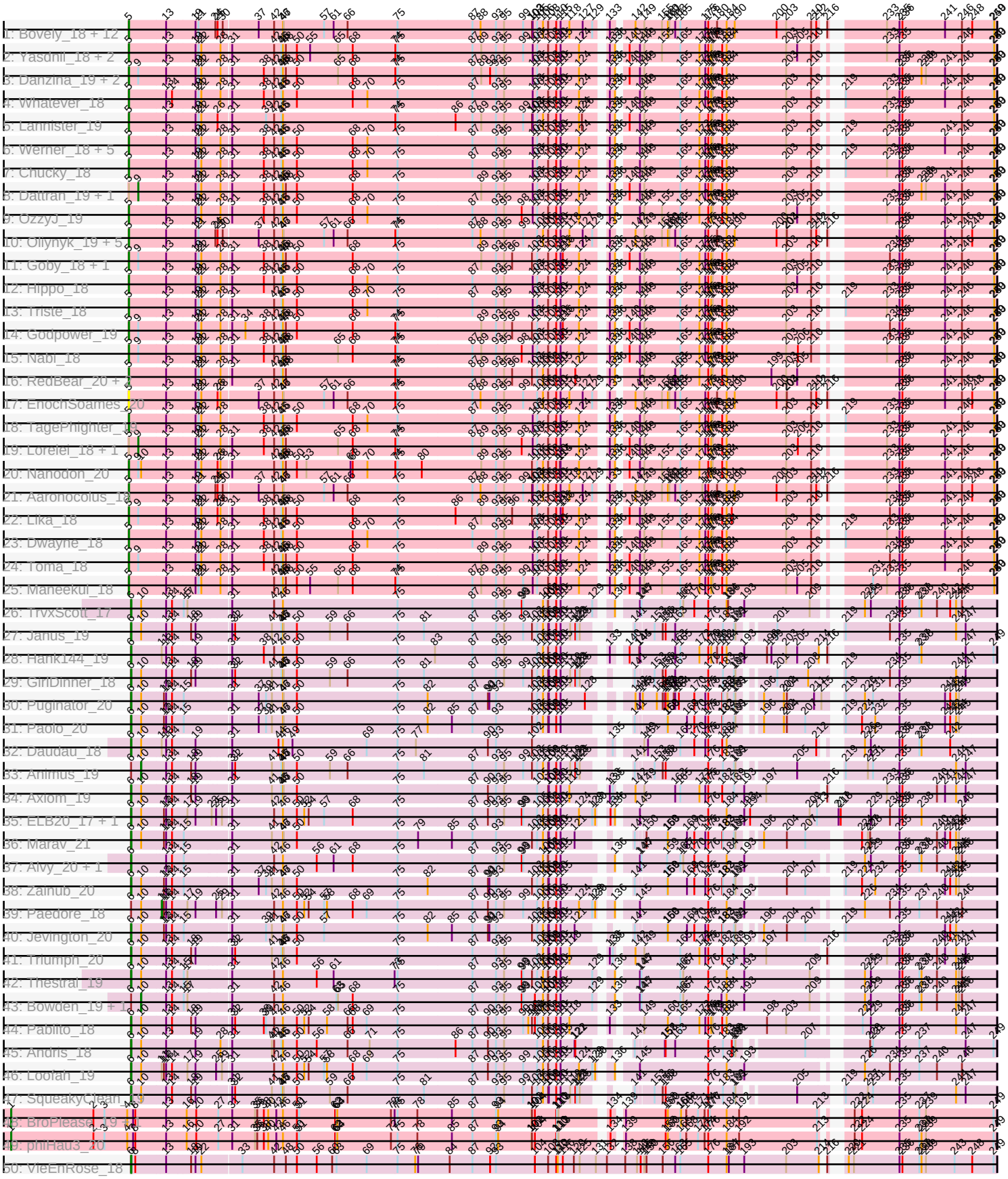
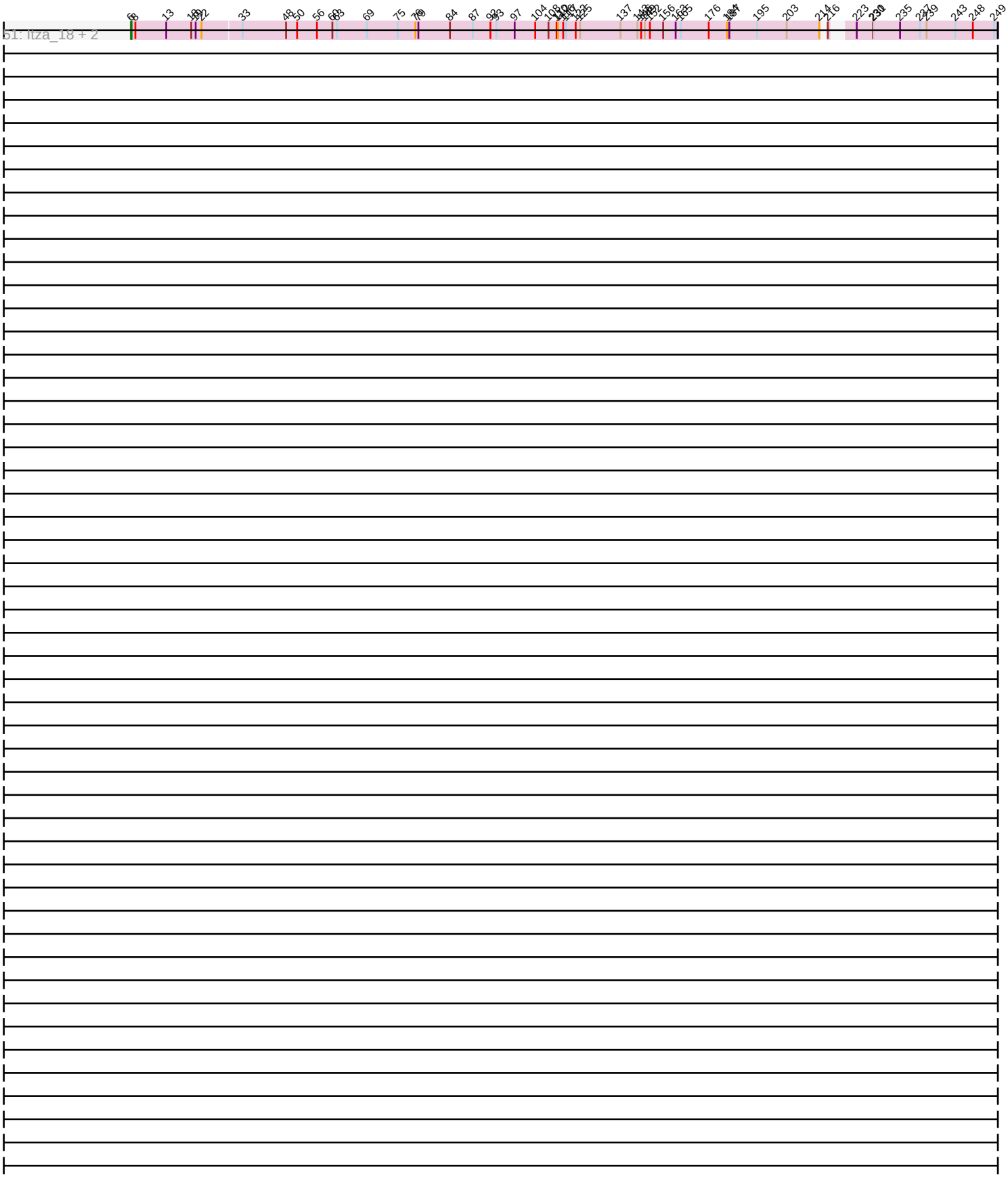
Pham 289299



Pham 289299



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 289299 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 289299 has 88 members, 1 are drafts.

Phages represented in each track:
• Track 1 : Bovely_18, Esperer_18, SunsetPointe_18, Leviticus_18, Indigo_18, Ozzie_18, Caliburn_18, Unstoppable_18, Hydra_20, BeardedLady_19, Legacy_18, Phettuccine_18, Nerdos_18
• Track 2 : Yasdnil_18, TuanPN_18, Ejemplo_18
• Track 3 : Danzina_19, Brataylor_19, Zemlya_19
• Track 4 : Whatever_18
• Track 5 : Lannister_19
• Track 6 : Werner_18, Snorlax_18, SarahRose_18, BarryBee_20, Asten_18, Emaanora_20
• Track 7 : Chucky_18
• Track 8 : Dattran_19, Celeste_18
• Track 9 : OzzyJ_19
• Track 10 : Oliynyk_19, BryanRecycles_19, Rusticus_19, Eddasa_19, Izzy_19, Jash_19
• Track 11 : Goby_18, Sujidade_19
• Track 12 : Hippo_18
• Track 13 : Triste_18
• Track 14 : Godpower_19
• Track 15 : Nabi_18
• Track 16 : RedBear_20, Katalie_19, South40_19
• Track 17 : EnochSoames_20
• Track 18 : TagePhighter_19
• Track 19 : Lorelei_18, Rana_18
• Track 20 : Nanodon_20
• Track 21 : Aaronocolus_18
• Track 22 : Lika_18
• Track 23 : Dwayne_18
• Track 24 : Toma_18
• Track 25 : Maneekul_18
• Track 26 : TrvxScott_17
• Track 27 : Janus_19
• Track 28 : Hank144_19
• Track 29 : GirlDinner_18

• Track 30 : Puginator_20
• Track 31 : Paolo_20
• Track 32 : Daudau_18
• Track 33 : Animus_19
• Track 34 : Axiom_19
• Track 35 : ELB20_17, R4_18
• Track 36 : Marav_21
• Track 37 : Alvy_20, BartholomewSD_20
• Track 38 : Zainub_20
• Track 39 : Paedore_18
• Track 40 : Jevington_20
• Track 41 : Triumph_20
• Track 42 : Thestral_19
• Track 43 : Bowden_19, TinaBelcher_18
• Track 44 : Pablito_18
• Track 45 : Andris_18
• Track 46 : Loofah_19
• Track 47 : SqueakyClean_19
• Track 48 : BroPlease_19, GreenWeasel_20
• Track 49 : phiHau3_20
• Track 50 : VieEnRose_18
• Track 51 : Itza_18, Celia_18, Urza_18

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

The start number called the most often in the published annotations is 5, it was called in 51 of the 87 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aaronocolus_18, Asten_18, BarryBee_20, BeardedLady_19, Bovely_18, Brataylor_19, BryanRecycles_19, Caliburn_18, Chucky_18, Danzina_19, Dwayne_18, Eddasa_19, Ejemplo_18, Emaanora_20, EnochSoames_20, Esperer_18, Goby_18, Godpower_19, Hippo_18, Hydra_20, Indigo_18, Izzy_19, Jash_19, Katalie_19, Lannister_19, Legacy_18, Leviticus_18, Lika_18, Maneekul_18, Nabi_18, Nanodon_20, Nerdos_18, Oliynyk_19, Ozzie_18, OzzyJ_19, Phettuccine_18, RedBear_20, Rusticus_19, SarahRose_18, Snorlax_18, South40_19, Sujidade_19, SunsetPointe_18, TagePhighter_19, Toma_18, Triste_18, TuanPN_18, Unstoppable_18, Werner_18, Whatever_18, Yasdnil_18, Zemlya_19,

