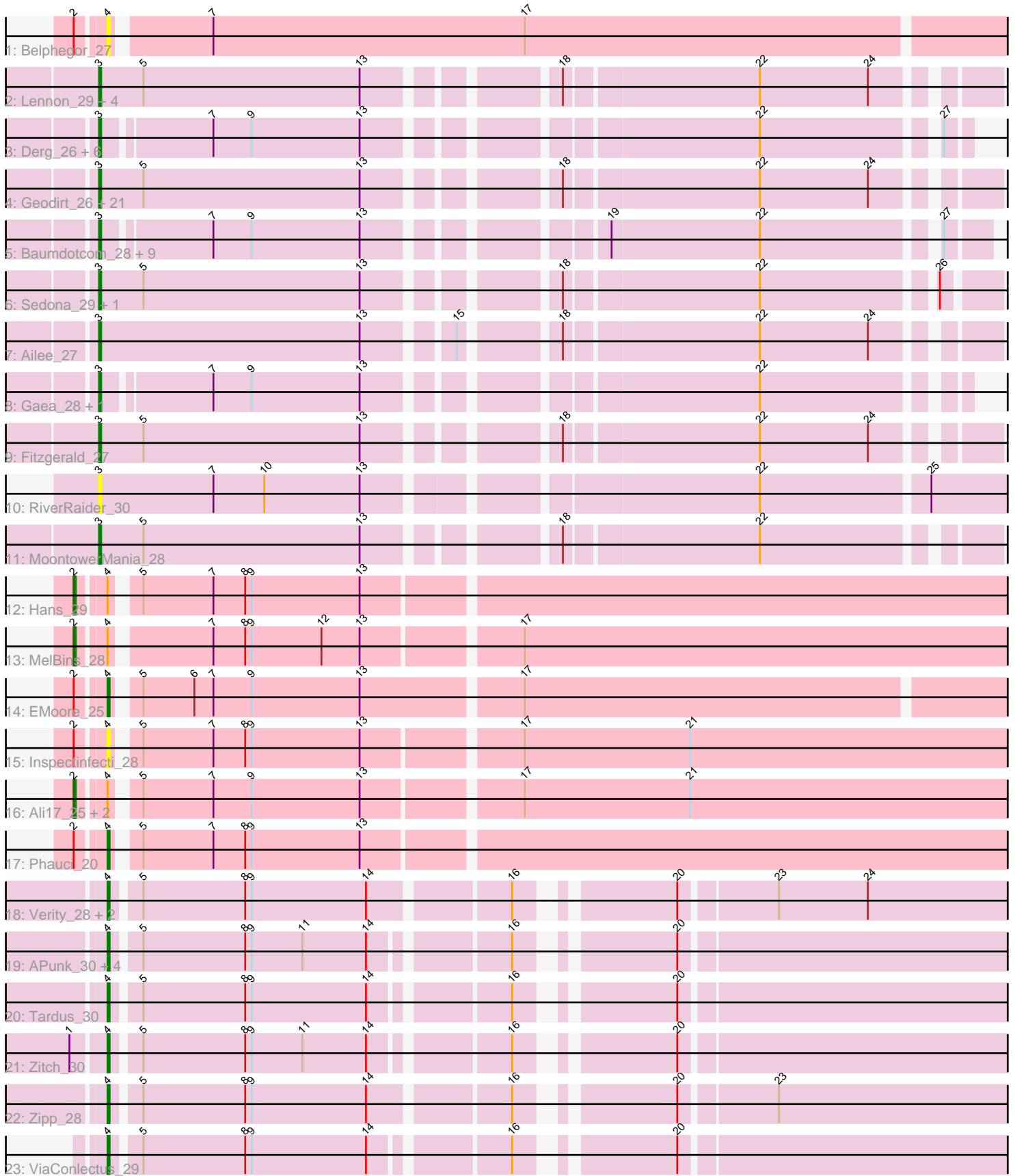


Pham 171429



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 171429 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171429 has 73 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Belphegor\_27
- Track 2 : Lennon\_29, Affeca\_27, Sitar\_29, Fosterous\_27, Stultus\_27
- Track 3 : Derg\_26, Bizzy\_29, Baddon\_28, Kroos\_29, Flatwoods\_29, Ribeye\_29, YorkOnyx\_29
- Track 4 : Geodirt\_26, Angelicage\_27, Nordenberg\_23, Rofo\_29, Galadriel\_29, Charming\_29, Sanjuju\_27, Jabberwocky\_27, Brandonk123\_30, Tangent\_29, BobBob\_26, Shivanishola\_30, Barsten\_29, Kewpiedoll\_28, ChadMasterC\_29, Kamashten\_28, Vivi2\_31, Paries\_31, Love\_32, Keitabear\_29, McKinley\_31, Thing3\_28
- Track 5 : Baumdotcom\_28, Saronaya\_28, Tycho\_28, Tangerine\_28, Gustavo\_28, StorminNorm\_28, Ashertheman\_29, Kwobi\_29, LilHam\_26, SchottB\_27
- Track 6 : Sedona\_29, Bibwit\_28
- Track 7 : Ailee\_27
- Track 8 : Gaea\_28, JKSyngboy\_26
- Track 9 : Fitzgerald\_27
- Track 10 : RiverRaider\_30
- Track 11 : MoontowerMania\_28
- Track 12 : Hans\_29
- Track 13 : MelBins\_28
- Track 14 : EMOore\_25
- Track 15 : Inspectinfecti\_28
- Track 16 : Ali17\_25, Leonard\_27, Phinally\_27
- Track 17 : Phauci\_20
- Track 18 : Verity\_28, Delrey21\_28, DoctorFroggo\_28
- Track 19 : APunk\_30, Abblin\_29, Scioto\_29, Sampson\_29, Natkenzie\_29
- Track 20 : Tardus\_30
- Track 21 : Zitch\_30
- Track 22 : Zipp\_28
- Track 23 : ViaConlectus\_29

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

