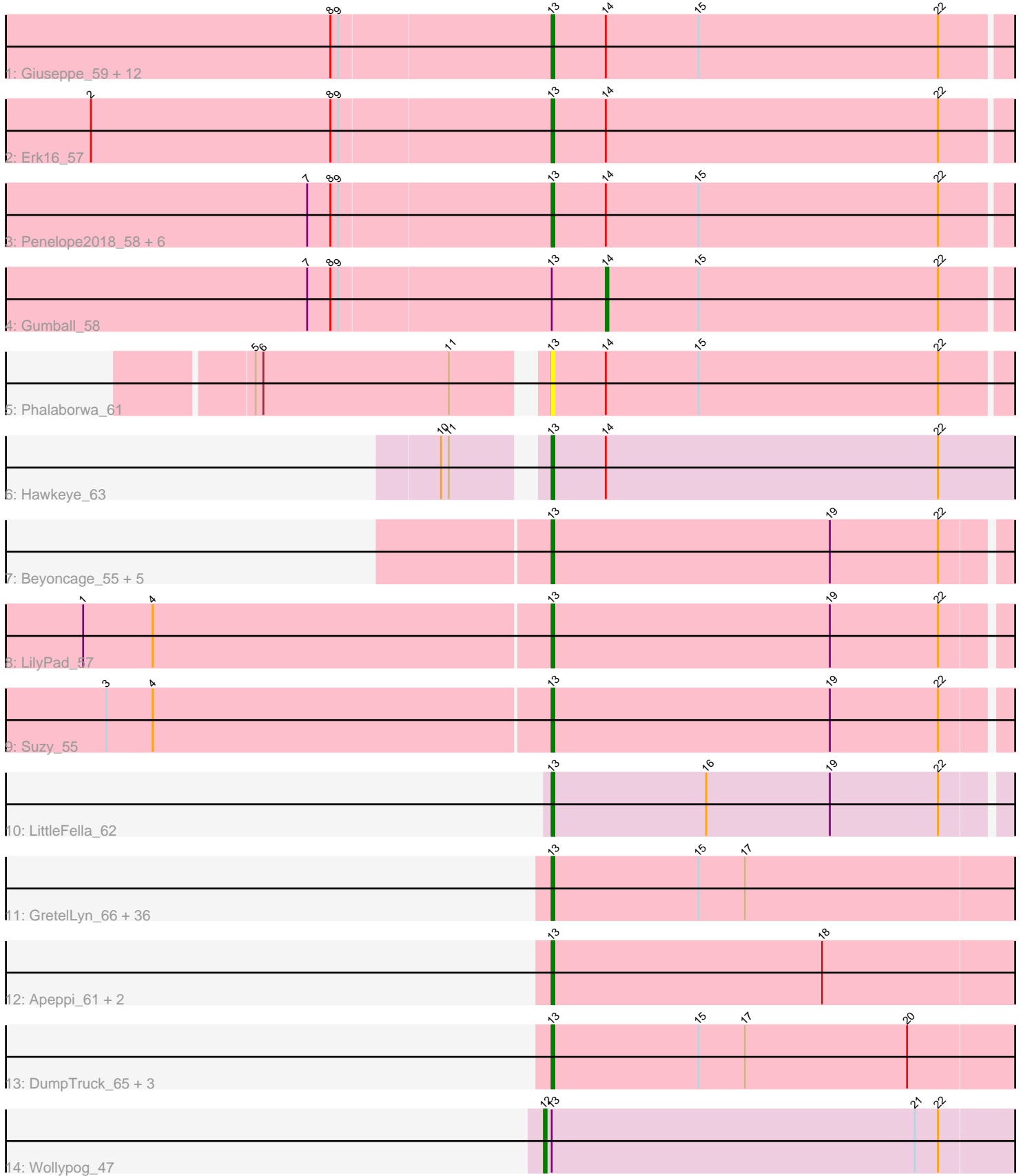


Pham 308489



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 308489 Report

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

Pham number 308489 has 78 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Giuseppe\_59, Chill\_60, BigMama\_56, Butterscotch\_57, Helpful\_61, PBI1\_55, Adjutor\_57, Delton\_59, Visconti\_59, WaldoWhy\_60, Prager\_58, Troll4\_58, Thoth\_58
- Track 2 : Erk16\_57
- Track 3 : Penelope2018\_58, SuperheroCarly\_59, PLOT\_58, KandZ\_57, Mopey\_59, Nova\_57, SirHarley\_60
- Track 4 : Gumball\_58
- Track 5 : Phalaborwa\_61
- Track 6 : Hawkeye\_63
- Track 7 : Beyoncage\_55, Djokovic\_55, Madi\_55, Sienna\_55, BiteSize\_55, Terapin\_56
- Track 8 : LilyPad\_57
- Track 9 : Suzy\_55
- Track 10 : LittleFella\_62
- Track 11 : GretelLyn\_66, Alyssamiracle\_69, Charminar\_65, Ranch\_66, Gibbin\_68, Patos\_70, Erutan\_66, NorManre\_70, DoobyDoo\_65, Rukungu\_68, Lila22\_67, Zany\_64, Jamemuya19\_65, Avian\_64, Stormer\_66, BirthdayBoy\_68, Alephilan\_67, Pywacket\_63, Wojtek\_62, Sadboi\_67, Genamy16\_69, Sampudon\_66, ParvusTarda\_65, DaviePasture\_66, Riduram\_65, NovaSharks\_68, Rumi\_67, Astralis\_66, Rota\_63, LavAbarElk\_66, Fulcrum\_66, Lambo\_64, RazorC\_66, Yikes\_68, OtterstedtS21\_66, Jalebi\_65, GOATification\_66
- Track 12 : Apeppi\_61, LuckyLeo\_63, Tillicus\_61
