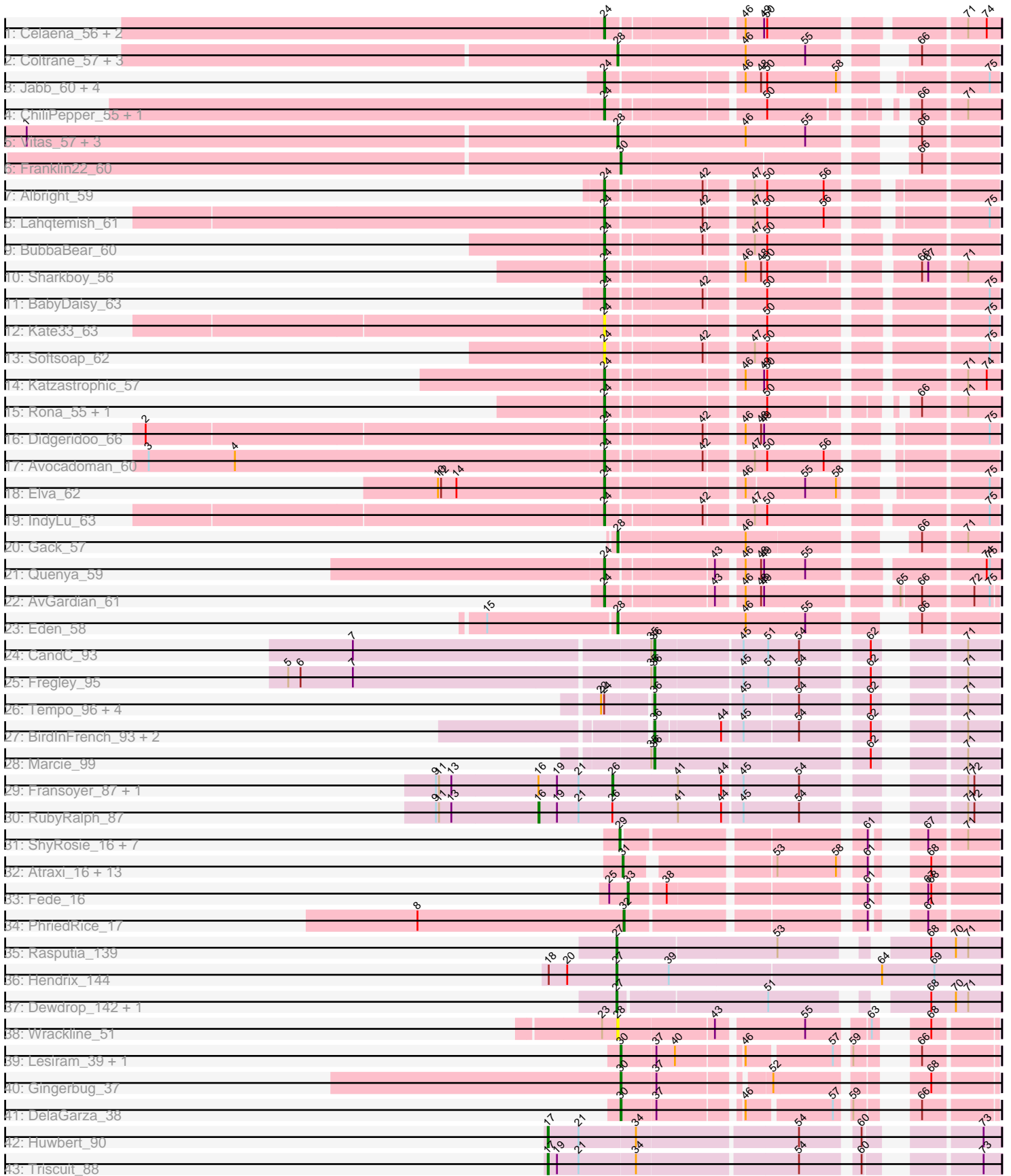


Pham 202857



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 202857 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202857 has 86 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Celaena\_56, Bachaco\_56, FlameThrower\_55
- Track 2 : Coltrane\_57, Brahms\_57, Armstrong\_57, Clayda5\_59
- Track 3 : Jabb\_60, MsUbiquitous\_60, Eula\_60, CupcakePrincess\_60, QMacho\_62
- Track 4 : ChiliPepper\_55, Dismas\_56
- Track 5 : Vitas\_57, Bernstein\_57, Skylord\_57, Rollins\_57
- Track 6 : Franklin22\_60
- Track 7 : Albright\_59
- Track 8 : Lahqtemish\_61
- Track 9 : BubbaBear\_60
- Track 10 : Sharkboy\_56
- Track 11 : BabyDaisy\_63
- Track 12 : Kate33\_63
- Track 13 : Softsoap\_62
- Track 14 : Katzastrophic\_57
- Track 15 : Rona\_55, Kieran\_55
- Track 16 : Didgeridoo\_66
- Track 17 : Avocadoman\_60
- Track 18 : Elva\_62
- Track 19 : IndyLu\_63
- Track 20 : Gack\_57
- Track 21 : Quenya\_59
- Track 22 : AvGardian\_61
- Track 23 : Eden\_58
- Track 24 : CandC\_93
- Track 25 : Fregley\_95
- Track 26 : Tempo\_96, Kelcole\_94, Romm\_97, RobinRose\_97, OneinaGillian\_92
- Track 27 : BirdInFrench\_93, Wilca\_93, Pepe25\_91
- Track 28 : Marcie\_99
- Track 29 : Fransoyer\_87, SadLad\_89
- Track 30 : RubyRalph\_87
- Track 31 : ShyRosie\_16, AloeVera\_16, Ashton\_16, Truong\_16, JordanFarm\_16, Barroma\_16, Waterlily\_16, Akoni\_16
- Track 32 : Atraxi\_16, TrippleS\_16, Morrill\_16, Yafa\_16, Pharky\_17, RicoCaldo\_17, Phractured\_17, Fullmetal\_17, StagePhright\_17, Phedro\_17, Mazun\_17, Astartes\_17, Moleficient\_17, ThirteenKH\_16
- Track 33 : Fede\_16
- Track 34 : PhriedRice\_17

- Track 35 : Rasputia\_139
- Track 36 : Hendrix\_144
- Track 37 : Dewdrop\_142, Leaf\_142
- Track 38 : Wrackline\_51
- Track 39 : Lesiram\_39, Teng\_40
- Track 40 : Gingerbug\_37
- Track 41 : DelaGarza\_38
- Track 42 : Huwbert\_90