Genes that have the "Most Annotated" start but do not call it:
• Celeste_18, Dattran_19, Lorelei_18, Rana_18,

Genes that do not have the "Most Annotated" start:
• Alvy_20, Andris_18, Animus_19, Axiom_19, BartholomewSD_20, Bowden_19, BroPlease_19, Celia_18, Daudau_18, ELB20_17, GirlDinner_18, GreenWeasel_20, Hank144_19, Itza_18, Janus_19, Jevington_20, Loofah_19, Marav_21, Pablito_18, Paedore_18, Paolo_20, Puginator_20, R4_18, SqueakyClean_19, Thestral_19, TinaBelcher_18, Triumph_20, TrvxScott_17, Urza_18, VieEnRose_18, Zainub_20, phiHau3_20,

Summary by start number:

Start 1:
• Found in 3 of 88 (3.4%) of genes in pham
• Manual Annotations of this start: 3 of 87
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BroPlease_19 (BD4), GreenWeasel_20 (BD4), phiHau3_20 (BD4),

Start 5:
• Found in 56 of 88 (63.6%) of genes in pham
• Manual Annotations of this start: 51 of 87
• Called 92.9% of time when present
• Phage (with cluster) where this start called: Aaronocolus_18 (BD1), Asten_18 (BD1), BarryBee_20 (BD1), BeardedLady_19 (BD1), Bovely_18 (BD1), Brataylor_19 (BD1), BryanRecycles_19 (BD1), Caliburn_18 (BD1), Chucky_18 (BD1), Danzina_19 (BD1), Dwayne_18 (BD1), Eddasa_19 (BD1), Ejemplo_18 (BD1), Emaanora_20 (BD1), EnochSoames_20 (BD1), Esperer_18 (BD1), Goby_18 (BD1), Godpower_19 (BD1), Hippo_18 (BD1), Hydra_20 (BD1), Indigo_18 (BD1), Izzy_19 (BD1), Jash_19 (BD1), Katalie_19 (BD1), Lannister_19 (BD1), Legacy_18 (BD1), Leviticus_18 (BD1), Lika_18 (BD1), Maneekul_18 (BD1), Nabi_18 (BD1), Nanodon_20 (BD1), Nerdos_18 (BD1), Oliynyk_19 (BD1), Ozzie_18 (BD1), OzzyJ_19 (BD1), Phettuccine_18 (BD1), RedBear_20 (BD1), Rusticus_19 (BD1), SarahRose_18 (BD1), Snorlax_18 (BD1), South40_19 (BD1), Sujidade_19 (BD1), SunsetPointe_18 (BD1), TagePhighter_19 (BD1), Toma_18 (BD1), Triste_18 (BD1), TuanPN_18 (BD1), Unstoppable_18 (BD1), Werner_18 (BD1), Whatever_18 (BD1), Yasdnil_18 (BD1), Zemlya_19 (BD1),

Start 6:
• Found in 29 of 88 (33.0%) of genes in pham
• Manual Annotations of this start: 25 of 87
• Called 86.2% of time when present
• Phage (with cluster) where this start called: Alvy_20 (BD2), Andris_18 (BD2), Axiom_19 (BD2), BartholomewSD_20 (BD2), Celia_18 (BD6), Daudau_18 (BD2), ELB20_17 (BD2), GirlDinner_18 (BD2), Hank144_19 (BD2), Itza_18 (BD6), Janus_19 (BD2), Jevington_20 (BD2), Loofah_19 (BD2), Marav_21 (BD2), Pablito_18 (BD2), Paolo_20 (BD2), Puginator_20 (BD2), R4_18 (BD2), SqueakyClean_19 (BD2), Thestral_19 (BD2), Triumph_20 (BD2), TrvxScott_17 (BD2), Urza_18 (BD6), VieEnRose_18 (BD6), Zainub_20 (BD2),

Start 9:
• Found in 14 of 88 (15.9%) of genes in pham
• Manual Annotations of this start: 4 of 87
• Called 28.6% of time when present
• Phage (with cluster) where this start called: Celeste_18 (BD1), Dattran_19 (BD1), Lorelei_18 (BD1), Rana_18 (BD1),

Start 10:
• Found in 23 of 88 (26.1%) of genes in pham
• Manual Annotations of this start: 3 of 87
• Called 13.0% of time when present
• Phage (with cluster) where this start called: Animus_19 (BD2), Bowden_19 (BD2), TinaBelcher_18 (BD2),

Start 11:
• Found in 4 of 88 (4.5%) of genes in pham
• Manual Annotations of this start: 1 of 87
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Paedore_18 (BD2),

Summary by clusters:

There are 4 clusters represented in this pham: BD4, BD6, BD1, BD2,

Info for manual annotations of cluster BD1:
•Start number 5 was manually annotated 51 times for cluster BD1.
•Start number 9 was manually annotated 4 times for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 6 was manually annotated 21 times for cluster BD2.
•Start number 10 was manually annotated 3 times for cluster BD2.
•Start number 11 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster BD4:
•Start number 1 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster BD6:
•Start number 6 was manually annotated 4 times for cluster BD6.

Gene Information:

Gene: Aaronocolus_18 Start: 11669, Stop: 14989, Start Num: 5
Candidate Starts for Aaronocolus_18:
(Start: 5 @11669 has 51 MA's), (13, 11813), (19, 11924), (21, 11936), (24, 12005), (26, 12011), (30, 12032), (37, 12167), (42, 12230), (46, 12266), (47, 12269), (57, 12434), (61, 12473), (66, 12530), (75, 12734), (87, 13037), (88, 13070), (93, 13133), (95, 13166), (99, 13244), (102, 13280), (103, 13283), (105, 13301), (106, 13325), (108, 13346), (110, 13379), (115, 13397), (118, 13433), (127, 13487), (129, 13526), (133, 13550), (142, 13616), (149, 13652), (155, 13724), (160, 13748), (161, 13754), (163, 13778), (165, 13799), (173, 13889), (175, 13901), (176, 13913), (180, 13949), (184, 13988), (190, 14021), (200, 14192), (203, 14231), (210, 14333), (212, 14354), (216, 14366), (233, 14543), (235, 14594), (236, 14606), (241, 14780), (246, 14849), (248, 14888), (249, 14975), (250, 14978),

Gene: Alvy_20 Start: 11699, Stop: 14998, Start Num: 6
Candidate Starts for Alvy_20:
(Start: 6 @11699 has 25 MA's), (13, 11834), (14, 11855), (15, 11897), (31, 12074), (42, 12245), (46, 12281), (56, 12419), (61, 12488), (68, 12566), (75, 12749), (87, 13052), (93, 13148), (95, 13181), (98, 13253), (99, 13259), (106, 13340), (107, 13358), (108, 13361), (110, 13394), (115, 13412), (136, 13586), (145, 13649), (147, 13655), (159, 13760), (165, 13814), (167, 13826), (170, 13871), (176, 13928), (184, 14003), (193, 14075), (226, 14468), (229, 14492), (235, 14609), (236, 14621), (237, 14690), (238, 14699), (240, 14762), (244, 14840), (245, 14852), (246, 14864),

Gene: Andris_18 Start: 11508, Stop: 14702, Start Num: 6
Candidate Starts for Andris_18:
(Start: 6 @11508 has 25 MA's), (Start: 10 @11547 has 3 MA's), (13, 11643), (19, 11754), (28, 11850), (31, 11886), (41, 12048), (42, 12057), (45, 12087), (46, 12093), (50, 12150), (56, 12231), (66, 12357),

(71, 12447), (75, 12561), (86, 12795), (87, 12864), (90, 12927), (93, 12960), (95, 12993), (105, 13128), (106, 13152), (108, 13173), (110, 13206), (115, 13224), (121, 13281), (122, 13284), (141, 13371), (157, 13476), (158, 13479), (163, 13518), (176, 13653), (183, 13713), (188, 13749), (189, 13758), (191, 13764), (207, 13995), (228, 14193), (231, 14205), (235, 14313), (237, 14394), (247, 14580), (249, 14691),

Gene: Animus_19 Start: 11880, Stop: 15038, Start Num: 10
Candidate Starts for Animus_19:
(Start: 6 @11841 has 25 MA's), (Start: 10 @11880 has 3 MA's), (13, 11979), (14, 12000), (18, 12072), (19, 12090), (31, 12222), (32, 12234), (41, 12384), (45, 12423), (46, 12429), (47, 12432), (50, 12486), (59, 12621), (66, 12693), (75, 12897), (81, 13005), (87, 13200), (93, 13296), (95, 13329), (99, 13407), (102, 13443), (105, 13464), (106, 13488), (108, 13509), (109, 13512), (110, 13542), (115, 13560), (119, 13599), (122, 13620), (123, 13626), (125, 13638), (141, 13707), (153, 13770), (156, 13803), (158, 13815), (176, 13989), (183, 14049), (189, 14094), (191, 14100), (205, 14298), (219, 14430), (227, 14520), (231, 14541), (235, 14649), (244, 14880), (247, 14916),

Gene: Asten_18 Start: 11636, Stop: 14959, Start Num: 5
Candidate Starts for Asten_18:
(Start: 5 @11636 has 51 MA's), (13, 11783), (19, 11894), (21, 11906), (22, 11918), (28, 11993), (31, 12029), (38, 12158), (42, 12200), (45, 12230), (46, 12236), (50, 12293), (68, 12521), (70, 12581), (75, 12704), (87, 13007), (93, 13103), (95, 13136), (103, 13253), (105, 13271), (108, 13316), (110, 13349), (115, 13367), (124, 13442), (133, 13520), (136, 13541), (145, 13604), (149, 13622), (165, 13769), (172, 13847), (175, 13871), (176, 13883), (178, 13895), (179, 13901), (182, 13940), (184, 13958), (203, 14201), (210, 14303), (219, 14345), (233, 14513), (235, 14564), (236, 14576), (241, 14750), (246, 14819), (249, 14945), (250, 14948),

Gene: Axiom_19 Start: 11546, Stop: 14851, Start Num: 6
Candidate Starts for Axiom_19:
(Start: 6 @11546 has 25 MA's), (Start: 10 @11585 has 3 MA's), (13, 11684), (14, 11705), (18, 11777), (19, 11795), (31, 11927), (41, 12089), (45, 12128), (46, 12134), (47, 12137), (50, 12191), (75, 12602), (87, 12905), (90, 12968), (93, 13001), (95, 13034), (105, 13169), (108, 13214), (109, 13217), (110, 13247), (115, 13265), (118, 13301), (133, 13418), (135, 13430), (142, 13484), (149, 13520), (163, 13646), (165, 13667), (172, 13745), (175, 13769), (176, 13781), (182, 13838), (189, 13886), (193, 13928), (197, 14018), (216, 14234), (233, 14411), (235, 14462), (236, 14474), (240, 14615), (241, 14648), (244, 14693), (247, 14729),

