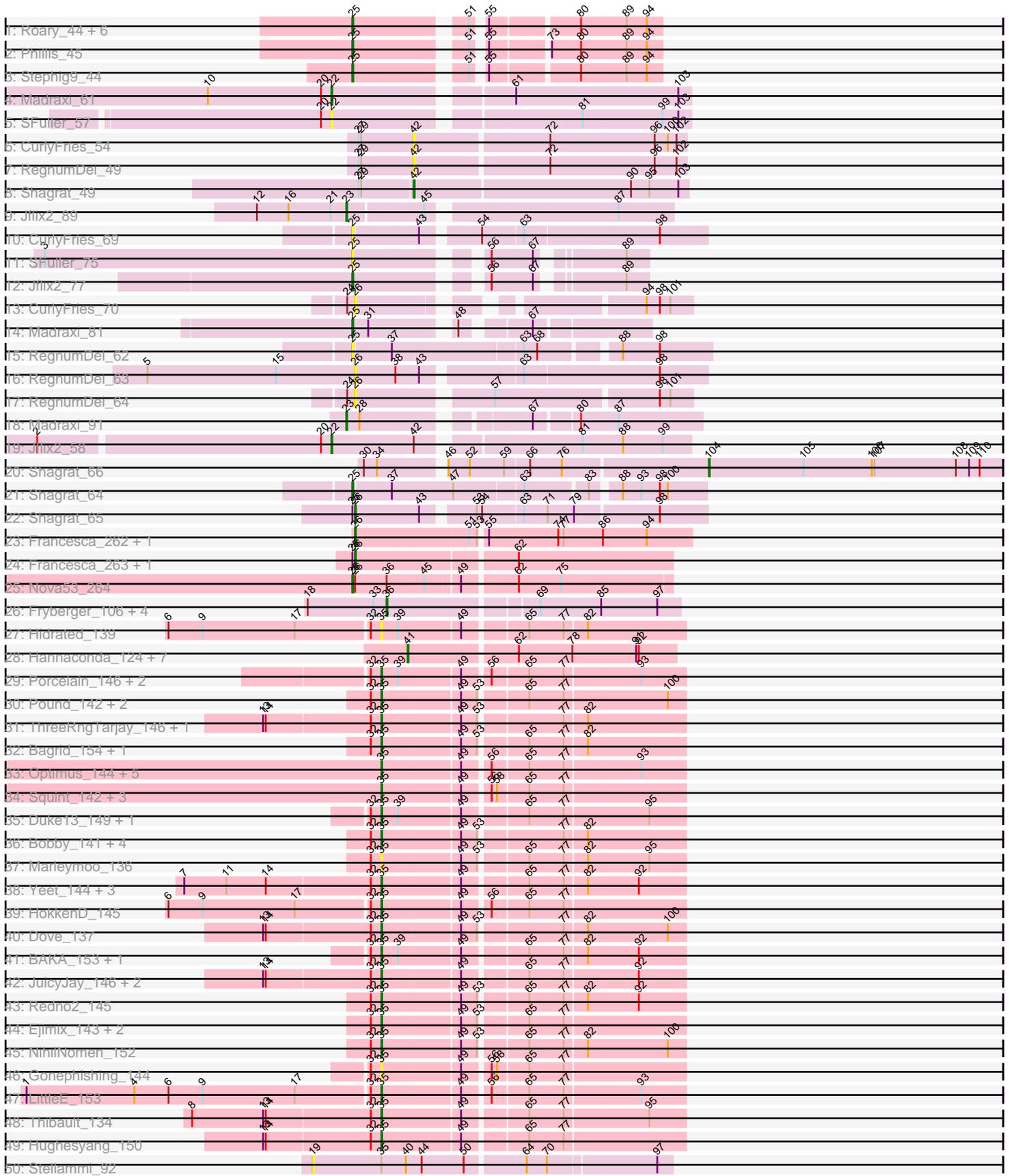
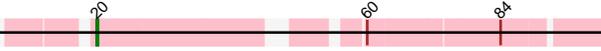


Pham 283674



51: Sleepyhead\_43



A series of horizontal lines for writing, with a dashed vertical line on the right side.

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 283674 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283674 has 97 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Roary\_44, Smeadley\_44, Astro\_43, Danforth\_43, Groundhog\_42, Caitlin\_42, Expelliarmus\_43
- Track 2 : Phillis\_45
- Track 3 : Stephig9\_44
- Track 4 : Madraxi\_61
- Track 5 : SFuller\_57
- Track 6 : CurlyFries\_54
- Track 7 : RegnumDei\_49
- Track 8 : Shagrat\_49
- Track 9 : Jflix2\_89
- Track 10 : CurlyFries\_69
- Track 11 : SFuller\_75
- Track 12 : Jflix2\_77
- Track 13 : CurlyFries\_70
- Track 14 : Madraxi\_81
- Track 15 : RegnumDei\_62
- Track 16 : RegnumDei\_63
- Track 17 : RegnumDei\_64
- Track 18 : Madraxi\_91
- Track 19 : Jflix2\_58
- Track 20 : Shagrat\_66
- Track 21 : Shagrat\_64
- Track 22 : Shagrat\_65
- Track 23 : Francesca\_262, Dorin\_262
- Track 24 : Francesca\_263, Dorin\_263
- Track 25 : Nova53\_264
- Track 26 : Fryberger\_106, Ronaldo\_108, Ziko\_109, Guey18\_111, Volt\_110
- Track 27 : Hidrated\_139
- Track 28 : Hannaconda\_124, Odette\_135, HokkenD\_123, Yeet\_125, Gonephishing\_125, Rearden\_129, Superphikiman\_128, Courthouse\_126
- Track 29 : Porcelain\_146, MiaZeal\_149, Lucky2013\_142
- Track 30 : Pound\_142, DmpstrDiver\_151, Schatzie\_146
- Track 31 : ThreeRngTarjay\_146, Phoebus\_151
- Track 32 : Bagrid\_154, Constella\_144
- Track 33 : Optimus\_144, Omega\_157, BronnyJames\_145, Shaboozey\_148, Odette\_156, Nibley\_144
- Track 34 : Squint\_142, Nekros\_148, KashFlow\_150, Hannaconda\_144

