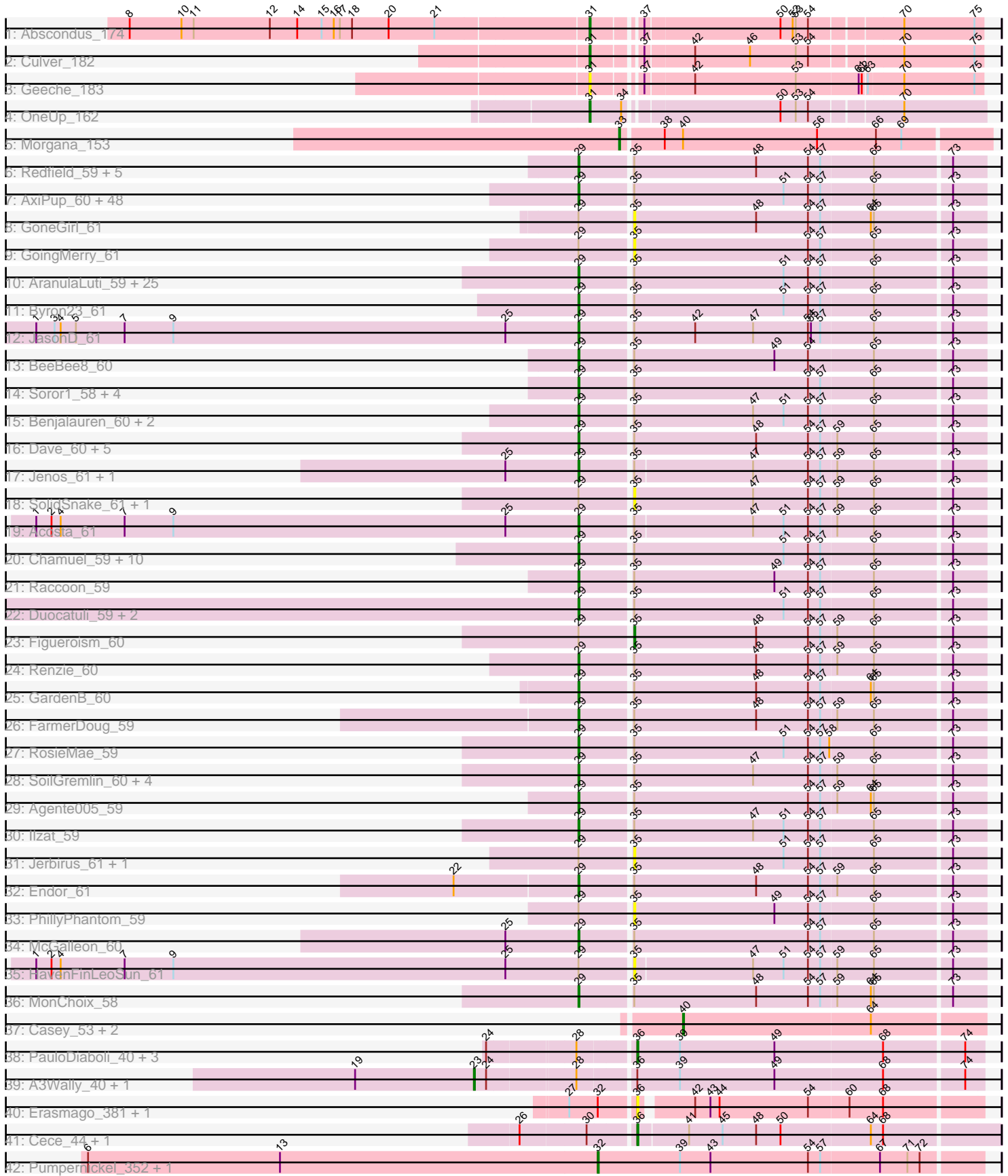


Pham 311308



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 311308 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311308 has 159 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Abscondus\_174
- Track 2 : Culver\_182
- Track 3 : Geeche\_183
- Track 4 : OneUp\_162
- Track 5 : Morgana\_153
- Track 6 : Redfield\_59, KingJulien\_58, Balsa\_58, Stormbreaker8\_58, Schnapsidee\_59, Peppino\_59
- Track 7 : AxiPup\_60, Convict\_60, Pherferi\_60, Oxtober96\_61, Erla\_59, WildNOut\_60, Stanktossa\_59, Blage\_60, ParleG\_60, Rog141\_59, Greys\_60, Gargoyle\_60, Exploradora\_59, PhredFlintston\_60, BigRedClifford\_60, Dothraki\_60, Symere\_59, Martin\_61, BonesMcCoy\_60, ShaiHulud\_60, Bandik\_60, Espinosa\_59, Baines\_59, MrWorldwide\_60, Thorongil\_60, SJay\_60, BeautPeep30\_60, Phiderman\_60, Sedgewig\_59, Inventa\_60, Phireproof\_60, Lovelyunicorn\_60, Knox\_60, Gelo\_59, Oats\_59, NickSell\_60, Shee\_60, TinSulphur\_61, Riyhil\_60, HungryHenry\_59, MillyPhilly\_60, Kouch\_60, Teagan\_60, Den3\_60, Kurt1\_60, TatarkaPM\_60, Nagem\_60, Vispistious\_60, PuppyEggo\_60
- Track 8 : GoneGirl\_61
- Track 9 : GoingMerry\_61
- Track 10 : AranulaLuti\_59, Aubergine\_59, Nattles\_59, Asta\_59, Gershwin\_59, Winzigespinne\_59, TeddyBear\_59, StifryIV\_59, JeriBeth\_59, Strathdee\_60, Ioannes\_60, HanSolo\_59, Clancy\_59, Robinson\_60, Janus167\_59, Ludgate\_60, Rappheph\_60, HankSprout\_60, Christoph\_59, Etta\_59, Garey24\_60, ManRay\_59, Calix\_59, CoraRita\_59, Tenda\_59, Kale\_59
- Track 11 : Byron23\_61
- Track 12 : JasonD\_61
- Track 13 : BeeBee8\_60
- Track 14 : Soror1\_58, Leafus\_59, Hamlet\_59, Anilorac\_58, Etna\_59
- Track 15 : Benjalauen\_60, Papafritta\_59, StingRay\_59
- Track 16 : Dave\_60, Superfresh\_60, MaeLinda\_60, Zada\_61, Antoinette\_60, Peep\_60
- Track 17 : Jenos\_61, CarisSwetlik\_59
- Track 18 : SolidSnake\_61, Merida02\_61
- Track 19 : Acosta\_61
- Track 20 : Chamuel\_59, Bonino\_59, Raptor\_60, Klimt\_60, Thompsone\_60, SonOfLevi\_60, KannH\_59, Velene\_60, Pocket\_59, Alyxandracam\_60, Gubbabump\_59
- Track 21 : Raccoon\_59

- Track 22 : Duocatuli\_59, JasperRussell\_59, Chako\_59
- Track 23 : Figueroism\_60
- Track 24 : Renzie\_60
- Track 25 : GardenB\_60
- Track 26 : FarmerDoug\_59
- Track 27 : RosieMae\_59
- Track 28 : SoilGremlin\_60, Phriends\_59, Delphidian\_59, OldNelly\_60, AlexAdler\_60
- Track 29 : Agente005\_59
- Track 30 : Ilzat\_59
- Track 31 : Jerbirus\_61, KellyGreen\_61
- Track 32 : Endor\_61
- Track 33 : PhillyPhantom\_59
- Track 34 : McGalleon\_60
- Track 35 : HavenFinLeoSun\_61
- Track 36 : MonChoix\_58
- Track 37 : Casey\_53, Pajaza\_53, Pikmin\_53
- Track 38 : PauloDiaboli\_40, PauloDiaboli\_395, Dodo\_41, Dodo\_387
- Track 39 : A3Wally\_40, A3Wally\_393
- Track 40 : Erasmago\_381, Erasmago\_43
- Track 41 : Cece\_44, Cece\_346
- Track 42 : Pumpernickel\_352, Pumpernickel\_51