Gene: BarryBee_20 Start: 11646, Stop: 14969, Start Num: 5
Candidate Starts for BarryBee_20:
(Start: 5 @11646 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (22, 11928), (28, 12003), (31, 12039), (38, 12168), (42, 12210), (45, 12240), (46, 12246), (50, 12303), (68, 12531), (70, 12591), (75, 12714), (87, 13017), (93, 13113), (95, 13146), (103, 13263), (105, 13281), (108, 13326), (110, 13359), (115, 13377), (124, 13452), (133, 13530), (136, 13551), (145, 13614), (149, 13632), (165, 13779), (172, 13857), (175, 13881), (176, 13893), (178, 13905), (179, 13911), (182, 13950), (184, 13968), (203, 14211), (210, 14313), (219, 14355), (233, 14523), (235, 14574), (236, 14586), (241, 14760), (246, 14829), (249, 14955), (250, 14958),

Gene: BartholomewSD_20 Start: 11699, Stop: 14998, Start Num: 6
Candidate Starts for BartholomewSD_20:
(Start: 6 @11699 has 25 MA's), (13, 11834), (14, 11855), (15, 11897), (31, 12074), (42, 12245), (46, 12281), (56, 12419), (61, 12488), (68, 12566), (75, 12749), (87, 13052), (93, 13148), (95, 13181), (98, 13253), (99, 13259), (106, 13340), (107, 13358), (108, 13361), (110, 13394), (115, 13412), (136, 13586), (145, 13649), (147, 13655), (159, 13760), (165, 13814), (167, 13826), (170, 13871), (176, 13928), (184, 14003), (193, 14075), (226, 14468), (229, 14492), (235, 14609), (236, 14621), (237,

14690), (238, 14699), (240, 14762), (244, 14840), (245, 14852), (246, 14864),

Gene: BeardedLady_19 Start: 11916, Stop: 15236, Start Num: 5
Candidate Starts for BeardedLady_19:
(Start: 5 @11916 has 51 MA's), (13, 12060), (19, 12171), (21, 12183), (24, 12252), (26, 12258), (30, 12279), (37, 12414), (42, 12477), (46, 12513), (47, 12516), (57, 12681), (61, 12720), (66, 12777), (75, 12981), (87, 13284), (88, 13317), (93, 13380), (95, 13413), (99, 13491), (102, 13527), (103, 13530), (105, 13548), (106, 13572), (108, 13593), (110, 13626), (115, 13644), (118, 13680), (127, 13734), (129, 13773), (133, 13797), (142, 13863), (149, 13899), (155, 13971), (160, 13995), (161, 14001), (163, 14025), (165, 14046), (175, 14148), (176, 14160), (180, 14196), (184, 14235), (190, 14268), (200, 14439), (203, 14478), (210, 14580), (212, 14601), (216, 14613), (233, 14790), (235, 14841), (236, 14853), (241, 15027), (246, 15096), (248, 15135), (249, 15222), (250, 15225),

Gene: Bovely_18 Start: 11675, Stop: 14995, Start Num: 5
Candidate Starts for Bovely_18:
(Start: 5 @11675 has 51 MA's), (13, 11819), (19, 11930), (21, 11942), (24, 12011), (26, 12017), (30, 12038), (37, 12173), (42, 12236), (46, 12272), (47, 12275), (57, 12440), (61, 12479), (66, 12536), (75, 12740), (87, 13043), (88, 13076), (93, 13139), (95, 13172), (99, 13250), (102, 13286), (103, 13289), (105, 13307), (106, 13331), (108, 13352), (110, 13385), (115, 13403), (118, 13439), (127, 13493), (129, 13532), (133, 13556), (142, 13622), (149, 13658), (155, 13730), (160, 13754), (161, 13760), (163, 13784), (165, 13805), (175, 13907), (176, 13919), (180, 13955), (184, 13994), (190, 14027), (200, 14198), (203, 14237), (210, 14339), (212, 14360), (216, 14372), (233, 14549), (235, 14600), (236, 14612), (241, 14786), (246, 14855), (248, 14894), (249, 14981), (250, 14984),

Gene: Bowden_19 Start: 11670, Stop: 14930, Start Num: 10
Candidate Starts for Bowden_19:
(Start: 6 @11631 has 25 MA's), (Start: 10 @11670 has 3 MA's), (13, 11766), (14, 11787), (15, 11829), (17, 11844), (31, 12006), (42, 12177), (46, 12213), (63, 12432), (65, 12438), (68, 12498), (75, 12681), (87, 12984), (93, 13080), (95, 13113), (98, 13185), (99, 13191), (104, 13239), (106, 13272), (107, 13290), (108, 13293), (110, 13326), (115, 13344), (129, 13473), (136, 13518), (145, 13581), (147, 13587), (165, 13746), (167, 13758), (176, 13860), (181, 13914), (184, 13935), (193, 14007), (209, 14274), (226, 14400), (229, 14424), (235, 14541), (236, 14553), (237, 14622), (238, 14631), (240, 14694), (244, 14772), (245, 14784), (246, 14796),

Gene: Brataylor_19 Start: 11658, Stop: 14981, Start Num: 5
Candidate Starts for Brataylor_19:
(Start: 5 @11658 has 51 MA's), (Start: 9 @11694 has 4 MA's), (13, 11805), (19, 11916), (21, 11928), (22, 11940), (28, 12015), (31, 12051), (38, 12180), (42, 12222), (45, 12252), (46, 12258), (48, 12270), (50, 12315), (65, 12483), (68, 12543), (74, 12717), (75, 12726), (87, 13029), (89, 13065), (92, 13101), (93, 13125), (95, 13158), (103, 13275), (105, 13293), (108, 13338), (110, 13371), (115, 13389), (124, 13464), (133, 13542), (136, 13563), (140, 13584), (145, 13626), (149, 13644), (165, 13791), (172, 13869), (175, 13893), (176, 13905), (178, 13917), (179, 13923), (182, 13962), (184, 13980), (203, 14223), (210, 14325), (235, 14586), (236, 14598), (238, 14676), (239, 14694), (241, 14772), (246, 14841), (249, 14967), (250, 14970),

Gene: BroPlease_19 Start: 11860, Stop: 15681, Start Num: 1
Candidate Starts for BroPlease_19:
(Start: 1 @11860 has 3 MA's), (2, 12196), (3, 12241), (4, 12334), (7, 12358), (8, 12367), (13, 12493), (16, 12577), (20, 12616), (27, 12703), (31, 12760), (35, 12853), (36, 12862), (38, 12889), (40, 12907), (43, 12940), (46, 12967), (50, 13024), (51, 13033), (62, 13180), (63, 13186), (64, 13189), (72, 13408), (73, 13423), (75, 13435), (78, 13516), (85, 13654), (87, 13738), (93, 13834), (94, 13843), (101, 13978), (102, 13981), (104, 13993), (110, 14080), (111, 14083), (113, 14089), (134, 14254), (139, 14281), (158, 14440), (160, 14449), (165, 14500), (166, 14503), (168, 14524), (171, 14572), (174, 14599),

(176, 14614), (177, 14620), (184, 14689), (192, 14740), (213, 15058), (222, 15112), (224, 15142), (235, 15295), (237, 15376), (239, 15403), (249, 15670),

Gene: BryanRecycles_19 Start: 11832, Stop: 15152, Start Num: 5
Candidate Starts for BryanRecycles_19:
(Start: 5 @11832 has 51 MA's), (13, 11976), (19, 12087), (21, 12099), (24, 12168), (26, 12174), (30, 12195), (37, 12330), (42, 12393), (46, 12429), (47, 12432), (57, 12597), (61, 12636), (66, 12693), (74, 12888), (75, 12897), (87, 13200), (88, 13233), (93, 13296), (95, 13329), (99, 13407), (105, 13464), (106, 13488), (108, 13509), (110, 13542), (115, 13560), (118, 13596), (127, 13650), (129, 13689), (133, 13713), (142, 13779), (149, 13815), (155, 13887), (160, 13911), (161, 13917), (163, 13941), (165, 13962), (175, 14064), (176, 14076), (180, 14112), (184, 14151), (190, 14184), (200, 14355), (203, 14394), (204, 14397), (210, 14496), (212, 14517), (216, 14529), (235, 14757), (236, 14769), (241, 14943), (246, 15012), (248, 15051), (249, 15138), (250, 15141),

Gene: Caliburn_18 Start: 11649, Stop: 14969, Start Num: 5
Candidate Starts for Caliburn_18:
(Start: 5 @11649 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (24, 11985), (26, 11991), (30, 12012), (37, 12147), (42, 12210), (46, 12246), (47, 12249), (57, 12414), (61, 12453), (66, 12510), (75, 12714), (87, 13017), (88, 13050), (93, 13113), (95, 13146), (99, 13224), (102, 13260), (103, 13263), (105, 13281), (106, 13305), (108, 13326), (110, 13359), (115, 13377), (118, 13413), (127, 13467), (129, 13506), (133, 13530), (142, 13596), (149, 13632), (155, 13704), (160, 13728), (161, 13734), (163, 13758), (165, 13779), (175, 13881), (176, 13893), (180, 13929), (184, 13968), (190, 14001), (200, 14172), (203, 14211), (210, 14313), (212, 14334), (216, 14346), (233, 14523), (235, 14574), (236, 14586), (241, 14760), (246, 14829), (248, 14868), (249, 14955), (250, 14958),

Gene: Celeste_18 Start: 11686, Stop: 14973, Start Num: 9
Candidate Starts for Celeste_18:
(Start: 5 @11650 has 51 MA's), (Start: 9 @11686 has 4 MA's), (13, 11797), (19, 11908), (21, 11920), (22, 11932), (28, 12007), (31, 12043), (38, 12172), (42, 12214), (45, 12244), (46, 12250), (48, 12262), (50, 12307), (68, 12535), (75, 12718), (89, 13057), (93, 13117), (95, 13150), (103, 13267), (105, 13285), (108, 13330), (110, 13363), (115, 13381), (124, 13456), (133, 13534), (136, 13555), (140, 13576), (145, 13618), (149, 13636), (165, 13783), (172, 13861), (175, 13885), (176, 13897), (178, 13909), (179, 13915), (182, 13954), (184, 13972), (203, 14215), (210, 14317), (235, 14578), (236, 14590), (238, 14668), (239, 14686), (241, 14764), (246, 14833), (249, 14959), (250, 14962),

Gene: Celia_18 Start: 12007, Stop: 15408, Start Num: 6
Candidate Starts for Celia_18:
(Start: 6 @12007 has 25 MA's), (8, 12022), (13, 12142), (18, 12235), (19, 12253), (22, 12277), (33, 12433), (48, 12610), (50, 12655), (56, 12736), (60, 12799), (63, 12817), (69, 12940), (75, 13063), (76, 13135), (79, 13147), (84, 13276), (87, 13369), (92, 13441), (93, 13465), (97, 13540), (104, 13624), (108, 13678), (110, 13711), (112, 13717), (116, 13738), (117, 13750), (122, 13789), (125, 13807), (137, 13972), (143, 14041), (146, 14056), (149, 14071), (152, 14092), (156, 14146), (163, 14197), (165, 14218), (176, 14332), (184, 14407), (187, 14416), (195, 14530), (203, 14650), (214, 14782), (216, 14785), (223, 14836), (230, 14902), (231, 14905), (235, 15013), (237, 15094), (239, 15121), (243, 15238), (248, 15310), (249, 15397),

