

# Pham 271665



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 271665 Report

This analysis was run 02/07/26 on database version 634.

Pham number 271665 has 70 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Football\_82
- Track 2 : Mossy\_78, Blanky\_75
- Track 3 : Hortihabitatio\_80
- Track 4 : CWormy\_76, ArtetaBall\_77, Phepper\_78, Untouchable\_79, Runhaar\_76, Madvan\_77
- Track 5 : Crocheter\_78, Aloe25\_81, BetterYeti\_77, Gusicorn\_79, PestoPenguin\_82
- Track 6 : Figliar\_76, TenaciousP\_78, Jodelie19\_76, MajinBuu\_78
- Track 7 : Dancer\_79, JulesRay\_79, Kerry\_76, Tairn4Wing\_82, ChickyNuggy\_82, Bugg\_83, Cappybara\_77, Gravy\_76, Trufflozitus\_84, Artorias\_79, FortCran\_79
- Track 8 : Magel\_78
- Track 9 : Luthien\_78
- Track 10 : OlgasClover\_80
- Track 11 : Vardy\_76, Zeph\_79
- Track 12 : Mysticmoon\_79, Pherobrine\_78
- Track 13 : Rickmore\_76
- Track 14 : Dialga\_79
- Track 15 : Roney\_76, Tanis\_77, Gill\_77
- Track 16 : Demure\_74, Hydrus\_77, Arataki\_76
- Track 17 : Chikenjars\_77
- Track 18 : Duffington\_78
- Track 19 : Talon44\_81, Captrips\_78, NoPickles\_78, Avazak\_80
- Track 20 : Glintora\_79
- Track 21 : Odesza\_76
- Track 22 : Nithya\_76
- Track 23 : Citrus\_77
- Track 24 : Burley\_77
- Track 25 : EndAve\_79
- Track 26 : Petito\_80
- Track 27 : Conley\_76
- Track 28 : AlainaMarie\_78
- Track 29 : OhMyWard\_74
- Track 30 : Nadmeg\_77
- Track 31 : Kenosha\_76
- Track 32 : ShaggyRogers\_77
- Track 33 : Tonaltzin\_82, Aflac\_78
- Track 34 : Eddiemania\_78
- Track 35 : Perkunas\_79

- Track 36 : BluerMoon\_77
- Track 37 : Fazel\_81

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

The start number called the most often in the published annotations is 8, it was called in 34 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac\_78, AlainaMarie\_78, Aloe25\_81, Arataki\_76, ArtetaBall\_77, BetterYeti\_77, Blanky\_75, BluerMoon\_77, Burley\_77, CWormy\_76, Chickenjars\_77, Citrus\_77, Crocheter\_78, Demure\_74, Duffington\_78, Eddiemania\_78, EndAve\_79, Fazel\_81, Figliar\_76, Gusicorn\_79, Hydrus\_77, Jodelie19\_76, Kenosha\_76, Luthien\_78, Madvan\_77, MajinBuu\_78, Mossy\_78, Mysticmoon\_79, Nadmeg\_77, Nithya\_76, OhMyWard\_74, OlgasClover\_80, PestoPenguin\_82, Phepper\_78, Pherobrine\_78, Rickmore\_76, Runhaar\_76, ShaggyRogers\_77, TenaciousP\_78, Tonaltzin\_82, Untouchable\_79, Vardy\_76, Zeph\_79,

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

- Dialga\_79, Glintora\_79,

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

- Artorias\_79, Avazak\_80, Bugg\_83, Captrips\_78, Copybara\_77, ChickyNuggy\_82, Conley\_76, Dancer\_79, Football\_82, FortCran\_79, Gill\_77, Gravy\_76, Hortihabitatio\_80, JulesRay\_79, Kerry\_76, Magel\_78, NoPickles\_78, Odesza\_76, Perkunas\_79, Petito\_80, Roney\_76, Tairn4Wing\_82, Talon44\_81, Tanis\_77, Trufflozitus\_84,

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

Start 8:

- Found in 45 of 70 ( 64.3% ) of genes in pham
- Manual Annotations of this start: 34 of 54
- Called 95.6% of time when present
- Phage (with cluster) where this start called: Aflac\_78 (DJ), AlainaMarie\_78 (DJ), Aloe25\_81 (DJ), Arataki\_76 (DJ), ArtetaBall\_77 (DJ), BetterYeti\_77 (DJ), Blanky\_75 (DJ), BluerMoon\_77 (DJ), Burley\_77 (DJ), CWormy\_76 (DJ), Chickenjars\_77 (DJ), Citrus\_77 (DJ), Crocheter\_78 (DJ), Demure\_74 (DJ), Duffington\_78 (DJ), Eddiemania\_78 (DJ), EndAve\_79 (DJ), Fazel\_81 (DJ), Figliar\_76 (DJ), Gusicorn\_79 (DJ), Hydrus\_77 (DJ), Jodelie19\_76 (DJ), Kenosha\_76 (DJ), Luthien\_78 (DJ), Madvan\_77 (DJ), MajinBuu\_78 (DJ), Mossy\_78 (DJ), Mysticmoon\_79 (DJ), Nadmeg\_77 (DJ), Nithya\_76 (DJ), OhMyWard\_74 (DJ), OlgasClover\_80 (DJ), PestoPenguin\_82 (DJ), Phepper\_78 (DJ), Pherobrine\_78 (DJ), Rickmore\_76 (DJ), Runhaar\_76 (DJ), ShaggyRogers\_77 (DJ), TenaciousP\_78 (DJ), Tonaltzin\_82 (DJ), Untouchable\_79 (DJ), Vardy\_76 (DJ), Zeph\_79 (DJ),

Start 9:

- Found in 1 of 70 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Hortihabitatio\_80 (DJ),

#### Start 10:

- Found in 24 of 70 ( 34.3% ) of genes in pham
- Manual Annotations of this start: 19 of 54
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Artorias\_79 (DJ), Avazak\_80 (DJ), Bugg\_83 (DJ), Captrips\_78 (DJ), Cappybara\_77 (DJ), ChickyNuggy\_82 (DJ), Conley\_76 (DJ), Dancer\_79 (DJ), FortCran\_79 (DJ), Gill\_77 (DJ), Gravy\_76 (DJ), JulesRay\_79 (DJ), Kerry\_76 (DJ), Magel\_78 (DJ), NoPickles\_78 (DJ), Odesza\_76 (DJ), Perkunas\_79 (DJ), Petite\_80 (DJ), Roney\_76 (DJ), Tairn4Wing\_82 (DJ), Talon44\_81 (DJ), Tanis\_77 (DJ), Trufflozitus\_84 (DJ),

#### Start 13:

- Found in 5 of 70 ( 7.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Glintora\_79 (DJ),

#### Start 14:

- Found in 19 of 70 ( 27.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.3% of time when present
- Phage (with cluster) where this start called: Football\_82 (DJ),

#### Start 15:

- Found in 34 of 70 ( 48.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Dialga\_79 (DJ),

### Summary by clusters:

There is one cluster represented in this pham: DJ

Info for manual annotations of cluster DJ:

- Start number 8 was manually annotated 34 times for cluster DJ.
- Start number 9 was manually annotated 1 time for cluster DJ.
- Start number 10 was manually annotated 19 times for cluster DJ.

### Gene Information:

Gene: Aflac\_78 Start: 51861, Stop: 52208, Start Num: 8

Candidate Starts for Aflac\_78:

(Start: 8 @51861 has 34 MA's), (17, 51966), (18, 51969), (31, 52092), (34, 52113), (42, 52170),

Gene: AlainaMarie\_78 Start: 51906, Stop: 52253, Start Num: 8

Candidate Starts for AlainaMarie\_78:

(6, 51858), (Start: 8 @51906 has 34 MA's), (13, 51954), (17, 52011), (18, 52014), (25, 52101), (27, 52107), (31, 52137), (32, 52143), (42, 52215),

Gene: Aloe25\_81 Start: 51286, Stop: 51633, Start Num: 8  
Candidate Starts for Aloe25\_81:  
(Start: 8 @51286 has 34 MA's), (15, 51367), (24, 51478), (27, 51487), (28, 51496), (34, 51538),

Gene: Arataki\_76 Start: 50900, Stop: 51247, Start Num: 8  
Candidate Starts for Arataki\_76:  
(3, 50819), (Start: 8 @50900 has 34 MA's), (17, 51005), (18, 51008), (34, 51152),

Gene: ArtetaBall\_77 Start: 51462, Stop: 51809, Start Num: 8  
Candidate Starts for ArtetaBall\_77:  
(Start: 8 @51462 has 34 MA's), (15, 51543), (18, 51570), (27, 51663), (28, 51672),

Gene: Artorias\_79 Start: 51103, Stop: 51390, Start Num: 10  
Candidate Starts for Artorias\_79:  
(Start: 10 @51103 has 19 MA's), (11, 51112), (14, 51130), (29, 51289), (31, 51307), (36, 51340), (38, 51355),

