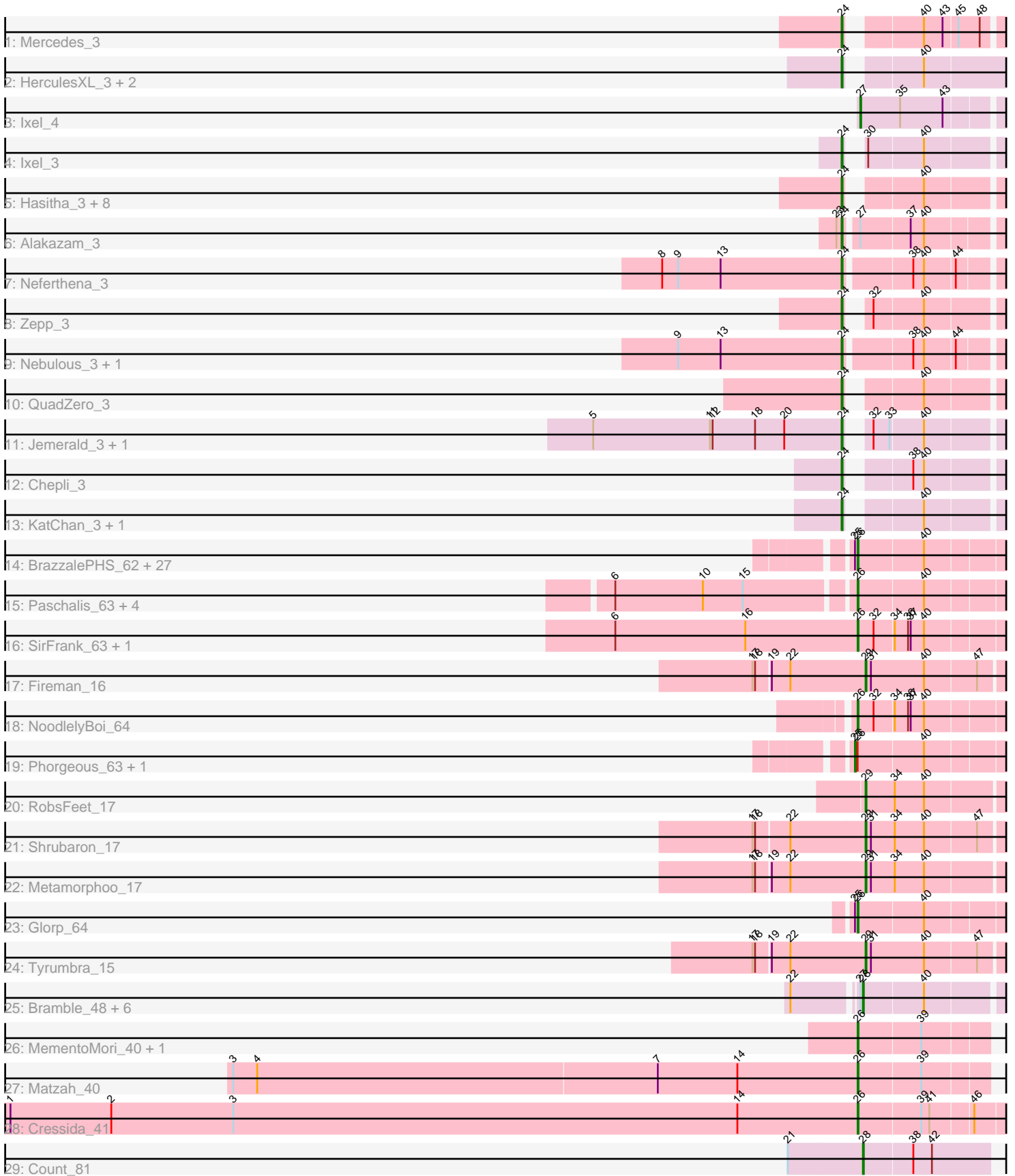


Pham 311501



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 311501 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311501 has 82 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Mercedes\_3
- Track 2 : HerculesXL\_3, Tinyman4\_3, Scissor2024\_3
- Track 3 : Ixel\_4
- Track 4 : Ixel\_3
- Track 5 : Hasitha\_3, Wardwill\_3, BaronJohn\_3, Zayuliv\_3, Greenlvy\_3, CaptainRex\_3, LilTerminator\_3, Fulton\_3, Librie\_3
- Track 6 : Alakazam\_3
- Track 7 : Neferthena\_3
- Track 8 : Zepp\_3
- Track 9 : Nebulous\_3, Clock\_3
- Track 10 : QuadZero\_3
- Track 11 : Jemerald\_3, Juicer\_3
- Track 12 : Chepli\_3
- Track 13 : KatChan\_3, Luna18\_3
- Track 14 : BrazzalePHS\_62, Shotgun\_63, Hermeonysus\_63, Rockwell\_62, Germa\_65, PhedwardCullen\_62, Kowalski\_62, Busephilis\_62, Savannah\_62, Piperis\_64, Phrancesco\_63, Jefe\_63, Cranjis\_64, Ganandorf\_62, Quhwah\_67, Selwyn23\_64, Scumberland\_65, Onika\_62, Honeyfin\_64, BeagleBug\_62, Pulchra\_65, Yeti\_65, LittleFortune\_65, Ramiel05\_62, Lucretia\_63, Jollipop\_64, PiperSansNom\_64, Antares\_63
- Track 15 : Paschalis\_63, EarickHC\_64, Crisis\_64, KaiHaiDragon\_64, PierreOrion\_63
- Track 16 : SirFrank\_63, ClearAsMud\_67
- Track 17 : Fireman\_16
- Track 18 : NoodlelyBoi\_64
- Track 19 : Phorgeous\_63, CrazyRich\_62
- Track 20 : RobsFeet\_17
- Track 21 : Shrubaron\_17
- Track 22 : Metamorphoo\_17
- Track 23 : Glorp\_64
- Track 24 : Tyumbra\_15
