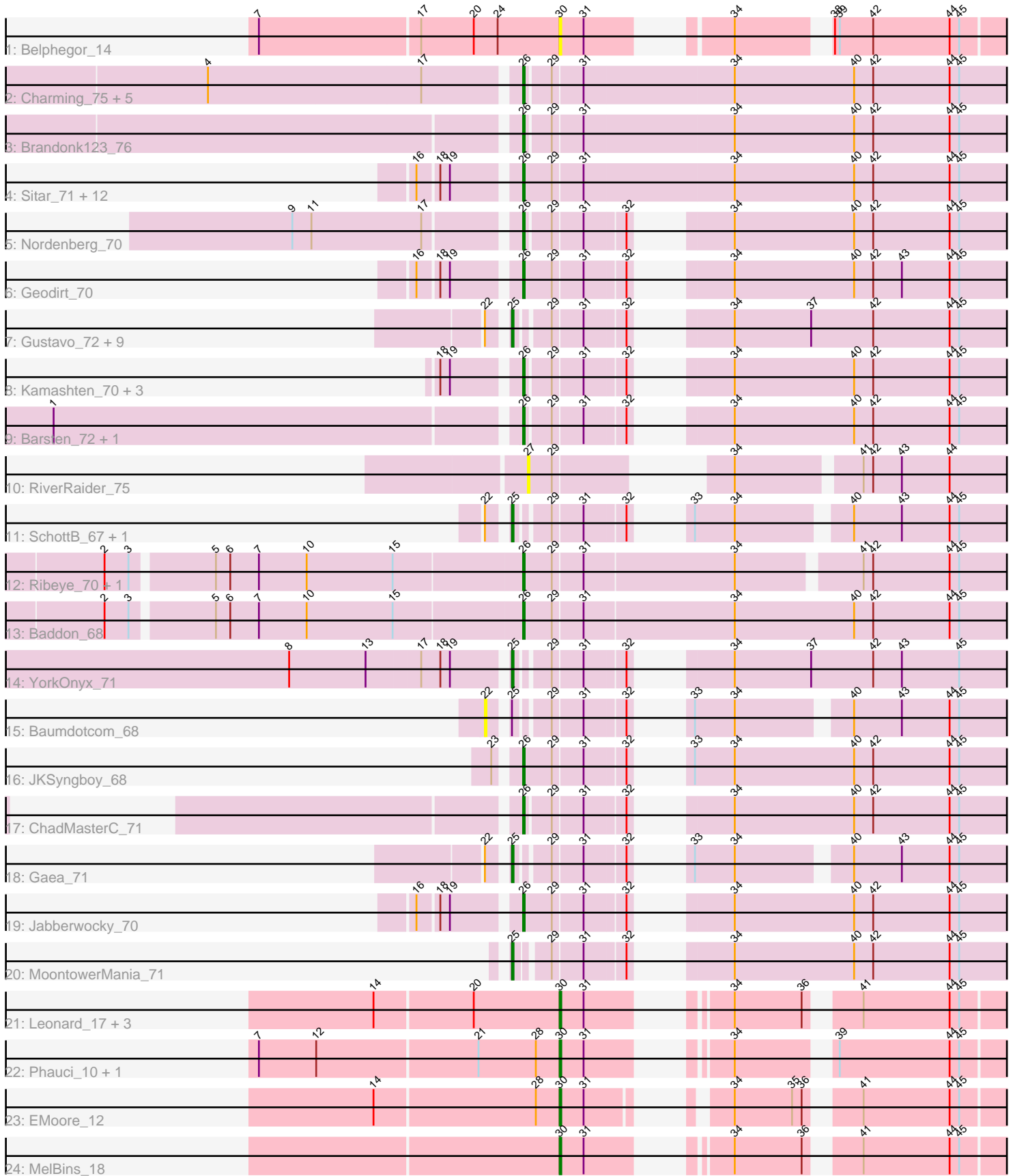


# Pham 85677



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 85677 Report

This analysis was run 04/28/24 on database version 559.

