, 11038), (86, 11077), (92, 11119),

Gene: PhillyJawn\_15 Start: 8354, Stop: 8848, Start Num: 17

Candidate Starts for PhillyJawn\_15:

(Start: 17 @8354 has 28 MA's), (32, 8441), (40, 8483), (45, 8531), (46, 8549), (48, 8561), (50, 8576), (63, 8648), (65, 8678), (76, 8756), (82, 8789), (88, 8813), (91, 8831),

Gene: Phingu\_17 Start: 8513, Stop: 9007, Start Num: 17

Candidate Starts for Phingu\_17:

(Start: 17 @8513 has 28 MA's), (32, 8600), (40, 8642), (45, 8690), (46, 8708), (48, 8720), (50, 8735), (63, 8807), (65, 8837), (76, 8915), (82, 8948), (88, 8972), (91, 8990),

Gene: Phoningi\_14 Start: 8348, Stop: 8848, Start Num: 17

Candidate Starts for Phoningi\_14:

(Start: 17 @8348 has 28 MA's), (30, 8408), (42, 8501), (45, 8525), (50, 8570), (63, 8642), (76, 8756), (82, 8789), (91, 8831),

Gene: Pickles13\_14 Start: 8518, Stop: 9012, Start Num: 17

Candidate Starts for Pickles13\_14:

(Start: 17 @8518 has 28 MA's), (29, 8572), (30, 8578), (42, 8671), (50, 8740), (75, 8920), (76, 8926), (82, 8959), (88, 8980), (91, 8998),

Gene: REQ3\_42 Start: 23499, Stop: 23909, Start Num: 23

Candidate Starts for REQ3\_42:

(8, 23352), (Start: 23 @23499 has 2 MA's), (30, 23538), (42, 23619), (63, 23760), (83, 23898),

Gene: Rasovi\_12 Start: 10585, Stop: 11064, Start Num: 17

Candidate Starts for Rasovi\_12:

(7, 10405), (15, 10570), (Start: 17 @10585 has 28 MA's), (31, 10651), (43, 10732), (65, 10897), (67, 10909), (76, 10978), (86, 11017),

Gene: Rootkit7\_12 Start: 10414, Stop: 10893, Start Num: 17

Candidate Starts for Rootkit7\_12:

(Start: 17 @10414 has 28 MA's), (43, 10561), (65, 10726), (67, 10738), (76, 10807), (86, 10846),

Gene: SBlackberry\_12 Start: 10420, Stop: 10899, Start Num: 17

Candidate Starts for SBlackberry\_12:

(Start: 17 @10420 has 28 MA's), (43, 10567), (65, 10732), (67, 10744), (76, 10813), (86, 10852),

Gene: ScoobySnack\_13 Start: 8223, Stop: 8717, Start Num: 17

Candidate Starts for ScoobySnack\_13:

(Start: 17 @8223 has 28 MA's), (29, 8277), (44, 8391), (45, 8400), (46, 8418), (48, 8430), (63, 8517), (76, 8625), (82, 8658), (88, 8682), (91, 8700),

Gene: Taotie\_8 Start: 8172, Stop: 8609, Start Num: 14

Candidate Starts for Taotie\_8:

(12, 8163), (Start: 14 @8172 has 2 MA's), (37, 8277), (65, 8493),

Gene: TinyDot\_10 Start: 7216, Stop: 7635, Start Num: 20

Candidate Starts for TinyDot\_10:

(Start: 20 @7216 has 1 MA's), (36, 7294), (48, 7396), (51, 7414), (64, 7492), (71, 7558),

Gene: TurboVicky\_12 Start: 10414, Stop: 10893, Start Num: 17

Candidate Starts for TurboVicky\_12:

(Start: 17 @10414 has 28 MA's), (43, 10561), (65, 10726), (67, 10738), (76, 10807), (86, 10846),

Gene: Typher\_14 Start: 10548, Stop: 11027, Start Num: 17

Candidate Starts for Typher\_14:

(6, 10332), (7, 10368), (Start: 17 @10548 has 28 MA's), (43, 10695), (65, 10860), (67, 10872),

Gene: VanLee\_10 Start: 7200, Stop: 7619, Start Num: 23

Candidate Starts for VanLee\_10:

(Start: 23 @7200 has 2 MA's), (25, 7206), (41, 7314), (47, 7365), (49, 7386), (59, 7440), (65, 7491), (74, 7554),

Gene: Violeta\_16 Start: 8452, Stop: 8946, Start Num: 17

Candidate Starts for Violeta\_16:

(Start: 17 @8452 has 28 MA's), (32, 8539), (40, 8581), (45, 8629), (46, 8647), (48, 8659), (50, 8674), (63, 8746), (65, 8776), (76, 8854), (82, 8887), (88, 8911), (91, 8929),

Gene: Warren\_15 Start: 8551, Stop: 9045, Start Num: 17

Candidate Starts for Warren\_15:

(Start: 17 @8551 has 28 MA's), (32, 8638), (40, 8680), (45, 8728), (46, 8746), (48, 8758), (50, 8773), (63, 8845), (65, 8875), (76, 8953), (82, 8986), (88, 9010), (91, 9028),

Gene: Winchester007\_30 Start: 14471, Stop: 14965, Start Num: 17

Candidate Starts for Winchester007\_30:

(Start: 17 @14471 has 28 MA's), (32, 14558), (40, 14600), (45, 14648), (46, 14666), (48, 14678), (50, 14693), (63, 14765), (65, 14795), (76, 14873), (82, 14906), (88, 14930), (91, 14948),

Gene: Wrackline\_19 Start: 9814, Stop: 10284, Start Num: 26

Candidate Starts for Wrackline\_19:

(9, 9655), (Start: 26 @9814 has 1 MA's), (45, 9955), (50, 9997), (51, 10000), (54, 10018), (57, 10030), (62, 10069), (68, 10120), (70, 10144), (73, 10159), (81, 10213), (87, 10231), (90, 10264),

Gene: Zanella\_12 Start: 10417, Stop: 10896, Start Num: 17

Candidate Starts for Zanella\_12:

(Start: 17 @10417 has 28 MA's), (43, 10564), (65, 10729), (67, 10741), (76, 10810), (86, 10849),