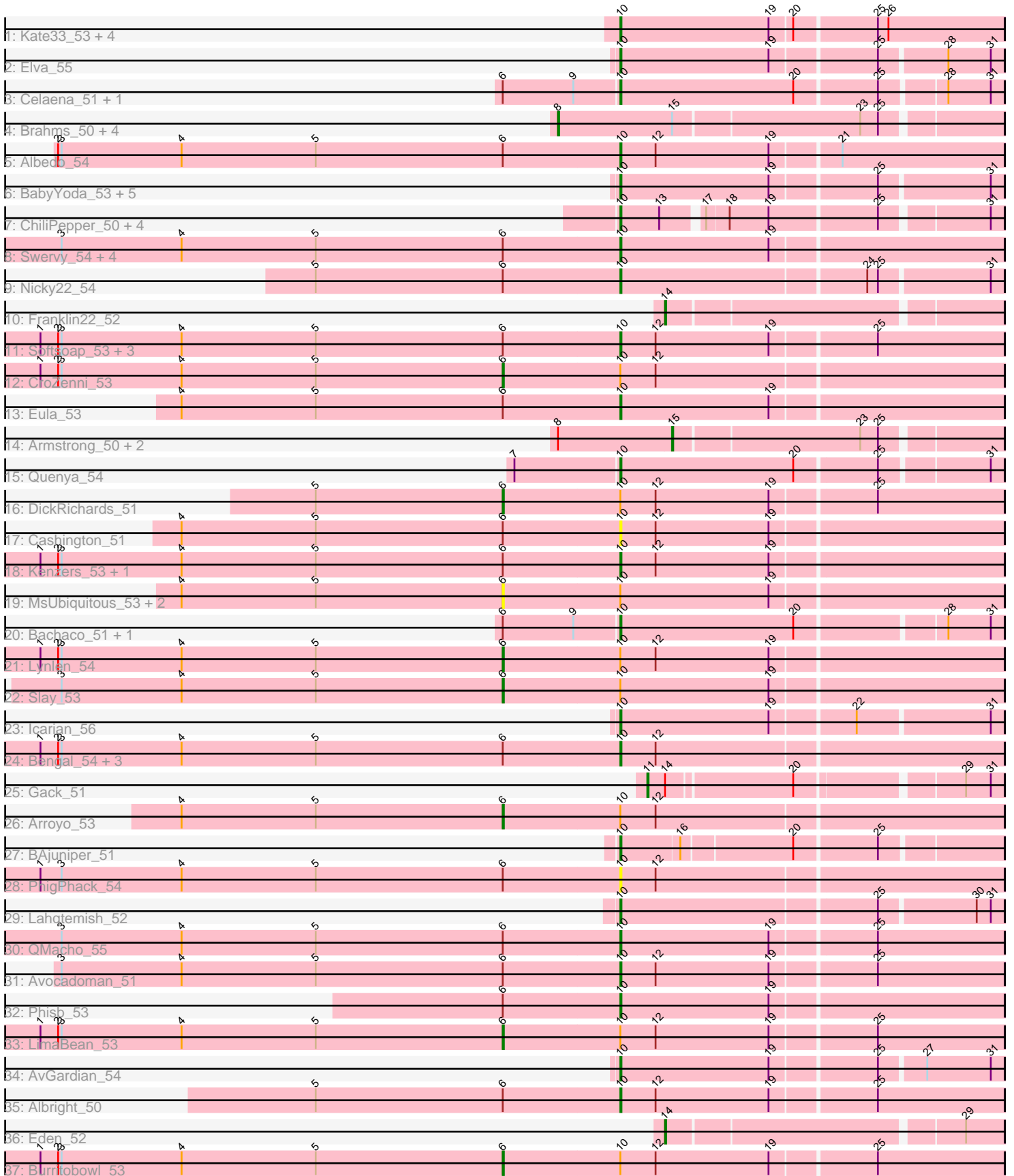


Pham 200228



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 200228 Report

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

Pham number 200228 has 71 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Kate33\_53, Didgeridoo\_56, BabyDaisy\_53, PastaFagioli\_52, IndyLu\_53
- Track 2 : Elva\_55
- Track 3 : Celaena\_51, FlameThrower\_50
- Track 4 : Brahms\_50, Coltrane\_50, Clayda5\_52, Bernstein\_50, Rollins\_50
- Track 5 : Albedo\_54
- Track 6 : BabyYoda\_53, WalkingDead\_55, SanaSana\_55, Stoor\_53, DirtyBubble\_52, Stromboli\_53
- Track 7 : ChiliPepper\_50, Kieran\_50, Sharkboy\_51, Dismas\_51, Rona\_50
- Track 8 : Swervy\_54, Jovita\_52, TukTuk\_54, Finalfrontier\_54, SarBear\_53
- Track 9 : Nicky22\_54
- Track 10 : Franklin22\_52
- Track 11 : Softsoap\_53, BubbaBear\_52, Doobus\_51, Abigail\_52
- Track 12 : CroZenni\_53
- Track 13 : Eula\_53
- Track 14 : Armstrong\_50, Vitas\_50, Skylord\_50
- Track 15 : Quenya\_54
- Track 16 : DickRichards\_51
- Track 17 : Cashington\_51
- Track 18 : Kenzers\_53, Johnathan\_52
- Track 19 : MsUbiquitous\_53, Jabb\_53, CupcakePrincess\_53
- Track 20 : Bachaco\_51, Katzastrophic\_52
- Track 21 : Lynlen\_54
- Track 22 : Slay\_53
- Track 23 : Icarian\_56
- Track 24 : Bengal\_54, BelmontSKP\_53, SansAfet\_54, AnnaLie\_53
- Track 25 : Gack\_51
- Track 26 : Arroyo\_53
- Track 27 : BAjuniper\_51
- Track 28 : PhigPhack\_54
- Track 29 : Lahqtemish\_52
- Track 30 : QMacho\_55
- Track 31 : Avocadoman\_51
