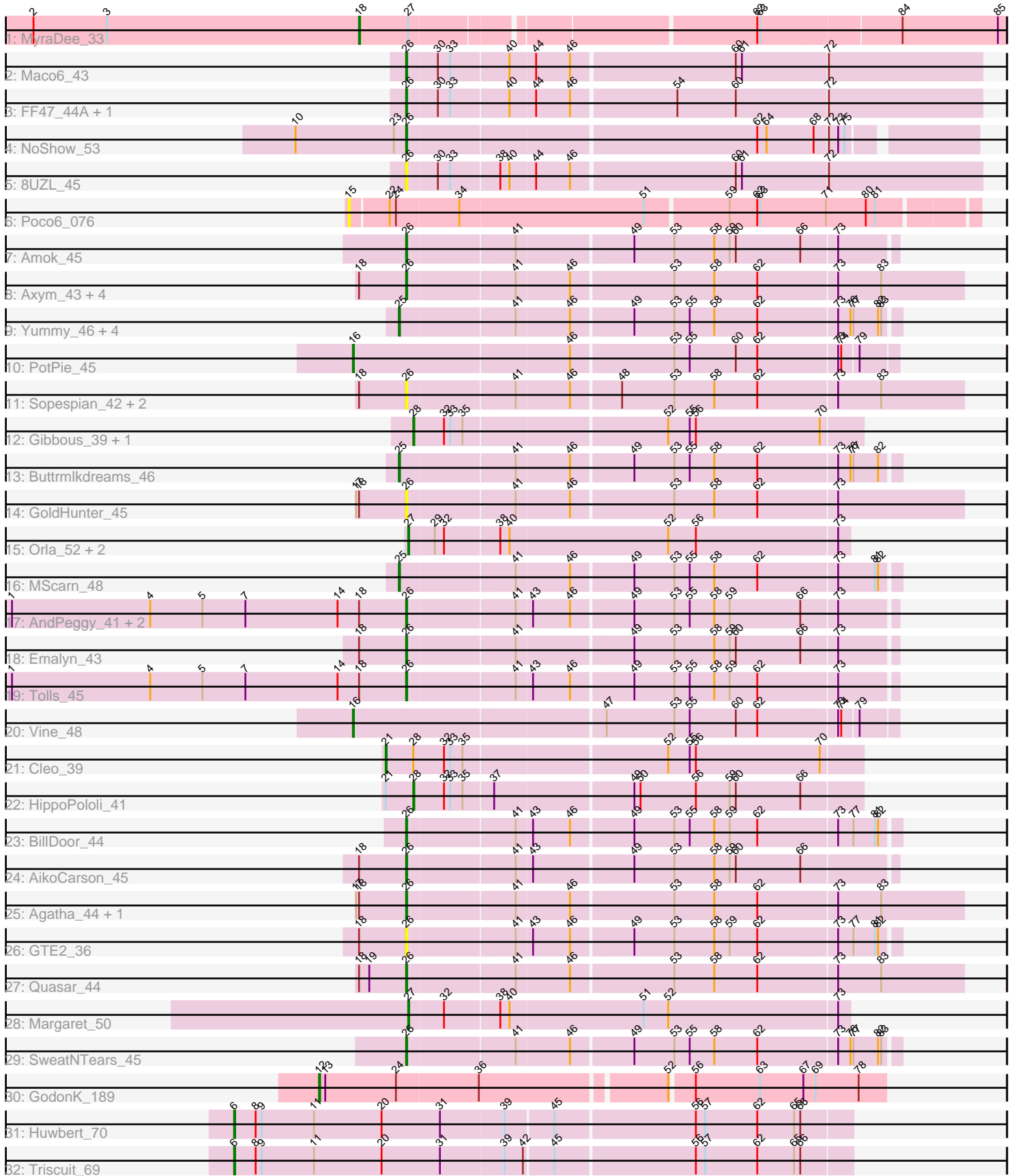


Pham 171542



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 171542 Report

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

Pham number 171542 has 49 members, 10 are drafts.

