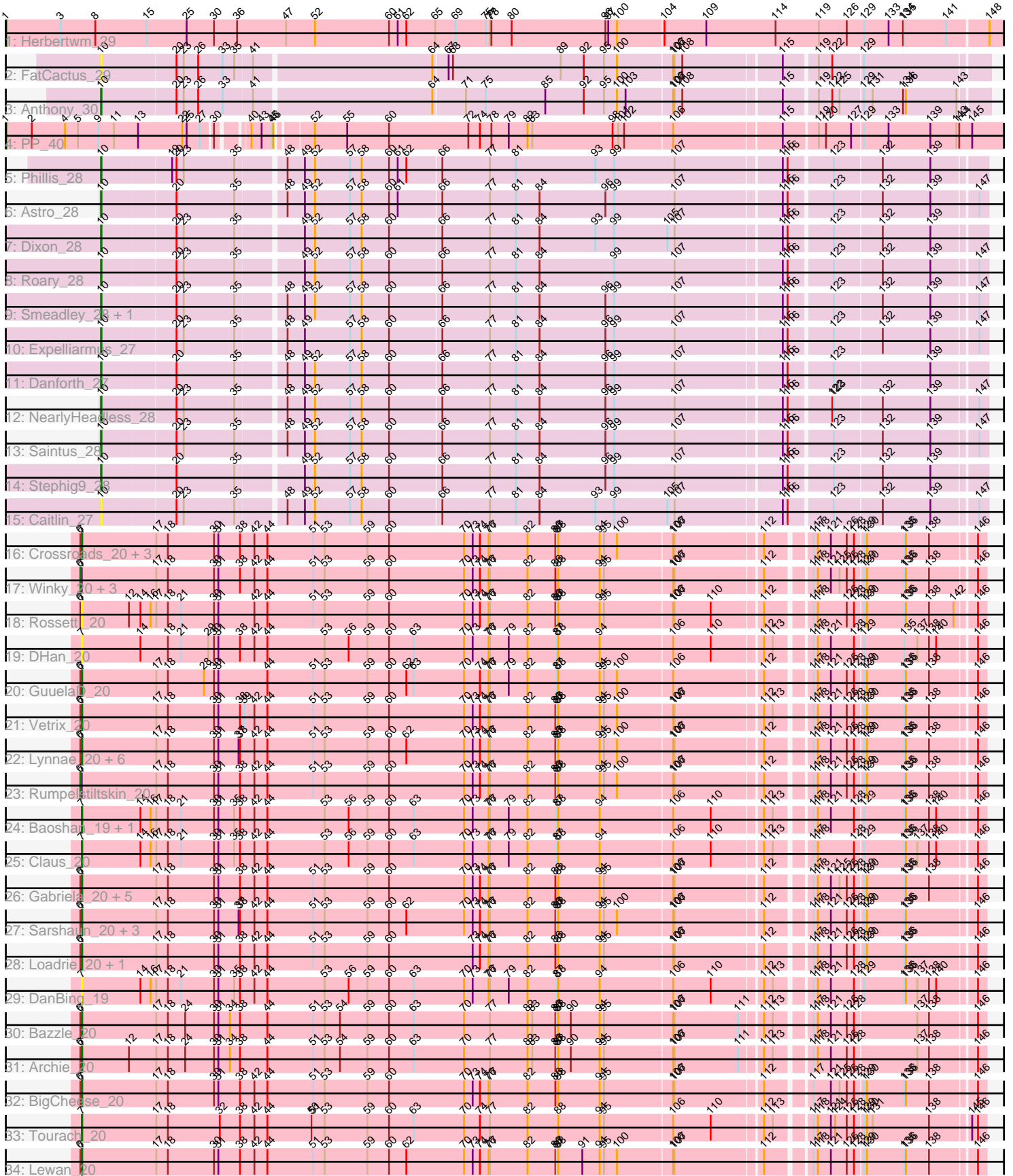


Pham 305042



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 305042 Report

This analysis was run 06/08/26 on database version 649.

Pham number 305042 has 57 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Herbertwm_29
- Track 2 : FatCactus_29
- Track 3 : Anthony_30
- Track 4 : PP_40
- Track 5 : Phillis_28
- Track 6 : Astro_28
- Track 7 : Dixon_28
- Track 8 : Roary_28
- Track 9 : Smeadley_28, Groundhog_27
- Track 10 : Expelliarmus_27
- Track 11 : Danforth_27
- Track 12 : NearlyHeadless_28
- Track 13 : Saintus_28
- Track 14 : Stephig9_28
- Track 15 : Caitlin_27
- Track 16 : Crossroads_20, Finemlucis_20, MkaliMitinis3_20, Zakai_20
- Track 17 : Winky_20, Faith1_20, Breezona_20, Itos_20
- Track 18 : Rossetti_20
- Track 19 : DHan_20
- Track 20 : GuuelaD_20
- Track 21 : Vetrix_20
- Track 22 : Lynnae_20, Underpass_20, LilDestine_20, Kahlid_20, Wilder_20, Gardann_20, Nicholasp3_20
- Track 23 : Rumpelstiltskin_20
- Track 24 : Baoshan_19, ZhongYanYuan_19
- Track 25 : Claus_20
- Track 26 : Gabriela_20, SoJulia_20, Miley16_20, BobsGarage_20, Netyap_20, DrSeegs_20
- Track 27 : Sarshaun_20, Wigglewobble_20, Soap141_20, Hafay_20
- Track 28 : Loadrie_20, OverPar_20
- Track 29 : DanBing_19
- Track 30 : Bazzle_20
- Track 31 : Archie_20
- Track 32 : BigCheese_20
- Track 33 : Tourach_20
- Track 34 : Lewan_20