- Track 32 : Phisb\_53
- Track 33 : LimaBean\_53
- Track 34 : AvGardian\_54
- Track 35 : Albright\_50
- Track 36 : Eden\_52

- Track 37 : Burritobowl\_53

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

The start number called the most often in the published annotations is 10, it was called in 43 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abigail\_52, Albedo\_54, Albright\_50, AnnaLie\_53, AvGardian\_54, Avocadoman\_51, BAjuniper\_51, BabyDaisy\_53, BabyYoda\_53, Bachaco\_51, BelmontSKP\_53, Bengal\_54, BubbaBear\_52, Cashington\_51, Celaena\_51, ChiliPepper\_50, Didgeridoo\_56, DirtyBubble\_52, Dismas\_51, Doobus\_51, Elva\_55, Eula\_53, Finalfrontier\_54, FlameThrower\_50, Icarian\_56, IndyLu\_53, Johnathan\_52, Jovita\_52, Kate33\_53, Katzastrophic\_52, Kenzers\_53, Kieran\_50, Lahqtemish\_52, Nicky22\_54, PastaFagioli\_52, PhigPhack\_54, Phisb\_53, QMacho\_55, Quenya\_54, Rona\_50, SanaSana\_55, SansAfet\_54, SarBear\_53, Sharkboy\_51, Softsoap\_53, Stoor\_53, Stromboli\_53, Swervy\_54, TukTuk\_54, WalkingDead\_55,

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

- Arroyo\_53, Burritobowl\_53, CroZenni\_53, CupcakePrincess\_53, DickRichards\_51, Jabb\_53, LimaBean\_53, Lynlen\_54, MsUbiquitous\_53, Slay\_53,

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

- Armstrong\_50, Bernstein\_50, Brahms\_50, Clayda5\_52, Coltrane\_50, Eden\_52, Franklin22\_52, Gack\_51, Rollins\_50, Skylord\_50, Vitas\_50,

**Summary by start number:**

Start 6:

- Found in 38 of 71 ( 53.5% ) of genes in pham
- Manual Annotations of this start: 7 of 61
- Called 26.3% of time when present
- Phage (with cluster) where this start called: Arroyo\_53 (EB), Burritobowl\_53 (EB), CroZenni\_53 (EB), CupcakePrincess\_53 (EB), DickRichards\_51 (EB), Jabb\_53 (EB), LimaBean\_53 (EB), Lynlen\_54 (EB), MsUbiquitous\_53 (EB), Slay\_53 (EB),

Start 8:

- Found in 8 of 71 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 5 of 61
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Bernstein\_50 (EB), Brahms\_50 (EB), Clayda5\_52 (EB), Coltrane\_50 (EB), Rollins\_50 (EB),

Start 10:

- Found in 60 of 71 ( 84.5% ) of genes in pham
- Manual Annotations of this start: 43 of 61
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Abigail\_52 (EB), Albedo\_54 (EB), Albright\_50 (EB), AnnaLie\_53 (EB), AvGardian\_54 (EB), Avocadoman\_51 (EB), BAjuniper\_51 (EB), BabyDaisy\_53 (EB), BabyYoda\_53 (EB), Bachaco\_51 (EB),

BelmontSKP\_53 (EB), Bengal\_54 (EB), BubbaBear\_52 (EB), Cashington\_51 (EB), Celaena\_51 (EB), ChiliPepper\_50 (EB), Didgeridoo\_56 (EB), DirtyBubble\_52 (EB), Dismas\_51 (EB), Doobus\_51 (EB), Elva\_55 (EB), Eula\_53 (EB), Finalfrontier\_54 (EB), FlameThrower\_50 (EB), Icarian\_56 (EB), IndyLu\_53 (EB), Johnathan\_52 (EB), Jovita\_52 (EB), Kate33\_53 (EB), Katzastrophic\_52 (EB), Kenzers\_53 (EB), Kieran\_50 (EB), Lahqtemish\_52 (EB), Nicky22\_54 (EB), PastaFagioli\_52 (EB), PhigPhack\_54 (EB), Phisb\_53 (EB), QMacho\_55 (EB), Quenya\_54 (EB), Rona\_50 (EB), SanaSana\_55 (EB), SansAfet\_54 (EB), SarBear\_53 (EB), Sharkboy\_51 (EB), Softsoap\_53 (EB), Stoor\_53 (EB), Stromboli\_53 (EB), Swervy\_54 (EB), TukTuk\_54 (EB), WalkingDead\_55 (EB),

Start 11:

- Found in 1 of 71 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gack\_51 (EB),

Start 14:

- Found in 3 of 71 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 2 of 61
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Eden\_52 (EB), Franklin22\_52 (EB),

Start 15:

- Found in 8 of 71 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 3 of 61
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Armstrong\_50 (EB), Skylord\_50 (EB), Vitas\_50 (EB),

### **Summary by clusters:**

There is one cluster represented in this pham: EB

Info for manual annotations of cluster EB:

- Start number 6 was manually annotated 7 times for cluster EB.
- Start number 8 was manually annotated 5 times for cluster EB.
- Start number 10 was manually annotated 43 times for cluster EB.
- Start number 11 was manually annotated 1 time for cluster EB.
- Start number 14 was manually annotated 2 times for cluster EB.
- Start number 15 was manually annotated 3 times for cluster EB.

### **Gene Information:**

Gene: Abigail\_52 Start: 34814, Stop: 35131, Start Num: 10

Candidate Starts for Abigail\_52:

(1, 34322), (2, 34337), (3, 34340), (4, 34442), (5, 34556), (Start: 6 @34715 has 7 MA's), (Start: 10 @34814 has 43 MA's), (12, 34844), (19, 34940), (25, 35024),

Gene: Albedo\_54 Start: 35539, Stop: 35856, Start Num: 10

Candidate Starts for Albedo\_54:

(2, 35062), (3, 35065), (4, 35167), (5, 35281), (Start: 6 @35440 has 7 MA's), (Start: 10 @35539 has 43 MA's), (12, 35569), (19, 35665), (21, 35719),

