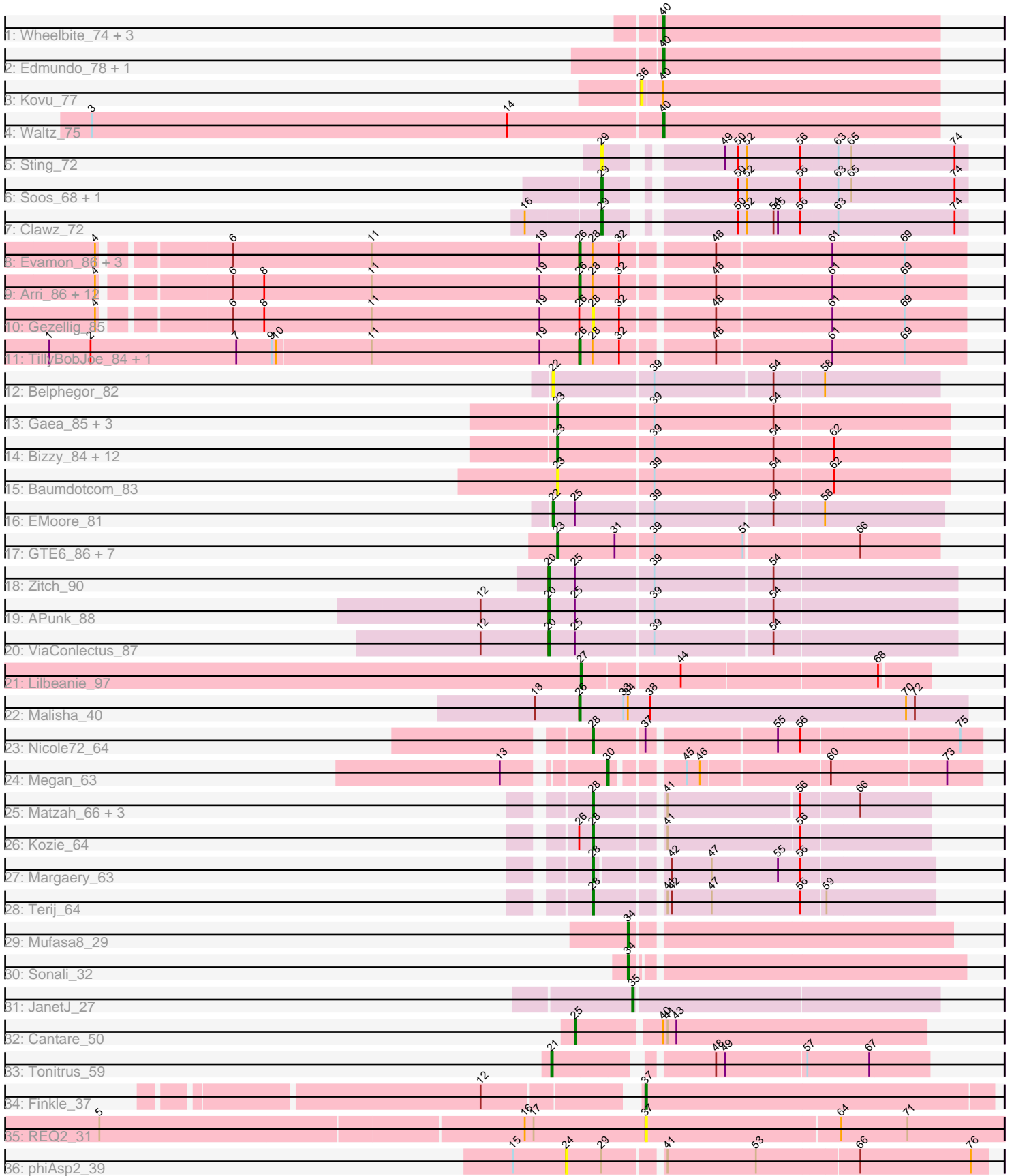


Pham 171394



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 171394 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171394 has 82 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Wheelbite\_74, LiSara\_75, Salgado\_78, Laroye\_78
- Track 2 : Edmundo\_78, Shrooms\_76
- Track 3 : Kovu\_77
- Track 4 : Waltz\_75
- Track 5 : Sting\_72
- Track 6 : Soos\_68, DonTron\_72
- Track 7 : Clawz\_72
- Track 8 : Evamon\_86, SmokingBunny\_87, Togo\_86, Salvador\_86
- Track 9 : Arri\_86, KimmyK\_84, Twister6\_85, Wizard\_81, Valary\_87, Phlop\_83, PullumCavea\_84, Portcullis\_86, VanDeWege\_88, Shinji\_85, RogerDodger\_89, Savbucketdawg\_81, Fireball\_89
- Track 10 : Gezellig\_85
- Track 11 : TillyBobJoe\_84, PinkCoffee\_87
- Track 12 : Belphegor\_82
- Track 13 : Gaea\_85, Saronaya\_86, StorminNorm\_85, Gustavo\_86
- Track 14 : Bizzy\_84, JKSyngboy\_81, Kwobi\_85, Flatwoods\_84, Derg\_82, Tycho\_84, Tangerine\_84, Ashertheman\_84, SchottB\_83, Kroos\_84, Ribeye\_84, LilHam\_78, YorkOnyx\_83
- Track 15 : Baumdotcom\_83
- Track 16 : EMoore\_81
- Track 17 : GTE6\_86, Tiamoceli\_80, Kwekel\_87, Chickadee\_87, Twonlo\_84, EdmundFerry\_85, Dextert\_82, RoadKill\_84
- Track 18 : Zitch\_90
- Track 19 : APunk\_88
- Track 20 : ViaConlectus\_87
- Track 21 : Lilbeanie\_97
- Track 22 : Malisha\_40
- Track 23 : Nicole72\_64
- Track 24 : Megan\_63
- Track 25 : Matzah\_66, MementoMori\_65, Cressida\_67, Cinna\_64
- Track 26 : Kozie\_64
- Track 27 : Margaery\_63
- Track 28 : Terij\_64
- Track 29 : Mufasa8\_29
- Track 30 : Sonali\_32
- Track 31 : JanetJ\_27
- Track 32 : Cantare\_50

- Track 33 : Tonitrus\_59
- Track 34 : Finkle\_37
- Track 35 : REQ2\_31
- Track 36 : phiAsp2\_39

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