- Track 25 : Bramble\_48, LordBart\_48, RikSengupta\_48, TinyMiny\_48, Sparcetus\_48, Ajin\_48, Kors\_48
- Track 26 : MementoMori\_40, Cinna\_39
- Track 27 : Matzah\_40
- Track 28 : Cressida\_41
- Track 29 : Count\_81

### **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 37 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares\_63, BeagleBug\_62, BrazzalePHS\_62, Busephilis\_62, Cinna\_39, ClearAsMud\_67, Cranjis\_64, Cressida\_41, Crisis\_64, EarickHC\_64, Ganandorf\_62, Germa\_65, Glorp\_64, Hermeonysus\_63, Honeyfin\_64, Jefe\_63, Jollipop\_64, KaiHaiDragon\_64, Kowalski\_62, LittleFortune\_65, Lucretia\_63, Matzah\_40, MementoMori\_40, NoodlelyBoi\_64, Onika\_62, Paschalis\_63, PhedwardCullen\_62, Phrancesco\_63, PierreOrion\_63, PiperSansNom\_64, Piperis\_64, Pulchra\_65, Quhwah\_67, Ramiel05\_62, Rockwell\_62, Savannah\_62, Scumberland\_65, Selwyn23\_64, Shotgun\_63, SirFrank\_63, Yeti\_65,

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

- CrazyRich\_62, Phorgeous\_63,

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

- Ajin\_48, Alakazam\_3, BaronJohn\_3, Bramble\_48, CaptainRex\_3, Chepli\_3, Clock\_3, Count\_81, Fireman\_16, Fulton\_3, GreenIvy\_3, Hasitha\_3, HerculesXL\_3, Ixel\_3, Ixel\_4, Jemerald\_3, Juicer\_3, KatChan\_3, Kors\_48, Librie\_3, LilTerminator\_3, LordBart\_48, Luna18\_3, Mercedes\_3, Metamorphoo\_17, Nebulous\_3, Neferthena\_3, QuadZero\_3, RikSengupta\_48, RobsFeet\_17, Scissor2024\_3, Shrubaron\_17, Sparcetus\_48, TinyMiny\_48, Tinyman4\_3, Tyumbra\_15, Wardwill\_3, Zayuliv\_3, Zepp\_3,