- Track 35 : Duke13\_149, EricMillard\_145
- Track 36 : Bobby\_141, Wanda\_150, Minerva\_150, Kalah2\_142, Zelink\_145
- Track 37 : Marleymoo\_136
- Track 38 : Yeet\_144, Superphikiman\_147, Ariel\_149, Courthouse\_145
- Track 39 : HokkenD\_145
- Track 40 : Dove\_137
- Track 41 : BAKA\_153, Klein\_150
- Track 42 : JuicyJay\_146, Beem\_153, Bombitas\_138
- Track 43 : Redno2\_145
- Track 44 : Ejimix\_143, Halley\_152, Dallas\_151
- Track 45 : NihilNomen\_152
- Track 46 : Gonephishing\_144
- Track 47 : LittleE\_153
- Track 48 : Thibault\_134
- Track 49 : Hughesyang\_150
- Track 50 : Stellammi\_92
- Track 51 : Sleepyhead\_43

***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 40 of the 74 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ariel\_149, BAKA\_153, Bagrid\_154, Beem\_153, Bobby\_141, Bombitas\_138, BronnyJames\_145, Constella\_144, Courthouse\_145, Dallas\_151, DmpstrDiver\_151, Dove\_137, Duke13\_149, Ejimix\_143, EricMillard\_145, Gonephishing\_144, Halley\_152, Hannaconda\_144, Hidrated\_139, HokkenD\_145, Hughesyang\_150, JuicyJay\_146, Kalah2\_142, KashFlow\_150, Klein\_150, LittleE\_153, Lucky2013\_142, Marleymoo\_136, MiaZeal\_149, Minerva\_150, Nekros\_148, Nibley\_144, NihilNomen\_152, Odette\_156, Omega\_157, Optimus\_144, Phoebus\_151, Porcelain\_146, Pound\_142, Redno2\_145, Schatzie\_146, Shaboozey\_148, Squint\_142, Superphikiman\_147, Thibault\_134, ThreeRngTarjay\_146, Wanda\_150, Yeet\_144, Zelink\_145,

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

- Stellammi\_92,

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

- Astro\_43, Caitlin\_42, Courthouse\_126, CurlyFries\_54, CurlyFries\_69, CurlyFries\_70, Danforth\_43, Dorin\_262, Dorin\_263, Expelliarmus\_43, Francesca\_262, Francesca\_263, Fryberger\_106, Gonephishing\_125, Groundhog\_42, Guey18\_111, Hannaconda\_124, HokkenD\_123, Jflix2\_58, Jflix2\_77, Jflix2\_89, Madraxi\_61, Madraxi\_81, Madraxi\_91, Nova53\_264, Odette\_135, Phillis\_45, Rearden\_129, RegnumDei\_49, RegnumDei\_62, RegnumDei\_63, RegnumDei\_64, Roary\_44, Ronaldo\_108, SFuller\_57, SFuller\_75, Shagrat\_49, Shagrat\_64, Shagrat\_65, Shagrat\_66, Sleepyhead\_43, Smeadley\_44, Stephig9\_44, Superphikiman\_128, Volt\_110, Yeet\_125, Ziko\_109,

**Summary by start number:**

Start 19:

- Found in 1 of 97 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Stellammi\_92 (UNK),

Start 20:

- Found in 4 of 97 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 1 of 74
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Sleepyhead\_43 (singleton),

Start 22:

- Found in 3 of 97 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 2 of 74
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jflix2\_58 (CF), Madraxi\_61 (CF), SFuller\_57 (CF),

Start 23:

- Found in 2 of 97 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 2 of 74
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jflix2\_89 (CF), Madraxi\_91 (CF),

Start 25:

- Found in 19 of 97 ( 19.6% ) of genes in pham
- Manual Annotations of this start: 12 of 74
- Called 84.2% of time when present
- Phage (with cluster) where this start called: Astro\_43 (A8), Caitlin\_42 (A8), CurlyFries\_69 (CF), Danforth\_43 (A8), Expelliarmus\_43 (A8), Groundhog\_42 (A8), Jflix2\_77 (CF), Madraxi\_81 (CF), Nova53\_264 (CG), Phillis\_45 (A8), RegnumDei\_62 (CF), Roary\_44 (A8), SFuller\_75 (CF), Shagrat\_64 (CF), Smeadley\_44 (A8), StepHig9\_44 (A8),

Start 26:

- Found in 9 of 97 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 5 of 74
- Called 88.9% of time when present
- Phage (with cluster) where this start called: CurlyFries\_70 (CF), Dorin\_262 (CG), Dorin\_263 (CG), Francesca\_262 (CG), Francesca\_263 (CG), RegnumDei\_63 (CF), RegnumDei\_64 (CF), Shagrat\_65 (CF),

Start 35:

- Found in 50 of 97 ( 51.5% ) of genes in pham
- Manual Annotations of this start: 40 of 74
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Ariel\_149 (J), BAKA\_153 (J), Bagrid\_154 (J), Beem\_153 (J), Bobby\_141 (J), Bombitas\_138 (J), BronnyJames\_145 (J), Constella\_144 (J), Courthouse\_145 (J), Dallas\_151 (J), DmpstrDiver\_151 (J), Dove\_137 (J), Duke13\_149 (J), Ejimix\_143 (J), EricMillard\_145 (J), Gonephishing\_144 (J), Halley\_152 (J), Hannaconda\_144 (J), Hidrated\_139 (J),

HokkenD\_145 (J), Hughesyang\_150 (J), JuicyJay\_146 (J), Kalah2\_142 (J), KashFlow\_150 (J), Klein\_150 (J), LittleE\_153 (J), Lucky2013\_142 (J), Marleymoo\_136 (J), MiaZeal\_149 (J), Minerva\_150 (J), Nekros\_148 (J), Nibley\_144 (J), NihilNomen\_152 (J), Odette\_156 (J), Omega\_157 (J), Optimus\_144 (J), Phoebus\_151 (J), Porcelain\_146 (J), Pound\_142 (J), Redno2\_145 (J), Schatzie\_146 (J), Shaboozey\_148 (J), Squint\_142 (J), Superphikiman\_147 (J), Thibault\_134 (J), ThreeRngTarjay\_146 (J), Wanda\_150 (J), Yeet\_144 (J), Zelink\_145 (J),

Start 36:

- Found in 6 of 97 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 5 of 74
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Fryberger\_106 (DP), Guey18\_111 (DP), Ronaldo\_108 (DP), Volt\_110 (DP), Ziko\_109 (DP),

Start 41:

- Found in 8 of 97 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 5 of 74
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Courthouse\_126 (J), Gonephishing\_125 (J), Hannaconda\_124 (J), HokkenD\_123 (J), Odette\_135 (J), Rearden\_129 (J), Superphikiman\_128 (J), Yeet\_125 (J),

Start 42:

- Found in 4 of 97 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 1 of 74
- Called 75.0% of time when present
- Phage (with cluster) where this start called: CurlyFries\_54 (CF), RegnumDei\_49 (CF), Shagrat\_49 (CF),

Start 104:

- Found in 1 of 97 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 74
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shagrat\_66 (CF),

### **Summary by clusters:**

There are 7 clusters represented in this pham: singleton, J, CG, CF, A8, UNK, DP,

Info for manual annotations of cluster A8:

- Start number 25 was manually annotated 8 times for cluster A8.

Info for manual annotations of cluster CF:

- Start number 22 was manually annotated 2 times for cluster CF.
- Start number 23 was manually annotated 2 times for cluster CF.
- Start number 25 was manually annotated 3 times for cluster CF.
- Start number 26 was manually annotated 1 time for cluster CF.
- Start number 42 was manually annotated 1 time for cluster CF.
- Start number 104 was manually annotated 1 time for cluster CF.

Info for manual annotations of cluster CG:

- Start number 25 was manually annotated 1 time for cluster CG.

- Start number 26 was manually annotated 4 times for cluster CG.

Info for manual annotations of cluster DP:

- Start number 36 was manually annotated 5 times for cluster DP.

Info for manual annotations of cluster J:

- Start number 35 was manually annotated 40 times for cluster J.
- Start number 41 was manually annotated 5 times for cluster J.

### **Gene Information:**

Gene: Ariel\_149 Start: 76661, Stop: 76984, Start Num: 35

Candidate Starts for Ariel\_149:

(7, 76439), (11, 76487), (14, 76532), (32, 76649), (Start: 35 @76661 has 40 MA's), (49, 76745), (65, 76811), (77, 76850), (82, 76874), (92, 76931),

Gene: Astro\_43 Start: 30852, Stop: 30550, Start Num: 25

Candidate Starts for Astro\_43:

(Start: 25 @30852 has 12 MA's), (51, 30741), (55, 30732), (80, 30639), (89, 30588), (94, 30567),

Gene: BAKA\_153 Start: 81330, Stop: 81653, Start Num: 35

Candidate Starts for BAKA\_153:

(32, 81318), (Start: 35 @81330 has 40 MA's), (39, 81348), (49, 81414), (65, 81480), (77, 81519), (82, 81543), (92, 81600),

Gene: Bagrid\_154 Start: 82037, Stop: 82360, Start Num: 35

Candidate Starts for Bagrid\_154:

(32, 82025), (Start: 35 @82037 has 40 MA's), (49, 82121), (53, 82139), (65, 82187), (77, 82226), (82, 82250),

Gene: Beem\_153 Start: 81458, Stop: 81781, Start Num: 35

Candidate Starts for Beem\_153:

(13, 81326), (14, 81329), (32, 81446), (Start: 35 @81458 has 40 MA's), (49, 81542), (65, 81608), (77, 81647), (92, 81728),

Gene: Bobby\_141 Start: 81455, Stop: 81778, Start Num: 35

Candidate Starts for Bobby\_141:

(32, 81443), (Start: 35 @81455 has 40 MA's), (49, 81539), (53, 81557), (77, 81644), (82, 81668),

Gene: Bombitas\_138 Start: 78311, Stop: 78634, Start Num: 35

Candidate Starts for Bombitas\_138:

(13, 78179), (14, 78182), (32, 78299), (Start: 35 @78311 has 40 MA's), (49, 78395), (65, 78461), (77, 78500), (92, 78581),

Gene: BronnyJames\_145 Start: 77611, Stop: 77934, Start Num: 35

Candidate Starts for BronnyJames\_145:

(Start: 35 @77611 has 40 MA's), (49, 77695), (56, 77722), (65, 77761), (77, 77800), (93, 77884),

Gene: Caitlin\_42 Start: 30845, Stop: 30543, Start Num: 25

Candidate Starts for Caitlin\_42:

(Start: 25 @30845 has 12 MA's), (51, 30734), (55, 30725), (80, 30632), (89, 30581), (94, 30560),

Gene: Constella\_144 Start: 79520, Stop: 79843, Start Num: 35

Candidate Starts for Constella\_144:

(32, 79508), (Start: 35 @79520 has 40 MA's), (49, 79604), (53, 79622), (65, 79670), (77, 79709), (82, 79733),

Gene: Courthouse\_145 Start: 76519, Stop: 76842, Start Num: 35

Candidate Starts for Courthouse\_145:

(7, 76297), (11, 76345), (14, 76390), (32, 76507), (Start: 35 @76519 has 40 MA's), (49, 76603), (65, 76669), (77, 76708), (82, 76732), (92, 76789),

Gene: Courthouse\_126 Start: 68736, Stop: 69029, Start Num: 41

Candidate Starts for Courthouse\_126:

(Start: 41 @68736 has 5 MA's), (62, 68853), (78, 68913), (91, 68985), (92, 68988),

Gene: CurlyFries\_54 Start: 35699, Stop: 35998, Start Num: 42

Candidate Starts for CurlyFries\_54:

(27, 35636), (29, 35639), (Start: 42 @35699 has 1 MA's), (72, 35846), (96, 35963), (100, 35978), (102, 35987),

Gene: CurlyFries\_69 Start: 39422, Stop: 39799, Start Num: 25

Candidate Starts for CurlyFries\_69:

(Start: 25 @39422 has 12 MA's), (43, 39494), (54, 39551), (63, 39596), (98, 39746),

Gene: CurlyFries\_70 Start: 39801, Stop: 40115, Start Num: 26

Candidate Starts for CurlyFries\_70:

(24, 39792), (Start: 26 @39801 has 5 MA's), (94, 40065), (98, 40080), (101, 40092),

Gene: Dallas\_151 Start: 80367, Stop: 80690, Start Num: 35

Candidate Starts for Dallas\_151:

(32, 80355), (Start: 35 @80367 has 40 MA's), (49, 80451), (53, 80469), (65, 80517), (77, 80556),

Gene: Danforth\_43 Start: 30881, Stop: 30579, Start Num: 25

Candidate Starts for Danforth\_43:

(Start: 25 @30881 has 12 MA's), (51, 30770), (55, 30761), (80, 30668), (89, 30617), (94, 30596),

Gene: DmpstrDiver\_151 Start: 80286, Stop: 80609, Start Num: 35

Candidate Starts for DmpstrDiver\_151:

(32, 80274), (Start: 35 @80286 has 40 MA's), (49, 80370), (53, 80388), (65, 80436), (77, 80475), (100, 80589),

Gene: Dorin\_262 Start: 128550, Stop: 128915, Start Num: 26

Candidate Starts for Dorin\_262:

(Start: 26 @128550 has 5 MA's), (51, 128673), (53, 128682), (55, 128688), (74, 128766), (77, 128772), (86, 128817), (94, 128865),

Gene: Dorin\_263 Start: 128893, Stop: 129231, Start Num: 26

Candidate Starts for Dorin\_263:

(Start: 25 @128890 has 12 MA's), (Start: 26 @128893 has 5 MA's), (62, 129061),

Gene: Dove\_137 Start: 76474, Stop: 76797, Start Num: 35

Candidate Starts for Dove\_137:

(13, 76342), (14, 76345), (32, 76462), (Start: 35 @76474 has 40 MA's), (49, 76558), (53, 76576), (77, 76663), (82, 76687), (100, 76777),

Gene: Duke13\_149 Start: 79615, Stop: 79938, Start Num: 35

Candidate Starts for Duke13\_149:

(32, 79603), (Start: 35 @79615 has 40 MA's), (39, 79633), (49, 79699), (65, 79765), (77, 79804), (95, 79897),

Gene: Ejimix\_143 Start: 80435, Stop: 80758, Start Num: 35

Candidate Starts for Ejimix\_143:

(32, 80423), (Start: 35 @80435 has 40 MA's), (49, 80519), (53, 80537), (65, 80585), (77, 80624),

Gene: EricMillard\_145 Start: 80967, Stop: 81290, Start Num: 35

Candidate Starts for EricMillard\_145:

(32, 80955), (Start: 35 @80967 has 40 MA's), (39, 80985), (49, 81051), (65, 81117), (77, 81156), (95, 81249),

Gene: Expelliarmus\_43 Start: 30910, Stop: 30608, Start Num: 25

Candidate Starts for Expelliarmus\_43:

(Start: 25 @30910 has 12 MA's), (51, 30799), (55, 30790), (80, 30697), (89, 30646), (94, 30625),

Gene: Francesca\_262 Start: 129192, Stop: 129557, Start Num: 26

Candidate Starts for Francesca\_262:

(Start: 26 @129192 has 5 MA's), (51, 129315), (53, 129324), (55, 129330), (74, 129408), (77, 129414), (86, 129459), (94, 129507),

Gene: Francesca\_263 Start: 129535, Stop: 129873, Start Num: 26

Candidate Starts for Francesca\_263:

(Start: 25 @129532 has 12 MA's), (Start: 26 @129535 has 5 MA's), (62, 129703),

Gene: Fryberger\_106 Start: 52384, Stop: 52698, Start Num: 36

Candidate Starts for Fryberger\_106:

(18, 52294), (33, 52369), (Start: 36 @52384 has 5 MA's), (69, 52540), (85, 52609), (97, 52672),

Gene: Gonephishing\_125 Start: 68379, Stop: 68672, Start Num: 41

Candidate Starts for Gonephishing\_125:

(Start: 41 @68379 has 5 MA's), (62, 68496), (78, 68556), (91, 68628), (92, 68631),

Gene: Gonephishing\_144 Start: 78607, Stop: 78930, Start Num: 35

Candidate Starts for Gonephishing\_144:

(32, 78595), (Start: 35 @78607 has 40 MA's), (49, 78691), (56, 78718), (58, 78724), (65, 78757), (77, 78796),

Gene: Groundhog\_42 Start: 30817, Stop: 30515, Start Num: 25

Candidate Starts for Groundhog\_42:

(Start: 25 @30817 has 12 MA's), (51, 30706), (55, 30697), (80, 30604), (89, 30553), (94, 30532),

Gene: Guey18\_111 Start: 53707, Stop: 54021, Start Num: 36

Candidate Starts for Guey18\_111:

(18, 53617), (33, 53692), (Start: 36 @53707 has 5 MA's), (69, 53863), (85, 53932), (97, 53995),

Gene: Halley\_152 Start: 80751, Stop: 81074, Start Num: 35

Candidate Starts for Halley\_152:

(32, 80739), (Start: 35 @80751 has 40 MA's), (49, 80835), (53, 80853), (65, 80901), (77, 80940),

Gene: Hannaconda\_124 Start: 69032, Stop: 69325, Start Num: 41

Candidate Starts for Hannaconda\_124:

(Start: 41 @69032 has 5 MA's), (62, 69149), (78, 69209), (91, 69281), (92, 69284),

Gene: Hannaconda\_144 Start: 79540, Stop: 79863, Start Num: 35

Candidate Starts for Hannaconda\_144:

(Start: 35 @79540 has 40 MA's), (49, 79624), (56, 79651), (58, 79657), (65, 79690), (77, 79729),

Gene: Hidrated\_139 Start: 79925, Stop: 80248, Start Num: 35

Candidate Starts for Hidrated\_139:

(6, 79688), (9, 79727), (17, 79832), (32, 79913), (Start: 35 @79925 has 40 MA's), (39, 79943), (49, 80009), (65, 80075), (77, 80114), (82, 80138),

Gene: HokkenD\_123 Start: 71913, Stop: 72206, Start Num: 41

Candidate Starts for HokkenD\_123:

(Start: 41 @71913 has 5 MA's), (62, 72030), (78, 72090), (91, 72162), (92, 72165),

Gene: HokkenD\_145 Start: 81876, Stop: 82199, Start Num: 35

Candidate Starts for HokkenD\_145:

(6, 81639), (9, 81678), (17, 81783), (32, 81864), (Start: 35 @81876 has 40 MA's), (49, 81960), (56, 81987), (65, 82026), (77, 82065),

Gene: Hughesyang\_150 Start: 81110, Stop: 81433, Start Num: 35

Candidate Starts for Hughesyang\_150:

(13, 80978), (14, 80981), (32, 81098), (Start: 35 @81110 has 40 MA's), (49, 81194), (65, 81260), (77, 81299),

Gene: Jflix2\_89 Start: 50660, Stop: 51001, Start Num: 23

Candidate Starts for Jflix2\_89:

(12, 50558), (16, 50594), (21, 50642), (Start: 23 @50660 has 2 MA's), (45, 50741), (87, 50939),

Gene: Jflix2\_77 Start: 46906, Stop: 47172, Start Num: 25

Candidate Starts for Jflix2\_77:

(Start: 25 @46906 has 12 MA's), (56, 47026), (67, 47071), (89, 47149),

Gene: Jflix2\_58 Start: 39721, Stop: 40101, Start Num: 22

Candidate Starts for Jflix2\_58:

(2, 39397), (Start: 20 @39709 has 1 MA's), (Start: 22 @39721 has 2 MA's), (Start: 42 @39814 has 1 MA's), (81, 39979), (88, 40024), (99, 40069),