Gene: Chucky_18 Start: 11647, Stop: 14970, Start Num: 5
Candidate Starts for Chucky_18:
(Start: 5 @11647 has 51 MA's), (13, 11794), (19, 11905), (21, 11917), (22, 11929), (28, 12004), (31, 12040), (38, 12169), (42, 12211), (45, 12241), (46, 12247), (50, 12304), (68, 12532), (70, 12592), (75, 12715), (87, 13018), (93, 13114), (95, 13147), (103, 13264), (105, 13282), (108, 13327), (110, 13360), (115, 13378), (124, 13453), (133, 13531), (136, 13552), (145, 13615), (149, 13633), (165, 13780), (172, 13858), (175, 13882), (176, 13894), (178, 13906), (179, 13912), (182, 13951), (184, 13969),

(203, 14212), (210, 14314), (219, 14356), (233, 14524), (235, 14575), (236, 14587), (246, 14830), (249, 14956), (250, 14959),

Gene: Danzina_19 Start: 11860, Stop: 15183, Start Num: 5
Candidate Starts for Danzina_19:
(Start: 5 @11860 has 51 MA's), (Start: 9 @11896 has 4 MA's), (13, 12007), (19, 12118), (21, 12130), (22, 12142), (28, 12217), (31, 12253), (38, 12382), (42, 12424), (45, 12454), (46, 12460), (48, 12472), (50, 12517), (65, 12685), (68, 12745), (74, 12919), (75, 12928), (87, 13231), (89, 13267), (92, 13303), (93, 13327), (95, 13360), (103, 13477), (105, 13495), (108, 13540), (110, 13573), (115, 13591), (124, 13666), (133, 13744), (136, 13765), (140, 13786), (145, 13828), (149, 13846), (165, 13993), (172, 14071), (175, 14095), (176, 14107), (178, 14119), (179, 14125), (182, 14164), (184, 14182), (203, 14425), (210, 14527), (235, 14788), (236, 14800), (238, 14878), (239, 14896), (241, 14974), (246, 15043), (249, 15169), (250, 15172),

Gene: Dattran_19 Start: 11685, Stop: 14972, Start Num: 9
Candidate Starts for Dattran_19:
(Start: 5 @11649 has 51 MA's), (Start: 9 @11685 has 4 MA's), (13, 11796), (19, 11907), (21, 11919), (22, 11931), (28, 12006), (31, 12042), (38, 12171), (42, 12213), (45, 12243), (46, 12249), (48, 12261), (50, 12306), (68, 12534), (75, 12717), (89, 13056), (93, 13116), (95, 13149), (103, 13266), (105, 13284), (108, 13329), (110, 13362), (115, 13380), (124, 13455), (133, 13533), (136, 13554), (140, 13575), (145, 13617), (149, 13635), (165, 13782), (172, 13860), (175, 13884), (176, 13896), (178, 13908), (179, 13914), (182, 13953), (184, 13971), (203, 14214), (210, 14316), (235, 14577), (236, 14589), (238, 14667), (239, 14685), (241, 14763), (246, 14832), (249, 14958), (250, 14961),

Gene: Daudau_18 Start: 11605, Stop: 14904, Start Num: 6
Candidate Starts for Daudau_18:
(Start: 6 @11605 has 25 MA's), (Start: 10 @11644 has 3 MA's), (Start: 11 @11722 has 1 MA's), (13, 11740), (14, 11761), (19, 11851), (31, 11983), (44, 12172), (46, 12190), (49, 12229), (69, 12532), (75, 12655), (77, 12730), (90, 13021), (93, 13054), (102, 13201), (135, 13483), (149, 13573), (151, 13588), (165, 13720), (170, 13777), (175, 13822), (176, 13834), (182, 13891), (184, 13909), (212, 14275), (226, 14374), (229, 14398), (235, 14515), (236, 14527), (237, 14596), (238, 14605), (242, 14722),

Gene: Dwayne_18 Start: 11643, Stop: 14966, Start Num: 5
Candidate Starts for Dwayne_18:
(Start: 5 @11643 has 51 MA's), (13, 11790), (19, 11901), (21, 11913), (22, 11925), (28, 12000), (31, 12036), (38, 12165), (42, 12207), (45, 12237), (46, 12243), (50, 12300), (68, 12528), (70, 12588), (75, 12711), (87, 13014), (93, 13110), (95, 13143), (103, 13260), (105, 13278), (108, 13323), (110, 13356), (115, 13374), (124, 13449), (133, 13527), (136, 13548), (145, 13611), (149, 13629), (155, 13701), (165, 13776), (172, 13854), (175, 13878), (176, 13890), (178, 13902), (179, 13908), (182, 13947), (184, 13965), (203, 14208), (210, 14310), (219, 14352), (233, 14520), (235, 14571), (236, 14583), (241, 14757), (246, 14826), (249, 14952), (250, 14955),

Gene: ELB20_17 Start: 11627, Stop: 15028, Start Num: 6
Candidate Starts for ELB20_17:
(Start: 6 @11627 has 25 MA's), (Start: 10 @11666 has 3 MA's), (12, 11753), (13, 11762), (14, 11783), (17, 11840), (19, 11873), (23, 11936), (25, 11954), (29, 11975), (31, 12005), (42, 12176), (46, 12212), (50, 12269), (52, 12299), (54, 12317), (57, 12380), (68, 12497), (75, 12680), (87, 12983), (90, 13046), (93, 13079), (95, 13112), (98, 13184), (99, 13190), (105, 13247), (106, 13271), (108, 13292), (110, 13325), (115, 13343), (124, 13418), (129, 13472), (130, 13484), (134, 13499), (136, 13517), (145, 13580), (176, 13859), (184, 13934), (193, 14006), (194, 14030), (209, 14273), (213, 14303), (217, 14390), (218, 14399), (229, 14522), (234, 14600), (235, 14639), (236, 14651), (238, 14729), (246, 14894),

Gene: Eddasa_19 Start: 11832, Stop: 15152, Start Num: 5
Candidate Starts for Eddasa_19:
(Start: 5 @11832 has 51 MA's), (13, 11976), (19, 12087), (21, 12099), (24, 12168), (26, 12174), (30, 12195), (37, 12330), (42, 12393), (46, 12429), (47, 12432), (57, 12597), (61, 12636), (66, 12693), (74, 12888), (75, 12897), (87, 13200), (88, 13233), (93, 13296), (95, 13329), (99, 13407), (105, 13464), (106, 13488), (108, 13509), (110, 13542), (115, 13560), (118, 13596), (127, 13650), (129, 13689), (133, 13713), (142, 13779), (149, 13815), (155, 13887), (160, 13911), (161, 13917), (163, 13941), (165, 13962), (175, 14064), (176, 14076), (180, 14112), (184, 14151), (190, 14184), (200, 14355), (203, 14394), (204, 14397), (210, 14496), (212, 14517), (216, 14529), (235, 14757), (236, 14769), (241, 14943), (246, 15012), (248, 15051), (249, 15138), (250, 15141),

Gene: Ejemplo_18 Start: 11643, Stop: 14966, Start Num: 5
Candidate Starts for Ejemplo_18:
(Start: 5 @11643 has 51 MA's), (13, 11790), (19, 11901), (21, 11913), (22, 11925), (28, 12000), (31, 12036), (42, 12207), (45, 12237), (46, 12243), (48, 12255), (50, 12300), (55, 12354), (65, 12468), (68, 12528), (74, 12702), (75, 12711), (87, 13014), (89, 13050), (93, 13110), (95, 13143), (99, 13221), (103, 13260), (105, 13278), (108, 13323), (110, 13356), (115, 13374), (124, 13449), (133, 13527), (136, 13548), (140, 13569), (145, 13611), (149, 13629), (155, 13701), (165, 13776), (172, 13854), (175, 13878), (176, 13890), (178, 13902), (179, 13908), (182, 13947), (184, 13965), (203, 14208), (205, 14253), (210, 14310), (233, 14520), (235, 14571), (246, 14826), (249, 14952), (250, 14955),

Gene: Emaanora_20 Start: 11646, Stop: 14969, Start Num: 5
Candidate Starts for Emaanora_20:
(Start: 5 @11646 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (22, 11928), (28, 12003), (31, 12039), (38, 12168), (42, 12210), (45, 12240), (46, 12246), (50, 12303), (68, 12531), (70, 12591), (75, 12714), (87, 13017), (93, 13113), (95, 13146), (103, 13263), (105, 13281), (108, 13326), (110, 13359), (115, 13377), (124, 13452), (133, 13530), (136, 13551), (145, 13614), (149, 13632), (165, 13779), (172, 13857), (175, 13881), (176, 13893), (178, 13905), (179, 13911), (182, 13950), (184, 13968), (203, 14211), (210, 14313), (219, 14355), (233, 14523), (235, 14574), (236, 14586), (241, 14760), (246, 14829), (249, 14955), (250, 14958),

Gene: EnochSoames_20 Start: 11828, Stop: 15148, Start Num: 5
Candidate Starts for EnochSoames_20:
(Start: 5 @11828 has 51 MA's), (13, 11972), (19, 12083), (21, 12095), (22, 12107), (26, 12170), (28, 12182), (37, 12326), (42, 12389), (46, 12425), (47, 12428), (57, 12593), (61, 12632), (66, 12689), (74, 12884), (75, 12893), (87, 13196), (88, 13229), (93, 13292), (95, 13325), (99, 13403), (105, 13460), (106, 13484), (108, 13505), (110, 13538), (115, 13556), (118, 13592), (127, 13646), (129, 13685), (133, 13709), (142, 13775), (149, 13811), (155, 13883), (160, 13907), (161, 13913), (163, 13937), (165, 13958), (175, 14060), (176, 14072), (180, 14108), (184, 14147), (190, 14180), (200, 14351), (203, 14390), (204, 14393), (210, 14492), (212, 14513), (216, 14525), (235, 14753), (236, 14765), (241, 14939), (246, 15008), (248, 15047), (249, 15134), (250, 15137),