Gene: Avazak\_80 Start: 51785, Stop: 52072, Start Num: 10  
Candidate Starts for Avazak\_80:  
(Start: 10 @51785 has 19 MA's), (11, 51794), (14, 51812), (29, 51971), (31, 51989), (36, 52022),

Gene: BetterYeti\_77 Start: 51285, Stop: 51632, Start Num: 8  
Candidate Starts for BetterYeti\_77:  
(Start: 8 @51285 has 34 MA's), (15, 51366), (24, 51477), (27, 51486), (28, 51495), (34, 51537),

Gene: Blanky\_75 Start: 52347, Stop: 52694, Start Num: 8  
Candidate Starts for Blanky\_75:  
(7, 52308), (Start: 8 @52347 has 34 MA's), (13, 52395), (17, 52452), (18, 52455), (34, 52599),

Gene: BluerMoon\_77 Start: 51813, Stop: 52160, Start Num: 8  
Candidate Starts for BluerMoon\_77:  
(Start: 8 @51813 has 34 MA's), (15, 51894), (17, 51918), (24, 52005), (27, 52014), (28, 52023),

Gene: Bugg\_83 Start: 51148, Stop: 51435, Start Num: 10  
Candidate Starts for Bugg\_83:  
(Start: 10 @51148 has 19 MA's), (11, 51157), (14, 51175), (29, 51334), (31, 51352), (36, 51385), (38, 51400),

Gene: Burley\_77 Start: 50918, Stop: 51265, Start Num: 8  
Candidate Starts for Burley\_77:  
(Start: 8 @50918 has 34 MA's), (15, 50999), (18, 51026), (24, 51110),

Gene: CWormy\_76 Start: 50879, Stop: 51226, Start Num: 8  
Candidate Starts for CWormy\_76:  
(Start: 8 @50879 has 34 MA's), (15, 50960), (18, 50987), (27, 51080), (28, 51089),

Gene: Captrips\_78 Start: 50933, Stop: 51220, Start Num: 10  
Candidate Starts for Captrips\_78:  
(Start: 10 @50933 has 19 MA's), (11, 50942), (14, 50960), (29, 51119), (31, 51137), (36, 51170),

Gene: Capybara\_77 Start: 50770, Stop: 51057, Start Num: 10  
Candidate Starts for Capybara\_77:

(Start: 10 @50770 has 19 MA's), (11, 50779), (14, 50797), (29, 50956), (31, 50974), (36, 51007), (38, 51022),

Gene: ChickyNuggy\_82 Start: 51527, Stop: 51814, Start Num: 10

Candidate Starts for ChickyNuggy\_82:

(Start: 10 @51527 has 19 MA's), (11, 51536), (14, 51554), (29, 51713), (31, 51731), (36, 51764), (38, 51779),

Gene: Chikenjars\_77 Start: 51872, Stop: 52219, Start Num: 8

Candidate Starts for Chikenjars\_77:

(5, 51815), (Start: 8 @51872 has 34 MA's), (15, 51953), (17, 51977), (24, 52064), (27, 52073), (28, 52082),

Gene: Citrus\_77 Start: 51922, Stop: 52269, Start Num: 8

Candidate Starts for Citrus\_77:

(Start: 8 @51922 has 34 MA's), (15, 52003), (18, 52030), (28, 52132),

Gene: Conley\_76 Start: 51234, Stop: 51521, Start Num: 10

Candidate Starts for Conley\_76:

(Start: 10 @51234 has 19 MA's), (11, 51243), (14, 51261), (29, 51420), (31, 51438),

Gene: Crocheter\_78 Start: 51379, Stop: 51726, Start Num: 8

Candidate Starts for Crocheter\_78:

(Start: 8 @51379 has 34 MA's), (15, 51460), (24, 51571), (27, 51580), (28, 51589), (34, 51631),

Gene: Dancer\_79 Start: 50840, Stop: 51127, Start Num: 10

Candidate Starts for Dancer\_79:

(Start: 10 @50840 has 19 MA's), (11, 50849), (14, 50867), (29, 51026), (31, 51044), (36, 51077), (38, 51092),

Gene: Demure\_74 Start: 50900, Stop: 51247, Start Num: 8

Candidate Starts for Demure\_74:

(3, 50819), (Start: 8 @50900 has 34 MA's), (17, 51005), (18, 51008), (34, 51152),