- Track 13 : DumpTruck\_65, Xenia2\_65, MoiGyank\_69, Mima20\_66
- Track 14 : Wollypog\_47

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

The start number called the most often in the published annotations is 13, it was called in 70 of the 72 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adjutor\_57, Alephilan\_67, Alyssamiracle\_69, Apeppi\_61, Astralis\_66, Avian\_64, Beyoncage\_55, BigMama\_56, BirthdayBoy\_68, BiteSize\_55, Butterscotch\_57, Charminar\_65, Chill\_60, DaviePasture\_66, Delton\_59, Djokovic\_55, DoobyDoo\_65,

DumpTruck\_65, Erk16\_57, Erutan\_66, Fulcrum\_66, GOATification\_66, Genamy16\_69, Gibbin\_68, Giuseppe\_59, GretellLyn\_66, Hawkeye\_63, Helpful\_61, Jalebi\_65, Jamemuya19\_65, KandZ\_57, Lambo\_64, LavAbarElk\_66, Lila22\_67, LilyPad\_57, LittleFella\_62, LuckyLeo\_63, Madi\_55, Mima20\_66, MoiGyank\_69, Mopey\_59, NorManre\_70, NovaSharks\_68, Nova\_57, OtterstedtS21\_66, PBI1\_55, PLOT\_58, ParvusTarda\_65, Patos\_70, Penelope2018\_58, Phalaborwa\_61, Prager\_58, Pywacket\_63, Ranch\_66, RazorC\_66, Riduram\_65, Rota\_63, Rukungu\_68, Rumi\_67, Sadboi\_67, Sampudon\_66, Sienna\_55, SirHarley\_60, Stormer\_66, SuperheroCarly\_59, Suzy\_55, Terapin\_56, Thoth\_58, Tillicus\_61, Troll4\_58, Visconti\_59, WaldoWhy\_60, Wojtek\_62, Xenia2\_65, Yikes\_68, Zany\_64,

