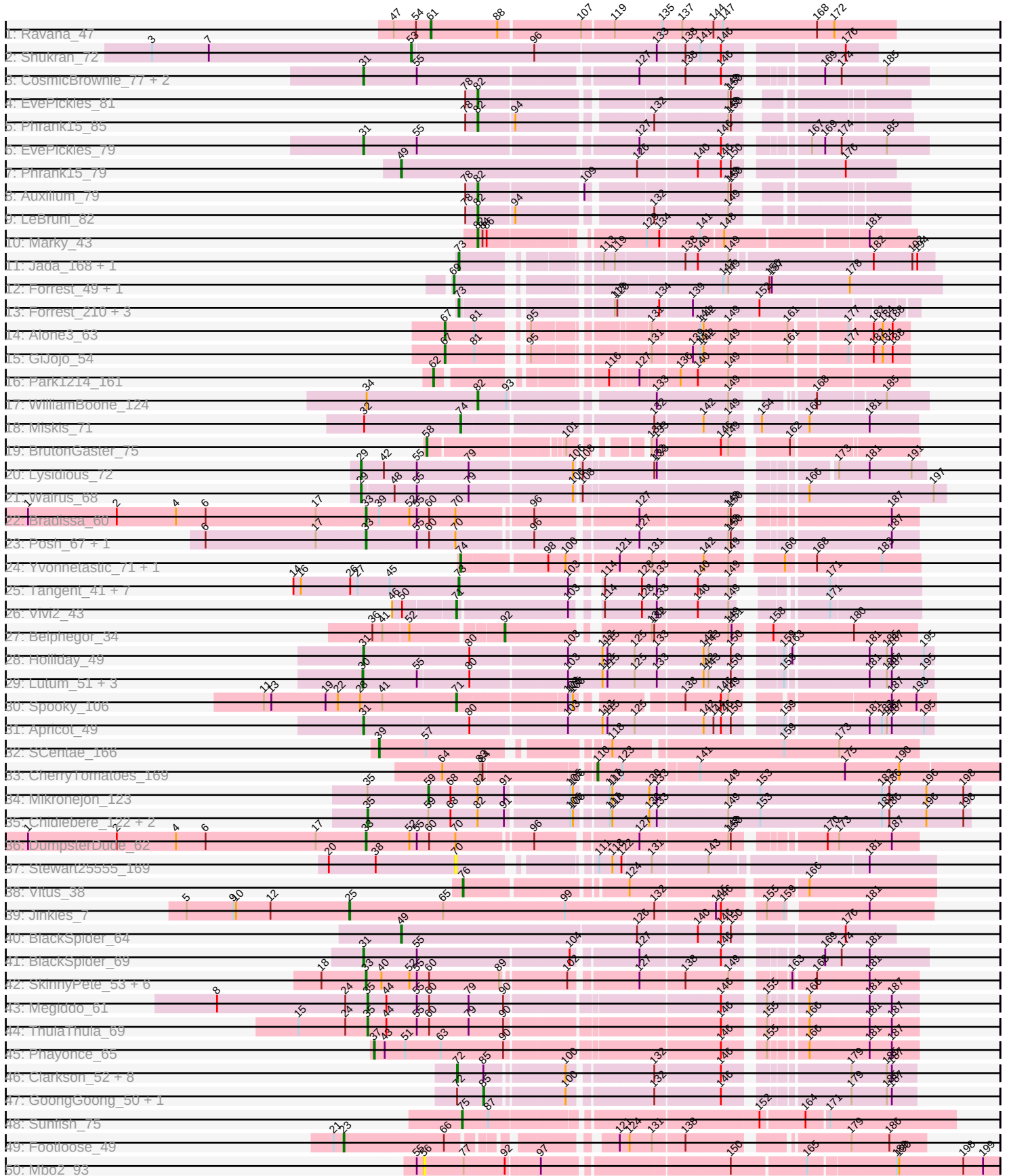


Pham 330731



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 330731 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330731 has 86 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Ravana_47
- Track 2 : Shukran_72
- Track 3 : CosmicBrownie_77, Lasker_80, GumGum_85
- Track 4 : EvePickles_81
- Track 5 : Phrank15_85
- Track 6 : EvePickles_79
- Track 7 : Phrank15_79
- Track 8 : Auxilium_79
- Track 9 : LeBruni_82
- Track 10 : Marky_43
- Track 11 : Jada_168, Forrest_171
- Track 12 : Forrest_49, Jada_47
- Track 13 : Forrest_210, Phredrick_212, Emma1919_210, DeluluLabubu_212
- Track 14 : Alone3_63
- Track 15 : GiJojo_54
- Track 16 : Park1214_161
- Track 17 : WilliamBoone_124
- Track 18 : Miskis_71
- Track 19 : BrutonGaster_75
- Track 20 : Lysidious_72
- Track 21 : Walrus_68
- Track 22 : Bradissa_60
- Track 23 : Posh_67, Wrigley_69
- Track 24 : Yvonnetastic_71, JonJames_73
- Track 25 : Tangent_41, BobBob_38, Charming_41, Nordenberg_35, Love_44, Brandonk123_42, Paries_43, Rofo_41
- Track 26 : Vivi2_43
- Track 27 : Belphegor_34
- Track 28 : Holliday_49
- Track 29 : Lutum_51, Kenna_50, BENtherdunthat_51, Getalong_54
- Track 30 : Spooky_106
- Track 31 : Apricot_49
- Track 32 : SCentae_166
- Track 33 : CherryTomatoes_169
- Track 34 : Mikronejon_123
- Track 35 : Chidiebere_122, Schomber_120, Kabocha_123
- Track 36 : DumpsterDude_62