Pham number 85677 has 60 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Belphegor\_14
- Track 2 : Charming\_75, BobBob\_72, Fosterous\_74, Vivi2\_76, Rofo\_72, Tangent\_74
- Track 3 : Brandonk123\_76
- Track 4 : Sitar\_71, Ailee\_69, Keitabear\_70, Sanjuju\_70, Shivanishola\_71, Angelicage\_70, Affeca\_72, Lennon\_71, Stultus\_67, Sedona\_70, Fitzgerald\_70, Bibwit\_70, McKinley\_72
- Track 5 : Nordenberg\_70
- Track 6 : Geodirt\_70
- Track 7 : Gustavo\_72, StorminNorm\_71, Ashertheman\_70, Tycho\_69, Bizzy\_71, Flatwoods\_70, Saronaya\_72, Kwobi\_71, Tangerine\_71, Kroos\_70
- Track 8 : Kamashten\_70, Thing3\_70, Galadriel\_71, Paries\_73
- Track 9 : Barsten\_72, Kewpiedoll\_70
- Track 10 : RiverRaider\_75
- Track 11 : SchottB\_67, LilHam\_64
- Track 12 : Ribeye\_70, Derg\_67
- Track 13 : Baddon\_68
- Track 14 : YorkOnyx\_71
- Track 15 : Baumdotcom\_68
- Track 16 : JKSyngboy\_68
- Track 17 : ChadMasterC\_71
- Track 18 : Gaea\_71
- Track 19 : Jabberwocky\_70
- Track 20 : MoontowerMania\_71
- Track 21 : Leonard\_17, Inspectinfecti\_18, Ali17\_15, Phinally\_17
- Track 22 : Phauci\_10, Hans\_19
- Track 23 : EMoore\_12
- Track 24 : MelBins\_18

### ***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 31 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_72, Ailee\_69, Angelicage\_70, Baddon\_68, Barsten\_72, Bibwit\_70, BobBob\_72, Brandonk123\_76, ChadMasterC\_71, Charming\_75, Derg\_67, Fitzgerald\_70, Fosterous\_74, Galadriel\_71, Geodirt\_70, JKSyngboy\_68, Jabberwocky\_70, Kamashten\_70, Keitabear\_70, Kewpiedoll\_70, Lennon\_71, McKinley\_72, Nordenberg\_70, Paries\_73, Ribeye\_70, Rofo\_72, Sanjuju\_70, Sedona\_70, Shivanishola\_71, Sitar\_71, Stultus\_67, Tangent\_74, Thing3\_70, Vivi2\_76,

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

- 

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

- Ali17\_15, Ashertheman\_70, Baumdotcom\_68, Belphegor\_14, Bizzy\_71, EMOore\_12, Flatwoods\_70, Gaea\_71, Gustavo\_72, Hans\_19, Inspectinfecti\_18, Kroos\_70, Kwobi\_71, Leonard\_17, LilHam\_64, MelBins\_18, MoontowerMania\_71, Phauci\_10, Phinally\_17, RiverRaider\_75, Saronaya\_72, SchottB\_67, StorminNorm\_71, Tangerine\_71, Tycho\_69, YorkOnyx\_71,

### Summary by start number:

Start 22:

- Found in 14 of 60 ( 23.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.1% of time when present
- Phage (with cluster) where this start called: Baumdotcom\_68 (DE1),

Start 25:

- Found in 16 of 60 ( 26.7% ) of genes in pham
- Manual Annotations of this start: 10 of 48
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Ashertheman\_70 (DE1), Bizzy\_71 (DE1), Flatwoods\_70 (DE1), Gaea\_71 (DE1), Gustavo\_72 (DE1), Kroos\_70 (DE1), Kwobi\_71 (DE1), LilHam\_64 (DE1), MoontowerMania\_71 (DE1), Saronaya\_72 (DE1), SchottB\_67 (DE1), StorminNorm\_71 (DE1), Tangerine\_71 (DE1), Tycho\_69 (DE1), YorkOnyx\_71 (DE1),

