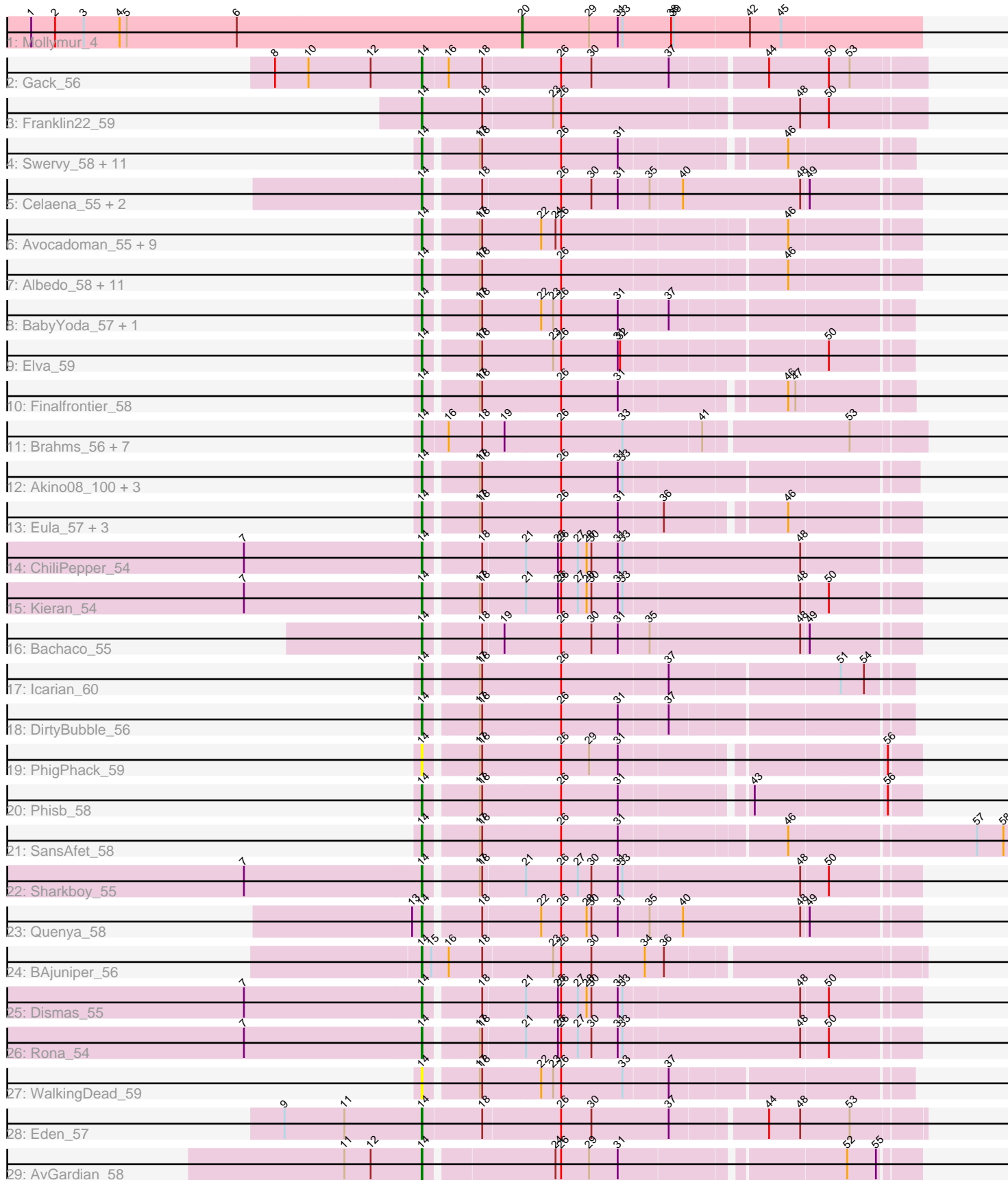


# Pham 216107



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 216107 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216107 has 76 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Mollymur\_4
- Track 2 : Gack\_56
- Track 3 : Franklin22\_59
- Track 4 : Swervy\_58, CroZenni\_57, Cashington\_56, BubbaBear\_56, Slay\_57, Nicky22\_58, Burritobowl\_58, QMacho\_59, TukTuk\_58, Jovita\_56, Doobus\_55, SarBear\_57
- Track 5 : Celaena\_55, FlameThrower\_54, Katzastrophic\_56
- Track 6 : Avocadoman\_55, Didgeridoo\_61, Softsoap\_58, Lahqtemish\_56, Abigail\_56, IndyLu\_58, BabyDaisy\_58, LimaBean\_57, PastaFagioli\_56, Kate33\_58
- Track 7 : Albedo\_58, BelmontSKP\_57, Milomuff\_59, Lynlen\_58, Kenzers\_57, DickRichards\_55, AnnaLie\_57, Bengal\_59, Arroyo\_57, Johnathan\_56, Solea\_59, Albright\_54
- Track 8 : BabyYoda\_57, Stromboli\_57
- Track 9 : Elva\_59
- Track 10 : Finalfrontier\_58
- Track 11 : Brahms\_56, Coltrane\_56, Armstrong\_56, Vitas\_56, Clayda5\_58, Bernstein\_56, Skylord\_56, Rollins\_56
- Track 12 : Akino08\_100, Stoor\_57, SanaSana\_59, Loviatar\_100
- Track 13 : Eula\_57, MsUbiquitous\_57, Jabb\_57, CupcakePrincess\_57
- Track 14 : ChiliPepper\_54
- Track 15 : Kieran\_54
- Track 16 : Bachaco\_55
- Track 17 : Icarian\_60
- Track 18 : DirtyBubble\_56
- Track 19 : PhigPhack\_59
- Track 20 : Phisb\_58
- Track 21 : SansAfet\_58
- Track 22 : Sharkboy\_55
- Track 23 : Quenya\_58
- Track 24 : BAjuniper\_56
- Track 25 : Dismas\_55