Gene: Esperer_18 Start: 11669, Stop: 14989, Start Num: 5
Candidate Starts for Esperer_18:
(Start: 5 @11669 has 51 MA's), (13, 11813), (19, 11924), (21, 11936), (24, 12005), (26, 12011), (30, 12032), (37, 12167), (42, 12230), (46, 12266), (47, 12269), (57, 12434), (61, 12473), (66, 12530), (75, 12734), (87, 13037), (88, 13070), (93, 13133), (95, 13166), (99, 13244), (102, 13280), (103, 13283), (105, 13301), (106, 13325), (108, 13346), (110, 13379), (115, 13397), (118, 13433), (127, 13487), (129, 13526), (133, 13550), (142, 13616), (149, 13652), (155, 13724), (160, 13748), (161, 13754), (163, 13778), (165, 13799), (175, 13901), (176, 13913), (180, 13949), (184, 13988), (190, 14021), (200, 14192), (203, 14231), (210, 14333), (212, 14354), (216, 14366), (233, 14543), (235, 14594), (236, 14606), (241, 14780), (246, 14849), (248, 14888), (249, 14975), (250, 14978),

Gene: GirlDinner_18 Start: 11503, Stop: 14700, Start Num: 6
Candidate Starts for GirlDinner_18:
(Start: 6 @11503 has 25 MA's), (Start: 10 @11542 has 3 MA's), (13, 11641), (14, 11662), (18, 11734), (19, 11752), (31, 11884), (32, 11896), (41, 12046), (45, 12085), (46, 12091), (47, 12094), (50, 12148), (59, 12283), (66, 12355), (75, 12559), (81, 12667), (87, 12862), (93, 12958), (95, 12991), (99, 13069), (102, 13105), (105, 13126), (106, 13150), (108, 13171), (109, 13174), (110, 13204), (115, 13222), (119, 13261), (122, 13282), (123, 13288), (125, 13300), (141, 13369), (153, 13432), (156, 13465), (158, 13477), (163, 13516), (176, 13651), (183, 13711), (189, 13756), (191, 13762), (201, 13879), (208, 14005), (219, 14092), (234, 14272), (235, 14311), (244, 14542), (247, 14578),

Gene: Goby_18 Start: 11655, Stop: 14978, Start Num: 5
Candidate Starts for Goby_18:
(Start: 5 @11655 has 51 MA's), (Start: 9 @11691 has 4 MA's), (13, 11802), (19, 11913), (21, 11925), (22, 11937), (28, 12012), (31, 12048), (38, 12177), (42, 12219), (45, 12249), (46, 12255), (48, 12267), (50, 12312), (68, 12540), (75, 12723), (89, 13062), (93, 13122), (95, 13155), (96, 13188), (102, 13269), (105, 13290), (108, 13335), (110, 13368), (115, 13386), (116, 13395), (124, 13461), (133, 13539), (136, 13560), (140, 13581), (145, 13623), (149, 13641), (165, 13788), (172, 13866), (175, 13890), (176, 13902), (178, 13914), (179, 13920), (182, 13959), (184, 13977), (203, 14220), (210, 14322), (234, 14544), (235, 14583), (236, 14595), (241, 14769), (246, 14838), (249, 14964), (250, 14967),

Gene: Godpower_19 Start: 11667, Stop: 14990, Start Num: 5
Candidate Starts for Godpower_19:
(Start: 5 @11667 has 51 MA's), (Start: 9 @11703 has 4 MA's), (13, 11814), (19, 11925), (21, 11937), (22, 11949), (28, 12024), (31, 12060), (34, 12114), (38, 12189), (42, 12231), (45, 12261), (46, 12267), (48, 12279), (50, 12324), (68, 12552), (74, 12726), (75, 12735), (89, 13074), (93, 13134), (95, 13167), (96, 13200), (102, 13281), (105, 13302), (108, 13347), (110, 13380), (115, 13398), (116, 13407), (124, 13473), (133, 13551), (136, 13572), (140, 13593), (145, 13635), (149, 13653), (165, 13800), (172, 13878), (175, 13902), (176, 13914), (178, 13926), (179, 13932), (182, 13971), (184, 13989), (203, 14232), (210, 14334), (234, 14556), (235, 14595), (236, 14607), (241, 14781), (246, 14850), (249, 14976), (250, 14979),

Gene: GreenWeasel_20 Start: 11869, Stop: 15690, Start Num: 1
Candidate Starts for GreenWeasel_20:
(Start: 1 @11869 has 3 MA's), (2, 12205), (3, 12250), (4, 12343), (7, 12367), (8, 12376), (13, 12502), (16, 12586), (20, 12625), (27, 12712), (31, 12769), (35, 12862), (36, 12871), (38, 12898), (40, 12916), (43, 12949), (46, 12976), (50, 13033), (51, 13042), (62, 13189), (63, 13195), (64, 13198), (72, 13417), (73, 13432), (75, 13444), (78, 13525), (85, 13663), (87, 13747), (93, 13843), (94, 13852), (101, 13987), (102, 13990), (104, 14002), (110, 14089), (111, 14092), (113, 14098), (134, 14263), (139, 14290), (158, 14449), (160, 14458), (165, 14509), (166, 14512), (168, 14533), (171, 14581), (174, 14608), (176, 14623), (177, 14629), (184, 14698), (192, 14749), (213, 15067), (222, 15121), (224, 15151), (235, 15304), (237, 15385), (239, 15412), (249, 15679),

Gene: Hank144_19 Start: 11796, Stop: 15098, Start Num: 6
Candidate Starts for Hank144_19:
(Start: 6 @11796 has 25 MA's), (Start: 11 @11913 has 1 MA's), (13, 11931), (14, 11952), (19, 12042), (31, 12174), (38, 12303), (42, 12345), (46, 12381), (50, 12438), (75, 12849), (83, 13002), (87, 13152), (93, 13248), (95, 13281), (105, 13416), (106, 13440), (108, 13461), (110, 13494), (115, 13512), (133, 13665), (140, 13707), (144, 13746), (145, 13749), (163, 13893), (165, 13914), (172, 13992), (176, 14028), (178, 14040), (180, 14064), (182, 14085), (184, 14103), (193, 14175), (198, 14268), (199, 14286), (203, 14346), (205, 14391), (214, 14478), (216, 14481), (235, 14709), (237, 14790), (238, 14799), (247, 14976), (249, 15087),

Gene: Hippo_18 Start: 11646, Stop: 14969, Start Num: 5

Candidate Starts for Hippo_18:
(Start: 5 @11646 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (22, 11928), (28, 12003), (31, 12039), (38, 12168), (42, 12210), (45, 12240), (46, 12246), (50, 12303), (68, 12531), (70, 12591), (75, 12714), (87, 13017), (93, 13113), (95, 13146), (103, 13263), (105, 13281), (108, 13326), (110, 13359), (115, 13377), (124, 13452), (133, 13530), (136, 13551), (145, 13614), (149, 13632), (165, 13779), (172, 13857), (175, 13881), (176, 13893), (178, 13905), (179, 13911), (182, 13950), (184, 13968), (203, 14211), (205, 14256), (210, 14313), (233, 14523), (235, 14574), (236, 14586), (241, 14760), (246, 14829), (249, 14955), (250, 14958),

Gene: Hydra_20 Start: 12197, Stop: 15517, Start Num: 5
Candidate Starts for Hydra_20:
(Start: 5 @12197 has 51 MA's), (13, 12341), (19, 12452), (21, 12464), (24, 12533), (26, 12539), (30, 12560), (37, 12695), (42, 12758), (46, 12794), (47, 12797), (57, 12962), (61, 13001), (66, 13058), (75, 13262), (87, 13565), (88, 13598), (93, 13661), (95, 13694), (99, 13772), (102, 13808), (103, 13811), (105, 13829), (106, 13853), (108, 13874), (110, 13907), (115, 13925), (118, 13961), (127, 14015), (129, 14054), (133, 14078), (142, 14144), (149, 14180), (155, 14252), (160, 14276), (161, 14282), (163, 14306), (165, 14327), (175, 14429), (176, 14441), (180, 14477), (184, 14516), (190, 14549), (200, 14720), (203, 14759), (210, 14861), (212, 14882), (216, 14894), (233, 15071), (235, 15122), (236, 15134), (241, 15308), (246, 15377), (248, 15416), (249, 15503), (250, 15506),

Gene: Indigo_18 Start: 11669, Stop: 14989, Start Num: 5
Candidate Starts for Indigo_18:
(Start: 5 @11669 has 51 MA's), (13, 11813), (19, 11924), (21, 11936), (24, 12005), (26, 12011), (30, 12032), (37, 12167), (42, 12230), (46, 12266), (47, 12269), (57, 12434), (61, 12473), (66, 12530), (75, 12734), (87, 13037), (88, 13070), (93, 13133), (95, 13166), (99, 13244), (102, 13280), (103, 13283), (105, 13301), (106, 13325), (108, 13346), (110, 13379), (115, 13397), (118, 13433), (127, 13487), (129, 13526), (133, 13550), (142, 13616), (149, 13652), (155, 13724), (160, 13748), (161, 13754), (163, 13778), (165, 13799), (175, 13901), (176, 13913), (180, 13949), (184, 13988), (190, 14021), (200, 14192), (203, 14231), (210, 14333), (212, 14354), (216, 14366), (233, 14543), (235, 14594), (236, 14606), (241, 14780), (246, 14849), (248, 14888), (249, 14975), (250, 14978),

Gene: Itza_18 Start: 11930, Stop: 15331, Start Num: 6
Candidate Starts for Itza_18:
(Start: 6 @11930 has 25 MA's), (8, 11945), (13, 12065), (18, 12158), (19, 12176), (22, 12200), (33, 12356), (48, 12533), (50, 12578), (56, 12659), (60, 12722), (63, 12740), (69, 12863), (75, 12986), (76, 13058), (79, 13070), (84, 13199), (87, 13292), (92, 13364), (93, 13388), (97, 13463), (104, 13547), (108, 13601), (110, 13634), (112, 13640), (116, 13661), (117, 13673), (122, 13712), (125, 13730), (137, 13895), (143, 13964), (146, 13979), (149, 13994), (152, 14015), (156, 14069), (163, 14120), (165, 14141), (176, 14255), (184, 14330), (187, 14339), (195, 14453), (203, 14573), (214, 14705), (216, 14708), (223, 14759), (230, 14825), (231, 14828), (235, 14936), (237, 15017), (239, 15044), (243, 15161), (248, 15233), (249, 15320),

Gene: Izzy_19 Start: 11879, Stop: 15199, Start Num: 5
Candidate Starts for Izzy_19:
(Start: 5 @11879 has 51 MA's), (13, 12023), (19, 12134), (21, 12146), (24, 12215), (26, 12221), (30, 12242), (37, 12377), (42, 12440), (46, 12476), (47, 12479), (57, 12644), (61, 12683), (66, 12740), (74, 12935), (75, 12944), (87, 13247), (88, 13280), (93, 13343), (95, 13376), (99, 13454), (105, 13511), (106, 13535), (108, 13556), (110, 13589), (115, 13607), (118, 13643), (127, 13697), (129, 13736), (133, 13760), (142, 13826), (149, 13862), (155, 13934), (160, 13958), (161, 13964), (163, 13988), (165, 14009), (175, 14111), (176, 14123), (180, 14159), (184, 14198), (190, 14231), (200, 14402), (203, 14441), (204, 14444), (210, 14543), (212, 14564), (216, 14576), (235, 14804), (236, 14816), (241, 14990), (246, 15059), (248, 15098), (249, 15185), (250, 15188),

