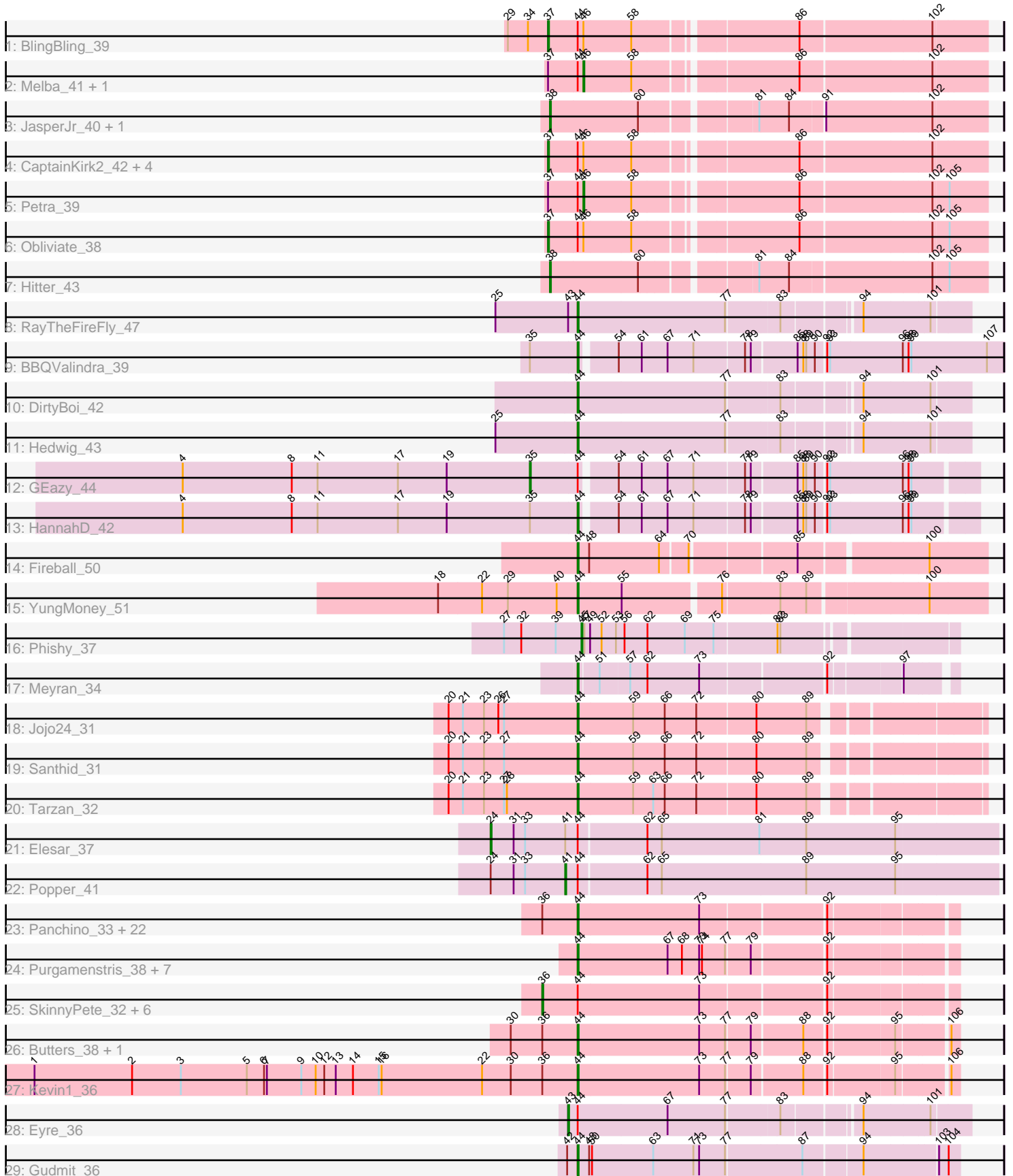


Pham 196503



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 196503 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196503 has 71 members, 0 are drafts.