The start number called the most often in the published annotations is 26, it was called in 19 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arri\_86, Evamon\_86, Fireball\_89, KimmyK\_84, Malisha\_40, Phlop\_83, PinkCoffee\_87, Portcullis\_86, PullumCavea\_84, RogerDodger\_89, Salvador\_86, Savbucketdawg\_81, Shinji\_85, SmokingBunny\_87, TillyBobJoe\_84, Togo\_86, Twister6\_85, Valary\_87, VanDeWege\_88, Wizard\_81,

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

- Gezellig\_85, Kozi\_64,

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

- APunk\_88, Ashertheman\_84, Baumdotcom\_83, Belphegor\_82, Bizzy\_84, Cantare\_50, Chickadee\_87, Cinna\_64, Clawz\_72, Cressida\_67, Derg\_82, Dextert\_82, DonTron\_72, EMOore\_81, EdmundFerry\_85, Edmundo\_78, Finkle\_37, Flatwoods\_84, GTE6\_86, Gaea\_85, Gustavo\_86, JKSyngboy\_81, JanetJ\_27, Kovu\_77, Kroos\_84, Kwekel\_87, Kwobi\_85, Laroye\_78, LiSara\_75, LilHam\_78, Lilbeanie\_97, Margaery\_63, Matzah\_66, Megan\_63, MementoMori\_65, Mufasa8\_29, Nicole72\_64, REQ2\_31, Ribeye\_84, RoadKill\_84, Salgado\_78, Saronaya\_86, SchottB\_83, Shrooms\_76, Sonali\_32, Soos\_68, Sting\_72, StorminNorm\_85, Tangerine\_84, Terij\_64, Tiamoceli\_80, Tonitrus\_59, Twonlo\_84, Tycho\_84, ViaConlectus\_87, Waltz\_75, Wheelbite\_74, YorkOnyx\_83, Zitch\_90, phiAsp2\_39,

**Summary by start number:**

Start 20:

- Found in 3 of 82 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 3 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: APunk\_88 (DE4), ViaConlectus\_87 (DE4), Zitch\_90 (DE4),

Start 21:

- Found in 1 of 82 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tonitrus\_59 (singleton),

Start 22:

- Found in 2 of 82 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Belphegor\_82 (DE), EMOore\_81 (DE2),

