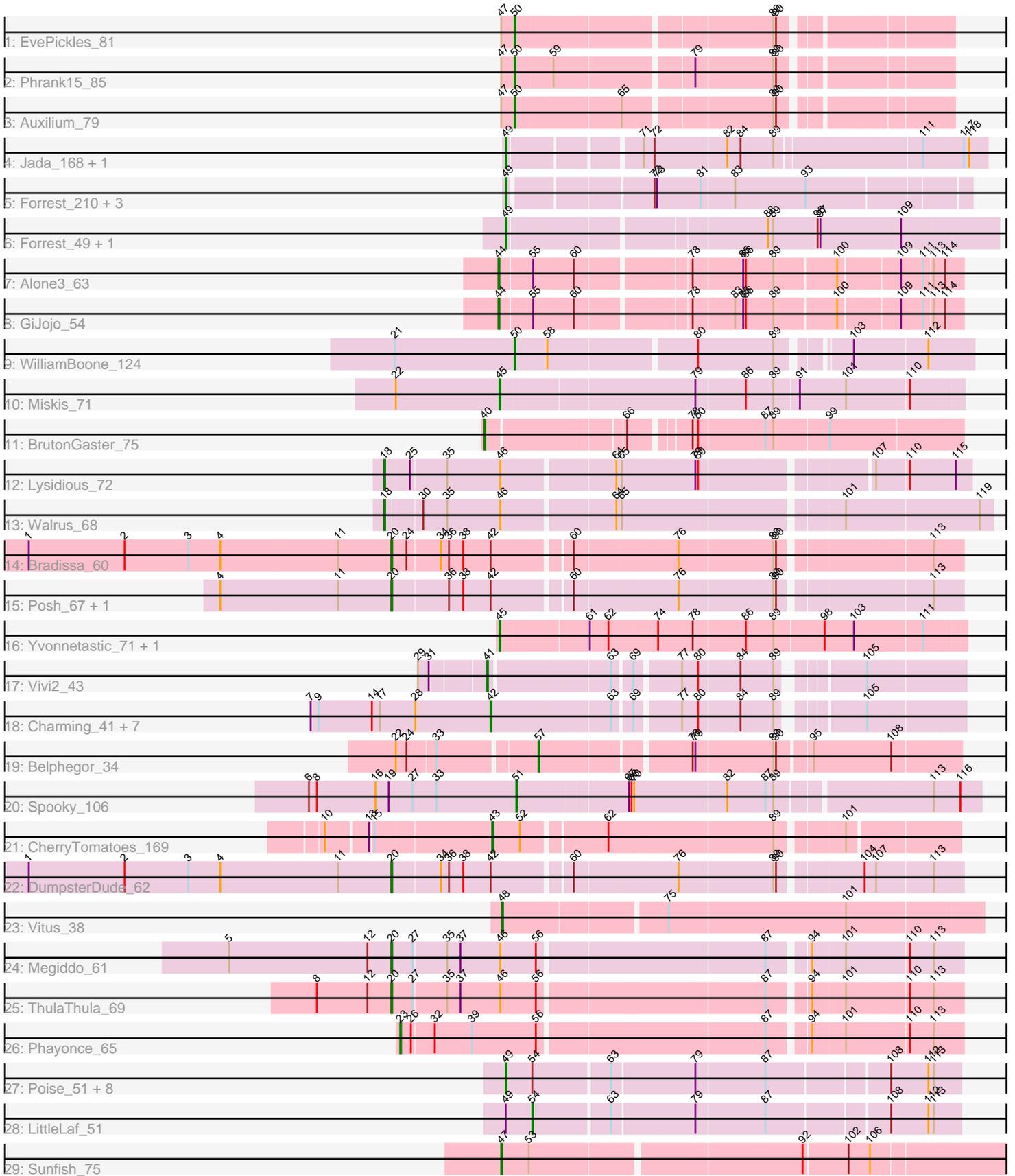# Pham 291247

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 291247 Report

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

Pham number 291247 has 51 members, 0 are drafts.