Phages represented in each track:

- Track 1 : MyraDee\_33
- Track 2 : Maco6\_43
- Track 3 : FF47\_44A, Muddy\_45
- Track 4 : NoShow\_53
- Track 5 : 8UZL\_45
- Track 6 : Poco6\_076
- Track 7 : Amok\_45
- Track 8 : Axym\_43, Typhonomachy\_44, Burnsey\_44, Nina\_43, RedBaron\_46
- Track 9 : Yummy\_46, Troje\_46, Horseradish\_46, SketchMex\_44, Biskit\_46
- Track 10 : PotPie\_45
- Track 11 : Sopespian\_42, Elliott\_44, PsychoKiller\_43
- Track 12 : Gibbous\_39, Dre3\_39
- Track 13 : Buttrmlkdreams\_46
- Track 14 : GoldHunter\_45
- Track 15 : Orla\_52, Hexbug\_52, Nodigi\_52
- Track 16 : MScarn\_48
- Track 17 : AndPeggy\_41, SteamedHams\_44, Yarn\_41
- Track 18 : Emalyn\_43
- Track 19 : Tolls\_45
- Track 20 : Vine\_48
- Track 21 : Cleo\_39
- Track 22 : HippoPololi\_41
- Track 23 : BillDoor\_44
- Track 24 : AikoCarson\_45
- Track 25 : Agatha\_44, Cozz\_42
- Track 26 : GTE2\_36
- Track 27 : Quasar\_44
- Track 28 : Margaret\_50
- Track 29 : SweatNTears\_45
- Track 30 : GodonK\_189
- Track 31 : Huwbert\_70
- Track 32 : Triscuit\_69

***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 18 of the 39 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 8UZL\_45, Agatha\_44, AikoCarson\_45, Amok\_45, AndPeggy\_41, Axym\_43, BillDoor\_44, Burnsey\_44, Cozz\_42, Elliott\_44, Emalyn\_43, FF47\_44A, GTE2\_36, GoldHunter\_45, Maco6\_43, Muddy\_45, Nina\_43, NoShow\_53, PsychoKiller\_43, Quasar\_44, RedBaron\_46, Sopespian\_42, SteamedHams\_44, SweatNTears\_45, Tolls\_45, Typhonmachy\_44, Yarn\_41,

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

- 

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

- Biskit\_46, Buttrmldreams\_46, Cleo\_39, Dre3\_39, Gibbous\_39, GodonK\_189, Hexbug\_52, HippoPololi\_41, Horseradish\_46, Huwbert\_70, MScarn\_48, Margaret\_50, MyraDee\_33, Nodigi\_52, Orla\_52, Poco6\_076, PotPie\_45, SketchMex\_44, Triscuit\_69, Troje\_46, Vine\_48, Yummy\_46,

### Summary by start number:

Start 6:

- Found in 2 of 49 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 2 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Huwbert\_70 (GG), Triscuit\_69 (GG),

Start 12:

- Found in 1 of 49 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GodonK\_189 (DK),

Start 15:

- Found in 1 of 49 ( 2.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Poco6\_076 (CC),

Start 16:

- Found in 2 of 49 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 2 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PotPie\_45 (CT), Vine\_48 (CT),

Start 18:

- Found in 20 of 49 ( 40.8% ) of genes in pham
- Manual Annotations of this start: 1 of 39
- Called 5.0% of time when present
- Phage (with cluster) where this start called: MyraDee\_33 (A18),

Start 21:

- Found in 2 of 49 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 1 of 39
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cleo\_39 (CT),

#### Start 25:

- Found in 7 of 49 ( 14.3% ) of genes in pham
- Manual Annotations of this start: 7 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Biskit\_46 (CT), Buttrmlkdreams\_46 (CT), Horseradish\_46 (CT), MScarn\_48 (CT), SketchMex\_44 (CT), Troje\_46 (CT), Yummy\_46 (CT),