- Track 37 : Stewart25555_169
- Track 38 : Vitus_38
- Track 39 : Jinkies_7
- Track 40 : BlackSpider_64
- Track 41 : BlackSpider_69
- Track 42 : SkinnyPete_53, Aloeri_75, ChickenDinner_74, DocMcStuffins_74, Misha28_72, Awesomesauce_74, TootsiePop_72
- Track 43 : Megiddo_61
- Track 44 : ThulaThula_69
- Track 45 : Phayonce_65
- Track 46 : Clarkson_52, Pringar_51, Blackbeetle_51, Huphlepuuff_53, VasuNzinga_51, Raela_51, Beelzebub_55, Poise_51, Lilbit_50
- Track 47 : GoongGoong_50, LittleLaf_51
- Track 48 : Sunfish_75
- Track 49 : Footloose_49
- Track 50 : Mbo2_93

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

The start number called the most often in the published annotations is 73, it was called in 14 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BobBob_38, Brandonk123_42, Charming_41, DeluluLabubu_212, Emma1919_210, Forrest_171, Forrest_210, Jada_168, Love_44, Nordenberg_35, Paries_43, Phredrick_212, Rofo_41, Tangent_41,

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

-

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

- Aloeri_75, Alone3_63, Apricot_49, Auxilium_79, Awesomesauce_74, BENtherdunthat_51, Beelzebub_55, Belphegor_34, BlackSpider_64, BlackSpider_69, Blackbeetle_51, Bradissa_60, BrutonGaster_75, CherryTomatoes_169, ChickenDinner_74, Chidiebere_122, Clarkson_52, CosmicBrownie_77, DocMcStuffins_74, DumpsterDude_62, EvePickles_79, EvePickles_81, Footloose_49, Forrest_49, Getalong_54, GiJojo_54, GoongGoong_50, GumGum_85, Holliday_49, Huphlepuuff_53, Jada_47, Jinkies_7, JonJames_73, Kabocha_123, Kenna_50, Lasker_80, LeBruni_82, Lilbit_50, LittleLaf_51, Lutum_51, Lysidious_72, Marky_43, Mbo2_93, Megiddo_61, Mikronejon_123, Misha28_72, Miskis_71, Park1214_161, Phayonce_65, Phrank15_79, Phrank15_85, Poise_51, Posh_67, Pringar_51, Raela_51, Ravana_47, SCentae_166, Schomber_120, Shukran_72, SkinnyPete_53, Spooky_106, Stewart25555_169, Sunfish_75, ThulaThula_69, TootsiePop_72, VasuNzinga_51, Vitus_38, Vivi2_43, Walrus_68, WilliamBoone_124, Wrigley_69, Yvonnestic_71,

Summary by start number:

Start 23:

- Found in 1 of 86 (1.2%) of genes in pham

- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Footloose_49 (singleton),

Start 25:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jinkies_7 (FL),

Start 29:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lysidious_72 (CV), Walrus_68 (CV),

Start 30:

- Found in 4 of 86 (4.7%) of genes in pham
- Manual Annotations of this start: 4 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BENTherdunthat_51 (DN1), Getalong_54 (DN1), Kenna_50 (DN1), Lutum_51 (DN1),

Start 31:

- Found in 7 of 86 (8.1%) of genes in pham
- Manual Annotations of this start: 5 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_49 (DN3), BlackSpider_69 (FN), CosmicBrownie_77 (AY), EvePickles_79 (AY), GumGum_85 (AY), Holliday_49 (DN1), Lasker_80 (AY),

Start 33:

- Found in 11 of 86 (12.8%) of genes in pham
- Manual Annotations of this start: 11 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aloeri_75 (F1), Awesomesauce_74 (F1), Bradissa_60 (CY1), ChickenDinner_74 (F1), DocMcStuffins_74 (F1), DumpsterDude_62 (DW), Misha28_72 (F1), Posh_67 (CY4), SkinnyPete_53 (N), TootsiePop_72 (F1), Wrigley_69 (CY4),

Start 35:

- Found in 6 of 86 (7.0%) of genes in pham
- Manual Annotations of this start: 5 of 82
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Chidiebere_122 (DQ), Kabocha_123 (DQ), Megiddo_61 (P1), Schomber_120 (DQ), ThulaThula_69 (P5),

Start 37:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phayonce_65 (P5),

Start 39:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 50.0% of time when present
- Phage (with cluster) where this start called: SCentae_166 (DO),

Start 49:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlackSpider_64 (FN), Phrank15_79 (AY),

Start 53:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shukran_72 (AY),

Start 56:

- Found in 1 of 86 (1.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mbo2_93 (singleton),

Start 58:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrutonGaster_75 (CQ2),

Start 59:

- Found in 4 of 86 (4.7%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Mikronejon_123 (DQ),

Start 61:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ravana_47 (A15),

Start 62:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Park1214_161 (BS),

Start 67:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Alone3_63 (BS), GiJojo_54 (BS),

Start 69:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Forrest_49 (BK1), Jada_47 (BK1),

Start 70:

- Found in 5 of 86 (5.8%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Stewart25555_169 (FC),

Start 71:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spooky_106 (DN2), Vivi2_43 (DE1),

Start 72:

- Found in 11 of 86 (12.8%) of genes in pham
- Manual Annotations of this start: 9 of 82
- Called 81.8% of time when present
- Phage (with cluster) where this start called: Beelzebub_55 (S), Blackbeetle_51 (S), Clarkson_52 (S), Huphlepuuff_53 (S), Lilbit_50 (S), Poise_51 (S), Pringar_51 (S), Raela_51 (S), VasuNzinga_51 (S),

Start 73:

- Found in 14 of 86 (16.3%) of genes in pham
- Manual Annotations of this start: 14 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BobBob_38 (DE1), Brandonk123_42 (DE1), Charming_41 (DE1), DeluluLabubu_212 (BK1), Emma1919_210 (BK1), Forrest_171 (BK1), Forrest_210 (BK1), Jada_168 (BK1), Love_44 (DE1), Nordenberg_35 (DE1), Paries_43 (DE1), Phredrick_212 (BK1), Rofo_41 (DE1), Tangent_41 (DE1),

Start 74:

- Found in 3 of 86 (3.5%) of genes in pham
- Manual Annotations of this start: 3 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JonJames_73 (DD), Miskis_71 (CQ1), Yvonnestic_71 (DD),

Start 75:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sunfish_75 (singleton),

Start 76:

- Found in 1 of 86 (1.2%) of genes in pham

- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Vitus_38 (FL),

Start 82:

- Found in 10 of 86 (11.6%) of genes in pham
- Manual Annotations of this start: 6 of 82
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Auxilium_79 (AY), EvePickles_81 (AY), LeBruni_82 (AY), Marky_43 (BH), Phrank15_85 (AY), WilliamBoone_124 (CQ1),

Start 85:

- Found in 11 of 86 (12.8%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 18.2% of time when present
- Phage (with cluster) where this start called: GoongGoong_50 (S), LittleLaf_51 (S),

Start 92:

- Found in 2 of 86 (2.3%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Belphegor_34 (DE2),

Start 110:

- Found in 1 of 86 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryTomatoes_169 (DO),

Summary by clusters:

There are 28 clusters represented in this pham: DO, singleton, DD, BH, FC, BS, DW, FL, FN, DQ, A15, P5, DN1, DN3, DN2, CQ2, CQ1, CY1, P1, CY4, N, S, BK1, AY, CV, F1, DE1, DE2,

Info for manual annotations of cluster A15:

- Start number 61 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster AY:

- Start number 31 was manually annotated 2 times for cluster AY.
- Start number 49 was manually annotated 1 time for cluster AY.
- Start number 53 was manually annotated 1 time for cluster AY.
- Start number 82 was manually annotated 4 times for cluster AY.

Info for manual annotations of cluster BH:

- Start number 82 was manually annotated 1 time for cluster BH.

Info for manual annotations of cluster BK1:

- Start number 69 was manually annotated 2 times for cluster BK1.
- Start number 73 was manually annotated 6 times for cluster BK1.

Info for manual annotations of cluster BS:

- Start number 62 was manually annotated 1 time for cluster BS.

- Start number 67 was manually annotated 2 times for cluster BS.

Info for manual annotations of cluster CQ1:

- Start number 74 was manually annotated 1 time for cluster CQ1.
- Start number 82 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 58 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster CV:

- Start number 29 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 33 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY4:

- Start number 33 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster DD:

- Start number 74 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 71 was manually annotated 1 time for cluster DE1.
- Start number 73 was manually annotated 8 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 92 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DN1:

- Start number 30 was manually annotated 4 times for cluster DN1.
- Start number 31 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 71 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 31 was manually annotated 1 time for cluster DN3.

Info for manual annotations of cluster DO:

- Start number 39 was manually annotated 1 time for cluster DO.
- Start number 110 was manually annotated 1 time for cluster DO.

Info for manual annotations of cluster DQ:

- Start number 35 was manually annotated 3 times for cluster DQ.
- Start number 59 was manually annotated 1 time for cluster DQ.

Info for manual annotations of cluster DW:

- Start number 33 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster F1:

- Start number 33 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster FL:

- Start number 25 was manually annotated 1 time for cluster FL.
- Start number 76 was manually annotated 1 time for cluster FL.

Info for manual annotations of cluster FN:

- Start number 31 was manually annotated 1 time for cluster FN.
- Start number 49 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster N:

- Start number 33 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P1:

- Start number 35 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P5:

- Start number 35 was manually annotated 1 time for cluster P5.
- Start number 37 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster S:

- Start number 72 was manually annotated 9 times for cluster S.
- Start number 85 was manually annotated 2 times for cluster S.

Gene Information:

Gene: Aloeri_75 Start: 46126, Stop: 46713, Start Num: 33

Candidate Starts for Aloeri_75:

(18, 46072), (Start: 33 @46126 has 11 MA's), (40, 46144), (52, 46177), (55, 46186), (60, 46201), (89, 46282), (102, 46348), (127, 46420), (138, 46471), (149, 46522), (163, 46573), (168, 46597), (181, 46654),

Gene: Alone3_63 Start: 21624, Stop: 22094, Start Num: 67

Candidate Starts for Alone3_63:

(Start: 67 @21624 has 2 MA's), (81, 21660), (95, 21702), (131, 21816), (141, 21870), (142, 21873), (149, 21903), (161, 21969), (177, 22029), (182, 22053), (184, 22062), (188, 22074),

Gene: Apricot_49 Start: 33085, Stop: 32453, Start Num: 31

Candidate Starts for Apricot_49:

(Start: 31 @33085 has 5 MA's), (80, 32965), (103, 32854), (112, 32812), (115, 32806), (125, 32773), (142, 32695), (144, 32683), (146, 32674), (150, 32662), (159, 32617), (181, 32530), (183, 32515), (185, 32509), (187, 32503), (195, 32464),

Gene: Auxilium_79 Start: 44205, Stop: 44636, Start Num: 82

Candidate Starts for Auxilium_79:

(78, 44190), (Start: 82 @44205 has 6 MA's), (109, 44313), (149, 44466), (150, 44469),

Gene: Awesomesauce_74 Start: 45209, Stop: 45796, Start Num: 33

Candidate Starts for Awesomesauce_74:

(18, 45155), (Start: 33 @45209 has 11 MA's), (40, 45227), (52, 45260), (55, 45269), (60, 45284), (89, 45365), (102, 45431), (127, 45503), (138, 45554), (149, 45605), (163, 45656), (168, 45680), (181, 45737),

Gene: BENtherdunthat_51 Start: 33462, Stop: 32830, Start Num: 30

Candidate Starts for BENtherdunthat_51:

(Start: 30 @33462 has 4 MA's), (55, 33399), (80, 33342), (103, 33231), (112, 33189), (115, 33183), (125, 33150), (133, 33123), (142, 33072), (143, 33066), (150, 33039), (159, 32994), (181, 32907), (185, 32886), (187, 32880), (195, 32841),

Gene: Beelzebub_55 Start: 29418, Stop: 29891, Start Num: 72

Candidate Starts for Beelzebub_55:

(Start: 72 @29418 has 9 MA's), (Start: 85 @29448 has 2 MA's), (100, 29529), (132, 29619), (146, 29694), (179, 29817), (185, 29856), (187, 29862),

Gene: Belphegor_34 Start: 32088, Stop: 31654, Start Num: 92

Candidate Starts for Belphegor_34:

(36, 32232), (41, 32220), (52, 32190), (Start: 92 @32088 has 1 MA's), (131, 31938), (132, 31935), (149, 31851), (151, 31848), (158, 31815), (180, 31728),

Gene: BlackSpider_64 Start: 38978, Stop: 39544, Start Num: 49

Candidate Starts for BlackSpider_64:

(Start: 49 @38978 has 2 MA's), (126, 39260), (140, 39329), (146, 39356), (150, 39368), (176, 39485),

Gene: BlackSpider_69 Start: 42752, Stop: 43360, Start Num: 31

Candidate Starts for BlackSpider_69:

(Start: 31 @42752 has 5 MA's), (55, 42815), (104, 42986), (127, 43055), (146, 43148), (169, 43241), (174, 43259), (181, 43289),

Gene: Blackbeetle_51 Start: 28464, Stop: 28937, Start Num: 72

Candidate Starts for Blackbeetle_51:

(Start: 72 @28464 has 9 MA's), (Start: 85 @28494 has 2 MA's), (100, 28575), (132, 28665), (146, 28740), (179, 28863), (185, 28902), (187, 28908),

Gene: BobBob_38 Start: 35578, Stop: 35108, Start Num: 73

Candidate Starts for BobBob_38:

(14, 35776), (16, 35767), (26, 35707), (27, 35698), (45, 35662), (Start: 73 @35578 has 14 MA's), (103, 35452), (114, 35434), (128, 35389), (133, 35371), (140, 35326), (149, 35290), (171, 35212),

Gene: Bradissa_60 Start: 44116, Stop: 44703, Start Num: 33

Candidate Starts for Bradissa_60:

(1, 43708), (2, 43816), (4, 43888), (6, 43924), (17, 44056), (Start: 33 @44116 has 11 MA's), (Start: 39 @44131 has 1 MA's), (52, 44167), (55, 44176), (60, 44191), (70, 44221), (96, 44302), (127, 44410), (149, 44512), (150, 44515), (187, 44671),

Gene: Brandonk123_42 Start: 36713, Stop: 36243, Start Num: 73

Candidate Starts for Brandonk123_42:

(14, 36911), (16, 36902), (26, 36842), (27, 36833), (45, 36797), (Start: 73 @36713 has 14 MA's), (103, 36587), (114, 36569), (128, 36524), (133, 36506), (140, 36461), (149, 36425), (171, 36347),

Gene: BrutonGaster_75 Start: 52573, Stop: 53064, Start Num: 58

Candidate Starts for BrutonGaster_75:

(Start: 58 @52573 has 1 MA's), (101, 52717), (131, 52774), (133, 52780), (146, 52852), (149, 52861), (162, 52921),

Gene: Charming_41 Start: 36214, Stop: 35744, Start Num: 73

Candidate Starts for Charming_41:

(14, 36412), (16, 36403), (26, 36343), (27, 36334), (45, 36298), (Start: 73 @36214 has 14 MA's), (103, 36088), (114, 36070), (128, 36025), (133, 36007), (140, 35962), (149, 35926), (171, 35848),

Gene: CherryTomatoes_169 Start: 123046, Stop: 122573, Start Num: 110

Candidate Starts for CherryTomatoes_169:

(64, 123214), (83, 123169), (84, 123166), (Start: 110 @123046 has 1 MA's), (123, 123016), (141, 122929), (175, 122755), (190, 122689),

Gene: ChickenDinner_74 Start: 46126, Stop: 46713, Start Num: 33

Candidate Starts for ChickenDinner_74:

(18, 46072), (Start: 33 @46126 has 11 MA's), (40, 46144), (52, 46177), (55, 46186), (60, 46201), (89, 46282), (102, 46348), (127, 46420), (138, 46471), (149, 46522), (163, 46573), (168, 46597), (181, 46654),

Gene: Chidiebere_122 Start: 85918, Stop: 86616, Start Num: 35

Candidate Starts for Chidiebere_122:

(Start: 35 @85918 has 5 MA's), (Start: 59 @85990 has 1 MA's), (68, 86017), (Start: 82 @86050 has 6 MA's), (91, 86080), (105, 86152), (106, 86155), (117, 86188), (118, 86191), (130, 86236), (133, 86245), (149, 86326), (153, 86365), (183, 86509), (186, 86518), (196, 86563), (198, 86608),

Gene: Clarkson_52 Start: 29146, Stop: 29619, Start Num: 72

Candidate Starts for Clarkson_52:

(Start: 72 @29146 has 9 MA's), (Start: 85 @29176 has 2 MA's), (100, 29257), (132, 29347), (146, 29422), (179, 29545), (185, 29584), (187, 29590),

Gene: CosmicBrownie_77 Start: 44062, Stop: 44670, Start Num: 31

Candidate Starts for CosmicBrownie_77:

(Start: 31 @44062 has 5 MA's), (55, 44125), (127, 44365), (138, 44416), (146, 44458), (169, 44551), (174, 44569), (185, 44620),

Gene: DeluluLabubu_212 Start: 104650, Stop: 105126, Start Num: 73

Candidate Starts for DeluluLabubu_212:

(Start: 73 @104650 has 14 MA's), (119, 104794), (120, 104797), (134, 104845), (139, 104881), (152, 104959),

Gene: DocMcStuffins_74 Start: 46126, Stop: 46713, Start Num: 33

Candidate Starts for DocMcStuffins_74:

(18, 46072), (Start: 33 @46126 has 11 MA's), (40, 46144), (52, 46177), (55, 46186), (60, 46201), (89, 46282), (102, 46348), (127, 46420), (138, 46471), (149, 46522), (163, 46573), (168, 46597), (181, 46654),

Gene: DumpsterDude_62 Start: 46219, Stop: 46806, Start Num: 33

Candidate Starts for DumpsterDude_62:

(1, 45811), (2, 45919), (4, 45991), (6, 46027), (17, 46159), (Start: 33 @46219 has 11 MA's), (52, 46270), (55, 46279), (60, 46294), (70, 46324), (96, 46405), (127, 46513), (149, 46615), (150, 46618), (170, 46702), (173, 46714), (187, 46774),

Gene: Emma1919_210 Start: 103175, Stop: 103651, Start Num: 73

Candidate Starts for Emma1919_210:

(Start: 73 @103175 has 14 MA's), (119, 103319), (120, 103322), (134, 103370), (139, 103406), (152, 103484),

Gene: EvePickles_81 Start: 47374, Stop: 47805, Start Num: 82

Candidate Starts for EvePickles_81:

(78, 47359), (Start: 82 @47374 has 6 MA's), (149, 47635), (150, 47638),

Gene: EvePickles_79 Start: 46090, Stop: 46698, Start Num: 31

Candidate Starts for EvePickles_79:

(Start: 31 @46090 has 5 MA's), (55, 46153), (127, 46393), (146, 46486), (167, 46564), (169, 46579), (174, 46597), (185, 46648),

Gene: Footloose_49 Start: 28880, Stop: 29479, Start Num: 23

Candidate Starts for Footloose_49:

(21, 28868), (Start: 23 @28880 has 1 MA's), (66, 29000), (121, 29150), (124, 29162), (131, 29189), (138, 29225), (179, 29393), (186, 29435),

Gene: Forrest_49 Start: 41931, Stop: 42446, Start Num: 69

Candidate Starts for Forrest_49:

(Start: 69 @41931 has 2 MA's), (147, 42195), (149, 42201), (156, 42249), (157, 42252), (178, 42342),

Gene: Forrest_210 Start: 104141, Stop: 104617, Start Num: 73

Candidate Starts for Forrest_210:

(Start: 73 @104141 has 14 MA's), (119, 104285), (120, 104288), (134, 104336), (139, 104372), (152, 104450),

Gene: Forrest_171 Start: 88900, Stop: 89394, Start Num: 73

Candidate Starts for Forrest_171:

(Start: 73 @88900 has 14 MA's), (113, 89029), (119, 89041), (138, 89119), (140, 89134), (149, 89170), (182, 89323), (192, 89368), (194, 89374),

Gene: Getalong_54 Start: 36463, Stop: 35831, Start Num: 30

Candidate Starts for Getalong_54:

(Start: 30 @36463 has 4 MA's), (55, 36400), (80, 36343), (103, 36232), (112, 36190), (115, 36184), (125, 36151), (133, 36124), (142, 36073), (143, 36067), (150, 36040), (159, 35995), (181, 35908), (185, 35887), (187, 35881), (195, 35842),

Gene: GiJojo_54 Start: 20818, Stop: 21288, Start Num: 67

Candidate Starts for GiJojo_54:

(Start: 67 @20818 has 2 MA's), (81, 20854), (95, 20896), (131, 21010), (139, 21055), (141, 21064), (142, 21067), (149, 21097), (161, 21163), (177, 21223), (182, 21247), (184, 21256), (188, 21268),

Gene: GoongGoong_50 Start: 28396, Stop: 28839, Start Num: 85

Candidate Starts for GoongGoong_50:

(Start: 72 @28366 has 9 MA's), (Start: 85 @28396 has 2 MA's), (100, 28477), (132, 28567), (146, 28642), (179, 28765), (185, 28804), (187, 28810),

Gene: GumGum_85 Start: 45863, Stop: 46471, Start Num: 31

Candidate Starts for GumGum_85:

(Start: 31 @45863 has 5 MA's), (55, 45926), (127, 46166), (138, 46217), (146, 46259), (169, 46352), (174, 46370), (185, 46421),

Gene: Holliday_49 Start: 33694, Stop: 33062, Start Num: 31

Candidate Starts for Holliday_49:

(Start: 31 @33694 has 5 MA's), (80, 33574), (103, 33463), (112, 33421), (115, 33415), (125, 33382), (133, 33355), (142, 33304), (143, 33298), (150, 33271), (159, 33226), (163, 33220), (181, 33139), (185, 33118), (187, 33112), (195, 33073),

Gene: Huphlepuuff_53 Start: 28951, Stop: 29424, Start Num: 72

Candidate Starts for Huphlepuuff_53:

(Start: 72 @28951 has 9 MA's), (Start: 85 @28981 has 2 MA's), (100, 29062), (132, 29152), (146, 29227), (179, 29350), (185, 29389), (187, 29395),

Gene: Jada_168 Start: 87596, Stop: 88090, Start Num: 73

Candidate Starts for Jada_168:

(Start: 73 @87596 has 14 MA's), (113, 87725), (119, 87737), (138, 87815), (140, 87830), (149, 87866), (182, 88019), (192, 88064), (194, 88070),

Gene: Jada_47 Start: 41113, Stop: 41628, Start Num: 69

Candidate Starts for Jada_47:

(Start: 69 @41113 has 2 MA's), (147, 41377), (149, 41383), (156, 41431), (157, 41434), (178, 41524),

Gene: Jinkies_7 Start: 5796, Stop: 6461, Start Num: 25

Candidate Starts for Jinkies_7:

(5, 5598), (9, 5655), (10, 5658), (12, 5700), (Start: 25 @5796 has 1 MA's), (65, 5910), (99, 6057), (132, 6165), (145, 6234), (146, 6240), (155, 6279), (159, 6300), (181, 6384),

Gene: JonJames_73 Start: 49905, Stop: 50405, Start Num: 74

Candidate Starts for JonJames_73:

(Start: 74 @49905 has 3 MA's), (98, 49998), (100, 50019), (121, 50073), (131, 50112), (142, 50169), (149, 50199), (160, 50253), (168, 50286), (183, 50361),

Gene: Kabocha_123 Start: 86731, Stop: 87429, Start Num: 35

Candidate Starts for Kabocha_123:

(Start: 35 @86731 has 5 MA's), (Start: 59 @86803 has 1 MA's), (68, 86830), (Start: 82 @86863 has 6 MA's), (91, 86893), (105, 86965), (106, 86968), (117, 87001), (118, 87004), (130, 87049), (133, 87058), (149, 87139), (153, 87178), (183, 87322), (186, 87331), (196, 87376), (198, 87421),

Gene: Kenna_50 Start: 34206, Stop: 33574, Start Num: 30

Candidate Starts for Kenna_50:

(Start: 30 @34206 has 4 MA's), (55, 34143), (80, 34086), (103, 33975), (112, 33933), (115, 33927), (125, 33894), (133, 33867), (142, 33816), (143, 33810), (150, 33783), (159, 33738), (181, 33651), (185, 33630), (187, 33624), (195, 33585),

Gene: Lasker_80 Start: 46302, Stop: 46910, Start Num: 31

Candidate Starts for Lasker_80:

(Start: 31 @46302 has 5 MA's), (55, 46365), (127, 46605), (138, 46656), (146, 46698), (169, 46791), (174, 46809), (185, 46860),

Gene: LeBruni_82 Start: 46016, Stop: 46447, Start Num: 82

Candidate Starts for LeBruni_82:

(78, 46001), (Start: 82 @46016 has 6 MA's), (94, 46052), (132, 46193), (149, 46277),

Gene: Lilbit_50 Start: 29147, Stop: 29620, Start Num: 72

Candidate Starts for Lilbit_50:

(Start: 72 @29147 has 9 MA's), (Start: 85 @29177 has 2 MA's), (100, 29258), (132, 29348), (146, 29423), (179, 29546), (185, 29585), (187, 29591),

Gene: LittleLaf_51 Start: 28906, Stop: 29349, Start Num: 85

Candidate Starts for LittleLaf_51:

(Start: 72 @28876 has 9 MA's), (Start: 85 @28906 has 2 MA's), (100, 28987), (132, 29077), (146, 29152), (179, 29275), (185, 29314), (187, 29320),

Gene: Love_44 Start: 37647, Stop: 37177, Start Num: 73

Candidate Starts for Love_44:

(14, 37845), (16, 37836), (26, 37776), (27, 37767), (45, 37731), (Start: 73 @37647 has 14 MA's), (103, 37521), (114, 37503), (128, 37458), (133, 37440), (140, 37395), (149, 37359), (171, 37281),

Gene: Lutum_51 Start: 34206, Stop: 33574, Start Num: 30

Candidate Starts for Lutum_51:

(Start: 30 @34206 has 4 MA's), (55, 34143), (80, 34086), (103, 33975), (112, 33933), (115, 33927), (125, 33894), (133, 33867), (142, 33816), (143, 33810), (150, 33783), (159, 33738), (181, 33651), (185, 33630), (187, 33624), (195, 33585),

Gene: Lysidious_72 Start: 45013, Stop: 45621, Start Num: 29

Candidate Starts for Lysidious_72:

(Start: 29 @45013 has 2 MA's), (42, 45040), (55, 45079), (79, 45139), (106, 45256), (108, 45262), (132, 45343), (133, 45346), (173, 45520), (181, 45553), (191, 45604),

Gene: Marky_43 Start: 31173, Stop: 31622, Start Num: 82

Candidate Starts for Marky_43:

(Start: 82 @31173 has 6 MA's), (84, 31179), (86, 31182), (129, 31344), (134, 31359), (141, 31404), (148, 31428), (181, 31572),

Gene: Mbo2_93 Start: 66190, Stop: 65546, Start Num: 56

Candidate Starts for Mbo2_93:

(55, 66199), (56, 66190), (77, 66142), (Start: 92 @66094 has 1 MA's), (97, 66058), (150, 65854), (165, 65770), (189, 65671), (190, 65668), (198, 65590), (199, 65566),

Gene: Megiddo_61 Start: 41199, Stop: 41795, Start Num: 35

Candidate Starts for Megiddo_61:

(8, 41016), (24, 41172), (Start: 35 @41199 has 5 MA's), (44, 41220), (55, 41256), (60, 41271), (79, 41316), (90, 41355), (146, 41595), (155, 41634), (166, 41670), (181, 41736), (187, 41763),