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

The start number called the most often in the published annotations is 7, it was called in 26 of the 45 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archie_20, Baoshan_19, Bazzle_20, BigCheese_20, BobsGarage_20, Claus_20, Crossroads_20, DHan_20, DanBing_19, DrSeegs_20, Finemlucis_20, Gabriela_20, Gardann_20, GuuelaD_20, Hafay_20, Kahlid_20, Lewan_20, LilDestine_20, Loadrie_20, Lynnae_20, Miley16_20, MkaliMitinis3_20, Netyap_20, Nicholasp3_20, OverPar_20, Rossetti_20, Sarshaun_20, SoJulia_20, Soap141_20, Tourach_20, Underpass_20, Vetrix_20, Wigglewiggles_20, Wilder_20, Zakai_20, ZhongYanYuan_19,

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

- Breezona_20, Faith1_20, Itos_20, Rumpelstiltskin_20, Winky_20,

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

- Anthony_30, Astro_28, Caitlin_27, Danforth_27, Dixon_28, Expelliarmus_27, FatCactus_29, Groundhog_27, Herbertwm_29, NearlyHeadless_28, PP_40, Phillis_28, Roary_28, Saintus_28, Smeadley_28, StepHig9_28,

Summary by start number:

Start 1:

- Found in 2 of 57 (3.5%) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Herbertwm_29 (A2), PP_40 (A7),

Start 6:

- Found in 35 of 57 (61.4%) of genes in pham
- Manual Annotations of this start: 5 of 45
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Breezona_20 (L2), Faith1_20 (L2), Itos_20 (L2), Rumpelstiltskin_20 (L2), Winky_20 (L2),

Start 7:

- Found in 41 of 57 (71.9%) of genes in pham
- Manual Annotations of this start: 26 of 45
- Called 87.8% of time when present
- Phage (with cluster) where this start called: Archie_20 (L2), Baoshan_19 (L2), Bazzle_20 (L2), BigCheese_20 (L2), BobsGarage_20 (L2), Claus_20 (L2), Crossroads_20 (L2), DHan_20 (L2), DanBing_19 (L2), DrSeegs_20 (L2), Finemlucis_20 (L2), Gabriela_20 (L2), Gardann_20 (L2), GuuelaD_20 (L2), Hafay_20 (L2), Kahlid_20 (L2), Lewan_20 (L2), LilDestine_20 (L2), Loadrie_20 (L2), Lynnae_20 (L2), Miley16_20 (L2), MkaliMitinis3_20 (L2), Netyap_20 (L2), Nicholasp3_20 (L2), OverPar_20 (L2), Rossetti_20 (L2), Sarshaun_20 (L2), SoJulia_20 (L2), Soap141_20 (L2), Tourach_20 (L2), Underpass_20 (L2), Vetrix_20 (L2), Wigglewiggles_20 (L2), Wilder_20 (L2), Zakai_20 (L2), ZhongYanYuan_19 (L2),

Start 10:

- Found in 14 of 57 (24.6%) of genes in pham
- Manual Annotations of this start: 12 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anthony_30 (A20), Astro_28 (A8), Caitlin_27 (A8), Danforth_27 (A8), Dixon_28 (A8), Expelliarmus_27 (A8), FatCactus_29 (A20), Groundhog_27 (A8), NearlyHeadless_28 (A8), Phillis_28 (A8), Roary_28 (A8), Saintus_28 (A8), Smeadley_28 (A8), Stephig9_28 (A8),

Summary by clusters:

There are 5 clusters represented in this pham: A20, A8, A2, L2, A7,

Info for manual annotations of cluster A2:

- Start number 1 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 10 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A7:

- Start number 1 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:

- Start number 10 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster L2:

- Start number 6 was manually annotated 5 times for cluster L2.
- Start number 7 was manually annotated 26 times for cluster L2.

Gene Information:

Gene: Anthony_30 Start: 21219, Stop: 22928, Start Num: 10

Candidate Starts for Anthony_30:

(Start: 10 @21219 has 12 MA's), (20, 21366), (23, 21381), (26, 21408), (33, 21456), (41, 21513), (64, 21867), (71, 21930), (75, 21966), (85, 22080), (92, 22158), (95, 22197), (100, 22224), (103, 22242), (106, 22332), (107, 22335), (108, 22350), (115, 22536), (119, 22596), (122, 22623), (125, 22638), (129, 22683), (131, 22701), (134, 22764), (136, 22770), (143, 22872),

Gene: Archie_20 Start: 19444, Stop: 21240, Start Num: 7

Candidate Starts for Archie_20:

(Start: 6 @19441 has 5 MA's), (Start: 7 @19444 has 26 MA's), (12, 19540), (17, 19597), (18, 19621), (24, 19657), (30, 19717), (31, 19726), (34, 19750), (38, 19771), (44, 19828), (51, 19921), (53, 19945), (54, 19975), (59, 20029), (60, 20074), (63, 20125), (70, 20230), (77, 20284), (82, 20362), (83, 20371), (86, 20419), (87, 20422), (88, 20425), (90, 20449), (94, 20509), (95, 20518), (106, 20656), (107, 20659), (111, 20788), (112, 20827), (113, 20842), (117, 20902), (118, 20911), (121, 20938), (126, 20971), (128, 20986), (137, 21112), (138, 21136), (146, 21223),

Gene: Astro_28 Start: 21515, Stop: 23236, Start Num: 10

Candidate Starts for Astro_28:

(Start: 10 @21515 has 12 MA's), (20, 21659), (35, 21773), (48, 21863), (49, 21899), (52, 21920), (57, 21992), (58, 22016), (60, 22070), (61, 22088), (66, 22172), (77, 22268), (81, 22322), (84, 22370), (96, 22499), (99, 22517), (107, 22643), (115, 22847), (116, 22856), (123, 22937), (132, 23033), (139, 23132), (147, 23219),

Gene: Baoshan_19 Start: 19053, Stop: 20849, Start Num: 7

Candidate Starts for Baoshan_19:

(Start: 7 @19053 has 26 MA's), (14, 19173), (16, 19194), (17, 19206), (18, 19230), (21, 19257), (30, 19326), (31, 19335), (35, 19368), (38, 19380), (42, 19410), (44, 19437), (53, 19554), (56, 19602), (59, 19638), (60, 19683), (63, 19734), (70, 19839), (73, 19857), (76, 19890), (77, 19893), (79, 19932), (82, 19971), (87, 20031), (88, 20034), (94, 20118), (106, 20265), (110, 20343), (112, 20436), (113, 20451), (117, 20511), (118, 20520), (121, 20547), (128, 20595), (129, 20610), (135, 20694), (136, 20697), (138, 20745), (140, 20760), (146, 20832),

Gene: Bazzle_20 Start: 19193, Stop: 20989, Start Num: 7

Candidate Starts for Bazzle_20:

(Start: 6 @19190 has 5 MA's), (Start: 7 @19193 has 26 MA's), (17, 19346), (18, 19370), (24, 19406), (30, 19466), (31, 19475), (34, 19499), (38, 19520), (44, 19577), (51, 19670), (53, 19694), (54, 19724), (59, 19778), (60, 19823), (63, 19874), (70, 19979), (77, 20033), (82, 20111), (83, 20120), (86, 20168), (87, 20171), (88, 20174), (90, 20198), (94, 20258), (95, 20267), (106, 20405), (107, 20408), (111, 20537), (112, 20576), (113, 20591), (117, 20651), (118, 20660), (121, 20687), (126, 20720), (128, 20735), (137, 20861), (138, 20885), (146, 20972),

Gene: BigCheese_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for BigCheese_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: BobsGarage_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for BobsGarage_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Breezona_20 Start: 19225, Stop: 21024, Start Num: 6

Candidate Starts for Breezona_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Caitlin_27 Start: 21508, Stop: 23229, Start Num: 10

Candidate Starts for Caitlin_27:

(Start: 10 @21508 has 12 MA's), (20, 21652), (23, 21667), (35, 21766), (48, 21856), (49, 21892), (52, 21913), (57, 21985), (58, 22009), (60, 22063), (66, 22165), (77, 22261), (81, 22315), (84, 22363), (93, 22474), (99, 22510), (105, 22621), (107, 22636), (115, 22840), (116, 22849), (123, 22930), (132, 23026), (139, 23125), (147, 23212),

Gene: Claus_20 Start: 19209, Stop: 21005, Start Num: 7

Candidate Starts for Claus_20:

(Start: 7 @19209 has 26 MA's), (14, 19329), (16, 19350), (17, 19362), (18, 19386), (21, 19413), (30, 19482), (31, 19491), (35, 19524), (38, 19536), (42, 19566), (44, 19593), (53, 19710), (56, 19758), (59, 19794), (60, 19839), (63, 19890), (70, 19995), (73, 20013), (76, 20046), (77, 20049), (79, 20088), (82, 20127), (87, 20187), (88, 20190), (94, 20274), (106, 20421), (110, 20499), (112, 20592), (113, 20607), (117, 20667), (118, 20676), (128, 20751), (129, 20766), (135, 20850), (136, 20853), (137, 20877), (138, 20901), (140, 20916), (146, 20988),

Gene: Crossroads_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for Crossroads_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (87, 20206), (88, 20209), (94, 20293), (95, 20302), (100, 20329), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: DHan_20 Start: 19145, Stop: 20941, Start Num: 7

Candidate Starts for DHan_20:

(Start: 7 @19145 has 26 MA's), (14, 19265), (18, 19322), (21, 19349), (29, 19406), (30, 19418), (31, 19427), (38, 19472), (42, 19502), (44, 19529), (53, 19646), (56, 19694), (59, 19730), (60, 19775), (63, 19826), (70, 19931), (73, 19949), (76, 19982), (77, 19985), (79, 20024), (82, 20063), (87, 20123), (88, 20126), (94, 20210), (106, 20357), (110, 20435), (112, 20528), (113, 20543), (117, 20603), (118, 20612), (121, 20639), (128, 20687), (129, 20702), (135, 20786), (137, 20813), (138, 20837), (140, 20852), (146, 20924),

Gene: DanBing_19 Start: 19049, Stop: 20845, Start Num: 7

Candidate Starts for DanBing_19:

(Start: 7 @19049 has 26 MA's), (14, 19169), (16, 19190), (17, 19202), (18, 19226), (21, 19253), (30, 19322), (31, 19331), (35, 19364), (38, 19376), (42, 19406), (44, 19433), (53, 19550), (56, 19598), (59, 19634), (60, 19679), (63, 19730), (70, 19835), (73, 19853), (76, 19886), (77, 19889), (79, 19928), (82, 19967), (87, 20027), (88, 20030), (94, 20114), (106, 20261), (110, 20339), (112, 20432), (113, 20447), (117, 20507), (118, 20516), (121, 20543), (128, 20591), (129, 20606), (135, 20690), (136, 20693), (137, 20717), (138, 20741), (140, 20756), (146, 20828),

Gene: Danforth_27 Start: 21490, Stop: 23211, Start Num: 10

Candidate Starts for Danforth_27:

(Start: 10 @21490 has 12 MA's), (20, 21634), (35, 21748), (48, 21838), (49, 21874), (52, 21895), (57, 21967), (58, 21991), (60, 22045), (66, 22147), (77, 22243), (81, 22297), (84, 22345), (96, 22474), (99, 22492), (107, 22618), (115, 22822), (116, 22831), (123, 22912), (139, 23107),

Gene: Dixon_28 Start: 21509, Stop: 23230, Start Num: 10

Candidate Starts for Dixon_28:

(Start: 10 @21509 has 12 MA's), (20, 21653), (23, 21668), (35, 21767), (49, 21893), (52, 21914), (57, 21986), (58, 22010), (60, 22064), (66, 22166), (77, 22262), (81, 22316), (84, 22364), (93, 22475), (99, 22511), (105, 22622), (107, 22637), (115, 22841), (116, 22850), (123, 22931), (132, 23027), (139, 23126),

Gene: DrSeegs_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for DrSeegs_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Expelliarmus_27 Start: 21476, Stop: 23197, Start Num: 10

Candidate Starts for Expelliarmus_27:

(Start: 10 @21476 has 12 MA's), (20, 21620), (23, 21635), (35, 21734), (48, 21824), (49, 21860), (57, 21953), (58, 21977), (60, 22031), (66, 22133), (77, 22229), (81, 22283), (84, 22331), (96, 22460), (99, 22478), (107, 22604), (115, 22808), (116, 22817), (123, 22898), (132, 22994), (139, 23093), (147, 23180),

Gene: Faith1_20 Start: 19225, Stop: 21024, Start Num: 6

Candidate Starts for Faith1_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: FatCactus_29 Start: 21131, Stop: 22840, Start Num: 10

Candidate Starts for FatCactus_29:

(Start: 10 @21131 has 12 MA's), (20, 21278), (23, 21293), (26, 21320), (33, 21368), (35, 21392), (41, 21425), (64, 21779), (67, 21806), (68, 21815), (89, 22022), (92, 22070), (95, 22109), (100, 22136), (106, 22244), (107, 22247), (108, 22262), (115, 22448), (119, 22508), (122, 22535), (129, 22595),

Gene: Finemlucis_20 Start: 19236, Stop: 21032, Start Num: 7

Candidate Starts for Finemlucis_20:

(Start: 6 @19233 has 5 MA's), (Start: 7 @19236 has 26 MA's), (17, 19389), (18, 19413), (30, 19509), (31, 19518), (38, 19563), (42, 19593), (44, 19620), (51, 19713), (53, 19737), (59, 19821), (60, 19866), (70, 20022), (73, 20040), (74, 20055), (76, 20073), (77, 20076), (82, 20154), (86, 20211), (87, 20214), (88, 20217), (94, 20301), (95, 20310), (100, 20337), (106, 20448), (107, 20451), (112, 20619), (117, 20694), (118, 20703), (121, 20730), (126, 20763), (128, 20778), (129, 20793), (130, 20799), (135, 20877), (136, 20880), (138, 20928), (146, 21015),

Gene: Gabriela_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for Gabriela_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Gardann_20 Start: 19233, Stop: 21029, Start Num: 7

Candidate Starts for Gardann_20:

(Start: 6 @19230 has 5 MA's), (Start: 7 @19233 has 26 MA's), (17, 19386), (18, 19410), (30, 19506), (31, 19515), (37, 19557), (38, 19560), (42, 19590), (44, 19617), (51, 19710), (53, 19734), (59, 19818), (60, 19863), (62, 19899), (70, 20019), (73, 20037), (74, 20052), (76, 20070), (77, 20073), (82, 20151), (86, 20208), (87, 20211), (88, 20214), (94, 20298), (95, 20307), (100, 20334), (106, 20445), (107, 20448), (112, 20616), (117, 20691), (118, 20700), (121, 20727), (126, 20760), (128, 20775), (129, 20790), (130, 20796), (135, 20874), (136, 20877), (138, 20925), (146, 21012),

Gene: Groundhog_27 Start: 21477, Stop: 23198, Start Num: 10

Candidate Starts for Groundhog_27:

(Start: 10 @21477 has 12 MA's), (20, 21621), (23, 21636), (35, 21735), (48, 21825), (49, 21861), (52, 21882), (57, 21954), (58, 21978), (60, 22032), (66, 22134), (77, 22230), (81, 22284), (84, 22332), (96, 22461), (99, 22479), (107, 22605), (115, 22809), (116, 22818), (123, 22899), (132, 22995), (139, 23094), (147, 23181),

Gene: GuuelaD_20 Start: 19262, Stop: 21058, Start Num: 7

Candidate Starts for GuuelaD_20:

(Start: 6 @19259 has 5 MA's), (Start: 7 @19262 has 26 MA's), (17, 19415), (18, 19439), (28, 19514), (30, 19535), (31, 19544), (44, 19646), (51, 19739), (53, 19763), (59, 19847), (60, 19892), (62, 19928), (63, 19943), (70, 20048), (74, 20081), (76, 20099), (77, 20102), (79, 20141), (82, 20180), (87, 20240), (88, 20243), (94, 20327), (95, 20336), (100, 20363), (106, 20474), (112, 20645), (117, 20720), (118, 20729), (121, 20756), (126, 20789), (128, 20804), (129, 20819), (130, 20825), (135, 20903), (136, 20906), (138, 20954), (146, 21041),

Gene: Hafay_20 Start: 19261, Stop: 21057, Start Num: 7

Candidate Starts for Hafay_20:

(Start: 6 @19258 has 5 MA's), (Start: 7 @19261 has 26 MA's), (17, 19414), (18, 19438), (30, 19534), (31, 19543), (37, 19585), (38, 19588), (42, 19618), (44, 19645), (51, 19738), (53, 19762), (59, 19846), (60, 19891), (62, 19927), (70, 20047), (73, 20065), (74, 20080), (76, 20098), (77, 20101), (82, 20179), (86, 20236), (87, 20239), (88, 20242), (94, 20326), (95, 20335), (100, 20362), (106, 20473), (107, 20476), (112, 20644), (117, 20719), (118, 20728), (121, 20755), (126, 20788), (128, 20803), (129, 20818), (130, 20824), (135, 20902), (136, 20905), (146, 21040),

Gene: Herbertwm_29 Start: 21904, Stop: 23925, Start Num: 1

Candidate Starts for Herbertwm_29:

(Start: 1 @21904 has 2 MA's), (3, 22018), (8, 22090), (15, 22192), (25, 22273), (30, 22330), (36, 22378), (47, 22480), (52, 22540), (60, 22690), (61, 22708), (62, 22726), (65, 22783), (69, 22822), (75, 22885), (77, 22891), (78, 22894), (80, 22936), (96, 23122), (97, 23128), (100, 23146), (104, 23239), (109, 23323), (114, 23467), (119, 23557), (126, 23614), (129, 23650), (133, 23698), (134, 23728), (135, 23731), (141, 23818), (148, 23893),

Gene: Itos_20 Start: 19225, Stop: 21024, Start Num: 6

Candidate Starts for Itos_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Kahlid_20 Start: 19233, Stop: 21029, Start Num: 7

Candidate Starts for Kahlid_20:

(Start: 6 @19230 has 5 MA's), (Start: 7 @19233 has 26 MA's), (17, 19386), (18, 19410), (30, 19506), (31, 19515), (37, 19557), (38, 19560), (42, 19590), (44, 19617), (51, 19710), (53, 19734), (59, 19818),

(60, 19863), (62, 19899), (70, 20019), (73, 20037), (74, 20052), (76, 20070), (77, 20073), (82, 20151), (86, 20208), (87, 20211), (88, 20214), (94, 20298), (95, 20307), (100, 20334), (106, 20445), (107, 20448), (112, 20616), (117, 20691), (118, 20700), (121, 20727), (126, 20760), (128, 20775), (129, 20790), (130, 20796), (135, 20874), (136, 20877), (138, 20925), (146, 21012),

Gene: Lewan_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for Lewan_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (62, 19894), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (87, 20206), (88, 20209), (91, 20257), (94, 20293), (95, 20302), (100, 20329), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: LilDestine_20 Start: 19227, Stop: 21023, Start Num: 7

Candidate Starts for LilDestine_20:

(Start: 6 @19224 has 5 MA's), (Start: 7 @19227 has 26 MA's), (17, 19380), (18, 19404), (30, 19500), (31, 19509), (37, 19551), (38, 19554), (42, 19584), (44, 19611), (51, 19704), (53, 19728), (59, 19812), (60, 19857), (62, 19893), (70, 20013), (73, 20031), (74, 20046), (76, 20064), (77, 20067), (82, 20145), (86, 20202), (87, 20205), (88, 20208), (94, 20292), (95, 20301), (100, 20328), (106, 20439), (107, 20442), (112, 20610), (117, 20685), (118, 20694), (121, 20721), (126, 20754), (128, 20769), (129, 20784), (130, 20790), (135, 20868), (136, 20871), (138, 20919), (146, 21006),

Gene: Loadrie_20 Start: 19260, Stop: 21056, Start Num: 7

Candidate Starts for Loadrie_20:

(Start: 6 @19257 has 5 MA's), (Start: 7 @19260 has 26 MA's), (17, 19413), (18, 19437), (30, 19533), (31, 19542), (38, 19587), (42, 19617), (44, 19644), (51, 19737), (53, 19761), (59, 19845), (60, 19890), (73, 20064), (74, 20079), (76, 20097), (77, 20100), (82, 20178), (86, 20235), (88, 20241), (94, 20325), (95, 20334), (106, 20472), (107, 20475), (112, 20643), (117, 20718), (118, 20727), (121, 20754), (126, 20787), (128, 20802), (129, 20817), (130, 20823), (135, 20901), (136, 20904), (146, 21039),

Gene: Lynnae_20 Start: 19216, Stop: 21012, Start Num: 7

Candidate Starts for Lynnae_20:

(Start: 6 @19213 has 5 MA's), (Start: 7 @19216 has 26 MA's), (17, 19369), (18, 19393), (30, 19489), (31, 19498), (37, 19540), (38, 19543), (42, 19573), (44, 19600), (51, 19693), (53, 19717), (59, 19801), (60, 19846), (62, 19882), (70, 20002), (73, 20020), (74, 20035), (76, 20053), (77, 20056), (82, 20134), (86, 20191), (87, 20194), (88, 20197), (94, 20281), (95, 20290), (100, 20317), (106, 20428), (107, 20431), (112, 20599), (117, 20674), (118, 20683), (121, 20710), (126, 20743), (128, 20758), (129, 20773), (130, 20779), (135, 20857), (136, 20860), (138, 20908), (146, 20995),

Gene: Miley16_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for Miley16_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: MkaliMitinis3_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for MkaliMitinis3_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858),

(70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (87, 20206), (88, 20209), (94, 20293), (95, 20302), (100, 20329), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: NearlyHeadless_28 Start: 21529, Stop: 23250, Start Num: 10

Candidate Starts for NearlyHeadless_28:

(Start: 10 @21529 has 12 MA's), (20, 21673), (23, 21688), (35, 21787), (48, 21877), (49, 21913), (52, 21934), (57, 22006), (58, 22030), (60, 22084), (66, 22186), (77, 22282), (81, 22336), (84, 22384), (96, 22513), (99, 22531), (107, 22657), (115, 22861), (116, 22870), (122, 22948), (123, 22951), (132, 23047), (139, 23146), (147, 23233),