The start number called the most often in the published annotations is 3, it was called in 43 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_27, Ailee\_27, Angelicage\_27, Ashertheman\_29, Baddon\_28, Barsten\_29, Baumdotcom\_28, Bibwit\_28, Bizzy\_29, BobBob\_26, Brandonk123\_30, ChadMasterC\_29, Charming\_29, Derg\_26, Fitzgerald\_27, Flatwoods\_29, Fosterous\_27, Gaea\_28, Galadriel\_29, Geodirt\_26, Gustavo\_28, JKSyngboy\_26, Jabberwocky\_27, Kamashten\_28, Keitabear\_29, Kewpiedoll\_28, Kroos\_29, Kwobi\_29, Lennon\_29, LilHam\_26, Love\_32, McKinley\_31, MoontowerMania\_28, Nordenberg\_23, Paries\_31, Ribeye\_29, RiverRaider\_30, Rofo\_29, Sanjuju\_27, Saronaya\_28, SchottB\_27, Sedona\_29, Shivanishola\_30, Sitar\_29, StorminNorm\_28, Stultus\_27, Tangent\_29, Tangerine\_28, Thing3\_28, Tycho\_28, Vivi2\_31, YorkOnyx\_29,

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

- 

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

- APunk\_30, Abblin\_29, Ali17\_25, Belphegor\_27, Delrey21\_28, DoctorFroggo\_28, EMOore\_25, Hans\_29, Inspectinfecti\_28, Leonard\_27, MelBins\_28, Natkenzie\_29, Phauci\_20, Phinally\_27, Sampson\_29, Scioto\_29, Tardus\_30, Verity\_28, ViaConlectus\_29, Zipp\_28, Zitch\_30,

### Summary by start number:

Start 2:

- Found in 9 of 73 ( 12.3% ) of genes in pham
- Manual Annotations of this start: 5 of 59
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Ali17\_25 (DE2), Hans\_29 (DE2), Leonard\_27 (DE2), MelBins\_28 (DE2), Phinally\_27 (DE2),

Start 3:

- Found in 52 of 73 ( 71.2% ) of genes in pham
- Manual Annotations of this start: 43 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca\_27 (DE1), Ailee\_27 (DE1), Angelicage\_27 (DE1), Ashertheman\_29 (DE1), Baddon\_28 (DE1), Barsten\_29 (DE1), Baumdotcom\_28 (DE1), Bibwit\_28 (DE1), Bizzy\_29 (DE1), BobBob\_26 (DE1), Brandonk123\_30 (DE1), ChadMasterC\_29 (DE1), Charming\_29 (DE1), Derg\_26 (DE1), Fitzgerald\_27 (DE1), Flatwoods\_29 (DE1), Fosterous\_27 (DE1), Gaea\_28 (DE1), Galadriel\_29 (DE1), Geodirt\_26 (DE1), Gustavo\_28 (DE1), JKSyngboy\_26 (DE1), Jabberwocky\_27 (DE1), Kamashten\_28 (DE1), Keitabear\_29 (DE1), Kewpiedoll\_28 (DE1), Kroos\_29 (DE1), Kwobi\_29 (DE1), Lennon\_29 (DE1), LilHam\_26 (DE1), Love\_32 (DE1), McKinley\_31 (DE1), MoontowerMania\_28 (DE1), Nordenberg\_23 (DE1), Paries\_31 (DE1), Ribeye\_29 (DE1), RiverRaider\_30 (DE1), Rofo\_29 (DE1), Sanjuju\_27 (DE1), Saronaya\_28 (DE1), SchottB\_27 (DE1), Sedona\_29 (DE1), Shivanishola\_30 (DE1), Sitar\_29 (DE1), StorminNorm\_28 (DE1), Stultus\_27 (DE1), Tangent\_29 (DE1), Tangerine\_28 (DE1), Thing3\_28 (DE1), Tycho\_28 (DE1), Vivi2\_31 (DE1), YorkOnyx\_29 (DE1),

Start 4:

- Found in 21 of 73 ( 28.8% ) of genes in pham
- Manual Annotations of this start: 11 of 59

- Called 76.2% of time when present
- Phage (with cluster) where this start called: APunk\_30 (DE4), Abblin\_29 (DE4), Belphegor\_27 (DE), Delrey21\_28 (DE4), DoctorFroggo\_28 (DE4), EMOore\_25 (DE2), Inspectinfecti\_28 (DE2), Natkenzie\_29 (DE4), Phauci\_20 (DE2), Sampson\_29 (DE4), Scioto\_29 (DE4), Tardus\_30 (DE4), Verity\_28 (DE4), ViaConlectus\_29 (DE4), Zipp\_28 (DE4), Zitch\_30 (DE4),

### **Summary by clusters:**

There are 4 clusters represented in this pham: DE1, DE2, DE, DE4,

Info for manual annotations of cluster DE1:

- Start number 3 was manually annotated 43 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 2 was manually annotated 5 times for cluster DE2.
- Start number 4 was manually annotated 2 times for cluster DE2.

Info for manual annotations of cluster DE4:

- Start number 4 was manually annotated 9 times for cluster DE4.

### **Gene Information:**

Gene: APunk\_30 Start: 21958, Stop: 22368, Start Num: 4

Candidate Starts for APunk\_30:

(Start: 4 @21958 has 11 MA's), (5, 21970), (8, 22018), (9, 22021), (11, 22045), (14, 22075), (16, 22132), (20, 22192),

Gene: Abblin\_29 Start: 22570, Stop: 22980, Start Num: 4

Candidate Starts for Abblin\_29:

(Start: 4 @22570 has 11 MA's), (5, 22582), (8, 22630), (9, 22633), (11, 22657), (14, 22687), (16, 22744), (20, 22804),

Gene: Affeca\_27 Start: 22464, Stop: 22871, Start Num: 3

Candidate Starts for Affeca\_27:

(Start: 3 @22464 has 43 MA's), (5, 22485), (13, 22587), (18, 22662), (22, 22749), (24, 22800),

Gene: Ailee\_27 Start: 23173, Stop: 23580, Start Num: 3

Candidate Starts for Ailee\_27:

(Start: 3 @23173 has 43 MA's), (13, 23296), (15, 23332), (18, 23371), (22, 23458), (24, 23509),

Gene: Ali17\_25 Start: 20316, Stop: 20762, Start Num: 2

Candidate Starts for Ali17\_25:

(Start: 2 @20316 has 5 MA's), (Start: 4 @20328 has 11 MA's), (5, 20337), (7, 20370), (9, 20388), (13, 20439), (17, 20508), (21, 20586),

Gene: Angelicage\_27 Start: 22881, Stop: 23288, Start Num: 3

Candidate Starts for Angelicage\_27:

(Start: 3 @22881 has 43 MA's), (5, 22902), (13, 23004), (18, 23079), (22, 23166), (24, 23217),

Gene: Ashertheman\_29 Start: 21770, Stop: 22165, Start Num: 3  
Candidate Starts for Ashertheman\_29:  
(Start: 3 @21770 has 43 MA's), (7, 21818), (9, 21836), (13, 21887), (19, 21980), (22, 22049), (27, 22124),

Gene: Baddon\_28 Start: 22582, Stop: 22965, Start Num: 3  
Candidate Starts for Baddon\_28:  
(Start: 3 @22582 has 43 MA's), (7, 22630), (9, 22648), (13, 22699), (22, 22861), (27, 22936),

Gene: Barsten\_29 Start: 22305, Stop: 22712, Start Num: 3  
Candidate Starts for Barsten\_29:  
(Start: 3 @22305 has 43 MA's), (5, 22326), (13, 22428), (18, 22503), (22, 22590), (24, 22641),

Gene: Baumdotcom\_28 Start: 21385, Stop: 21780, Start Num: 3  
Candidate Starts for Baumdotcom\_28:  
(Start: 3 @21385 has 43 MA's), (7, 21433), (9, 21451), (13, 21502), (19, 21595), (22, 21664), (27, 21739),

Gene: Belphegor\_27 Start: 21877, Stop: 22314, Start Num: 4  
Candidate Starts for Belphegor\_27:  
(Start: 2 @21865 has 5 MA's), (Start: 4 @21877 has 11 MA's), (7, 21919), (17, 22066),

Gene: Bibwit\_28 Start: 22492, Stop: 22899, Start Num: 3  
Candidate Starts for Bibwit\_28:  
(Start: 3 @22492 has 43 MA's), (5, 22513), (13, 22615), (18, 22690), (22, 22777), (26, 22852),

Gene: Bizzy\_29 Start: 21729, Stop: 22112, Start Num: 3  
Candidate Starts for Bizzy\_29:  
(Start: 3 @21729 has 43 MA's), (7, 21777), (9, 21795), (13, 21846), (22, 22008), (27, 22083),

Gene: BobBob\_26 Start: 21770, Stop: 22177, Start Num: 3  
Candidate Starts for BobBob\_26:  
(Start: 3 @21770 has 43 MA's), (5, 21791), (13, 21893), (18, 21968), (22, 22055), (24, 22106),

Gene: Brandonk123\_30 Start: 22839, Stop: 23246, Start Num: 3  
Candidate Starts for Brandonk123\_30:  
(Start: 3 @22839 has 43 MA's), (5, 22860), (13, 22962), (18, 23037), (22, 23124), (24, 23175),

Gene: ChadMasterC\_29 Start: 23497, Stop: 23904, Start Num: 3  
Candidate Starts for ChadMasterC\_29:  
(Start: 3 @23497 has 43 MA's), (5, 23518), (13, 23620), (18, 23695), (22, 23782), (24, 23833),

Gene: Charming\_29 Start: 22348, Stop: 22755, Start Num: 3  
Candidate Starts for Charming\_29:  
(Start: 3 @22348 has 43 MA's), (5, 22369), (13, 22471), (18, 22546), (22, 22633), (24, 22684),

