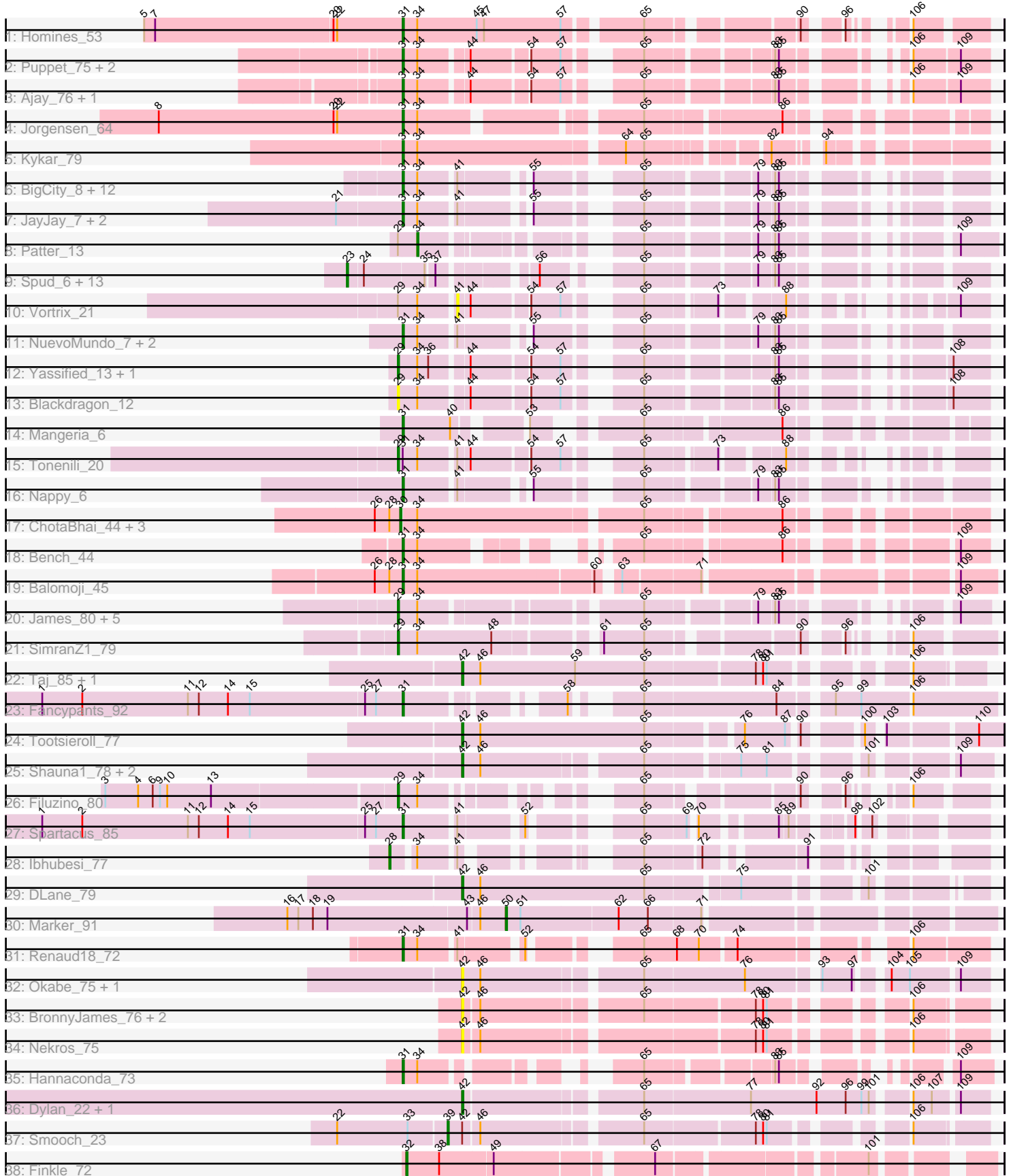


Pham 304925



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 304925 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304925 has 86 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Homines\_53
- Track 2 : Puppet\_75, Eyeball\_79, KSSJEB\_78
- Track 3 : Ajay\_76, Teodoridan\_77
- Track 4 : Jorgensen\_64
- Track 5 : Kykar\_79
- Track 6 : BigCity\_8, Drazdys\_8, PharkleMinkus\_8, EggyFarm\_8, Grasshills\_8, LordLeafolot\_8, InterFolia\_8, Tyke\_8, Specks\_8, LolaVinca\_8, DTDevon\_8, FrayBell\_8, Dandelion\_7
- Track 7 : JayJay\_7, Sebata\_7, LinStu\_7
- Track 8 : Patter\_13
- Track 9 : Spud\_6, ScottMcG\_5, Nidhogg\_5, Jezreel\_6, DirtMonster\_6, Pio\_6, Sauce\_5, Mikro\_6, MoMoMixon\_5, Astraea\_6, Bxz1\_6, QBert\_6, JulietS\_6, NoodleTree\_6
- Track 10 : Vortrix\_21
- Track 11 : NuevoMundo\_7, StephanieG\_7, Pier\_7
- Track 12 : Yassified\_13, Duckfeet\_14
- Track 13 : Blackdragon\_12
- Track 14 : Mangeria\_6
- Track 15 : Tonenili\_20
- Track 16 : Nappy\_6
- Track 17 : ChotaBhai\_44, DoctorDiddles\_44, Pat3\_42, BaboJay\_42
- Track 18 : Bench\_44
- Track 19 : Balomoji\_45
- Track 20 : James\_80, OlympiaSaint\_79, Jarcob\_79, Clifton\_72, Philus\_82, DRBy19\_83
- Track 21 : SimranZ1\_79
- Track 22 : Taj\_85, Wee\_84
- Track 23 : Fancypants\_92
- Track 24 : Tootsieroll\_77
- Track 25 : Shauna1\_78, Kingsley\_82, Phanphagia\_77
- Track 26 : Filuzino\_80
- Track 27 : Spartacus\_85
- Track 28 : Ibhubesi\_77
- Track 29 : DLane\_79
- Track 30 : Marker\_91
- Track 31 : Renaud18\_72
- Track 32 : Okabe\_75, Mwanjiwa\_82

- Track 33 : BronnyJames\_76, Nibley\_69, Shaboozey\_75
- Track 34 : Nekros\_75
- Track 35 : Hannaconda\_73
- Track 36 : Dylan\_22, Zakhe101\_23
- Track 37 : Smooch\_23
- Track 38 : Finkle\_72

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