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

Start 24:

- Found in 25 of 82 ( 30.5% ) of genes in pham
- Manual Annotations of this start: 24 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alakazam\_3 (EA5), BaronJohn\_3 (EA5), CaptainRex\_3 (EA5), Chepli\_3 (EA6), Clock\_3 (EA5), Fulton\_3 (EA5), GreenIvy\_3 (EA5), Hasitha\_3 (EA5), HerculesXL\_3 (EA11), Ixel\_3 (EA11), Jemerald\_3 (EA6), Juicer\_3 (EA6), KatChan\_3 (EA6), Librie\_3 (EA5), LilTerminator\_3 (EA5), Luna18\_3 (EA6), Mercedes\_3 (EA), Nebulous\_3 (EA5), Neferthena\_3 (EA5), QuadZero\_3 (EA5), Scissor2024\_3 (EA11), Tinyman4\_3 (EA11), Wardwill\_3 (EA5), Zayuliv\_3 (EA5), Zepp\_3 (EA5),

Start 25:

- Found in 31 of 82 ( 37.8% ) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 6.5% of time when present
- Phage (with cluster) where this start called: CrazyRich\_62 (EC), Phorgeous\_63 (EC),

Start 26:

- Found in 43 of 82 ( 52.4% ) of genes in pham
- Manual Annotations of this start: 37 of 77
- Called 95.3% of time when present
- Phage (with cluster) where this start called: Antares\_63 (EC), BeagleBug\_62 (EC), BrazzalePHS\_62 (EC), Busephilis\_62 (EC), Cinna\_39 (EI), ClearAsMud\_67 (EC), Cranjis\_64 (EC), Cressida\_41 (EI), Crisis\_64 (EC), EarickHC\_64 (EC), Ganandorf\_62 (EC), Germa\_65 (EC), Glorp\_64 (EC), Hermeonysus\_63 (EC), Honeyfin\_64 (EC), Jefe\_63 (EC), Jollipop\_64 (EC), KaiHaiDragon\_64 (EC), Kowalski\_62 (EC), LittleFortune\_65 (EC), Lucretia\_63 (EC), Matzah\_40 (EI), MementoMori\_40 (EI), NoodlelyBoi\_64 (EC), Onika\_62 (EC), Paschalis\_63 (EC), PhedwardCullen\_62 (EC), Phrancesco\_63 (EC), PierreOrion\_63 (EC), PiperSansNom\_64 (EC), Piperis\_64 (EC), Pulchra\_65 (EC), Quhwah\_67 (EC), Ramiel05\_62 (EC), Rockwell\_62 (EC), Savannah\_62 (EC), Scumberland\_65 (EC), Selwyn23\_64 (EC), Shotgun\_63 (EC), SirFrank\_63 (EC), Yeti\_65 (EC),

#### Start 27:

- Found in 9 of 82 ( 11.0% ) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Ixel\_4 (EA11),

#### Start 28:

- Found in 8 of 82 ( 9.8% ) of genes in pham
- Manual Annotations of this start: 8 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ajin\_48 (EF), Bramble\_48 (EF), Count\_81 (EL), Kors\_48 (EF), LordBart\_48 (EF), RikSengupta\_48 (EF), Sparcetus\_48 (EF), TinyMiny\_48 (EF),

#### Start 29:

- Found in 5 of 82 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 5 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fireman\_16 (EC), Metamorphoo\_17 (EC), RobsFeet\_17 (EC), Shrubaron\_17 (EC), Tyrumbra\_15 (EC),

### Summary by clusters:

There are 8 clusters represented in this pham: EL, EA11, EF, EA, EC, EI, EA5, EA6,

Info for manual annotations of cluster EA:

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

Info for manual annotations of cluster EA11:

- Start number 24 was manually annotated 3 times for cluster EA11.
- Start number 27 was manually annotated 1 time for cluster EA11.