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

The start number called the most often in the published annotations is 29, it was called in 130 of the 148 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Acosta\_61, Agente005\_59, AlexAdler\_60, Alyxandracam\_60, Anilorac\_58, Antoinette\_60, AranulaLuti\_59, Asta\_59, Aubergine\_59, AxiPup\_60, Baines\_59, Balsa\_58, Bandik\_60, BeautPeep30\_60, BeeBee8\_60, Benjalauren\_60, BigRedClifford\_60, Blage\_60, BonesMcCoy\_60, Bonino\_59, Byron23\_61, Calix\_59, CarisSwetlik\_59, Chako\_59, Chamuel\_59, Christoph\_59, Clancy\_59, Convict\_60, CoraRita\_59, Dave\_60, Delphidian\_59, Den3\_60, Dothraki\_60, Duocatuli\_59, Endor\_61, Erla\_59, Espinosa\_59, Etna\_59, Etta\_59, Exploradora\_59, FarmerDoug\_59, GardenB\_60, Garey24\_60, Gargoyle\_60, Gelo\_59, Gershwin\_59, Greys\_60, Gubbabump\_59, Hamlet\_59, HanSolo\_59, HankSprout\_60, HungryHenry\_59, Ilzat\_59, Inventa\_60, Ioannes\_60, Janus167\_59, JasonD\_61, JasperRussell\_59, Jenos\_61, JeriBeth\_59, Kale\_59, KannH\_59, KingJulien\_58, Klimt\_60, Knox\_60, Kouch\_60, Kurt1\_60, Leafus\_59, Lovelyunicorn\_60, Ludgate\_60, MaeLinda\_60, ManRay\_59, Martin\_61, McGalleon\_60, MillyPhilly\_60, MonChoix\_58, MrWorldwide\_60, Nagem\_60, Nattles\_59, NickSell\_60, Oats\_59, OldNelly\_60, Oxtober96\_61, Papafritta\_59, ParleG\_60, Peep\_60, Peppino\_59, Pherferi\_60, Phiderman\_60, Phireproof\_60, PhredFlintston\_60, Phriends\_59, Pocket\_59, PuppyEggo\_60, Raccoon\_59, Rapheph\_60, Raptor\_60, Redfield\_59, Renzie\_60, Rihhil\_60, Robinson\_60, Rog141\_59, RosieMae\_59, SJay\_60, Schnapsidee\_59, Sedgewig\_59, ShaiHulud\_60, Shee\_60, SoilGremlin\_60, SonOfLevi\_60, Soror1\_58, Stanktossa\_59, StingRay\_59, StirfryIV\_59, Stormbreaker8\_58, Strathdee\_60, Superfresh\_60, Symere\_59, TatarkaPM\_60, Teagan\_60, TeddyBear\_59, Tenda\_59, Thompsone\_60, Thorongil\_60, TinSulphur\_61, Velene\_60, Vispitious\_60,

WildNOut\_60, Winzigespinne\_59, Zada\_61,

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

- Figueroism\_60, GoingMerry\_61, GoneGirl\_61, HavenFinLeoSun\_61, Jerbirus\_61, KellyGreen\_61, Merida02\_61, PhillyPhantom\_59, SolidSnake\_61,

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

- A3Wally\_393, A3Wally\_40, Abscondus\_174, Casey\_53, Cece\_346, Cece\_44, Culver\_182, Dodo\_387, Dodo\_41, Erasmago\_381, Erasmago\_43, Geeche\_183, Morgana\_153, OneUp\_162, Pajaza\_53, PauloDiaboli\_395, PauloDiaboli\_40, Pikmin\_53, Pumpernickel\_352, Pumpernickel\_51,

### Summary by start number:

Start 23:

- Found in 2 of 159 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_393 (GD1), A3Wally\_40 (GD1),

Start 29:

- Found in 139 of 159 ( 87.4% ) of genes in pham
- Manual Annotations of this start: 130 of 148
- Called 93.5% of time when present
- Phage (with cluster) where this start called: Acosta\_61 (EA1), Agente005\_59 (EA1), AlexAdler\_60 (EA1), Alyxandracam\_60 (EA1), Anilorac\_58 (EA1), Antoinette\_60 (EA1), AranulaLuti\_59 (EA1), Asta\_59 (EA1), Aubergine\_59 (EA1), AxiPup\_60 (EA1), Baines\_59 (EA1), Balsa\_58 (EA1), Bandik\_60 (EA1), BeautPeep30\_60 (EA1), BeeBee8\_60 (EA1), Benjalauen\_60 (EA1), BigRedClifford\_60 (EA1), Blage\_60 (EA1), BonesMcCoy\_60 (EA1), Bonino\_59 (EA1), Byron23\_61 (EA1), Calix\_59 (EA1), CarisSwetlik\_59 (EA1), Chako\_59 (EA1), Chamuel\_59 (EA1), Christoph\_59 (EA1), Clancy\_59 (EA1), Convict\_60 (EA1), CoraRita\_59 (EA1), Dave\_60 (EA1), Delphidian\_59 (EA1), Den3\_60 (EA1), Dothraki\_60 (EA1), Duocatuli\_59 (EA1), Endor\_61 (EA1), Erla\_59 (EA1), Espinosa\_59 (EA1), Etna\_59 (EA1), Etta\_59 (EA1), Exploradora\_59 (EA1), FarmerDoug\_59 (EA1), GardenB\_60 (EA1), Garey24\_60 (EA1), Gargoyle\_60 (EA1), Gelo\_59 (EA1), Gershwin\_59 (EA1), Greys\_60 (EA1), Gubbabump\_59 (EA1), Hamlet\_59 (EA1), HanSolo\_59 (EA1), HankSprout\_60 (EA1), HungryHenry\_59 (EA1), Ilzat\_59 (EA1), Inventa\_60 (EA1), Ioannes\_60 (EA1), Janus167\_59 (EA1), JasonD\_61 (EA1), JasperRussell\_59 (EA1), Jenos\_61 (EA1), JeriBeth\_59 (EA1), Kale\_59 (EA1), KannH\_59 (EA1), KingJulien\_58 (EA1), Klimt\_60 (EA1), Knox\_60 (EA1), Kouch\_60 (EA1), Kurt1\_60 (EA1), Leafus\_59 (EA1), Lovelyunicorn\_60 (EA1), Ludgate\_60 (EA1), MaeLinda\_60 (EA1), ManRay\_59 (EA1), Martin\_61 (EA1), McGalleon\_60 (EA1), MillyPhilly\_60 (EA1), MonChoix\_58 (EA1), MrWorldwide\_60 (EA1), Nagem\_60 (EA1), Nattles\_59 (EA1), NickSell\_60 (EA1), Oats\_59 (EA1), OldNelly\_60 (EA1), Oxtober96\_61 (EA1), Papafritta\_59 (EA1), ParleG\_60 (EA1), Peep\_60 (EA1), Peppino\_59 (EA1), Pherferi\_60 (EA1), Phiderman\_60 (EA1), Phireproof\_60 (EA1), PhredFlintston\_60 (EA1), Phriends\_59 (EA1), Pocket\_59 (EA1), PuppyEggo\_60 (EA1), Raccoon\_59 (EA1), Rapheph\_60 (EA1), Raptor\_60 (EA1), Redfield\_59 (EA1), Renzie\_60 (EA1), Riyhil\_60 (EA1), Robinson\_60 (EA1), Rog141\_59 (EA1), RosieMae\_59 (EA1), SJay\_60 (EA1), Schnapsidee\_59 (EA1), Sedgewig\_59 (EA1), ShaiHulud\_60 (EA1), Shee\_60 (EA1), SoilGremlin\_60 (EA1), SonOfLevi\_60 (EA1), Soror1\_58 (EA1), Stanktossa\_59 (EA1), StingRay\_59 (EA1), StirfryIV\_59 (EA1), Stormbreaker8\_58 (EA1), Strathdee\_60

(EA1), Superfresh\_60 (EA1), Symere\_59 (EA1), TatarkaPM\_60 (EA1), Teagan\_60 (EA1), TeddyBear\_59 (EA1), Tenda\_59 (EA1), Thompsone\_60 (EA1), Thorongil\_60 (EA1), TinSulphur\_61 (EA1), Velene\_60 (EA1), Vispistious\_60 (EA1), WildNOut\_60 (EA1), Winzigespinne\_59 (EA1), Zada\_61 (EA1),

Start 31:

- Found in 4 of 159 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 3 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abscondus\_174 (CQ1), Culver\_182 (CQ1), Geeche\_183 (CQ1), OneUp\_162 (CQ2),

Start 32:

- Found in 4 of 159 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 148
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Pumpernickel\_352 (GD4), Pumpernickel\_51 (GD4),

Start 33:

- Found in 1 of 159 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Morgana\_153 (DZ),

Start 35:

- Found in 139 of 159 ( 87.4% ) of genes in pham
- Manual Annotations of this start: 1 of 148
- Called 6.5% of time when present
- Phage (with cluster) where this start called: Figueroism\_60 (EA1), GoingMerry\_61 (EA1), GoneGirl\_61 (EA1), HavenFinLeoSun\_61 (EA1), Jerbirus\_61 (EA1), KellyGreen\_61 (EA1), Merida02\_61 (EA1), PhillyPhantom\_59 (EA1), SolidSnake\_61 (EA1),

Start 36:

- Found in 10 of 159 ( 6.3% ) of genes in pham
- Manual Annotations of this start: 6 of 148
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Cece\_346 (GD3), Cece\_44 (GD3), Dodo\_387 (GD1), Dodo\_41 (GD1), Erasmago\_381 (GD2), Erasmago\_43 (GD2), PauloDiaboli\_395 (GD1), PauloDiaboli\_40 (GD1),

Start 40:

- Found in 4 of 159 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 3 of 148
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Casey\_53 (EA3), Pajaza\_53 (EA3), Pikmin\_53 (EA3),

### **Summary by clusters:**

There are 9 clusters represented in this pham: GD1, GD2, GD3, GD4, DZ, EA1, CQ2, EA3, CQ1,

Info for manual annotations of cluster CQ1:

- Start number 31 was manually annotated 2 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 31 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster DZ:

- Start number 33 was manually annotated 1 time for cluster DZ.

Info for manual annotations of cluster EA1:

- Start number 29 was manually annotated 130 times for cluster EA1.
- Start number 35 was manually annotated 1 time for cluster EA1.

Info for manual annotations of cluster EA3:

- Start number 40 was manually annotated 3 times for cluster EA3.

Info for manual annotations of cluster GD1:

- Start number 23 was manually annotated 2 times for cluster GD1.
- Start number 36 was manually annotated 4 times for cluster GD1.

Info for manual annotations of cluster GD3:

- Start number 36 was manually annotated 2 times for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 32 was manually annotated 2 times for cluster GD4.

### ***Gene Information:***

Gene: A3Wally\_40 Start: 13714, Stop: 14190, Start Num: 23

Candidate Starts for A3Wally\_40:

(19, 13597), (Start: 23 @13714 has 2 MA's), (24, 13726), (28, 13807), (Start: 36 @13858 has 6 MA's), (39, 13900), (49, 13993), (68, 14098), (74, 14173),

Gene: A3Wally\_393 Start: 192935, Stop: 193411, Start Num: 23

Candidate Starts for A3Wally\_393:

(19, 192818), (Start: 23 @192935 has 2 MA's), (24, 192947), (28, 193028), (Start: 36 @193079 has 6 MA's), (39, 193121), (49, 193214), (68, 193319), (74, 193394),

Gene: Abscondus\_174 Start: 88837, Stop: 88481, Start Num: 31

Candidate Starts for Abscondus\_174:

(8, 89281), (10, 89230), (11, 89218), (12, 89143), (14, 89116), (15, 89092), (16, 89080), (17, 89074), (18, 89062), (20, 89026), (21, 88981), (Start: 31 @88837 has 3 MA's), (37, 88798), (50, 88669), (52, 88657), (53, 88654), (54, 88642), (70, 88558), (75, 88489),

Gene: Acosta\_61 Start: 40099, Stop: 39716, Start Num: 29

Candidate Starts for Acosta\_61:

(1, 40633), (2, 40618), (4, 40609), (7, 40546), (9, 40498), (25, 40171), (Start: 29 @40099 has 130 MA's), (Start: 35 @40051 has 1 MA's), (47, 39937), (51, 39907), (54, 39883), (57, 39871), (59, 39856), (65, 39820), (73, 39748),

Gene: Agente005\_59 Start: 39879, Stop: 39493, Start Num: 29

Candidate Starts for Agente005\_59:

(Start: 29 @39879 has 130 MA's), (Start: 35 @39831 has 1 MA's), (54, 39660), (57, 39648), (59, 39633), (64, 39600), (65, 39597), (73, 39525),

Gene: AlexAdler\_60 Start: 40059, Stop: 39673, Start Num: 29

Candidate Starts for AlexAdler\_60:

(Start: 29 @40059 has 130 MA's), (Start: 35 @40011 has 1 MA's), (47, 39894), (54, 39840), (57, 39828), (59, 39813), (65, 39777), (73, 39705),

Gene: Alyxandracam\_60 Start: 39996, Stop: 39610, Start Num: 29

Candidate Starts for Alyxandracam\_60:

(Start: 29 @39996 has 130 MA's), (Start: 35 @39948 has 1 MA's), (51, 39801), (54, 39777), (57, 39765), (65, 39714), (73, 39642),

Gene: Anilorac\_58 Start: 39786, Stop: 39400, Start Num: 29

Candidate Starts for Anilorac\_58:

(Start: 29 @39786 has 130 MA's), (Start: 35 @39738 has 1 MA's), (54, 39567), (57, 39555), (65, 39504), (73, 39432),

Gene: Antoinette\_60 Start: 40084, Stop: 39698, Start Num: 29

Candidate Starts for Antoinette\_60:

(Start: 29 @40084 has 130 MA's), (Start: 35 @40036 has 1 MA's), (48, 39916), (54, 39865), (57, 39853), (59, 39838), (65, 39802), (73, 39730),

Gene: AranulaLuti\_59 Start: 39776, Stop: 39390, Start Num: 29

Candidate Starts for AranulaLuti\_59:

(Start: 29 @39776 has 130 MA's), (Start: 35 @39728 has 1 MA's), (51, 39581), (54, 39557), (57, 39545), (65, 39494), (73, 39422),

Gene: Asta\_59 Start: 39781, Stop: 39395, Start Num: 29

Candidate Starts for Asta\_59:

(Start: 29 @39781 has 130 MA's), (Start: 35 @39733 has 1 MA's), (51, 39586), (54, 39562), (57, 39550), (65, 39499), (73, 39427),

Gene: Aubergine\_59 Start: 39781, Stop: 39395, Start Num: 29

Candidate Starts for Aubergine\_59:

(Start: 29 @39781 has 130 MA's), (Start: 35 @39733 has 1 MA's), (51, 39586), (54, 39562), (57, 39550), (65, 39499), (73, 39427),

Gene: AxiPup\_60 Start: 39995, Stop: 39609, Start Num: 29

Candidate Starts for AxiPup\_60:

(Start: 29 @39995 has 130 MA's), (Start: 35 @39947 has 1 MA's), (51, 39800), (54, 39776), (57, 39764), (65, 39713), (73, 39641),

Gene: Baines\_59 Start: 39780, Stop: 39394, Start Num: 29

Candidate Starts for Baines\_59:

(Start: 29 @39780 has 130 MA's), (Start: 35 @39732 has 1 MA's), (51, 39585), (54, 39561), (57, 39549), (65, 39498), (73, 39426),

Gene: Balsa\_58 Start: 39910, Stop: 39524, Start Num: 29

Candidate Starts for Balsa\_58:

(Start: 29 @39910 has 130 MA's), (Start: 35 @39862 has 1 MA's), (48, 39742), (54, 39691), (57, 39679), (65, 39628), (73, 39556),

Gene: Bandik\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Bandik\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: BeautPeep30\_60 Start: 40034, Stop: 39648, Start Num: 29

Candidate Starts for BeautPeep30\_60:

(Start: 29 @40034 has 130 MA's), (Start: 35 @39986 has 1 MA's), (51, 39839), (54, 39815), (57, 39803), (65, 39752), (73, 39680),

Gene: BeeBee8\_60 Start: 40084, Stop: 39698, Start Num: 29

Candidate Starts for BeeBee8\_60:

(Start: 29 @40084 has 130 MA's), (Start: 35 @40036 has 1 MA's), (49, 39898), (54, 39865), (65, 39802), (73, 39730),

Gene: Benjalauren\_60 Start: 39787, Stop: 39401, Start Num: 29

Candidate Starts for Benjalauren\_60:

(Start: 29 @39787 has 130 MA's), (Start: 35 @39739 has 1 MA's), (47, 39622), (51, 39592), (54, 39568), (57, 39556), (65, 39505), (73, 39433),

Gene: BigRedClifford\_60 Start: 40022, Stop: 39636, Start Num: 29

Candidate Starts for BigRedClifford\_60:

(Start: 29 @40022 has 130 MA's), (Start: 35 @39974 has 1 MA's), (51, 39827), (54, 39803), (57, 39791), (65, 39740), (73, 39668),

Gene: Blage\_60 Start: 40022, Stop: 39636, Start Num: 29

Candidate Starts for Blage\_60:

(Start: 29 @40022 has 130 MA's), (Start: 35 @39974 has 1 MA's), (51, 39827), (54, 39803), (57, 39791), (65, 39740), (73, 39668),

Gene: BonesMcCoy\_60 Start: 40023, Stop: 39637, Start Num: 29

Candidate Starts for BonesMcCoy\_60:

(Start: 29 @40023 has 130 MA's), (Start: 35 @39975 has 1 MA's), (51, 39828), (54, 39804), (57, 39792), (65, 39741), (73, 39669),

Gene: Bonino\_59 Start: 39760, Stop: 39374, Start Num: 29

Candidate Starts for Bonino\_59:

(Start: 29 @39760 has 130 MA's), (Start: 35 @39712 has 1 MA's), (51, 39565), (54, 39541), (57, 39529), (65, 39478), (73, 39406),

Gene: Byron23\_61 Start: 40031, Stop: 39645, Start Num: 29

Candidate Starts for Byron23\_61:

(Start: 29 @40031 has 130 MA's), (Start: 35 @39983 has 1 MA's), (51, 39836), (54, 39812), (57, 39800), (65, 39749), (73, 39677),

Gene: Calix\_59 Start: 39767, Stop: 39381, Start Num: 29

Candidate Starts for Calix\_59:

(Start: 29 @39767 has 130 MA's), (Start: 35 @39719 has 1 MA's), (51, 39572), (54, 39548), (57, 39536), (65, 39485), (73, 39413),

Gene: CarisSwetlik\_59 Start: 40366, Stop: 39983, Start Num: 29

Candidate Starts for CarisSwetlik\_59:

(25, 40438), (Start: 29 @40366 has 130 MA's), (Start: 35 @40318 has 1 MA's), (47, 40204), (54, 40150), (57, 40138), (59, 40123), (65, 40087), (73, 40015),

Gene: Casey\_53 Start: 36229, Stop: 35939, Start Num: 40

Candidate Starts for Casey\_53:

(Start: 40 @36229 has 3 MA's), (64, 36046),

Gene: Cece\_44 Start: 16476, Stop: 16823, Start Num: 36

Candidate Starts for Cece\_44:

(26, 16371), (30, 16434), (Start: 36 @16476 has 6 MA's), (41, 16524), (45, 16557), (48, 16590), (50, 16614), (64, 16701), (68, 16713),

Gene: Cece\_346 Start: 184910, Stop: 185257, Start Num: 36

Candidate Starts for Cece\_346:

(26, 184805), (30, 184868), (Start: 36 @184910 has 6 MA's), (41, 184958), (45, 184991), (48, 185024), (50, 185048), (64, 185135), (68, 185147),

Gene: Chako\_59 Start: 39776, Stop: 39390, Start Num: 29

Candidate Starts for Chako\_59:

(Start: 29 @39776 has 130 MA's), (Start: 35 @39728 has 1 MA's), (51, 39581), (54, 39557), (57, 39545), (65, 39494), (73, 39422),

Gene: Chamuel\_59 Start: 39793, Stop: 39407, Start Num: 29

Candidate Starts for Chamuel\_59:

(Start: 29 @39793 has 130 MA's), (Start: 35 @39745 has 1 MA's), (51, 39598), (54, 39574), (57, 39562), (65, 39511), (73, 39439),

Gene: Christoph\_59 Start: 39780, Stop: 39394, Start Num: 29

Candidate Starts for Christoph\_59:

(Start: 29 @39780 has 130 MA's), (Start: 35 @39732 has 1 MA's), (51, 39585), (54, 39561), (57, 39549), (65, 39498), (73, 39426),

Gene: Clancy\_59 Start: 39780, Stop: 39394, Start Num: 29

Candidate Starts for Clancy\_59:

(Start: 29 @39780 has 130 MA's), (Start: 35 @39732 has 1 MA's), (51, 39585), (54, 39561), (57, 39549), (65, 39498), (73, 39426),

Gene: Convict\_60 Start: 40023, Stop: 39637, Start Num: 29

Candidate Starts for Convict\_60:

(Start: 29 @40023 has 130 MA's), (Start: 35 @39975 has 1 MA's), (51, 39828), (54, 39804), (57, 39792), (65, 39741), (73, 39669),

Gene: CoraRita\_59 Start: 39749, Stop: 39363, Start Num: 29

Candidate Starts for CoraRita\_59:

(Start: 29 @39749 has 130 MA's), (Start: 35 @39701 has 1 MA's), (51, 39554), (54, 39530), (57, 39518), (65, 39467), (73, 39395),

Gene: Culver\_182 Start: 88820, Stop: 88464, Start Num: 31

Candidate Starts for Culver\_182:

(Start: 31 @88820 has 3 MA's), (37, 88781), (42, 88736), (46, 88682), (53, 88637), (54, 88625), (70, 88541), (75, 88472),

Gene: Dave\_60 Start: 40084, Stop: 39698, Start Num: 29

Candidate Starts for Dave\_60:

(Start: 29 @40084 has 130 MA's), (Start: 35 @40036 has 1 MA's), (48, 39916), (54, 39865), (57, 39853), (59, 39838), (65, 39802), (73, 39730),

Gene: Delphidian\_59 Start: 39821, Stop: 39435, Start Num: 29

Candidate Starts for Delphidian\_59:

(Start: 29 @39821 has 130 MA's), (Start: 35 @39773 has 1 MA's), (47, 39656), (54, 39602), (57, 39590), (59, 39575), (65, 39539), (73, 39467),

Gene: Den3\_60 Start: 40027, Stop: 39641, Start Num: 29

Candidate Starts for Den3\_60:

(Start: 29 @40027 has 130 MA's), (Start: 35 @39979 has 1 MA's), (51, 39832), (54, 39808), (57, 39796), (65, 39745), (73, 39673),

Gene: Dodo\_41 Start: 13705, Stop: 14037, Start Num: 36

Candidate Starts for Dodo\_41:

(24, 13573), (28, 13654), (Start: 36 @13705 has 6 MA's), (39, 13747), (49, 13840), (68, 13945), (74, 14020),

Gene: Dodo\_387 Start: 191905, Stop: 192237, Start Num: 36

Candidate Starts for Dodo\_387:

(24, 191773), (28, 191854), (Start: 36 @191905 has 6 MA's), (39, 191947), (49, 192040), (68, 192145), (74, 192220),

Gene: Dothraki\_60 Start: 40031, Stop: 39645, Start Num: 29

Candidate Starts for Dothraki\_60:

(Start: 29 @40031 has 130 MA's), (Start: 35 @39983 has 1 MA's), (51, 39836), (54, 39812), (57, 39800), (65, 39749), (73, 39677),

Gene: Duocatuli\_59 Start: 39776, Stop: 39390, Start Num: 29

Candidate Starts for Duocatuli\_59:

(Start: 29 @39776 has 130 MA's), (Start: 35 @39728 has 1 MA's), (51, 39581), (54, 39557), (57, 39545), (65, 39494), (73, 39422),

Gene: Endor\_61 Start: 40347, Stop: 39961, Start Num: 29

Candidate Starts for Endor\_61:

(22, 40467), (Start: 29 @40347 has 130 MA's), (Start: 35 @40299 has 1 MA's), (48, 40179), (54, 40128), (57, 40116), (59, 40101), (65, 40065), (73, 39993),

Gene: Erasmago\_381 Start: 189919, Stop: 190239, Start Num: 36

Candidate Starts for Erasmago\_381:

(27, 189859), (Start: 32 @189886 has 2 MA's), (Start: 36 @189919 has 6 MA's), (42, 189964), (43, 189979), (44, 189988), (54, 190075), (60, 190114), (68, 190147),

Gene: Erasmago\_43 Start: 15410, Stop: 15730, Start Num: 36

Candidate Starts for Erasmago\_43:

(27, 15350), (Start: 32 @15377 has 2 MA's), (Start: 36 @15410 has 6 MA's), (42, 15455), (43, 15470), (44, 15479), (54, 15566), (60, 15605), (68, 15638),

Gene: Erla\_59 Start: 39764, Stop: 39378, Start Num: 29

Candidate Starts for Erla\_59:

(Start: 29 @39764 has 130 MA's), (Start: 35 @39716 has 1 MA's), (51, 39569), (54, 39545), (57, 39533), (65, 39482), (73, 39410),

Gene: Espinosa\_59 Start: 39779, Stop: 39393, Start Num: 29

Candidate Starts for Espinosa\_59:

(Start: 29 @39779 has 130 MA's), (Start: 35 @39731 has 1 MA's), (51, 39584), (54, 39560), (57, 39548), (65, 39497), (73, 39425),

Gene: Etna\_59 Start: 39957, Stop: 39571, Start Num: 29

Candidate Starts for Etna\_59:

(Start: 29 @39957 has 130 MA's), (Start: 35 @39909 has 1 MA's), (54, 39738), (57, 39726), (65, 39675), (73, 39603),

Gene: Etta\_59 Start: 39768, Stop: 39382, Start Num: 29

Candidate Starts for Etta\_59:

(Start: 29 @39768 has 130 MA's), (Start: 35 @39720 has 1 MA's), (51, 39573), (54, 39549), (57, 39537), (65, 39486), (73, 39414),

Gene: Exploradora\_59 Start: 39729, Stop: 39343, Start Num: 29

Candidate Starts for Exploradora\_59:

(Start: 29 @39729 has 130 MA's), (Start: 35 @39681 has 1 MA's), (51, 39534), (54, 39510), (57, 39498), (65, 39447), (73, 39375),

Gene: FarmerDoug\_59 Start: 39780, Stop: 39394, Start Num: 29

Candidate Starts for FarmerDoug\_59:

(Start: 29 @39780 has 130 MA's), (Start: 35 @39732 has 1 MA's), (48, 39612), (54, 39561), (57, 39549), (59, 39534), (65, 39498), (73, 39426),

Gene: Figueroism\_60 Start: 40025, Stop: 39687, Start Num: 35

Candidate Starts for Figueroism\_60:

(Start: 29 @40073 has 130 MA's), (Start: 35 @40025 has 1 MA's), (48, 39905), (54, 39854), (57, 39842), (59, 39827), (65, 39791), (73, 39719),

Gene: GardenB\_60 Start: 40152, Stop: 39766, Start Num: 29

Candidate Starts for GardenB\_60:

(Start: 29 @40152 has 130 MA's), (Start: 35 @40104 has 1 MA's), (48, 39984), (54, 39933), (57, 39921), (64, 39873), (65, 39870), (73, 39798),

Gene: Garey24\_60 Start: 39747, Stop: 39361, Start Num: 29

Candidate Starts for Garey24\_60:

(Start: 29 @39747 has 130 MA's), (Start: 35 @39699 has 1 MA's), (51, 39552), (54, 39528), (57, 39516), (65, 39465), (73, 39393),

Gene: Gargoyle\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Gargoyle\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: Geeche\_183 Start: 90483, Stop: 90124, Start Num: 31

Candidate Starts for Geeche\_183:

(Start: 31 @90483 has 3 MA's), (37, 90444), (42, 90399), (53, 90300), (61, 90240), (62, 90237), (63, 90234), (70, 90201), (75, 90132),

Gene: Gelo\_59 Start: 39774, Stop: 39388, Start Num: 29

Candidate Starts for Gelo\_59:

(Start: 29 @39774 has 130 MA's), (Start: 35 @39726 has 1 MA's), (51, 39579), (54, 39555), (57, 39543), (65, 39492), (73, 39420),

Gene: Gershwin\_59 Start: 39781, Stop: 39395, Start Num: 29

Candidate Starts for Gershwin\_59:

(Start: 29 @39781 has 130 MA's), (Start: 35 @39733 has 1 MA's), (51, 39586), (54, 39562), (57, 39550), (65, 39499), (73, 39427),

Gene: GoingMerry\_61 Start: 39957, Stop: 39619, Start Num: 35

Candidate Starts for GoingMerry\_61:

(Start: 29 @40005 has 130 MA's), (Start: 35 @39957 has 1 MA's), (54, 39786), (57, 39774), (65, 39723), (73, 39651),

Gene: GoneGirl\_61 Start: 40091, Stop: 39753, Start Num: 35

Candidate Starts for GoneGirl\_61:

(Start: 29 @40139 has 130 MA's), (Start: 35 @40091 has 1 MA's), (48, 39971), (54, 39920), (57, 39908), (64, 39860), (65, 39857), (73, 39785),

Gene: Greys\_60 Start: 40023, Stop: 39637, Start Num: 29

Candidate Starts for Greys\_60:

(Start: 29 @40023 has 130 MA's), (Start: 35 @39975 has 1 MA's), (51, 39828), (54, 39804), (57, 39792), (65, 39741), (73, 39669),

Gene: Gubbabump\_59 Start: 39718, Stop: 39332, Start Num: 29

Candidate Starts for Gubbabump\_59:

(Start: 29 @39718 has 130 MA's), (Start: 35 @39670 has 1 MA's), (51, 39523), (54, 39499), (57, 39487), (65, 39436), (73, 39364),

Gene: Hamlet\_59 Start: 40003, Stop: 39617, Start Num: 29

Candidate Starts for Hamlet\_59:

(Start: 29 @40003 has 130 MA's), (Start: 35 @39955 has 1 MA's), (54, 39784), (57, 39772), (65, 39721), (73, 39649),

Gene: HanSolo\_59 Start: 39728, Stop: 39342, Start Num: 29

Candidate Starts for HanSolo\_59:

(Start: 29 @39728 has 130 MA's), (Start: 35 @39680 has 1 MA's), (51, 39533), (54, 39509), (57, 39497), (65, 39446), (73, 39374),

Gene: HankSprout\_60 Start: 39647, Stop: 39261, Start Num: 29

Candidate Starts for HankSprout\_60:

(Start: 29 @39647 has 130 MA's), (Start: 35 @39599 has 1 MA's), (51, 39452), (54, 39428), (57, 39416), (65, 39365), (73, 39293),

Gene: HavenFinLeoSun\_61 Start: 39997, Stop: 39662, Start Num: 35

Candidate Starts for HavenFinLeoSun\_61:

(1, 40579), (2, 40564), (4, 40555), (7, 40492), (9, 40444), (25, 40117), (Start: 29 @40045 has 130 MA's), (Start: 35 @39997 has 1 MA's), (47, 39883), (51, 39853), (54, 39829), (57, 39817), (59, 39802), (65, 39766), (73, 39694),

Gene: HungryHenry\_59 Start: 39741, Stop: 39355, Start Num: 29

Candidate Starts for HungryHenry\_59:

(Start: 29 @39741 has 130 MA's), (Start: 35 @39693 has 1 MA's), (51, 39546), (54, 39522), (57, 39510), (65, 39459), (73, 39387),

Gene: Ilzat\_59 Start: 39751, Stop: 39365, Start Num: 29

Candidate Starts for Ilzat\_59:

(Start: 29 @39751 has 130 MA's), (Start: 35 @39703 has 1 MA's), (47, 39586), (51, 39556), (54, 39532), (57, 39520), (65, 39469), (73, 39397),

Gene: Inventa\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Inventa\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: loannes\_60 Start: 40105, Stop: 39719, Start Num: 29

Candidate Starts for loannes\_60:

(Start: 29 @40105 has 130 MA's), (Start: 35 @40057 has 1 MA's), (51, 39910), (54, 39886), (57, 39874), (65, 39823), (73, 39751),

Gene: Janus167\_59 Start: 39756, Stop: 39370, Start Num: 29

Candidate Starts for Janus167\_59:

(Start: 29 @39756 has 130 MA's), (Start: 35 @39708 has 1 MA's), (51, 39561), (54, 39537), (57, 39525), (65, 39474), (73, 39402),

Gene: JasonD\_61 Start: 40316, Stop: 39930, Start Num: 29

Candidate Starts for JasonD\_61:

(1, 40850), (3, 40832), (4, 40826), (5, 40811), (7, 40763), (9, 40715), (25, 40388), (Start: 29 @40316 has 130 MA's), (Start: 35 @40268 has 1 MA's), (42, 40208), (47, 40151), (54, 40097), (55, 40094), (57, 40085), (65, 40034), (73, 39962),

Gene: JasperRussell\_59 Start: 39776, Stop: 39390, Start Num: 29

Candidate Starts for JasperRussell\_59:

(Start: 29 @39776 has 130 MA's), (Start: 35 @39728 has 1 MA's), (51, 39581), (54, 39557), (57, 39545), (65, 39494), (73, 39422),