The start number called the most often in the published annotations is 31, it was called in 29 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ajay\_76, Balomoji\_45, Bench\_44, BigCity\_8, DTDevon\_8, Dandelion\_7, Drazdys\_8, EggyFarm\_8, Eyeball\_79, Fancypants\_92, FrayBell\_8, Grasshills\_8, Hannaconda\_73, Homines\_53, InterFolia\_8, JayJay\_7, Jorgensen\_64, KSSJEB\_78, Kykar\_79, LinStu\_7, LolaVinca\_8, LordLeafolot\_8, Mangeria\_6, Nappy\_6, NuevoMundo\_7, PharkleMinkus\_8, Pier\_7, Puppet\_75, Renaud18\_72, Sebata\_7, Spartacus\_85, Specks\_8, StephanieG\_7, Teodoridan\_77, Tyke\_8,

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

- Tonenili\_20,

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

- Astraea\_6, BaboJay\_42, Blackdragon\_12, BronnyJames\_76, Bxz1\_6, ChotaBhai\_44, Clifton\_72, DLane\_79, DRBy19\_83, DirtMonster\_6, DoctorDiddles\_44, Duckfeet\_14, Dylan\_22, Filuzino\_80, Finkle\_72, Ihubesi\_77, James\_80, Jarcob\_79, Jezreel\_6, JulietS\_6, Kingsley\_82, Marker\_91, Mikro\_6, MoMoMixon\_5, Mwanjiwa\_82, Nekros\_75, Nibley\_69, Nidhogg\_5, NoodleTree\_6, Okabe\_75, OlympiaSaint\_79, Pat3\_42, Patter\_13, Phanphagia\_77, Philus\_82, Pio\_6, QBert\_6, Sauce\_5, ScottMcG\_5, Shaboozey\_75, Shauna1\_78, SimranZ1\_79, Smooch\_23, Spud\_6, Taj\_85, Tootsieroll\_77, Vortrix\_21, Wee\_84, Yassified\_13, Zakhe101\_23,

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

Start 23:

- Found in 14 of 86 ( 16.3% ) of genes in pham
- Manual Annotations of this start: 14 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Astraea\_6 (C1), Bxz1\_6 (C1), DirtMonster\_6 (C1), Jezreel\_6 (C1), JulietS\_6 (C1), Mikro\_6 (C1), MoMoMixon\_5 (C1), Nidhogg\_5 (C1), NoodleTree\_6 (C1), Pio\_6 (C1), QBert\_6 (C1), Sauce\_5 (C1), ScottMcG\_5 (C1), Spud\_6 (C1),

Start 28:

- Found in 6 of 86 ( 7.0% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Ihubesi\_77 (F1),

Start 29:

- Found in 14 of 86 ( 16.3% ) of genes in pham
- Manual Annotations of this start: 10 of 71
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Blackdragon\_12 (C1), Clifton\_72 (F1), DRBy19\_83 (F1), Duckfeet\_14 (C1), Filuzino\_80 (F1), James\_80 (F1), Jarcob\_79 (F1), OlympiaSaint\_79 (F1), Philus\_82 (F1), SimranZ1\_79 (F1), Tonenili\_20 (C1), Yassified\_13 (C1),