Gene: Dialga\_79 Start: 51562, Stop: 51828, Start Num: 15

Candidate Starts for Dialga\_79:

(Start: 8 @51481 has 34 MA's), (15, 51562), (18, 51589), (27, 51682), (28, 51691),

Gene: Duffington\_78 Start: 51842, Stop: 52189, Start Num: 8

Candidate Starts for Duffington\_78:

(5, 51785), (Start: 8 @51842 has 34 MA's), (17, 51947), (24, 52034), (27, 52043), (28, 52052),

Gene: Eddiemania\_78 Start: 51958, Stop: 52305, Start Num: 8

Candidate Starts for Eddiemania\_78:

(2, 51877), (Start: 8 @51958 has 34 MA's), (15, 52039), (18, 52066), (24, 52150), (27, 52159), (28, 52168),

Gene: EndAve\_79 Start: 51816, Stop: 52163, Start Num: 8

Candidate Starts for EndAve\_79:

(6, 51768), (Start: 8 @51816 has 34 MA's), (15, 51897), (17, 51921), (18, 51924), (28, 52026),

Gene: Fazel\_81 Start: 51842, Stop: 52171, Start Num: 8

Candidate Starts for Fazel\_81:

(Start: 8 @51842 has 34 MA's), (18, 51950), (21, 52001), (26, 52040), (39, 52124), (41, 52145),

Gene: Figliar\_76 Start: 51641, Stop: 51988, Start Num: 8

Candidate Starts for Figliar\_76:

(5, 51584), (Start: 8 @51641 has 34 MA's), (15, 51722), (17, 51746), (18, 51749), (24, 51833), (31, 51872), (42, 51950),

Gene: Football\_82 Start: 50757, Stop: 51017, Start Num: 14

Candidate Starts for Football\_82:

(Start: 10 @50730 has 19 MA's), (11, 50739), (14, 50757), (29, 50916), (31, 50934), (36, 50967), (38, 50982),

Gene: FortCran\_79 Start: 51103, Stop: 51390, Start Num: 10

Candidate Starts for FortCran\_79:

(Start: 10 @51103 has 19 MA's), (11, 51112), (14, 51130), (29, 51289), (31, 51307), (36, 51340), (38, 51355),

Gene: Gill\_77 Start: 50798, Stop: 51109, Start Num: 10

Candidate Starts for Gill\_77:

(Start: 10 @50798 has 19 MA's), (11, 50807), (15, 50852), (19, 50882), (23, 50951), (36, 51032), (37, 51035), (40, 51065), (42, 51077),

Gene: Glintora\_79 Start: 52065, Stop: 52364, Start Num: 13

Candidate Starts for Glintora\_79:

(5, 51960), (Start: 8 @52017 has 34 MA's), (13, 52065), (17, 52122), (18, 52125), (25, 52212), (27, 52218), (31, 52248), (32, 52254), (42, 52326),

Gene: Gravy\_76 Start: 50460, Stop: 50747, Start Num: 10

Candidate Starts for Gravy\_76:

(Start: 10 @50460 has 19 MA's), (11, 50469), (14, 50487), (29, 50646), (31, 50664), (36, 50697), (38, 50712),

Gene: Gusicorn\_79 Start: 51286, Stop: 51633, Start Num: 8

Candidate Starts for Gusicorn\_79:

(Start: 8 @51286 has 34 MA's), (15, 51367), (24, 51478), (27, 51487), (28, 51496), (34, 51538),

Gene: Hortihabitatio\_80 Start: 52238, Stop: 52543, Start Num: 9

Candidate Starts for Hortihabitatio\_80:

(Start: 9 @52238 has 1 MA's), (14, 52283), (16, 52316), (20, 52352), (22, 52406), (38, 52508),

Gene: Hydrus\_77 Start: 51677, Stop: 52024, Start Num: 8

Candidate Starts for Hydrus\_77:

(3, 51596), (Start: 8 @51677 has 34 MA's), (17, 51782), (18, 51785), (34, 51929),

Gene: Jodelie19\_76 Start: 52808, Stop: 53155, Start Num: 8

Candidate Starts for Jodelie19\_76:

(5, 52751), (Start: 8 @52808 has 34 MA's), (15, 52889), (17, 52913), (18, 52916), (24, 53000), (31, 53039), (42, 53117),

Gene: JulesRay\_79 Start: 51452, Stop: 51739, Start Num: 10

Candidate Starts for JulesRay\_79:

(Start: 10 @51452 has 19 MA's), (11, 51461), (14, 51479), (29, 51638), (31, 51656), (36, 51689), (38, 51704),