- Track 26 : Rona\_54
- Track 27 : WalkingDead\_59
- Track 28 : Eden\_57
- Track 29 : AvGuardian\_58

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

The start number called the most often in the published annotations is 14, it was called in 61 of the 62 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abigail\_56, Akino08\_100, Albedo\_58, Albright\_54, AnnaLie\_57, Armstrong\_56, Arroyo\_57, AvGardian\_58, Avocadoman\_55, BAjuniper\_56, BabyDaisy\_58, BabyYoda\_57, Bachaco\_55, BelmontSKP\_57, Bengal\_59, Bernstein\_56, Brahms\_56, BubbaBear\_56, Burritobowl\_58, Cashington\_56, Celaena\_55, ChiliPepper\_54, Clayda5\_58, Coltrane\_56, CroZenni\_57, CupcakePrincess\_57, DickRichards\_55, Didgeridoo\_61, DirtyBubble\_56, Dismas\_55, Doobus\_55, Eden\_57, Elva\_59, Eula\_57, Finalfrontier\_58, FlameThrower\_54, Franklin22\_59, Gack\_56, Icarian\_60, IndyLu\_58, Jabb\_57, Johnathan\_56, Jovita\_56, Kate33\_58, Katzastrophic\_56, Kenzers\_57, Kieran\_54, Lahqtemish\_56, LimaBean\_57, Loviatar\_100, Lynlen\_58, Milomuff\_59, MsUbiquitous\_57, Nicky22\_58, PastaFagioli\_56, PhigPhack\_59, Phisb\_58, QMacho\_59, Quenya\_58, Rollins\_56, Rona\_54, SanaSana\_59, SansAfet\_58, SarBear\_57, Sharkboy\_55, Skylord\_56, Slay\_57, Softsoap\_58, Solea\_59, Stoor\_57, Stromboli\_57, Swervy\_58, TukTuk\_58, Vitas\_56, WalkingDead\_59,

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

- 

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

- Mollymur\_4,

## **Summary by start number:**

Start 14:

- Found in 75 of 76 ( 98.7% ) of genes in pham
- Manual Annotations of this start: 61 of 62
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail\_56 (EB), Akino08\_100 (EB), Albedo\_58 (EB), Albright\_54 (EB), AnnaLie\_57 (EB), Armstrong\_56 (EB), Arroyo\_57 (EB), AvGardian\_58 (EB), Avocadoman\_55 (EB), BAjuniper\_56 (EB), BabyDaisy\_58 (EB), BabyYoda\_57 (EB), Bachaco\_55 (EB), BelmontSKP\_57 (EB), Bengal\_59 (EB), Bernstein\_56 (EB), Brahms\_56 (EB), BubbaBear\_56 (EB), Burritobowl\_58 (EB), Cashington\_56 (EB), Celaena\_55 (EB), ChiliPepper\_54 (EB), Clayda5\_58 (EB), Coltrane\_56 (EB), CroZenni\_57 (EB), CupcakePrincess\_57 (EB), DickRichards\_55 (EB), Didgeridoo\_61 (EB), DirtyBubble\_56 (EB), Dismas\_55 (EB), Doobus\_55 (EB), Eden\_57 (EB), Elva\_59 (EB), Eula\_57 (EB), Finalfrontier\_58 (EB), FlameThrower\_54 (EB), Franklin22\_59 (EB), Gack\_56 (EB), Icarian\_60 (EB), IndyLu\_58 (EB), Jabb\_57 (EB), Johnathan\_56 (EB), Jovita\_56 (EB), Kate33\_58 (EB), Katzastrophic\_56 (EB), Kenzers\_57 (EB), Kieran\_54 (EB), Lahqtemish\_56 (EB), LimaBean\_57 (EB), Loviatar\_100 (EB), Lynlen\_58 (EB), Milomuff\_59 (EB), MsUbiquitous\_57 (EB), Nicky22\_58 (EB), PastaFagioli\_56 (EB), PhigPhack\_59 (EB), Phisb\_58 (EB), QMacho\_59 (EB), Quenya\_58 (EB), Rollins\_56 (EB), Rona\_54 (EB), SanaSana\_59 (EB), SansAfet\_58 (EB), SarBear\_57 (EB), Sharkboy\_55 (EB), Skylord\_56 (EB), Slay\_57 (EB), Softsoap\_58 (EB), Solea\_59 (EB), Stoor\_57 (EB), Stromboli\_57 (EB), Swervy\_58 (EB), TukTuk\_58 (EB), Vitas\_56 (EB), WalkingDead\_59 (EB),

Start 20:

- Found in 1 of 76 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mollymur\_4 (DL),

### **Summary by clusters:**

There are 2 clusters represented in this pham: DL, EB,

Info for manual annotations of cluster DL:

- Start number 20 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster EB:

- Start number 14 was manually annotated 61 times for cluster EB.

### **Gene Information:**

Gene: Abigail\_56 Start: 36201, Stop: 36776, Start Num: 14

Candidate Starts for Abigail\_56:

(Start: 14 @36201 has 61 MA's), (17, 36261), (18, 36264), (22, 36336), (24, 36354), (26, 36360), (46, 36624),

Gene: Akino08\_100 Start: 38574, Stop: 39149, Start Num: 14

Candidate Starts for Akino08\_100:

(Start: 14 @38574 has 61 MA's), (17, 38634), (18, 38637), (26, 38733), (31, 38802), (33, 38808),

Gene: Albedo\_58 Start: 36929, Stop: 37501, Start Num: 14

Candidate Starts for Albedo\_58:

(Start: 14 @36929 has 61 MA's), (17, 36989), (18, 36992), (26, 37088), (46, 37352),

Gene: Albright\_54 Start: 35632, Stop: 36207, Start Num: 14

Candidate Starts for Albright\_54:

(Start: 14 @35632 has 61 MA's), (17, 35692), (18, 35695), (26, 35791), (46, 36055),

Gene: AnnaLie\_57 Start: 36858, Stop: 37430, Start Num: 14

Candidate Starts for AnnaLie\_57:

(Start: 14 @36858 has 61 MA's), (17, 36918), (18, 36921), (26, 37017), (46, 37281),

Gene: Armstrong\_56 Start: 34973, Stop: 35572, Start Num: 14

Candidate Starts for Armstrong\_56:

(Start: 14 @34973 has 61 MA's), (16, 35003), (18, 35045), (19, 35072), (26, 35141), (33, 35216), (41, 35312), (53, 35483),

Gene: Arroyo\_57 Start: 36969, Stop: 37541, Start Num: 14

Candidate Starts for Arroyo\_57:

(Start: 14 @36969 has 61 MA's), (17, 37029), (18, 37032), (26, 37128), (46, 37392),

Gene: AvGardian\_58 Start: 37129, Stop: 37695, Start Num: 14

Candidate Starts for AvGardian\_58:

(11, 37036), (12, 37069), (Start: 14 @37129 has 61 MA's), (24, 37279), (26, 37285), (29, 37318), (31, 37354), (52, 37612), (55, 37648),

Gene: Avocadoman\_55 Start: 35833, Stop: 36408, Start Num: 14

Candidate Starts for Avocadoman\_55:

(Start: 14 @35833 has 61 MA's), (17, 35893), (18, 35896), (22, 35968), (24, 35986), (26, 35992), (46, 36256),

Gene: BAjuniper\_56 Start: 37510, Stop: 38103, Start Num: 14

Candidate Starts for BAjuniper\_56:

(Start: 14 @37510 has 61 MA's), (15, 37522), (16, 37543), (18, 37582), (23, 37666), (26, 37675), (30, 37711), (34, 37777), (36, 37801),

Gene: BabyDaisy\_58 Start: 37133, Stop: 37708, Start Num: 14

Candidate Starts for BabyDaisy\_58:

(Start: 14 @37133 has 61 MA's), (17, 37193), (18, 37196), (22, 37268), (24, 37286), (26, 37292), (46, 37556),

Gene: BabyYoda\_57 Start: 37507, Stop: 38073, Start Num: 14

Candidate Starts for BabyYoda\_57:

(Start: 14 @37507 has 61 MA's), (17, 37567), (18, 37570), (22, 37642), (23, 37657), (26, 37666), (31, 37735), (37, 37792),

Gene: Bachaco\_55 Start: 38194, Stop: 38778, Start Num: 14

Candidate Starts for Bachaco\_55:

(Start: 14 @38194 has 61 MA's), (18, 38257), (19, 38281), (26, 38350), (30, 38386), (31, 38419), (35, 38455), (48, 38641), (49, 38650),

Gene: BelmontSKP\_57 Start: 36858, Stop: 37430, Start Num: 14

Candidate Starts for BelmontSKP\_57:

(Start: 14 @36858 has 61 MA's), (17, 36918), (18, 36921), (26, 37017), (46, 37281),

Gene: Bengal\_59 Start: 36736, Stop: 37308, Start Num: 14

Candidate Starts for Bengal\_59:

(Start: 14 @36736 has 61 MA's), (17, 36796), (18, 36799), (26, 36895), (46, 37159),

Gene: Bernstein\_56 Start: 34971, Stop: 35570, Start Num: 14

Candidate Starts for Bernstein\_56:

(Start: 14 @34971 has 61 MA's), (16, 35001), (18, 35043), (19, 35070), (26, 35139), (33, 35214), (41, 35310), (53, 35481),

Gene: Brahms\_56 Start: 34873, Stop: 35472, Start Num: 14

Candidate Starts for Brahms\_56:

(Start: 14 @34873 has 61 MA's), (16, 34903), (18, 34945), (19, 34972), (26, 35041), (33, 35116), (41, 35212), (53, 35383),

Gene: BubbaBear\_56 Start: 36610, Stop: 37182, Start Num: 14

Candidate Starts for BubbaBear\_56:

(Start: 14 @36610 has 61 MA's), (17, 36670), (18, 36673), (26, 36769), (31, 36838), (46, 37033),

Gene: Burritobowl\_58 Start: 36705, Stop: 37277, Start Num: 14

Candidate Starts for Burritobowl\_58:

(Start: 14 @36705 has 61 MA's), (17, 36765), (18, 36768), (26, 36864), (31, 36933), (46, 37128),

Gene: Cashington\_56 Start: 36062, Stop: 36634, Start Num: 14

Candidate Starts for Cashington\_56:

(Start: 14 @36062 has 61 MA's), (17, 36122), (18, 36125), (26, 36221), (31, 36290), (46, 36485),

Gene: Celaena\_55 Start: 37956, Stop: 38540, Start Num: 14

Candidate Starts for Celaena\_55:

(Start: 14 @37956 has 61 MA's), (18, 38019), (26, 38112), (30, 38148), (31, 38181), (35, 38217), (40, 38256), (48, 38403), (49, 38412),

Gene: ChiliPepper\_54 Start: 37266, Stop: 37850, Start Num: 14

Candidate Starts for ChiliPepper\_54:

(7, 37047), (Start: 14 @37266 has 61 MA's), (18, 37329), (21, 37380), (25, 37419), (26, 37422), (27, 37443), (28, 37452), (30, 37458), (31, 37491), (33, 37497), (48, 37713),

Gene: Clayda5\_58 Start: 34938, Stop: 35537, Start Num: 14

Candidate Starts for Clayda5\_58:

(Start: 14 @34938 has 61 MA's), (16, 34968), (18, 35010), (19, 35037), (26, 35106), (33, 35181), (41, 35277), (53, 35448),

Gene: Coltrane\_56 Start: 34873, Stop: 35472, Start Num: 14

Candidate Starts for Coltrane\_56:

(Start: 14 @34873 has 61 MA's), (16, 34903), (18, 34945), (19, 34972), (26, 35041), (33, 35116), (41, 35212), (53, 35383),

Gene: CroZenni\_57 Start: 36477, Stop: 37049, Start Num: 14

Candidate Starts for CroZenni\_57:

(Start: 14 @36477 has 61 MA's), (17, 36537), (18, 36540), (26, 36636), (31, 36705), (46, 36900),

Gene: CupcakePrincess\_57 Start: 36335, Stop: 36898, Start Num: 14

Candidate Starts for CupcakePrincess\_57:

(Start: 14 @36335 has 61 MA's), (17, 36395), (18, 36398), (26, 36494), (31, 36563), (36, 36614), (46, 36749),

Gene: DickRichards\_55 Start: 36652, Stop: 37224, Start Num: 14

Candidate Starts for DickRichards\_55:

(Start: 14 @36652 has 61 MA's), (17, 36712), (18, 36715), (26, 36811), (46, 37075),

Gene: Didgeridoo\_61 Start: 37517, Stop: 38092, Start Num: 14

Candidate Starts for Didgeridoo\_61:

(Start: 14 @37517 has 61 MA's), (17, 37577), (18, 37580), (22, 37652), (24, 37670), (26, 37676), (46, 37940),

Gene: DirtyBubble\_56 Start: 37177, Stop: 37743, Start Num: 14

Candidate Starts for DirtyBubble\_56:

(Start: 14 @37177 has 61 MA's), (17, 37237), (18, 37240), (26, 37336), (31, 37405), (37, 37462),

Gene: Dismas\_55 Start: 37187, Stop: 37771, Start Num: 14

Candidate Starts for Dismas\_55:

(7, 36968), (Start: 14 @37187 has 61 MA's), (18, 37250), (21, 37301), (25, 37340), (26, 37343), (27, 37364), (28, 37373), (30, 37379), (31, 37412), (33, 37418), (48, 37634), (50, 37667),

Gene: Doobus\_55 Start: 36141, Stop: 36713, Start Num: 14

Candidate Starts for Doobus\_55:

(Start: 14 @36141 has 61 MA's), (17, 36201), (18, 36204), (26, 36300), (31, 36369), (46, 36564),

Gene: Eden\_57 Start: 36088, Stop: 36681, Start Num: 14

Candidate Starts for Eden\_57:

(9, 35917), (11, 35992), (Start: 14 @36088 has 61 MA's), (18, 36160), (26, 36253), (30, 36289), (37, 36385), (44, 36496), (48, 36535), (53, 36595),

Gene: Elva\_59 Start: 37571, Stop: 38137, Start Num: 14

Candidate Starts for Elva\_59:

(Start: 14 @37571 has 61 MA's), (17, 37631), (18, 37634), (23, 37721), (26, 37730), (31, 37799), (32, 37802), (50, 38042),

Gene: Eula\_57 Start: 36321, Stop: 36884, Start Num: 14

Candidate Starts for Eula\_57:

(Start: 14 @36321 has 61 MA's), (17, 36381), (18, 36384), (26, 36480), (31, 36549), (36, 36600), (46, 36735),

