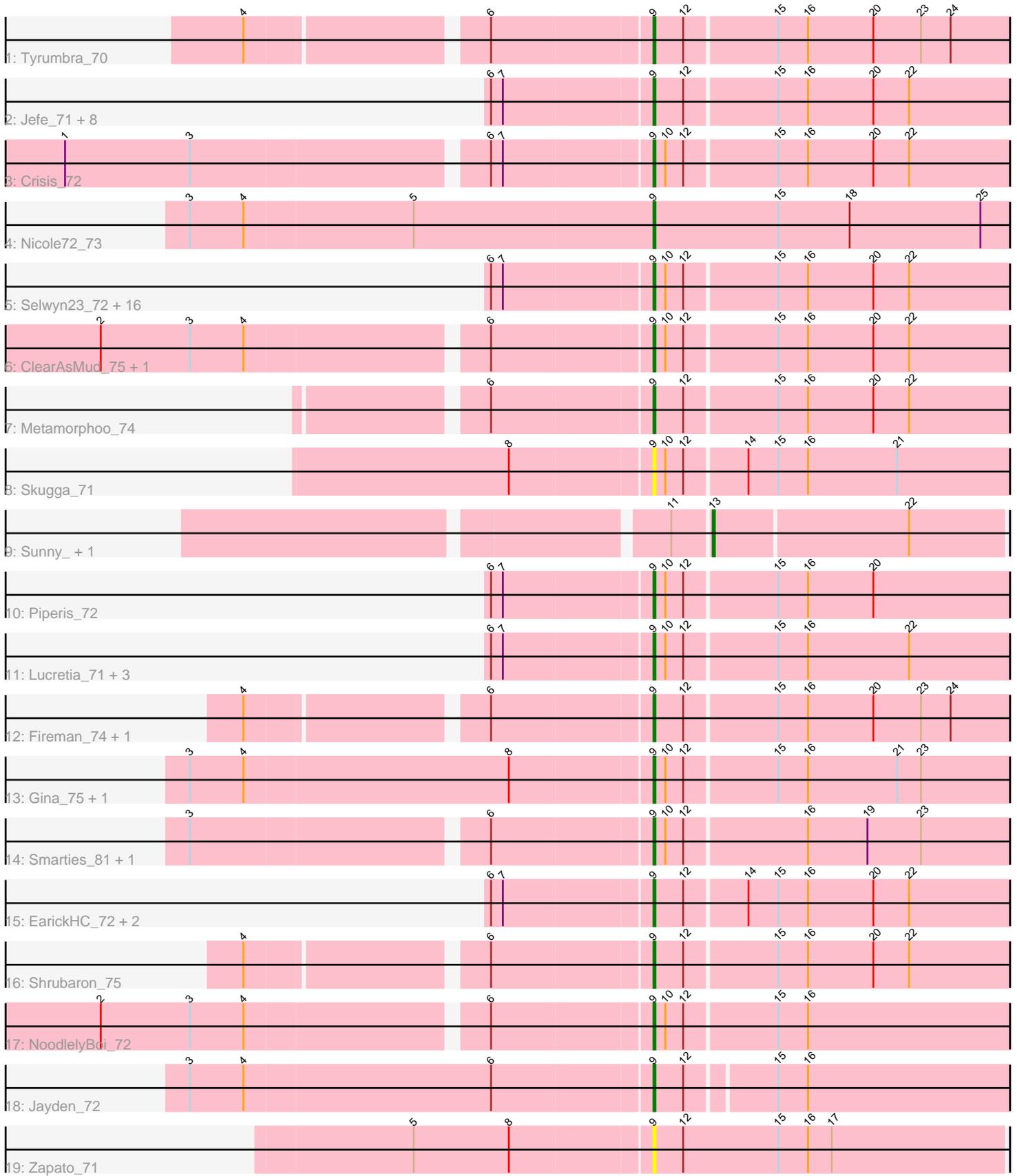


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 289470 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289470 has 53 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Tyrumbra\_70
- Track 2 : Jefe\_71, PhedwardCullen\_69, Yeti\_73, BeagleBug\_70, CrazyRich\_70, LittleFortune\_73, Hermeonysus\_71, Honeyfin\_72, PierreOrion\_71
- Track 3 : Crisis\_72
- Track 4 : Nicole72\_73
- Track 5 : Selwyn23\_72, Quhwah\_75, Onika\_70, Glorp\_72, Cranjis\_72, Jollipop\_72, PiperSansNom\_72, Antares\_71, Kowalski\_70, Shotgun\_71, Ganandorf\_70, Scumberland\_73, Rockwell\_70, Paschalis\_71, Ramiel05\_70, Savannah\_70, BrazzalePHS\_70
- Track 6 : ClearAsMud\_75, SirFrank\_71
- Track 7 : Metamorphoo\_74
- Track 8 : Skugga\_71
- Track 9 : Sunny\_, Merry\_
- Track 10 : Piperis\_72
- Track 11 : Lucretia\_71, Phrancesco\_71, Pulchra\_73, Busephilis\_70
- Track 12 : Fireman\_74, RobsFeet\_75
- Track 13 : Gina\_75, Teamocil\_75
- Track 14 : Smarties\_81, Ariadne\_81
- Track 15 : EarickHC\_72, KaiHaiDragon\_72, Phorgeous\_71
- Track 16 : Shrubaron\_75
- Track 17 : NoodlelyBoi\_72
- Track 18 : Jayden\_72
- Track 19 : Zapato\_71

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

The start number called the most often in the published annotations is 9, it was called in 44 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares\_71, Ariadne\_81, BeagleBug\_70, BrazzalePHS\_70, Busephilis\_70, ClearAsMud\_75, Cranjis\_72, CrazyRich\_70, Crisis\_72, EarickHC\_72, Fireman\_74, Ganandorf\_70, Gina\_75, Glorp\_72, Hermeonysus\_71, Honeyfin\_72, Jayden\_72, Jefe\_71, Jollipop\_72, KaiHaiDragon\_72, Kowalski\_70, LittleFortune\_73, Lucretia\_71,

Metamorphoo\_74, Nicole72\_73, NoodlelyBoi\_72, Onika\_70, Paschalis\_71, PhedwardCullen\_69, Phorgeous\_71, Phrancesco\_71, PierreOrion\_71, PiperSansNom\_72, Piperis\_72, Pulchra\_73, Quhwah\_75, Ramiel05\_70, RobsFeet\_75, Rockwell\_70, Savannah\_70, Scumberland\_73, Selwyn23\_72, Shotgun\_71, Shrubaron\_75, SirFrank\_71, Skugga\_71, Smarties\_81, Teamocil\_75, Tyrumbra\_70, Yeti\_73, Zapato\_71,