Gene: Kenosha\_76 Start: 51507, Stop: 51854, Start Num: 8

Candidate Starts for Kenosha\_76:

(Start: 8 @51507 has 34 MA's), (15, 51588), (18, 51615), (24, 51699), (27, 51708), (28, 51717), (34, 51759),

Gene: Kerry\_76 Start: 50523, Stop: 50810, Start Num: 10

Candidate Starts for Kerry\_76:

(Start: 10 @50523 has 19 MA's), (11, 50532), (14, 50550), (29, 50709), (31, 50727), (36, 50760), (38, 50775),

Gene: Luthien\_78 Start: 51811, Stop: 52158, Start Num: 8

Candidate Starts for Luthien\_78:

(6, 51763), (Start: 8 @51811 has 34 MA's), (15, 51892), (18, 51919), (28, 52021),

Gene: Madvan\_77 Start: 50974, Stop: 51321, Start Num: 8

Candidate Starts for Madvan\_77:

(Start: 8 @50974 has 34 MA's), (15, 51055), (18, 51082), (27, 51175), (28, 51184),

Gene: Magel\_78 Start: 50713, Stop: 51024, Start Num: 10

Candidate Starts for Magel\_78:

(Start: 10 @50713 has 19 MA's), (11, 50722), (19, 50797), (23, 50866), (36, 50947), (40, 50980),

Gene: MajinBuu\_78 Start: 52023, Stop: 52370, Start Num: 8

Candidate Starts for MajinBuu\_78:

(5, 51966), (Start: 8 @52023 has 34 MA's), (15, 52104), (17, 52128), (18, 52131), (24, 52215), (31, 52254), (42, 52332),

Gene: Mossy\_78 Start: 52559, Stop: 52906, Start Num: 8

Candidate Starts for Mossy\_78:

(7, 52520), (Start: 8 @52559 has 34 MA's), (13, 52607), (17, 52664), (18, 52667), (34, 52811),

Gene: Mysticmoon\_79 Start: 52201, Stop: 52548, Start Num: 8

Candidate Starts for Mysticmoon\_79:

(Start: 8 @52201 has 34 MA's), (17, 52306), (18, 52309), (34, 52453),

Gene: Nadmeg\_77 Start: 51977, Stop: 52324, Start Num: 8

Candidate Starts for Nadmeg\_77:

(Start: 8 @51977 has 34 MA's), (15, 52058), (27, 52178),

Gene: Nithya\_76 Start: 51360, Stop: 51707, Start Num: 8

Candidate Starts for Nithya\_76:

(Start: 8 @51360 has 34 MA's), (15, 51441), (27, 51561), (28, 51570),

Gene: NoPickles\_78 Start: 50619, Stop: 50906, Start Num: 10

Candidate Starts for NoPickles\_78:

(Start: 10 @50619 has 19 MA's), (11, 50628), (14, 50646), (29, 50805), (31, 50823), (36, 50856),

Gene: Odesza\_76 Start: 50660, Stop: 50971, Start Num: 10

Candidate Starts for Odesza\_76:

(Start: 10 @50660 has 19 MA's), (11, 50669), (15, 50714), (19, 50744), (23, 50813), (36, 50894), (37, 50897), (40, 50927), (42, 50939),



Gene: OhMyWard\_74 Start: 52318, Stop: 52665, Start Num: 8  
Candidate Starts for OhMyWard\_74:  
(7, 52279), (Start: 8 @52318 has 34 MA's), (13, 52366), (17, 52423), (18, 52426), (34, 52570), (42, 52627),

Gene: OlgasClover\_80 Start: 52722, Stop: 53078, Start Num: 8  
Candidate Starts for OlgasClover\_80:  
(5, 52665), (Start: 8 @52722 has 34 MA's), (17, 52827), (18, 52830), (30, 52941), (31, 52953), (33, 52968),

Gene: Perkunas\_79 Start: 50720, Stop: 51007, Start Num: 10  
Candidate Starts for Perkunas\_79:  
(4, 50633), (Start: 10 @50720 has 19 MA's), (11, 50729), (14, 50747), (29, 50906), (31, 50924), (35, 50954), (36, 50957), (40, 50990),

Gene: PestoPenguin\_82 Start: 51286, Stop: 51633, Start Num: 8  
Candidate Starts for PestoPenguin\_82:  
(Start: 8 @51286 has 34 MA's), (15, 51367), (24, 51478), (27, 51487), (28, 51496), (34, 51538),