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

- Gumball\_58, Wollypog\_47,

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

- 

### Summary by start number:

Start 12:

- Found in 1 of 78 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wollypog\_47 (singleton),

Start 13:

- Found in 78 of 78 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 70 of 72
- Called 97.4% of time when present
- Phage (with cluster) where this start called: Adjutor\_57 (D1), Alephilan\_67 (DV), Alyssamiracle\_69 (DV), Apeppi\_61 (DV), Astralis\_66 (DV), Avian\_64 (DV), Beyoncage\_55 (DG1), BigMama\_56 (D1), BirthdayBoy\_68 (DV), BiteSize\_55 (DG1), Butterscotch\_57 (D1), Charminar\_65 (DV), Chill\_60 (D1), DaviePasture\_66 (DV), Delton\_59 (D1), Djokovic\_55 (DG1), DoobyDoo\_65 (DV), DumpTruck\_65 (DV), Erk16\_57 (D1), Erutan\_66 (DV), Fulcrum\_66 (DV), GOATification\_66 (DV), Genamy16\_69 (DV), Gibbin\_68 (DV), Giuseppe\_59 (D1), GretellLyn\_66 (DV), Hawkeye\_63 (D2), Helpful\_61 (D1), Jalebi\_65 (DV), Jamemuya19\_65 (DV), KandZ\_57 (D1), Lambo\_64 (DV), LavAbarElk\_66 (DV), Lila22\_67 (DV), LilyPad\_57 (DG1), LittleFella\_62 (DG2), LuckyLeo\_63 (DV), Madi\_55 (DG1), Mima20\_66 (DV), MoiGyank\_69 (DV), Mopey\_59 (D1), NorManre\_70 (DV), NovaSharks\_68 (DV), Nova\_57 (D1), OtterstedtS21\_66 (DV), PBI1\_55 (D1), PLOT\_58 (D1), ParvusTarda\_65 (DV), Patos\_70 (DV), Penelope2018\_58 (D1), Phalaborwa\_61 (D1), Prager\_58 (D1), Pywacket\_63 (DV), Ranch\_66 (DV), RazorC\_66 (DV), Riduram\_65 (DV), Rota\_63 (DV), Rukungu\_68 (DV), Rumi\_67 (DV), Sadboi\_67 (DV), Sampudon\_66 (DV), Sienna\_55 (DG1), SirHarley\_60 (D1), Stormer\_66 (DV), SuperheroCarly\_59 (D1), Suzy\_55 (DG1), Terapin\_56 (DG1), Thoth\_58 (D1), Tillicus\_61 (DV), Troll4\_58 (D1), Visconti\_59 (D1), WaldoWhy\_60 (D1), Wojtek\_62 (DV), Xenia2\_65 (DV), Yikes\_68 (DV), Zany\_64 (DV),

Start 14:

- Found in 24 of 78 ( 30.8% ) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 4.2% of time when present

- Phage (with cluster) where this start called: Gumball\_58 (D1),

### **Summary by clusters:**

There are 6 clusters represented in this pham: singleton, DG2, DG1, DV, D2, D1,

Info for manual annotations of cluster D1:

- Start number 13 was manually annotated 21 times for cluster D1.
- Start number 14 was manually annotated 1 time for cluster D1.

Info for manual annotations of cluster D2:

- Start number 13 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 13 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 13 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 13 was manually annotated 39 times for cluster DV.