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

- 

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

- Merry\_, Sunny\_

### Summary by start number:

Start 9:

- Found in 51 of 53 ( 96.2% ) of genes in pham
- Manual Annotations of this start: 44 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antares\_71 (EC), Ariadne\_81 (EC), BeagleBug\_70 (EC), BrazzalePHS\_70 (EC), Busephilis\_70 (EC), ClearAsMud\_75 (EC), Cranjis\_72 (EC), CrazyRich\_70 (EC), Crisis\_72 (EC), EarickHC\_72 (EC), Fireman\_74 (EC), Ganandorf\_70 (EC), Gina\_75 (EC), Glorp\_72 (EC), Hermeonysus\_71 (EC), Honeyfin\_72 (EC), Jayden\_72 (EC), Jefe\_71 (EC), Jollipop\_72 (EC), KaiHaiDragon\_72 (EC), Kowalski\_70 (EC), LittleFortune\_73 (EC), Lucretia\_71 (EC), Metamorphoo\_74 (EC), Nicole72\_73 (EC), NoodlelyBoi\_72 (EC), Onika\_70 (EC), Paschalis\_71 (EC), PhedwardCullen\_69 (EC), Phorgeous\_71 (EC), Phrancesco\_71 (EC), PierreOrion\_71 (EC), PiperSansNom\_72 (EC), Piperis\_72 (EC), Pulchra\_73 (EC), Quhwah\_75 (EC), Ramiel05\_70 (EC), RobsFeet\_75 (EC), Rockwell\_70 (EC), Savannah\_70 (EC), Scumberland\_73 (EC), Selwyn23\_72 (EC), Shotgun\_71 (EC), Shrubaron\_75 (EC), SirFrank\_71 (EC), Skugga\_71 (EC), Smarties\_81 (EC), Teamocil\_75 (EC), Tyrumbra\_70 (EC), Yeti\_73 (EC), Zapato\_71 (EC),

Start 13:

- Found in 2 of 53 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 2 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Merry\_ (EC), Sunny\_ (EC),

### Summary by clusters:

There is one cluster represented in this pham: EC

Info for manual annotations of cluster EC:

- Start number 9 was manually annotated 44 times for cluster EC.
- Start number 13 was manually annotated 2 times for cluster EC.