#### Start 23:

- Found in 26 of 82 ( 31.7% ) of genes in pham
- Manual Annotations of this start: 18 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ashertheman\_84 (DE1), Baumdotcom\_83 (DE1), Bizzy\_84 (DE1), Chickadee\_87 (DE3), Derg\_82 (DE1), Dextert\_82 (DE3), EdmundFerry\_85 (DE3), Flatwoods\_84 (DE1), GTE6\_86 (DE3), Gaea\_85 (DE1), Gustavo\_86 (DE1), JKSyngboy\_81 (DE1), Kroos\_84 (DE1), Kwekel\_87 (DE3), Kwobi\_85 (DE1), LilHam\_78 (DE1), Ribeye\_84 (DE1), RoadKill\_84 (DE3), Saronaya\_86 (DE1), SchottB\_83 (DE1), StorminNorm\_85 (DE1), Tangerine\_84 (DE1), Tiamoceli\_80 (DE3), Twonlo\_84 (DE3), Tycho\_84 (DE1), YorkOnyx\_83 (DE1),

#### Start 24:

- Found in 1 of 82 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: phiAsp2\_39 (singleton),

#### Start 25:

- Found in 5 of 82 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Cantare\_50 (singleton),

#### Start 26:

- Found in 22 of 82 ( 26.8% ) of genes in pham
- Manual Annotations of this start: 19 of 66
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Arri\_86 (DC1), Evamon\_86 (DC1), Fireball\_89 (DC1), KimmyK\_84 (DC1), Malisha\_40 (DN), Phlop\_83 (DC1), PinkCoffee\_87 (DC1), Portcullis\_86 (DC1), PullumCavea\_84 (DC1), RogerDodger\_89 (DC1), Salvador\_86 (DC1), Savbucketdawg\_81 (DC1), Shinji\_85 (DC1), SmokingBunny\_87 (DC1), TillyBobJoe\_84 (DC1), Togo\_86 (DC1), Twister6\_85 (DC1), Valary\_87 (DC1), VanDeWege\_88 (DC1), Wizard\_81 (DC1),

#### Start 27:

- Found in 1 of 82 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie\_97 (DE5),

#### Start 28:

- Found in 28 of 82 ( 34.1% ) of genes in pham
- Manual Annotations of this start: 8 of 66
- Called 32.1% of time when present
- Phage (with cluster) where this start called: Cinna\_64 (EI), Cressida\_67 (EI), Gezellig\_85 (DC1), Kozie\_64 (EI), Margaery\_63 (EI), Matzah\_66 (EI), MementoMori\_65 (EI), Nicole72\_64 (EC), Terij\_64 (EI),

#### Start 29:

- Found in 5 of 82 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 2 of 66
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Clawz\_72 (CP), DonTron\_72 (CP), Soos\_68 (CP), Sting\_72 (CP),

#### Start 30:

- Found in 1 of 82 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Megan\_63 (EC),

#### Start 34:

- Found in 3 of 82 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 2 of 66
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Mufasa8\_29 (FG), Sonali\_32 (FG),

#### Start 35:

- Found in 1 of 82 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JanetJ\_27 (FO),

#### Start 36:

- Found in 1 of 82 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kovu\_77 (AL),

#### Start 37:

- Found in 3 of 82 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Finkle\_37 (singleton), REQ2\_31 (singleton),

#### Start 40:

- Found in 9 of 82 ( 11.0% ) of genes in pham
- Manual Annotations of this start: 7 of 66
- Called 77.8% of time when present
- Phage (with cluster) where this start called: Edmundo\_78 (AL), Laroye\_78 (AL), LiSara\_75 (AL), Salgado\_78 (AL), Shrooms\_76 (AL), Waltz\_75 (AL), Wheelbite\_74 (AL),

### **Summary by clusters:**

There are 15 clusters represented in this pham: DN, singleton, CP, EI, DE1, DE2, DE3, DE4, AL, EC, DE5, FG, DC1, DE, FO,

Info for manual annotations of cluster AL:

- Start number 40 was manually annotated 7 times for cluster AL.

Info for manual annotations of cluster CP:

- Start number 29 was manually annotated 2 times for cluster CP.

Info for manual annotations of cluster DC1:

- Start number 26 was manually annotated 18 times for cluster DC1.

Info for manual annotations of cluster DE1:

- Start number 23 was manually annotated 11 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 22 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 23 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 20 was manually annotated 3 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 27 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DN:

- Start number 26 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster EC:

- Start number 28 was manually annotated 1 time for cluster EC.
- Start number 30 was manually annotated 1 time for cluster EC.

Info for manual annotations of cluster EI:

- Start number 28 was manually annotated 7 times for cluster EI.

Info for manual annotations of cluster FG:

- Start number 34 was manually annotated 2 times for cluster FG.

Info for manual annotations of cluster FO:

- Start number 35 was manually annotated 1 time for cluster FO.