Gene: Janus_19 Start: 11841, Stop: 15038, Start Num: 6
Candidate Starts for Janus_19:
(Start: 6 @11841 has 25 MA's), (Start: 10 @11880 has 3 MA's), (13, 11979), (14, 12000), (18, 12072), (19, 12090), (31, 12222), (32, 12234), (41, 12384), (45, 12423), (46, 12429), (47, 12432), (50, 12486), (59, 12621), (66, 12693), (75, 12897), (81, 13005), (87, 13200), (93, 13296), (95, 13329), (99, 13407), (102, 13443), (105, 13464), (106, 13488), (108, 13509), (109, 13512), (110, 13542), (115, 13560), (119, 13599), (122, 13620), (123, 13626), (125, 13638), (141, 13707), (153, 13770), (156, 13803), (158, 13815), (163, 13854), (176, 13989), (183, 14049), (189, 14094), (191, 14100), (201, 14217), (219, 14430), (234, 14610), (235, 14649), (244, 14880), (247, 14916),

Gene: Jash_19 Start: 11832, Stop: 15152, Start Num: 5
Candidate Starts for Jash_19:
(Start: 5 @11832 has 51 MA's), (13, 11976), (19, 12087), (21, 12099), (24, 12168), (26, 12174), (30, 12195), (37, 12330), (42, 12393), (46, 12429), (47, 12432), (57, 12597), (61, 12636), (66, 12693), (74, 12888), (75, 12897), (87, 13200), (88, 13233), (93, 13296), (95, 13329), (99, 13407), (105, 13464), (106, 13488), (108, 13509), (110, 13542), (115, 13560), (118, 13596), (127, 13650), (129, 13689), (133, 13713), (142, 13779), (149, 13815), (155, 13887), (160, 13911), (161, 13917), (163, 13941), (165, 13962), (175, 14064), (176, 14076), (180, 14112), (184, 14151), (190, 14184), (200, 14355), (203, 14394), (204, 14397), (210, 14496), (212, 14517), (216, 14529), (235, 14757), (236, 14769), (241, 14943), (246, 15012), (248, 15051), (249, 15138), (250, 15141),

Gene: Jevington_20 Start: 12149, Stop: 15340, Start Num: 6
Candidate Starts for Jevington_20:
(Start: 6 @12149 has 25 MA's), (Start: 10 @12188 has 3 MA's), (12, 12275), (13, 12284), (14, 12305), (15, 12347), (31, 12524), (39, 12662), (41, 12686), (46, 12731), (47, 12734), (50, 12788), (57, 12899), (75, 13199), (82, 13322), (85, 13418), (87, 13502), (90, 13565), (91, 13571), (93, 13598), (102, 13745), (105, 13766), (106, 13790), (108, 13811), (109, 13814), (110, 13844), (115, 13862), (121, 13919), (141, 14009), (159, 14123), (160, 14126), (169, 14204), (170, 14234), (175, 14279), (176, 14291), (182, 14348), (183, 14351), (189, 14396), (191, 14402), (196, 14465), (204, 14558), (207, 14633), (219, 14732), (235, 14951), (241, 15137), (242, 15158), (244, 15182),

Gene: Katalie_19 Start: 11907, Stop: 15230, Start Num: 5
Candidate Starts for Katalie_19:
(Start: 5 @11907 has 51 MA's), (13, 12054), (19, 12165), (21, 12177), (22, 12189), (28, 12264), (31, 12300), (42, 12471), (45, 12501), (46, 12507), (48, 12519), (74, 12966), (75, 12975), (87, 13278), (89, 13314), (93, 13374), (95, 13407), (96, 13440), (102, 13521), (105, 13542), (106, 13566), (108, 13587), (110, 13620), (115, 13638), (122, 13698), (133, 13791), (136, 13812), (145, 13875), (149, 13893), (163, 14019), (165, 14040), (172, 14118), (176, 14154), (178, 14166), (179, 14172), (182, 14211), (184, 14229), (199, 14412), (203, 14472), (205, 14517), (235, 14835), (236, 14847), (241, 15021), (246, 15090), (249, 15216), (250, 15219),

Gene: Lannister_19 Start: 11670, Stop: 14996, Start Num: 5
Candidate Starts for Lannister_19:
(Start: 5 @11670 has 51 MA's), (13, 11817), (19, 11928), (21, 11940), (22, 11952), (26, 12015), (31, 12063), (39, 12201), (42, 12234), (45, 12264), (46, 12270), (74, 12729), (75, 12738), (86, 12972), (87, 13041), (89, 13077), (93, 13137), (95, 13170), (99, 13248), (102, 13284), (103, 13287), (105, 13305), (106, 13329), (108, 13350), (110, 13383), (115, 13401), (124, 13476), (126, 13488), (133, 13554), (136, 13575), (140, 13596), (145, 13638), (149, 13656), (165, 13803), (172, 13881), (176, 13917), (178, 13929), (179, 13935), (182, 13974), (184, 13992), (203, 14235), (210, 14337), (233, 14547), (235, 14598), (236, 14610), (246, 14853), (249, 14982), (250, 14985),

Gene: Legacy_18 Start: 11640, Stop: 14960, Start Num: 5
Candidate Starts for Legacy_18:

(Start: 5 @11640 has 51 MA's), (13, 11784), (19, 11895), (21, 11907), (24, 11976), (26, 11982), (30, 12003), (37, 12138), (42, 12201), (46, 12237), (47, 12240), (57, 12405), (61, 12444), (66, 12501), (75, 12705), (87, 13008), (88, 13041), (93, 13104), (95, 13137), (99, 13215), (102, 13251), (103, 13254), (105, 13272), (106, 13296), (108, 13317), (110, 13350), (115, 13368), (118, 13404), (127, 13458), (129, 13497), (133, 13521), (142, 13587), (149, 13623), (155, 13695), (160, 13719), (161, 13725), (163, 13749), (165, 13770), (175, 13872), (176, 13884), (180, 13920), (184, 13959), (190, 13992), (200, 14163), (203, 14202), (210, 14304), (212, 14325), (216, 14337), (233, 14514), (235, 14565), (236, 14577), (241, 14751), (246, 14820), (248, 14859), (249, 14946), (250, 14949),

Gene: Leviticus_18 Start: 11669, Stop: 14989, Start Num: 5
Candidate Starts for Leviticus_18:
(Start: 5 @11669 has 51 MA's), (13, 11813), (19, 11924), (21, 11936), (24, 12005), (26, 12011), (30, 12032), (37, 12167), (42, 12230), (46, 12266), (47, 12269), (57, 12434), (61, 12473), (66, 12530), (75, 12734), (87, 13037), (88, 13070), (93, 13133), (95, 13166), (99, 13244), (102, 13280), (103, 13283), (105, 13301), (106, 13325), (108, 13346), (110, 13379), (115, 13397), (118, 13433), (127, 13487), (129, 13526), (133, 13550), (142, 13616), (149, 13652), (155, 13724), (160, 13748), (161, 13754), (163, 13778), (165, 13799), (175, 13901), (176, 13913), (180, 13949), (184, 13988), (190, 14021), (200, 14192), (203, 14231), (210, 14333), (212, 14354), (216, 14366), (233, 14543), (235, 14594), (236, 14606), (241, 14780), (246, 14849), (248, 14888), (249, 14975), (250, 14978),

Gene: Lika_18 Start: 11671, Stop: 14994, Start Num: 5
Candidate Starts for Lika_18:
(Start: 5 @11671 has 51 MA's), (Start: 9 @11707 has 4 MA's), (13, 11818), (19, 11929), (21, 11941), (22, 11953), (26, 12016), (28, 12028), (31, 12064), (38, 12193), (42, 12235), (45, 12265), (46, 12271), (48, 12283), (50, 12328), (68, 12556), (75, 12739), (86, 12973), (89, 13078), (93, 13138), (95, 13171), (96, 13204), (102, 13285), (105, 13306), (108, 13351), (110, 13384), (115, 13402), (116, 13411), (124, 13477), (133, 13555), (136, 13576), (140, 13597), (145, 13639), (149, 13657), (165, 13804), (172, 13882), (175, 13906), (176, 13918), (178, 13930), (179, 13936), (182, 13975), (184, 13993), (188, 14014), (203, 14236), (210, 14338), (234, 14560), (235, 14599), (236, 14611), (241, 14785), (246, 14854), (249, 14980), (250, 14983),

Gene: Loofah_19 Start: 11655, Stop: 14957, Start Num: 6
Candidate Starts for Loofah_19:
(Start: 6 @11655 has 25 MA's), (Start: 10 @11694 has 3 MA's), (Start: 11 @11772 has 1 MA's), (12, 11781), (13, 11790), (14, 11811), (17, 11868), (19, 11901), (25, 11982), (29, 12003), (31, 12033), (42, 12204), (46, 12240), (50, 12297), (52, 12327), (54, 12345), (57, 12408), (58, 12420), (68, 12525), (69, 12582), (75, 12708), (87, 13011), (90, 13074), (93, 13107), (95, 13140), (99, 13218), (105, 13275), (106, 13299), (108, 13320), (110, 13353), (115, 13371), (124, 13446), (129, 13500), (130, 13512), (136, 13545), (145, 13608), (176, 13887), (184, 13962), (193, 14034), (226, 14427), (234, 14529), (235, 14568), (237, 14649), (240, 14721), (246, 14823),

Gene: Lorelei_18 Start: 11676, Stop: 14963, Start Num: 9
Candidate Starts for Lorelei_18:
(Start: 5 @11640 has 51 MA's), (Start: 9 @11676 has 4 MA's), (13, 11787), (19, 11898), (21, 11910), (22, 11922), (28, 11997), (31, 12033), (38, 12162), (42, 12204), (45, 12234), (46, 12240), (48, 12252), (65, 12465), (68, 12525), (74, 12699), (75, 12708), (87, 13011), (89, 13047), (93, 13107), (95, 13140), (98, 13212), (103, 13257), (105, 13275), (108, 13320), (110, 13353), (115, 13371), (124, 13446), (133, 13524), (136, 13545), (140, 13566), (145, 13608), (149, 13626), (165, 13773), (172, 13851), (175, 13875), (176, 13887), (178, 13899), (179, 13905), (182, 13944), (184, 13962), (203, 14205), (206, 14253), (210, 14307), (233, 14517), (235, 14568), (236, 14580), (241, 14754), (246, 14823), (249, 14949), (250, 14952),

Gene: Maneekul_18 Start: 11642, Stop: 14965, Start Num: 5

Candidate Starts for Maneekul_18:
(Start: 5 @11642 has 51 MA's), (13, 11789), (19, 11900), (21, 11912), (22, 11924), (28, 11999), (31, 12035), (42, 12206), (45, 12236), (46, 12242), (48, 12254), (50, 12299), (55, 12353), (65, 12467), (68, 12527), (74, 12701), (75, 12710), (87, 13013), (89, 13049), (93, 13109), (95, 13142), (99, 13220), (103, 13259), (105, 13277), (108, 13322), (110, 13355), (115, 13373), (124, 13448), (133, 13526), (136, 13547), (140, 13568), (145, 13610), (149, 13628), (155, 13700), (165, 13775), (172, 13853), (175, 13877), (176, 13889), (178, 13901), (179, 13907), (182, 13946), (184, 13964), (203, 14207), (205, 14252), (210, 14309), (231, 14462), (233, 14519), (235, 14570), (246, 14825), (249, 14951), (250, 14954),