Gene: Albright\_50 Start: 34245, Stop: 34562, Start Num: 10

Candidate Starts for Albright\_50:

(5, 33987), (Start: 6 @34146 has 7 MA's), (Start: 10 @34245 has 43 MA's), (12, 34275), (19, 34371), (25, 34455),

Gene: AnnaLie\_53 Start: 35474, Stop: 35791, Start Num: 10

Candidate Starts for AnnaLie\_53:

(1, 34982), (2, 34997), (3, 35000), (4, 35102), (5, 35216), (Start: 6 @35375 has 7 MA's), (Start: 10 @35474 has 43 MA's), (12, 35504),

Gene: Armstrong\_50 Start: 33369, Stop: 33632, Start Num: 15

Candidate Starts for Armstrong\_50:

(Start: 8 @33273 has 5 MA's), (Start: 15 @33369 has 3 MA's), (23, 33522), (25, 33537),

Gene: Arroyo\_53 Start: 35483, Stop: 35899, Start Num: 6

Candidate Starts for Arroyo\_53:

(4, 35210), (5, 35324), (Start: 6 @35483 has 7 MA's), (Start: 10 @35582 has 43 MA's), (12, 35612),

Gene: AvGardian\_54 Start: 35767, Stop: 36078, Start Num: 10

Candidate Starts for AvGardian\_54:

(Start: 10 @35767 has 43 MA's), (19, 35893), (25, 35977), (27, 36013), (31, 36067),

Gene: Avocadoman\_51 Start: 34446, Stop: 34763, Start Num: 10

Candidate Starts for Avocadoman\_51:

(3, 33972), (4, 34074), (5, 34188), (Start: 6 @34347 has 7 MA's), (Start: 10 @34446 has 43 MA's), (12, 34476), (19, 34572), (25, 34656),

Gene: BAjuniper\_51 Start: 36109, Stop: 36411, Start Num: 10

Candidate Starts for BAjuniper\_51:

(Start: 10 @36109 has 43 MA's), (16, 36157), (20, 36247), (25, 36313),

Gene: BabyDaisy\_53 Start: 35603, Stop: 35920, Start Num: 10

Candidate Starts for BabyDaisy\_53:

(Start: 10 @35603 has 43 MA's), (19, 35729), (20, 35747), (25, 35813), (26, 35822),

Gene: BabyYoda\_53 Start: 36188, Stop: 36499, Start Num: 10

Candidate Starts for BabyYoda\_53:

(Start: 10 @36188 has 43 MA's), (19, 36314), (25, 36398), (31, 36488),

Gene: Bachaco\_51 Start: 36917, Stop: 37228, Start Num: 10

Candidate Starts for Bachaco\_51:

(Start: 6 @36821 has 7 MA's), (9, 36881), (Start: 10 @36917 has 43 MA's), (20, 37064), (28, 37181), (31, 37217),

Gene: BelmontSKP\_53 Start: 35474, Stop: 35791, Start Num: 10

Candidate Starts for BelmontSKP\_53:

(1, 34982), (2, 34997), (3, 35000), (4, 35102), (5, 35216), (Start: 6 @35375 has 7 MA's), (Start: 10 @35474 has 43 MA's), (12, 35504),

Gene: Bengal\_54 Start: 35240, Stop: 35557, Start Num: 10

Candidate Starts for Bengal\_54:

(1, 34748), (2, 34763), (3, 34766), (4, 34868), (5, 34982), (Start: 6 @35141 has 7 MA's), (Start: 10 @35240 has 43 MA's), (12, 35270),

Gene: Bernstein\_50 Start: 33271, Stop: 33630, Start Num: 8

Candidate Starts for Bernstein\_50:

(Start: 8 @33271 has 5 MA's), (Start: 15 @33367 has 3 MA's), (23, 33520), (25, 33535),

Gene: Brahms\_50 Start: 33191, Stop: 33550, Start Num: 8

Candidate Starts for Brahms\_50:

(Start: 8 @33191 has 5 MA's), (Start: 15 @33287 has 3 MA's), (23, 33440), (25, 33455),