Phages represented in each track:
• Track 1 : EvePickles_81
• Track 2 : Phrank15_85
• Track 3 : Auxilium_79
• Track 4 : Jada_168, Forrest_171
• Track 5 : Forrest_210, Phredrick_212, DeluluLabubu_212, Emma1919_210
• Track 6 : Forrest_49, Jada_47
• Track 7 : Alone3_63
• Track 8 : GiJojo_54
• Track 9 : WilliamBoone_124
• Track 10 : Miskis_71
• Track 11 : BrutonGaster_75
• Track 12 : Lysidious_72
• Track 13 : Walrus_68
• Track 14 : Bradissa_60
• Track 15 : Posh_67, Wrigley_69
• Track 16 : Yvonnetastic_71, JonJames_73
• Track 17 : Vivi2_43
• Track 18 : Charming_41, Paries_43, Nordenberg_35, Tangent_41, Love_44, Rofo_41, BobBob_38, Brandonk123_42
• Track 19 : Belphegor_34
• Track 20 : Spooky_106
• Track 21 : CherryTomatoes_169
• Track 22 : DumpsterDude_62
• Track 23 : Vitus_38
• Track 24 : Megiddo_61
• Track 25 : ThulaThula_69
• Track 26 : Phayonce_65
• Track 27 : Poise_51, Raela_51, Beelzebub_55, Clarkson_52, Pringar_51, Lilbit_50, Huphlepuff_53, Blackbeetle_51, VasuNzinga_51
• Track 28 : LittleLaf_51
• Track 29 : Sunfish_75

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

The start number called the most often in the published annotations is 49, it was called in 17 of the 51 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Beelzebub_55, Blackbeetle_51, Clarkson_52, DeluluLabubu_212, Emma1919_210, Forrest_171, Forrest_210, Forrest_49, Huphlepuff_53, Jada_168, Jada_47, Lilbit_50, Phredrick_212, Poise_51, Pringar_51, Raela_51, VasuNzinga_51,

Genes that have the "Most Annotated" start but do not call it:
• LittleLaf_51,

Genes that do not have the "Most Annotated" start:
• Alone3_63, Auxilium_79, Belphegor_34, BobBob_38, Bradissa_60, Brandonk123_42, BrutonGaster_75, Charming_41, CherryTomatoes_169, DumpsterDude_62, EvePickles_81, GiJojo_54, JonJames_73, Love_44, Lysidious_72, Megiddo_61, Miskis_71, Nordenberg_35, Paries_43, Phayonce_65, Phrank15_85, Posh_67, Rofo_41, Spooky_106, Sunfish_75, Tangent_41, ThulaThula_69, Vitus_38, Vivi2_43, Walrus_68, WilliamBoone_124, Wrigley_69, Yvonnetastic_71,

Summary by start number:

Start 18:
• Found in 2 of 51 (3.9%) of genes in pham
• Manual Annotations of this start: 2 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Lysidious_72 (CV), Walrus_68 (CV),

Start 20:
• Found in 6 of 51 (11.8%) of genes in pham
• Manual Annotations of this start: 6 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Bradissa_60 (CY1), DumpsterDude_62 (DW), Megiddo_61 (P1), Posh_67 (CY4), ThulaThula_69 (P5), Wrigley_69 (CY4),

Start 23:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Phayonce_65 (P5),

Start 40:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BrutonGaster_75 (CQ2),

Start 41:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Vivi2_43 (DE1),

Start 42:
• Found in 12 of 51 (23.5%) of genes in pham
• Manual Annotations of this start: 8 of 51
• Called 66.7% of time when present
• Phage (with cluster) where this start called: BobBob_38 (DE1), Brandonk123_42 (DE1), Charming_41 (DE1), Love_44 (DE1), Nordenberg_35 (DE1), Paries_43 (DE1), Rofo_41 (DE1), Tangent_41 (DE1),

Start 43:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CherryTomatoes_169 (DO),

Start 44:
• Found in 2 of 51 (3.9%) of genes in pham
• Manual Annotations of this start: 2 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alone3_63 (BS), GiJojo_54 (BS),

