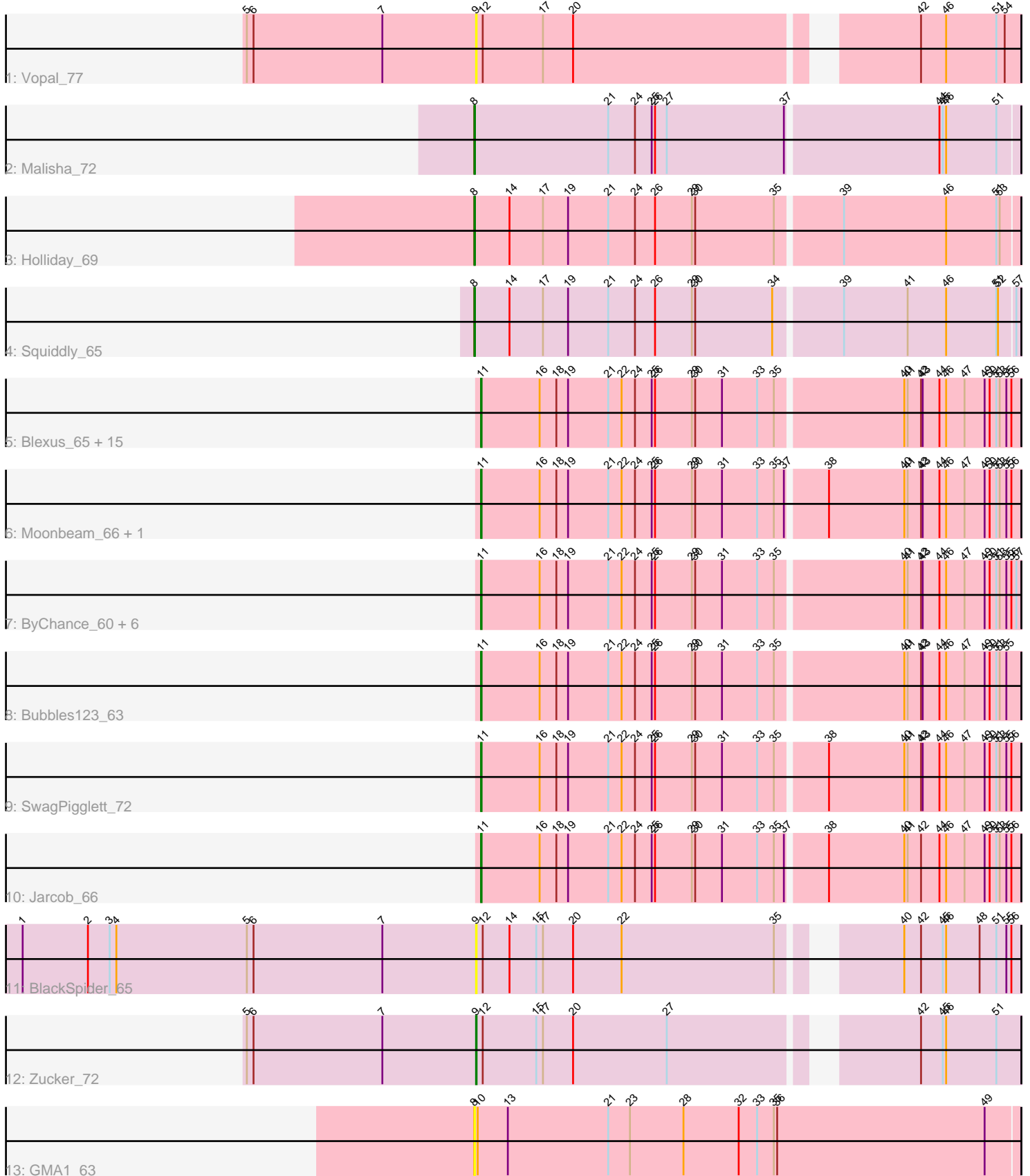


# Pham 221615



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 221615 Report

This analysis was run 03/28/25 on database version 593.