- Track 43 : Triscuit\_88

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

The start number called the most often in the published annotations is 24, it was called in 21 of the 72 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albright\_59, AvGardian\_61, Avocadoman\_60, BabyDaisy\_63, Bachaco\_56, BubbaBear\_60, Celaena\_56, ChiliPepper\_55, CupcakePrincess\_60, Didgeridoo\_66, Dismas\_56, Elva\_62, Eula\_60, FlameThrower\_55, IndyLu\_63, Jabb\_60, Kate33\_63, Katzastrophic\_57, Kieran\_55, Lahqtemish\_61, MsUbiquitous\_60, QMacho\_62, Quenya\_59, Rona\_55, Sharkboy\_56, Softsoap\_62,

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

- Kelcole\_94, OneinaGillian\_92, RobinRose\_97, Romm\_97, Tempo\_96,

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

- Akoni\_16, AloeVera\_16, Armstrong\_57, Ashton\_16, Astartes\_17, Atraxi\_16, Barroma\_16, Bernstein\_57, BirdInFrench\_93, Brahms\_57, CandC\_93, Clayda5\_59, Coltrane\_57, DelaGarza\_38, Dewdrop\_142, Eden\_58, Fede\_16, Franklin22\_60, Fransoyer\_87, Fregley\_95, Fullmetal\_17, Gack\_57, Gingerbug\_37, Hendrix\_144, Huwbert\_90, JordanFarm\_16, Leaf\_142, Lesiram\_39, Marcie\_99, Mazun\_17, Moleficient\_17, Morrill\_16, Pepe25\_91, Pharky\_17, Phedro\_17, Phracted\_17, PhriedRice\_17, Rasputia\_139, RicoCaldo\_17, Rollins\_57, RubyRalph\_87, SadLad\_89, ShyRosie\_16, Skylord\_57, StagePhright\_17, Teng\_40, ThirteenKH\_16, TrippleS\_16, Triscuit\_88, Truong\_16, Vitas\_57, Waterlily\_16, Wilca\_93, Wrackline\_51, Yafa\_16,

**Summary by start number:**

Start 16:

- Found in 3 of 86 ( 3.5% ) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 33.3% of time when present
- Phage (with cluster) where this start called: RubyRalph\_87 (EG),

Start 17:

- Found in 2 of 86 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Huwbert\_90 (GG), Triscuit\_88 (GG),

Start 24:

- Found in 31 of 86 ( 36.0% ) of genes in pham
- Manual Annotations of this start: 21 of 72
- Called 83.9% of time when present
- Phage (with cluster) where this start called: Albright\_59 (EB), AvGardian\_61 (EB), Avocadoman\_60 (EB), BabyDaisy\_63 (EB), Bachaco\_56 (EB), BubbaBear\_60 (EB), Celaena\_56 (EB), ChiliPepper\_55 (EB), CupcakePrincess\_60 (EB), Didgeridoo\_66 (EB), Dismas\_56 (EB), Elva\_62 (EB), Eula\_60 (EB), FlameThrower\_55 (EB), IndyLu\_63 (EB), Jabb\_60 (EB), Kate33\_63 (EB), Katzastrophic\_57 (EB), Kieran\_55 (EB), Lahqtemish\_61 (EB), MsUbiquitous\_60 (EB), QMacho\_62 (EB), Quenya\_59 (EB), Rona\_55 (EB), Sharkboy\_56 (EB), Softsoap\_62 (EB),

Start 26:

- Found in 3 of 86 ( 3.5% ) of genes in pham
- Manual Annotations of this start: 2 of 72
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Fransoyer\_87 (EG), SadLad\_89 (EG),

Start 27:

- Found in 4 of 86 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 4 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dewdrop\_142 (GC), Hendrix\_144 (GC), Leaf\_142 (GC), Rasputia\_139 (GC),

Start 28:

- Found in 11 of 86 ( 12.8% ) of genes in pham
- Manual Annotations of this start: 10 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Armstrong\_57 (EB), Bernstein\_57 (EB), Brahms\_57 (EB), Clayda5\_59 (EB), Coltrane\_57 (EB), Eden\_58 (EB), Gack\_57 (EB), Rollins\_57 (EB), Skylord\_57 (EB), Vitas\_57 (EB), Wrackline\_51 (GF),

Start 29:

- Found in 8 of 86 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 6 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Akoni\_16 (EK2), AloeVera\_16 (EK2), Ashton\_16 (EK2), Barroma\_16 (EK2), JordanFarm\_16 (EK2), ShyRosie\_16 (EK2), Truong\_16 (EK2), Waterlily\_16 (EK2),

Start 30:

- Found in 5 of 86 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 4 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DelaGarza\_38 (GF), Franklin22\_60 (EB), Gingerbug\_37 (GF), Lesiram\_39 (GF), Teng\_40 (GF),

Start 31:

- Found in 14 of 86 ( 16.3% ) of genes in pham
- Manual Annotations of this start: 12 of 72
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Astartes\_17 (EK2), Atraxi\_16 (EK2), Fullmetal\_17 (EK2), Mazun\_17 (EK2), Moleficent\_17 (EK2), Morrill\_16 (EK2), Pharky\_17 (EK2), Phedro\_17 (EK2), Phracted\_17 (EK2), RicoCaldo\_17 (EK2), StagePhright\_17 (EK2), ThirteenKH\_16 (EK2), TrippleS\_16 (EK2), Yafa\_16 (EK2),

#### Start 32:

- Found in 1 of 86 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PhriedRice\_17 (EK2),

#### Start 33:

- Found in 1 of 86 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fede\_16 (EK2),

#### Start 36:

- Found in 11 of 86 ( 12.8% ) of genes in pham
- Manual Annotations of this start: 8 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdInFrench\_93 (EG), CandC\_93 (EG), Fregley\_95 (EG), Kelcole\_94 (EG), Marcie\_99 (EG), OneinaGillian\_92 (EG), Pepe25\_91 (EG), RobinRose\_97 (EG), Romm\_97 (EG), Tempo\_96 (EG), Wilca\_93 (EG),

### **Summary by clusters:**

There are 6 clusters represented in this pham: EG, EB, GG, GF, GC, EK2,

#### Info for manual annotations of cluster EB:

- Start number 24 was manually annotated 21 times for cluster EB.
- Start number 28 was manually annotated 10 times for cluster EB.
- Start number 30 was manually annotated 1 time for cluster EB.

#### Info for manual annotations of cluster EG:

- Start number 16 was manually annotated 1 time for cluster EG.
- Start number 26 was manually annotated 2 times for cluster EG.
- Start number 36 was manually annotated 8 times for cluster EG.

#### Info for manual annotations of cluster EK2:

- Start number 29 was manually annotated 6 times for cluster EK2.
- Start number 31 was manually annotated 12 times for cluster EK2.
- Start number 32 was manually annotated 1 time for cluster EK2.
- Start number 33 was manually annotated 1 time for cluster EK2.

#### Info for manual annotations of cluster GC:

- Start number 27 was manually annotated 4 times for cluster GC.