Gene: Delrey21\_28 Start: 22700, Stop: 23113, Start Num: 4  
Candidate Starts for Delrey21\_28:  
(Start: 4 @22700 has 11 MA's), (5, 22712), (8, 22760), (9, 22763), (14, 22817), (16, 22877), (20, 22937), (23, 22979), (24, 23021),

Gene: Derg\_26 Start: 21325, Stop: 21708, Start Num: 3  
Candidate Starts for Derg\_26:

(Start: 3 @21325 has 43 MA's), (7, 21373), (9, 21391), (13, 21442), (22, 21604), (27, 21679),

Gene: DoctorFroggo\_28 Start: 22700, Stop: 23113, Start Num: 4

Candidate Starts for DoctorFroggo\_28:

(Start: 4 @22700 has 11 MA's), (5, 22712), (8, 22760), (9, 22763), (14, 22817), (16, 22877), (20, 22937), (23, 22979), (24, 23021),

Gene: EMoore\_25 Start: 21172, Stop: 21603, Start Num: 4

Candidate Starts for EMoore\_25:

(Start: 2 @21160 has 5 MA's), (Start: 4 @21172 has 11 MA's), (5, 21181), (6, 21205), (7, 21214), (9, 21232), (13, 21283), (17, 21355),

Gene: Fitzgerald\_27 Start: 22931, Stop: 23338, Start Num: 3

Candidate Starts for Fitzgerald\_27:

(Start: 3 @22931 has 43 MA's), (5, 22952), (13, 23054), (18, 23129), (22, 23216), (24, 23267),

Gene: Flatwoods\_29 Start: 21686, Stop: 22069, Start Num: 3

Candidate Starts for Flatwoods\_29:

(Start: 3 @21686 has 43 MA's), (7, 21734), (9, 21752), (13, 21803), (22, 21965), (27, 22040),

Gene: Fosterous\_27 Start: 22764, Stop: 23171, Start Num: 3

Candidate Starts for Fosterous\_27:

(Start: 3 @22764 has 43 MA's), (5, 22785), (13, 22887), (18, 22962), (22, 23049), (24, 23100),

Gene: Gaea\_28 Start: 21337, Stop: 21720, Start Num: 3

Candidate Starts for Gaea\_28:

(Start: 3 @21337 has 43 MA's), (7, 21385), (9, 21403), (13, 21454), (22, 21616),

Gene: Galadriel\_29 Start: 23253, Stop: 23660, Start Num: 3

Candidate Starts for Galadriel\_29:

(Start: 3 @23253 has 43 MA's), (5, 23274), (13, 23376), (18, 23451), (22, 23538), (24, 23589),

Gene: Geodirt\_26 Start: 22236, Stop: 22643, Start Num: 3

Candidate Starts for Geodirt\_26:

(Start: 3 @22236 has 43 MA's), (5, 22257), (13, 22359), (18, 22434), (22, 22521), (24, 22572),

Gene: Gustavo\_28 Start: 21477, Stop: 21872, Start Num: 3

Candidate Starts for Gustavo\_28:

(Start: 3 @21477 has 43 MA's), (7, 21525), (9, 21543), (13, 21594), (19, 21687), (22, 21756), (27, 21831),

Gene: Hans\_29 Start: 20978, Stop: 21424, Start Num: 2

Candidate Starts for Hans\_29:

(Start: 2 @20978 has 5 MA's), (Start: 4 @20990 has 11 MA's), (5, 20999), (7, 21032), (8, 21047), (9, 21050), (13, 21101),

Gene: Inspectinfecti\_28 Start: 21414, Stop: 21848, Start Num: 4

Candidate Starts for Inspectinfecti\_28:

(Start: 2 @21402 has 5 MA's), (Start: 4 @21414 has 11 MA's), (5, 21423), (7, 21456), (8, 21471), (9, 21474), (13, 21525), (17, 21594), (21, 21672),

Gene: JKSyngboy\_26 Start: 22046, Stop: 22429, Start Num: 3

Candidate Starts for JKSyngboy\_26:

(Start: 3 @22046 has 43 MA's), (7, 22094), (9, 22112), (13, 22163), (22, 22325),

Gene: Jabberwocky\_27 Start: 23395, Stop: 23799, Start Num: 3

Candidate Starts for Jabberwocky\_27:

(Start: 3 @23395 has 43 MA's), (5, 23416), (13, 23518), (18, 23593), (22, 23677), (24, 23728),

Gene: Kamashten\_28 Start: 22841, Stop: 23248, Start Num: 3

Candidate Starts for Kamashten\_28:

(Start: 3 @22841 has 43 MA's), (5, 22862), (13, 22964), (18, 23039), (22, 23126), (24, 23177),

Gene: Keitabear\_29 Start: 24197, Stop: 24604, Start Num: 3

Candidate Starts for Keitabear\_29:

(Start: 3 @24197 has 43 MA's), (5, 24218), (13, 24320), (18, 24395), (22, 24482), (24, 24533),

Gene: Kewpiedoll\_28 Start: 22038, Stop: 22445, Start Num: 3

Candidate Starts for Kewpiedoll\_28:

(Start: 3 @22038 has 43 MA's), (5, 22059), (13, 22161), (18, 22236), (22, 22323), (24, 22374),

Gene: Kroos\_29 Start: 22230, Stop: 22625, Start Num: 3

Candidate Starts for Kroos\_29:

(Start: 3 @22230 has 43 MA's), (7, 22278), (9, 22296), (13, 22347), (22, 22509), (27, 22584),

Gene: Kwobi\_29 Start: 22216, Stop: 22611, Start Num: 3

Candidate Starts for Kwobi\_29:

(Start: 3 @22216 has 43 MA's), (7, 22264), (9, 22282), (13, 22333), (19, 22426), (22, 22495), (27, 22570),

Gene: Lennon\_29 Start: 23999, Stop: 24406, Start Num: 3

Candidate Starts for Lennon\_29:

(Start: 3 @23999 has 43 MA's), (5, 24020), (13, 24122), (18, 24197), (22, 24284), (24, 24335),

Gene: Leonard\_27 Start: 20976, Stop: 21422, Start Num: 2

Candidate Starts for Leonard\_27:

(Start: 2 @20976 has 5 MA's), (Start: 4 @20988 has 11 MA's), (5, 20997), (7, 21030), (9, 21048), (13, 21099), (17, 21168), (21, 21246),

Gene: LilHam\_26 Start: 20810, Stop: 21205, Start Num: 3

Candidate Starts for LilHam\_26:

(Start: 3 @20810 has 43 MA's), (7, 20858), (9, 20876), (13, 20927), (19, 21020), (22, 21089), (27, 21164),

Gene: Love\_32 Start: 23763, Stop: 24170, Start Num: 3

Candidate Starts for Love\_32:

(Start: 3 @23763 has 43 MA's), (5, 23784), (13, 23886), (18, 23961), (22, 24048), (24, 24099),

Gene: McKinley\_31 Start: 23795, Stop: 24202, Start Num: 3

Candidate Starts for McKinley\_31:

(Start: 3 @23795 has 43 MA's), (5, 23816), (13, 23918), (18, 23993), (22, 24080), (24, 24131),

Gene: MelBins\_28 Start: 21184, Stop: 21630, Start Num: 2

Candidate Starts for MelBins\_28:

(Start: 2 @21184 has 5 MA's), (Start: 4 @21196 has 11 MA's), (7, 21238), (8, 21253), (9, 21256), (12, 21289), (13, 21307), (17, 21376),

Gene: MoontowerMania\_28 Start: 22606, Stop: 23013, Start Num: 3

Candidate Starts for MoontowerMania\_28:

(Start: 3 @22606 has 43 MA's), (5, 22627), (13, 22729), (18, 22804), (22, 22891),

Gene: Natkenzie\_29 Start: 22570, Stop: 22980, Start Num: 4

Candidate Starts for Natkenzie\_29:

(Start: 4 @22570 has 11 MA's), (5, 22582), (8, 22630), (9, 22633), (11, 22657), (14, 22687), (16, 22744), (20, 22804),