Phages represented in each track:

- Track 1 : BlingBling\_39
- Track 2 : Melba\_41, Barco\_40
- Track 3 : JasperJr\_40, Guacamole\_40
- Track 4 : CaptainKirk2\_42, Delian\_45, Archis\_45, Zarbodnamra\_41, MintFen\_42
- Track 5 : Petra\_39
- Track 6 : Obliviate\_38
- Track 7 : Hitter\_43
- Track 8 : RayTheFireFly\_47
- Track 9 : BBQValindra\_39
- Track 10 : DirtyBoi\_42
- Track 11 : Hedwig\_43
- Track 12 : GEazy\_44
- Track 13 : HannahD\_42
- Track 14 : Fireball\_50
- Track 15 : YungMoney\_51
- Track 16 : Phishy\_37
- Track 17 : Meyran\_34
- Track 18 : Jojo24\_31
- Track 19 : Santhid\_31
- Track 20 : Tarzan\_32
- Track 21 : Elesar\_37
- Track 22 : Popper\_41
- Track 23 : Panchino\_33, Carcharodon\_37, Duplicity\_37, Phloss\_35, Phrann\_38, MichelleMyBell\_35, Gex\_37, Tapioca\_38, Silvafighter\_38, Fulbright\_36, Journey\_35, Aggie\_35, Silvy\_35, Charlie\_35, Magsby\_37, Melville\_39, Andies\_34, Smurph\_37, SpongeBob\_34, Parmesanjohn\_37, Snekmaggedon\_34, Xerxes\_37, Philonius\_35
- Track 24 : Purgamenstris\_38, Hanako\_38, PhancyPhin\_38, Nенаe\_38, Raymond7\_32, BabeRuth\_39, Redi\_38, ShrimpFriedEgg\_38
- Track 25 : SkinnyPete\_32, Jamie19\_34, Xeno\_34, Shweta\_34, Chewbacca\_38, Schnauzer\_37, Pipsqueaks\_37
- Track 26 : Butters\_38, Rubeelu\_38
- Track 27 : Kevin1\_36
- Track 28 : Eyre\_36
- Track 29 : Gudmit\_36

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

The start number called the most often in the published annotations is 44, it was called in 46 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aggie\_35, Andies\_34, BBQValindra\_39, BabeRuth\_39, Butters\_38, Carcharodon\_37, Charlie\_35, DirtyBoi\_42, Duplicity\_37, Fireball\_50, Fulbright\_36, Gex\_37, Gudmit\_36, Hanako\_38, HannahD\_42, Hedwig\_43, Jojo24\_31, Journey\_35, Kevin1\_36, Magsby\_37, Melville\_39, Meyran\_34, MichelleMyBell\_35, Nenae\_38, Panchino\_33, Parmesanjohn\_37, PhancyPhin\_38, Philonius\_35, Phloss\_35, Phrann\_38, Purgamenstris\_38, RayTheFireFly\_47, Raymond7\_32, Redi\_38, Rubeelu\_38, Santhid\_31, ShrimpFriedEgg\_38, Silvafighter\_38, Silvy\_35, Smurph\_37, Snekmaggedon\_34, SpongeBob\_34, Tapioca\_38, Tarzan\_32, Xerxes\_37, YungMoney\_51,

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

- Archis\_45, Barco\_40, BlingBling\_39, CaptainKirk2\_42, Chewbacca\_38, Delian\_45, Elesar\_37, Eyre\_36, GEazy\_44, Jamie19\_34, Melba\_41, MintFen\_42, Obliviate\_38, Petra\_39, Pipsqueaks\_37, Popper\_41, Schnauzer\_37, Shweta\_34, SkinnyPete\_32, Xeno\_34, Zarbodnamra\_41,

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

- Guacamole\_40, Hitter\_43, JasperJr\_40, Phishy\_37,

### **Summary by start number:**

Start 24:

- Found in 2 of 71 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Elesar\_37 (FF),

Start 35:

- Found in 3 of 71 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 33.3% of time when present
- Phage (with cluster) where this start called: GEazy\_44 (DB),

Start 36:

- Found in 33 of 71 ( 46.5% ) of genes in pham
- Manual Annotations of this start: 7 of 71
- Called 21.2% of time when present
- Phage (with cluster) where this start called: Chewbacca\_38 (N), Jamie19\_34 (N), Pipsqueaks\_37 (N), Schnauzer\_37 (N), Shweta\_34 (N), SkinnyPete\_32 (N), Xeno\_34 (N),

Start 37:

- Found in 10 of 71 ( 14.1% ) of genes in pham
- Manual Annotations of this start: 7 of 71
- Called 70.0% of time when present