Gene: Mikronejon_123 Start: 85340, Stop: 85966, Start Num: 59

Candidate Starts for Mikronejon_123:

(Start: 35 @85268 has 5 MA's), (Start: 59 @85340 has 1 MA's), (68, 85367), (Start: 82 @85400 has 6 MA's), (91, 85430), (105, 85502), (106, 85505), (117, 85538), (118, 85541), (130, 85586), (133, 85595), (149, 85676), (153, 85715), (183, 85859), (186, 85868), (196, 85913), (198, 85958),

Gene: Misha28_72 Start: 45214, Stop: 45801, Start Num: 33

Candidate Starts for Misha28_72:

(18, 45160), (Start: 33 @45214 has 11 MA's), (40, 45232), (52, 45265), (55, 45274), (60, 45289), (89, 45370), (102, 45436), (127, 45508), (138, 45559), (149, 45610), (163, 45661), (168, 45685), (181, 45742),

Gene: Miskis_71 Start: 47774, Stop: 48271, Start Num: 74

Candidate Starts for Miskis_71:

(32, 47657), (Start: 74 @47774 has 3 MA's), (132, 47984), (142, 48038), (149, 48068), (154, 48095), (166, 48146), (181, 48215),

Gene: Nordenberg_35 Start: 35840, Stop: 35370, Start Num: 73

Candidate Starts for Nordenberg_35:

(14, 36038), (16, 36029), (26, 35969), (27, 35960), (45, 35924), (Start: 73 @35840 has 14 MA's), (103, 35714), (114, 35696), (128, 35651), (133, 35633), (140, 35588), (149, 35552), (171, 35474),

Gene: Paries_43 Start: 37309, Stop: 36839, Start Num: 73

Candidate Starts for Paries_43:

(14, 37507), (16, 37498), (26, 37438), (27, 37429), (45, 37393), (Start: 73 @37309 has 14 MA's), (103, 37183), (114, 37165), (128, 37120), (133, 37102), (140, 37057), (149, 37021), (171, 36943),

Gene: Park1214_161 Start: 84748, Stop: 85224, Start Num: 62

Candidate Starts for Park1214_161:

(Start: 62 @84748 has 1 MA's), (116, 84904), (127, 84934), (136, 84976), (140, 84997), (149, 85033),

Gene: Phayonce_65 Start: 43286, Stop: 43876, Start Num: 37

Candidate Starts for Phayonce_65:

(Start: 37 @43286 has 1 MA's), (43, 43298), (51, 43322), (63, 43364), (90, 43436), (146, 43676), (155, 43715), (166, 43751), (181, 43817), (187, 43844),

Gene: Phrank15_85 Start: 46952, Stop: 47386, Start Num: 82

Candidate Starts for Phrank15_85:

(78, 46937), (Start: 82 @46952 has 6 MA's), (94, 46988), (132, 47129), (149, 47213), (150, 47216),

Gene: Phrank15_79 Start: 42147, Stop: 42713, Start Num: 49

Candidate Starts for Phrank15_79:

(Start: 49 @42147 has 2 MA's), (126, 42429), (140, 42498), (146, 42525), (150, 42537), (176, 42654),

Gene: Phredrick_212 Start: 102971, Stop: 103447, Start Num: 73

Candidate Starts for Phredrick_212:

(Start: 73 @102971 has 14 MA's), (119, 103115), (120, 103118), (134, 103166), (139, 103202), (152, 103280),

Gene: Poise_51 Start: 28464, Stop: 28937, Start Num: 72

Candidate Starts for Poise_51:

(Start: 72 @28464 has 9 MA's), (Start: 85 @28494 has 2 MA's), (100, 28575), (132, 28665), (146, 28740), (179, 28863), (185, 28902), (187, 28908),

Gene: Posh_67 Start: 45892, Stop: 46479, Start Num: 33

Candidate Starts for Posh_67:

(6, 45700), (17, 45832), (Start: 33 @45892 has 11 MA's), (55, 45952), (60, 45967), (70, 45997), (96, 46078), (127, 46186), (149, 46288), (150, 46291), (187, 46447),

Gene: Pringar_51 Start: 28752, Stop: 29225, Start Num: 72

Candidate Starts for Pringar_51:

(Start: 72 @28752 has 9 MA's), (Start: 85 @28782 has 2 MA's), (100, 28863), (132, 28953), (146, 29028), (179, 29151), (185, 29190), (187, 29196),

Gene: Raela_51 Start: 29019, Stop: 29492, Start Num: 72

Candidate Starts for Raela_51:

(Start: 72 @29019 has 9 MA's), (Start: 85 @29049 has 2 MA's), (100, 29130), (132, 29220), (146, 29295), (179, 29418), (185, 29457), (187, 29463),

Gene: Ravana_47 Start: 28579, Stop: 28028, Start Num: 61

Candidate Starts for Ravana_47:

(47, 28624), (54, 28597), (Start: 61 @28579 has 1 MA's), (88, 28498), (107, 28402), (119, 28366), (135, 28309), (137, 28285), (144, 28249), (147, 28237), (168, 28123), (172, 28102),

Gene: Rofo_41 Start: 36635, Stop: 36165, Start Num: 73

Candidate Starts for Rofo_41:

(14, 36833), (16, 36824), (26, 36764), (27, 36755), (45, 36719), (Start: 73 @36635 has 14 MA's), (103, 36509), (114, 36491), (128, 36446), (133, 36428), (140, 36383), (149, 36347), (171, 36269),

Gene: SCentae_166 Start: 121636, Stop: 122217, Start Num: 39

Candidate Starts for SCentae_166:

(Start: 39 @121636 has 1 MA's), (57, 121693), (118, 121873), (159, 122059), (173, 122125),

Gene: Schomber_120 Start: 85119, Stop: 85817, Start Num: 35

Candidate Starts for Schomber_120:

(Start: 35 @85119 has 5 MA's), (Start: 59 @85191 has 1 MA's), (68, 85218), (Start: 82 @85251 has 6 MA's), (91, 85281), (105, 85353), (106, 85356), (117, 85389), (118, 85392), (130, 85437), (133, 85446), (149, 85527), (153, 85566), (183, 85710), (186, 85719), (196, 85764), (198, 85809),

Gene: Shukran_72 Start: 40696, Stop: 41226, Start Num: 53

Candidate Starts for Shukran_72:

(3, 40381), (7, 40450), (Start: 53 @40696 has 1 MA's), (96, 40843), (133, 40987), (138, 41017), (141, 41035), (146, 41059), (176, 41188),

Gene: SkinnyPete_53 Start: 35995, Stop: 36582, Start Num: 33

Candidate Starts for SkinnyPete_53:

(18, 35941), (Start: 33 @35995 has 11 MA's), (40, 36013), (52, 36046), (55, 36055), (60, 36070), (89, 36151), (102, 36217), (127, 36289), (138, 36340), (149, 36391), (163, 36442), (168, 36466), (181, 36523),

Gene: Spooky_106 Start: 55742, Stop: 56233, Start Num: 71

Candidate Starts for Spooky_106:

(11, 55508), (13, 55517), (19, 55583), (22, 55598), (28, 55625), (41, 55652), (Start: 71 @55742 has 2 MA's), (103, 55859), (105, 55862), (106, 55865), (138, 55967), (146, 56009), (149, 56018), (187, 56180), (193, 56210),

Gene: Stewart25555_169 Start: 117773, Stop: 118273, Start Num: 70

Candidate Starts for Stewart25555_169:

(20, 117620), (38, 117677), (70, 117773), (111, 117902), (118, 117917), (122, 117926), (131, 117959), (143, 118022), (181, 118193),

Gene: Sunfish_75 Start: 46858, Stop: 46316, Start Num: 75

Candidate Starts for Sunfish_75:

(Start: 75 @46858 has 1 MA's), (87, 46828), (152, 46537), (164, 46489), (171, 46465),

Gene: Tangent_41 Start: 36226, Stop: 35756, Start Num: 73

Candidate Starts for Tangent_41:

(14, 36424), (16, 36415), (26, 36355), (27, 36346), (45, 36310), (Start: 73 @36226 has 14 MA's), (103, 36100), (114, 36082), (128, 36037), (133, 36019), (140, 35974), (149, 35938), (171, 35860),

Gene: ThulaThula_69 Start: 44706, Stop: 45302, Start Num: 35

Candidate Starts for ThulaThula_69:

(15, 44622), (24, 44679), (Start: 35 @44706 has 5 MA's), (44, 44727), (55, 44763), (60, 44778), (79, 44823), (90, 44862), (146, 45102), (155, 45141), (166, 45177), (181, 45243), (187, 45270),

Gene: TootsiePop_72 Start: 45214, Stop: 45801, Start Num: 33

Candidate Starts for TootsiePop_72:

(18, 45160), (Start: 33 @45214 has 11 MA's), (40, 45232), (52, 45265), (55, 45274), (60, 45289), (89, 45370), (102, 45436), (127, 45508), (138, 45559), (149, 45610), (163, 45661), (168, 45685), (181, 45742),

Gene: VasuNzinga_51 Start: 28326, Stop: 28799, Start Num: 72

Candidate Starts for VasuNzinga_51:

(Start: 72 @28326 has 9 MA's), (Start: 85 @28356 has 2 MA's), (100, 28437), (132, 28527), (146, 28602), (179, 28725), (185, 28764), (187, 28770),

Gene: Vitus_38 Start: 31088, Stop: 31606, Start Num: 76

Candidate Starts for Vitus_38:

(Start: 76 @31088 has 1 MA's), (124, 31262), (166, 31457),

Gene: Vivi2_43 Start: 37381, Stop: 36914, Start Num: 71

Candidate Starts for Vivi2_43:

(46, 37450), (50, 37441), (Start: 71 @37381 has 2 MA's), (103, 37258), (114, 37240), (128, 37195), (133, 37177), (140, 37132), (149, 37096), (171, 37018),

Gene: Walrus_68 Start: 43422, Stop: 44057, Start Num: 29

Candidate Starts for Walrus_68:

(Start: 29 @43422 has 2 MA's), (48, 43458), (55, 43485), (79, 43545), (106, 43662), (108, 43668), (166, 43899), (197, 44043),

Gene: WilliamBoone_124 Start: 68689, Stop: 69156, Start Num: 82

Candidate Starts for WilliamBoone_124:

(34, 68554), (Start: 82 @68689 has 6 MA's), (93, 68722), (133, 68878), (149, 68962), (168, 69028), (185, 69106),

Gene: Wrigley_69 Start: 45475, Stop: 46062, Start Num: 33

Candidate Starts for Wrigley_69:

(6, 45283), (17, 45415), (Start: 33 @45475 has 11 MA's), (55, 45535), (60, 45550), (70, 45580), (96, 45661), (127, 45769), (149, 45871), (150, 45874), (187, 46030),

Gene: Yvonnetastic_71 Start: 47446, Stop: 47946, Start Num: 74

Candidate Starts for Yvonnetastic_71:

(Start: 74 @47446 has 3 MA's), (98, 47539), (100, 47560), (121, 47614), (131, 47653), (142, 47710), (149, 47740), (160, 47794), (168, 47827), (183, 47902),