### Gene Information:

Gene: Antares\_71 Start: 43482, Stop: 43658, Start Num: 9

Candidate Starts for Antares\_71:

(6, 43404), (7, 43410), (Start: 9 @43482 has 44 MA's), (10, 43488), (12, 43497), (15, 43542), (16, 43557), (20, 43590), (22, 43608),

Gene: Ariadne\_81 Start: 45071, Stop: 45247, Start Num: 9

Candidate Starts for Ariadne\_81:

(3, 44852), (6, 44993), (Start: 9 @45071 has 44 MA's), (10, 45077), (12, 45086), (16, 45146), (19, 45176), (23, 45203),

Gene: BeagleBug\_70 Start: 43262, Stop: 43438, Start Num: 9

Candidate Starts for BeagleBug\_70:

(6, 43184), (7, 43190), (Start: 9 @43262 has 44 MA's), (12, 43277), (15, 43322), (16, 43337), (20, 43370), (22, 43388),

Gene: BrazzalePHS\_70 Start: 43250, Stop: 43426, Start Num: 9

Candidate Starts for BrazzalePHS\_70:

(6, 43172), (7, 43178), (Start: 9 @43250 has 44 MA's), (10, 43256), (12, 43265), (15, 43310), (16, 43325), (20, 43358), (22, 43376),

Gene: Busephilis\_70 Start: 43189, Stop: 43365, Start Num: 9

Candidate Starts for Busephilis\_70:

(6, 43111), (7, 43117), (Start: 9 @43189 has 44 MA's), (10, 43195), (12, 43204), (15, 43249), (16, 43264), (22, 43315),

Gene: ClearAsMud\_75 Start: 43770, Stop: 43946, Start Num: 9

Candidate Starts for ClearAsMud\_75:

(2, 43506), (3, 43551), (4, 43578), (6, 43692), (Start: 9 @43770 has 44 MA's), (10, 43776), (12, 43785), (15, 43830), (16, 43845), (20, 43878), (22, 43896),

Gene: Cranjis\_72 Start: 43437, Stop: 43613, Start Num: 9

Candidate Starts for Cranjis\_72:

(6, 43359), (7, 43365), (Start: 9 @43437 has 44 MA's), (10, 43443), (12, 43452), (15, 43497), (16, 43512), (20, 43545), (22, 43563),

Gene: CrazyRich\_70 Start: 43243, Stop: 43419, Start Num: 9

Candidate Starts for CrazyRich\_70:

(6, 43165), (7, 43171), (Start: 9 @43243 has 44 MA's), (12, 43258), (15, 43303), (16, 43318), (20, 43351), (22, 43369),

Gene: Crisis\_72 Start: 43252, Stop: 43428, Start Num: 9

Candidate Starts for Crisis\_72:

(1, 42970), (3, 43033), (6, 43174), (7, 43180), (Start: 9 @43252 has 44 MA's), (10, 43258), (12, 43267), (15, 43312), (16, 43327), (20, 43360), (22, 43378),

Gene: EarickHC\_72 Start: 43174, Stop: 43350, Start Num: 9

Candidate Starts for EarickHC\_72:

(6, 43096), (7, 43102), (Start: 9 @43174 has 44 MA's), (12, 43189), (14, 43219), (15, 43234), (16, 43249), (20, 43282), (22, 43300),

Gene: Fireman\_74 Start: 45207, Stop: 45383, Start Num: 9

Candidate Starts for Fireman\_74:

(4, 45018), (6, 45129), (Start: 9 @45207 has 44 MA's), (12, 45222), (15, 45267), (16, 45282), (20, 45315), (23, 45339), (24, 45354),

Gene: Ganandorf\_70 Start: 43270, Stop: 43446, Start Num: 9

Candidate Starts for Ganandorf\_70:

(6, 43192), (7, 43198), (Start: 9 @43270 has 44 MA's), (10, 43276), (12, 43285), (15, 43330), (16, 43345), (20, 43378), (22, 43396),