Gene: Marav_21 Start: 12499, Stop: 15690, Start Num: 6
Candidate Starts for Marav_21:
(Start: 6 @12499 has 25 MA's), (Start: 10 @12538 has 3 MA's), (12, 12625), (13, 12634), (14, 12655), (15, 12697), (31, 12874), (41, 13036), (46, 13081), (47, 13084), (50, 13138), (75, 13549), (79, 13633), (85, 13768), (87, 13852), (93, 13948), (102, 14095), (105, 14116), (106, 14140), (108, 14161), (109, 14164), (110, 14194), (115, 14212), (121, 14269), (141, 14359), (150, 14389), (159, 14473), (160, 14476), (169, 14554), (170, 14584), (175, 14629), (176, 14641), (182, 14698), (183, 14701), (189, 14746), (191, 14752), (196, 14815), (204, 14908), (207, 14983), (224, 15148), (227, 15172), (228, 15181), (235, 15301), (240, 15454), (241, 15487), (242, 15508), (244, 15532), (245, 15544),

Gene: Nabi_18 Start: 11640, Stop: 14963, Start Num: 5
Candidate Starts for Nabi_18:
(Start: 5 @11640 has 51 MA's), (Start: 9 @11676 has 4 MA's), (13, 11787), (19, 11898), (21, 11910), (22, 11922), (28, 11997), (31, 12033), (38, 12162), (42, 12204), (45, 12234), (46, 12240), (48, 12252), (65, 12465), (68, 12525), (74, 12699), (75, 12708), (87, 13011), (89, 13047), (93, 13107), (95, 13140), (98, 13212), (103, 13257), (105, 13275), (108, 13320), (110, 13353), (115, 13371), (124, 13446), (133, 13524), (136, 13545), (140, 13566), (145, 13608), (149, 13626), (165, 13773), (172, 13851), (175, 13875), (176, 13887), (178, 13899), (179, 13905), (182, 13944), (184, 13962), (203, 14205), (206, 14253), (210, 14307), (233, 14517), (235, 14568), (236, 14580), (241, 14754), (246, 14823), (249, 14949), (250, 14952),

Gene: Nanodon_20 Start: 11848, Stop: 15171, Start Num: 5
Candidate Starts for Nanodon_20:
(Start: 5 @11848 has 51 MA's), (Start: 9 @11884 has 4 MA's), (Start: 10 @11896 has 3 MA's), (13, 11995), (19, 12106), (21, 12118), (22, 12130), (26, 12193), (28, 12205), (31, 12241), (42, 12412), (45, 12442), (46, 12448), (48, 12460), (50, 12505), (53, 12544), (67, 12724), (68, 12733), (70, 12793), (74, 12907), (75, 12916), (80, 13015), (89, 13255), (93, 13315), (95, 13348), (102, 13462), (105, 13483), (106, 13507), (108, 13528), (110, 13561), (114, 13576), (115, 13579), (124, 13654), (133, 13732), (136, 13753), (140, 13774), (145, 13816), (149, 13834), (155, 13906), (165, 13981), (172, 14059), (176, 14095), (178, 14107), (179, 14113), (182, 14152), (184, 14170), (203, 14413), (210, 14515), (233, 14725), (235, 14776), (236, 14788), (241, 14962), (246, 15031), (249, 15157), (250, 15160),

Gene: Nerdos_18 Start: 11669, Stop: 14989, Start Num: 5
Candidate Starts for Nerdos_18:
(Start: 5 @11669 has 51 MA's), (13, 11813), (19, 11924), (21, 11936), (24, 12005), (26, 12011), (30, 12032), (37, 12167), (42, 12230), (46, 12266), (47, 12269), (57, 12434), (61, 12473), (66, 12530), (75, 12734), (87, 13037), (88, 13070), (93, 13133), (95, 13166), (99, 13244), (102, 13280), (103, 13283), (105, 13301), (106, 13325), (108, 13346), (110, 13379), (115, 13397), (118, 13433), (127, 13487), (129, 13526), (133, 13550), (142, 13616), (149, 13652), (155, 13724), (160, 13748), (161, 13754), (163, 13778), (165, 13799), (175, 13901), (176, 13913), (180, 13949), (184, 13988), (190, 14021), (200, 14192), (203, 14231), (210, 14333), (212, 14354), (216, 14366), (233, 14543), (235, 14594), (236, 14606), (241, 14780), (246, 14849), (248, 14888), (249, 14975), (250, 14978),

Gene: Oliynyk_19 Start: 11832, Stop: 15152, Start Num: 5
Candidate Starts for Oliynyk_19:
(Start: 5 @11832 has 51 MA's), (13, 11976), (19, 12087), (21, 12099), (24, 12168), (26, 12174), (30, 12195), (37, 12330), (42, 12393), (46, 12429), (47, 12432), (57, 12597), (61, 12636), (66, 12693), (74, 12888), (75, 12897), (87, 13200), (88, 13233), (93, 13296), (95, 13329), (99, 13407), (105, 13464), (106, 13488), (108, 13509), (110, 13542), (115, 13560), (118, 13596), (127, 13650), (129, 13689), (133, 13713), (142, 13779), (149, 13815), (155, 13887), (160, 13911), (161, 13917), (163, 13941), (165, 13962), (175, 14064), (176, 14076), (180, 14112), (184, 14151), (190, 14184), (200, 14355), (203, 14394), (204, 14397), (210, 14496), (212, 14517), (216, 14529), (235, 14757), (236, 14769), (241, 14943), (246, 15012), (248, 15051), (249, 15138), (250, 15141),

Gene: Ozzie_18 Start: 11649, Stop: 14969, Start Num: 5
Candidate Starts for Ozzie_18:
(Start: 5 @11649 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (24, 11985), (26, 11991), (30, 12012), (37, 12147), (42, 12210), (46, 12246), (47, 12249), (57, 12414), (61, 12453), (66, 12510), (75, 12714), (87, 13017), (88, 13050), (93, 13113), (95, 13146), (99, 13224), (102, 13260), (103, 13263), (105, 13281), (106, 13305), (108, 13326), (110, 13359), (115, 13377), (118, 13413), (127, 13467), (129, 13506), (133, 13530), (142, 13596), (149, 13632), (155, 13704), (160, 13728), (161, 13734), (163, 13758), (165, 13779), (175, 13881), (176, 13893), (180, 13929), (184, 13968), (190, 14001), (200, 14172), (203, 14211), (210, 14313), (212, 14334), (216, 14346), (233, 14523), (235, 14574), (236, 14586), (241, 14760), (246, 14829), (248, 14868), (249, 14955), (250, 14958),

Gene: OzzyJ_19 Start: 11637, Stop: 14960, Start Num: 5
Candidate Starts for OzzyJ_19:
(Start: 5 @11637 has 51 MA's), (13, 11784), (19, 11895), (21, 11907), (22, 11919), (28, 11994), (31, 12030), (38, 12159), (42, 12201), (45, 12231), (46, 12237), (50, 12294), (68, 12522), (70, 12582), (75, 12705), (87, 13008), (93, 13104), (95, 13137), (98, 13209), (103, 13254), (105, 13272), (108, 13317), (110, 13350), (115, 13368), (124, 13443), (133, 13521), (136, 13542), (145, 13605), (149, 13623), (155, 13695), (165, 13770), (172, 13848), (176, 13884), (178, 13896), (179, 13902), (182, 13941), (184, 13959), (203, 14202), (205, 14247), (210, 14304), (233, 14514), (235, 14565), (236, 14577), (241, 14751), (246, 14820), (249, 14946), (250, 14949),

Gene: Pablito_18 Start: 11494, Stop: 14799, Start Num: 6
Candidate Starts for Pablito_18:
(Start: 6 @11494 has 25 MA's), (Start: 10 @11533 has 3 MA's), (13, 11632), (14, 11653), (18, 11725), (19, 11743), (31, 11875), (32, 11887), (38, 12004), (39, 12013), (42, 12046), (46, 12082), (50, 12139), (52, 12169), (54, 12187), (58, 12262), (66, 12346), (68, 12367), (69, 12424), (75, 12550), (87, 12853), (90, 12916), (93, 12949), (95, 12982), (99, 13060), (100, 13081), (102, 13096), (104, 13108), (105, 13117), (106, 13141), (108, 13162), (110, 13195), (115, 13213), (118, 13249), (133, 13366), (149, 13468), (160, 13564), (165, 13615), (172, 13693), (175, 13717), (176, 13729), (178, 13741), (179, 13747), (182, 13786), (184, 13804), (198, 13969), (203, 14047), (225, 14260), (229, 14293), (235, 14410), (236, 14422), (244, 14641), (247, 14677),

Gene: Paedore_18 Start: 11772, Stop: 14957, Start Num: 11
Candidate Starts for Paedore_18:
(Start: 6 @11655 has 25 MA's), (Start: 10 @11694 has 3 MA's), (Start: 11 @11772 has 1 MA's), (12, 11781), (13, 11790), (14, 11811), (17, 11868), (19, 11901), (25, 11982), (29, 12003), (31, 12033), (42, 12204), (46, 12240), (50, 12297), (52, 12327), (54, 12345), (57, 12408), (58, 12420), (68, 12525), (69, 12582), (75, 12708), (87, 13011), (90, 13074), (93, 13107), (95, 13140), (99, 13218), (105, 13275), (106, 13299), (108, 13320), (110, 13353), (115, 13371), (124, 13446), (129, 13500), (130, 13512), (136, 13545), (145, 13608), (176, 13887), (184, 13962), (193, 14034), (226, 14427), (234, 14529), (235, 14568), (237, 14649), (240, 14721), (246, 14823),

Gene: Paolo_20 Start: 12162, Stop: 15353, Start Num: 6
Candidate Starts for Paolo_20:
(Start: 6 @12162 has 25 MA's), (Start: 10 @12201 has 3 MA's), (12, 12288), (13, 12297), (14, 12318), (15, 12360), (31, 12537), (37, 12645), (39, 12675), (41, 12699), (46, 12744), (47, 12747), (50, 12801), (75, 13212), (82, 13335), (85, 13431), (87, 13515), (93, 13611), (102, 13758), (105, 13779), (106, 13803), (108, 13824), (109, 13827), (110, 13857), (115, 13875), (141, 14022), (159, 14136), (160, 14139), (169, 14217), (170, 14247), (175, 14292), (176, 14304), (182, 14361), (183, 14364), (189, 14409), (191, 14415), (196, 14478), (202, 14559), (204, 14571), (207, 14646), (219, 14745), (224, 14811), (232, 14865), (235, 14964), (241, 15150), (242, 15171), (244, 15195), (245, 15207),