Gene: Jenos\_61 Start: 40611, Stop: 40228, Start Num: 29

Candidate Starts for Jenos\_61:

(25, 40683), (Start: 29 @40611 has 130 MA's), (Start: 35 @40563 has 1 MA's), (47, 40449), (54, 40395), (57, 40383), (59, 40368), (65, 40332), (73, 40260),

Gene: Jerbirus\_61 Start: 39723, Stop: 39385, Start Num: 35

Candidate Starts for Jerbirus\_61:

(Start: 29 @39771 has 130 MA's), (Start: 35 @39723 has 1 MA's), (51, 39576), (54, 39552), (57, 39540), (65, 39489), (73, 39417),

Gene: JeriBeth\_59 Start: 39659, Stop: 39273, Start Num: 29

Candidate Starts for JeriBeth\_59:

(Start: 29 @39659 has 130 MA's), (Start: 35 @39611 has 1 MA's), (51, 39464), (54, 39440), (57, 39428), (65, 39377), (73, 39305),

Gene: Kale\_59 Start: 39783, Stop: 39397, Start Num: 29

Candidate Starts for Kale\_59:

(Start: 29 @39783 has 130 MA's), (Start: 35 @39735 has 1 MA's), (51, 39588), (54, 39564), (57, 39552), (65, 39501), (73, 39429),

Gene: KannH\_59 Start: 39776, Stop: 39390, Start Num: 29

Candidate Starts for KannH\_59:

(Start: 29 @39776 has 130 MA's), (Start: 35 @39728 has 1 MA's), (51, 39581), (54, 39557), (57, 39545), (65, 39494), (73, 39422),

Gene: KellyGreen\_61 Start: 39717, Stop: 39379, Start Num: 35

Candidate Starts for KellyGreen\_61:

(Start: 29 @39765 has 130 MA's), (Start: 35 @39717 has 1 MA's), (51, 39570), (54, 39546), (57, 39534), (65, 39483), (73, 39411),

Gene: KingJulien\_58 Start: 39798, Stop: 39412, Start Num: 29

Candidate Starts for KingJulien\_58:

(Start: 29 @39798 has 130 MA's), (Start: 35 @39750 has 1 MA's), (48, 39630), (54, 39579), (57, 39567), (65, 39516), (73, 39444),

Gene: Klimt\_60 Start: 39799, Stop: 39413, Start Num: 29

Candidate Starts for Klimt\_60:

(Start: 29 @39799 has 130 MA's), (Start: 35 @39751 has 1 MA's), (51, 39604), (54, 39580), (57, 39568), (65, 39517), (73, 39445),

Gene: Knox\_60 Start: 40023, Stop: 39637, Start Num: 29

Candidate Starts for Knox\_60:

(Start: 29 @40023 has 130 MA's), (Start: 35 @39975 has 1 MA's), (51, 39828), (54, 39804), (57, 39792), (65, 39741), (73, 39669),

Gene: Kouch\_60 Start: 39729, Stop: 39343, Start Num: 29

Candidate Starts for Kouch\_60:

(Start: 29 @39729 has 130 MA's), (Start: 35 @39681 has 1 MA's), (51, 39534), (54, 39510), (57, 39498), (65, 39447), (73, 39375),

Gene: Kurt1\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Kurt1\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: Leafus\_59 Start: 40060, Stop: 39674, Start Num: 29

Candidate Starts for Leafus\_59:

(Start: 29 @40060 has 130 MA's), (Start: 35 @40012 has 1 MA's), (54, 39841), (57, 39829), (65, 39778), (73, 39706),

Gene: Lovelyunicorn\_60 Start: 40023, Stop: 39637, Start Num: 29

Candidate Starts for Lovelyunicorn\_60:

(Start: 29 @40023 has 130 MA's), (Start: 35 @39975 has 1 MA's), (51, 39828), (54, 39804), (57, 39792), (65, 39741), (73, 39669),

Gene: Ludgate\_60 Start: 40024, Stop: 39638, Start Num: 29

Candidate Starts for Ludgate\_60:

(Start: 29 @40024 has 130 MA's), (Start: 35 @39976 has 1 MA's), (51, 39829), (54, 39805), (57, 39793), (65, 39742), (73, 39670),

Gene: MaeLinda\_60 Start: 40035, Stop: 39649, Start Num: 29

Candidate Starts for MaeLinda\_60:

(Start: 29 @40035 has 130 MA's), (Start: 35 @39987 has 1 MA's), (48, 39867), (54, 39816), (57, 39804), (59, 39789), (65, 39753), (73, 39681),

Gene: ManRay\_59 Start: 39781, Stop: 39395, Start Num: 29

Candidate Starts for ManRay\_59:

(Start: 29 @39781 has 130 MA's), (Start: 35 @39733 has 1 MA's), (51, 39586), (54, 39562), (57, 39550), (65, 39499), (73, 39427),

Gene: Martin\_61 Start: 40037, Stop: 39651, Start Num: 29

Candidate Starts for Martin\_61:

(Start: 29 @40037 has 130 MA's), (Start: 35 @39989 has 1 MA's), (51, 39842), (54, 39818), (57, 39806), (65, 39755), (73, 39683),

Gene: McGalleon\_60 Start: 40752, Stop: 40366, Start Num: 29

Candidate Starts for McGalleon\_60:

(25, 40824), (Start: 29 @40752 has 130 MA's), (Start: 35 @40704 has 1 MA's), (54, 40533), (57, 40521), (65, 40470), (73, 40398),

Gene: Merida02\_61 Start: 39780, Stop: 39442, Start Num: 35

Candidate Starts for Merida02\_61:

(Start: 29 @39828 has 130 MA's), (Start: 35 @39780 has 1 MA's), (47, 39663), (54, 39609), (57, 39597), (59, 39582), (65, 39546), (73, 39474),

Gene: MillyPhilly\_60 Start: 40025, Stop: 39639, Start Num: 29

Candidate Starts for MillyPhilly\_60:

(Start: 29 @40025 has 130 MA's), (Start: 35 @39977 has 1 MA's), (51, 39830), (54, 39806), (57, 39794), (65, 39743), (73, 39671),

Gene: MonChoix\_58 Start: 39706, Stop: 39320, Start Num: 29

Candidate Starts for MonChoix\_58:

(Start: 29 @39706 has 130 MA's), (Start: 35 @39658 has 1 MA's), (48, 39538), (54, 39487), (57, 39475), (59, 39460), (64, 39427), (65, 39424), (73, 39352),

Gene: Morgana\_153 Start: 78272, Stop: 77919, Start Num: 33

Candidate Starts for Morgana\_153:

(Start: 33 @78272 has 1 MA's), (38, 78233), (Start: 40 @78215 has 3 MA's), (56, 78083), (66, 78026), (69, 78002),

Gene: MrWorldwide\_60 Start: 40035, Stop: 39649, Start Num: 29

Candidate Starts for MrWorldwide\_60:

(Start: 29 @40035 has 130 MA's), (Start: 35 @39987 has 1 MA's), (51, 39840), (54, 39816), (57, 39804), (65, 39753), (73, 39681),

Gene: Nagem\_60 Start: 40071, Stop: 39685, Start Num: 29

Candidate Starts for Nagem\_60:

(Start: 29 @40071 has 130 MA's), (Start: 35 @40023 has 1 MA's), (51, 39876), (54, 39852), (57, 39840), (65, 39789), (73, 39717),

Gene: Nattles\_59 Start: 39768, Stop: 39382, Start Num: 29

Candidate Starts for Nattles\_59:

(Start: 29 @39768 has 130 MA's), (Start: 35 @39720 has 1 MA's), (51, 39573), (54, 39549), (57, 39537), (65, 39486), (73, 39414),

Gene: NickSell\_60 Start: 40038, Stop: 39652, Start Num: 29

Candidate Starts for NickSell\_60:

(Start: 29 @40038 has 130 MA's), (Start: 35 @39990 has 1 MA's), (51, 39843), (54, 39819), (57, 39807), (65, 39756), (73, 39684),

Gene: Oats\_59 Start: 39781, Stop: 39395, Start Num: 29

Candidate Starts for Oats\_59:

(Start: 29 @39781 has 130 MA's), (Start: 35 @39733 has 1 MA's), (51, 39586), (54, 39562), (57, 39550), (65, 39499), (73, 39427),

Gene: OldNelly\_60 Start: 39825, Stop: 39439, Start Num: 29

Candidate Starts for OldNelly\_60:

(Start: 29 @39825 has 130 MA's), (Start: 35 @39777 has 1 MA's), (47, 39660), (54, 39606), (57, 39594), (59, 39579), (65, 39543), (73, 39471),

Gene: OneUp\_162 Start: 88590, Stop: 88228, Start Num: 31

Candidate Starts for OneUp\_162:

(Start: 31 @88590 has 3 MA's), (34, 88560), (50, 88419), (53, 88404), (54, 88392), (70, 88308),

Gene: Oxtober96\_61 Start: 40023, Stop: 39637, Start Num: 29

Candidate Starts for Oxtober96\_61:

(Start: 29 @40023 has 130 MA's), (Start: 35 @39975 has 1 MA's), (51, 39828), (54, 39804), (57, 39792), (65, 39741), (73, 39669),

Gene: Pajaza\_53 Start: 36229, Stop: 35939, Start Num: 40

Candidate Starts for Pajaza\_53:

(Start: 40 @36229 has 3 MA's), (64, 36046),

Gene: Papafritta\_59 Start: 39786, Stop: 39400, Start Num: 29

Candidate Starts for Papafritta\_59:

(Start: 29 @39786 has 130 MA's), (Start: 35 @39738 has 1 MA's), (47, 39621), (51, 39591), (54, 39567), (57, 39555), (65, 39504), (73, 39432),

Gene: ParleG\_60 Start: 40035, Stop: 39649, Start Num: 29

Candidate Starts for ParleG\_60:

(Start: 29 @40035 has 130 MA's), (Start: 35 @39987 has 1 MA's), (51, 39840), (54, 39816), (57, 39804), (65, 39753), (73, 39681),

Gene: PauloDiaboli\_40 Start: 13698, Stop: 14030, Start Num: 36

Candidate Starts for PauloDiaboli\_40:

(24, 13566), (28, 13647), (Start: 36 @13698 has 6 MA's), (39, 13740), (49, 13833), (68, 13938), (74, 14013),

Gene: PauloDiaboli\_395 Start: 190327, Stop: 190659, Start Num: 36

Candidate Starts for PauloDiaboli\_395:

(24, 190195), (28, 190276), (Start: 36 @190327 has 6 MA's), (39, 190369), (49, 190462), (68, 190567), (74, 190642),

Gene: Peep\_60 Start: 40081, Stop: 39695, Start Num: 29

Candidate Starts for Peep\_60:

(Start: 29 @40081 has 130 MA's), (Start: 35 @40033 has 1 MA's), (48, 39913), (54, 39862), (57, 39850), (59, 39835), (65, 39799), (73, 39727),

Gene: Peppino\_59 Start: 39980, Stop: 39594, Start Num: 29

Candidate Starts for Peppino\_59:

(Start: 29 @39980 has 130 MA's), (Start: 35 @39932 has 1 MA's), (48, 39812), (54, 39761), (57, 39749), (65, 39698), (73, 39626),

Gene: Pherferi\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Pherferi\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: Phiderman\_60 Start: 40025, Stop: 39639, Start Num: 29

Candidate Starts for Phiderman\_60:

(Start: 29 @40025 has 130 MA's), (Start: 35 @39977 has 1 MA's), (51, 39830), (54, 39806), (57, 39794), (65, 39743), (73, 39671),

Gene: PhillyPhantom\_59 Start: 39843, Stop: 39505, Start Num: 35

Candidate Starts for PhillyPhantom\_59:

(Start: 29 @39891 has 130 MA's), (Start: 35 @39843 has 1 MA's), (49, 39705), (54, 39672), (57, 39660), (65, 39609), (73, 39537),

Gene: Phireproof\_60 Start: 40034, Stop: 39648, Start Num: 29

Candidate Starts for Phireproof\_60:

(Start: 29 @40034 has 130 MA's), (Start: 35 @39986 has 1 MA's), (51, 39839), (54, 39815), (57, 39803), (65, 39752), (73, 39680),

Gene: PhredFlintston\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for PhredFlintston\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: Phriends\_59 Start: 39829, Stop: 39443, Start Num: 29

Candidate Starts for Phriends\_59:

(Start: 29 @39829 has 130 MA's), (Start: 35 @39781 has 1 MA's), (47, 39664), (54, 39610), (57, 39598), (59, 39583), (65, 39547), (73, 39475),

Gene: Pikmin\_53 Start: 36229, Stop: 35939, Start Num: 40

Candidate Starts for Pikmin\_53:

(Start: 40 @36229 has 3 MA's), (64, 36046),

Gene: Pocket\_59 Start: 39808, Stop: 39422, Start Num: 29

Candidate Starts for Pocket\_59:

(Start: 29 @39808 has 130 MA's), (Start: 35 @39760 has 1 MA's), (51, 39613), (54, 39589), (57, 39577), (65, 39526), (73, 39454),

Gene: Pumpernickel\_352 Start: 184745, Stop: 185116, Start Num: 32

Candidate Starts for Pumpernickel\_352:

(6, 184244), (13, 184433), (Start: 32 @184745 has 2 MA's), (39, 184826), (43, 184856), (54, 184952), (57, 184964), (67, 185021), (71, 185048), (72, 185060),

Gene: Pumpernickel\_51 Start: 18613, Stop: 18984, Start Num: 32

Candidate Starts for Pumpernickel\_51:

(6, 18112), (13, 18301), (Start: 32 @18613 has 2 MA's), (39, 18694), (43, 18724), (54, 18820), (57, 18832), (67, 18889), (71, 18916), (72, 18928),

Gene: PuppyEggo\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for PuppyEggo\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: Raccoon\_59 Start: 39951, Stop: 39565, Start Num: 29

Candidate Starts for Raccoon\_59:

(Start: 29 @39951 has 130 MA's), (Start: 35 @39903 has 1 MA's), (49, 39765), (54, 39732), (57, 39720), (65, 39669), (73, 39597),

Gene: Rapheph\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Rapheph\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: Raptor\_60 Start: 40026, Stop: 39640, Start Num: 29

Candidate Starts for Raptor\_60:

(Start: 29 @40026 has 130 MA's), (Start: 35 @39978 has 1 MA's), (51, 39831), (54, 39807), (57, 39795), (65, 39744), (73, 39672),

Gene: Redfield\_59 Start: 39990, Stop: 39604, Start Num: 29

Candidate Starts for Redfield\_59:

(Start: 29 @39990 has 130 MA's), (Start: 35 @39942 has 1 MA's), (48, 39822), (54, 39771), (57, 39759), (65, 39708), (73, 39636),

Gene: Renzie\_60 Start: 40084, Stop: 39698, Start Num: 29

Candidate Starts for Renzie\_60:

(Start: 29 @40084 has 130 MA's), (Start: 35 @40036 has 1 MA's), (48, 39916), (54, 39865), (57, 39853), (59, 39838), (65, 39802), (73, 39730),

Gene: Riyhil\_60 Start: 40038, Stop: 39652, Start Num: 29

Candidate Starts for Riyhil\_60:

(Start: 29 @40038 has 130 MA's), (Start: 35 @39990 has 1 MA's), (51, 39843), (54, 39819), (57, 39807), (65, 39756), (73, 39684),

Gene: Robinson\_60 Start: 40100, Stop: 39714, Start Num: 29

Candidate Starts for Robinson\_60:

(Start: 29 @40100 has 130 MA's), (Start: 35 @40052 has 1 MA's), (51, 39905), (54, 39881), (57, 39869), (65, 39818), (73, 39746),

Gene: Rog141\_59 Start: 39771, Stop: 39385, Start Num: 29

Candidate Starts for Rog141\_59:

(Start: 29 @39771 has 130 MA's), (Start: 35 @39723 has 1 MA's), (51, 39576), (54, 39552), (57, 39540), (65, 39489), (73, 39417),

Gene: RosieMae\_59 Start: 39832, Stop: 39446, Start Num: 29

Candidate Starts for RosieMae\_59:

(Start: 29 @39832 has 130 MA's), (Start: 35 @39784 has 1 MA's), (51, 39637), (54, 39613), (57, 39601), (58, 39592), (65, 39550), (73, 39478),

Gene: SJay\_60 Start: 40072, Stop: 39686, Start Num: 29

Candidate Starts for SJay\_60:

(Start: 29 @40072 has 130 MA's), (Start: 35 @40024 has 1 MA's), (51, 39877), (54, 39853), (57, 39841), (65, 39790), (73, 39718),