- Phage (with cluster) where this start called: Archis\_45 (CV), BlingBling\_39 (CV), CaptainKirk2\_42 (CV), Delian\_45 (CV), MintFen\_42 (CV), Obliviate\_38 (CV), Zarbodnamra\_41 (CV),

#### Start 38:

- Found in 3 of 71 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 3 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Guacamole\_40 (CV), Hitter\_43 (CV), JasperJr\_40 (CV),

#### Start 41:

- Found in 2 of 71 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Popper\_41 (FF),

#### Start 43:

- Found in 2 of 71 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Eyre\_36 (singleton),

#### Start 44:

- Found in 67 of 71 ( 94.4% ) of genes in pham
- Manual Annotations of this start: 46 of 71
- Called 68.7% of time when present
- Phage (with cluster) where this start called: Aggie\_35 (N), Andies\_34 (N), BBQValindra\_39 (DB), BabeRuth\_39 (N), Butters\_38 (N), Carcharodon\_37 (N), Charlie\_35 (N), DirtyBoi\_42 (DB), Duplicity\_37 (N), Fireball\_50 (DC1), Fulbright\_36 (N), Gex\_37 (N), Gudmit\_36 (singleton), Hanako\_38 (N), HannahD\_42 (DB), Hedwig\_43 (DB), Jojo24\_31 (DY), Journey\_35 (N), Kevin1\_36 (N), Magsby\_37 (N), Melville\_39 (N), Meyran\_34 (DT), MichelleMyBell\_35 (N), Nенаe\_38 (N), Panchino\_33 (N), Parmesanjohn\_37 (N), PhancyPhin\_38 (N), Philonius\_35 (N), Phloss\_35 (N), Phrann\_38 (N), Purgamenstris\_38 (N), RayTheFireFly\_47 (DB), Raymond7\_32 (N), Redi\_38 (N), Rubeelu\_38 (N), Santhid\_31 (DY), ShrimpFriedEgg\_38 (N), Silvafighter\_38 (N), Silvy\_35 (N), Smurph\_37 (N), Snekmaggedon\_34 (N), SpongeBob\_34 (N), Tapioca\_38 (N), Tarzan\_32 (DY), Xerxes\_37 (N), YungMoney\_51 (DC1),

#### Start 45:

- Found in 1 of 71 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phishy\_37 (DT),

#### Start 46:

- Found in 10 of 71 ( 14.1% ) of genes in pham
- Manual Annotations of this start: 3 of 71
- Called 30.0% of time when present
- Phage (with cluster) where this start called: Barco\_40 (CV), Melba\_41 (CV), Petra\_39 (CV),

## Summary by clusters:

There are 8 clusters represented in this pham: singleton, DB, N, FF, DY, DT, CV, DC1,

Info for manual annotations of cluster CV:

- Start number 37 was manually annotated 7 times for cluster CV.
- Start number 38 was manually annotated 3 times for cluster CV.
- Start number 46 was manually annotated 3 times for cluster CV.

Info for manual annotations of cluster DB:

- Start number 35 was manually annotated 1 time for cluster DB.
- Start number 44 was manually annotated 5 times for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 44 was manually annotated 2 times for cluster DC1.

Info for manual annotations of cluster DT:

- Start number 44 was manually annotated 1 time for cluster DT.
- Start number 45 was manually annotated 1 time for cluster DT.

Info for manual annotations of cluster DY:

- Start number 44 was manually annotated 3 times for cluster DY.

Info for manual annotations of cluster FF:

- Start number 24 was manually annotated 1 time for cluster FF.
- Start number 41 was manually annotated 1 time for cluster FF.

Info for manual annotations of cluster N:

- Start number 36 was manually annotated 7 times for cluster N.
- Start number 44 was manually annotated 34 times for cluster N.

## **Gene Information:**

Gene: Aggie\_35 Start: 27766, Stop: 27395, Start Num: 44

Candidate Starts for Aggie\_35:

(Start: 36 @27802 has 7 MA's), (Start: 44 @27766 has 46 MA's), (73, 27640), (92, 27517),

Gene: Andies\_34 Start: 28284, Stop: 27913, Start Num: 44

Candidate Starts for Andies\_34:

(Start: 36 @28320 has 7 MA's), (Start: 44 @28284 has 46 MA's), (73, 28158), (92, 28035),

Gene: Archis\_45 Start: 33058, Stop: 32636, Start Num: 37

Candidate Starts for Archis\_45:

(Start: 37 @33058 has 7 MA's), (Start: 44 @33028 has 46 MA's), (Start: 46 @33022 has 3 MA's), (58, 32974), (86, 32821), (102, 32689),

Gene: BBQValindra\_39 Start: 32907, Stop: 32485, Start Num: 44

Candidate Starts for BBQValindra\_39:

(Start: 35 @32955 has 1 MA's), (Start: 44 @32907 has 46 MA's), (54, 32874), (61, 32850), (67, 32823), (71, 32796), (78, 32745), (79, 32739), (85, 32694), (88, 32688), (89, 32685), (90, 32676), (92,

32667), (93, 32664), (96, 32589), (98, 32583), (99, 32580), (107, 32502),

Gene: BabeRuth\_39 Start: 29411, Stop: 29040, Start Num: 44

Candidate Starts for BabeRuth\_39:

(Start: 44 @29411 has 46 MA's), (67, 29318), (68, 29303), (73, 29285), (74, 29282), (77, 29258), (79, 29234), (92, 29162),

Gene: Barco\_40 Start: 32072, Stop: 31686, Start Num: 46

Candidate Starts for Barco\_40:

(Start: 37 @32108 has 7 MA's), (Start: 44 @32078 has 46 MA's), (Start: 46 @32072 has 3 MA's), (58, 32024), (86, 31871), (102, 31739),

Gene: BlingBling\_39 Start: 33071, Stop: 32649, Start Num: 37

Candidate Starts for BlingBling\_39:

(29, 33113), (34, 33092), (Start: 37 @33071 has 7 MA's), (Start: 44 @33041 has 46 MA's), (Start: 46 @33035 has 3 MA's), (58, 32987), (86, 32834), (102, 32702),

Gene: Butters\_38 Start: 29838, Stop: 29467, Start Num: 44

Candidate Starts for Butters\_38:

(30, 29907), (Start: 36 @29874 has 7 MA's), (Start: 44 @29838 has 46 MA's), (73, 29712), (77, 29685), (79, 29661), (88, 29610), (92, 29589), (95, 29523), (106, 29475),

Gene: CaptainKirk2\_42 Start: 32356, Stop: 31934, Start Num: 37

Candidate Starts for CaptainKirk2\_42:

(Start: 37 @32356 has 7 MA's), (Start: 44 @32326 has 46 MA's), (Start: 46 @32320 has 3 MA's), (58, 32272), (86, 32119), (102, 31987),

Gene: Carcharodon\_37 Start: 29095, Stop: 28724, Start Num: 44

Candidate Starts for Carcharodon\_37:

(Start: 36 @29131 has 7 MA's), (Start: 44 @29095 has 46 MA's), (73, 28969), (92, 28846),

Gene: Charlie\_35 Start: 27786, Stop: 27415, Start Num: 44

Candidate Starts for Charlie\_35:

(Start: 36 @27822 has 7 MA's), (Start: 44 @27786 has 46 MA's), (73, 27660), (92, 27537),

Gene: Chewbacca\_38 Start: 29131, Stop: 28724, Start Num: 36

Candidate Starts for Chewbacca\_38:

(Start: 36 @29131 has 7 MA's), (Start: 44 @29095 has 46 MA's), (73, 28969), (92, 28846),

Gene: Delian\_45 Start: 32354, Stop: 31932, Start Num: 37

Candidate Starts for Delian\_45:

(Start: 37 @32354 has 7 MA's), (Start: 44 @32324 has 46 MA's), (Start: 46 @32318 has 3 MA's), (58, 32270), (86, 32117), (102, 31985),

Gene: DirtyBoi\_42 Start: 31803, Stop: 31423, Start Num: 44

Candidate Starts for DirtyBoi\_42:

(Start: 44 @31803 has 46 MA's), (77, 31650), (83, 31599), (94, 31527), (101, 31461),

Gene: Duplicity\_37 Start: 29104, Stop: 28733, Start Num: 44

Candidate Starts for Duplicity\_37:

(Start: 36 @29140 has 7 MA's), (Start: 44 @29104 has 46 MA's), (73, 28978), (92, 28855),

Gene: Elesar\_37 Start: 30914, Stop: 30393, Start Num: 24

Candidate Starts for Elesar\_37:

(Start: 24 @30914 has 1 MA's), (31, 30890), (33, 30878), (Start: 41 @30836 has 1 MA's), (Start: 44 @30824 has 46 MA's), (62, 30755), (65, 30740), (81, 30638), (89, 30590), (95, 30497),