Gene: Nordenberg\_23 Start: 21965, Stop: 22372, Start Num: 3

Candidate Starts for Nordenberg\_23:

(Start: 3 @21965 has 43 MA's), (5, 21986), (13, 22088), (18, 22163), (22, 22250), (24, 22301),

Gene: Paries\_31 Start: 23422, Stop: 23838, Start Num: 3

Candidate Starts for Paries\_31:

(Start: 3 @23422 has 43 MA's), (5, 23443), (13, 23545), (18, 23620), (22, 23707), (24, 23758),

Gene: Phauci\_20 Start: 17577, Stop: 18011, Start Num: 4

Candidate Starts for Phauci\_20:

(Start: 2 @17565 has 5 MA's), (Start: 4 @17577 has 11 MA's), (5, 17586), (7, 17619), (8, 17634), (9, 17637), (13, 17688),

Gene: Phinally\_27 Start: 20973, Stop: 21419, Start Num: 2

Candidate Starts for Phinally\_27:

(Start: 2 @20973 has 5 MA's), (Start: 4 @20985 has 11 MA's), (5, 20994), (7, 21027), (9, 21045), (13, 21096), (17, 21165), (21, 21243),

Gene: Ribeye\_29 Start: 22643, Stop: 23026, Start Num: 3

Candidate Starts for Ribeye\_29:

(Start: 3 @22643 has 43 MA's), (7, 22691), (9, 22709), (13, 22760), (22, 22922), (27, 22997),

Gene: RiverRaider\_30 Start: 21027, Stop: 21458, Start Num: 3

Candidate Starts for RiverRaider\_30:

(Start: 3 @21027 has 43 MA's), (7, 21081), (10, 21105), (13, 21150), (22, 21318), (25, 21393),

Gene: Rofo\_29 Start: 22826, Stop: 23233, Start Num: 3

Candidate Starts for Rofo\_29:

(Start: 3 @22826 has 43 MA's), (5, 22847), (13, 22949), (18, 23024), (22, 23111), (24, 23162),

Gene: Sampson\_29 Start: 22515, Stop: 22925, Start Num: 4

Candidate Starts for Sampson\_29:

(Start: 4 @22515 has 11 MA's), (5, 22527), (8, 22575), (9, 22578), (11, 22602), (14, 22632), (16, 22689), (20, 22749),

Gene: Sanjuju\_27 Start: 23007, Stop: 23414, Start Num: 3

Candidate Starts for Sanjuju\_27:

(Start: 3 @23007 has 43 MA's), (5, 23028), (13, 23130), (18, 23205), (22, 23292), (24, 23343),

Gene: Saronaya\_28 Start: 21477, Stop: 21872, Start Num: 3

Candidate Starts for Saronaya\_28:

(Start: 3 @21477 has 43 MA's), (7, 21525), (9, 21543), (13, 21594), (19, 21687), (22, 21756), (27, 21831),



Gene: SchottB\_27 Start: 22489, Stop: 22884, Start Num: 3

Candidate Starts for SchottB\_27:

(Start: 3 @22489 has 43 MA's), (7, 22537), (9, 22555), (13, 22606), (19, 22699), (22, 22768), (27, 22843),

Gene: Scioto\_29 Start: 22570, Stop: 22980, Start Num: 4

Candidate Starts for Scioto\_29:

(Start: 4 @22570 has 11 MA's), (5, 22582), (8, 22630), (9, 22633), (11, 22657), (14, 22687), (16, 22744), (20, 22804),

Gene: Sedona\_29 Start: 23932, Stop: 24339, Start Num: 3

Candidate Starts for Sedona\_29:

(Start: 3 @23932 has 43 MA's), (5, 23953), (13, 24055), (18, 24130), (22, 24217), (26, 24292),

Gene: Shivanishola\_30 Start: 22906, Stop: 23313, Start Num: 3

Candidate Starts for Shivanishola\_30:

(Start: 3 @22906 has 43 MA's), (5, 22927), (13, 23029), (18, 23104), (22, 23191), (24, 23242),