Gene: Gina\_75 Start: 43324, Stop: 43500, Start Num: 9

Candidate Starts for Gina\_75:

(3, 43096), (4, 43123), (8, 43255), (Start: 9 @43324 has 44 MA's), (10, 43330), (12, 43339), (15, 43384), (16, 43399), (21, 43444), (23, 43456),

Gene: Glorp\_72 Start: 43234, Stop: 43410, Start Num: 9

Candidate Starts for Glorp\_72:

(6, 43156), (7, 43162), (Start: 9 @43234 has 44 MA's), (10, 43240), (12, 43249), (15, 43294), (16, 43309), (20, 43342), (22, 43360),

Gene: Hermeonysus\_71 Start: 43159, Stop: 43335, Start Num: 9

Candidate Starts for Hermeonysus\_71:

(6, 43081), (7, 43087), (Start: 9 @43159 has 44 MA's), (12, 43174), (15, 43219), (16, 43234), (20, 43267), (22, 43285),

Gene: Honeyfin\_72 Start: 43419, Stop: 43595, Start Num: 9

Candidate Starts for Honeyfin\_72:

(6, 43341), (7, 43347), (Start: 9 @43419 has 44 MA's), (12, 43434), (15, 43479), (16, 43494), (20, 43527), (22, 43545),

Gene: Jayden\_72 Start: 43680, Stop: 43853, Start Num: 9

Candidate Starts for Jayden\_72:

(3, 43452), (4, 43479), (6, 43602), (Start: 9 @43680 has 44 MA's), (12, 43695), (15, 43737), (16, 43752),

Gene: Jefe\_71 Start: 43220, Stop: 43396, Start Num: 9

Candidate Starts for Jefe\_71:

(6, 43142), (7, 43148), (Start: 9 @43220 has 44 MA's), (12, 43235), (15, 43280), (16, 43295), (20, 43328), (22, 43346),

Gene: Jollipop\_72 Start: 43608, Stop: 43784, Start Num: 9

Candidate Starts for Jollipop\_72:

(6, 43530), (7, 43536), (Start: 9 @43608 has 44 MA's), (10, 43614), (12, 43623), (15, 43668), (16, 43683), (20, 43716), (22, 43734),

Gene: KaiHaiDragon\_72 Start: 43174, Stop: 43350, Start Num: 9

Candidate Starts for KaiHaiDragon\_72:

(6, 43096), (7, 43102), (Start: 9 @43174 has 44 MA's), (12, 43189), (14, 43219), (15, 43234), (16, 43249), (20, 43282), (22, 43300),

Gene: Kowalski\_70 Start: 43245, Stop: 43421, Start Num: 9

Candidate Starts for Kowalski\_70:

(6, 43167), (7, 43173), (Start: 9 @43245 has 44 MA's), (10, 43251), (12, 43260), (15, 43305), (16, 43320), (20, 43353), (22, 43371),

Gene: LittleFortune\_73 Start: 43530, Stop: 43706, Start Num: 9

Candidate Starts for LittleFortune\_73:

(6, 43452), (7, 43458), (Start: 9 @43530 has 44 MA's), (12, 43545), (15, 43590), (16, 43605), (20, 43638), (22, 43656),

Gene: Lucretia\_71 Start: 43152, Stop: 43328, Start Num: 9

Candidate Starts for Lucretia\_71:

(6, 43074), (7, 43080), (Start: 9 @43152 has 44 MA's), (10, 43158), (12, 43167), (15, 43212), (16, 43227), (22, 43278),

Gene: Merry\_ Start: 44856, Stop: 44999, Start Num: 13

Candidate Starts for Merry\_:

(11, 44838), (Start: 13 @44856 has 2 MA's), (22, 44952),

Gene: Metamorphoo\_74 Start: 44501, Stop: 44677, Start Num: 9

Candidate Starts for Metamorphoo\_74:

(6, 44423), (Start: 9 @44501 has 44 MA's), (12, 44516), (15, 44561), (16, 44576), (20, 44609), (22, 44627),

Gene: Nicole72\_73 Start: 48942, Stop: 49121, Start Num: 9

Candidate Starts for Nicole72\_73:

(3, 48711), (4, 48738), (5, 48822), (Start: 9 @48942 has 44 MA's), (15, 49005), (18, 49041), (25, 49107),