Start 26:

- Found in 34 of 60 ( 56.7% ) of genes in pham
- Manual Annotations of this start: 31 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca\_72 (DE1), Ailee\_69 (DE1), Angelicage\_70 (DE1), Baddon\_68 (DE1), Barsten\_72 (DE1), Bibwit\_70 (DE1), BobBob\_72 (DE1), Brandonk123\_76 (DE1), ChadMasterC\_71 (DE1), Charming\_75 (DE1), Derg\_67 (DE1), Fitzgerald\_70 (DE1), Fosterous\_74 (DE1), Galadriel\_71 (DE1), Geodirt\_70 (DE1), JKSyngboy\_68 (DE1), Jabberwocky\_70 (DE1), Kamashten\_70 (DE1), Keitabear\_70 (DE1), Kewpiedoll\_70 (DE1), Lennon\_71 (DE1), McKinley\_72 (DE1), Nordenberg\_70 (DE1), Paries\_73 (DE1), Ribeye\_70 (DE1), Rofo\_72 (DE1), Sanjuju\_70 (DE1), Sedona\_70 (DE1), Shivanishola\_71 (DE1), Sitar\_71 (DE1), Stultus\_67 (DE1), Tangent\_74 (DE1), Thing3\_70 (DE1), Vivi2\_76 (DE1),

Start 27:

- Found in 1 of 60 ( 1.7% ) of genes in pham

- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RiverRaider\_75 (DE1),

Start 30:

- Found in 9 of 60 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 7 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ali17\_15 (DE2), Belphegor\_14 (DE), EMOore\_12 (DE2), Hans\_19 (DE2), Inspectinfecti\_18 (DE2), Leonard\_17 (DE2), MelBins\_18 (DE2), Phauci\_10 (DE2), Phinally\_17 (DE2),

### **Summary by clusters:**

There are 3 clusters represented in this pham: DE1, DE2, DE,

Info for manual annotations of cluster DE1:

- Start number 25 was manually annotated 10 times for cluster DE1.
- Start number 26 was manually annotated 31 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 30 was manually annotated 7 times for cluster DE2.

### **Gene Information:**

Gene: Affeca\_72 Start: 54116, Stop: 54418, Start Num: 26

Candidate Starts for Affeca\_72:

(16, 54062), (18, 54074), (19, 54080), (Start: 26 @54116 has 31 MA's), (29, 54134), (31, 54152), (34, 54245), (40, 54320), (42, 54332), (44, 54380), (45, 54386),

Gene: Ailee\_69 Start: 53151, Stop: 53453, Start Num: 26

Candidate Starts for Ailee\_69:

(16, 53097), (18, 53109), (19, 53115), (Start: 26 @53151 has 31 MA's), (29, 53169), (31, 53187), (34, 53280), (40, 53355), (42, 53367), (44, 53415), (45, 53421),

Gene: Ali17\_15 Start: 10989, Stop: 11213, Start Num: 30

Candidate Starts for Ali17\_15:

(14, 10875), (20, 10935), (Start: 30 @10989 has 7 MA's), (31, 11004), (34, 11058), (36, 11100), (41, 11124), (44, 11178), (45, 11184),

Gene: Angelicage\_70 Start: 54044, Stop: 54346, Start Num: 26

Candidate Starts for Angelicage\_70:

(16, 53990), (18, 54002), (19, 54008), (Start: 26 @54044 has 31 MA's), (29, 54062), (31, 54080), (34, 54173), (40, 54248), (42, 54260), (44, 54308), (45, 54314),

Gene: Ashertheman\_70 Start: 52344, Stop: 52610, Start Num: 25

Candidate Starts for Ashertheman\_70:

(22, 52335), (Start: 25 @52344 has 10 MA's), (29, 52362), (31, 52380), (32, 52404), (34, 52437), (37, 52485), (42, 52524), (44, 52572), (45, 52578),

Gene: Baddon\_68 Start: 52962, Stop: 53264, Start Num: 26

Candidate Starts for Baddon\_68:

(2, 52710), (3, 52725), (5, 52773), (6, 52782), (7, 52800), (10, 52830), (15, 52884), (Start: 26 @52962 has 31 MA's), (29, 52980), (31, 52998), (34, 53091), (40, 53166), (42, 53178), (44, 53226), (45, 53232),

Gene: Barsten\_72 Start: 53916, Stop: 54179, Start Num: 26

Candidate Starts for Barsten\_72:

(1, 53634), (Start: 26 @53916 has 31 MA's), (29, 53931), (31, 53949), (32, 53973), (34, 54006), (40, 54081), (42, 54093), (44, 54141), (45, 54147),

Gene: Baumdotcom\_68 Start: 52316, Stop: 52579, Start Num: 22

Candidate Starts for Baumdotcom\_68:

(22, 52316), (Start: 25 @52325 has 10 MA's), (29, 52343), (31, 52361), (32, 52385), (33, 52394), (34, 52418), (40, 52481), (43, 52511), (44, 52541), (45, 52547),

Gene: Belphegor\_14 Start: 10238, Stop: 10465, Start Num: 30

Candidate Starts for Belphegor\_14:

(7, 10052), (17, 10151), (20, 10184), (24, 10199), (Start: 30 @10238 has 7 MA's), (31, 10253), (34, 10310), (38, 10358), (39, 10361), (42, 10382), (44, 10430), (45, 10436),

Gene: Bibwit\_70 Start: 52745, Stop: 53047, Start Num: 26

Candidate Starts for Bibwit\_70:

(16, 52691), (18, 52703), (19, 52709), (Start: 26 @52745 has 31 MA's), (29, 52763), (31, 52781), (34, 52874), (40, 52949), (42, 52961), (44, 53009), (45, 53015),

Gene: Bizzy\_71 Start: 52228, Stop: 52494, Start Num: 25

Candidate Starts for Bizzy\_71:

(22, 52219), (Start: 25 @52228 has 10 MA's), (29, 52246), (31, 52264), (32, 52288), (34, 52321), (37, 52369), (42, 52408), (44, 52456), (45, 52462),

Gene: BobBob\_72 Start: 53325, Stop: 53624, Start Num: 26

Candidate Starts for BobBob\_72:

(4, 53139), (17, 53271), (Start: 26 @53325 has 31 MA's), (29, 53340), (31, 53358), (34, 53451), (40, 53526), (42, 53538), (44, 53586), (45, 53592),

Gene: Brandonk123\_76 Start: 53753, Stop: 54052, Start Num: 26

Candidate Starts for Brandonk123\_76:

(Start: 26 @53753 has 31 MA's), (29, 53768), (31, 53786), (34, 53879), (40, 53954), (42, 53966), (44, 54014), (45, 54020),

Gene: ChadMasterC\_71 Start: 55187, Stop: 55450, Start Num: 26

Candidate Starts for ChadMasterC\_71:

(Start: 26 @55187 has 31 MA's), (29, 55202), (31, 55220), (32, 55244), (34, 55277), (40, 55352), (42, 55364), (44, 55412), (45, 55418),

Gene: Charming\_75 Start: 53075, Stop: 53374, Start Num: 26

Candidate Starts for Charming\_75:

(4, 52889), (17, 53021), (Start: 26 @53075 has 31 MA's), (29, 53090), (31, 53108), (34, 53201), (40, 53276), (42, 53288), (44, 53336), (45, 53342),

Gene: Derg\_67 Start: 50955, Stop: 51248, Start Num: 26

Candidate Starts for Derg\_67:

(2, 50703), (3, 50718), (5, 50766), (6, 50775), (7, 50793), (10, 50823), (15, 50877), (Start: 26 @50955 has 31 MA's), (29, 50973), (31, 50991), (34, 51084), (41, 51156), (42, 51162), (44, 51210), (45, 51216),

Gene: EMoore\_12 Start: 9320, Stop: 9538, Start Num: 30

Candidate Starts for EMoore\_12:

(14, 9206), (28, 9305), (Start: 30 @9320 has 7 MA's), (31, 9335), (34, 9383), (35, 9419), (36, 9425), (41, 9449), (44, 9503), (45, 9509),

Gene: Fitzgerald\_70 Start: 53893, Stop: 54195, Start Num: 26

Candidate Starts for Fitzgerald\_70:

(16, 53839), (18, 53851), (19, 53857), (Start: 26 @53893 has 31 MA's), (29, 53911), (31, 53929), (34, 54022), (40, 54097), (42, 54109), (44, 54157), (45, 54163),

Gene: Flatwoods\_70 Start: 51537, Stop: 51803, Start Num: 25

Candidate Starts for Flatwoods\_70:

(22, 51528), (Start: 25 @51537 has 10 MA's), (29, 51555), (31, 51573), (32, 51597), (34, 51630), (37, 51678), (42, 51717), (44, 51765), (45, 51771),

Gene: Fosterous\_74 Start: 54069, Stop: 54368, Start Num: 26

Candidate Starts for Fosterous\_74:

(4, 53883), (17, 54015), (Start: 26 @54069 has 31 MA's), (29, 54084), (31, 54102), (34, 54195), (40, 54270), (42, 54282), (44, 54330), (45, 54336),

Gene: Gaea\_71 Start: 52134, Stop: 52388, Start Num: 25

Candidate Starts for Gaea\_71:

(22, 52125), (Start: 25 @52134 has 10 MA's), (29, 52152), (31, 52170), (32, 52194), (33, 52203), (34, 52227), (40, 52290), (43, 52320), (44, 52350), (45, 52356),

Gene: Galadriel\_71 Start: 54024, Stop: 54287, Start Num: 26

Candidate Starts for Galadriel\_71:

(18, 53982), (19, 53988), (Start: 26 @54024 has 31 MA's), (29, 54039), (31, 54057), (32, 54081), (34, 54114), (40, 54189), (42, 54201), (44, 54249), (45, 54255),

Gene: Geodirt\_70 Start: 54433, Stop: 54699, Start Num: 26

Candidate Starts for Geodirt\_70:

(16, 54379), (18, 54391), (19, 54397), (Start: 26 @54433 has 31 MA's), (29, 54451), (31, 54469), (32, 54493), (34, 54526), (40, 54601), (42, 54613), (43, 54631), (44, 54661), (45, 54667),

Gene: Gustavo\_72 Start: 53107, Stop: 53373, Start Num: 25

Candidate Starts for Gustavo\_72:

(22, 53098), (Start: 25 @53107 has 10 MA's), (29, 53125), (31, 53143), (32, 53167), (34, 53200), (37, 53248), (42, 53287), (44, 53335), (45, 53341),

Gene: Hans\_19 Start: 11533, Stop: 11757, Start Num: 30

Candidate Starts for Hans\_19:

(7, 11347), (12, 11383), (21, 11482), (28, 11518), (Start: 30 @11533 has 7 MA's), (31, 11548), (34, 11602), (39, 11653), (44, 11722), (45, 11728),

Gene: Inspectinfecti\_18 Start: 11992, Stop: 12216, Start Num: 30

Candidate Starts for Inspectinfecti\_18:

(14, 11878), (20, 11938), (Start: 30 @11992 has 7 MA's), (31, 12007), (34, 12061), (36, 12103), (41, 12127), (44, 12181), (45, 12187),

Gene: JKSyngboy\_68 Start: 53020, Stop: 53286, Start Num: 26

Candidate Starts for JKSyngboy\_68:

(23, 53011), (Start: 26 @53020 has 31 MA's), (29, 53038), (31, 53056), (32, 53080), (33, 53089), (34, 53113), (40, 53188), (42, 53200), (44, 53248), (45, 53254),

Gene: Jabberwocky\_70 Start: 54152, Stop: 54418, Start Num: 26

Candidate Starts for Jabberwocky\_70:

(16, 54098), (18, 54110), (19, 54116), (Start: 26 @54152 has 31 MA's), (29, 54170), (31, 54188), (32, 54212), (34, 54245), (40, 54320), (42, 54332), (44, 54380), (45, 54386),

Gene: Kamashten\_70 Start: 53150, Stop: 53413, Start Num: 26

Candidate Starts for Kamashten\_70:

(18, 53108), (19, 53114), (Start: 26 @53150 has 31 MA's), (29, 53165), (31, 53183), (32, 53207), (34, 53240), (40, 53315), (42, 53327), (44, 53375), (45, 53381),

Gene: Keitabear\_70 Start: 54665, Stop: 54967, Start Num: 26

Candidate Starts for Keitabear\_70:

(16, 54611), (18, 54623), (19, 54629), (Start: 26 @54665 has 31 MA's), (29, 54683), (31, 54701), (34, 54794), (40, 54869), (42, 54881), (44, 54929), (45, 54935),

Gene: Kewpiedoll\_70 Start: 54077, Stop: 54340, Start Num: 26

Candidate Starts for Kewpiedoll\_70:

(1, 53795), (Start: 26 @54077 has 31 MA's), (29, 54092), (31, 54110), (32, 54134), (34, 54167), (40, 54242), (42, 54254), (44, 54302), (45, 54308),

Gene: Kroos\_70 Start: 52663, Stop: 52929, Start Num: 25

Candidate Starts for Kroos\_70:

(22, 52654), (Start: 25 @52663 has 10 MA's), (29, 52681), (31, 52699), (32, 52723), (34, 52756), (37, 52804), (42, 52843), (44, 52891), (45, 52897),

Gene: Kwobi\_71 Start: 52926, Stop: 53192, Start Num: 25

Candidate Starts for Kwobi\_71:

(22, 52917), (Start: 25 @52926 has 10 MA's), (29, 52944), (31, 52962), (32, 52986), (34, 53019), (37, 53067), (42, 53106), (44, 53154), (45, 53160),

Gene: Lennon\_71 Start: 54814, Stop: 55116, Start Num: 26

Candidate Starts for Lennon\_71:

(16, 54760), (18, 54772), (19, 54778), (Start: 26 @54814 has 31 MA's), (29, 54832), (31, 54850), (34, 54943), (40, 55018), (42, 55030), (44, 55078), (45, 55084),

Gene: Leonard\_17 Start: 11587, Stop: 11811, Start Num: 30

Candidate Starts for Leonard\_17:

(14, 11473), (20, 11533), (Start: 30 @11587 has 7 MA's), (31, 11602), (34, 11656), (36, 11698), (41, 11722), (44, 11776), (45, 11782),

Gene: LilHam\_64 Start: 50020, Stop: 50274, Start Num: 25

Candidate Starts for LilHam\_64:

(22, 50011), (Start: 25 @50020 has 10 MA's), (29, 50038), (31, 50056), (32, 50080), (33, 50089), (34, 50113), (40, 50176), (43, 50206), (44, 50236), (45, 50242),

Gene: McKinley\_72 Start: 53670, Stop: 53972, Start Num: 26

Candidate Starts for McKinley\_72:

(16, 53616), (18, 53628), (19, 53634), (Start: 26 @53670 has 31 MA's), (29, 53688), (31, 53706), (34, 53799), (40, 53874), (42, 53886), (44, 53934), (45, 53940),

Gene: MelBins\_18 Start: 11783, Stop: 12007, Start Num: 30

Candidate Starts for MelBins\_18:

(Start: 30 @11783 has 7 MA's), (31, 11798), (34, 11852), (36, 11894), (41, 11918), (44, 11972), (45, 11978),