### **Gene Information:**

Gene: Adjutor\_57 Start: 44227, Stop: 44415, Start Num: 13

Candidate Starts for Adjutor\_57:

(8, 44143), (9, 44146), (Start: 13 @44227 has 70 MA's), (Start: 14 @44248 has 1 MA's), (15, 44284), (22, 44377),

Gene: Alephilan\_67 Start: 45298, Stop: 45492, Start Num: 13

Candidate Starts for Alephilan\_67:

(Start: 13 @45298 has 70 MA's), (15, 45355), (17, 45373),

Gene: Alyssamiracle\_69 Start: 44300, Stop: 44494, Start Num: 13

Candidate Starts for Alyssamiracle\_69:

(Start: 13 @44300 has 70 MA's), (15, 44357), (17, 44375),

Gene: Apeppi\_61 Start: 44459, Stop: 44653, Start Num: 13

Candidate Starts for Apeppi\_61:

(Start: 13 @44459 has 70 MA's), (18, 44564),

Gene: Astralis\_66 Start: 43879, Stop: 44073, Start Num: 13

Candidate Starts for Astralis\_66:

(Start: 13 @43879 has 70 MA's), (15, 43936), (17, 43954),

Gene: Avian\_64 Start: 44028, Stop: 44222, Start Num: 13

Candidate Starts for Avian\_64:

(Start: 13 @44028 has 70 MA's), (15, 44085), (17, 44103),

Gene: Beyoncage\_55 Start: 41632, Stop: 41814, Start Num: 13

Candidate Starts for Beyoncage\_55:

(Start: 13 @41632 has 70 MA's), (19, 41740), (22, 41782),

Gene: BigMama\_56 Start: 44303, Stop: 44491, Start Num: 13

Candidate Starts for BigMama\_56:

(8, 44219), (9, 44222), (Start: 13 @44303 has 70 MA's), (Start: 14 @44324 has 1 MA's), (15, 44360), (22, 44453),

Gene: BirthdayBoy\_68 Start: 45604, Stop: 45798, Start Num: 13

Candidate Starts for BirthdayBoy\_68:

(Start: 13 @45604 has 70 MA's), (15, 45661), (17, 45679),

Gene: BiteSize\_55 Start: 41718, Stop: 41900, Start Num: 13

Candidate Starts for BiteSize\_55:

(Start: 13 @41718 has 70 MA's), (19, 41826), (22, 41868),

Gene: Butterscotch\_57 Start: 44287, Stop: 44475, Start Num: 13

Candidate Starts for Butterscotch\_57:

(8, 44203), (9, 44206), (Start: 13 @44287 has 70 MA's), (Start: 14 @44308 has 1 MA's), (15, 44344), (22, 44437),

Gene: Charminar\_65 Start: 43638, Stop: 43832, Start Num: 13

Candidate Starts for Charminar\_65:

(Start: 13 @43638 has 70 MA's), (15, 43695), (17, 43713),

Gene: Chill\_60 Start: 44350, Stop: 44538, Start Num: 13

Candidate Starts for Chill\_60:

(8, 44266), (9, 44269), (Start: 13 @44350 has 70 MA's), (Start: 14 @44371 has 1 MA's), (15, 44407), (22, 44500),

Gene: DaviePasture\_66 Start: 45212, Stop: 45406, Start Num: 13

Candidate Starts for DaviePasture\_66:

(Start: 13 @45212 has 70 MA's), (15, 45269), (17, 45287),

Gene: Delton\_59 Start: 44685, Stop: 44873, Start Num: 13

Candidate Starts for Delton\_59:

(8, 44601), (9, 44604), (Start: 13 @44685 has 70 MA's), (Start: 14 @44706 has 1 MA's), (15, 44742), (22, 44835),

Gene: Djokovic\_55 Start: 41631, Stop: 41813, Start Num: 13

Candidate Starts for Djokovic\_55:

(Start: 13 @41631 has 70 MA's), (19, 41739), (22, 41781),

Gene: DoobyDoo\_65 Start: 44188, Stop: 44382, Start Num: 13

Candidate Starts for DoobyDoo\_65:

(Start: 13 @44188 has 70 MA's), (15, 44245), (17, 44263),

Gene: DumpTruck\_65 Start: 44000, Stop: 44194, Start Num: 13

Candidate Starts for DumpTruck\_65:

(Start: 13 @44000 has 70 MA's), (15, 44057), (17, 44075), (20, 44138),

Gene: Erk16\_57 Start: 44389, Stop: 44577, Start Num: 13

Candidate Starts for Erk16\_57:

(2, 44212), (8, 44305), (9, 44308), (Start: 13 @44389 has 70 MA's), (Start: 14 @44410 has 1 MA's), (22, 44539),

Gene: Erutan\_66 Start: 44830, Stop: 45024, Start Num: 13  
Candidate Starts for Erutan\_66:  
(Start: 13 @44830 has 70 MA's), (15, 44887), (17, 44905),

Gene: Fulcrum\_66 Start: 44912, Stop: 45106, Start Num: 13  
Candidate Starts for Fulcrum\_66:  
(Start: 13 @44912 has 70 MA's), (15, 44969), (17, 44987),

Gene: GOATification\_66 Start: 44912, Stop: 45106, Start Num: 13  
Candidate Starts for GOATification\_66:  
(Start: 13 @44912 has 70 MA's), (15, 44969), (17, 44987),

Gene: Genamy16\_69 Start: 44286, Stop: 44480, Start Num: 13  
Candidate Starts for Genamy16\_69:  
(Start: 13 @44286 has 70 MA's), (15, 44343), (17, 44361),

Gene: Gibbin\_68 Start: 45717, Stop: 45911, Start Num: 13  
Candidate Starts for Gibbin\_68:  
(Start: 13 @45717 has 70 MA's), (15, 45774), (17, 45792),

Gene: Giuseppe\_59 Start: 44255, Stop: 44443, Start Num: 13  
Candidate Starts for Giuseppe\_59:  
(8, 44171), (9, 44174), (Start: 13 @44255 has 70 MA's), (Start: 14 @44276 has 1 MA's), (15, 44312), (22, 44405),

Gene: Gretellyn\_66 Start: 45702, Stop: 45896, Start Num: 13  
Candidate Starts for Gretellyn\_66:  
(Start: 13 @45702 has 70 MA's), (15, 45759), (17, 45777),

Gene: Gumball\_58 Start: 44768, Stop: 44935, Start Num: 14  
Candidate Starts for Gumball\_58:  
(7, 44654), (8, 44663), (9, 44666), (Start: 13 @44747 has 70 MA's), (Start: 14 @44768 has 1 MA's), (15, 44804), (22, 44897),

Gene: Hawkeye\_63 Start: 44249, Stop: 44440, Start Num: 13  
Candidate Starts for Hawkeye\_63:  
(10, 44216), (11, 44219), (Start: 13 @44249 has 70 MA's), (Start: 14 @44270 has 1 MA's), (22, 44399),

Gene: Helpful\_61 Start: 44616, Stop: 44804, Start Num: 13  
Candidate Starts for Helpful\_61:  
(8, 44532), (9, 44535), (Start: 13 @44616 has 70 MA's), (Start: 14 @44637 has 1 MA's), (15, 44673), (22, 44766),

Gene: Jalebi\_65 Start: 46055, Stop: 46249, Start Num: 13  
Candidate Starts for Jalebi\_65:  
(Start: 13 @46055 has 70 MA's), (15, 46112), (17, 46130),

Gene: Jamemuya19\_65 Start: 43891, Stop: 44085, Start Num: 13  
Candidate Starts for Jamemuya19\_65:  
(Start: 13 @43891 has 70 MA's), (15, 43948), (17, 43966),

Gene: KandZ\_57 Start: 44413, Stop: 44601, Start Num: 13  
Candidate Starts for KandZ\_57:  
(7, 44320), (8, 44329), (9, 44332), (Start: 13 @44413 has 70 MA's), (Start: 14 @44434 has 1 MA's),  
(15, 44470), (22, 44563),