Gene: Schnapsidee\_59 Start: 39932, Stop: 39546, Start Num: 29

Candidate Starts for Schnapsidee\_59:

(Start: 29 @39932 has 130 MA's), (Start: 35 @39884 has 1 MA's), (48, 39764), (54, 39713), (57, 39701), (65, 39650), (73, 39578),

Gene: Sedgewig\_59 Start: 39732, Stop: 39346, Start Num: 29

Candidate Starts for Sedgewig\_59:

(Start: 29 @39732 has 130 MA's), (Start: 35 @39684 has 1 MA's), (51, 39537), (54, 39513), (57, 39501), (65, 39450), (73, 39378),

Gene: ShaiHulud\_60 Start: 40037, Stop: 39651, Start Num: 29

Candidate Starts for ShaiHulud\_60:

(Start: 29 @40037 has 130 MA's), (Start: 35 @39989 has 1 MA's), (51, 39842), (54, 39818), (57, 39806), (65, 39755), (73, 39683),

Gene: Shee\_60 Start: 40025, Stop: 39639, Start Num: 29

Candidate Starts for Shee\_60:

(Start: 29 @40025 has 130 MA's), (Start: 35 @39977 has 1 MA's), (51, 39830), (54, 39806), (57, 39794), (65, 39743), (73, 39671),

Gene: SoilGremlin\_60 Start: 39822, Stop: 39436, Start Num: 29

Candidate Starts for SoilGremlin\_60:

(Start: 29 @39822 has 130 MA's), (Start: 35 @39774 has 1 MA's), (47, 39657), (54, 39603), (57, 39591), (59, 39576), (65, 39540), (73, 39468),

Gene: SolidSnake\_61 Start: 39773, Stop: 39435, Start Num: 35

Candidate Starts for SolidSnake\_61:

(Start: 29 @39821 has 130 MA's), (Start: 35 @39773 has 1 MA's), (47, 39656), (54, 39602), (57, 39590), (59, 39575), (65, 39539), (73, 39467),

Gene: SonOfLevi\_60 Start: 39799, Stop: 39413, Start Num: 29

Candidate Starts for SonOfLevi\_60:

(Start: 29 @39799 has 130 MA's), (Start: 35 @39751 has 1 MA's), (51, 39604), (54, 39580), (57, 39568), (65, 39517), (73, 39445),

Gene: Soror1\_58 Start: 39813, Stop: 39427, Start Num: 29

Candidate Starts for Soror1\_58:

(Start: 29 @39813 has 130 MA's), (Start: 35 @39765 has 1 MA's), (54, 39594), (57, 39582), (65, 39531), (73, 39459),

Gene: Stanktossa\_59 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Stanktossa\_59:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: StingRay\_59 Start: 39822, Stop: 39436, Start Num: 29

Candidate Starts for StingRay\_59:

(Start: 29 @39822 has 130 MA's), (Start: 35 @39774 has 1 MA's), (47, 39657), (51, 39627), (54, 39603), (57, 39591), (65, 39540), (73, 39468),

Gene: StirfryIV\_59 Start: 39744, Stop: 39358, Start Num: 29

Candidate Starts for StirfryIV\_59:

(Start: 29 @39744 has 130 MA's), (Start: 35 @39696 has 1 MA's), (51, 39549), (54, 39525), (57, 39513), (65, 39462), (73, 39390),

Gene: Stormbreaker8\_58 Start: 39799, Stop: 39413, Start Num: 29

Candidate Starts for Stormbreaker8\_58:

(Start: 29 @39799 has 130 MA's), (Start: 35 @39751 has 1 MA's), (48, 39631), (54, 39580), (57, 39568), (65, 39517), (73, 39445),

Gene: Strathdee\_60 Start: 40027, Stop: 39641, Start Num: 29

Candidate Starts for Strathdee\_60:

(Start: 29 @40027 has 130 MA's), (Start: 35 @39979 has 1 MA's), (51, 39832), (54, 39808), (57, 39796), (65, 39745), (73, 39673),

Gene: Superfresh\_60 Start: 40084, Stop: 39698, Start Num: 29

Candidate Starts for Superfresh\_60:

(Start: 29 @40084 has 130 MA's), (Start: 35 @40036 has 1 MA's), (48, 39916), (54, 39865), (57, 39853), (59, 39838), (65, 39802), (73, 39730),

Gene: Symere\_59 Start: 39742, Stop: 39356, Start Num: 29

Candidate Starts for Symere\_59:

(Start: 29 @39742 has 130 MA's), (Start: 35 @39694 has 1 MA's), (51, 39547), (54, 39523), (57, 39511), (65, 39460), (73, 39388),

Gene: TatarkaPM\_60 Start: 40038, Stop: 39652, Start Num: 29

Candidate Starts for TatarkaPM\_60:

(Start: 29 @40038 has 130 MA's), (Start: 35 @39990 has 1 MA's), (51, 39843), (54, 39819), (57, 39807), (65, 39756), (73, 39684),

Gene: Teagan\_60 Start: 40018, Stop: 39632, Start Num: 29

Candidate Starts for Teagan\_60:

(Start: 29 @40018 has 130 MA's), (Start: 35 @39970 has 1 MA's), (51, 39823), (54, 39799), (57, 39787), (65, 39736), (73, 39664),

Gene: TeddyBear\_59 Start: 39781, Stop: 39395, Start Num: 29

Candidate Starts for TeddyBear\_59:

(Start: 29 @39781 has 130 MA's), (Start: 35 @39733 has 1 MA's), (51, 39586), (54, 39562), (57, 39550), (65, 39499), (73, 39427),

Gene: Tenda\_59 Start: 39779, Stop: 39393, Start Num: 29

Candidate Starts for Tenda\_59:

(Start: 29 @39779 has 130 MA's), (Start: 35 @39731 has 1 MA's), (51, 39584), (54, 39560), (57, 39548), (65, 39497), (73, 39425),

Gene: Thompsone\_60 Start: 40025, Stop: 39639, Start Num: 29

Candidate Starts for Thompsone\_60:

(Start: 29 @40025 has 130 MA's), (Start: 35 @39977 has 1 MA's), (51, 39830), (54, 39806), (57, 39794), (65, 39743), (73, 39671),

Gene: Thorongil\_60 Start: 39542, Stop: 39156, Start Num: 29

Candidate Starts for Thorongil\_60:

(Start: 29 @39542 has 130 MA's), (Start: 35 @39494 has 1 MA's), (51, 39347), (54, 39323), (57, 39311), (65, 39260), (73, 39188),

Gene: TinSulphur\_61 Start: 40034, Stop: 39648, Start Num: 29

Candidate Starts for TinSulphur\_61:

(Start: 29 @40034 has 130 MA's), (Start: 35 @39986 has 1 MA's), (51, 39839), (54, 39815), (57, 39803), (65, 39752), (73, 39680),

Gene: Velene\_60 Start: 40024, Stop: 39638, Start Num: 29

Candidate Starts for Velene\_60:

(Start: 29 @40024 has 130 MA's), (Start: 35 @39976 has 1 MA's), (51, 39829), (54, 39805), (57, 39793), (65, 39742), (73, 39670),

Gene: Vispitious\_60 Start: 40028, Stop: 39642, Start Num: 29

Candidate Starts for Vispitious\_60:

(Start: 29 @40028 has 130 MA's), (Start: 35 @39980 has 1 MA's), (51, 39833), (54, 39809), (57, 39797), (65, 39746), (73, 39674),

Gene: WildNOut\_60 Start: 40021, Stop: 39635, Start Num: 29

Candidate Starts for WildNOut\_60:

(Start: 29 @40021 has 130 MA's), (Start: 35 @39973 has 1 MA's), (51, 39826), (54, 39802), (57, 39790), (65, 39739), (73, 39667),

Gene: Winzigespinne\_59 Start: 39767, Stop: 39381, Start Num: 29

Candidate Starts for Winzigespinne\_59:

(Start: 29 @39767 has 130 MA's), (Start: 35 @39719 has 1 MA's), (51, 39572), (54, 39548), (57, 39536), (65, 39485), (73, 39413),

Gene: Zada\_61 Start: 40040, Stop: 39654, Start Num: 29

Candidate Starts for Zada\_61:

(Start: 29 @40040 has 130 MA's), (Start: 35 @39992 has 1 MA's), (48, 39872), (54, 39821), (57, 39809), (59, 39794), (65, 39758), (73, 39686),