Start 45:
• Found in 3 of 51 (5.9%) of genes in pham
• Manual Annotations of this start: 3 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: JonJames_73 (DD), Miskis_71 (CQ1), Yvonnetastic_71 (DD),

Start 47:
• Found in 4 of 51 (7.8%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Sunfish_75 (singleton),

Start 48:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Vitus_38 (FL),

Start 49:
• Found in 18 of 51 (35.3%) of genes in pham
• Manual Annotations of this start: 17 of 51
• Called 94.4% of time when present
• Phage (with cluster) where this start called: Beelzebub_55 (S), Blackbeetle_51 (S), Clarkson_52 (S), DeluluLabubu_212 (BK1), Emma1919_210 (BK1), Forrest_171 (BK1), Forrest_210 (BK1), Forrest_49 (BK1), Huphlepuff_53 (S), Jada_168 (BK1), Jada_47 (BK1), Lilbit_50 (S), Phredrick_212 (BK1), Poise_51 (S), Pringar_51 (S), Raela_51 (S), VasuNzinga_51 (S),

Start 50:
• Found in 4 of 51 (7.8%) of genes in pham
• Manual Annotations of this start: 4 of 51
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Auxilium_79 (AY), EvePickles_81 (AY), Phrank15_85 (AY), WilliamBoone_124 (CQ1),

Start 51:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Spooky_106 (DN2),

Start 54:
• Found in 10 of 51 (19.6%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 10.0% of time when present
• Phage (with cluster) where this start called: LittleLaf_51 (S),

Start 57:
• Found in 1 of 51 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Belphegor_34 (DE2),

Summary by clusters:

There are 19 clusters represented in this pham: DO, singleton, P1, CQ2, CY4, DE1, DD, P5, CY1, DN2, S, DE2, BK1, BS, AY, DW, CQ1, FL, CV,

Info for manual annotations of cluster AY:
•Start number 50 was manually annotated 3 times for cluster AY.

Info for manual annotations of cluster BK1:
•Start number 49 was manually annotated 8 times for cluster BK1.

Info for manual annotations of cluster BS:
•Start number 44 was manually annotated 2 times for cluster BS.

Info for manual annotations of cluster CQ1:
•Start number 45 was manually annotated 1 time for cluster CQ1.
•Start number 50 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CQ2:
•Start number 40 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster CV:
•Start number 18 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CY1:
•Start number 20 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY4:
•Start number 20 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster DD:
•Start number 45 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DE1:
•Start number 41 was manually annotated 1 time for cluster DE1.
•Start number 42 was manually annotated 8 times for cluster DE1.

Info for manual annotations of cluster DE2:
•Start number 57 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DN2:
•Start number 51 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DO:
•Start number 43 was manually annotated 1 time for cluster DO.

Info for manual annotations of cluster DW:
•Start number 20 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster FL:
•Start number 48 was manually annotated 1 time for cluster FL.

Info for manual annotations of cluster P1:
•Start number 20 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P5:
•Start number 20 was manually annotated 1 time for cluster P5.
•Start number 23 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster S:
•Start number 49 was manually annotated 9 times for cluster S.
•Start number 54 was manually annotated 1 time for cluster S.

Gene Information:
Gene: Alone3_63 Start: 21624, Stop: 22094, Start Num: 44
Candidate Starts for Alone3_63:
(Start: 44 @21624 has 2 MA's), (55, 21660), (60, 21702), (78, 21816), (85, 21870), (86, 21873), (89, 21903), (100, 21969), (109, 22029), (111, 22053), (113, 22062), (114, 22074),

Gene: Auxilium_79 Start: 44205, Stop: 44636, Start Num: 50
Candidate Starts for Auxilium_79:
(Start: 47 @44190 has 1 MA's), (Start: 50 @44205 has 4 MA's), (65, 44313), (89, 44466), (90, 44469),

Gene: Beelzebub_55 Start: 29418, Stop: 29891, Start Num: 49
Candidate Starts for Beelzebub_55:
(Start: 49 @29418 has 17 MA's), (Start: 54 @29448 has 1 MA's), (63, 29529), (79, 29619), (87, 29694), (108, 29817), (112, 29856), (113, 29862),