Gene: Netyap_20 Start: 19228, Stop: 21024, Start Num: 7

Candidate Starts for Netyap_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Nicholasp3_20 Start: 19233, Stop: 21029, Start Num: 7

Candidate Starts for Nicholasp3_20:

(Start: 6 @19230 has 5 MA's), (Start: 7 @19233 has 26 MA's), (17, 19386), (18, 19410), (30, 19506), (31, 19515), (37, 19557), (38, 19560), (42, 19590), (44, 19617), (51, 19710), (53, 19734), (59, 19818), (60, 19863), (62, 19899), (70, 20019), (73, 20037), (74, 20052), (76, 20070), (77, 20073), (82, 20151), (86, 20208), (87, 20211), (88, 20214), (94, 20298), (95, 20307), (100, 20334), (106, 20445), (107, 20448), (112, 20616), (117, 20691), (118, 20700), (121, 20727), (126, 20760), (128, 20775), (129, 20790), (130, 20796), (135, 20874), (136, 20877), (138, 20925), (146, 21012),

Gene: OverPar_20 Start: 19260, Stop: 21056, Start Num: 7

Candidate Starts for OverPar_20:

(Start: 6 @19257 has 5 MA's), (Start: 7 @19260 has 26 MA's), (17, 19413), (18, 19437), (30, 19533), (31, 19542), (38, 19587), (42, 19617), (44, 19644), (51, 19737), (53, 19761), (59, 19845), (60, 19890), (73, 20064), (74, 20079), (76, 20097), (77, 20100), (82, 20178), (86, 20235), (88, 20241), (94, 20325), (95, 20334), (106, 20472), (107, 20475), (112, 20643), (117, 20718), (118, 20727), (121, 20754), (126, 20787), (128, 20802), (129, 20817), (130, 20823), (135, 20901), (136, 20904), (146, 21039),

Gene: PP_40 Start: 28396, Stop: 30327, Start Num: 1

Candidate Starts for PP_40:

(Start: 1 @28396 has 2 MA's), (2, 28447), (4, 28516), (5, 28543), (9, 28585), (11, 28618), (13, 28666), (22, 28756), (25, 28765), (27, 28792), (30, 28813), (40, 28864), (43, 28885), (45, 28906), (46, 28909), (52, 28972), (55, 29038), (60, 29122), (72, 29281), (74, 29305), (78, 29326), (79, 29359), (82, 29398), (83, 29407), (98, 29569), (101, 29581), (102, 29593), (106, 29689), (115, 29893), (119, 29956), (120, 29971), (127, 30022), (129, 30043), (133, 30091), (139, 30178), (143, 30232), (144, 30238), (145, 30265),

Gene: Phillis_28 Start: 21576, Stop: 23297, Start Num: 10

Candidate Starts for Phillis_28:

(Start: 10 @21576 has 12 MA's), (19, 21711), (20, 21720), (23, 21735), (35, 21834), (48, 21924), (49, 21960), (52, 21981), (57, 22053), (58, 22077), (60, 22131), (61, 22149), (62, 22167), (66, 22233), (77, 22329), (81, 22383), (93, 22542), (99, 22578), (107, 22704), (115, 22908), (116, 22917), (123, 22998), (132, 23094), (139, 23193),

Gene: Roary_28 Start: 21475, Stop: 23196, Start Num: 10

Candidate Starts for Roary_28:

(Start: 10 @21475 has 12 MA's), (20, 21619), (23, 21634), (35, 21733), (49, 21859), (52, 21880), (57, 21952), (58, 21976), (60, 22030), (66, 22132), (77, 22228), (81, 22282), (84, 22330), (99, 22477), (107, 22603), (115, 22807), (116, 22816), (123, 22897), (132, 22993), (139, 23092), (147, 23179),

Gene: Rossetti_20 Start: 19247, Stop: 21043, Start Num: 7

Candidate Starts for Rossetti_20:

(Start: 6 @19244 has 5 MA's), (Start: 7 @19247 has 26 MA's), (12, 19343), (14, 19367), (16, 19388), (17, 19400), (18, 19424), (21, 19451), (30, 19520), (31, 19529), (42, 19604), (44, 19631), (51, 19724), (53, 19748), (59, 19832), (60, 19877), (70, 20033), (73, 20051), (74, 20066), (76, 20084), (77, 20087), (82, 20165), (86, 20222), (87, 20225), (88, 20228), (94, 20312), (95, 20321), (106, 20459), (107, 20462), (110, 20537), (112, 20630), (117, 20705), (118, 20714), (126, 20774), (128, 20789), (129, 20804), (130, 20810), (135, 20888), (136, 20891), (138, 20939), (142, 20990), (146, 21026),

Gene: Rumpelstiltskin_20 Start: 19231, Stop: 21030, Start Num: 6

Candidate Starts for Rumpelstiltskin_20:

(Start: 6 @19231 has 5 MA's), (Start: 7 @19234 has 26 MA's), (17, 19387), (18, 19411), (30, 19507), (31, 19516), (38, 19561), (42, 19591), (44, 19618), (51, 19711), (53, 19735), (59, 19819), (60, 19864), (70, 20020), (73, 20038), (74, 20053), (76, 20071), (77, 20074), (82, 20152), (86, 20209), (87, 20212), (88, 20215), (94, 20299), (95, 20308), (100, 20335), (106, 20446), (107, 20449), (112, 20617), (117, 20692), (118, 20701), (121, 20728), (126, 20761), (128, 20776), (129, 20791), (130, 20797), (135, 20875), (136, 20878), (138, 20926), (146, 21013),