Gene: Petito\_80 Start: 52186, Stop: 52473, Start Num: 10  
Candidate Starts for Petito\_80:  
(Start: 10 @52186 has 19 MA's), (11, 52195), (15, 52240), (29, 52372), (31, 52390), (36, 52423),

Gene: Phepper\_78 Start: 51216, Stop: 51563, Start Num: 8  
Candidate Starts for Phepper\_78:  
(Start: 8 @51216 has 34 MA's), (15, 51297), (18, 51324), (27, 51417), (28, 51426),

Gene: Pherobrine\_78 Start: 52256, Stop: 52603, Start Num: 8  
Candidate Starts for Pherobrine\_78:  
(Start: 8 @52256 has 34 MA's), (17, 52361), (18, 52364), (34, 52508),

Gene: Rickmore\_76 Start: 50323, Stop: 50679, Start Num: 8  
Candidate Starts for Rickmore\_76:  
(1, 50200), (Start: 8 @50323 has 34 MA's), (12, 50365), (17, 50428), (18, 50431), (31, 50554), (33, 50569),

Gene: Roney\_76 Start: 50823, Stop: 51134, Start Num: 10  
Candidate Starts for Roney\_76:  
(Start: 10 @50823 has 19 MA's), (11, 50832), (15, 50877), (19, 50907), (23, 50976), (36, 51057), (37, 51060), (40, 51090), (42, 51102),

Gene: Runhaar\_76 Start: 51025, Stop: 51372, Start Num: 8  
Candidate Starts for Runhaar\_76:  
(Start: 8 @51025 has 34 MA's), (15, 51106), (18, 51133), (27, 51226), (28, 51235),

Gene: ShaggyRogers\_77 Start: 51016, Stop: 51363, Start Num: 8  
Candidate Starts for ShaggyRogers\_77:  
(Start: 8 @51016 has 34 MA's), (15, 51097), (24, 51208), (28, 51226), (34, 51268),

Gene: Tairn4Wing\_82 Start: 50941, Stop: 51228, Start Num: 10  
Candidate Starts for Tairn4Wing\_82:  
(Start: 10 @50941 has 19 MA's), (11, 50950), (14, 50968), (29, 51127), (31, 51145), (36, 51178), (38, 51193),

Gene: Talon44\_81 Start: 51571, Stop: 51858, Start Num: 10

Candidate Starts for Talon44\_81:

(Start: 10 @51571 has 19 MA's), (11, 51580), (14, 51598), (29, 51757), (31, 51775), (36, 51808),

Gene: Tanis\_77 Start: 50643, Stop: 50954, Start Num: 10

Candidate Starts for Tanis\_77:

(Start: 10 @50643 has 19 MA's), (11, 50652), (15, 50697), (19, 50727), (23, 50796), (36, 50877), (37, 50880), (40, 50910), (42, 50922),

Gene: TenaciousP\_78 Start: 52770, Stop: 53117, Start Num: 8

Candidate Starts for TenaciousP\_78:

(5, 52713), (Start: 8 @52770 has 34 MA's), (15, 52851), (17, 52875), (18, 52878), (24, 52962), (31, 53001), (42, 53079),

Gene: Tonaltzin\_82 Start: 51629, Stop: 51976, Start Num: 8

Candidate Starts for Tonaltzin\_82:

(Start: 8 @51629 has 34 MA's), (17, 51734), (18, 51737), (31, 51860), (34, 51881), (42, 51938),

Gene: Trufflozitus\_84 Start: 51456, Stop: 51743, Start Num: 10

Candidate Starts for Trufflozitus\_84:

(Start: 10 @51456 has 19 MA's), (11, 51465), (14, 51483), (29, 51642), (31, 51660), (36, 51693), (38, 51708),

Gene: Untouchable\_79 Start: 52213, Stop: 52554, Start Num: 8

Candidate Starts for Untouchable\_79:

(Start: 8 @52213 has 34 MA's), (15, 52294), (18, 52321), (27, 52414), (28, 52423),

Gene: Vardy\_76 Start: 50912, Stop: 51259, Start Num: 8

Candidate Starts for Vardy\_76:

(Start: 8 @50912 has 34 MA's), (15, 50993), (18, 51020), (24, 51104), (28, 51122),

Gene: Zeph\_79 Start: 52050, Stop: 52397, Start Num: 8

Candidate Starts for Zeph\_79:

(Start: 8 @52050 has 34 MA's), (15, 52131), (18, 52158), (24, 52242), (28, 52260),