Gene: Belphegor_34 Start: 32088, Stop: 31654, Start Num: 57
Candidate Starts for Belphegor_34:
(22, 32232), (24, 32220), (33, 32190), (Start: 57 @32088 has 1 MA's), (78, 31938), (79, 31935), (89, 31851), (90, 31848), (95, 31815), (108, 31728),

Gene: Blackbeetle_51 Start: 28464, Stop: 28937, Start Num: 49
Candidate Starts for Blackbeetle_51:
(Start: 49 @28464 has 17 MA's), (Start: 54 @28494 has 1 MA's), (63, 28575), (79, 28665), (87, 28740), (108, 28863), (112, 28902), (113, 28908),

Gene: BobBob_38 Start: 35578, Stop: 35108, Start Num: 42
Candidate Starts for BobBob_38:
(7, 35776), (9, 35767), (14, 35707), (17, 35698), (28, 35662), (Start: 42 @35578 has 8 MA's), (63, 35452), (69, 35434), (77, 35389), (80, 35371), (84, 35326), (89, 35290), (105, 35212),

Gene: Bradissa_60 Start: 44116, Stop: 44703, Start Num: 20
Candidate Starts for Bradissa_60:
(1, 43708), (2, 43816), (3, 43888), (4, 43924), (11, 44056), (Start: 20 @44116 has 6 MA's), (24, 44131), (34, 44167), (36, 44176), (38, 44191), (Start: 42 @44221 has 8 MA's), (60, 44302), (76, 44410), (89, 44512), (90, 44515), (113, 44671),

Gene: Brandonk123_42 Start: 36713, Stop: 36243, Start Num: 42
Candidate Starts for Brandonk123_42:
(7, 36911), (9, 36902), (14, 36842), (17, 36833), (28, 36797), (Start: 42 @36713 has 8 MA's), (63, 36587), (69, 36569), (77, 36524), (80, 36506), (84, 36461), (89, 36425), (105, 36347),

Gene: BrutonGaster_75 Start: 52573, Stop: 53064, Start Num: 40
Candidate Starts for BrutonGaster_75:
(Start: 40 @52573 has 1 MA's), (66, 52717), (78, 52774), (80, 52780), (87, 52852), (89, 52861), (99, 52921),

Gene: Charming_41 Start: 36214, Stop: 35744, Start Num: 42
Candidate Starts for Charming_41:
(7, 36412), (9, 36403), (14, 36343), (17, 36334), (28, 36298), (Start: 42 @36214 has 8 MA's), (63, 36088), (69, 36070), (77, 36025), (80, 36007), (84, 35962), (89, 35926), (105, 35848),

Gene: CherryTomatoes_169 Start: 123046, Stop: 122573, Start Num: 43
Candidate Starts for CherryTomatoes_169:
(10, 123214), (13, 123169), (15, 123166), (Start: 43 @123046 has 1 MA's), (52, 123016), (62, 122929), (89, 122755), (101, 122689),

Gene: Clarkson_52 Start: 29146, Stop: 29619, Start Num: 49
Candidate Starts for Clarkson_52:
(Start: 49 @29146 has 17 MA's), (Start: 54 @29176 has 1 MA's), (63, 29257), (79, 29347), (87, 29422), (108, 29545), (112, 29584), (113, 29590),

Gene: DeluluLabubu_212 Start: 104650, Stop: 105126, Start Num: 49
Candidate Starts for DeluluLabubu_212:
(Start: 49 @104650 has 17 MA's), (72, 104794), (73, 104797), (81, 104845), (83, 104881), (93, 104959),

Gene: DumpsterDude_62 Start: 46219, Stop: 46806, Start Num: 20
Candidate Starts for DumpsterDude_62:
(1, 45811), (2, 45919), (3, 45991), (4, 46027), (11, 46159), (Start: 20 @46219 has 6 MA's), (34, 46270), (36, 46279), (38, 46294), (Start: 42 @46324 has 8 MA's), (60, 46405), (76, 46513), (89, 46615), (90, 46618), (104, 46702), (107, 46714), (113, 46774),