Gene: NoodlelyBoi\_72 Start: 44019, Stop: 44195, Start Num: 9

Candidate Starts for NoodlelyBoi\_72:

(2, 43755), (3, 43800), (4, 43827), (6, 43941), (Start: 9 @44019 has 44 MA's), (10, 44025), (12, 44034), (15, 44079), (16, 44094),

Gene: Onika\_70 Start: 43248, Stop: 43424, Start Num: 9

Candidate Starts for Onika\_70:

(6, 43170), (7, 43176), (Start: 9 @43248 has 44 MA's), (10, 43254), (12, 43263), (15, 43308), (16, 43323), (20, 43356), (22, 43374),

Gene: Paschalis\_71 Start: 43273, Stop: 43449, Start Num: 9

Candidate Starts for Paschalis\_71:

(6, 43195), (7, 43201), (Start: 9 @43273 has 44 MA's), (10, 43279), (12, 43288), (15, 43333), (16, 43348), (20, 43381), (22, 43399),

Gene: PhedwardCullen\_69 Start: 42990, Stop: 43166, Start Num: 9

Candidate Starts for PhedwardCullen\_69:

(6, 42912), (7, 42918), (Start: 9 @42990 has 44 MA's), (12, 43005), (15, 43050), (16, 43065), (20, 43098), (22, 43116),

Gene: Phorgeous\_71 Start: 43056, Stop: 43232, Start Num: 9

Candidate Starts for Phorgeous\_71:

(6, 42978), (7, 42984), (Start: 9 @43056 has 44 MA's), (12, 43071), (14, 43101), (15, 43116), (16, 43131), (20, 43164), (22, 43182),

Gene: Phrancesco\_71 Start: 43379, Stop: 43555, Start Num: 9

Candidate Starts for Phrancesco\_71:

(6, 43301), (7, 43307), (Start: 9 @43379 has 44 MA's), (10, 43385), (12, 43394), (15, 43439), (16, 43454), (22, 43505),

Gene: PierreOrion\_71 Start: 43485, Stop: 43661, Start Num: 9

Candidate Starts for PierreOrion\_71:

(6, 43407), (7, 43413), (Start: 9 @43485 has 44 MA's), (12, 43500), (15, 43545), (16, 43560), (20, 43593), (22, 43611),

Gene: PiperSansNom\_72 Start: 43558, Stop: 43734, Start Num: 9

Candidate Starts for PiperSansNom\_72:

(6, 43480), (7, 43486), (Start: 9 @43558 has 44 MA's), (10, 43564), (12, 43573), (15, 43618), (16, 43633), (20, 43666), (22, 43684),

Gene: Piperis\_72 Start: 43181, Stop: 43357, Start Num: 9

Candidate Starts for Piperis\_72:

(6, 43103), (7, 43109), (Start: 9 @43181 has 44 MA's), (10, 43187), (12, 43196), (15, 43241), (16, 43256), (20, 43289),

Gene: Pulchra\_73 Start: 43577, Stop: 43753, Start Num: 9

Candidate Starts for Pulchra\_73:

(6, 43499), (7, 43505), (Start: 9 @43577 has 44 MA's), (10, 43583), (12, 43592), (15, 43637), (16, 43652), (22, 43703),

Gene: Quhwah\_75 Start: 43866, Stop: 44042, Start Num: 9

Candidate Starts for Quhwah\_75:

(6, 43788), (7, 43794), (Start: 9 @43866 has 44 MA's), (10, 43872), (12, 43881), (15, 43926), (16, 43941), (20, 43974), (22, 43992),

Gene: Ramiel05\_70 Start: 43245, Stop: 43421, Start Num: 9

Candidate Starts for Ramiel05\_70:

(6, 43167), (7, 43173), (Start: 9 @43245 has 44 MA's), (10, 43251), (12, 43260), (15, 43305), (16, 43320), (20, 43353), (22, 43371),

Gene: RobsFeet\_75 Start: 44787, Stop: 44963, Start Num: 9

Candidate Starts for RobsFeet\_75:

(4, 44598), (6, 44709), (Start: 9 @44787 has 44 MA's), (12, 44802), (15, 44847), (16, 44862), (20, 44895), (23, 44919), (24, 44934),

Gene: Rockwell\_70 Start: 43269, Stop: 43445, Start Num: 9

Candidate Starts for Rockwell\_70:

(6, 43191), (7, 43197), (Start: 9 @43269 has 44 MA's), (10, 43275), (12, 43284), (15, 43329), (16, 43344), (20, 43377), (22, 43395),

Gene: Savannah\_70 Start: 43296, Stop: 43472, Start Num: 9

Candidate Starts for Savannah\_70:

(6, 43218), (7, 43224), (Start: 9 @43296 has 44 MA's), (10, 43302), (12, 43311), (15, 43356), (16, 43371), (20, 43404), (22, 43422),

Gene: Scumberland\_73 Start: 43491, Stop: 43667, Start Num: 9

Candidate Starts for Scumberland\_73:

(6, 43413), (7, 43419), (Start: 9 @43491 has 44 MA's), (10, 43497), (12, 43506), (15, 43551), (16, 43566), (20, 43599), (22, 43617),

Gene: Selwyn23\_72 Start: 43408, Stop: 43584, Start Num: 9

Candidate Starts for Selwyn23\_72:

(6, 43330), (7, 43336), (Start: 9 @43408 has 44 MA's), (10, 43414), (12, 43423), (15, 43468), (16, 43483), (20, 43516), (22, 43534),

Gene: Shotgun\_71 Start: 43175, Stop: 43351, Start Num: 9

Candidate Starts for Shotgun\_71:

(6, 43097), (7, 43103), (Start: 9 @43175 has 44 MA's), (10, 43181), (12, 43190), (15, 43235), (16, 43250), (20, 43283), (22, 43301),

Gene: Shrubaron\_75 Start: 44382, Stop: 44558, Start Num: 9

Candidate Starts for Shrubaron\_75:

(4, 44193), (6, 44304), (Start: 9 @44382 has 44 MA's), (12, 44397), (15, 44442), (16, 44457), (20, 44490), (22, 44508),

Gene: SirFrank\_71 Start: 43465, Stop: 43641, Start Num: 9

Candidate Starts for SirFrank\_71:

(2, 43201), (3, 43246), (4, 43273), (6, 43387), (Start: 9 @43465 has 44 MA's), (10, 43471), (12, 43480), (15, 43525), (16, 43540), (20, 43573), (22, 43591),

Gene: Skugga\_71 Start: 43713, Stop: 43889, Start Num: 9

Candidate Starts for Skugga\_71:

(8, 43644), (Start: 9 @43713 has 44 MA's), (10, 43719), (12, 43728), (14, 43758), (15, 43773), (16, 43788), (21, 43833),

Gene: Smarties\_81 Start: 45071, Stop: 45247, Start Num: 9

Candidate Starts for Smarties\_81:

(3, 44852), (6, 44993), (Start: 9 @45071 has 44 MA's), (10, 45077), (12, 45086), (16, 45146), (19, 45176), (23, 45203),

Gene: Sunny\_ Start: 44858, Stop: 45001, Start Num: 13

Candidate Starts for Sunny\_:

(11, 44840), (Start: 13 @44858 has 2 MA's), (22, 44954),

Gene: Teamocil\_75 Start: 43417, Stop: 43593, Start Num: 9

Candidate Starts for Teamocil\_75:

(3, 43189), (4, 43216), (8, 43348), (Start: 9 @43417 has 44 MA's), (10, 43423), (12, 43432), (15, 43477), (16, 43492), (21, 43537), (23, 43549),

Gene: Tyumbra\_70 Start: 44012, Stop: 44188, Start Num: 9

Candidate Starts for Tyumbra\_70:

(4, 43823), (6, 43934), (Start: 9 @44012 has 44 MA's), (12, 44027), (15, 44072), (16, 44087), (20, 44120), (23, 44144), (24, 44159),

Gene: Yeti\_73 Start: 43207, Stop: 43383, Start Num: 9

Candidate Starts for Yeti\_73:

(6, 43129), (7, 43135), (Start: 9 @43207 has 44 MA's), (12, 43222), (15, 43267), (16, 43282), (20, 43315), (22, 43333),

Gene: Zapato\_71 Start: 43943, Stop: 44119, Start Num: 9

Candidate Starts for Zapato\_71:

(5, 43826), (8, 43874), (Start: 9 @43943 has 44 MA's), (12, 43958), (15, 44006), (16, 44021), (17, 44033),