Pham number 221615 has 35 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Vopal\_77
- Track 2 : Malisha\_72
- Track 3 : Holliday\_69
- Track 4 : Squiddly\_65
- Track 5 : Blexus\_65, DaWorst\_67, Ramsey\_66, Yorick\_66, Maravista\_69, Spikelee\_74, Cabrinians\_68, NormanBulbieJr\_67, Koella\_61, Fancypants\_70, Burwell21\_65, MinionDave\_66, CaptainTrips\_65, Whouxphf\_64, Priscilla\_67, Aubs\_67
- Track 6 : Moonbeam\_66, Emma\_69
- Track 7 : ByChance\_60, Estave1\_72, Crumble\_62, ShowerHandel\_70, BobaPhett\_71, Zizzle\_71, Pippy\_66
- Track 8 : Bubbles123\_63
- Track 9 : SwagPiggett\_72
- Track 10 : Jacob\_66
- Track 11 : BlackSpider\_65
- Track 12 : Zucker\_72
- Track 13 : GMA1\_63

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

The start number called the most often in the published annotations is 11, it was called in 28 of the 32 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aubs\_67, Blexus\_65, BobaPhett\_71, Bubbles123\_63, Burwell21\_65, ByChance\_60, Cabrinians\_68, CaptainTrips\_65, Crumble\_62, DaWorst\_67, Emma\_69, Estave1\_72, Fancypants\_70, Jacob\_66, Koella\_61, Maravista\_69, MinionDave\_66, Moonbeam\_66, NormanBulbieJr\_67, Pippy\_66, Priscilla\_67, Ramsey\_66, ShowerHandel\_70, Spikelee\_74, SwagPiggett\_72, Whouxphf\_64, Yorick\_66, Zizzle\_71,

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

-

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

- BlackSpider\_65, GMA1\_63, Holliday\_69, Malisha\_72, Squiddly\_65, Vopal\_77, Zucker\_72,

### Summary by start number:

Start 8:

- Found in 4 of 35 ( 11.4% ) of genes in pham
- Manual Annotations of this start: 3 of 32
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA1\_63 (singleton), Holliday\_69 (DN1), Malisha\_72 (DN), Squiddly\_65 (DN2),

Start 9:

- Found in 3 of 35 ( 8.6% ) of genes in pham
- Manual Annotations of this start: 1 of 32
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlackSpider\_65 (FN), Vopal\_77 (AY), Zucker\_72 (FN),

Start 11:

- Found in 28 of 35 ( 80.0% ) of genes in pham
- Manual Annotations of this start: 28 of 32
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aubs\_67 (F1), Blexus\_65 (F1), BobaPhett\_71 (F1), Bubbles123\_63 (F1), Burwell21\_65 (F1), ByChance\_60 (F1), Cabrinians\_68 (F1), CaptainTrips\_65 (F1), Crumble\_62 (F1), DaWorst\_67 (F1), Emma\_69 (F1), Estave1\_72 (F1), Fancypants\_70 (F1), Jarcob\_66 (F1), Koella\_61 (F1), Maravista\_69 (F1), MinionDave\_66 (F1), Moonbeam\_66 (F1), NormanBulbieJr\_67 (F1), Pippy\_66 (F1), Priscilla\_67 (F1), Ramsey\_66 (F1), ShowerHandel\_70 (F1), Spikelee\_74 (F1), SwagPigglett\_72 (F1), Whouxphf\_64 (F1), Yorick\_66 (F1), Zizzle\_71 (F1),

### Summary by clusters:

There are 7 clusters represented in this pham: DN, F1, singleton, DN1, DN2, AY, FN,

Info for manual annotations of cluster DN:

- Start number 8 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 8 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 8 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster F1:

- Start number 11 was manually annotated 28 times for cluster F1.

Info for manual annotations of cluster FN:

- Start number 9 was manually annotated 1 time for cluster FN.