Gene: Saintus_28 Start: 21494, Stop: 23215, Start Num: 10

Candidate Starts for Saintus_28:

(Start: 10 @21494 has 12 MA's), (20, 21638), (23, 21653), (35, 21752), (48, 21842), (49, 21878), (52, 21899), (57, 21971), (58, 21995), (60, 22049), (66, 22151), (77, 22247), (81, 22301), (84, 22349), (96, 22478), (99, 22496), (107, 22622), (115, 22826), (116, 22835), (123, 22916), (132, 23012), (139, 23111), (147, 23198),

Gene: Sarshaun_20 Start: 19261, Stop: 21057, Start Num: 7

Candidate Starts for Sarshaun_20:

(Start: 6 @19258 has 5 MA's), (Start: 7 @19261 has 26 MA's), (17, 19414), (18, 19438), (30, 19534), (31, 19543), (37, 19585), (38, 19588), (42, 19618), (44, 19645), (51, 19738), (53, 19762), (59, 19846), (60, 19891), (62, 19927), (70, 20047), (73, 20065), (74, 20080), (76, 20098), (77, 20101), (82, 20179), (86, 20236), (87, 20239), (88, 20242), (94, 20326), (95, 20335), (100, 20362), (106, 20473), (107, 20476), (112, 20644), (117, 20719), (118, 20728), (121, 20755), (126, 20788), (128, 20803), (129, 20818), (130, 20824), (135, 20902), (136, 20905), (146, 21040),

Gene: Smeadley_28 Start: 21508, Stop: 23229, Start Num: 10

Candidate Starts for Smeadley_28:

(Start: 10 @21508 has 12 MA's), (20, 21652), (23, 21667), (35, 21766), (48, 21856), (49, 21892), (52, 21913), (57, 21985), (58, 22009), (60, 22063), (66, 22165), (77, 22261), (81, 22315), (84, 22363), (96, 22492), (99, 22510), (107, 22636), (115, 22840), (116, 22849), (123, 22930), (132, 23026), (139, 23125), (147, 23212),

Gene: SoJulia_20 Start: 19227, Stop: 21023, Start Num: 7

Candidate Starts for SoJulia_20:

(Start: 6 @19224 has 5 MA's), (Start: 7 @19227 has 26 MA's), (17, 19380), (18, 19404), (30, 19500), (31, 19509), (38, 19554), (42, 19584), (44, 19611), (51, 19704), (53, 19728), (59, 19812), (60, 19857), (70, 20013), (73, 20031), (74, 20046), (76, 20064), (77, 20067), (82, 20145), (86, 20202), (88, 20208),

(94, 20292), (95, 20301), (106, 20439), (107, 20442), (112, 20610), (117, 20685), (118, 20694), (121, 20721), (125, 20739), (126, 20754), (128, 20769), (129, 20784), (130, 20790), (135, 20868), (136, 20871), (138, 20919), (146, 21006),

Gene: Soap141_20 Start: 19261, Stop: 21057, Start Num: 7

Candidate Starts for Soap141_20:

(Start: 6 @19258 has 5 MA's), (Start: 7 @19261 has 26 MA's), (17, 19414), (18, 19438), (30, 19534), (31, 19543), (37, 19585), (38, 19588), (42, 19618), (44, 19645), (51, 19738), (53, 19762), (59, 19846), (60, 19891), (62, 19927), (70, 20047), (73, 20065), (74, 20080), (76, 20098), (77, 20101), (82, 20179), (86, 20236), (87, 20239), (88, 20242), (94, 20326), (95, 20335), (100, 20362), (106, 20473), (107, 20476), (112, 20644), (117, 20719), (118, 20728), (121, 20755), (126, 20788), (128, 20803), (129, 20818), (130, 20824), (135, 20902), (136, 20905), (146, 21040),

Gene: Stephig9_28 Start: 21490, Stop: 23211, Start Num: 10

Candidate Starts for Stephig9_28:

(Start: 10 @21490 has 12 MA's), (20, 21634), (35, 21748), (49, 21874), (52, 21895), (57, 21967), (58, 21991), (60, 22045), (66, 22147), (77, 22243), (81, 22297), (84, 22345), (96, 22474), (99, 22492), (107, 22618), (115, 22822), (116, 22831), (123, 22912), (132, 23008), (139, 23107),

Gene: Tourach_20 Start: 19226, Stop: 21022, Start Num: 7

Candidate Starts for Tourach_20:

(Start: 7 @19226 has 26 MA's), (17, 19379), (18, 19403), (32, 19511), (38, 19553), (42, 19583), (44, 19610), (50, 19700), (51, 19703), (53, 19727), (59, 19811), (60, 19856), (63, 19907), (70, 20012), (74, 20045), (77, 20066), (82, 20144), (88, 20207), (94, 20291), (95, 20300), (106, 20438), (110, 20516), (112, 20609), (113, 20624), (117, 20684), (118, 20693), (121, 20720), (124, 20729), (126, 20753), (128, 20768), (129, 20783), (130, 20789), (131, 20801), (138, 20918), (145, 20993), (146, 21005),

Gene: Underpass_20 Start: 19233, Stop: 21029, Start Num: 7

Candidate Starts for Underpass_20:

(Start: 6 @19230 has 5 MA's), (Start: 7 @19233 has 26 MA's), (17, 19386), (18, 19410), (30, 19506), (31, 19515), (37, 19557), (38, 19560), (42, 19590), (44, 19617), (51, 19710), (53, 19734), (59, 19818), (60, 19863), (62, 19899), (70, 20019), (73, 20037), (74, 20052), (76, 20070), (77, 20073), (82, 20151), (86, 20208), (87, 20211), (88, 20214), (94, 20298), (95, 20307), (100, 20334), (106, 20445), (107, 20448), (112, 20616), (117, 20691), (118, 20700), (121, 20727), (126, 20760), (128, 20775), (129, 20790), (130, 20796), (135, 20874), (136, 20877), (138, 20925), (146, 21012),