Gene: BubbaBear\_52 Start: 35223, Stop: 35540, Start Num: 10

Candidate Starts for BubbaBear\_52:

(1, 34731), (2, 34746), (3, 34749), (4, 34851), (5, 34965), (Start: 6 @35124 has 7 MA's), (Start: 10 @35223 has 43 MA's), (12, 35253), (19, 35349), (25, 35433),

Gene: Burritobowl\_53 Start: 35054, Stop: 35470, Start Num: 6

Candidate Starts for Burritobowl\_53:

(1, 34661), (2, 34676), (3, 34679), (4, 34781), (5, 34895), (Start: 6 @35054 has 7 MA's), (Start: 10 @35153 has 43 MA's), (12, 35183), (19, 35279), (25, 35363),

Gene: Cashington\_51 Start: 34566, Stop: 34883, Start Num: 10

Candidate Starts for Cashington\_51:

(4, 34194), (5, 34308), (Start: 6 @34467 has 7 MA's), (Start: 10 @34566 has 43 MA's), (12, 34596), (19, 34692),

Gene: Celaena\_51 Start: 36679, Stop: 36990, Start Num: 10

Candidate Starts for Celaena\_51:

(Start: 6 @36583 has 7 MA's), (9, 36643), (Start: 10 @36679 has 43 MA's), (20, 36826), (25, 36892), (28, 36943), (31, 36979),

Gene: ChiliPepper\_50 Start: 35984, Stop: 36280, Start Num: 10

Candidate Starts for ChiliPepper\_50:

(Start: 10 @35984 has 43 MA's), (13, 36017), (17, 36047), (18, 36065), (19, 36098), (25, 36185), (31, 36269),

Gene: Clayda5\_52 Start: 33256, Stop: 33615, Start Num: 8

Candidate Starts for Clayda5\_52:

(Start: 8 @33256 has 5 MA's), (Start: 15 @33352 has 3 MA's), (23, 33505), (25, 33520),

Gene: Coltrane\_50 Start: 33191, Stop: 33550, Start Num: 8

Candidate Starts for Coltrane\_50:

(Start: 8 @33191 has 5 MA's), (Start: 15 @33287 has 3 MA's), (23, 33440), (25, 33455),

Gene: CroZenni\_53 Start: 34991, Stop: 35407, Start Num: 6

Candidate Starts for CroZenni\_53:

(1, 34598), (2, 34613), (3, 34616), (4, 34718), (5, 34832), (Start: 6 @34991 has 7 MA's), (Start: 10 @35090 has 43 MA's), (12, 35120),

Gene: CupcakePrincess\_53 Start: 34852, Stop: 35268, Start Num: 6

Candidate Starts for CupcakePrincess\_53:

(4, 34579), (5, 34693), (Start: 6 @34852 has 7 MA's), (Start: 10 @34951 has 43 MA's), (19, 35077),

Gene: DickRichards\_51 Start: 35166, Stop: 35582, Start Num: 6  
Candidate Starts for DickRichards\_51:  
(5, 35007), (Start: 6 @35166 has 7 MA's), (Start: 10 @35265 has 43 MA's), (12, 35295), (19, 35391),  
(25, 35475),

Gene: Didgeridoo\_56 Start: 35947, Stop: 36264, Start Num: 10  
Candidate Starts for Didgeridoo\_56:  
(Start: 10 @35947 has 43 MA's), (19, 36073), (20, 36091), (25, 36157), (26, 36166),

Gene: DirtyBubble\_52 Start: 35856, Stop: 36167, Start Num: 10  
Candidate Starts for DirtyBubble\_52:  
(Start: 10 @35856 has 43 MA's), (19, 35982), (25, 36066), (31, 36156),

Gene: Dismas\_51 Start: 35905, Stop: 36201, Start Num: 10  
Candidate Starts for Dismas\_51:  
(Start: 10 @35905 has 43 MA's), (13, 35938), (17, 35968), (18, 35986), (19, 36019), (25, 36106), (31,  
36190),