#### Start 26:

- Found in 27 of 49 ( 55.1% ) of genes in pham
- Manual Annotations of this start: 18 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 8UZL\_45 (AB), Agatha\_44 (CT), AikoCarson\_45 (CT), Amok\_45 (CT), AndPeggy\_41 (CT), Axym\_43 (CT), BillDoor\_44 (CT), Burnsey\_44 (CT), Cozz\_42 (CT), Elliott\_44 (CT), Emalyn\_43 (CT), FF47\_44A (AB), GTE2\_36 (CT), GoldHunter\_45 (CT), Maco6\_43 (AB), Muddy\_45 (AB), Nina\_43 (CT), NoShow\_53 (AB), PsychoKiller\_43 (CT), Quasar\_44 (CT), RedBaron\_46 (CT), Sopespian\_42 (CT), SteamedHams\_44 (CT), SweatNTears\_45 (CT), Tolls\_45 (CT), Typhonmacy\_44 (CT), Yarn\_41 (CT),

#### Start 27:

- Found in 5 of 49 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 4 of 39
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Hexbug\_52 (CT), Margaret\_50 (CT), Nodigi\_52 (CT), Orla\_52 (CT),

#### Start 28:

- Found in 4 of 49 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 3 of 39
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Dre3\_39 (CT), Gibbous\_39 (CT), HippoPololi\_41 (CT),

### Summary by clusters:

There are 6 clusters represented in this pham: AB, DK, CC, A18, GG, CT,

Info for manual annotations of cluster A18:

- Start number 18 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster AB:

- Start number 26 was manually annotated 3 times for cluster AB.

Info for manual annotations of cluster CT:

- Start number 16 was manually annotated 2 times for cluster CT.
- Start number 21 was manually annotated 1 time for cluster CT.

- Start number 25 was manually annotated 7 times for cluster CT.
- Start number 26 was manually annotated 15 times for cluster CT.
- Start number 27 was manually annotated 4 times for cluster CT.
- Start number 28 was manually annotated 3 times for cluster CT.

Info for manual annotations of cluster DK:

- Start number 12 was manually annotated 1 time for cluster DK.

Info for manual annotations of cluster GG:

- Start number 6 was manually annotated 2 times for cluster GG.

### **Gene Information:**

Gene: 8UZL\_45 Start: 34790, Stop: 34248, Start Num: 26

Candidate Starts for 8UZL\_45:

(Start: 26 @34790 has 18 MA's), (30, 34763), (33, 34751), (38, 34706), (40, 34697), (44, 34673), (46, 34640), (60, 34484), (61, 34478), (72, 34397),

Gene: Agatha\_44 Start: 33075, Stop: 32551, Start Num: 26

Candidate Starts for Agatha\_44:

(17, 33123), (Start: 18 @33120 has 1 MA's), (Start: 26 @33075 has 18 MA's), (41, 32976), (46, 32925), (53, 32829), (58, 32790), (62, 32748), (73, 32673), (83, 32631),

Gene: AikoCarson\_45 Start: 33253, Stop: 32798, Start Num: 26

Candidate Starts for AikoCarson\_45:

(Start: 18 @33298 has 1 MA's), (Start: 26 @33253 has 18 MA's), (41, 33154), (43, 33139), (49, 33046), (53, 33007), (58, 32968), (59, 32953), (60, 32947), (66, 32884),

Gene: Amok\_45 Start: 33277, Stop: 32822, Start Num: 26

Candidate Starts for Amok\_45:

(Start: 26 @33277 has 18 MA's), (41, 33178), (49, 33070), (53, 33031), (58, 32992), (59, 32977), (60, 32971), (66, 32908), (73, 32875),

Gene: AndPeggy\_41 Start: 32608, Stop: 32153, Start Num: 26

Candidate Starts for AndPeggy\_41:

(1, 32992), (4, 32857), (5, 32806), (7, 32764), (14, 32674), (Start: 18 @32653 has 1 MA's), (Start: 26 @32608 has 18 MA's), (41, 32509), (43, 32494), (46, 32458), (49, 32401), (53, 32362), (55, 32347), (58, 32323), (59, 32308), (66, 32239), (73, 32206),