Gene: Finalfrontier\_58 Start: 37434, Stop: 37991, Start Num: 14

Candidate Starts for Finalfrontier\_58:

(Start: 14 @37434 has 61 MA's), (17, 37494), (18, 37497), (26, 37593), (31, 37662), (46, 37848), (47, 37857),

Gene: FlameThrower\_54 Start: 36993, Stop: 37577, Start Num: 14

Candidate Starts for FlameThrower\_54:

(Start: 14 @36993 has 61 MA's), (18, 37056), (26, 37149), (30, 37185), (31, 37218), (35, 37254), (40, 37293), (48, 37440), (49, 37449),

Gene: Franklin22\_59 Start: 35732, Stop: 36328, Start Num: 14

Candidate Starts for Franklin22\_59:

(Start: 14 @35732 has 61 MA's), (18, 35804), (23, 35888), (26, 35897), (48, 36179), (50, 36215),

Gene: Gack\_56 Start: 35679, Stop: 36275, Start Num: 14

Candidate Starts for Gack\_56:

(8, 35496), (10, 35538), (12, 35616), (Start: 14 @35679 has 61 MA's), (16, 35709), (18, 35751), (26, 35844), (30, 35880), (37, 35976), (44, 36087), (50, 36162), (53, 36186),

Gene: Icarian\_60 Start: 38175, Stop: 38744, Start Num: 14

Candidate Starts for Icarian\_60:

(Start: 14 @38175 has 61 MA's), (17, 38235), (18, 38238), (26, 38334), (37, 38460), (51, 38664), (54, 38691),

Gene: IndyLu\_58 Start: 37065, Stop: 37640, Start Num: 14

Candidate Starts for IndyLu\_58:

(Start: 14 @37065 has 61 MA's), (17, 37125), (18, 37128), (22, 37200), (24, 37218), (26, 37224), (46, 37488),

Gene: Jabb\_57 Start: 36335, Stop: 36898, Start Num: 14

Candidate Starts for Jabb\_57:

(Start: 14 @36335 has 61 MA's), (17, 36395), (18, 36398), (26, 36494), (31, 36563), (36, 36614), (46, 36749),

Gene: Johnathan\_56 Start: 35979, Stop: 36551, Start Num: 14

Candidate Starts for Johnathan\_56:

(Start: 14 @35979 has 61 MA's), (17, 36039), (18, 36042), (26, 36138), (46, 36402),

Gene: Jovita\_56 Start: 36190, Stop: 36747, Start Num: 14

Candidate Starts for Jovita\_56:

(Start: 14 @36190 has 61 MA's), (17, 36250), (18, 36253), (26, 36349), (31, 36418), (46, 36604),

Gene: Kate33\_58 Start: 36810, Stop: 37385, Start Num: 14

Candidate Starts for Kate33\_58:

(Start: 14 @36810 has 61 MA's), (17, 36870), (18, 36873), (22, 36945), (24, 36963), (26, 36969), (46, 37233),

Gene: Katzastrophic\_56 Start: 37503, Stop: 38087, Start Num: 14

Candidate Starts for Katzastrophic\_56:

(Start: 14 @37503 has 61 MA's), (18, 37566), (26, 37659), (30, 37695), (31, 37728), (35, 37764), (40, 37803), (48, 37950), (49, 37959),

Gene: Kenzers\_57 Start: 36458, Stop: 37030, Start Num: 14

Candidate Starts for Kenzers\_57:

(Start: 14 @36458 has 61 MA's), (17, 36518), (18, 36521), (26, 36617), (46, 36881),

Gene: Kieran\_54 Start: 37228, Stop: 37812, Start Num: 14

Candidate Starts for Kieran\_54:

(7, 37009), (Start: 14 @37228 has 61 MA's), (17, 37288), (18, 37291), (21, 37342), (25, 37381), (26, 37384), (27, 37405), (28, 37414), (30, 37420), (31, 37453), (33, 37459), (48, 37675), (50, 37708),

Gene: Lahqtemish\_56 Start: 36892, Stop: 37464, Start Num: 14

Candidate Starts for Lahqtemish\_56:

(Start: 14 @36892 has 61 MA's), (17, 36952), (18, 36955), (22, 37027), (24, 37045), (26, 37051), (46, 37315),