Gene: Lambo\_64 Start: 44709, Stop: 44903, Start Num: 13  
Candidate Starts for Lambo\_64:  
(Start: 13 @44709 has 70 MA's), (15, 44766), (17, 44784),

Gene: LavAbarElk\_66 Start: 44449, Stop: 44643, Start Num: 13  
Candidate Starts for LavAbarElk\_66:  
(Start: 13 @44449 has 70 MA's), (15, 44506), (17, 44524),

Gene: Lila22\_67 Start: 45661, Stop: 45855, Start Num: 13  
Candidate Starts for Lila22\_67:  
(Start: 13 @45661 has 70 MA's), (15, 45718), (17, 45736),

Gene: LilyPad\_57 Start: 42828, Stop: 43010, Start Num: 13  
Candidate Starts for LilyPad\_57:  
(1, 42648), (4, 42675), (Start: 13 @42828 has 70 MA's), (19, 42936), (22, 42978),

Gene: LittleFella\_62 Start: 44348, Stop: 44530, Start Num: 13  
Candidate Starts for LittleFella\_62:  
(Start: 13 @44348 has 70 MA's), (16, 44408), (19, 44456), (22, 44498),

Gene: LuckyLeo\_63 Start: 44459, Stop: 44653, Start Num: 13  
Candidate Starts for LuckyLeo\_63:  
(Start: 13 @44459 has 70 MA's), (18, 44564),

Gene: Madi\_55 Start: 41709, Stop: 41891, Start Num: 13  
Candidate Starts for Madi\_55:  
(Start: 13 @41709 has 70 MA's), (19, 41817), (22, 41859),

Gene: Mima20\_66 Start: 45218, Stop: 45412, Start Num: 13  
Candidate Starts for Mima20\_66:  
(Start: 13 @45218 has 70 MA's), (15, 45275), (17, 45293), (20, 45356),

Gene: MoiGyank\_69 Start: 45983, Stop: 46177, Start Num: 13  
Candidate Starts for MoiGyank\_69:  
(Start: 13 @45983 has 70 MA's), (15, 46040), (17, 46058), (20, 46121),

Gene: Mopey\_59 Start: 44291, Stop: 44479, Start Num: 13  
Candidate Starts for Mopey\_59:  
(7, 44198), (8, 44207), (9, 44210), (Start: 13 @44291 has 70 MA's), (Start: 14 @44312 has 1 MA's),  
(15, 44348), (22, 44441),

Gene: NorManre\_70 Start: 46109, Stop: 46303, Start Num: 13  
Candidate Starts for NorManre\_70:  
(Start: 13 @46109 has 70 MA's), (15, 46166), (17, 46184),

Gene: Nova\_57 Start: 44743, Stop: 44931, Start Num: 13  
Candidate Starts for Nova\_57:

(7, 44650), (8, 44659), (9, 44662), (Start: 13 @44743 has 70 MA's), (Start: 14 @44764 has 1 MA's), (15, 44800), (22, 44893),

Gene: NovaSharks\_68 Start: 43877, Stop: 44071, Start Num: 13

Candidate Starts for NovaSharks\_68:

(Start: 13 @43877 has 70 MA's), (15, 43934), (17, 43952),

Gene: OtterstedtS21\_66 Start: 45043, Stop: 45237, Start Num: 13

Candidate Starts for OtterstedtS21\_66:

(Start: 13 @45043 has 70 MA's), (15, 45100), (17, 45118),

Gene: PBI1\_55 Start: 44218, Stop: 44406, Start Num: 13

Candidate Starts for PBI1\_55:

(8, 44134), (9, 44137), (Start: 13 @44218 has 70 MA's), (Start: 14 @44239 has 1 MA's), (15, 44275), (22, 44368),

Gene: PLOT\_58 Start: 44270, Stop: 44458, Start Num: 13

Candidate Starts for PLOT\_58:

(7, 44177), (8, 44186), (9, 44189), (Start: 13 @44270 has 70 MA's), (Start: 14 @44291 has 1 MA's), (15, 44327), (22, 44420),

Gene: ParvusTarda\_65 Start: 44415, Stop: 44609, Start Num: 13

Candidate Starts for ParvusTarda\_65:

(Start: 13 @44415 has 70 MA's), (15, 44472), (17, 44490),

Gene: Patos\_70 Start: 46108, Stop: 46302, Start Num: 13

Candidate Starts for Patos\_70:

(Start: 13 @46108 has 70 MA's), (15, 46165), (17, 46183),

Gene: Penelope2018\_58 Start: 44288, Stop: 44476, Start Num: 13

Candidate Starts for Penelope2018\_58:

(7, 44195), (8, 44204), (9, 44207), (Start: 13 @44288 has 70 MA's), (Start: 14 @44309 has 1 MA's), (15, 44345), (22, 44438),

Gene: Phalaborwa\_61 Start: 44729, Stop: 44917, Start Num: 13

Candidate Starts for Phalaborwa\_61:

(5, 44624), (6, 44627), (11, 44699), (Start: 13 @44729 has 70 MA's), (Start: 14 @44750 has 1 MA's), (15, 44786), (22, 44879),

Gene: Prager\_58 Start: 44307, Stop: 44495, Start Num: 13

Candidate Starts for Prager\_58:

(8, 44223), (9, 44226), (Start: 13 @44307 has 70 MA's), (Start: 14 @44328 has 1 MA's), (15, 44364), (22, 44457),

Gene: Pywacket\_63 Start: 45827, Stop: 46021, Start Num: 13

Candidate Starts for Pywacket\_63:

(Start: 13 @45827 has 70 MA's), (15, 45884), (17, 45902),

Gene: Ranch\_66 Start: 43887, Stop: 44081, Start Num: 13

Candidate Starts for Ranch\_66:

(Start: 13 @43887 has 70 MA's), (15, 43944), (17, 43962),

Gene: RazorC\_66 Start: 44031, Stop: 44225, Start Num: 13

Candidate Starts for RazorC\_66:  
(Start: 13 @44031 has 70 MA's), (15, 44088), (17, 44106),

Gene: Riduram\_65 Start: 43606, Stop: 43800, Start Num: 13  
Candidate Starts for Riduram\_65:  
(Start: 13 @43606 has 70 MA's), (15, 43663), (17, 43681),

Gene: Rota\_63 Start: 44901, Stop: 45095, Start Num: 13  
Candidate Starts for Rota\_63:  
(Start: 13 @44901 has 70 MA's), (15, 44958), (17, 44976),

Gene: Rukungu\_68 Start: 45906, Stop: 46100, Start Num: 13  
Candidate Starts for Rukungu\_68:  
(Start: 13 @45906 has 70 MA's), (15, 45963), (17, 45981),

Gene: Rumi\_67 Start: 43574, Stop: 43768, Start Num: 13  
Candidate Starts for Rumi\_67:  
(Start: 13 @43574 has 70 MA's), (15, 43631), (17, 43649),

Gene: Sadboi\_67 Start: 45703, Stop: 45897, Start Num: 13  
Candidate Starts for Sadboi\_67:  
(Start: 13 @45703 has 70 MA's), (15, 45760), (17, 45778),

Gene: Sampudon\_66 Start: 46055, Stop: 46249, Start Num: 13  
Candidate Starts for Sampudon\_66:  
(Start: 13 @46055 has 70 MA's), (15, 46112), (17, 46130),

Gene: Sienna\_55 Start: 41709, Stop: 41891, Start Num: 13  
Candidate Starts for Sienna\_55:  
(Start: 13 @41709 has 70 MA's), (19, 41817), (22, 41859),