Gene: Axym\_43 Start: 32972, Stop: 32448, Start Num: 26

Candidate Starts for Axym\_43:

(Start: 18 @33017 has 1 MA's), (Start: 26 @32972 has 18 MA's), (41, 32873), (46, 32822), (53, 32726), (58, 32687), (62, 32645), (73, 32570), (83, 32528),

Gene: BillDoor\_44 Start: 32280, Stop: 31822, Start Num: 26

Candidate Starts for BillDoor\_44:

(Start: 26 @32280 has 18 MA's), (41, 32181), (43, 32166), (46, 32130), (49, 32073), (53, 32034), (55, 32019), (58, 31995), (59, 31980), (62, 31953), (73, 31878), (77, 31863), (81, 31842), (82, 31839),

Gene: Biskit\_46 Start: 32979, Stop: 32512, Start Num: 25

Candidate Starts for Biskit\_46:

(Start: 25 @32979 has 7 MA's), (41, 32871), (46, 32820), (49, 32763), (53, 32724), (55, 32709), (58, 32685), (62, 32643), (73, 32568), (76, 32556), (77, 32553), (82, 32529), (83, 32526),

Gene: Burnsey\_44 Start: 33066, Stop: 32542, Start Num: 26

Candidate Starts for Burnsey\_44:

(Start: 18 @33111 has 1 MA's), (Start: 26 @33066 has 18 MA's), (41, 32967), (46, 32916), (53, 32820), (58, 32781), (62, 32739), (73, 32664), (83, 32622),

Gene: Buttrmlkdreams\_46 Start: 33426, Stop: 32959, Start Num: 25

Candidate Starts for Buttrmlkdreams\_46:

(Start: 25 @33426 has 7 MA's), (41, 33318), (46, 33267), (49, 33210), (53, 33171), (55, 33156), (58, 33132), (62, 33090), (73, 33015), (76, 33003), (77, 33000), (82, 32976),

Gene: Cleo\_39 Start: 32050, Stop: 31601, Start Num: 21

Candidate Starts for Cleo\_39:

(Start: 21 @32050 has 1 MA's), (Start: 28 @32023 has 3 MA's), (32, 31993), (33, 31987), (35, 31975), (52, 31786), (55, 31765), (56, 31759), (70, 31639),

Gene: Cozz\_42 Start: 32663, Stop: 32139, Start Num: 26

Candidate Starts for Cozz\_42:

(17, 32711), (Start: 18 @32708 has 1 MA's), (Start: 26 @32663 has 18 MA's), (41, 32564), (46, 32513), (53, 32417), (58, 32378), (62, 32336), (73, 32261), (83, 32219),

Gene: Dre3\_39 Start: 31766, Stop: 31344, Start Num: 28

Candidate Starts for Dre3\_39:

(Start: 28 @31766 has 3 MA's), (32, 31736), (33, 31730), (35, 31718), (52, 31529), (55, 31508), (56, 31502), (70, 31382),

Gene: Elliott\_44 Start: 32961, Stop: 32437, Start Num: 26

Candidate Starts for Elliott\_44:

(Start: 18 @33006 has 1 MA's), (Start: 26 @32961 has 18 MA's), (41, 32862), (46, 32811), (48, 32766), (53, 32715), (58, 32676), (62, 32634), (73, 32559), (83, 32517),

Gene: Emalyn\_43 Start: 32069, Stop: 31614, Start Num: 26

Candidate Starts for Emalyn\_43:

(Start: 18 @32114 has 1 MA's), (Start: 26 @32069 has 18 MA's), (41, 31970), (49, 31862), (53, 31823), (58, 31784), (59, 31769), (60, 31763), (66, 31700), (73, 31667),

Gene: FF47\_44A Start: 34701, Stop: 34159, Start Num: 26

Candidate Starts for FF47\_44A:

(Start: 26 @34701 has 18 MA's), (30, 34674), (33, 34662), (40, 34608), (44, 34584), (46, 34551), (54, 34452), (60, 34395), (72, 34308),