Gene: Eyre\_36 Start: 27990, Stop: 27601, Start Num: 43

Candidate Starts for Eyre\_36:

(Start: 43 @27990 has 1 MA's), (Start: 44 @27981 has 46 MA's), (67, 27888), (77, 27828), (83, 27777), (94, 27705), (101, 27639),

Gene: Fireball\_50 Start: 40315, Stop: 39920, Start Num: 44

Candidate Starts for Fireball\_50:

(Start: 44 @40315 has 46 MA's), (48, 40303), (64, 40231), (70, 40204), (85, 40102), (100, 39979),

Gene: Fulbright\_36 Start: 28184, Stop: 27813, Start Num: 44

Candidate Starts for Fulbright\_36:

(Start: 36 @28220 has 7 MA's), (Start: 44 @28184 has 46 MA's), (73, 28058), (92, 27935),

Gene: GEazy\_44 Start: 32533, Stop: 32096, Start Num: 35

Candidate Starts for GEazy\_44:

(4, 32896), (8, 32782), (11, 32755), (17, 32671), (19, 32620), (Start: 35 @32533 has 1 MA's), (Start: 44 @32485 has 46 MA's), (54, 32452), (61, 32428), (67, 32401), (71, 32374), (78, 32323), (79, 32317), (85, 32272), (88, 32266), (89, 32263), (90, 32254), (92, 32245), (93, 32242), (96, 32167), (98, 32161), (99, 32158),

Gene: Gex\_37 Start: 29111, Stop: 28740, Start Num: 44

Candidate Starts for Gex\_37:

(Start: 36 @29147 has 7 MA's), (Start: 44 @29111 has 46 MA's), (73, 28985), (92, 28862),

Gene: Guacamole\_40 Start: 32920, Stop: 32501, Start Num: 38

Candidate Starts for Guacamole\_40:

(Start: 38 @32920 has 3 MA's), (60, 32830), (81, 32725), (84, 32695), (91, 32662), (102, 32554),

Gene: Gudmit\_36 Start: 27005, Stop: 26628, Start Num: 44

Candidate Starts for Gudmit\_36:

(42, 27014), (Start: 44 @27005 has 46 MA's), (48, 26993), (50, 26990), (63, 26927), (71, 26885), (73, 26879), (77, 26852), (87, 26777), (94, 26720), (103, 26648), (104, 26639),

Gene: Hanako\_38 Start: 29410, Stop: 29039, Start Num: 44

Candidate Starts for Hanako\_38:

(Start: 44 @29410 has 46 MA's), (67, 29317), (68, 29302), (73, 29284), (74, 29281), (77, 29257), (79, 29233), (92, 29161),

Gene: HannahD\_42 Start: 31852, Stop: 31463, Start Num: 44

Candidate Starts for HannahD\_42:

(4, 32263), (8, 32149), (11, 32122), (17, 32038), (19, 31987), (Start: 35 @31900 has 1 MA's), (Start: 44 @31852 has 46 MA's), (54, 31819), (61, 31795), (67, 31768), (71, 31741), (78, 31690), (79, 31684), (85, 31639), (88, 31633), (89, 31630), (90, 31621), (92, 31612), (93, 31609), (96, 31534), (98, 31528), (99, 31525),

Gene: Hedwig\_43 Start: 32226, Stop: 31846, Start Num: 44

Candidate Starts for Hedwig\_43:

(25, 32310), (Start: 44 @32226 has 46 MA's), (77, 32073), (83, 32022), (94, 31950), (101, 31884),

Gene: Hitter\_43 Start: 32564, Stop: 32145, Start Num: 38  
Candidate Starts for Hitter\_43:  
(Start: 38 @32564 has 3 MA's), (60, 32474), (81, 32369), (84, 32339), (102, 32198), (105, 32183),

Gene: Jamie19\_34 Start: 28201, Stop: 27794, Start Num: 36  
Candidate Starts for Jamie19\_34:  
(Start: 36 @28201 has 7 MA's), (Start: 44 @28165 has 46 MA's), (73, 28039), (92, 27916),

Gene: JasperJr\_40 Start: 32920, Stop: 32501, Start Num: 38  
Candidate Starts for JasperJr\_40:  
(Start: 38 @32920 has 3 MA's), (60, 32830), (81, 32725), (84, 32695), (91, 32662), (102, 32554),