Gene: JuicyJay\_146 Start: 82036, Stop: 82359, Start Num: 35

Candidate Starts for JuicyJay\_146:

(13, 81904), (14, 81907), (32, 82024), (Start: 35 @82036 has 40 MA's), (49, 82120), (65, 82186), (77, 82225), (92, 82306),

Gene: Kalah2\_142 Start: 80240, Stop: 80563, Start Num: 35

Candidate Starts for Kalah2\_142:

(32, 80228), (Start: 35 @80240 has 40 MA's), (49, 80324), (53, 80342), (77, 80429), (82, 80453),

Gene: KashFlow\_150 Start: 79539, Stop: 79862, Start Num: 35

Candidate Starts for KashFlow\_150:

(Start: 35 @79539 has 40 MA's), (49, 79623), (56, 79650), (58, 79656), (65, 79689), (77, 79728),

Gene: Klein\_150 Start: 80105, Stop: 80428, Start Num: 35

Candidate Starts for Klein\_150:

(32, 80093), (Start: 35 @80105 has 40 MA's), (39, 80123), (49, 80189), (65, 80255), (77, 80294), (82, 80318), (92, 80375),

Gene: LittleE\_153 Start: 80985, Stop: 81308, Start Num: 35

Candidate Starts for LittleE\_153:

(1, 80586), (4, 80709), (6, 80748), (9, 80787), (17, 80892), (32, 80973), (Start: 35 @80985 has 40 MA's), (49, 81069), (56, 81096), (65, 81135), (77, 81174), (93, 81258),

Gene: Lucky2013\_142 Start: 75897, Stop: 76220, Start Num: 35

Candidate Starts for Lucky2013\_142:

(32, 75885), (Start: 35 @75897 has 40 MA's), (39, 75915), (49, 75981), (56, 76008), (65, 76047), (77, 76086), (93, 76170),

Gene: Madraxi\_61 Start: 42224, Stop: 42604, Start Num: 22

Candidate Starts for Madraxi\_61:

(10, 42083), (Start: 20 @42212 has 1 MA's), (Start: 22 @42224 has 2 MA's), (61, 42407), (103, 42590),

Gene: Madraxi\_81 Start: 49694, Stop: 49978, Start Num: 25

Candidate Starts for Madraxi\_81:

(Start: 25 @49694 has 12 MA's), (31, 49712), (48, 49793), (67, 49856),

Gene: Madraxi\_91 Start: 52811, Stop: 53170, Start Num: 23

Candidate Starts for Madraxi\_91:

(Start: 23 @52811 has 2 MA's), (28, 52826), (67, 52988), (80, 53033), (87, 53075),

Gene: Marleymoo\_136 Start: 77201, Stop: 77524, Start Num: 35

Candidate Starts for Marleymoo\_136:

(32, 77189), (Start: 35 @77201 has 40 MA's), (49, 77285), (53, 77303), (65, 77351), (77, 77390), (82, 77414), (95, 77483),

Gene: MiaZeal\_149 Start: 77044, Stop: 77367, Start Num: 35

Candidate Starts for MiaZeal\_149:

(32, 77032), (Start: 35 @77044 has 40 MA's), (39, 77062), (49, 77128), (56, 77155), (65, 77194), (77, 77233), (93, 77317),

Gene: Minerva\_150 Start: 80059, Stop: 80382, Start Num: 35

Candidate Starts for Minerva\_150:

(32, 80047), (Start: 35 @80059 has 40 MA's), (49, 80143), (53, 80161), (77, 80248), (82, 80272),

Gene: Nekros\_148 Start: 79933, Stop: 80256, Start Num: 35

Candidate Starts for Nekros\_148:

(Start: 35 @79933 has 40 MA's), (49, 80017), (56, 80044), (58, 80050), (65, 80083), (77, 80122),

Gene: Nibley\_144 Start: 77188, Stop: 77511, Start Num: 35

Candidate Starts for Nibley\_144:

(Start: 35 @77188 has 40 MA's), (49, 77272), (56, 77299), (65, 77338), (77, 77377), (93, 77461),

Gene: NihilNomen\_152 Start: 79960, Stop: 80283, Start Num: 35

Candidate Starts for NihilNomen\_152:

(32, 79948), (Start: 35 @79960 has 40 MA's), (49, 80044), (53, 80062), (65, 80110), (77, 80149), (82, 80173), (100, 80263),

Gene: Nova53\_264 Start: 130197, Stop: 130535, Start Num: 25

Candidate Starts for Nova53\_264:

(Start: 25 @130197 has 12 MA's), (Start: 26 @130200 has 5 MA's), (Start: 36 @130236 has 5 MA's), (45, 130275), (49, 130311), (62, 130368), (75, 130416),

Gene: Odette\_135 Start: 73830, Stop: 74123, Start Num: 41

Candidate Starts for Odette\_135:

(Start: 41 @73830 has 5 MA's), (62, 73947), (78, 74007), (91, 74079), (92, 74082),

Gene: Odette\_156 Start: 82653, Stop: 82976, Start Num: 35

Candidate Starts for Odette\_156:

(Start: 35 @82653 has 40 MA's), (49, 82737), (56, 82764), (65, 82803), (77, 82842), (93, 82926),

Gene: Omega\_157 Start: 82149, Stop: 82472, Start Num: 35

Candidate Starts for Omega\_157:

(Start: 35 @82149 has 40 MA's), (49, 82233), (56, 82260), (65, 82299), (77, 82338), (93, 82422),

Gene: Optimus\_144 Start: 79658, Stop: 79981, Start Num: 35

Candidate Starts for Optimus\_144:

(Start: 35 @79658 has 40 MA's), (49, 79742), (56, 79769), (65, 79808), (77, 79847), (93, 79931),

Gene: Phillis\_45 Start: 31235, Stop: 30933, Start Num: 25

Candidate Starts for Phillis\_45:

(Start: 25 @31235 has 12 MA's), (51, 31124), (55, 31115), (73, 31055), (80, 31022), (89, 30971), (94, 30950),

Gene: Phoebus\_151 Start: 82464, Stop: 82787, Start Num: 35

Candidate Starts for Phoebus\_151:

(13, 82332), (14, 82335), (32, 82452), (Start: 35 @82464 has 40 MA's), (49, 82548), (53, 82566), (77, 82653), (82, 82677),

Gene: Porcelain\_146 Start: 76843, Stop: 77166, Start Num: 35

Candidate Starts for Porcelain\_146:

(32, 76831), (Start: 35 @76843 has 40 MA's), (39, 76861), (49, 76927), (56, 76954), (65, 76993), (77, 77032), (93, 77116),

Gene: Pound\_142 Start: 79694, Stop: 80017, Start Num: 35

Candidate Starts for Pound\_142:

(32, 79682), (Start: 35 @79694 has 40 MA's), (49, 79778), (53, 79796), (65, 79844), (77, 79883), (100, 79997),

Gene: Rearden\_129 Start: 69937, Stop: 70230, Start Num: 41

Candidate Starts for Rearden\_129:

(Start: 41 @69937 has 5 MA's), (62, 70054), (78, 70114), (91, 70186), (92, 70189),

Gene: Redno2\_145 Start: 77962, Stop: 78285, Start Num: 35

Candidate Starts for Redno2\_145:

(32, 77950), (Start: 35 @77962 has 40 MA's), (49, 78046), (53, 78064), (65, 78112), (77, 78151), (82, 78175), (92, 78232),

Gene: RegnumDei\_49 Start: 35958, Stop: 36257, Start Num: 42  
Candidate Starts for RegnumDei\_49:  
(27, 35895), (29, 35898), (Start: 42 @35958 has 1 MA's), (72, 36105), (96, 36222), (102, 36246),

Gene: RegnumDei\_62 Start: 39892, Stop: 40269, Start Num: 25  
Candidate Starts for RegnumDei\_62:  
(Start: 25 @39892 has 12 MA's), (37, 39934), (63, 40078), (68, 40093), (88, 40168), (98, 40210),

Gene: RegnumDei\_63 Start: 40266, Stop: 40643, Start Num: 26  
Candidate Starts for RegnumDei\_63:  
(5, 40029), (15, 40176), (Start: 26 @40266 has 5 MA's), (38, 40311), (43, 40338), (63, 40440), (98, 40590),

Gene: RegnumDei\_64 Start: 40645, Stop: 40995, Start Num: 26  
Candidate Starts for RegnumDei\_64:  
(24, 40636), (Start: 26 @40645 has 5 MA's), (57, 40783), (98, 40960), (101, 40972),

Gene: Roary\_44 Start: 30866, Stop: 30564, Start Num: 25  
Candidate Starts for Roary\_44:  
(Start: 25 @30866 has 12 MA's), (51, 30755), (55, 30746), (80, 30653), (89, 30602), (94, 30581),

Gene: Ronaldo\_108 Start: 53289, Stop: 53603, Start Num: 36  
Candidate Starts for Ronaldo\_108:  
(18, 53199), (33, 53274), (Start: 36 @53289 has 5 MA's), (69, 53445), (85, 53514), (97, 53577),

Gene: SFuller\_57 Start: 39913, Stop: 40293, Start Num: 22  
Candidate Starts for SFuller\_57:  
(Start: 20 @39901 has 1 MA's), (Start: 22 @39913 has 2 MA's), (81, 40171), (99, 40261), (103, 40279),

Gene: SFuller\_75 Start: 47105, Stop: 47371, Start Num: 25  
Candidate Starts for SFuller\_75:  
(3, 46754), (Start: 25 @47105 has 12 MA's), (56, 47225), (67, 47270), (89, 47348),

Gene: Schatzie\_146 Start: 80543, Stop: 80866, Start Num: 35  
Candidate Starts for Schatzie\_146:  
(32, 80531), (Start: 35 @80543 has 40 MA's), (49, 80627), (53, 80645), (65, 80693), (77, 80732), (100, 80846),

Gene: Shaboozey\_148 Start: 77632, Stop: 77955, Start Num: 35  
Candidate Starts for Shaboozey\_148:  
(Start: 35 @77632 has 40 MA's), (49, 77716), (56, 77743), (65, 77782), (77, 77821), (93, 77905),

Gene: Shagrat\_49 Start: 36435, Stop: 36740, Start Num: 42  
Candidate Starts for Shagrat\_49:  
(27, 36375), (29, 36378), (Start: 42 @36435 has 1 MA's), (90, 36675), (95, 36696), (103, 36729),