Gene: GTE2\_36 Start: 32665, Stop: 32207, Start Num: 26

Candidate Starts for GTE2\_36:

(Start: 18 @32710 has 1 MA's), (Start: 26 @32665 has 18 MA's), (41, 32566), (43, 32551), (46, 32515), (49, 32458), (53, 32419), (58, 32380), (59, 32365), (62, 32338), (73, 32263), (77, 32248), (81, 32227), (82, 32224),

Gene: Gibbous\_39 Start: 31766, Stop: 31344, Start Num: 28

Candidate Starts for Gibbous\_39:

(Start: 28 @31766 has 3 MA's), (32, 31736), (33, 31730), (35, 31718), (52, 31529), (55, 31508), (56, 31502), (70, 31382),

Gene: GodonK\_189 Start: 98192, Stop: 97662, Start Num: 12

Candidate Starts for GodonK\_189:

(Start: 12 @98192 has 1 MA's), (13, 98186), (24, 98117), (36, 98039), (52, 97868), (56, 97847), (63, 97784), (67, 97742), (69, 97730), (78, 97688),

Gene: GoldHunter\_45 Start: 33075, Stop: 32551, Start Num: 26

Candidate Starts for GoldHunter\_45:

(17, 33123), (Start: 18 @33120 has 1 MA's), (Start: 26 @33075 has 18 MA's), (41, 32976), (46, 32925), (53, 32829), (58, 32790), (62, 32748), (73, 32673),

Gene: Hexbug\_52 Start: 35640, Stop: 35221, Start Num: 27

Candidate Starts for Hexbug\_52:

(Start: 27 @35640 has 4 MA's), (29, 35616), (32, 35607), (38, 35556), (40, 35547), (52, 35394), (56, 35367), (73, 35232),

Gene: HippoPololi\_41 Start: 32178, Stop: 31756, Start Num: 28

Candidate Starts for HippoPololi\_41:

(Start: 21 @32205 has 1 MA's), (Start: 28 @32178 has 3 MA's), (32, 32148), (33, 32142), (35, 32130), (37, 32103), (49, 31974), (50, 31968), (56, 31914), (59, 31881), (60, 31875), (66, 31812),

Gene: Horseradish\_46 Start: 32912, Stop: 32445, Start Num: 25

Candidate Starts for Horseradish\_46:

(Start: 25 @32912 has 7 MA's), (41, 32804), (46, 32753), (49, 32696), (53, 32657), (55, 32642), (58, 32618), (62, 32576), (73, 32501), (76, 32489), (77, 32486), (82, 32462), (83, 32459),

Gene: Huwbert\_70 Start: 43330, Stop: 43914, Start Num: 6

Candidate Starts for Huwbert\_70:

(Start: 6 @43330 has 2 MA's), (8, 43351), (9, 43357), (11, 43408), (20, 43474), (31, 43531), (39, 43588), (45, 43633), (56, 43765), (57, 43774), (62, 43825), (65, 43861), (66, 43867),

Gene: MScarn\_48 Start: 33094, Stop: 32627, Start Num: 25

Candidate Starts for MScarn\_48:

(Start: 25 @33094 has 7 MA's), (41, 32986), (46, 32935), (49, 32878), (53, 32839), (55, 32824), (58, 32800), (62, 32758), (73, 32683), (81, 32647), (82, 32644),

Gene: Maco6\_43 Start: 34041, Stop: 33499, Start Num: 26

Candidate Starts for Maco6\_43:

(Start: 26 @34041 has 18 MA's), (30, 34014), (33, 34002), (40, 33948), (44, 33924), (46, 33891), (60, 33735), (61, 33729), (72, 33648),

Gene: Margaret\_50 Start: 34280, Stop: 33861, Start Num: 27

Candidate Starts for Margaret\_50:

(Start: 27 @34280 has 4 MA's), (32, 34247), (38, 34196), (40, 34187), (51, 34058), (52, 34034), (73, 33872),

Gene: Muddy\_45 Start: 35273, Stop: 34731, Start Num: 26

Candidate Starts for Muddy\_45:

(Start: 26 @35273 has 18 MA's), (30, 35246), (33, 35234), (40, 35180), (44, 35156), (46, 35123), (54, 35024), (60, 34967), (72, 34880),

Gene: MyraDee\_33 Start: 25725, Stop: 25126, Start Num: 18

Candidate Starts for MyraDee\_33:

(2, 26043), (3, 25971), (Start: 18 @25725 has 1 MA's), (Start: 27 @25677 has 4 MA's), (62, 25362), (63, 25359), (84, 25227), (85, 25134),

Gene: Nina\_43 Start: 33199, Stop: 32675, Start Num: 26

Candidate Starts for Nina\_43:

(Start: 18 @33244 has 1 MA's), (Start: 26 @33199 has 18 MA's), (41, 33100), (46, 33049), (53, 32953), (58, 32914), (62, 32872), (73, 32797), (83, 32755),

Gene: NoShow\_53 Start: 38273, Stop: 37752, Start Num: 26

Candidate Starts for NoShow\_53:

(10, 38381), (23, 38285), (Start: 26 @38273 has 18 MA's), (62, 37946), (64, 37937), (68, 37892), (72, 37880), (73, 37871), (75, 37865),

Gene: Nodigi\_52 Start: 35691, Stop: 35272, Start Num: 27

Candidate Starts for Nodigi\_52:

(Start: 27 @35691 has 4 MA's), (29, 35667), (32, 35658), (38, 35607), (40, 35598), (52, 35445), (56, 35418), (73, 35283),

Gene: Orla\_52 Start: 35599, Stop: 35180, Start Num: 27

Candidate Starts for Orla\_52:

(Start: 27 @35599 has 4 MA's), (29, 35575), (32, 35566), (38, 35515), (40, 35506), (52, 35353), (56, 35326), (73, 35191),

Gene: Poco6\_076 Start: 59210, Stop: 59797, Start Num: 15

Candidate Starts for Poco6\_076:

(15, 59210), (22, 59246), (24, 59252), (34, 59312), (51, 59489), (59, 59567), (62, 59594), (63, 59597), (71, 59660), (80, 59699), (81, 59708),

Gene: PotPie\_45 Start: 35409, Stop: 34900, Start Num: 16

Candidate Starts for PotPie\_45:

(Start: 16 @35409 has 2 MA's), (46, 35205), (53, 35109), (55, 35094), (60, 35049), (62, 35028), (73, 34953), (74, 34950), (79, 34935),

Gene: PsychoKiller\_43 Start: 32962, Stop: 32438, Start Num: 26

Candidate Starts for PsychoKiller\_43:

(Start: 18 @33007 has 1 MA's), (Start: 26 @32962 has 18 MA's), (41, 32863), (46, 32812), (48, 32767), (53, 32716), (58, 32677), (62, 32635), (73, 32560), (83, 32518),

Gene: Quasar\_44 Start: 33624, Stop: 33100, Start Num: 26

Candidate Starts for Quasar\_44:

(Start: 18 @33669 has 1 MA's), (19, 33660), (Start: 26 @33624 has 18 MA's), (41, 33525), (46, 33474), (53, 33378), (58, 33339), (62, 33297), (73, 33222), (83, 33180),

Gene: RedBaron\_46 Start: 33291, Stop: 32767, Start Num: 26

Candidate Starts for RedBaron\_46:

(Start: 18 @33336 has 1 MA's), (Start: 26 @33291 has 18 MA's), (41, 33192), (46, 33141), (53, 33045), (58, 33006), (62, 32964), (73, 32889), (83, 32847),

Gene: SketchMex\_44 Start: 32979, Stop: 32512, Start Num: 25

Candidate Starts for SketchMex\_44:

(Start: 25 @32979 has 7 MA's), (41, 32871), (46, 32820), (49, 32763), (53, 32724), (55, 32709), (58, 32685), (62, 32643), (73, 32568), (76, 32556), (77, 32553), (82, 32529), (83, 32526),



Gene: Sopespian\_42 Start: 32963, Stop: 32439, Start Num: 26

Candidate Starts for Sopespian\_42:

(Start: 18 @33008 has 1 MA's), (Start: 26 @32963 has 18 MA's), (41, 32864), (46, 32813), (48, 32768), (53, 32717), (58, 32678), (62, 32636), (73, 32561), (83, 32519),

Gene: SteamedHams\_44 Start: 32460, Stop: 32005, Start Num: 26

Candidate Starts for SteamedHams\_44:

(1, 32844), (4, 32709), (5, 32658), (7, 32616), (14, 32526), (Start: 18 @32505 has 1 MA's), (Start: 26 @32460 has 18 MA's), (41, 32361), (43, 32346), (46, 32310), (49, 32253), (53, 32214), (55, 32199), (58, 32175), (59, 32160), (66, 32091), (73, 32058),

Gene: SweatNTears\_45 Start: 32906, Stop: 32448, Start Num: 26

Candidate Starts for SweatNTears\_45:

(Start: 26 @32906 has 18 MA's), (41, 32807), (46, 32756), (49, 32699), (53, 32660), (55, 32645), (58, 32621), (62, 32579), (73, 32504), (76, 32492), (77, 32489), (82, 32465), (83, 32462),

Gene: Tolls\_45 Start: 32853, Stop: 32398, Start Num: 26

Candidate Starts for Tolls\_45:

(1, 33237), (4, 33102), (5, 33051), (7, 33009), (14, 32919), (Start: 18 @32898 has 1 MA's), (Start: 26 @32853 has 18 MA's), (41, 32754), (43, 32739), (46, 32703), (49, 32646), (53, 32607), (55, 32592), (58, 32568), (59, 32553), (62, 32526), (73, 32451),

Gene: Triscuit\_69 Start: 43287, Stop: 43871, Start Num: 6

Candidate Starts for Triscuit\_69:

(Start: 6 @43287 has 2 MA's), (8, 43308), (9, 43314), (11, 43365), (20, 43431), (31, 43488), (39, 43545), (42, 43563), (45, 43590), (56, 43722), (57, 43731), (62, 43782), (65, 43818), (66, 43824),

Gene: Troje\_46 Start: 33317, Stop: 32850, Start Num: 25

Candidate Starts for Troje\_46:

(Start: 25 @33317 has 7 MA's), (41, 33209), (46, 33158), (49, 33101), (53, 33062), (55, 33047), (58, 33023), (62, 32981), (73, 32906), (76, 32894), (77, 32891), (82, 32867), (83, 32864),

Gene: Typhonomachy\_44 Start: 32785, Stop: 32261, Start Num: 26

Candidate Starts for Typhonomachy\_44:

(Start: 18 @32830 has 1 MA's), (Start: 26 @32785 has 18 MA's), (41, 32686), (46, 32635), (53, 32539), (58, 32500), (62, 32458), (73, 32383), (83, 32341),

Gene: Vine\_48 Start: 35175, Stop: 34666, Start Num: 16

Candidate Starts for Vine\_48:

(Start: 16 @35175 has 2 MA's), (47, 34941), (53, 34875), (55, 34860), (60, 34815), (62, 34794), (73, 34719), (74, 34716), (79, 34701),

Gene: Yarn\_41 Start: 32613, Stop: 32158, Start Num: 26

Candidate Starts for Yarn\_41:

(1, 32997), (4, 32862), (5, 32811), (7, 32769), (14, 32679), (Start: 18 @32658 has 1 MA's), (Start: 26 @32613 has 18 MA's), (41, 32514), (43, 32499), (46, 32463), (49, 32406), (53, 32367), (55, 32352), (58, 32328), (59, 32313), (66, 32244), (73, 32211),

Gene: Yummy\_46 Start: 33026, Stop: 32559, Start Num: 25

Candidate Starts for Yummy\_46:

(Start: 25 @33026 has 7 MA's), (41, 32918), (46, 32867), (49, 32810), (53, 32771), (55, 32756), (58, 32732), (62, 32690), (73, 32615), (76, 32603), (77, 32600), (82, 32576), (83, 32573),