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

Gene: APunk\_88 Start: 58714, Stop: 58983, Start Num: 20

Candidate Starts for APunk\_88:

(12, 58669), (Start: 20 @58714 has 3 MA's), (Start: 25 @58732 has 1 MA's), (39, 58783), (54, 58861),

Gene: Arri\_86 Start: 56263, Stop: 56015, Start Num: 26

Candidate Starts for Arri\_86:

(4, 56575), (6, 56497), (8, 56476), (11, 56404), (19, 56290), (Start: 26 @56263 has 19 MA's), (Start: 28 @56254 has 8 MA's), (32, 56236), (48, 56179), (61, 56104), (69, 56056),

Gene: Ashertheman\_84 Start: 56563, Stop: 56823, Start Num: 23

Candidate Starts for Ashertheman\_84:

(Start: 23 @56563 has 18 MA's), (39, 56626), (54, 56707), (62, 56746),

Gene: Baumdotcom\_83 Start: 56963, Stop: 57223, Start Num: 23

Candidate Starts for Baumdotcom\_83:

(Start: 23 @56963 has 18 MA's), (39, 57026), (54, 57107), (62, 57146),

Gene: Belphegor\_82 Start: 58991, Stop: 59245, Start Num: 22

Candidate Starts for Belphegor\_82:

(Start: 22 @58991 has 1 MA's), (39, 59057), (54, 59135), (58, 59168),

Gene: Bizzy\_84 Start: 56320, Stop: 56580, Start Num: 23

Candidate Starts for Bizzy\_84:

(Start: 23 @56320 has 18 MA's), (39, 56383), (54, 56464), (62, 56503),

Gene: Cantare\_50 Start: 45879, Stop: 46109, Start Num: 25

Candidate Starts for Cantare\_50:

(Start: 25 @45879 has 1 MA's), (Start: 40 @45933 has 7 MA's), (41, 45936), (43, 45942),

Gene: Chickadee\_87 Start: 56050, Stop: 56301, Start Num: 23

Candidate Starts for Chickadee\_87:

(Start: 23 @56050 has 18 MA's), (31, 56089), (39, 56113), (51, 56173), (66, 56248),

Gene: Cinna\_64 Start: 43061, Stop: 43273, Start Num: 28

Candidate Starts for Cinna\_64:

(Start: 28 @43061 has 8 MA's), (41, 43103), (56, 43190), (66, 43226),

Gene: Clawz\_72 Start: 48155, Stop: 48379, Start Num: 29

Candidate Starts for Clawz\_72:

(16, 48107), (Start: 29 @48155 has 2 MA's), (50, 48227), (52, 48233), (54, 48251), (55, 48254), (56, 48269), (63, 48293), (74, 48371),

Gene: Cressida\_67 Start: 42667, Stop: 42879, Start Num: 28

Candidate Starts for Cressida\_67:

(Start: 28 @42667 has 8 MA's), (41, 42709), (56, 42796), (66, 42832),

Gene: Derg\_82 Start: 55217, Stop: 55477, Start Num: 23

Candidate Starts for Derg\_82:

(Start: 23 @55217 has 18 MA's), (39, 55280), (54, 55361), (62, 55400),

Gene: Dxdert\_82 Start: 54559, Stop: 54810, Start Num: 23

Candidate Starts for Dxdert\_82:

(Start: 23 @54559 has 18 MA's), (31, 54598), (39, 54622), (51, 54682), (66, 54757),

Gene: DonTron\_72 Start: 48395, Stop: 48619, Start Num: 29

Candidate Starts for DonTron\_72:

(Start: 29 @48395 has 2 MA's), (50, 48467), (52, 48473), (56, 48509), (63, 48533), (65, 48542), (74, 48611),

Gene: EMoore\_81 Start: 58164, Stop: 58421, Start Num: 22

Candidate Starts for EMoore\_81:

(Start: 22 @58164 has 1 MA's), (Start: 25 @58179 has 1 MA's), (39, 58230), (54, 58308), (58, 58341),

Gene: EdmundFerry\_85 Start: 55426, Stop: 55677, Start Num: 23

Candidate Starts for EdmundFerry\_85:

(Start: 23 @55426 has 18 MA's), (31, 55465), (39, 55489), (51, 55549), (66, 55624),

Gene: Edmundo\_78 Start: 47501, Stop: 47316, Start Num: 40

Candidate Starts for Edmundo\_78:

(Start: 40 @47501 has 7 MA's),

Gene: Evamon\_86 Start: 56075, Stop: 55827, Start Num: 26

Candidate Starts for Evamon\_86:

(4, 56387), (6, 56309), (11, 56216), (19, 56102), (Start: 26 @56075 has 19 MA's), (Start: 28 @56066 has 8 MA's), (32, 56048), (48, 55991), (61, 55916), (69, 55868),