Gene: MoontowerMania\_71 Start: 54544, Stop: 54810, Start Num: 25

Candidate Starts for MoontowerMania\_71:

(Start: 25 @54544 has 10 MA's), (29, 54562), (31, 54580), (32, 54604), (34, 54637), (40, 54712), (42, 54724), (44, 54772), (45, 54778),

Gene: Nordenberg\_70 Start: 52729, Stop: 52992, Start Num: 26

Candidate Starts for Nordenberg\_70:

(9, 52597), (11, 52609), (17, 52678), (Start: 26 @52729 has 31 MA's), (29, 52744), (31, 52762), (32, 52786), (34, 52819), (40, 52894), (42, 52906), (44, 52954), (45, 52960),

Gene: Paries\_73 Start: 54168, Stop: 54431, Start Num: 26

Candidate Starts for Paries\_73:

(18, 54126), (19, 54132), (Start: 26 @54168 has 31 MA's), (29, 54183), (31, 54201), (32, 54225), (34, 54258), (40, 54333), (42, 54345), (44, 54393), (45, 54399),

Gene: Phauci\_10 Start: 8117, Stop: 8341, Start Num: 30

Candidate Starts for Phauci\_10:

(7, 7931), (12, 7967), (21, 8066), (28, 8102), (Start: 30 @8117 has 7 MA's), (31, 8132), (34, 8186), (39, 8237), (44, 8306), (45, 8312),

Gene: Phinally\_17 Start: 11584, Stop: 11808, Start Num: 30

Candidate Starts for Phinally\_17:

(14, 11470), (20, 11530), (Start: 30 @11584 has 7 MA's), (31, 11599), (34, 11653), (36, 11695), (41, 11719), (44, 11773), (45, 11779),

Gene: Ribeye\_70 Start: 52194, Stop: 52487, Start Num: 26

Candidate Starts for Ribeye\_70:

(2, 51942), (3, 51957), (5, 52005), (6, 52014), (7, 52032), (10, 52062), (15, 52116), (Start: 26 @52194 has 31 MA's), (29, 52212), (31, 52230), (34, 52323), (41, 52395), (42, 52401), (44, 52449), (45, 52455),

Gene: RiverRaider\_75 Start: 52309, Stop: 52551, Start Num: 27

Candidate Starts for RiverRaider\_75:

(27, 52309), (29, 52324), (34, 52387), (41, 52459), (42, 52465), (43, 52483), (44, 52513),

Gene: Rofo\_72 Start: 53651, Stop: 53950, Start Num: 26

Candidate Starts for Rofo\_72:

(4, 53465), (17, 53597), (Start: 26 @53651 has 31 MA's), (29, 53666), (31, 53684), (34, 53777), (40, 53852), (42, 53864), (44, 53912), (45, 53918),

Gene: Sanjuju\_70 Start: 54025, Stop: 54327, Start Num: 26

Candidate Starts for Sanjuju\_70:

(16, 53971), (18, 53983), (19, 53989), (Start: 26 @54025 has 31 MA's), (29, 54043), (31, 54061), (34, 54154), (40, 54229), (42, 54241), (44, 54289), (45, 54295),



Gene: Saronaya\_72 Start: 53107, Stop: 53373, Start Num: 25

Candidate Starts for Saronaya\_72:

(22, 53098), (Start: 25 @53107 has 10 MA's), (29, 53125), (31, 53143), (32, 53167), (34, 53200), (37, 53248), (42, 53287), (44, 53335), (45, 53341),

Gene: SchottB\_67 Start: 52740, Stop: 52994, Start Num: 25

Candidate Starts for SchottB\_67:

(22, 52731), (Start: 25 @52740 has 10 MA's), (29, 52758), (31, 52776), (32, 52800), (33, 52809), (34, 52833), (40, 52896), (43, 52926), (44, 52956), (45, 52962),