Gene: LimaBean\_57 Start: 36079, Stop: 36654, Start Num: 14

Candidate Starts for LimaBean\_57:

(Start: 14 @36079 has 61 MA's), (17, 36139), (18, 36142), (22, 36214), (24, 36232), (26, 36238), (46, 36502),

Gene: Loviatar\_100 Start: 38589, Stop: 39164, Start Num: 14

Candidate Starts for Loviatar\_100:

(Start: 14 @38589 has 61 MA's), (17, 38649), (18, 38652), (26, 38748), (31, 38817), (33, 38823),

Gene: Lynlen\_58 Start: 36638, Stop: 37210, Start Num: 14

Candidate Starts for Lynlen\_58:

(Start: 14 @36638 has 61 MA's), (17, 36698), (18, 36701), (26, 36797), (46, 37061),

Gene: Milomuff\_59 Start: 36590, Stop: 37162, Start Num: 14

Candidate Starts for Milomuff\_59:

(Start: 14 @36590 has 61 MA's), (17, 36650), (18, 36653), (26, 36749), (46, 37013),

Gene: Mollymur\_4 Start: 1661, Stop: 2152, Start Num: 20

Candidate Starts for Mollymur\_4:

(1, 1046), (2, 1076), (3, 1112), (4, 1157), (5, 1166), (6, 1304), (Start: 20 @1661 has 1 MA's), (29, 1745), (31, 1781), (33, 1787), (38, 1847), (39, 1850), (42, 1940), (45, 1979),



Gene: MsUbiquitous\_57 Start: 36335, Stop: 36898, Start Num: 14  
Candidate Starts for MsUbiquitous\_57:  
(Start: 14 @36335 has 61 MA's), (17, 36395), (18, 36398), (26, 36494), (31, 36563), (36, 36614), (46, 36749),

Gene: Nicky22\_58 Start: 37090, Stop: 37653, Start Num: 14  
Candidate Starts for Nicky22\_58:  
(Start: 14 @37090 has 61 MA's), (17, 37150), (18, 37153), (26, 37249), (31, 37318), (46, 37504),

Gene: PastaFagioli\_56 Start: 37034, Stop: 37609, Start Num: 14  
Candidate Starts for PastaFagioli\_56:  
(Start: 14 @37034 has 61 MA's), (17, 37094), (18, 37097), (22, 37169), (24, 37187), (26, 37193), (46, 37457),

Gene: PhigPhack\_59 Start: 36600, Stop: 37166, Start Num: 14  
Candidate Starts for PhigPhack\_59:  
(Start: 14 @36600 has 61 MA's), (17, 36660), (18, 36663), (26, 36759), (29, 36792), (31, 36828), (56, 37128),

Gene: Phisb\_58 Start: 36756, Stop: 37322, Start Num: 14  
Candidate Starts for Phisb\_58:  
(Start: 14 @36756 has 61 MA's), (17, 36816), (18, 36819), (26, 36915), (31, 36984), (43, 37128), (56, 37284),

Gene: QMacho\_59 Start: 36978, Stop: 37547, Start Num: 14  
Candidate Starts for QMacho\_59:  
(Start: 14 @36978 has 61 MA's), (17, 37038), (18, 37041), (26, 37137), (31, 37206), (46, 37392),

Gene: Quenya\_58 Start: 37635, Stop: 38219, Start Num: 14  
Candidate Starts for Quenya\_58:  
(13, 37623), (Start: 14 @37635 has 61 MA's), (18, 37698), (22, 37767), (26, 37791), (28, 37821), (30, 37827), (31, 37860), (35, 37896), (40, 37935), (48, 38082), (49, 38091),

Gene: Rollins\_56 Start: 34971, Stop: 35570, Start Num: 14  
Candidate Starts for Rollins\_56:  
(Start: 14 @34971 has 61 MA's), (16, 35001), (18, 35043), (19, 35070), (26, 35139), (33, 35214), (41, 35310), (53, 35481),

Gene: Rona\_54 Start: 37178, Stop: 37762, Start Num: 14  
Candidate Starts for Rona\_54:  
(7, 36959), (Start: 14 @37178 has 61 MA's), (17, 37238), (18, 37241), (21, 37292), (25, 37331), (26, 37334), (27, 37355), (30, 37370), (31, 37403), (33, 37409), (48, 37625), (50, 37658),