Gene: Finkle\_37 Start: 29834, Stop: 29601, Start Num: 37

Candidate Starts for Finkle\_37:

(12, 29927), (Start: 37 @29834 has 1 MA's),

Gene: Fireball\_89 Start: 56537, Stop: 56289, Start Num: 26

Candidate Starts for Fireball\_89:

(4, 56849), (6, 56771), (8, 56750), (11, 56678), (19, 56564), (Start: 26 @56537 has 19 MA's), (Start: 28 @56528 has 8 MA's), (32, 56510), (48, 56453), (61, 56378), (69, 56330),

Gene: Flatwoods\_84 Start: 56131, Stop: 56391, Start Num: 23

Candidate Starts for Flatwoods\_84:

(Start: 23 @56131 has 18 MA's), (39, 56194), (54, 56275), (62, 56314),

Gene: GTE6\_86 Start: 56599, Stop: 56850, Start Num: 23

Candidate Starts for GTE6\_86:

(Start: 23 @56599 has 18 MA's), (31, 56638), (39, 56662), (51, 56722), (66, 56797),

Gene: Gaea\_85 Start: 56481, Stop: 56741, Start Num: 23

Candidate Starts for Gaea\_85:

(Start: 23 @56481 has 18 MA's), (39, 56544), (54, 56625),

Gene: Gezellig\_85 Start: 55912, Stop: 55673, Start Num: 28

Candidate Starts for Gezellig\_85:

(4, 56233), (6, 56155), (8, 56134), (11, 56062), (19, 55948), (Start: 26 @55921 has 19 MA's), (Start: 28 @55912 has 8 MA's), (32, 55894), (48, 55837), (61, 55762), (69, 55714),

Gene: Gustavo\_86 Start: 57313, Stop: 57573, Start Num: 23

Candidate Starts for Gustavo\_86:

(Start: 23 @57313 has 18 MA's), (39, 57376), (54, 57457),

Gene: JKSyngboy\_81 Start: 56985, Stop: 57245, Start Num: 23

Candidate Starts for JKSyngboy\_81:

(Start: 23 @56985 has 18 MA's), (39, 57048), (54, 57129), (62, 57168),

Gene: JanetJ\_27 Start: 24007, Stop: 23804, Start Num: 35

Candidate Starts for JanetJ\_27:

(Start: 35 @24007 has 1 MA's),

Gene: KimmyK\_84 Start: 56368, Stop: 56120, Start Num: 26

Candidate Starts for KimmyK\_84:



(4, 56680), (6, 56602), (8, 56581), (11, 56509), (19, 56395), (Start: 26 @56368 has 19 MA's), (Start: 28 @56359 has 8 MA's), (32, 56341), (48, 56284), (61, 56209), (69, 56161),

Gene: Kovu\_77 Start: 47520, Stop: 47323, Start Num: 36

Candidate Starts for Kovu\_77:

(36, 47520), (Start: 40 @47508 has 7 MA's),

Gene: Kozie\_64 Start: 42302, Stop: 42514, Start Num: 28

Candidate Starts for Kozie\_64:

(Start: 26 @42293 has 19 MA's), (Start: 28 @42302 has 8 MA's), (41, 42344), (56, 42431),

Gene: Kroos\_84 Start: 56981, Stop: 57241, Start Num: 23

Candidate Starts for Kroos\_84:

(Start: 23 @56981 has 18 MA's), (39, 57044), (54, 57125), (62, 57164),

Gene: Kwekel\_87 Start: 55963, Stop: 56214, Start Num: 23

Candidate Starts for Kwekel\_87:

(Start: 23 @55963 has 18 MA's), (31, 56002), (39, 56026), (51, 56086), (66, 56161),

Gene: Kwobi\_85 Start: 57490, Stop: 57750, Start Num: 23

Candidate Starts for Kwobi\_85:

(Start: 23 @57490 has 18 MA's), (39, 57553), (54, 57634), (62, 57673),

Gene: Laroye\_78 Start: 46919, Stop: 46734, Start Num: 40

Candidate Starts for Laroye\_78:

(Start: 40 @46919 has 7 MA's),

Gene: LiSara\_75 Start: 47053, Stop: 46868, Start Num: 40

Candidate Starts for LiSara\_75:

(Start: 40 @47053 has 7 MA's),

Gene: LilHam\_78 Start: 54602, Stop: 54862, Start Num: 23

Candidate Starts for LilHam\_78:

(Start: 23 @54602 has 18 MA's), (39, 54665), (54, 54746), (62, 54785),

Gene: Lilbeanie\_97 Start: 58823, Stop: 59047, Start Num: 27

Candidate Starts for Lilbeanie\_97:

(Start: 27 @58823 has 1 MA's), (44, 58886), (68, 59015),

Gene: Malisha\_40 Start: 30125, Stop: 29862, Start Num: 26

Candidate Starts for Malisha\_40:

(18, 30155), (Start: 26 @30125 has 19 MA's), (33, 30095), (Start: 34 @30092 has 2 MA's), (38, 30077), (70, 29903), (72, 29897),

Gene: Margaery\_63 Start: 42267, Stop: 42482, Start Num: 28

Candidate Starts for Margaery\_63:

(Start: 28 @42267 has 8 MA's), (42, 42309), (47, 42336), (55, 42381), (56, 42396),

Gene: Matzah\_66 Start: 43128, Stop: 43340, Start Num: 28

Candidate Starts for Matzah\_66:

(Start: 28 @43128 has 8 MA's), (41, 43170), (56, 43257), (66, 43293),

Gene: Megan\_63 Start: 45613, Stop: 45837, Start Num: 30

Candidate Starts for Megan\_63:

(13, 45556), (Start: 30 @45613 has 1 MA's), (45, 45652), (46, 45661), (60, 45739), (73, 45814),

Gene: MementoMori\_65 Start: 42723, Stop: 42935, Start Num: 28

Candidate Starts for MementoMori\_65:

(Start: 28 @42723 has 8 MA's), (41, 42765), (56, 42852), (66, 42888),

Gene: Mufasa8\_29 Start: 27032, Stop: 26823, Start Num: 34

Candidate Starts for Mufasa8\_29:

(Start: 34 @27032 has 2 MA's),

Gene: Nicole72\_64 Start: 46099, Stop: 46344, Start Num: 28

Candidate Starts for Nicole72\_64:

(Start: 28 @46099 has 8 MA's), (Start: 37 @46132 has 1 MA's), (55, 46213), (56, 46228), (75, 46330),

Gene: Phlop\_83 Start: 55971, Stop: 55723, Start Num: 26

Candidate Starts for Phlop\_83:

(4, 56283), (6, 56205), (8, 56184), (11, 56112), (19, 55998), (Start: 26 @55971 has 19 MA's), (Start: 28 @55962 has 8 MA's), (32, 55944), (48, 55887), (61, 55812), (69, 55764),

Gene: PinkCoffee\_87 Start: 55835, Stop: 55587, Start Num: 26

Candidate Starts for PinkCoffee\_87:

(1, 56192), (2, 56165), (7, 56066), (9, 56042), (10, 56039), (11, 55976), (19, 55862), (Start: 26 @55835 has 19 MA's), (Start: 28 @55826 has 8 MA's), (32, 55808), (48, 55751), (61, 55676), (69, 55628),

Gene: Portcullis\_86 Start: 55977, Stop: 55729, Start Num: 26

Candidate Starts for Portcullis\_86:

(4, 56289), (6, 56211), (8, 56190), (11, 56118), (19, 56004), (Start: 26 @55977 has 19 MA's), (Start: 28 @55968 has 8 MA's), (32, 55950), (48, 55893), (61, 55818), (69, 55770),

Gene: PullumCavea\_84 Start: 56148, Stop: 55900, Start Num: 26

Candidate Starts for PullumCavea\_84:

(4, 56460), (6, 56382), (8, 56361), (11, 56289), (19, 56175), (Start: 26 @56148 has 19 MA's), (Start: 28 @56139 has 8 MA's), (32, 56121), (48, 56064), (61, 55989), (69, 55941),

Gene: REQ2\_31 Start: 26798, Stop: 26559, Start Num: 37

Candidate Starts for REQ2\_31:

(5, 27161), (16, 26879), (17, 26873), (Start: 37 @26798 has 1 MA's), (64, 26669), (71, 26624),

Gene: Ribeye\_84 Start: 56456, Stop: 56716, Start Num: 23

Candidate Starts for Ribeye\_84:

(Start: 23 @56456 has 18 MA's), (39, 56519), (54, 56600), (62, 56639),

Gene: RoadKill\_84 Start: 55492, Stop: 55743, Start Num: 23

Candidate Starts for RoadKill\_84:

(Start: 23 @55492 has 18 MA's), (31, 55531), (39, 55555), (51, 55615), (66, 55690),

Gene: RogerDodger\_89 Start: 56736, Stop: 56488, Start Num: 26

Candidate Starts for RogerDodger\_89:

(4, 57048), (6, 56970), (8, 56949), (11, 56877), (19, 56763), (Start: 26 @56736 has 19 MA's), (Start: 28 @56727 has 8 MA's), (32, 56709), (48, 56652), (61, 56577), (69, 56529),

Gene: Salgado\_78 Start: 46723, Stop: 46538, Start Num: 40  
Candidate Starts for Salgado\_78:  
(Start: 40 @46723 has 7 MA's),

Gene: Salvador\_86 Start: 56073, Stop: 55825, Start Num: 26  
Candidate Starts for Salvador\_86:  
(4, 56385), (6, 56307), (11, 56214), (19, 56100), (Start: 26 @56073 has 19 MA's), (Start: 28 @56064 has 8 MA's), (32, 56046), (48, 55989), (61, 55914), (69, 55866),

Gene: Saronaya\_86 Start: 57313, Stop: 57573, Start Num: 23  
Candidate Starts for Saronaya\_86:  
(Start: 23 @57313 has 18 MA's), (39, 57376), (54, 57457),

Gene: Savbucketdawg\_81 Start: 55415, Stop: 55167, Start Num: 26  
Candidate Starts for Savbucketdawg\_81:  
(4, 55727), (6, 55649), (8, 55628), (11, 55556), (19, 55442), (Start: 26 @55415 has 19 MA's), (Start: 28 @55406 has 8 MA's), (32, 55388), (48, 55331), (61, 55256), (69, 55208),

Gene: SchottB\_83 Start: 57376, Stop: 57636, Start Num: 23  
Candidate Starts for SchottB\_83:  
(Start: 23 @57376 has 18 MA's), (39, 57439), (54, 57520), (62, 57559),

Gene: Shinji\_85 Start: 56154, Stop: 55906, Start Num: 26  
Candidate Starts for Shinji\_85:  
(4, 56466), (6, 56388), (8, 56367), (11, 56295), (19, 56181), (Start: 26 @56154 has 19 MA's), (Start: 28 @56145 has 8 MA's), (32, 56127), (48, 56070), (61, 55995), (69, 55947),

Gene: Shrooms\_76 Start: 45176, Stop: 44991, Start Num: 40  
Candidate Starts for Shrooms\_76:  
(Start: 40 @45176 has 7 MA's),

Gene: SmokingBunny\_87 Start: 57069, Stop: 56821, Start Num: 26  
Candidate Starts for SmokingBunny\_87:  
(4, 57381), (6, 57303), (11, 57210), (19, 57096), (Start: 26 @57069 has 19 MA's), (Start: 28 @57060 has 8 MA's), (32, 57042), (48, 56985), (61, 56910), (69, 56862),

Gene: Sonali\_32 Start: 30335, Stop: 30120, Start Num: 34  
Candidate Starts for Sonali\_32:  
(Start: 34 @30335 has 2 MA's),

Gene: Soos\_68 Start: 47562, Stop: 47786, Start Num: 29  
Candidate Starts for Soos\_68:  
(Start: 29 @47562 has 2 MA's), (50, 47634), (52, 47640), (56, 47676), (63, 47700), (65, 47709), (74, 47778),

Gene: Sting\_72 Start: 48001, Stop: 48225, Start Num: 29  
Candidate Starts for Sting\_72:  
(Start: 29 @48001 has 2 MA's), (49, 48064), (50, 48073), (52, 48079), (56, 48115), (63, 48139), (65, 48148), (74, 48217),

Gene: StorminNorm\_85 Start: 57257, Stop: 57517, Start Num: 23  
Candidate Starts for StorminNorm\_85:  
(Start: 23 @57257 has 18 MA's), (39, 57320), (54, 57401),

Gene: Tangerine\_84 Start: 56314, Stop: 56574, Start Num: 23  
Candidate Starts for Tangerine\_84:  
(Start: 23 @56314 has 18 MA's), (39, 56377), (54, 56458), (62, 56497),

Gene: Terij\_64 Start: 41499, Stop: 41717, Start Num: 28  
Candidate Starts for Terij\_64:  
(Start: 28 @41499 has 8 MA's), (41, 41541), (42, 41544), (47, 41571), (56, 41631), (59, 41646),

Gene: Tiamoceli\_80 Start: 55382, Stop: 55633, Start Num: 23  
Candidate Starts for Tiamoceli\_80:  
(Start: 23 @55382 has 18 MA's), (31, 55421), (39, 55445), (51, 55505), (66, 55580),