Start 30:

- Found in 4 of 86 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 4 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BaboJay\_42 (E), ChotaBhai\_44 (E), DoctorDiddles\_44 (E), Pat3\_42 (E),

Start 31:

- Found in 36 of 86 ( 41.9% ) of genes in pham
- Manual Annotations of this start: 29 of 71
- Called 97.2% of time when present
- Phage (with cluster) where this start called: Ajay\_76 (A1), Balomoji\_45 (E), Bench\_44 (E), BigCity\_8 (C1), DTDevon\_8 (C1), Dandelion\_7 (C1), Drazdys\_8 (C1), EggFarm\_8 (C1), Eyeball\_79 (A1), Fancypants\_92 (F1), FrayBell\_8 (C1), Grasshills\_8 (C1), Hannaconda\_73 (J), Homines\_53 (A1), InterFolia\_8 (C1), JayJay\_7 (C1), Jorgensen\_64 (A1), KSSJEB\_78 (A1), Kykar\_79 (A1), LinStu\_7 (C1), LolaVinca\_8 (C1), LordLeafolot\_8 (C1), Mangeria\_6 (C1), Nappy\_6 (C1), NuevoMundo\_7 (C1), PharkleMinkus\_8 (C1), Pier\_7 (C1), Puppet\_75 (A1), Renaud18\_72 (F4), Sebata\_7 (C1), Spartacus\_85 (F1), Specks\_8 (C1), StephanieG\_7 (C1), Teodoridan\_77 (A1), Tyke\_8 (C1),

Start 32:

- Found in 1 of 86 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finkle\_72 (singleton),

Start 34:

- Found in 50 of 86 ( 58.1% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 2.0% of time when present
- Phage (with cluster) where this start called: Patter\_13 (C1),

Start 39:

- Found in 1 of 86 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Smooch\_23 (O),

Start 41:

- Found in 25 of 86 ( 29.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.0% of time when present

- Phage (with cluster) where this start called: Vortrix\_21 (C1),

Start 42:

- Found in 16 of 86 ( 18.6% ) of genes in pham
- Manual Annotations of this start: 9 of 71
- Called 93.8% of time when present
- Phage (with cluster) where this start called: BronnyJames\_76 (J), DLane\_79 (F1), Dylan\_22 (O), Kingsley\_82 (F1), Mwanjiwa\_82 (F1), Nekros\_75 (J), Nibley\_69 (J), Okabe\_75 (F8), Phanphagia\_77 (F1), Shaboozey\_75 (J), Shauna1\_78 (F1), Taj\_85 (F1), Tootsieroll\_77 (F1), Wee\_84 (F1), Zakhe101\_23 (O),

Start 50:

- Found in 1 of 86 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marker\_91 (F1),

### **Summary by clusters:**

There are 9 clusters represented in this pham: F1, singleton, E, F8, J, O, A1, F4, C1,

Info for manual annotations of cluster A1:

- Start number 31 was manually annotated 6 times for cluster A1.

Info for manual annotations of cluster C1:

- Start number 23 was manually annotated 14 times for cluster C1.
- Start number 29 was manually annotated 2 times for cluster C1.
- Start number 31 was manually annotated 17 times for cluster C1.
- Start number 34 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster E:

- Start number 30 was manually annotated 4 times for cluster E.
- Start number 31 was manually annotated 2 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 28 was manually annotated 1 time for cluster F1.
- Start number 29 was manually annotated 8 times for cluster F1.
- Start number 31 was manually annotated 2 times for cluster F1.
- Start number 42 was manually annotated 7 times for cluster F1.
- Start number 50 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F4:

- Start number 31 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster J:

- Start number 31 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster O:

- Start number 39 was manually annotated 1 time for cluster O.
- Start number 42 was manually annotated 2 times for cluster O.

### **Gene Information:**

Gene: Ajay\_76 Start: 46873, Stop: 46502, Start Num: 31

Candidate Starts for Ajay\_76:

(Start: 31 @46873 has 29 MA's), (Start: 34 @46861 has 1 MA's), (44, 46825), (54, 46783), (57, 46759), (65, 46717), (83, 46627), (85, 46624), (106, 46561), (109, 46525),

Gene: Astraea\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for Astraea\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: BaboJay\_42 Start: 35493, Stop: 35068, Start Num: 30

Candidate Starts for BaboJay\_42:

(26, 35514), (Start: 28 @35502 has 1 MA's), (Start: 30 @35493 has 4 MA's), (Start: 34 @35481 has 1 MA's), (65, 35307), (86, 35205),

Gene: Balomoji\_45 Start: 36485, Stop: 36057, Start Num: 31

Candidate Starts for Balomoji\_45:

(26, 36506), (Start: 28 @36494 has 1 MA's), (Start: 31 @36485 has 29 MA's), (Start: 34 @36473 has 1 MA's), (60, 36335), (63, 36323), (71, 36263), (109, 36086),

Gene: Bench\_44 Start: 35114, Stop: 34752, Start Num: 31

Candidate Starts for Bench\_44:

(Start: 31 @35114 has 29 MA's), (Start: 34 @35102 has 1 MA's), (65, 34982), (86, 34880), (109, 34775),

Gene: BigCity\_8 Start: 2903, Stop: 3259, Start Num: 31

Candidate Starts for BigCity\_8:

(Start: 31 @2903 has 29 MA's), (Start: 34 @2915 has 1 MA's), (41, 2942), (55, 2987), (65, 3050), (79, 3128), (83, 3140), (85, 3143),

Gene: Blackdragon\_12 Start: 4007, Stop: 4381, Start Num: 29

Candidate Starts for Blackdragon\_12:

(Start: 29 @4007 has 10 MA's), (Start: 34 @4022 has 1 MA's), (44, 4058), (54, 4100), (57, 4124), (65, 4166), (83, 4256), (85, 4259), (108, 4352),

Gene: BronnyJames\_76 Start: 47637, Stop: 47275, Start Num: 42

Candidate Starts for BronnyJames\_76:

(Start: 42 @47637 has 9 MA's), (46, 47625), (65, 47505), (78, 47421), (80, 47415), (81, 47412), (106, 47328),

Gene: Bxz1\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for Bxz1\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: ChotaBhai\_44 Start: 35156, Stop: 34737, Start Num: 30

Candidate Starts for ChotaBhai\_44:

(26, 35177), (Start: 28 @35165 has 1 MA's), (Start: 30 @35156 has 4 MA's), (Start: 34 @35144 has 1 MA's), (65, 34970), (86, 34868),

Gene: Clifton\_72 Start: 46816, Stop: 47196, Start Num: 29

Candidate Starts for Clifton\_72:

(Start: 29 @46816 has 10 MA's), (Start: 34 @46831 has 1 MA's), (65, 46987), (79, 47065), (83, 47077), (85, 47080), (109, 47173),

Gene: DLane\_79 Start: 49141, Stop: 49515, Start Num: 42

Candidate Starts for DLane\_79:

(Start: 42 @49141 has 9 MA's), (46, 49156), (65, 49291), (75, 49360), (101, 49441),

Gene: DRBy19\_83 Start: 50545, Stop: 50925, Start Num: 29

Candidate Starts for DRBy19\_83:

(Start: 29 @50545 has 10 MA's), (Start: 34 @50560 has 1 MA's), (65, 50716), (79, 50794), (83, 50806), (85, 50809), (109, 50902),

Gene: DTDevon\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for DTDevon\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: Dandelion\_7 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for Dandelion\_7:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: DirtMonster\_6 Start: 2758, Stop: 3150, Start Num: 23

Candidate Starts for DirtMonster\_6:

(Start: 23 @2758 has 14 MA's), (24, 2770), (35, 2818), (37, 2824), (56, 2887), (65, 2941), (79, 3019), (83, 3031), (85, 3034),

Gene: DoctorDiddles\_44 Start: 35192, Stop: 34773, Start Num: 30

Candidate Starts for DoctorDiddles\_44:

(26, 35213), (Start: 28 @35201 has 1 MA's), (Start: 30 @35192 has 4 MA's), (Start: 34 @35180 has 1 MA's), (65, 35006), (86, 34904),

Gene: Drazdys\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for Drazdys\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: Duckfeet\_14 Start: 4700, Stop: 5074, Start Num: 29

Candidate Starts for Duckfeet\_14:

(Start: 29 @4700 has 10 MA's), (Start: 34 @4715 has 1 MA's), (36, 4724), (44, 4751), (54, 4793), (57, 4817), (65, 4859), (83, 4949), (85, 4952), (108, 5045),

Gene: Dylan\_22 Start: 10677, Stop: 11069, Start Num: 42

Candidate Starts for Dylan\_22:

(Start: 42 @10677 has 9 MA's), (65, 10809), (77, 10893), (92, 10947), (96, 10971), (99, 10983), (101, 10989), (106, 11013), (107, 11028), (109, 11046),

Gene: EggyFarm\_8 Start: 2903, Stop: 3259, Start Num: 31

Candidate Starts for EggyFarm\_8:

(Start: 31 @2903 has 29 MA's), (Start: 34 @2915 has 1 MA's), (41, 2942), (55, 2987), (65, 3050), (79, 3128), (83, 3140), (85, 3143),

Gene: Eyeball\_79 Start: 47899, Stop: 47528, Start Num: 31

Candidate Starts for Eyeball\_79:

(Start: 31 @47899 has 29 MA's), (Start: 34 @47887 has 1 MA's), (44, 47851), (54, 47809), (57, 47785), (65, 47743), (83, 47653), (85, 47650), (106, 47587), (109, 47551),

Gene: Fancypants\_92 Start: 52024, Stop: 52425, Start Num: 31

Candidate Starts for Fancypants\_92:

(1, 51730), (2, 51763), (11, 51850), (12, 51859), (14, 51883), (15, 51901), (25, 51994), (27, 52003), (Start: 31 @52024 has 29 MA's), (58, 52123), (65, 52156), (84, 52261), (95, 52297), (99, 52318), (106, 52357),

Gene: Filuzino\_80 Start: 50124, Stop: 50459, Start Num: 29

Candidate Starts for Filuzino\_80:

(3, 49893), (4, 49920), (6, 49932), (9, 49938), (10, 49944), (13, 49980), (Start: 29 @50124 has 10 MA's), (Start: 34 @50139 has 1 MA's), (65, 50259), (90, 50361), (96, 50382), (106, 50406),

Gene: Finkle\_72 Start: 43792, Stop: 44199, Start Num: 32

Candidate Starts for Finkle\_72:

(Start: 32 @43792 has 1 MA's), (38, 43819), (49, 43861), (67, 43975), (101, 44122),

Gene: FrayBell\_8 Start: 2465, Stop: 2821, Start Num: 31

Candidate Starts for FrayBell\_8:

(Start: 31 @2465 has 29 MA's), (Start: 34 @2477 has 1 MA's), (41, 2504), (55, 2549), (65, 2612), (79, 2690), (83, 2702), (85, 2705),

Gene: Grasshills\_8 Start: 2903, Stop: 3259, Start Num: 31

Candidate Starts for Grasshills\_8:

(Start: 31 @2903 has 29 MA's), (Start: 34 @2915 has 1 MA's), (41, 2942), (55, 2987), (65, 3050), (79, 3128), (83, 3140), (85, 3143),

Gene: Hannaconda\_73 Start: 46951, Stop: 46607, Start Num: 31

Candidate Starts for Hannaconda\_73:

(Start: 31 @46951 has 29 MA's), (Start: 34 @46939 has 1 MA's), (65, 46819), (83, 46729), (85, 46726), (109, 46633),

Gene: Homines\_53 Start: 37028, Stop: 36645, Start Num: 31

Candidate Starts for Homines\_53:

(5, 37238), (7, 37229), (20, 37085), (22, 37082), (Start: 31 @37028 has 29 MA's), (Start: 34 @37016 has 1 MA's), (45, 36968), (47, 36962), (57, 36899), (65, 36845), (90, 36743), (96, 36722), (106, 36698),

Gene: Ibhubesi\_77 Start: 46004, Stop: 46342, Start Num: 28

Candidate Starts for Ibhubesi\_77:

(Start: 28 @46004 has 1 MA's), (Start: 34 @46019 has 1 MA's), (41, 46046), (65, 46139), (72, 46181), (91, 46247),

Gene: InterFolia\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for InterFolia\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: James\_80 Start: 49880, Stop: 50260, Start Num: 29

Candidate Starts for James\_80:

(Start: 29 @49880 has 10 MA's), (Start: 34 @49895 has 1 MA's), (65, 50051), (79, 50129), (83, 50141), (85, 50144), (109, 50237),

Gene: Jarcob\_79 Start: 49477, Stop: 49857, Start Num: 29

Candidate Starts for Jarcob\_79:

(Start: 29 @49477 has 10 MA's), (Start: 34 @49492 has 1 MA's), (65, 49648), (79, 49726), (83, 49738), (85, 49741), (109, 49834),

Gene: JayJay\_7 Start: 1993, Stop: 2349, Start Num: 31

Candidate Starts for JayJay\_7:

(21, 1942), (Start: 31 @1993 has 29 MA's), (Start: 34 @2005 has 1 MA's), (41, 2032), (55, 2077), (65, 2140), (79, 2218), (83, 2230), (85, 2233),

Gene: Jezreel\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for Jezreel\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: Jorgensen\_64 Start: 41112, Stop: 40717, Start Num: 31

Candidate Starts for Jorgensen\_64:

(8, 41313), (20, 41169), (22, 41166), (Start: 31 @41112 has 29 MA's), (Start: 34 @41100 has 1 MA's), (65, 40944), (86, 40842),

Gene: JulietS\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for JulietS\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: KSSJEB\_78 Start: 46842, Stop: 46471, Start Num: 31

Candidate Starts for KSSJEB\_78:

(Start: 31 @46842 has 29 MA's), (Start: 34 @46830 has 1 MA's), (44, 46794), (54, 46752), (57, 46728), (65, 46686), (83, 46596), (85, 46593), (106, 46530), (109, 46494),