### **Gene Information:**

Gene: Aubs\_67 Start: 44345, Stop: 45295, Start Num: 11

Candidate Starts for Aubs\_67:

(Start: 11 @44345 has 28 MA's), (16, 44447), (18, 44477), (19, 44498), (21, 44570), (22, 44594), (24, 44618), (25, 44648), (26, 44654), (29, 44720), (30, 44726), (31, 44774), (33, 44837), (35, 44867), (40, 45086), (41, 45092), (42, 45116), (43, 45119), (44, 45149), (46, 45161), (47, 45194), (49, 45230), (50, 45239), (51, 45251), (53, 45257), (55, 45269), (56, 45278),

Gene: BlackSpider\_65 Start: 37958, Stop: 38857, Start Num: 9

Candidate Starts for BlackSpider\_65:

(1, 37145), (2, 37262), (3, 37301), (4, 37313), (5, 37547), (6, 37559), (7, 37790), (Start: 9 @37958 has 1 MA's), (12, 37967), (14, 38015), (15, 38063), (17, 38075), (20, 38129), (22, 38216), (35, 38489), (40, 38651), (42, 38681), (45, 38720), (46, 38726), (48, 38786), (51, 38816), (55, 38834), (56, 38843),

Gene: Blexus\_65 Start: 44521, Stop: 45471, Start Num: 11

Candidate Starts for Blexus\_65:

(Start: 11 @44521 has 28 MA's), (16, 44623), (18, 44653), (19, 44674), (21, 44746), (22, 44770), (24, 44794), (25, 44824), (26, 44830), (29, 44896), (30, 44902), (31, 44950), (33, 45013), (35, 45043), (40, 45262), (41, 45268), (42, 45292), (43, 45295), (44, 45325), (46, 45337), (47, 45370), (49, 45406), (50, 45415), (51, 45427), (53, 45433), (55, 45445), (56, 45454),

Gene: BobaPhett\_71 Start: 46777, Stop: 47727, Start Num: 11

Candidate Starts for BobaPhett\_71:

(Start: 11 @46777 has 28 MA's), (16, 46879), (18, 46909), (19, 46930), (21, 47002), (22, 47026), (24, 47050), (25, 47080), (26, 47086), (29, 47152), (30, 47158), (31, 47206), (33, 47269), (35, 47299), (40, 47518), (41, 47524), (42, 47548), (43, 47551), (44, 47581), (46, 47593), (47, 47626), (49, 47662), (50, 47671), (51, 47683), (53, 47689), (55, 47701), (56, 47710), (57, 47719),

Gene: Bubbles123\_63 Start: 43534, Stop: 44484, Start Num: 11

Candidate Starts for Bubbles123\_63:

(Start: 11 @43534 has 28 MA's), (16, 43636), (18, 43666), (19, 43687), (21, 43759), (22, 43783), (24, 43807), (25, 43837), (26, 43843), (29, 43909), (30, 43915), (31, 43963), (33, 44026), (35, 44056), (40, 44275), (41, 44281), (42, 44305), (43, 44308), (44, 44338), (46, 44350), (47, 44383), (49, 44419), (50, 44428), (51, 44440), (53, 44446), (55, 44458),

Gene: Burwell21\_65 Start: 44099, Stop: 45049, Start Num: 11

Candidate Starts for Burwell21\_65:

(Start: 11 @44099 has 28 MA's), (16, 44201), (18, 44231), (19, 44252), (21, 44324), (22, 44348), (24, 44372), (25, 44402), (26, 44408), (29, 44474), (30, 44480), (31, 44528), (33, 44591), (35, 44621), (40, 44840), (41, 44846), (42, 44870), (43, 44873), (44, 44903), (46, 44915), (47, 44948), (49, 44984), (50, 44993), (51, 45005), (53, 45011), (55, 45023), (56, 45032),

Gene: ByChance\_60 Start: 40119, Stop: 41069, Start Num: 11

Candidate Starts for ByChance\_60:

(Start: 11 @40119 has 28 MA's), (16, 40221), (18, 40251), (19, 40272), (21, 40344), (22, 40368), (24, 40392), (25, 40422), (26, 40428), (29, 40494), (30, 40500), (31, 40548), (33, 40611), (35, 40641), (40, 40860), (41, 40866), (42, 40890), (43, 40893), (44, 40923), (46, 40935), (47, 40968), (49, 41004), (50, 41013), (51, 41025), (53, 41031), (55, 41043), (56, 41052), (57, 41061),

Gene: Cabrinians\_68 Start: 44177, Stop: 45127, Start Num: 11

Candidate Starts for Cabrinians\_68:

(Start: 11 @44177 has 28 MA's), (16, 44279), (18, 44309), (19, 44330), (21, 44402), (22, 44426), (24, 44450), (25, 44480), (26, 44486), (29, 44552), (30, 44558), (31, 44606), (33, 44669), (35, 44699), (40, 44918), (41, 44924), (42, 44948), (43, 44951), (44, 44981), (46, 44993), (47, 45026), (49, 45062), (50, 45071), (51, 45083), (53, 45089), (55, 45101), (56, 45110),

Gene: CaptainTrips\_65 Start: 43912, Stop: 44862, Start Num: 11

Candidate Starts for CaptainTrips\_65:

(Start: 11 @43912 has 28 MA's), (16, 44014), (18, 44044), (19, 44065), (21, 44137), (22, 44161), (24, 44185), (25, 44215), (26, 44221), (29, 44287), (30, 44293), (31, 44341), (33, 44404), (35, 44434), (40, 44653), (41, 44659), (42, 44683), (43, 44686), (44, 44716), (46, 44728), (47, 44761), (49, 44797), (50, 44806), (51, 44818), (53, 44824), (55, 44836), (56, 44845),

Gene: Crumble\_62 Start: 40074, Stop: 41024, Start Num: 11

Candidate Starts for Crumble\_62:

(Start: 11 @40074 has 28 MA's), (16, 40176), (18, 40206), (19, 40227), (21, 40299), (22, 40323), (24, 40347), (25, 40377), (26, 40383), (29, 40449), (30, 40455), (31, 40503), (33, 40566), (35, 40596), (40, 40815), (41, 40821), (42, 40845), (43, 40848), (44, 40878), (46, 40890), (47, 40923), (49, 40959), (50, 40968), (51, 40980), (53, 40986), (55, 40998), (56, 41007), (57, 41016),

Gene: DaWorst\_67 Start: 43677, Stop: 44627, Start Num: 11

Candidate Starts for DaWorst\_67:

(Start: 11 @43677 has 28 MA's), (16, 43779), (18, 43809), (19, 43830), (21, 43902), (22, 43926), (24, 43950), (25, 43980), (26, 43986), (29, 44052), (30, 44058), (31, 44106), (33, 44169), (35, 44199), (40, 44418), (41, 44424), (42, 44448), (43, 44451), (44, 44481), (46, 44493), (47, 44526), (49, 44562), (50, 44571), (51, 44583), (53, 44589), (55, 44601), (56, 44610),

Gene: Emma\_69 Start: 43700, Stop: 44650, Start Num: 11

Candidate Starts for Emma\_69:

(Start: 11 @43700 has 28 MA's), (16, 43802), (18, 43832), (19, 43853), (21, 43925), (22, 43949), (24, 43973), (25, 44003), (26, 44009), (29, 44075), (30, 44081), (31, 44129), (33, 44192), (35, 44222), (37, 44240), (38, 44306), (40, 44441), (41, 44447), (42, 44471), (43, 44474), (44, 44504), (46, 44516), (47, 44549), (49, 44585), (50, 44594), (51, 44606), (53, 44612), (55, 44624), (56, 44633),

Gene: Estave1\_72 Start: 46536, Stop: 47486, Start Num: 11

Candidate Starts for Estave1\_72:

(Start: 11 @46536 has 28 MA's), (16, 46638), (18, 46668), (19, 46689), (21, 46761), (22, 46785), (24, 46809), (25, 46839), (26, 46845), (29, 46911), (30, 46917), (31, 46965), (33, 47028), (35, 47058), (40, 47277), (41, 47283), (42, 47307), (43, 47310), (44, 47340), (46, 47352), (47, 47385), (49, 47421), (50, 47430), (51, 47442), (53, 47448), (55, 47460), (56, 47469), (57, 47478),

Gene: Fancypants\_70 Start: 44712, Stop: 45662, Start Num: 11

Candidate Starts for Fancypants\_70:

(Start: 11 @44712 has 28 MA's), (16, 44814), (18, 44844), (19, 44865), (21, 44937), (22, 44961), (24, 44985), (25, 45015), (26, 45021), (29, 45087), (30, 45093), (31, 45141), (33, 45204), (35, 45234), (40, 45453), (41, 45459), (42, 45483), (43, 45486), (44, 45516), (46, 45528), (47, 45561), (49, 45597), (50, 45606), (51, 45618), (53, 45624), (55, 45636), (56, 45645),

Gene: GMA1\_63 Start: 37160, Stop: 38131, Start Num: 8

Candidate Starts for GMA1\_63:

(Start: 8 @37160 has 3 MA's), (10, 37166), (13, 37220), (21, 37400), (23, 37439), (28, 37535), (32, 37634), (33, 37667), (35, 37697), (36, 37703), (49, 38075),

Gene: Holliday\_69 Start: 42905, Stop: 43861, Start Num: 8

Candidate Starts for Holliday\_69:

(Start: 8 @42905 has 3 MA's), (14, 42965), (17, 43025), (19, 43070), (21, 43142), (24, 43190), (26, 43226), (29, 43292), (30, 43298), (35, 43439), (39, 43550), (46, 43733), (51, 43823), (53, 43829),

Gene: Jarcob\_66 Start: 44101, Stop: 45051, Start Num: 11

Candidate Starts for Jarcob\_66:

(Start: 11 @44101 has 28 MA's), (16, 44203), (18, 44233), (19, 44254), (21, 44326), (22, 44350), (24, 44374), (25, 44404), (26, 44410), (29, 44476), (30, 44482), (31, 44530), (33, 44593), (35, 44623), (37, 44641), (38, 44707), (40, 44842), (41, 44848), (42, 44872), (44, 44905), (46, 44917), (47, 44950), (49, 44986), (50, 44995), (51, 45007), (53, 45013), (55, 45025), (56, 45034),

Gene: Koella\_61 Start: 40075, Stop: 41025, Start Num: 11

Candidate Starts for Koella\_61:

(Start: 11 @40075 has 28 MA's), (16, 40177), (18, 40207), (19, 40228), (21, 40300), (22, 40324), (24, 40348), (25, 40378), (26, 40384), (29, 40450), (30, 40456), (31, 40504), (33, 40567), (35, 40597), (40, 40816), (41, 40822), (42, 40846), (43, 40849), (44, 40879), (46, 40891), (47, 40924), (49, 40960), (50, 40969), (51, 40981), (53, 40987), (55, 40999), (56, 41008),

Gene: Malisha\_72 Start: 44709, Stop: 45665, Start Num: 8

Candidate Starts for Malisha\_72:

(Start: 8 @44709 has 3 MA's), (21, 44946), (24, 44994), (25, 45024), (26, 45030), (27, 45051), (37, 45261), (44, 45525), (45, 45531), (46, 45537), (51, 45627),

Gene: Maravista\_69 Start: 46025, Stop: 46975, Start Num: 11

Candidate Starts for Maravista\_69:

(Start: 11 @46025 has 28 MA's), (16, 46127), (18, 46157), (19, 46178), (21, 46250), (22, 46274), (24, 46298), (25, 46328), (26, 46334), (29, 46400), (30, 46406), (31, 46454), (33, 46517), (35, 46547), (40, 46766), (41, 46772), (42, 46796), (43, 46799), (44, 46829), (46, 46841), (47, 46874), (49, 46910), (50, 46919), (51, 46931), (53, 46937), (55, 46949), (56, 46958),

Gene: MinionDave\_66 Start: 44448, Stop: 45398, Start Num: 11

Candidate Starts for MinionDave\_66:

(Start: 11 @44448 has 28 MA's), (16, 44550), (18, 44580), (19, 44601), (21, 44673), (22, 44697), (24, 44721), (25, 44751), (26, 44757), (29, 44823), (30, 44829), (31, 44877), (33, 44940), (35, 44970), (40, 45189), (41, 45195), (42, 45219), (43, 45222), (44, 45252), (46, 45264), (47, 45297), (49, 45333), (50, 45342), (51, 45354), (53, 45360), (55, 45372), (56, 45381),

Gene: Moonbeam\_66 Start: 43629, Stop: 44579, Start Num: 11

Candidate Starts for Moonbeam\_66:

(Start: 11 @43629 has 28 MA's), (16, 43731), (18, 43761), (19, 43782), (21, 43854), (22, 43878), (24, 43902), (25, 43932), (26, 43938), (29, 44004), (30, 44010), (31, 44058), (33, 44121), (35, 44151), (37, 44169), (38, 44235), (40, 44370), (41, 44376), (42, 44400), (43, 44403), (44, 44433), (46, 44445), (47, 44478), (49, 44514), (50, 44523), (51, 44535), (53, 44541), (55, 44553), (56, 44562),

Gene: NormanBulbieJr\_67 Start: 44088, Stop: 45038, Start Num: 11

Candidate Starts for NormanBulbieJr\_67:

(Start: 11 @44088 has 28 MA's), (16, 44190), (18, 44220), (19, 44241), (21, 44313), (22, 44337), (24, 44361), (25, 44391), (26, 44397), (29, 44463), (30, 44469), (31, 44517), (33, 44580), (35, 44610), (40, 44829), (41, 44835), (42, 44859), (43, 44862), (44, 44892), (46, 44904), (47, 44937), (49, 44973), (50, 44982), (51, 44994), (53, 45000), (55, 45012), (56, 45021),

Gene: Pippy\_66 Start: 43387, Stop: 44337, Start Num: 11

Candidate Starts for Pippy\_66:

(Start: 11 @43387 has 28 MA's), (16, 43489), (18, 43519), (19, 43540), (21, 43612), (22, 43636), (24, 43660), (25, 43690), (26, 43696), (29, 43762), (30, 43768), (31, 43816), (33, 43879), (35, 43909), (40, 44128), (41, 44134), (42, 44158), (43, 44161), (44, 44191), (46, 44203), (47, 44236), (49, 44272), (50, 44281), (51, 44293), (53, 44299), (55, 44311), (56, 44320), (57, 44329),

Gene: Priscilla\_67 Start: 44187, Stop: 45137, Start Num: 11

Candidate Starts for Priscilla\_67:

(Start: 11 @44187 has 28 MA's), (16, 44289), (18, 44319), (19, 44340), (21, 44412), (22, 44436), (24, 44460), (25, 44490), (26, 44496), (29, 44562), (30, 44568), (31, 44616), (33, 44679), (35, 44709), (40, 44928), (41, 44934), (42, 44958), (43, 44961), (44, 44991), (46, 45003), (47, 45036), (49, 45072), (50, 45081), (51, 45093), (53, 45099), (55, 45111), (56, 45120),

Gene: Ramsey\_66 Start: 43916, Stop: 44866, Start Num: 11

Candidate Starts for Ramsey\_66:

(Start: 11 @43916 has 28 MA's), (16, 44018), (18, 44048), (19, 44069), (21, 44141), (22, 44165), (24, 44189), (25, 44219), (26, 44225), (29, 44291), (30, 44297), (31, 44345), (33, 44408), (35, 44438), (40, 44657), (41, 44663), (42, 44687), (43, 44690), (44, 44720), (46, 44732), (47, 44765), (49, 44801), (50, 44810), (51, 44822), (53, 44828), (55, 44840), (56, 44849),

Gene: ShowerHandel\_70 Start: 44059, Stop: 45009, Start Num: 11

Candidate Starts for ShowerHandel\_70:

(Start: 11 @44059 has 28 MA's), (16, 44161), (18, 44191), (19, 44212), (21, 44284), (22, 44308), (24, 44332), (25, 44362), (26, 44368), (29, 44434), (30, 44440), (31, 44488), (33, 44551), (35, 44581), (40, 44800), (41, 44806), (42, 44830), (43, 44833), (44, 44863), (46, 44875), (47, 44908), (49, 44944), (50, 44953), (51, 44965), (53, 44971), (55, 44983), (56, 44992), (57, 45001),

Gene: Spikelee\_74 Start: 45764, Stop: 46714, Start Num: 11

Candidate Starts for Spikelee\_74:

(Start: 11 @45764 has 28 MA's), (16, 45866), (18, 45896), (19, 45917), (21, 45989), (22, 46013), (24, 46037), (25, 46067), (26, 46073), (29, 46139), (30, 46145), (31, 46193), (33, 46256), (35, 46286), (40, 46505), (41, 46511), (42, 46535), (43, 46538), (44, 46568), (46, 46580), (47, 46613), (49, 46649), (50, 46658), (51, 46670), (53, 46676), (55, 46688), (56, 46697),

Gene: Squiddly\_65 Start: 43028, Stop: 43984, Start Num: 8

Candidate Starts for Squiddly\_65:

(Start: 8 @43028 has 3 MA's), (14, 43088), (17, 43148), (19, 43193), (21, 43265), (24, 43313), (26, 43349), (29, 43415), (30, 43421), (34, 43559), (39, 43673), (41, 43787), (46, 43856), (51, 43946), (52, 43949), (57, 43976),

Gene: SwagPigglett\_72 Start: 46406, Stop: 47356, Start Num: 11

Candidate Starts for SwagPigglett\_72:

(Start: 11 @46406 has 28 MA's), (16, 46508), (18, 46538), (19, 46559), (21, 46631), (22, 46655), (24, 46679), (25, 46709), (26, 46715), (29, 46781), (30, 46787), (31, 46835), (33, 46898), (35, 46928), (38, 47012), (40, 47147), (41, 47153), (42, 47177), (43, 47180), (44, 47210), (46, 47222), (47, 47255), (49, 47291), (50, 47300), (51, 47312), (53, 47318), (55, 47330), (56, 47339),

Gene: Vopal\_77 Start: 43204, Stop: 44103, Start Num: 9

Candidate Starts for Vopal\_77:

(5, 42793), (6, 42805), (7, 43036), (Start: 9 @43204 has 1 MA's), (12, 43213), (17, 43321), (20, 43375), (42, 43927), (46, 43972), (51, 44062), (54, 44077),

Gene: Whouxphf\_64 Start: 43966, Stop: 44916, Start Num: 11

Candidate Starts for Whouxphf\_64:

(Start: 11 @43966 has 28 MA's), (16, 44068), (18, 44098), (19, 44119), (21, 44191), (22, 44215), (24, 44239), (25, 44269), (26, 44275), (29, 44341), (30, 44347), (31, 44395), (33, 44458), (35, 44488), (40, 44707), (41, 44713), (42, 44737), (43, 44740), (44, 44770), (46, 44782), (47, 44815), (49, 44851), (50, 44860), (51, 44872), (53, 44878), (55, 44890), (56, 44899),

Gene: Yorick\_66 Start: 44206, Stop: 45156, Start Num: 11

Candidate Starts for Yorick\_66:

(Start: 11 @44206 has 28 MA's), (16, 44308), (18, 44338), (19, 44359), (21, 44431), (22, 44455), (24, 44479), (25, 44509), (26, 44515), (29, 44581), (30, 44587), (31, 44635), (33, 44698), (35, 44728), (40, 44947), (41, 44953), (42, 44977), (43, 44980), (44, 45010), (46, 45022), (47, 45055), (49, 45091), (50, 45100), (51, 45112), (53, 45118), (55, 45130), (56, 45139),

Gene: Zizzle\_71 Start: 45692, Stop: 46642, Start Num: 11

Candidate Starts for Zizzle\_71:

(Start: 11 @45692 has 28 MA's), (16, 45794), (18, 45824), (19, 45845), (21, 45917), (22, 45941), (24, 45965), (25, 45995), (26, 46001), (29, 46067), (30, 46073), (31, 46121), (33, 46184), (35, 46214), (40, 46433), (41, 46439), (42, 46463), (43, 46466), (44, 46496), (46, 46508), (47, 46541), (49, 46577), (50, 46586), (51, 46598), (53, 46604), (55, 46616), (56, 46625), (57, 46634),

Gene: Zucker\_72 Start: 42192, Stop: 43091, Start Num: 9

Candidate Starts for Zucker\_72:

(5, 41781), (6, 41793), (7, 42024), (Start: 9 @42192 has 1 MA's), (12, 42201), (15, 42297), (17, 42309), (20, 42363), (27, 42531), (42, 42915), (45, 42954), (46, 42960), (51, 43050),