Gene: Jojo24\_31 Start: 26167, Stop: 25778, Start Num: 44  
Candidate Starts for Jojo24\_31:  
(20, 26299), (21, 26284), (23, 26263), (26, 26248), (27, 26242), (Start: 44 @26167 has 46 MA's), (59, 26110), (66, 26077), (72, 26044), (80, 25984), (89, 25933),

Gene: Journey\_35 Start: 27786, Stop: 27415, Start Num: 44  
Candidate Starts for Journey\_35:  
(Start: 36 @27822 has 7 MA's), (Start: 44 @27786 has 46 MA's), (73, 27660), (92, 27537),

Gene: Kevin1\_36 Start: 29017, Stop: 28646, Start Num: 44  
Candidate Starts for Kevin1\_36:  
(1, 29584), (2, 29482), (3, 29431), (5, 29362), (6, 29344), (7, 29341), (9, 29305), (10, 29290), (12, 29281), (13, 29269), (14, 29251), (15, 29224), (16, 29221), (22, 29116), (30, 29086), (Start: 36 @29053 has 7 MA's), (Start: 44 @29017 has 46 MA's), (73, 28891), (77, 28864), (79, 28840), (88, 28789), (92, 28768), (95, 28702), (106, 28654),

Gene: Magsby\_37 Start: 29112, Stop: 28741, Start Num: 44  
Candidate Starts for Magsby\_37:  
(Start: 36 @29148 has 7 MA's), (Start: 44 @29112 has 46 MA's), (73, 28986), (92, 28863),

Gene: Melba\_41 Start: 32860, Stop: 32474, Start Num: 46  
Candidate Starts for Melba\_41:  
(Start: 37 @32896 has 7 MA's), (Start: 44 @32866 has 46 MA's), (Start: 46 @32860 has 3 MA's), (58, 32812), (86, 32659), (102, 32527),

Gene: Melville\_39 Start: 29096, Stop: 28725, Start Num: 44  
Candidate Starts for Melville\_39:  
(Start: 36 @29132 has 7 MA's), (Start: 44 @29096 has 46 MA's), (73, 28970), (92, 28847),

Gene: Meyran\_34 Start: 30905, Stop: 30549, Start Num: 44  
Candidate Starts for Meyran\_34:  
(Start: 44 @30905 has 46 MA's), (51, 30887), (57, 30857), (62, 30839), (73, 30785), (92, 30662), (97, 30593),

Gene: MichelleMyBell\_35 Start: 28103, Stop: 27732, Start Num: 44  
Candidate Starts for MichelleMyBell\_35:  
(Start: 36 @28139 has 7 MA's), (Start: 44 @28103 has 46 MA's), (73, 27977), (92, 27854),

Gene: MintFen\_42 Start: 32970, Stop: 32548, Start Num: 37  
Candidate Starts for MintFen\_42:



(Start: 37 @32970 has 7 MA's), (Start: 44 @32940 has 46 MA's), (Start: 46 @32934 has 3 MA's), (58, 32886), (86, 32733), (102, 32601),

Gene: Nенаe\_38 Start: 29413, Stop: 29042, Start Num: 44

Candidate Starts for Nенаe\_38:

(Start: 44 @29413 has 46 MA's), (67, 29320), (68, 29305), (73, 29287), (74, 29284), (77, 29260), (79, 29236), (92, 29164),

Gene: Obliviate\_38 Start: 31257, Stop: 30835, Start Num: 37

Candidate Starts for Obliviate\_38:

(Start: 37 @31257 has 7 MA's), (Start: 44 @31227 has 46 MA's), (Start: 46 @31221 has 3 MA's), (58, 31173), (86, 31020), (102, 30888), (105, 30873),

Gene: Panchino\_33 Start: 29511, Stop: 29140, Start Num: 44

Candidate Starts for Panchino\_33:

(Start: 36 @29547 has 7 MA's), (Start: 44 @29511 has 46 MA's), (73, 29385), (92, 29262),

Gene: Parmesanjohn\_37 Start: 29115, Stop: 28744, Start Num: 44

Candidate Starts for Parmesanjohn\_37:

(Start: 36 @29151 has 7 MA's), (Start: 44 @29115 has 46 MA's), (73, 28989), (92, 28866),

Gene: Petra\_39 Start: 31580, Stop: 31194, Start Num: 46

Candidate Starts for Petra\_39:

(Start: 37 @31616 has 7 MA's), (Start: 44 @31586 has 46 MA's), (Start: 46 @31580 has 3 MA's), (58, 31532), (86, 31379), (102, 31247), (105, 31232),

Gene: PhancyPhin\_38 Start: 29407, Stop: 29036, Start Num: 44

Candidate Starts for PhancyPhin\_38:

(Start: 44 @29407 has 46 MA's), (67, 29314), (68, 29299), (73, 29281), (74, 29278), (77, 29254), (79, 29230), (92, 29158),

Gene: Philonius\_35 Start: 27777, Stop: 27406, Start Num: 44

Candidate Starts for Philonius\_35:

(Start: 36 @27813 has 7 MA's), (Start: 44 @27777 has 46 MA's), (73, 27651), (92, 27528),

Gene: Phishy\_37 Start: 31530, Stop: 31159, Start Num: 45

Candidate Starts for Phishy\_37:

(27, 31611), (32, 31593), (39, 31557), (Start: 45 @31530 has 1 MA's), (47, 31527), (49, 31521), (52, 31509), (53, 31494), (56, 31485), (62, 31461), (69, 31422), (75, 31392), (82, 31329), (83, 31326),

Gene: Phloss\_35 Start: 28522, Stop: 28151, Start Num: 44

Candidate Starts for Phloss\_35:

(Start: 36 @28558 has 7 MA's), (Start: 44 @28522 has 46 MA's), (73, 28396), (92, 28273),

Gene: Phrann\_38 Start: 30191, Stop: 29820, Start Num: 44

Candidate Starts for Phrann\_38:

(Start: 36 @30227 has 7 MA's), (Start: 44 @30191 has 46 MA's), (73, 30065), (92, 29942),

Gene: Pipsqueaks\_37 Start: 29128, Stop: 28721, Start Num: 36

Candidate Starts for Pipsqueaks\_37:

(Start: 36 @29128 has 7 MA's), (Start: 44 @29092 has 46 MA's), (73, 28966), (92, 28843),

Gene: Popper\_41 Start: 29991, Stop: 29548, Start Num: 41

Candidate Starts for Popper\_41:

(Start: 24 @30069 has 1 MA's), (31, 30045), (33, 30033), (Start: 41 @29991 has 1 MA's), (Start: 44 @29979 has 46 MA's), (62, 29910), (65, 29895), (89, 29745), (95, 29652),

Gene: Purgamenstris\_38 Start: 29411, Stop: 29040, Start Num: 44

Candidate Starts for Purgamenstris\_38:

(Start: 44 @29411 has 46 MA's), (67, 29318), (68, 29303), (73, 29285), (74, 29282), (77, 29258), (79, 29234), (92, 29162),

Gene: RayTheFireFly\_47 Start: 33400, Stop: 33020, Start Num: 44

Candidate Starts for RayTheFireFly\_47:

(25, 33484), (Start: 43 @33409 has 1 MA's), (Start: 44 @33400 has 46 MA's), (77, 33247), (83, 33196), (94, 33124), (101, 33058),

Gene: Raymond7\_32 Start: 29223, Stop: 28852, Start Num: 44

Candidate Starts for Raymond7\_32:

(Start: 44 @29223 has 46 MA's), (67, 29130), (68, 29115), (73, 29097), (74, 29094), (77, 29070), (79, 29046), (92, 28974),

Gene: Redi\_38 Start: 29410, Stop: 29039, Start Num: 44

Candidate Starts for Redi\_38:

(Start: 44 @29410 has 46 MA's), (67, 29317), (68, 29302), (73, 29284), (74, 29281), (77, 29257), (79, 29233), (92, 29161),

Gene: Rubeelu\_38 Start: 29838, Stop: 29467, Start Num: 44

Candidate Starts for Rubeelu\_38:

(30, 29907), (Start: 36 @29874 has 7 MA's), (Start: 44 @29838 has 46 MA's), (73, 29712), (77, 29685), (79, 29661), (88, 29610), (92, 29589), (95, 29523), (106, 29475),

Gene: Santhid\_31 Start: 24886, Stop: 24497, Start Num: 44

Candidate Starts for Santhid\_31:

(20, 25018), (21, 25003), (23, 24982), (27, 24961), (Start: 44 @24886 has 46 MA's), (59, 24829), (66, 24796), (72, 24763), (80, 24703), (89, 24652),