Gene: Sitar\_29 Start: 23999, Stop: 24406, Start Num: 3

Candidate Starts for Sitar\_29:

(Start: 3 @23999 has 43 MA's), (5, 24020), (13, 24122), (18, 24197), (22, 24284), (24, 24335),

Gene: StorminNorm\_28 Start: 21356, Stop: 21751, Start Num: 3

Candidate Starts for StorminNorm\_28:

(Start: 3 @21356 has 43 MA's), (7, 21404), (9, 21422), (13, 21473), (19, 21566), (22, 21635), (27, 21710),

Gene: Stultus\_27 Start: 21914, Stop: 22321, Start Num: 3

Candidate Starts for Stultus\_27:

(Start: 3 @21914 has 43 MA's), (5, 21935), (13, 22037), (18, 22112), (22, 22199), (24, 22250),

Gene: Tangent\_29 Start: 22348, Stop: 22755, Start Num: 3

Candidate Starts for Tangent\_29:

(Start: 3 @22348 has 43 MA's), (5, 22369), (13, 22471), (18, 22546), (22, 22633), (24, 22684),

Gene: Tangerine\_28 Start: 21362, Stop: 21757, Start Num: 3

Candidate Starts for Tangerine\_28:

(Start: 3 @21362 has 43 MA's), (7, 21410), (9, 21428), (13, 21479), (19, 21572), (22, 21641), (27, 21716),

Gene: Tardus\_30 Start: 21851, Stop: 22261, Start Num: 4

Candidate Starts for Tardus\_30:

(Start: 4 @21851 has 11 MA's), (5, 21863), (8, 21911), (9, 21914), (14, 21968), (16, 22025), (20, 22085),

Gene: Thing3\_28 Start: 22841, Stop: 23248, Start Num: 3

Candidate Starts for Thing3\_28:

(Start: 3 @22841 has 43 MA's), (5, 22862), (13, 22964), (18, 23039), (22, 23126), (24, 23177),

Gene: Tycho\_28 Start: 21451, Stop: 21846, Start Num: 3

Candidate Starts for Tycho\_28:

(Start: 3 @21451 has 43 MA's), (7, 21499), (9, 21517), (13, 21568), (19, 21661), (22, 21730), (27, 21805),

Gene: Verity\_28 Start: 22700, Stop: 23113, Start Num: 4

Candidate Starts for Verity\_28:

(Start: 4 @22700 has 11 MA's), (5, 22712), (8, 22760), (9, 22763), (14, 22817), (16, 22877), (20, 22937), (23, 22979), (24, 23021),

Gene: ViaConlectus\_29 Start: 21194, Stop: 21604, Start Num: 4

Candidate Starts for ViaConlectus\_29:

(Start: 4 @21194 has 11 MA's), (5, 21206), (8, 21254), (9, 21257), (14, 21311), (16, 21368), (20, 21428),

Gene: Vivi2\_31 Start: 23521, Stop: 23928, Start Num: 3

Candidate Starts for Vivi2\_31:

(Start: 3 @23521 has 43 MA's), (5, 23542), (13, 23644), (18, 23719), (22, 23806), (24, 23857),

Gene: YorkOnyx\_29 Start: 21719, Stop: 22102, Start Num: 3

Candidate Starts for YorkOnyx\_29:

(Start: 3 @21719 has 43 MA's), (7, 21767), (9, 21785), (13, 21836), (22, 21998), (27, 22073),

Gene: Zipp\_28 Start: 22597, Stop: 23010, Start Num: 4

Candidate Starts for Zipp\_28:

(Start: 4 @22597 has 11 MA's), (5, 22609), (8, 22657), (9, 22660), (14, 22714), (16, 22774), (20, 22834), (23, 22876),

Gene: Zitch\_30 Start: 20474, Stop: 20884, Start Num: 4

Candidate Starts for Zitch\_30:

(1, 20459), (Start: 4 @20474 has 11 MA's), (5, 20486), (8, 20534), (9, 20537), (11, 20561), (14, 20591), (16, 20648), (20, 20708),