Gene: Vetric_20 Start: 19234, Stop: 21030, Start Num: 7

Candidate Starts for Vetric_20:

(Start: 6 @19231 has 5 MA's), (Start: 7 @19234 has 26 MA's), (17, 19387), (18, 19411), (30, 19507), (31, 19516), (38, 19561), (39, 19570), (42, 19591), (44, 19618), (51, 19711), (53, 19735), (59, 19819), (60, 19864), (70, 20020), (73, 20038), (74, 20053), (76, 20071), (77, 20074), (82, 20152), (86, 20209), (87, 20212), (88, 20215), (94, 20299), (95, 20308), (100, 20335), (106, 20446), (107, 20449), (112, 20617), (113, 20632), (117, 20692), (118, 20701), (121, 20728), (126, 20761), (128, 20776), (129, 20791), (130, 20797), (135, 20875), (136, 20878), (138, 20926), (146, 21013),

Gene: Wigglewigg_20 Start: 19260, Stop: 21056, Start Num: 7

Candidate Starts for Wigglewigg_20:

(Start: 6 @19257 has 5 MA's), (Start: 7 @19260 has 26 MA's), (17, 19413), (18, 19437), (30, 19533), (31, 19542), (37, 19584), (38, 19587), (42, 19617), (44, 19644), (51, 19737), (53, 19761), (59, 19845), (60, 19890), (62, 19926), (70, 20046), (73, 20064), (74, 20079), (76, 20097), (77, 20100), (82, 20178), (86, 20235), (87, 20238), (88, 20241), (94, 20325), (95, 20334), (100, 20361), (106, 20472), (107, 20475), (112, 20643), (117, 20718), (118, 20727), (121, 20754), (126, 20787), (128, 20802), (129, 20817), (130, 20823), (135, 20901), (136, 20904), (146, 21039),

Gene: Wilder_20 Start: 19233, Stop: 21029, Start Num: 7

Candidate Starts for Wilder_20:

(Start: 6 @19230 has 5 MA's), (Start: 7 @19233 has 26 MA's), (17, 19386), (18, 19410), (30, 19506), (31, 19515), (37, 19557), (38, 19560), (42, 19590), (44, 19617), (51, 19710), (53, 19734), (59, 19818), (60, 19863), (62, 19899), (70, 20019), (73, 20037), (74, 20052), (76, 20070), (77, 20073), (82, 20151), (86, 20208), (87, 20211), (88, 20214), (94, 20298), (95, 20307), (100, 20334), (106, 20445), (107, 20448), (112, 20616), (117, 20691), (118, 20700), (121, 20727), (126, 20760), (128, 20775), (129, 20790), (130, 20796), (135, 20874), (136, 20877), (138, 20925), (146, 21012),

Gene: Winky_20 Start: 19225, Stop: 21024, Start Num: 6

Candidate Starts for Winky_20:

(Start: 6 @19225 has 5 MA's), (Start: 7 @19228 has 26 MA's), (17, 19381), (18, 19405), (30, 19501), (31, 19510), (38, 19555), (42, 19585), (44, 19612), (51, 19705), (53, 19729), (59, 19813), (60, 19858), (70, 20014), (73, 20032), (74, 20047), (76, 20065), (77, 20068), (82, 20146), (86, 20203), (88, 20209), (94, 20293), (95, 20302), (106, 20440), (107, 20443), (112, 20611), (117, 20686), (118, 20695), (121, 20722), (125, 20740), (126, 20755), (128, 20770), (129, 20785), (130, 20791), (135, 20869), (136, 20872), (138, 20920), (146, 21007),

Gene: Zakai_20 Start: 19222, Stop: 21018, Start Num: 7

Candidate Starts for Zakai_20:

(Start: 6 @19219 has 5 MA's), (Start: 7 @19222 has 26 MA's), (17, 19375), (18, 19399), (30, 19495), (31, 19504), (38, 19549), (42, 19579), (44, 19606), (51, 19699), (53, 19723), (59, 19807), (60, 19852), (70, 20008), (73, 20026), (74, 20041), (76, 20059), (77, 20062), (82, 20140), (86, 20197), (87, 20200), (88, 20203), (94, 20287), (95, 20296), (100, 20323), (106, 20434), (107, 20437), (112, 20605), (117, 20680), (118, 20689), (121, 20716), (126, 20749), (128, 20764), (129, 20779), (130, 20785), (135, 20863), (136, 20866), (138, 20914), (146, 21001),

Gene: ZhongYanYuan_19 Start: 19053, Stop: 20849, Start Num: 7

Candidate Starts for ZhongYanYuan_19:

(Start: 7 @19053 has 26 MA's), (14, 19173), (16, 19194), (17, 19206), (18, 19230), (21, 19257), (30, 19326), (31, 19335), (35, 19368), (38, 19380), (42, 19410), (44, 19437), (53, 19554), (56, 19602), (59, 19638), (60, 19683), (63, 19734), (70, 19839), (73, 19857), (76, 19890), (77, 19893), (79, 19932), (82, 19971), (87, 20031), (88, 20034), (94, 20118), (106, 20265), (110, 20343), (112, 20436), (113, 20451), (117, 20511), (118, 20520), (121, 20547), (128, 20595), (129, 20610), (135, 20694), (136, 20697), (138, 20745), (140, 20760), (146, 20832),