Gene: SirHarley\_60 Start: 44730, Stop: 44918, Start Num: 13  
Candidate Starts for SirHarley\_60:  
(7, 44637), (8, 44646), (9, 44649), (Start: 13 @44730 has 70 MA's), (Start: 14 @44751 has 1 MA's),  
(15, 44787), (22, 44880),

Gene: Stormer\_66 Start: 43578, Stop: 43772, Start Num: 13  
Candidate Starts for Stormer\_66:  
(Start: 13 @43578 has 70 MA's), (15, 43635), (17, 43653),

Gene: SuperheroCarly\_59 Start: 44404, Stop: 44592, Start Num: 13  
Candidate Starts for SuperheroCarly\_59:  
(7, 44311), (8, 44320), (9, 44323), (Start: 13 @44404 has 70 MA's), (Start: 14 @44425 has 1 MA's),  
(15, 44461), (22, 44554),

Gene: Suzy\_55 Start: 42902, Stop: 43084, Start Num: 13  
Candidate Starts for Suzy\_55:  
(3, 42731), (4, 42749), (Start: 13 @42902 has 70 MA's), (19, 43010), (22, 43052),

Gene: Terapin\_56 Start: 41633, Stop: 41815, Start Num: 13  
Candidate Starts for Terapin\_56:  
(Start: 13 @41633 has 70 MA's), (19, 41741), (22, 41783),

Gene: Thoth\_58 Start: 44286, Stop: 44474, Start Num: 13  
Candidate Starts for Thoth\_58:  
(8, 44202), (9, 44205), (Start: 13 @44286 has 70 MA's), (Start: 14 @44307 has 1 MA's), (15, 44343),  
(22, 44436),

Gene: Tillicus\_61 Start: 44400, Stop: 44594, Start Num: 13  
Candidate Starts for Tillicus\_61:  
(Start: 13 @44400 has 70 MA's), (18, 44505),

Gene: Troll4\_58 Start: 44417, Stop: 44605, Start Num: 13  
Candidate Starts for Troll4\_58:  
(8, 44333), (9, 44336), (Start: 13 @44417 has 70 MA's), (Start: 14 @44438 has 1 MA's), (15, 44474),  
(22, 44567),

Gene: Visconti\_59 Start: 44297, Stop: 44485, Start Num: 13  
Candidate Starts for Visconti\_59:  
(8, 44213), (9, 44216), (Start: 13 @44297 has 70 MA's), (Start: 14 @44318 has 1 MA's), (15, 44354),  
(22, 44447),

Gene: WaldoWhy\_60 Start: 44350, Stop: 44538, Start Num: 13  
Candidate Starts for WaldoWhy\_60:  
(8, 44266), (9, 44269), (Start: 13 @44350 has 70 MA's), (Start: 14 @44371 has 1 MA's), (15, 44407),  
(22, 44500),

Gene: Wojtek\_62 Start: 44136, Stop: 44330, Start Num: 13  
Candidate Starts for Wojtek\_62:  
(Start: 13 @44136 has 70 MA's), (15, 44193), (17, 44211),

Gene: Wollypog\_47 Start: 34596, Stop: 34784, Start Num: 12  
Candidate Starts for Wollypog\_47:  
(Start: 12 @34596 has 1 MA's), (Start: 13 @34599 has 70 MA's), (21, 34740), (22, 34749),

Gene: Xenia2\_65 Start: 43903, Stop: 44097, Start Num: 13  
Candidate Starts for Xenia2\_65:  
(Start: 13 @43903 has 70 MA's), (15, 43960), (17, 43978), (20, 44041),

Gene: Yikes\_68 Start: 46149, Stop: 46343, Start Num: 13  
Candidate Starts for Yikes\_68:  
(Start: 13 @46149 has 70 MA's), (15, 46206), (17, 46224),

Gene: Zany\_64 Start: 45550, Stop: 45744, Start Num: 13  
Candidate Starts for Zany\_64:  
(Start: 13 @45550 has 70 MA's), (15, 45607), (17, 45625),