Gene: SanaSana\_59 Start: 37932, Stop: 38507, Start Num: 14  
Candidate Starts for SanaSana\_59:  
(Start: 14 @37932 has 61 MA's), (17, 37992), (18, 37995), (26, 38091), (31, 38160), (33, 38166),

Gene: SansAfet\_58 Start: 36387, Stop: 37073, Start Num: 14  
Candidate Starts for SansAfet\_58:  
(Start: 14 @36387 has 61 MA's), (17, 36447), (18, 36450), (26, 36546), (31, 36615), (46, 36810), (57, 37029), (58, 37062),

Gene: SarBear\_57 Start: 36282, Stop: 36845, Start Num: 14

Candidate Starts for SarBear\_57:

(Start: 14 @36282 has 61 MA's), (17, 36342), (18, 36345), (26, 36441), (31, 36510), (46, 36696),

Gene: Sharkboy\_55 Start: 37277, Stop: 37861, Start Num: 14

Candidate Starts for Sharkboy\_55:

(7, 37058), (Start: 14 @37277 has 61 MA's), (17, 37337), (18, 37340), (21, 37391), (26, 37433), (27, 37454), (30, 37469), (31, 37502), (33, 37508), (48, 37724), (50, 37757),

Gene: Skylord\_56 Start: 34912, Stop: 35511, Start Num: 14

Candidate Starts for Skylord\_56:

(Start: 14 @34912 has 61 MA's), (16, 34942), (18, 34984), (19, 35011), (26, 35080), (33, 35155), (41, 35251), (53, 35422),

Gene: Slay\_57 Start: 36874, Stop: 37437, Start Num: 14

Candidate Starts for Slay\_57:

(Start: 14 @36874 has 61 MA's), (17, 36934), (18, 36937), (26, 37033), (31, 37102), (46, 37288),

Gene: Softsoap\_58 Start: 36640, Stop: 37215, Start Num: 14

Candidate Starts for Softsoap\_58:

(Start: 14 @36640 has 61 MA's), (17, 36700), (18, 36703), (22, 36775), (24, 36793), (26, 36799), (46, 37063),

Gene: Solea\_59 Start: 36589, Stop: 37161, Start Num: 14

Candidate Starts for Solea\_59:

(Start: 14 @36589 has 61 MA's), (17, 36649), (18, 36652), (26, 36748), (46, 37012),

Gene: Stoor\_57 Start: 37719, Stop: 38294, Start Num: 14

Candidate Starts for Stoor\_57:

(Start: 14 @37719 has 61 MA's), (17, 37779), (18, 37782), (26, 37878), (31, 37947), (33, 37953),

Gene: Stromboli\_57 Start: 37544, Stop: 38110, Start Num: 14

Candidate Starts for Stromboli\_57:

(Start: 14 @37544 has 61 MA's), (17, 37604), (18, 37607), (22, 37679), (23, 37694), (26, 37703), (31, 37772), (37, 37829),

Gene: Swervy\_58 Start: 36554, Stop: 37111, Start Num: 14

Candidate Starts for Swervy\_58:

(Start: 14 @36554 has 61 MA's), (17, 36614), (18, 36617), (26, 36713), (31, 36782), (46, 36968),

Gene: TukTuk\_58 Start: 36619, Stop: 37176, Start Num: 14

Candidate Starts for TukTuk\_58:

(Start: 14 @36619 has 61 MA's), (17, 36679), (18, 36682), (26, 36778), (31, 36847), (46, 37033),

Gene: Vitas\_56 Start: 34944, Stop: 35543, Start Num: 14

Candidate Starts for Vitas\_56:

(Start: 14 @34944 has 61 MA's), (16, 34974), (18, 35016), (19, 35043), (26, 35112), (33, 35187), (41, 35283), (53, 35454),

Gene: WalkingDead\_59 Start: 38299, Stop: 38865, Start Num: 14

Candidate Starts for WalkingDead\_59:

(Start: 14 @38299 has 61 MA's), (17, 38359), (18, 38362), (22, 38434), (23, 38449), (26, 38458), (33, 38533), (37, 38584),