Gene: Emma1919_210 Start: 103175, Stop: 103651, Start Num: 49
Candidate Starts for Emma1919_210:
(Start: 49 @103175 has 17 MA's), (72, 103319), (73, 103322), (81, 103370), (83, 103406), (93, 103484),

Gene: EvePickles_81 Start: 47374, Stop: 47805, Start Num: 50
Candidate Starts for EvePickles_81:
(Start: 47 @47359 has 1 MA's), (Start: 50 @47374 has 4 MA's), (89, 47635), (90, 47638),

Gene: Forrest_210 Start: 104141, Stop: 104617, Start Num: 49
Candidate Starts for Forrest_210:
(Start: 49 @104141 has 17 MA's), (72, 104285), (73, 104288), (81, 104336), (83, 104372), (93, 104450),

Gene: Forrest_49 Start: 41931, Stop: 42446, Start Num: 49
Candidate Starts for Forrest_49:
(Start: 49 @41931 has 17 MA's), (88, 42195), (89, 42201), (96, 42249), (97, 42252), (109, 42342),

Gene: Forrest_171 Start: 88900, Stop: 89394, Start Num: 49
Candidate Starts for Forrest_171:
(Start: 49 @88900 has 17 MA's), (71, 89029), (72, 89041), (82, 89119), (84, 89134), (89, 89170), (111, 89323), (117, 89368), (118, 89374),

Gene: GiJojo_54 Start: 20818, Stop: 21288, Start Num: 44
Candidate Starts for GiJojo_54:
(Start: 44 @20818 has 2 MA's), (55, 20854), (60, 20896), (78, 21010), (83, 21055), (85, 21064), (86, 21067), (89, 21097), (100, 21163), (109, 21223), (111, 21247), (113, 21256), (114, 21268),

Gene: Huphlepuff_53 Start: 28951, Stop: 29424, Start Num: 49
Candidate Starts for Huphlepuff_53:
(Start: 49 @28951 has 17 MA's), (Start: 54 @28981 has 1 MA's), (63, 29062), (79, 29152), (87, 29227), (108, 29350), (112, 29389), (113, 29395),

Gene: Jada_168 Start: 87596, Stop: 88090, Start Num: 49
Candidate Starts for Jada_168:
(Start: 49 @87596 has 17 MA's), (71, 87725), (72, 87737), (82, 87815), (84, 87830), (89, 87866), (111, 88019), (117, 88064), (118, 88070),

Gene: Jada_47 Start: 41113, Stop: 41628, Start Num: 49
Candidate Starts for Jada_47:
(Start: 49 @41113 has 17 MA's), (88, 41377), (89, 41383), (96, 41431), (97, 41434), (109, 41524),

Gene: JonJames_73 Start: 49905, Stop: 50405, Start Num: 45
Candidate Starts for JonJames_73:
(Start: 45 @49905 has 3 MA's), (61, 49998), (62, 50019), (74, 50073), (78, 50112), (86, 50169), (89, 50199), (98, 50253), (103, 50286), (111, 50361),

Gene: Lilbit_50 Start: 29147, Stop: 29620, Start Num: 49
Candidate Starts for Lilbit_50:
(Start: 49 @29147 has 17 MA's), (Start: 54 @29177 has 1 MA's), (63, 29258), (79, 29348), (87, 29423), (108, 29546), (112, 29585), (113, 29591),

Gene: LittleLaf_51 Start: 28906, Stop: 29349, Start Num: 54

Candidate Starts for LittleLaf_51:
(Start: 49 @28876 has 17 MA's), (Start: 54 @28906 has 1 MA's), (63, 28987), (79, 29077), (87, 29152), (108, 29275), (112, 29314), (113, 29320),

Gene: Love_44 Start: 37647, Stop: 37177, Start Num: 42
Candidate Starts for Love_44:
(7, 37845), (9, 37836), (14, 37776), (17, 37767), (28, 37731), (Start: 42 @37647 has 8 MA's), (63, 37521), (69, 37503), (77, 37458), (80, 37440), (84, 37395), (89, 37359), (105, 37281),