Gene: TillyBobJoe\_84 Start: 55955, Stop: 55707, Start Num: 26  
Candidate Starts for TillyBobJoe\_84:  
(1, 56312), (2, 56285), (7, 56186), (9, 56162), (10, 56159), (11, 56096), (19, 55982), (Start: 26 @55955 has 19 MA's), (Start: 28 @55946 has 8 MA's), (32, 55928), (48, 55871), (61, 55796), (69, 55748),

Gene: Togo\_86 Start: 57069, Stop: 56821, Start Num: 26  
Candidate Starts for Togo\_86:  
(4, 57381), (6, 57303), (11, 57210), (19, 57096), (Start: 26 @57069 has 19 MA's), (Start: 28 @57060 has 8 MA's), (32, 57042), (48, 56985), (61, 56910), (69, 56862),

Gene: Tonitrus\_59 Start: 44270, Stop: 44503, Start Num: 21  
Candidate Starts for Tonitrus\_59:  
(Start: 21 @44270 has 1 MA's), (48, 44363), (49, 44369), (57, 44423), (67, 44465),

Gene: Twister6\_85 Start: 55418, Stop: 55170, Start Num: 26  
Candidate Starts for Twister6\_85:  
(4, 55730), (6, 55652), (8, 55631), (11, 55559), (19, 55445), (Start: 26 @55418 has 19 MA's), (Start: 28 @55409 has 8 MA's), (32, 55391), (48, 55334), (61, 55259), (69, 55211),

Gene: Twonlo\_84 Start: 56083, Stop: 56334, Start Num: 23  
Candidate Starts for Twonlo\_84:  
(Start: 23 @56083 has 18 MA's), (31, 56122), (39, 56146), (51, 56206), (66, 56281),

Gene: Tycho\_84 Start: 56791, Stop: 57051, Start Num: 23  
Candidate Starts for Tycho\_84:  
(Start: 23 @56791 has 18 MA's), (39, 56854), (54, 56935), (62, 56974),

Gene: Valary\_87 Start: 57061, Stop: 56813, Start Num: 26  
Candidate Starts for Valary\_87:  
(4, 57373), (6, 57295), (8, 57274), (11, 57202), (19, 57088), (Start: 26 @57061 has 19 MA's), (Start: 28 @57052 has 8 MA's), (32, 57034), (48, 56977), (61, 56902), (69, 56854),

Gene: VanDeWege\_88 Start: 56586, Stop: 56338, Start Num: 26  
Candidate Starts for VanDeWege\_88:  
(4, 56898), (6, 56820), (8, 56799), (11, 56727), (19, 56613), (Start: 26 @56586 has 19 MA's), (Start: 28 @56577 has 8 MA's), (32, 56559), (48, 56502), (61, 56427), (69, 56379),

Gene: ViaConlectus\_87 Start: 57801, Stop: 58070, Start Num: 20  
Candidate Starts for ViaConlectus\_87:

(12, 57756), (Start: 20 @57801 has 3 MA's), (Start: 25 @57819 has 1 MA's), (39, 57870), (54, 57948),

Gene: Waltz\_75 Start: 45186, Stop: 45001, Start Num: 40

Candidate Starts for Waltz\_75:

(3, 45570), (14, 45288), (Start: 40 @45186 has 7 MA's),

Gene: Wheelbite\_74 Start: 46857, Stop: 46672, Start Num: 40

Candidate Starts for Wheelbite\_74:

(Start: 40 @46857 has 7 MA's),

Gene: Wizard\_81 Start: 55921, Stop: 55673, Start Num: 26

Candidate Starts for Wizard\_81:

(4, 56233), (6, 56155), (8, 56134), (11, 56062), (19, 55948), (Start: 26 @55921 has 19 MA's), (Start: 28 @55912 has 8 MA's), (32, 55894), (48, 55837), (61, 55762), (69, 55714),

Gene: YorkOnyx\_83 Start: 56426, Stop: 56686, Start Num: 23

Candidate Starts for YorkOnyx\_83:

(Start: 23 @56426 has 18 MA's), (39, 56489), (54, 56570), (62, 56609),

Gene: Zitch\_90 Start: 58345, Stop: 58614, Start Num: 20

Candidate Starts for Zitch\_90:

(Start: 20 @58345 has 3 MA's), (Start: 25 @58363 has 1 MA's), (39, 58414), (54, 58492),

Gene: phiAsp2\_39 Start: 33131, Stop: 33403, Start Num: 24

Candidate Starts for phiAsp2\_39:

(15, 33095), (24, 33131), (Start: 29 @33155 has 2 MA's), (41, 33191), (53, 33251), (66, 33317), (76, 33392),