Gene: Doobus\_51 Start: 34754, Stop: 35071, Start Num: 10  
Candidate Starts for Doobus\_51:  
(1, 34262), (2, 34277), (3, 34280), (4, 34382), (5, 34496), (Start: 6 @34655 has 7 MA's), (Start: 10  
@34754 has 43 MA's), (12, 34784), (19, 34880), (25, 34964),

Gene: Eden\_52 Start: 34643, Stop: 34912, Start Num: 14  
Candidate Starts for Eden\_52:  
(Start: 14 @34643 has 2 MA's), (29, 34880),

Gene: Elva\_55 Start: 36253, Stop: 36564, Start Num: 10  
Candidate Starts for Elva\_55:  
(Start: 10 @36253 has 43 MA's), (19, 36379), (25, 36463), (28, 36517), (31, 36553),

Gene: Eula\_53 Start: 34937, Stop: 35254, Start Num: 10  
Candidate Starts for Eula\_53:  
(4, 34565), (5, 34679), (Start: 6 @34838 has 7 MA's), (Start: 10 @34937 has 43 MA's), (19, 35063),

Gene: Finalfrontier\_54 Start: 36047, Stop: 36364, Start Num: 10  
Candidate Starts for Finalfrontier\_54:  
(3, 35573), (4, 35675), (5, 35789), (Start: 6 @35948 has 7 MA's), (Start: 10 @36047 has 43 MA's), (19,  
36173),

Gene: FlameThrower\_50 Start: 35716, Stop: 36027, Start Num: 10  
Candidate Starts for FlameThrower\_50:  
(Start: 6 @35620 has 7 MA's), (9, 35680), (Start: 10 @35716 has 43 MA's), (20, 35863), (25, 35929),  
(28, 35980), (31, 36016),

Gene: Franklin22\_52 Start: 33928, Stop: 34197, Start Num: 14  
Candidate Starts for Franklin22\_52:  
(Start: 14 @33928 has 2 MA's),

Gene: Gack\_51 Start: 34247, Stop: 34525, Start Num: 11  
Candidate Starts for Gack\_51:  
(Start: 11 @34247 has 1 MA's), (Start: 14 @34262 has 2 MA's), (20, 34364), (29, 34493), (31, 34514),

Gene: Icarian\_56 Start: 36852, Stop: 37163, Start Num: 10  
Candidate Starts for Icarian\_56:  
(Start: 10 @36852 has 43 MA's), (19, 36978), (22, 37044), (31, 37152),

Gene: IndyLu\_53 Start: 35523, Stop: 35840, Start Num: 10  
Candidate Starts for IndyLu\_53:  
(Start: 10 @35523 has 43 MA's), (19, 35649), (20, 35667), (25, 35733), (26, 35742),

Gene: Jabb\_53 Start: 34852, Stop: 35268, Start Num: 6  
Candidate Starts for Jabb\_53:  
(4, 34579), (5, 34693), (Start: 6 @34852 has 7 MA's), (Start: 10 @34951 has 43 MA's), (19, 35077),

Gene: Johnathan\_52 Start: 34592, Stop: 34909, Start Num: 10  
Candidate Starts for Johnathan\_52:  
(1, 34100), (2, 34115), (3, 34118), (4, 34220), (5, 34334), (Start: 6 @34493 has 7 MA's), (Start: 10 @34592 has 43 MA's), (12, 34622), (19, 34718),

Gene: Jovita\_52 Start: 34811, Stop: 35128, Start Num: 10  
Candidate Starts for Jovita\_52:  
(3, 34337), (4, 34439), (5, 34553), (Start: 6 @34712 has 7 MA's), (Start: 10 @34811 has 43 MA's), (19, 34937),

Gene: Kate33\_53 Start: 35240, Stop: 35557, Start Num: 10  
Candidate Starts for Kate33\_53:  
(Start: 10 @35240 has 43 MA's), (19, 35366), (20, 35384), (25, 35450), (26, 35459),