Gene: Sedona\_70 Start: 54598, Stop: 54900, Start Num: 26

Candidate Starts for Sedona\_70:

(16, 54544), (18, 54556), (19, 54562), (Start: 26 @54598 has 31 MA's), (29, 54616), (31, 54634), (34, 54727), (40, 54802), (42, 54814), (44, 54862), (45, 54868),

Gene: Shivanishola\_71 Start: 52328, Stop: 52630, Start Num: 26

Candidate Starts for Shivanishola\_71:

(16, 52274), (18, 52286), (19, 52292), (Start: 26 @52328 has 31 MA's), (29, 52346), (31, 52364), (34, 52457), (40, 52532), (42, 52544), (44, 52592), (45, 52598),

Gene: Sitar\_71 Start: 54523, Stop: 54825, Start Num: 26

Candidate Starts for Sitar\_71:

(16, 54469), (18, 54481), (19, 54487), (Start: 26 @54523 has 31 MA's), (29, 54541), (31, 54559), (34, 54652), (40, 54727), (42, 54739), (44, 54787), (45, 54793),

Gene: StorminNorm\_71 Start: 52897, Stop: 53163, Start Num: 25

Candidate Starts for StorminNorm\_71:

(22, 52888), (Start: 25 @52897 has 10 MA's), (29, 52915), (31, 52933), (32, 52957), (34, 52990), (37, 53038), (42, 53077), (44, 53125), (45, 53131),

Gene: Stultus\_67 Start: 52770, Stop: 53072, Start Num: 26

Candidate Starts for Stultus\_67:

(16, 52716), (18, 52728), (19, 52734), (Start: 26 @52770 has 31 MA's), (29, 52788), (31, 52806), (34, 52899), (40, 52974), (42, 52986), (44, 53034), (45, 53040),

Gene: Tangent\_74 Start: 53356, Stop: 53655, Start Num: 26

Candidate Starts for Tangent\_74:

(4, 53170), (17, 53302), (Start: 26 @53356 has 31 MA's), (29, 53371), (31, 53389), (34, 53482), (40, 53557), (42, 53569), (44, 53617), (45, 53623),

Gene: Tangerine\_71 Start: 52403, Stop: 52669, Start Num: 25

Candidate Starts for Tangerine\_71:

(22, 52394), (Start: 25 @52403 has 10 MA's), (29, 52421), (31, 52439), (32, 52463), (34, 52496), (37, 52544), (42, 52583), (44, 52631), (45, 52637),

Gene: Thing3\_70 Start: 53150, Stop: 53413, Start Num: 26

Candidate Starts for Thing3\_70:

(18, 53108), (19, 53114), (Start: 26 @53150 has 31 MA's), (29, 53165), (31, 53183), (32, 53207), (34, 53240), (40, 53315), (42, 53327), (44, 53375), (45, 53381),

Gene: Tycho\_69 Start: 52216, Stop: 52482, Start Num: 25

Candidate Starts for Tycho\_69:

(22, 52207), (Start: 25 @52216 has 10 MA's), (29, 52234), (31, 52252), (32, 52276), (34, 52309), (37, 52357), (42, 52396), (44, 52444), (45, 52450),

Gene: Vivi2\_76 Start: 54411, Stop: 54710, Start Num: 26

Candidate Starts for Vivi2\_76:

(4, 54225), (17, 54357), (Start: 26 @54411 has 31 MA's), (29, 54426), (31, 54444), (34, 54537), (40, 54612), (42, 54624), (44, 54672), (45, 54678),

Gene: YorkOnyx\_71 Start: 52418, Stop: 52684, Start Num: 25

Candidate Starts for YorkOnyx\_71:

(8, 52289), (13, 52337), (17, 52370), (18, 52382), (19, 52388), (Start: 25 @52418 has 10 MA's), (29, 52436), (31, 52454), (32, 52478), (34, 52511), (37, 52559), (42, 52598), (43, 52616), (45, 52652),