Gene: Shagrat\_66 Start: 40915, Stop: 41250, Start Num: 104  
Candidate Starts for Shagrat\_66:  
(30, 40549), (34, 40564), (46, 40630), (52, 40654), (59, 40693), (66, 40720), (76, 40756), (Start: 104 @40915 has 1 MA's), (105, 41023), (106, 41101), (107, 41104), (108, 41197), (109, 41212), (110, 41224),

Gene: Shagrat\_64 Start: 40165, Stop: 40536, Start Num: 25

Candidate Starts for Shagrat\_64:

(Start: 25 @40165 has 12 MA's), (37, 40207), (47, 40276), (63, 40351), (83, 40414), (88, 40441), (93, 40462), (98, 40483), (100, 40492),

Gene: Shagrat\_65 Start: 40539, Stop: 40913, Start Num: 26

Candidate Starts for Shagrat\_65:

(Start: 25 @40536 has 12 MA's), (Start: 26 @40539 has 5 MA's), (43, 40611), (53, 40662), (54, 40668), (63, 40713), (71, 40740), (79, 40770), (98, 40860),

Gene: Sleepyhead\_43 Start: 31028, Stop: 31363, Start Num: 20

Candidate Starts for Sleepyhead\_43:

(Start: 20 @31028 has 1 MA's), (60, 31199), (84, 31295),

Gene: Smeadley\_44 Start: 31032, Stop: 30730, Start Num: 25

Candidate Starts for Smeadley\_44:

(Start: 25 @31032 has 12 MA's), (51, 30921), (55, 30912), (80, 30819), (89, 30768), (94, 30747),

Gene: Squint\_142 Start: 76328, Stop: 76651, Start Num: 35

Candidate Starts for Squint\_142:

(Start: 35 @76328 has 40 MA's), (49, 76412), (56, 76439), (58, 76445), (65, 76478), (77, 76517),

Gene: Stellammi\_92 Start: 44459, Stop: 44845, Start Num: 19

Candidate Starts for Stellammi\_92:

(19, 44459), (Start: 35 @44537 has 40 MA's), (40, 44564), (44, 44582), (50, 44630), (64, 44690), (70, 44711), (97, 44828),

Gene: Stephig9\_44 Start: 30891, Stop: 30589, Start Num: 25

Candidate Starts for Stephig9\_44:

(Start: 25 @30891 has 12 MA's), (51, 30780), (55, 30771), (80, 30678), (89, 30627), (94, 30606),

Gene: Superphikiman\_147 Start: 76801, Stop: 77124, Start Num: 35

Candidate Starts for Superphikiman\_147:

(7, 76579), (11, 76627), (14, 76672), (32, 76789), (Start: 35 @76801 has 40 MA's), (49, 76885), (65, 76951), (77, 76990), (82, 77014), (92, 77071),

Gene: Superphikiman\_128 Start: 69018, Stop: 69311, Start Num: 41

Candidate Starts for Superphikiman\_128:

(Start: 41 @69018 has 5 MA's), (62, 69135), (78, 69195), (91, 69267), (92, 69270),

Gene: Thibault\_134 Start: 77417, Stop: 77740, Start Num: 35

Candidate Starts for Thibault\_134:

(8, 77204), (13, 77285), (14, 77288), (32, 77405), (Start: 35 @77417 has 40 MA's), (49, 77501), (65, 77567), (77, 77606), (95, 77699),

Gene: ThreeRngTarjay\_146 Start: 81055, Stop: 81378, Start Num: 35

Candidate Starts for ThreeRngTarjay\_146:

(13, 80923), (14, 80926), (32, 81043), (Start: 35 @81055 has 40 MA's), (49, 81139), (53, 81157), (77, 81244), (82, 81268),

Gene: Volt\_110 Start: 53453, Stop: 53767, Start Num: 36

Candidate Starts for Volt\_110:

(18, 53363), (33, 53438), (Start: 36 @53453 has 5 MA's), (69, 53609), (85, 53678), (97, 53741),

Gene: Wanda\_150 Start: 78530, Stop: 78853, Start Num: 35

Candidate Starts for Wanda\_150:

(32, 78518), (Start: 35 @78530 has 40 MA's), (49, 78614), (53, 78632), (77, 78719), (82, 78743),

Gene: Yeet\_125 Start: 71942, Stop: 72235, Start Num: 41

Candidate Starts for Yeet\_125:

(Start: 41 @71942 has 5 MA's), (62, 72059), (78, 72119), (91, 72191), (92, 72194),

Gene: Yeet\_144 Start: 79906, Stop: 80229, Start Num: 35

Candidate Starts for Yeet\_144:

(7, 79684), (11, 79732), (14, 79777), (32, 79894), (Start: 35 @79906 has 40 MA's), (49, 79990), (65, 80056), (77, 80095), (82, 80119), (92, 80176),

Gene: Zelink\_145 Start: 81372, Stop: 81695, Start Num: 35

Candidate Starts for Zelink\_145:

(32, 81360), (Start: 35 @81372 has 40 MA's), (49, 81456), (53, 81474), (77, 81561), (82, 81585),

Gene: Ziko\_109 Start: 53295, Stop: 53609, Start Num: 36

Candidate Starts for Ziko\_109:

(18, 53205), (33, 53280), (Start: 36 @53295 has 5 MA's), (69, 53451), (85, 53520), (97, 53583),