Gene: Lysidious_72 Start: 45013, Stop: 45621, Start Num: 18
Candidate Starts for Lysidious_72:
(Start: 18 @45013 has 2 MA's), (25, 45040), (35, 45079), (46, 45139), (64, 45256), (65, 45262), (79, 45343), (80, 45346), (107, 45520), (110, 45553), (115, 45604),

Gene: Megiddo_61 Start: 41199, Stop: 41795, Start Num: 20
Candidate Starts for Megiddo_61:
(5, 41016), (12, 41172), (Start: 20 @41199 has 6 MA's), (27, 41220), (35, 41256), (37, 41271), (46, 41316), (56, 41355), (87, 41595), (94, 41634), (101, 41670), (110, 41736), (113, 41763),

Gene: Miskis_71 Start: 47774, Stop: 48271, Start Num: 45
Candidate Starts for Miskis_71:
(22, 47657), (Start: 45 @47774 has 3 MA's), (79, 47984), (86, 48038), (89, 48068), (91, 48095), (101, 48146), (110, 48215),

Gene: Nordenberg_35 Start: 35840, Stop: 35370, Start Num: 42
Candidate Starts for Nordenberg_35:
(7, 36038), (9, 36029), (14, 35969), (17, 35960), (28, 35924), (Start: 42 @35840 has 8 MA's), (63, 35714), (69, 35696), (77, 35651), (80, 35633), (84, 35588), (89, 35552), (105, 35474),

Gene: Paries_43 Start: 37309, Stop: 36839, Start Num: 42
Candidate Starts for Paries_43:
(7, 37507), (9, 37498), (14, 37438), (17, 37429), (28, 37393), (Start: 42 @37309 has 8 MA's), (63, 37183), (69, 37165), (77, 37120), (80, 37102), (84, 37057), (89, 37021), (105, 36943),

Gene: Phayonce_65 Start: 43286, Stop: 43876, Start Num: 23
Candidate Starts for Phayonce_65:
(Start: 23 @43286 has 1 MA's), (26, 43298), (32, 43322), (39, 43364), (56, 43436), (87, 43676), (94, 43715), (101, 43751), (110, 43817), (113, 43844),

Gene: Phrank15_85 Start: 46952, Stop: 47386, Start Num: 50
Candidate Starts for Phrank15_85:
(Start: 47 @46937 has 1 MA's), (Start: 50 @46952 has 4 MA's), (59, 46988), (79, 47129), (89, 47213), (90, 47216),

Gene: Phredrick_212 Start: 102971, Stop: 103447, Start Num: 49
Candidate Starts for Phredrick_212:
(Start: 49 @102971 has 17 MA's), (72, 103115), (73, 103118), (81, 103166), (83, 103202), (93, 103280),

Gene: Poise_51 Start: 28464, Stop: 28937, Start Num: 49
Candidate Starts for Poise_51:
(Start: 49 @28464 has 17 MA's), (Start: 54 @28494 has 1 MA's), (63, 28575), (79, 28665), (87, 28740), (108, 28863), (112, 28902), (113, 28908),

Gene: Posh_67 Start: 45892, Stop: 46479, Start Num: 20
Candidate Starts for Posh_67:
(4, 45700), (11, 45832), (Start: 20 @45892 has 6 MA's), (36, 45952), (38, 45967), (Start: 42 @45997 has 8 MA's), (60, 46078), (76, 46186), (89, 46288), (90, 46291), (113, 46447),

Gene: Pringar_51 Start: 28752, Stop: 29225, Start Num: 49
Candidate Starts for Pringar_51:
(Start: 49 @28752 has 17 MA's), (Start: 54 @28782 has 1 MA's), (63, 28863), (79, 28953), (87, 29028), (108, 29151), (112, 29190), (113, 29196),

Gene: Raela_51 Start: 29019, Stop: 29492, Start Num: 49
Candidate Starts for Raela_51:
(Start: 49 @29019 has 17 MA's), (Start: 54 @29049 has 1 MA's), (63, 29130), (79, 29220), (87, 29295), (108, 29418), (112, 29457), (113, 29463),