Info for manual annotations of cluster EA5:

- Start number 24 was manually annotated 15 times for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 24 was manually annotated 5 times for cluster EA6.

Info for manual annotations of cluster EC:

- Start number 25 was manually annotated 2 times for cluster EC.
- Start number 26 was manually annotated 33 times for cluster EC.
- Start number 29 was manually annotated 5 times for cluster EC.

Info for manual annotations of cluster EF:

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

Info for manual annotations of cluster EI:

- Start number 26 was manually annotated 4 times for cluster EI.

Info for manual annotations of cluster EL:

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

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

Gene: Ajin\_48 Start: 30967, Stop: 31113, Start Num: 28

Candidate Starts for Ajin\_48:

(22, 30898), (Start: 27 @30964 has 1 MA's), (Start: 28 @30967 has 8 MA's), (40, 31033),

Gene: Alakazam\_3 Start: 2071, Stop: 2229, Start Num: 24

Candidate Starts for Alakazam\_3:

(23, 2065), (Start: 24 @2071 has 24 MA's), (Start: 27 @2083 has 1 MA's), (37, 2137), (40, 2152),

Gene: Antares\_63 Start: 40647, Stop: 40802, Start Num: 26

Candidate Starts for Antares\_63:

(Start: 25 @40644 has 2 MA's), (Start: 26 @40647 has 37 MA's), (40, 40719),

Gene: BaronJohn\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for BaronJohn\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: BeagleBug\_62 Start: 40427, Stop: 40582, Start Num: 26

Candidate Starts for BeagleBug\_62:

(Start: 25 @40424 has 2 MA's), (Start: 26 @40427 has 37 MA's), (40, 40499),

Gene: Bramble\_48 Start: 31016, Stop: 31162, Start Num: 28

Candidate Starts for Bramble\_48:

(22, 30947), (Start: 27 @31013 has 1 MA's), (Start: 28 @31016 has 8 MA's), (40, 31082),

Gene: BrazzalePHS\_62 Start: 40409, Stop: 40564, Start Num: 26

Candidate Starts for BrazzalePHS\_62:

(Start: 25 @40406 has 2 MA's), (Start: 26 @40409 has 37 MA's), (40, 40481),

Gene: Busephilis\_62 Start: 40354, Stop: 40509, Start Num: 26

Candidate Starts for Busephilis\_62:

(Start: 25 @40351 has 2 MA's), (Start: 26 @40354 has 37 MA's), (40, 40426),

Gene: CaptainRex\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for CaptainRex\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: Chepli\_3 Start: 2101, Stop: 2247, Start Num: 24

Candidate Starts for Chepli\_3:

(Start: 24 @2101 has 24 MA's), (38, 2155), (40, 2167),

Gene: Cinna\_39 Start: 31034, Stop: 31174, Start Num: 26

Candidate Starts for Cinna\_39:

(Start: 26 @31034 has 37 MA's), (39, 31103),

Gene: ClearAsMud\_67 Start: 40937, Stop: 41092, Start Num: 26

Candidate Starts for ClearAsMud\_67:

(6, 40664), (16, 40811), (Start: 26 @40937 has 37 MA's), (32, 40955), (34, 40976), (36, 40991), (37, 40994), (40, 41009),

Gene: Clock\_3 Start: 2104, Stop: 2262, Start Num: 24

Candidate Starts for Clock\_3:

(9, 1921), (13, 1969), (Start: 24 @2104 has 24 MA's), (38, 2173), (40, 2185), (44, 2218),

Gene: Count\_81 Start: 55860, Stop: 56000, Start Num: 28

Candidate Starts for Count\_81:

(21, 55776), (Start: 28 @55860 has 8 MA's), (38, 55914), (42, 55935),

Gene: Cranjis\_64 Start: 40602, Stop: 40757, Start Num: 26

Candidate Starts for Cranjis\_64:

(Start: 25 @40599 has 2 MA's), (Start: 26 @40602 has 37 MA's), (40, 40674),

Gene: CrazyRich\_62 Start: 40408, Stop: 40566, Start Num: 25

Candidate Starts for CrazyRich\_62:

(Start: 25 @40408 has 2 MA's), (Start: 26 @40411 has 37 MA's), (40, 40483),

Gene: Cressida\_41 Start: 30483, Stop: 30641, Start Num: 26

Candidate Starts for Cressida\_41:

(1, 29526), (2, 29640), (3, 29778), (14, 30348), (Start: 26 @30483 has 37 MA's), (39, 30552), (41, 30561), (46, 30606),

Gene: Crisis\_64 Start: 40417, Stop: 40572, Start Num: 26

Candidate Starts for Crisis\_64:

(6, 40159), (10, 40258), (15, 40303), (Start: 26 @40417 has 37 MA's), (40, 40489),

Gene: EarickHC\_64 Start: 40339, Stop: 40494, Start Num: 26

Candidate Starts for EarickHC\_64:

(6, 40081), (10, 40180), (15, 40225), (Start: 26 @40339 has 37 MA's), (40, 40411),

Gene: Fireman\_16 Start: 6897, Stop: 7046, Start Num: 29

Candidate Starts for Fireman\_16:

(17, 6774), (18, 6777), (19, 6792), (22, 6813), (Start: 29 @6897 has 5 MA's), (31, 6903), (40, 6963), (47, 7020),

Gene: Fulton\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Fulton\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: Ganandorf\_62 Start: 40435, Stop: 40590, Start Num: 26

Candidate Starts for Ganandorf\_62:

(Start: 25 @40432 has 2 MA's), (Start: 26 @40435 has 37 MA's), (40, 40507),

Gene: Germa\_65 Start: 40265, Stop: 40420, Start Num: 26

Candidate Starts for Germa\_65:

(Start: 25 @40262 has 2 MA's), (Start: 26 @40265 has 37 MA's), (40, 40337),

Gene: Glorp\_64 Start: 40402, Stop: 40557, Start Num: 26

Candidate Starts for Glorp\_64:

(Start: 25 @40399 has 2 MA's), (Start: 26 @40402 has 37 MA's), (40, 40474),

Gene: Greenlvy\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Greenlvy\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: Hasitha\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Hasitha\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: HerculesXL\_3 Start: 1952, Stop: 2107, Start Num: 24

Candidate Starts for HerculesXL\_3:

(Start: 24 @1952 has 24 MA's), (40, 2018),

Gene: Hermeonysus\_63 Start: 40330, Stop: 40485, Start Num: 26

Candidate Starts for Hermeonysus\_63:

(Start: 25 @40327 has 2 MA's), (Start: 26 @40330 has 37 MA's), (40, 40402),

Gene: Honeyfin\_64 Start: 40590, Stop: 40745, Start Num: 26

Candidate Starts for Honeyfin\_64:

(Start: 25 @40587 has 2 MA's), (Start: 26 @40590 has 37 MA's), (40, 40662),

Gene: Ixel\_4 Start: 2216, Stop: 2365, Start Num: 27

Candidate Starts for Ixel\_4:

(Start: 27 @2216 has 1 MA's), (35, 2261), (43, 2309),

Gene: Ixel\_3 Start: 2066, Stop: 2212, Start Num: 24

Candidate Starts for Ixel\_3:

(Start: 24 @2066 has 24 MA's), (30, 2072), (40, 2132),

Gene: Jefe\_63 Start: 40388, Stop: 40543, Start Num: 26

Candidate Starts for Jefe\_63:

(Start: 25 @40385 has 2 MA's), (Start: 26 @40388 has 37 MA's), (40, 40460),

Gene: Jemerald\_3 Start: 2077, Stop: 2223, Start Num: 24

Candidate Starts for Jemerald\_3:

(5, 1798), (11, 1930), (12, 1933), (18, 1981), (20, 2014), (Start: 24 @2077 has 24 MA's), (32, 2089), (33, 2107), (40, 2143),

Gene: Jollipop\_64 Start: 40770, Stop: 40925, Start Num: 26

Candidate Starts for Jollipop\_64:

(Start: 25 @40767 has 2 MA's), (Start: 26 @40770 has 37 MA's), (40, 40842),

Gene: Juicer\_3 Start: 2077, Stop: 2223, Start Num: 24

Candidate Starts for Juicer\_3:

(5, 1798), (11, 1930), (12, 1933), (18, 1981), (20, 2014), (Start: 24 @2077 has 24 MA's), (32, 2089), (33, 2107), (40, 2143),

Gene: KaiHaiDragon\_64 Start: 40339, Stop: 40494, Start Num: 26

Candidate Starts for KaiHaiDragon\_64:

(6, 40081), (10, 40180), (15, 40225), (Start: 26 @40339 has 37 MA's), (40, 40411),

Gene: KatChan\_3 Start: 2101, Stop: 2247, Start Num: 24

Candidate Starts for KatChan\_3:

(Start: 24 @2101 has 24 MA's), (40, 2167),

Gene: Kors\_48 Start: 31044, Stop: 31190, Start Num: 28

Candidate Starts for Kors\_48:

(22, 30975), (Start: 27 @31041 has 1 MA's), (Start: 28 @31044 has 8 MA's), (40, 31110),

Gene: Kowalski\_62 Start: 40404, Stop: 40559, Start Num: 26

Candidate Starts for Kowalski\_62:

(Start: 25 @40401 has 2 MA's), (Start: 26 @40404 has 37 MA's), (40, 40476),

Gene: Librie\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Librie\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: LilTerminator\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for LilTerminator\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: LittleFortune\_65 Start: 40695, Stop: 40850, Start Num: 26

Candidate Starts for LittleFortune\_65:

(Start: 25 @40692 has 2 MA's), (Start: 26 @40695 has 37 MA's), (40, 40767),

Gene: LordBart\_48 Start: 30953, Stop: 31099, Start Num: 28

Candidate Starts for LordBart\_48:

(22, 30884), (Start: 27 @30950 has 1 MA's), (Start: 28 @30953 has 8 MA's), (40, 31019),

Gene: Lucretia\_63 Start: 40320, Stop: 40475, Start Num: 26

Candidate Starts for Lucretia\_63:

(Start: 25 @40317 has 2 MA's), (Start: 26 @40320 has 37 MA's), (40, 40392),

Gene: Luna18\_3 Start: 2101, Stop: 2247, Start Num: 24

Candidate Starts for Luna18\_3:

(Start: 24 @2101 has 24 MA's), (40, 2167),

Gene: Matzah\_40 Start: 30974, Stop: 31114, Start Num: 26

Candidate Starts for Matzah\_40:

(3, 30272), (4, 30299), (7, 30749), (14, 30839), (Start: 26 @30974 has 37 MA's), (39, 31043),

Gene: MementoMori\_40 Start: 30722, Stop: 30862, Start Num: 26

Candidate Starts for MementoMori\_40:

(Start: 26 @30722 has 37 MA's), (39, 30791),

Gene: Mercedes\_3 Start: 1955, Stop: 2101, Start Num: 24

Candidate Starts for Mercedes\_3:

(Start: 24 @1955 has 24 MA's), (40, 2021), (43, 2042), (45, 2057), (48, 2081),

Gene: Metamorphoo\_17 Start: 7070, Stop: 7219, Start Num: 29

Candidate Starts for Metamorphoo\_17:

(17, 6947), (18, 6950), (19, 6965), (22, 6986), (Start: 29 @7070 has 5 MA's), (31, 7076), (34, 7103), (40, 7136),

Gene: Nebulous\_3 Start: 2113, Stop: 2271, Start Num: 24

Candidate Starts for Nebulous\_3:

(9, 1930), (13, 1978), (Start: 24 @2113 has 24 MA's), (38, 2182), (40, 2194), (44, 2227),

Gene: Neferthema\_3 Start: 2107, Stop: 2265, Start Num: 24

Candidate Starts for Neferthema\_3:

(8, 1906), (9, 1924), (13, 1972), (Start: 24 @2107 has 24 MA's), (38, 2176), (40, 2188), (44, 2221),

Gene: NoodlelyBoi\_64 Start: 41186, Stop: 41341, Start Num: 26

Candidate Starts for NoodlelyBoi\_64:

(Start: 26 @41186 has 37 MA's), (32, 41204), (34, 41225), (36, 41240), (37, 41243), (40, 41258),

Gene: Onika\_62 Start: 40413, Stop: 40568, Start Num: 26

Candidate Starts for Onika\_62:

(Start: 25 @40410 has 2 MA's), (Start: 26 @40413 has 37 MA's), (40, 40485),

Gene: Paschalis\_63 Start: 40435, Stop: 40590, Start Num: 26

Candidate Starts for Paschalis\_63:

(6, 40177), (10, 40276), (15, 40321), (Start: 26 @40435 has 37 MA's), (40, 40507),

Gene: PhedwardCullen\_62 Start: 40158, Stop: 40313, Start Num: 26

Candidate Starts for PhedwardCullen\_62:

(Start: 25 @40155 has 2 MA's), (Start: 26 @40158 has 37 MA's), (40, 40230),

Gene: Phorgeous\_63 Start: 40218, Stop: 40376, Start Num: 25

Candidate Starts for Phorgeous\_63:

(Start: 25 @40218 has 2 MA's), (Start: 26 @40221 has 37 MA's), (40, 40293),

Gene: Phrancesco\_63 Start: 40544, Stop: 40699, Start Num: 26

Candidate Starts for Phrancesco\_63:

(Start: 25 @40541 has 2 MA's), (Start: 26 @40544 has 37 MA's), (40, 40616),

Gene: PierreOrion\_63 Start: 40644, Stop: 40799, Start Num: 26

Candidate Starts for PierreOrion\_63:

(6, 40386), (10, 40485), (15, 40530), (Start: 26 @40644 has 37 MA's), (40, 40716),

Gene: PiperSansNom\_64 Start: 40726, Stop: 40881, Start Num: 26

Candidate Starts for PiperSansNom\_64:

(Start: 25 @40723 has 2 MA's), (Start: 26 @40726 has 37 MA's), (40, 40798),

Gene: Piperis\_64 Start: 40346, Stop: 40501, Start Num: 26

Candidate Starts for Piperis\_64:

(Start: 25 @40343 has 2 MA's), (Start: 26 @40346 has 37 MA's), (40, 40418),

Gene: Pulchra\_65 Start: 40742, Stop: 40897, Start Num: 26

Candidate Starts for Pulchra\_65:  
(Start: 25 @40739 has 2 MA's), (Start: 26 @40742 has 37 MA's), (40, 40814),

Gene: QuadZero\_3 Start: 1963, Stop: 2109, Start Num: 24  
Candidate Starts for QuadZero\_3:  
(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: Quhwah\_67 Start: 41034, Stop: 41189, Start Num: 26  
Candidate Starts for Quhwah\_67:  
(Start: 25 @41031 has 2 MA's), (Start: 26 @41034 has 37 MA's), (40, 41106),

Gene: Ramiel05\_62 Start: 40404, Stop: 40559, Start Num: 26  
Candidate Starts for Ramiel05\_62:  
(Start: 25 @40401 has 2 MA's), (Start: 26 @40404 has 37 MA's), (40, 40476),

Gene: RikSengupta\_48 Start: 31081, Stop: 31227, Start Num: 28  
Candidate Starts for RikSengupta\_48:  
(22, 31012), (Start: 27 @31078 has 1 MA's), (Start: 28 @31081 has 8 MA's), (40, 31147),