#### Info for manual annotations of cluster GF:

- Start number 30 was manually annotated 3 times for cluster GF.

#### Info for manual annotations of cluster GG:

- Start number 17 was manually annotated 2 times for cluster GG.

**Gene Information:**

Gene: Akoni\_16 Start: 11287, Stop: 10994, Start Num: 29

Candidate Starts for Akoni\_16:

(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Albright\_59 Start: 38042, Stop: 38365, Start Num: 24

Candidate Starts for Albright\_59:

(Start: 24 @38042 has 21 MA's), (42, 38129), (47, 38168), (50, 38180), (56, 38234),

Gene: AloeVera\_16 Start: 11287, Stop: 10994, Start Num: 29

Candidate Starts for AloeVera\_16:

(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Armstrong\_57 Start: 35575, Stop: 35892, Start Num: 28

Candidate Starts for Armstrong\_57:

(Start: 28 @35575 has 10 MA's), (46, 35695), (55, 35752), (66, 35824),

Gene: Ashton\_16 Start: 11291, Stop: 10998, Start Num: 29

Candidate Starts for Ashton\_16:

(Start: 29 @11291 has 6 MA's), (61, 11084), (67, 11060), (71, 11027),

Gene: Astartes\_17 Start: 11549, Stop: 11265, Start Num: 31

Candidate Starts for Astartes\_17:

(Start: 31 @11549 has 12 MA's), (53, 11426), (58, 11369), (61, 11351), (68, 11324),

Gene: Atraxi\_16 Start: 11306, Stop: 11022, Start Num: 31

Candidate Starts for Atraxi\_16:

(Start: 31 @11306 has 12 MA's), (53, 11183), (58, 11126), (61, 11108), (68, 11081),

Gene: AvGardian\_61 Start: 39011, Stop: 39343, Start Num: 24

Candidate Starts for AvGardian\_61:

(Start: 24 @39011 has 21 MA's), (43, 39107), (46, 39128), (48, 39143), (49, 39146), (65, 39260), (66, 39278), (72, 39323), (75, 39338),

Gene: Avocadoman\_60 Start: 38243, Stop: 38566, Start Num: 24

Candidate Starts for Avocadoman\_60:

(3, 37802), (4, 37886), (Start: 24 @38243 has 21 MA's), (42, 38330), (47, 38369), (50, 38381), (56, 38435),

Gene: BabyDaisy\_63 Start: 39765, Stop: 40097, Start Num: 24

Candidate Starts for BabyDaisy\_63:

(Start: 24 @39765 has 21 MA's), (42, 39852), (50, 39903), (75, 40089),

Gene: Bachaco\_56 Start: 38775, Stop: 39110, Start Num: 24

Candidate Starts for Bachaco\_56:

(Start: 24 @38775 has 21 MA's), (46, 38892), (49, 38910), (50, 38913), (71, 39078), (74, 39096),

Gene: Barroma\_16 Start: 11287, Stop: 10994, Start Num: 29

Candidate Starts for Barroma\_16:

(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Bernstein\_57 Start: 35573, Stop: 35890, Start Num: 28

Candidate Starts for Bernstein\_57:

(1, 35003), (Start: 28 @35573 has 10 MA's), (46, 35693), (55, 35750), (66, 35822),

Gene: BirdInFrench\_93 Start: 56287, Stop: 56012, Start Num: 36

Candidate Starts for BirdInFrench\_93:

(Start: 36 @56287 has 8 MA's), (44, 56227), (45, 56209), (54, 56158), (62, 56101), (71, 56041),

Gene: Brahms\_57 Start: 35475, Stop: 35792, Start Num: 28

Candidate Starts for Brahms\_57:

(Start: 28 @35475 has 10 MA's), (46, 35595), (55, 35652), (66, 35724),

Gene: BubbaBear\_60 Start: 39018, Stop: 39350, Start Num: 24

Candidate Starts for BubbaBear\_60:

(Start: 24 @39018 has 21 MA's), (42, 39105), (47, 39144), (50, 39156),

Gene: CandC\_93 Start: 56401, Stop: 56120, Start Num: 36

Candidate Starts for CandC\_93:

(7, 56686), (35, 56404), (Start: 36 @56401 has 8 MA's), (45, 56320), (51, 56296), (54, 56266), (62, 56209), (71, 56149),

Gene: Celaena\_56 Start: 38537, Stop: 38872, Start Num: 24

Candidate Starts for Celaena\_56:

(Start: 24 @38537 has 21 MA's), (46, 38654), (49, 38672), (50, 38675), (71, 38840), (74, 38858),