Gene: Kingsley\_82 Start: 50469, Stop: 50837, Start Num: 42

Candidate Starts for Kingsley\_82:

(Start: 42 @50469 has 9 MA's), (46, 50484), (65, 50604), (75, 50673), (81, 50694), (101, 50754), (109, 50811),

Gene: Kykar\_79 Start: 47679, Stop: 47278, Start Num: 31

Candidate Starts for Kykar\_79:

(Start: 31 @47679 has 29 MA's), (Start: 34 @47667 has 1 MA's), (64, 47508), (65, 47493), (82, 47412), (94, 47385),

Gene: LinStu\_7 Start: 2992, Stop: 3348, Start Num: 31

Candidate Starts for LinStu\_7:

(21, 2941), (Start: 31 @2992 has 29 MA's), (Start: 34 @3004 has 1 MA's), (41, 3031), (55, 3076), (65, 3139), (79, 3217), (83, 3229), (85, 3232),

Gene: LolaVinca\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for LolaVinca\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: LordLeafolot\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for LordLeafolot\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: Mangeria\_6 Start: 1759, Stop: 2133, Start Num: 31

Candidate Starts for Mangeria\_6:

(Start: 31 @1759 has 29 MA's), (40, 1798), (53, 1843), (65, 1906), (86, 2008),

Gene: Marker\_91 Start: 50605, Stop: 50967, Start Num: 50

Candidate Starts for Marker\_91:

(16, 50431), (17, 50440), (18, 50452), (19, 50464), (43, 50575), (46, 50584), (Start: 50 @50605 has 1 MA's), (51, 50617), (62, 50695), (66, 50719), (71, 50761),

Gene: Mikro\_6 Start: 2758, Stop: 3150, Start Num: 23

Candidate Starts for Mikro\_6:

(Start: 23 @2758 has 14 MA's), (24, 2770), (35, 2818), (37, 2824), (56, 2887), (65, 2941), (79, 3019), (83, 3031), (85, 3034),

Gene: MoMoMixon\_5 Start: 1605, Stop: 1997, Start Num: 23

Candidate Starts for MoMoMixon\_5:

(Start: 23 @1605 has 14 MA's), (24, 1617), (35, 1665), (37, 1671), (56, 1734), (65, 1788), (79, 1866), (83, 1878), (85, 1881),

Gene: Mwanjiwa\_82 Start: 49238, Stop: 49618, Start Num: 42

Candidate Starts for Mwanjiwa\_82:

(Start: 42 @49238 has 9 MA's), (46, 49253), (65, 49373), (76, 49451), (93, 49502), (97, 49526), (104, 49544), (105, 49559), (109, 49595),

Gene: Nappy\_6 Start: 1987, Stop: 2343, Start Num: 31

Candidate Starts for Nappy\_6:

(Start: 31 @1987 has 29 MA's), (41, 2026), (55, 2071), (65, 2134), (79, 2212), (83, 2224), (85, 2227),

Gene: Nekros\_75 Start: 49878, Stop: 49516, Start Num: 42

Candidate Starts for Nekros\_75:

(Start: 42 @49878 has 9 MA's), (46, 49866), (78, 49662), (80, 49656), (81, 49653), (106, 49569),

Gene: Nibley\_69 Start: 46726, Stop: 46364, Start Num: 42

Candidate Starts for Nibley\_69:

(Start: 42 @46726 has 9 MA's), (46, 46714), (65, 46594), (78, 46510), (80, 46504), (81, 46501), (106, 46417),

Gene: Nidhogg\_5 Start: 1605, Stop: 1997, Start Num: 23

Candidate Starts for Nidhogg\_5:

(Start: 23 @1605 has 14 MA's), (24, 1617), (35, 1665), (37, 1671), (56, 1734), (65, 1788), (79, 1866), (83, 1878), (85, 1881),

Gene: NoodleTree\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for NoodleTree\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: NuevoMundo\_7 Start: 2137, Stop: 2493, Start Num: 31

Candidate Starts for NuevoMundo\_7:

(Start: 31 @2137 has 29 MA's), (Start: 34 @2149 has 1 MA's), (41, 2176), (55, 2221), (65, 2284), (79, 2362), (83, 2374), (85, 2377),

Gene: Okabe\_75 Start: 45236, Stop: 45616, Start Num: 42

Candidate Starts for Okabe\_75:

(Start: 42 @45236 has 9 MA's), (46, 45251), (65, 45371), (76, 45449), (93, 45500), (97, 45524), (104, 45542), (105, 45557), (109, 45593),

Gene: OlympiaSaint\_79 Start: 48822, Stop: 49202, Start Num: 29

Candidate Starts for OlympiaSaint\_79:

(Start: 29 @48822 has 10 MA's), (Start: 34 @48837 has 1 MA's), (65, 48993), (79, 49071), (83, 49083), (85, 49086), (109, 49179),