Gene: Schnauzer\_37 Start: 29151, Stop: 28744, Start Num: 36

Candidate Starts for Schnauzer\_37:

(Start: 36 @29151 has 7 MA's), (Start: 44 @29115 has 46 MA's), (73, 28989), (92, 28866),

Gene: ShrimpFriedEgg\_38 Start: 29410, Stop: 29039, Start Num: 44

Candidate Starts for ShrimpFriedEgg\_38:

(Start: 44 @29410 has 46 MA's), (67, 29317), (68, 29302), (73, 29284), (74, 29281), (77, 29257), (79, 29233), (92, 29161),

Gene: Shweta\_34 Start: 28331, Stop: 27924, Start Num: 36

Candidate Starts for Shweta\_34:

(Start: 36 @28331 has 7 MA's), (Start: 44 @28295 has 46 MA's), (73, 28169), (92, 28046),

Gene: Silvafighter\_38 Start: 29088, Stop: 28717, Start Num: 44

Candidate Starts for Silvafighter\_38:

(Start: 36 @29124 has 7 MA's), (Start: 44 @29088 has 46 MA's), (73, 28962), (92, 28839),

Gene: Silvy\_35 Start: 27766, Stop: 27395, Start Num: 44

Candidate Starts for Silvy\_35:

(Start: 36 @27802 has 7 MA's), (Start: 44 @27766 has 46 MA's), (73, 27640), (92, 27517),

Gene: SkinnyPete\_32 Start: 26862, Stop: 26455, Start Num: 36

Candidate Starts for SkinnyPete\_32:

(Start: 36 @26862 has 7 MA's), (Start: 44 @26826 has 46 MA's), (73, 26700), (92, 26577),

Gene: Smurph\_37 Start: 29115, Stop: 28744, Start Num: 44

Candidate Starts for Smurph\_37:

(Start: 36 @29151 has 7 MA's), (Start: 44 @29115 has 46 MA's), (73, 28989), (92, 28866),

Gene: Snekmaggedon\_34 Start: 28165, Stop: 27794, Start Num: 44

Candidate Starts for Snekmaggedon\_34:

(Start: 36 @28201 has 7 MA's), (Start: 44 @28165 has 46 MA's), (73, 28039), (92, 27916),

Gene: SpongeBob\_34 Start: 28165, Stop: 27794, Start Num: 44

Candidate Starts for SpongeBob\_34:

(Start: 36 @28201 has 7 MA's), (Start: 44 @28165 has 46 MA's), (73, 28039), (92, 27916),

Gene: Tapioca\_38 Start: 29081, Stop: 28710, Start Num: 44

Candidate Starts for Tapioca\_38:

(Start: 36 @29117 has 7 MA's), (Start: 44 @29081 has 46 MA's), (73, 28955), (92, 28832),

Gene: Tarzan\_32 Start: 26056, Stop: 25667, Start Num: 44

Candidate Starts for Tarzan\_32:

(20, 26188), (21, 26173), (23, 26152), (27, 26131), (28, 26128), (Start: 44 @26056 has 46 MA's), (59, 25999), (63, 25978), (66, 25966), (72, 25933), (80, 25873), (89, 25822),

Gene: Xeno\_34 Start: 27588, Stop: 27181, Start Num: 36

Candidate Starts for Xeno\_34:

(Start: 36 @27588 has 7 MA's), (Start: 44 @27552 has 46 MA's), (73, 27426), (92, 27303),

Gene: Xerxes\_37 Start: 29112, Stop: 28741, Start Num: 44

Candidate Starts for Xerxes\_37:

(Start: 36 @29148 has 7 MA's), (Start: 44 @29112 has 46 MA's), (73, 28986), (92, 28863),

Gene: YungMoney\_51 Start: 42233, Stop: 41832, Start Num: 44

Candidate Starts for YungMoney\_51:

(18, 42377), (22, 42332), (29, 42305), (40, 42254), (Start: 44 @42233 has 46 MA's), (55, 42188), (76, 42092), (83, 42035), (89, 42008), (100, 41891),

Gene: Zarbodnamra\_41 Start: 32378, Stop: 31956, Start Num: 37

Candidate Starts for Zarbodnamra\_41:

(Start: 37 @32378 has 7 MA's), (Start: 44 @32348 has 46 MA's), (Start: 46 @32342 has 3 MA's), (58, 32294), (86, 32141), (102, 32009),