Gene: ChiliPepper\_55 Start: 37847, Stop: 38161, Start Num: 24

Candidate Starts for ChiliPepper\_55:

(Start: 24 @37847 has 21 MA's), (50, 37985), (66, 38090), (71, 38129),

Gene: Clayda5\_59 Start: 35540, Stop: 35857, Start Num: 28

Candidate Starts for Clayda5\_59:

(Start: 28 @35540 has 10 MA's), (46, 35660), (55, 35717), (66, 35789),

Gene: Coltrane\_57 Start: 35475, Stop: 35792, Start Num: 28

Candidate Starts for Coltrane\_57:

(Start: 28 @35475 has 10 MA's), (46, 35595), (55, 35652), (66, 35724),

Gene: CupcakePrincess\_60 Start: 38349, Stop: 38675, Start Num: 24

Candidate Starts for CupcakePrincess\_60:

(Start: 24 @38349 has 21 MA's), (46, 38469), (48, 38484), (50, 38490), (58, 38556), (75, 38667),

Gene: DelaGarza\_38 Start: 24570, Stop: 24280, Start Num: 30

Candidate Starts for DelaGarza\_38:

(Start: 30 @24570 has 4 MA's), (37, 24537), (46, 24465), (57, 24387), (59, 24378), (66, 24345),

Gene: Dewdrop\_142 Start: 85102, Stop: 85425, Start Num: 27

Candidate Starts for Dewdrop\_142:

(Start: 27 @85102 has 4 MA's), (51, 85240), (68, 85357), (70, 85381), (71, 85393),

Gene: Didgeridoo\_66 Start: 39884, Stop: 40207, Start Num: 24

Candidate Starts for Didgeridoo\_66:

(2, 39446), (Start: 24 @39884 has 21 MA's), (42, 39971), (46, 40001), (48, 40016), (49, 40019), (75, 40199),

Gene: Dismas\_56 Start: 37768, Stop: 38082, Start Num: 24

Candidate Starts for Dismas\_56:

(Start: 24 @37768 has 21 MA's), (50, 37906), (66, 38011), (71, 38050),

Gene: Eden\_58 Start: 36683, Stop: 37000, Start Num: 28

Candidate Starts for Eden\_58:

(15, 36560), (Start: 28 @36683 has 10 MA's), (46, 36803), (55, 36860), (66, 36932),

Gene: Elva\_62 Start: 39454, Stop: 39777, Start Num: 24

Candidate Starts for Elva\_62:

(10, 39292), (12, 39295), (14, 39310), (Start: 24 @39454 has 21 MA's), (46, 39574), (55, 39628), (58, 39658), (75, 39769),

Gene: Eula\_60 Start: 38335, Stop: 38661, Start Num: 24

Candidate Starts for Eula\_60:

(Start: 24 @38335 has 21 MA's), (46, 38455), (48, 38470), (50, 38476), (58, 38542), (75, 38653),

Gene: Fede\_16 Start: 11540, Stop: 11253, Start Num: 33

Candidate Starts for Fede\_16:

(25, 11558), (Start: 33 @11540 has 1 MA's), (38, 11507), (61, 11339), (67, 11315), (68, 11312),

Gene: FlameThrower\_55 Start: 37574, Stop: 37909, Start Num: 24

Candidate Starts for FlameThrower\_55:

(Start: 24 @37574 has 21 MA's), (46, 37691), (49, 37709), (50, 37712), (71, 37877), (74, 37895),

Gene: Franklin22\_60 Start: 36334, Stop: 36648, Start Num: 30

Candidate Starts for Franklin22\_60:

(Start: 30 @36334 has 4 MA's), (66, 36580),

Gene: Fransoyer\_87 Start: 55594, Stop: 55271, Start Num: 26

Candidate Starts for Fransoyer\_87:

(9, 55765), (11, 55762), (13, 55750), (Start: 16 @55666 has 1 MA's), (19, 55648), (21, 55627), (Start: 26 @55594 has 2 MA's), (41, 55531), (44, 55489), (45, 55471), (54, 55417), (71, 55300), (72, 55294),

Gene: Fregley\_95 Start: 56447, Stop: 56166, Start Num: 36

Candidate Starts for Fregley\_95:

(5, 56795), (6, 56783), (7, 56732), (35, 56450), (Start: 36 @56447 has 8 MA's), (45, 56366), (51, 56342), (54, 56312), (62, 56255), (71, 56195),

Gene: Fullmetal\_17 Start: 11547, Stop: 11263, Start Num: 31

Candidate Starts for Fullmetal\_17:

(Start: 31 @11547 has 12 MA's), (53, 11424), (58, 11367), (61, 11349), (68, 11322),

Gene: Gack\_57 Start: 36282, Stop: 36596, Start Num: 28

Candidate Starts for Gack\_57:

(Start: 28 @36282 has 10 MA's), (46, 36402), (66, 36528), (71, 36567),

Gene: Gingerbug\_37 Start: 25076, Stop: 24786, Start Num: 30

Candidate Starts for Gingerbug\_37:



(Start: 30 @25076 has 4 MA's), (37, 25043), (52, 24950), (68, 24842),

Gene: Hendrix\_144 Start: 89102, Stop: 89473, Start Num: 27

Candidate Starts for Hendrix\_144:

(18, 89036), (20, 89054), (Start: 27 @89102 has 4 MA's), (39, 89153), (64, 89357), (69, 89408),

Gene: Huwbert\_90 Start: 53979, Stop: 53599, Start Num: 17

Candidate Starts for Huwbert\_90:

(Start: 17 @53979 has 2 MA's), (21, 53949), (34, 53895), (54, 53745), (60, 53697), (73, 53616),

Gene: IndyLu\_63 Start: 39496, Stop: 39828, Start Num: 24

Candidate Starts for IndyLu\_63:

(Start: 24 @39496 has 21 MA's), (42, 39583), (47, 39622), (50, 39634), (75, 39820),

Gene: Jabb\_60 Start: 38349, Stop: 38675, Start Num: 24

Candidate Starts for Jabb\_60:

(Start: 24 @38349 has 21 MA's), (46, 38469), (48, 38484), (50, 38490), (58, 38556), (75, 38667),

Gene: JordanFarm\_16 Start: 11287, Stop: 10994, Start Num: 29

Candidate Starts for JordanFarm\_16:

(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Kate33\_63 Start: 39232, Stop: 39564, Start Num: 24

Candidate Starts for Kate33\_63:

(Start: 24 @39232 has 21 MA's), (50, 39370), (75, 39556),

Gene: Katzastrophic\_57 Start: 38084, Stop: 38419, Start Num: 24

Candidate Starts for Katzastrophic\_57:

(Start: 24 @38084 has 21 MA's), (46, 38201), (49, 38219), (50, 38222), (71, 38387), (74, 38405),

Gene: Kelcole\_94 Start: 56959, Stop: 56681, Start Num: 36

Candidate Starts for Kelcole\_94:

(22, 57004), (Start: 24 @57001 has 21 MA's), (Start: 36 @56959 has 8 MA's), (45, 56878), (54, 56827), (62, 56770), (71, 56710),

Gene: Kieran\_55 Start: 37809, Stop: 38123, Start Num: 24

Candidate Starts for Kieran\_55:

(Start: 24 @37809 has 21 MA's), (50, 37947), (66, 38052), (71, 38091),

Gene: Lahqtemish\_61 Start: 39515, Stop: 39841, Start Num: 24

Candidate Starts for Lahqtemish\_61:

(Start: 24 @39515 has 21 MA's), (42, 39605), (47, 39644), (50, 39656), (56, 39710), (75, 39833),

Gene: Leaf\_142 Start: 85033, Stop: 85356, Start Num: 27

Candidate Starts for Leaf\_142:

(Start: 27 @85033 has 4 MA's), (51, 85171), (68, 85288), (70, 85312), (71, 85324),

Gene: Lesiram\_39 Start: 24542, Stop: 24252, Start Num: 30

Candidate Starts for Lesiram\_39:

(Start: 30 @24542 has 4 MA's), (37, 24509), (40, 24491), (46, 24437), (57, 24359), (59, 24350), (66, 24317),

Gene: Marcie\_99 Start: 57159, Stop: 56878, Start Num: 36

Candidate Starts for Marcie\_99:

(35, 57162), (Start: 36 @57159 has 8 MA's), (62, 56967), (71, 56907),

Gene: Mazun\_17 Start: 11548, Stop: 11264, Start Num: 31

Candidate Starts for Mazun\_17:

(Start: 31 @11548 has 12 MA's), (53, 11425), (58, 11368), (61, 11350), (68, 11323),

Gene: Moleficent\_17 Start: 11543, Stop: 11259, Start Num: 31

Candidate Starts for Moleficent\_17:

(Start: 31 @11543 has 12 MA's), (53, 11420), (58, 11363), (61, 11345), (68, 11318),

Gene: Morrill\_16 Start: 11285, Stop: 11001, Start Num: 31

Candidate Starts for Morrill\_16:

(Start: 31 @11285 has 12 MA's), (53, 11162), (58, 11105), (61, 11087), (68, 11060),

Gene: MsUbiquitous\_60 Start: 38349, Stop: 38675, Start Num: 24

Candidate Starts for MsUbiquitous\_60:

(Start: 24 @38349 has 21 MA's), (46, 38469), (48, 38484), (50, 38490), (58, 38556), (75, 38667),

Gene: OneinaGillian\_92 Start: 55864, Stop: 55589, Start Num: 36

Candidate Starts for OneinaGillian\_92:

(22, 55909), (Start: 24 @55906 has 21 MA's), (Start: 36 @55864 has 8 MA's), (45, 55786), (54, 55735), (62, 55678), (71, 55618),

Gene: Pepe25\_91 Start: 55206, Stop: 54931, Start Num: 36

Candidate Starts for Pepe25\_91:

(Start: 36 @55206 has 8 MA's), (44, 55146), (45, 55128), (54, 55077), (62, 55020), (71, 54960),

Gene: Pharky\_17 Start: 11507, Stop: 11223, Start Num: 31

Candidate Starts for Pharky\_17:

(Start: 31 @11507 has 12 MA's), (53, 11384), (58, 11327), (61, 11309), (68, 11282),

Gene: Phedro\_17 Start: 11507, Stop: 11223, Start Num: 31

Candidate Starts for Phedro\_17:

(Start: 31 @11507 has 12 MA's), (53, 11384), (58, 11327), (61, 11309), (68, 11282),

Gene: Phracted\_17 Start: 11507, Stop: 11223, Start Num: 31

Candidate Starts for Phracted\_17:

(Start: 31 @11507 has 12 MA's), (53, 11384), (58, 11327), (61, 11309), (68, 11282),

Gene: PhriedRice\_17 Start: 11517, Stop: 11224, Start Num: 32

Candidate Starts for PhriedRice\_17:

(8, 11718), (Start: 32 @11517 has 1 MA's), (61, 11310), (67, 11286),

Gene: QMacho\_62 Start: 38995, Stop: 39321, Start Num: 24

Candidate Starts for QMacho\_62:

(Start: 24 @38995 has 21 MA's), (46, 39115), (48, 39130), (50, 39136), (58, 39202), (75, 39313),

Gene: Quenya\_59 Start: 38216, Stop: 38551, Start Num: 24

Candidate Starts for Quenya\_59:

(Start: 24 @38216 has 21 MA's), (43, 38312), (46, 38333), (48, 38348), (49, 38351), (55, 38390), (74, 38537), (75, 38540),

Gene: Rasputia\_139 Start: 86480, Stop: 86809, Start Num: 27

Candidate Starts for Rasputia\_139:

(Start: 27 @86480 has 4 MA's), (53, 86633), (68, 86741), (70, 86765), (71, 86777),

Gene: RicoCaldo\_17 Start: 11539, Stop: 11255, Start Num: 31

Candidate Starts for RicoCaldo\_17:

(Start: 31 @11539 has 12 MA's), (53, 11416), (58, 11359), (61, 11341), (68, 11314),

Gene: RobinRose\_97 Start: 57031, Stop: 56753, Start Num: 36

Candidate Starts for RobinRose\_97:

(22, 57076), (Start: 24 @57073 has 21 MA's), (Start: 36 @57031 has 8 MA's), (45, 56950), (54, 56899), (62, 56842), (71, 56782),

Gene: Rollins\_57 Start: 35573, Stop: 35890, Start Num: 28

Candidate Starts for Rollins\_57:

(1, 35003), (Start: 28 @35573 has 10 MA's), (46, 35693), (55, 35750), (66, 35822),

Gene: Romm\_97 Start: 57028, Stop: 56750, Start Num: 36

Candidate Starts for Romm\_97:

(22, 57073), (Start: 24 @57070 has 21 MA's), (Start: 36 @57028 has 8 MA's), (45, 56947), (54, 56896), (62, 56839), (71, 56779),

Gene: Rona\_55 Start: 37759, Stop: 38073, Start Num: 24

Candidate Starts for Rona\_55:

(Start: 24 @37759 has 21 MA's), (50, 37897), (66, 38002), (71, 38041),

Gene: RubyRalph\_87 Start: 55267, Stop: 54872, Start Num: 16

Candidate Starts for RubyRalph\_87:

(9, 55366), (11, 55363), (13, 55351), (Start: 16 @55267 has 1 MA's), (19, 55249), (21, 55228), (Start: 26 @55195 has 2 MA's), (41, 55132), (44, 55090), (45, 55072), (54, 55018), (71, 54901), (72, 54895),