Gene: Rofo_41 Start: 36635, Stop: 36165, Start Num: 42
Candidate Starts for Rofo_41:
(7, 36833), (9, 36824), (14, 36764), (17, 36755), (28, 36719), (Start: 42 @36635 has 8 MA's), (63, 36509), (69, 36491), (77, 36446), (80, 36428), (84, 36383), (89, 36347), (105, 36269),

Gene: Spooky_106 Start: 55742, Stop: 56233, Start Num: 51
Candidate Starts for Spooky_106:
(6, 55508), (8, 55517), (16, 55583), (19, 55598), (27, 55625), (33, 55652), (Start: 51 @55742 has 1 MA's), (67, 55859), (68, 55862), (70, 55865), (82, 55967), (87, 56009), (89, 56018), (113, 56180), (116, 56210),

Gene: Sunfish_75 Start: 46858, Stop: 46316, Start Num: 47
Candidate Starts for Sunfish_75:
(Start: 47 @46858 has 1 MA's), (53, 46828), (92, 46537), (102, 46489), (106, 46465),

Gene: Tangent_41 Start: 36226, Stop: 35756, Start Num: 42
Candidate Starts for Tangent_41:
(7, 36424), (9, 36415), (14, 36355), (17, 36346), (28, 36310), (Start: 42 @36226 has 8 MA's), (63, 36100), (69, 36082), (77, 36037), (80, 36019), (84, 35974), (89, 35938), (105, 35860),

Gene: ThulaThula_69 Start: 44706, Stop: 45302, Start Num: 20
Candidate Starts for ThulaThula_69:
(8, 44622), (12, 44679), (Start: 20 @44706 has 6 MA's), (27, 44727), (35, 44763), (37, 44778), (46, 44823), (56, 44862), (87, 45102), (94, 45141), (101, 45177), (110, 45243), (113, 45270),

Gene: VasuNzinga_51 Start: 28326, Stop: 28799, Start Num: 49
Candidate Starts for VasuNzinga_51:
(Start: 49 @28326 has 17 MA's), (Start: 54 @28356 has 1 MA's), (63, 28437), (79, 28527), (87, 28602), (108, 28725), (112, 28764), (113, 28770),

Gene: Vitus_38 Start: 31088, Stop: 31606, Start Num: 48
Candidate Starts for Vitus_38:
(Start: 48 @31088 has 1 MA's), (75, 31262), (101, 31457),

Gene: Vivi2_43 Start: 37381, Stop: 36914, Start Num: 41
Candidate Starts for Vivi2_43:

(29, 37450), (31, 37441), (Start: 41 @37381 has 1 MA's), (63, 37258), (69, 37240), (77, 37195), (80, 37177), (84, 37132), (89, 37096), (105, 37018),

Gene: Walrus_68 Start: 43422, Stop: 44057, Start Num: 18
Candidate Starts for Walrus_68:
(Start: 18 @43422 has 2 MA's), (30, 43458), (35, 43485), (46, 43545), (64, 43662), (65, 43668), (101, 43899), (119, 44043),

Gene: WilliamBoone_124 Start: 68689, Stop: 69156, Start Num: 50
Candidate Starts for WilliamBoone_124:
(21, 68554), (Start: 50 @68689 has 4 MA's), (58, 68722), (80, 68878), (89, 68962), (103, 69028), (112, 69106),

Gene: Wrigley_69 Start: 45475, Stop: 46062, Start Num: 20
Candidate Starts for Wrigley_69:
(4, 45283), (11, 45415), (Start: 20 @45475 has 6 MA's), (36, 45535), (38, 45550), (Start: 42 @45580 has 8 MA's), (60, 45661), (76, 45769), (89, 45871), (90, 45874), (113, 46030),

Gene: Yvonnetastic_71 Start: 47446, Stop: 47946, Start Num: 45
Candidate Starts for Yvonnetastic_71:
(Start: 45 @47446 has 3 MA's), (61, 47539), (62, 47560), (74, 47614), (78, 47653), (86, 47710), (89, 47740), (98, 47794), (103, 47827), (111, 47902),