Gene: RobsFeet\_17 Start: 6912, Stop: 7061, Start Num: 29  
Candidate Starts for RobsFeet\_17:  
(Start: 29 @6912 has 5 MA's), (34, 6945), (40, 6978),

Gene: Rockwell\_62 Start: 40437, Stop: 40592, Start Num: 26  
Candidate Starts for Rockwell\_62:  
(Start: 25 @40434 has 2 MA's), (Start: 26 @40437 has 37 MA's), (40, 40509),

Gene: Savannah\_62 Start: 40464, Stop: 40619, Start Num: 26  
Candidate Starts for Savannah\_62:  
(Start: 25 @40461 has 2 MA's), (Start: 26 @40464 has 37 MA's), (40, 40536),

Gene: Scissor2024\_3 Start: 1952, Stop: 2107, Start Num: 24  
Candidate Starts for Scissor2024\_3:  
(Start: 24 @1952 has 24 MA's), (40, 2018),

Gene: Scumberland\_65 Start: 40659, Stop: 40814, Start Num: 26  
Candidate Starts for Scumberland\_65:  
(Start: 25 @40656 has 2 MA's), (Start: 26 @40659 has 37 MA's), (40, 40731),

Gene: Selwyn23\_64 Start: 40576, Stop: 40731, Start Num: 26  
Candidate Starts for Selwyn23\_64:  
(Start: 25 @40573 has 2 MA's), (Start: 26 @40576 has 37 MA's), (40, 40648),

Gene: Shotgun\_63 Start: 40340, Stop: 40495, Start Num: 26  
Candidate Starts for Shotgun\_63:  
(Start: 25 @40337 has 2 MA's), (Start: 26 @40340 has 37 MA's), (40, 40412),

Gene: Shrubaron\_17 Start: 6959, Stop: 7108, Start Num: 29  
Candidate Starts for Shrubaron\_17:  
(17, 6836), (18, 6839), (22, 6875), (Start: 29 @6959 has 5 MA's), (31, 6965), (34, 6992), (40, 7025),  
(47, 7082),

Gene: SirFrank\_63 Start: 40632, Stop: 40787, Start Num: 26

Candidate Starts for SirFrank\_63:

(6, 40359), (16, 40506), (Start: 26 @40632 has 37 MA's), (32, 40650), (34, 40671), (36, 40686), (37, 40689), (40, 40704),

Gene: Sparcetus\_48 Start: 30958, Stop: 31104, Start Num: 28

Candidate Starts for Sparcetus\_48:

(22, 30889), (Start: 27 @30955 has 1 MA's), (Start: 28 @30958 has 8 MA's), (40, 31024),

Gene: TinyMiny\_48 Start: 30979, Stop: 31125, Start Num: 28

Candidate Starts for TinyMiny\_48:

(22, 30910), (Start: 27 @30976 has 1 MA's), (Start: 28 @30979 has 8 MA's), (40, 31045),

Gene: Tinyman4\_3 Start: 1952, Stop: 2107, Start Num: 24

Candidate Starts for Tinyman4\_3:

(Start: 24 @1952 has 24 MA's), (40, 2018),

Gene: Tyrumbra\_15 Start: 6388, Stop: 6537, Start Num: 29

Candidate Starts for Tyrumbra\_15:

(17, 6265), (18, 6268), (19, 6283), (22, 6304), (Start: 29 @6388 has 5 MA's), (31, 6394), (40, 6454), (47, 6511),

Gene: Wardwill\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Wardwill\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: Yeti\_65 Start: 40378, Stop: 40533, Start Num: 26

Candidate Starts for Yeti\_65:

(Start: 25 @40375 has 2 MA's), (Start: 26 @40378 has 37 MA's), (40, 40450),

Gene: Zayuliv\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Zayuliv\_3:

(Start: 24 @1963 has 24 MA's), (40, 2029),

Gene: Zepp\_3 Start: 1963, Stop: 2109, Start Num: 24

Candidate Starts for Zepp\_3:

(Start: 24 @1963 has 24 MA's), (32, 1975), (40, 2029),