Gene: Katzastrophic\_52 Start: 36226, Stop: 36537, Start Num: 10  
Candidate Starts for Katzastrophic\_52:  
(Start: 6 @36130 has 7 MA's), (9, 36190), (Start: 10 @36226 has 43 MA's), (20, 36373), (28, 36490), (31, 36526),

Gene: Kenzers\_53 Start: 35071, Stop: 35388, Start Num: 10  
Candidate Starts for Kenzers\_53:  
(1, 34579), (2, 34594), (3, 34597), (4, 34699), (5, 34813), (Start: 6 @34972 has 7 MA's), (Start: 10 @35071 has 43 MA's), (12, 35101), (19, 35197),

Gene: Kieran\_50 Start: 35946, Stop: 36242, Start Num: 10  
Candidate Starts for Kieran\_50:  
(Start: 10 @35946 has 43 MA's), (13, 35979), (17, 36009), (18, 36027), (19, 36060), (25, 36147), (31, 36231),

Gene: Lahqtemish\_52 Start: 35520, Stop: 35831, Start Num: 10  
Candidate Starts for Lahqtemish\_52:  
(Start: 10 @35520 has 43 MA's), (25, 35730), (30, 35808), (31, 35820),

Gene: LimaBean\_53 Start: 34593, Stop: 35009, Start Num: 6  
Candidate Starts for LimaBean\_53:  
(1, 34200), (2, 34215), (3, 34218), (4, 34320), (5, 34434), (Start: 6 @34593 has 7 MA's), (Start: 10 @34692 has 43 MA's), (12, 34722), (19, 34818), (25, 34902),

Gene: Lynlen\_54 Start: 35152, Stop: 35568, Start Num: 6  
Candidate Starts for Lynlen\_54:



(1, 34759), (2, 34774), (3, 34777), (4, 34879), (5, 34993), (Start: 6 @35152 has 7 MA's), (Start: 10 @35251 has 43 MA's), (12, 35281), (19, 35377),

Gene: MsUbiquitous\_53 Start: 34852, Stop: 35268, Start Num: 6

Candidate Starts for MsUbiquitous\_53:

(4, 34579), (5, 34693), (Start: 6 @34852 has 7 MA's), (Start: 10 @34951 has 43 MA's), (19, 35077),

Gene: Nicky22\_54 Start: 35706, Stop: 36017, Start Num: 10

Candidate Starts for Nicky22\_54:

(5, 35448), (Start: 6 @35607 has 7 MA's), (Start: 10 @35706 has 43 MA's), (24, 35907), (25, 35916), (31, 36006),

Gene: PastaFagioli\_52 Start: 35658, Stop: 35975, Start Num: 10

Candidate Starts for PastaFagioli\_52:

(Start: 10 @35658 has 43 MA's), (19, 35784), (20, 35802), (25, 35868), (26, 35877),

Gene: PhigPhack\_54 Start: 35101, Stop: 35418, Start Num: 10

Candidate Starts for PhigPhack\_54:

(1, 34609), (3, 34627), (4, 34729), (5, 34843), (Start: 6 @35002 has 7 MA's), (Start: 10 @35101 has 43 MA's), (12, 35131),

Gene: Phisb\_53 Start: 35175, Stop: 35492, Start Num: 10

Candidate Starts for Phisb\_53:

(Start: 6 @35076 has 7 MA's), (Start: 10 @35175 has 43 MA's), (19, 35301),

Gene: QMacho\_55 Start: 35591, Stop: 35908, Start Num: 10

Candidate Starts for QMacho\_55:

(3, 35117), (4, 35219), (5, 35333), (Start: 6 @35492 has 7 MA's), (Start: 10 @35591 has 43 MA's), (19, 35717), (25, 35801),

Gene: Quenya\_54 Start: 36360, Stop: 36671, Start Num: 10

Candidate Starts for Quenya\_54:

(7, 36273), (Start: 10 @36360 has 43 MA's), (20, 36507), (25, 36573), (31, 36660),

Gene: Rollins\_50 Start: 33271, Stop: 33630, Start Num: 8

Candidate Starts for Rollins\_50:

(Start: 8 @33271 has 5 MA's), (Start: 15 @33367 has 3 MA's), (23, 33520), (25, 33535),

Gene: Rona\_50 Start: 35896, Stop: 36192, Start Num: 10

Candidate Starts for Rona\_50:

(Start: 10 @35896 has 43 MA's), (13, 35929), (17, 35959), (18, 35977), (19, 36010), (25, 36097), (31, 36181),

Gene: SanaSana\_55 Start: 36568, Stop: 36879, Start Num: 10

Candidate Starts for SanaSana\_55:

(Start: 10 @36568 has 43 MA's), (19, 36694), (25, 36778), (31, 36868),

Gene: SansAfet\_54 Start: 35000, Stop: 35317, Start Num: 10

Candidate Starts for SansAfet\_54:

(1, 34508), (2, 34523), (3, 34526), (4, 34628), (5, 34742), (Start: 6 @34901 has 7 MA's), (Start: 10 @35000 has 43 MA's), (12, 35030),

Gene: SarBear\_53 Start: 34895, Stop: 35212, Start Num: 10

Candidate Starts for SarBear\_53:

(3, 34421), (4, 34523), (5, 34637), (Start: 6 @34796 has 7 MA's), (Start: 10 @34895 has 43 MA's), (19, 35021),

Gene: Sharkboy\_51 Start: 35995, Stop: 36291, Start Num: 10

Candidate Starts for Sharkboy\_51:

(Start: 10 @35995 has 43 MA's), (13, 36028), (17, 36058), (18, 36076), (19, 36109), (25, 36196), (31, 36280),

Gene: Skylord\_50 Start: 33326, Stop: 33589, Start Num: 15

Candidate Starts for Skylord\_50:

(Start: 8 @33230 has 5 MA's), (Start: 15 @33326 has 3 MA's), (23, 33479), (25, 33494),

Gene: Slay\_53 Start: 35388, Stop: 35804, Start Num: 6

Candidate Starts for Slay\_53:

(3, 35013), (4, 35115), (5, 35229), (Start: 6 @35388 has 7 MA's), (Start: 10 @35487 has 43 MA's), (19, 35613),

Gene: Softsoap\_53 Start: 35088, Stop: 35405, Start Num: 10

Candidate Starts for Softsoap\_53:

(1, 34596), (2, 34611), (3, 34614), (4, 34716), (5, 34830), (Start: 6 @34989 has 7 MA's), (Start: 10 @35088 has 43 MA's), (12, 35118), (19, 35214), (25, 35298),

Gene: Stoor\_53 Start: 36355, Stop: 36666, Start Num: 10

Candidate Starts for Stoor\_53:

(Start: 10 @36355 has 43 MA's), (19, 36481), (25, 36565), (31, 36655),

Gene: Stromboli\_53 Start: 36226, Stop: 36537, Start Num: 10

Candidate Starts for Stromboli\_53:

(Start: 10 @36226 has 43 MA's), (19, 36352), (25, 36436), (31, 36526),

Gene: Swervy\_54 Start: 35167, Stop: 35484, Start Num: 10

Candidate Starts for Swervy\_54:

(3, 34693), (4, 34795), (5, 34909), (Start: 6 @35068 has 7 MA's), (Start: 10 @35167 has 43 MA's), (19, 35293),

Gene: TukTuk\_54 Start: 35232, Stop: 35549, Start Num: 10

Candidate Starts for TukTuk\_54:

(3, 34758), (4, 34860), (5, 34974), (Start: 6 @35133 has 7 MA's), (Start: 10 @35232 has 43 MA's), (19, 35358),

Gene: Vitas\_50 Start: 33358, Stop: 33621, Start Num: 15

Candidate Starts for Vitas\_50:

(Start: 8 @33262 has 5 MA's), (Start: 15 @33358 has 3 MA's), (23, 33511), (25, 33526),

Gene: WalkingDead\_55 Start: 36975, Stop: 37286, Start Num: 10

Candidate Starts for WalkingDead\_55:

(Start: 10 @36975 has 43 MA's), (19, 37101), (25, 37185), (31, 37275),