Gene: SadLad\_89 Start: 56322, Stop: 55999, Start Num: 26

Candidate Starts for SadLad\_89:

(9, 56493), (11, 56490), (13, 56478), (Start: 16 @56394 has 1 MA's), (19, 56376), (21, 56355), (Start: 26 @56322 has 2 MA's), (41, 56259), (44, 56217), (45, 56199), (54, 56145), (71, 56028), (72, 56022),

Gene: Sharkboy\_56 Start: 37858, Stop: 38187, Start Num: 24

Candidate Starts for Sharkboy\_56:

(Start: 24 @37858 has 21 MA's), (46, 37975), (48, 37990), (50, 37996), (66, 38116), (67, 38122), (71, 38155),

Gene: ShyRosie\_16 Start: 11287, Stop: 10994, Start Num: 29

Candidate Starts for ShyRosie\_16:

(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Skylord\_57 Start: 35514, Stop: 35831, Start Num: 28

Candidate Starts for Skylord\_57:

(1, 34944), (Start: 28 @35514 has 10 MA's), (46, 35634), (55, 35691), (66, 35763),

Gene: Softsoap\_62 Start: 39051, Stop: 39383, Start Num: 24

Candidate Starts for Softsoap\_62:

(Start: 24 @39051 has 21 MA's), (42, 39138), (47, 39177), (50, 39189), (75, 39375),

Gene: StagePhright\_17 Start: 11507, Stop: 11223, Start Num: 31  
Candidate Starts for StagePhright\_17:  
(Start: 31 @11507 has 12 MA's), (53, 11384), (58, 11327), (61, 11309), (68, 11282),

Gene: Tempo\_96 Start: 57068, Stop: 56790, Start Num: 36  
Candidate Starts for Tempo\_96:  
(22, 57113), (Start: 24 @57110 has 21 MA's), (Start: 36 @57068 has 8 MA's), (45, 56987), (54, 56936),  
(62, 56879), (71, 56819),

Gene: Teng\_40 Start: 24578, Stop: 24288, Start Num: 30  
Candidate Starts for Teng\_40:  
(Start: 30 @24578 has 4 MA's), (37, 24545), (40, 24527), (46, 24473), (57, 24395), (59, 24386), (66,  
24353),

Gene: ThirteenKH\_16 Start: 11284, Stop: 11000, Start Num: 31  
Candidate Starts for ThirteenKH\_16:  
(Start: 31 @11284 has 12 MA's), (53, 11161), (58, 11104), (61, 11086), (68, 11059),

Gene: TrippleS\_16 Start: 11291, Stop: 11007, Start Num: 31  
Candidate Starts for TrippleS\_16:  
(Start: 31 @11291 has 12 MA's), (53, 11168), (58, 11111), (61, 11093), (68, 11066),

Gene: Triscuit\_88 Start: 53720, Stop: 53340, Start Num: 17  
Candidate Starts for Triscuit\_88:  
(Start: 17 @53720 has 2 MA's), (19, 53711), (21, 53690), (34, 53636), (54, 53486), (60, 53438), (73,  
53357),

Gene: Truong\_16 Start: 11287, Stop: 10994, Start Num: 29  
Candidate Starts for Truong\_16:  
(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Vitas\_57 Start: 35546, Stop: 35863, Start Num: 28  
Candidate Starts for Vitas\_57:  
(1, 34976), (Start: 28 @35546 has 10 MA's), (46, 35666), (55, 35723), (66, 35795),

Gene: Waterlily\_16 Start: 11287, Stop: 10994, Start Num: 29  
Candidate Starts for Waterlily\_16:  
(Start: 29 @11287 has 6 MA's), (61, 11080), (67, 11056), (71, 11023),

Gene: Wilca\_93 Start: 56287, Stop: 56012, Start Num: 36  
Candidate Starts for Wilca\_93:  
(Start: 36 @56287 has 8 MA's), (44, 56227), (45, 56209), (54, 56158), (62, 56101), (71, 56041),

Gene: Wrackline\_51 Start: 28147, Stop: 27845, Start Num: 28  
Candidate Starts for Wrackline\_51:  
(23, 28162), (Start: 28 @28147 has 10 MA's), (43, 28057), (55, 27979), (63, 27928), (68, 27901),

Gene: Yafa\_16 Start: 11307, Stop: 11023, Start Num: 31  
Candidate Starts for Yafa\_16:  
(Start: 31 @11307 has 12 MA's), (53, 11184), (58, 11127), (61, 11109), (68, 11082),