Gene: Pat3\_42 Start: 34357, Stop: 33938, Start Num: 30

Candidate Starts for Pat3\_42:

(26, 34378), (Start: 28 @34366 has 1 MA's), (Start: 30 @34357 has 4 MA's), (Start: 34 @34345 has 1 MA's), (65, 34171), (86, 34069),

Gene: Patter\_13 Start: 4002, Stop: 4352, Start Num: 34

Candidate Starts for Patter\_13:

(Start: 29 @3987 has 10 MA's), (Start: 34 @4002 has 1 MA's), (65, 4137), (79, 4215), (83, 4227), (85, 4230), (109, 4323),

Gene: Phanphagia\_77 Start: 48265, Stop: 48633, Start Num: 42

Candidate Starts for Phanphagia\_77:

(Start: 42 @48265 has 9 MA's), (46, 48280), (65, 48400), (75, 48469), (81, 48490), (101, 48550), (109, 48607),

Gene: PharkleMinkus\_8 Start: 2465, Stop: 2821, Start Num: 31

Candidate Starts for PharkleMinkus\_8:

(Start: 31 @2465 has 29 MA's), (Start: 34 @2477 has 1 MA's), (41, 2504), (55, 2549), (65, 2612), (79, 2690), (83, 2702), (85, 2705),

Gene: Philus\_82 Start: 50521, Stop: 50901, Start Num: 29

Candidate Starts for Philus\_82:

(Start: 29 @50521 has 10 MA's), (Start: 34 @50536 has 1 MA's), (65, 50692), (79, 50770), (83, 50782), (85, 50785), (109, 50878),

Gene: Pier\_7 Start: 2140, Stop: 2496, Start Num: 31

Candidate Starts for Pier\_7:

(Start: 31 @2140 has 29 MA's), (Start: 34 @2152 has 1 MA's), (41, 2179), (55, 2224), (65, 2287), (79, 2365), (83, 2377), (85, 2380),

Gene: Pio\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for Pio\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: Puppet\_75 Start: 48323, Stop: 47952, Start Num: 31

Candidate Starts for Puppet\_75:

(Start: 31 @48323 has 29 MA's), (Start: 34 @48311 has 1 MA's), (44, 48275), (54, 48233), (57, 48209), (65, 48167), (83, 48077), (85, 48074), (106, 48011), (109, 47975),

Gene: QBert\_6 Start: 2762, Stop: 3154, Start Num: 23

Candidate Starts for QBert\_6:

(Start: 23 @2762 has 14 MA's), (24, 2774), (35, 2822), (37, 2828), (56, 2891), (65, 2945), (79, 3023), (83, 3035), (85, 3038),

Gene: Renaud18\_72 Start: 42500, Stop: 42886, Start Num: 31

Candidate Starts for Renaud18\_72:

(Start: 31 @42500 has 29 MA's), (Start: 34 @42512 has 1 MA's), (41, 42539), (52, 42584), (65, 42647), (68, 42674), (70, 42692), (74, 42719), (106, 42827),

Gene: Sauce\_5 Start: 1609, Stop: 2001, Start Num: 23

Candidate Starts for Sauce\_5:

(Start: 23 @1609 has 14 MA's), (24, 1621), (35, 1669), (37, 1675), (56, 1738), (65, 1792), (79, 1870), (83, 1882), (85, 1885),

Gene: ScottMcG\_5 Start: 1605, Stop: 1997, Start Num: 23

Candidate Starts for ScottMcG\_5:

(Start: 23 @1605 has 14 MA's), (24, 1617), (35, 1665), (37, 1671), (56, 1734), (65, 1788), (79, 1866), (83, 1878), (85, 1881),

Gene: Sebata\_7 Start: 2992, Stop: 3348, Start Num: 31

Candidate Starts for Sebata\_7:

(21, 2941), (Start: 31 @2992 has 29 MA's), (Start: 34 @3004 has 1 MA's), (41, 3031), (55, 3076), (65, 3139), (79, 3217), (83, 3229), (85, 3232),

Gene: Shaboozey\_75 Start: 47658, Stop: 47296, Start Num: 42

Candidate Starts for Shaboozey\_75:

(Start: 42 @47658 has 9 MA's), (46, 47646), (65, 47526), (78, 47442), (80, 47436), (81, 47433), (106, 47349),

Gene: Shauna1\_78 Start: 48515, Stop: 48883, Start Num: 42

Candidate Starts for Shauna1\_78:

(Start: 42 @48515 has 9 MA's), (46, 48530), (65, 48650), (75, 48719), (81, 48740), (101, 48800), (109, 48857),

Gene: SimranZ1\_79 Start: 47570, Stop: 47956, Start Num: 29

Candidate Starts for SimranZ1\_79:

(Start: 29 @47570 has 10 MA's), (Start: 34 @47585 has 1 MA's), (48, 47645), (61, 47717), (65, 47750), (90, 47852), (96, 47873), (106, 47897),

Gene: Smooch\_23 Start: 10621, Stop: 10995, Start Num: 39

Candidate Starts for Smooch\_23:

(22, 10534), (33, 10591), (Start: 39 @10621 has 1 MA's), (Start: 42 @10633 has 9 MA's), (46, 10645), (65, 10765), (78, 10849), (80, 10855), (81, 10858), (106, 10942),

Gene: Spartacus\_85 Start: 51000, Stop: 51356, Start Num: 31

Candidate Starts for Spartacus\_85:

(1, 50706), (2, 50739), (11, 50826), (12, 50835), (14, 50859), (15, 50877), (25, 50970), (27, 50979), (Start: 31 @51000 has 29 MA's), (41, 51039), (52, 51084), (65, 51147), (69, 51180), (70, 51183), (85, 51234), (89, 51240), (98, 51276), (102, 51285),

Gene: Specks\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for Specks\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: Spud\_6 Start: 1759, Stop: 2151, Start Num: 23

Candidate Starts for Spud\_6:

(Start: 23 @1759 has 14 MA's), (24, 1771), (35, 1819), (37, 1825), (56, 1888), (65, 1942), (79, 2020), (83, 2032), (85, 2035),

Gene: StephanieG\_7 Start: 2140, Stop: 2496, Start Num: 31

Candidate Starts for StephanieG\_7:

(Start: 31 @2140 has 29 MA's), (Start: 34 @2152 has 1 MA's), (41, 2179), (55, 2224), (65, 2287), (79, 2365), (83, 2377), (85, 2380),

Gene: Taj\_85 Start: 49957, Stop: 50334, Start Num: 42

Candidate Starts for Taj\_85:

(Start: 42 @49957 has 9 MA's), (46, 49972), (59, 50050), (65, 50107), (78, 50191), (80, 50197), (81, 50200), (106, 50284),

Gene: Teodoridan\_77 Start: 45969, Stop: 45598, Start Num: 31

Candidate Starts for Teodoridan\_77:

(Start: 31 @45969 has 29 MA's), (Start: 34 @45957 has 1 MA's), (44, 45921), (54, 45879), (57, 45855), (65, 45813), (83, 45723), (85, 45720), (106, 45657), (109, 45621),

Gene: Tonenili\_20 Start: 6077, Stop: 6418, Start Num: 29

Candidate Starts for Tonenili\_20:

(Start: 29 @6077 has 10 MA's), (Start: 31 @6080 has 29 MA's), (Start: 34 @6092 has 1 MA's), (41, 6119), (44, 6128), (54, 6170), (57, 6194), (65, 6236), (73, 6287), (88, 6329),

Gene: Tootsieroll\_77 Start: 49368, Stop: 49754, Start Num: 42

Candidate Starts for Tootsieroll\_77:

(Start: 42 @49368 has 9 MA's), (46, 49383), (65, 49518), (76, 49584), (87, 49617), (90, 49623), (100, 49659), (103, 49668), (110, 49734),

Gene: Tyke\_8 Start: 2464, Stop: 2820, Start Num: 31

Candidate Starts for Tyke\_8:

(Start: 31 @2464 has 29 MA's), (Start: 34 @2476 has 1 MA's), (41, 2503), (55, 2548), (65, 2611), (79, 2689), (83, 2701), (85, 2704),

Gene: Vortrix\_21 Start: 6392, Stop: 6700, Start Num: 41

Candidate Starts for Vortrix\_21:

(Start: 29 @6350 has 10 MA's), (Start: 34 @6365 has 1 MA's), (41, 6392), (44, 6401), (54, 6443), (57, 6467), (65, 6509), (73, 6560), (88, 6602), (109, 6677),

Gene: Wee\_84 Start: 50033, Stop: 50410, Start Num: 42

Candidate Starts for Wee\_84:

(Start: 42 @50033 has 9 MA's), (46, 50048), (59, 50126), (65, 50183), (78, 50267), (80, 50273), (81, 50276), (106, 50360),

Gene: Yassified\_13 Start: 4163, Stop: 4537, Start Num: 29

Candidate Starts for Yassified\_13:

(Start: 29 @4163 has 10 MA's), (Start: 34 @4178 has 1 MA's), (36, 4187), (44, 4214), (54, 4256), (57, 4280), (65, 4322), (83, 4412), (85, 4415), (108, 4508),

Gene: Zakhe101\_23 Start: 10681, Stop: 11073, Start Num: 42

Candidate Starts for Zakhe101\_23:

(Start: 42 @10681 has 9 MA's), (65, 10813), (77, 10897), (92, 10951), (96, 10975), (99, 10987), (101, 10993), (106, 11017), (107, 11032), (109, 11050),