Gene: Phettuccine_18 Start: 11669, Stop: 14989, Start Num: 5
Candidate Starts for Phettuccine_18:
(Start: 5 @11669 has 51 MA's), (13, 11813), (19, 11924), (21, 11936), (24, 12005), (26, 12011), (30, 12032), (37, 12167), (42, 12230), (46, 12266), (47, 12269), (57, 12434), (61, 12473), (66, 12530), (75, 12734), (87, 13037), (88, 13070), (93, 13133), (95, 13166), (99, 13244), (102, 13280), (103, 13283), (105, 13301), (106, 13325), (108, 13346), (110, 13379), (115, 13397), (118, 13433), (127, 13487), (129, 13526), (133, 13550), (142, 13616), (149, 13652), (155, 13724), (160, 13748), (161, 13754), (163, 13778), (165, 13799), (175, 13901), (176, 13913), (180, 13949), (184, 13988), (190, 14021), (200, 14192), (203, 14231), (210, 14333), (212, 14354), (216, 14366), (233, 14543), (235, 14594), (236, 14606), (241, 14780), (246, 14849), (248, 14888), (249, 14975), (250, 14978),

Gene: Puginator_20 Start: 12120, Stop: 15398, Start Num: 6
Candidate Starts for Puginator_20:
(Start: 6 @12120 has 25 MA's), (Start: 10 @12159 has 3 MA's), (12, 12246), (13, 12255), (14, 12276), (15, 12318), (31, 12495), (37, 12603), (39, 12633), (41, 12657), (46, 12702), (47, 12705), (50, 12759), (75, 13170), (82, 13293), (87, 13473), (90, 13536), (91, 13542), (93, 13569), (102, 13716), (105, 13737), (106, 13761), (108, 13782), (109, 13785), (110, 13815), (115, 13833), (128, 13932), (142, 14052), (145, 14070), (148, 14082), (154, 14139), (156, 14163), (157, 14172), (158, 14175), (160, 14184), (162, 14208), (163, 14214), (164, 14229), (170, 14292), (175, 14337), (176, 14349), (182, 14406), (183, 14409), (185, 14427), (189, 14454), (191, 14460), (196, 14523), (202, 14604), (204, 14616), (211, 14727), (215, 14757), (219, 14790), (226, 14868), (231, 14901), (235, 15009), (241, 15195), (242, 15216), (244, 15240), (245, 15252),

Gene: R4_18 Start: 11638, Stop: 15039, Start Num: 6
Candidate Starts for R4_18:
(Start: 6 @11638 has 25 MA's), (Start: 10 @11677 has 3 MA's), (12, 11764), (13, 11773), (14, 11794), (17, 11851), (19, 11884), (23, 11947), (25, 11965), (29, 11986), (31, 12016), (42, 12187), (46, 12223), (50, 12280), (52, 12310), (54, 12328), (57, 12391), (68, 12508), (75, 12691), (87, 12994), (90, 13057), (93, 13090), (95, 13123), (98, 13195), (99, 13201), (105, 13258), (106, 13282), (108, 13303), (110, 13336), (115, 13354), (124, 13429), (129, 13483), (130, 13495), (134, 13510), (136, 13528), (145, 13591), (176, 13870), (184, 13945), (193, 14017), (194, 14041), (209, 14284), (213, 14314), (217, 14401), (218, 14410), (229, 14533), (234, 14611), (235, 14650), (236, 14662), (238, 14740), (246, 14905),

Gene: Rana_18 Start: 11676, Stop: 14963, Start Num: 9
Candidate Starts for Rana_18:
(Start: 5 @11640 has 51 MA's), (Start: 9 @11676 has 4 MA's), (13, 11787), (19, 11898), (21, 11910), (22, 11922), (28, 11997), (31, 12033), (38, 12162), (42, 12204), (45, 12234), (46, 12240), (48, 12252), (65, 12465), (68, 12525), (74, 12699), (75, 12708), (87, 13011), (89, 13047), (93, 13107), (95, 13140), (98, 13212), (103, 13257), (105, 13275), (108, 13320), (110, 13353), (115, 13371), (124, 13446), (133, 13524), (136, 13545), (140, 13566), (145, 13608), (149, 13626), (165, 13773), (172, 13851), (175, 13875), (176, 13887), (178, 13899), (179, 13905), (182, 13944), (184, 13962), (203, 14205), (206, 14253), (210, 14307), (233, 14517), (235, 14568), (236, 14580), (241, 14754), (246, 14823), (249,

14949), (250, 14952),

Gene: RedBear_20 Start: 11907, Stop: 15230, Start Num: 5
Candidate Starts for RedBear_20:
(Start: 5 @11907 has 51 MA's), (13, 12054), (19, 12165), (21, 12177), (22, 12189), (28, 12264), (31, 12300), (42, 12471), (45, 12501), (46, 12507), (48, 12519), (74, 12966), (75, 12975), (87, 13278), (89, 13314), (93, 13374), (95, 13407), (96, 13440), (102, 13521), (105, 13542), (106, 13566), (108, 13587), (110, 13620), (115, 13638), (122, 13698), (133, 13791), (136, 13812), (145, 13875), (149, 13893), (163, 14019), (165, 14040), (172, 14118), (176, 14154), (178, 14166), (179, 14172), (182, 14211), (184, 14229), (199, 14412), (203, 14472), (205, 14517), (235, 14835), (236, 14847), (241, 15021), (246, 15090), (249, 15216), (250, 15219),

Gene: Rusticus_19 Start: 11832, Stop: 15152, Start Num: 5
Candidate Starts for Rusticus_19:
(Start: 5 @11832 has 51 MA's), (13, 11976), (19, 12087), (21, 12099), (24, 12168), (26, 12174), (30, 12195), (37, 12330), (42, 12393), (46, 12429), (47, 12432), (57, 12597), (61, 12636), (66, 12693), (74, 12888), (75, 12897), (87, 13200), (88, 13233), (93, 13296), (95, 13329), (99, 13407), (105, 13464), (106, 13488), (108, 13509), (110, 13542), (115, 13560), (118, 13596), (127, 13650), (129, 13689), (133, 13713), (142, 13779), (149, 13815), (155, 13887), (160, 13911), (161, 13917), (163, 13941), (165, 13962), (175, 14064), (176, 14076), (180, 14112), (184, 14151), (190, 14184), (200, 14355), (203, 14394), (204, 14397), (210, 14496), (212, 14517), (216, 14529), (235, 14757), (236, 14769), (241, 14943), (246, 15012), (248, 15051), (249, 15138), (250, 15141),

Gene: SarahRose_18 Start: 11643, Stop: 14966, Start Num: 5
Candidate Starts for SarahRose_18:
(Start: 5 @11643 has 51 MA's), (13, 11790), (19, 11901), (21, 11913), (22, 11925), (28, 12000), (31, 12036), (38, 12165), (42, 12207), (45, 12237), (46, 12243), (50, 12300), (68, 12528), (70, 12588), (75, 12711), (87, 13014), (93, 13110), (95, 13143), (103, 13260), (105, 13278), (108, 13323), (110, 13356), (115, 13374), (124, 13449), (133, 13527), (136, 13548), (145, 13611), (149, 13629), (165, 13776), (172, 13854), (175, 13878), (176, 13890), (178, 13902), (179, 13908), (182, 13947), (184, 13965), (203, 14208), (210, 14310), (219, 14352), (233, 14520), (235, 14571), (236, 14583), (241, 14757), (246, 14826), (249, 14952), (250, 14955),

Gene: Snorlax_18 Start: 11646, Stop: 14969, Start Num: 5
Candidate Starts for Snorlax_18:
(Start: 5 @11646 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (22, 11928), (28, 12003), (31, 12039), (38, 12168), (42, 12210), (45, 12240), (46, 12246), (50, 12303), (68, 12531), (70, 12591), (75, 12714), (87, 13017), (93, 13113), (95, 13146), (103, 13263), (105, 13281), (108, 13326), (110, 13359), (115, 13377), (124, 13452), (133, 13530), (136, 13551), (145, 13614), (149, 13632), (165, 13779), (172, 13857), (175, 13881), (176, 13893), (178, 13905), (179, 13911), (182, 13950), (184, 13968), (203, 14211), (210, 14313), (219, 14355), (233, 14523), (235, 14574), (236, 14586), (241, 14760), (246, 14829), (249, 14955), (250, 14958),

Gene: South40_19 Start: 11907, Stop: 15230, Start Num: 5
Candidate Starts for South40_19:
(Start: 5 @11907 has 51 MA's), (13, 12054), (19, 12165), (21, 12177), (22, 12189), (28, 12264), (31, 12300), (42, 12471), (45, 12501), (46, 12507), (48, 12519), (74, 12966), (75, 12975), (87, 13278), (89, 13314), (93, 13374), (95, 13407), (96, 13440), (102, 13521), (105, 13542), (106, 13566), (108, 13587), (110, 13620), (115, 13638), (122, 13698), (133, 13791), (136, 13812), (145, 13875), (149, 13893), (163, 14019), (165, 14040), (172, 14118), (176, 14154), (178, 14166), (179, 14172), (182, 14211), (184, 14229), (199, 14412), (203, 14472), (205, 14517), (235, 14835), (236, 14847), (241, 15021), (246, 15090), (249, 15216), (250, 15219),

Gene: SqueakyClean_19 Start: 11767, Stop: 14964, Start Num: 6
Candidate Starts for SqueakyClean_19:
(Start: 6 @11767 has 25 MA's), (Start: 10 @11806 has 3 MA's), (13, 11905), (14, 11926), (18, 11998), (19, 12016), (31, 12148), (32, 12160), (41, 12310), (45, 12349), (46, 12355), (47, 12358), (50, 12412), (59, 12547), (66, 12619), (75, 12823), (81, 12931), (87, 13126), (93, 13222), (95, 13255), (99, 13333), (102, 13369), (105, 13390), (106, 13414), (108, 13435), (109, 13438), (110, 13468), (115, 13486), (119, 13525), (122, 13546), (123, 13552), (125, 13564), (141, 13633), (153, 13696), (156, 13729), (158, 13741), (176, 13915), (183, 13975), (189, 14020), (191, 14026), (205, 14224), (219, 14356), (227, 14446), (231, 14467), (235, 14575), (244, 14806), (247, 14842),

Gene: Sujidade_19 Start: 11947, Stop: 15270, Start Num: 5
Candidate Starts for Sujidade_19:
(Start: 5 @11947 has 51 MA's), (Start: 9 @11983 has 4 MA's), (13, 12094), (19, 12205), (21, 12217), (22, 12229), (28, 12304), (31, 12340), (38, 12469), (42, 12511), (45, 12541), (46, 12547), (48, 12559), (50, 12604), (68, 12832), (75, 13015), (89, 13354), (93, 13414), (95, 13447), (96, 13480), (102, 13561), (105, 13582), (108, 13627), (110, 13660), (115, 13678), (116, 13687), (124, 13753), (133, 13831), (136, 13852), (140, 13873), (145, 13915), (149, 13933), (165, 14080), (172, 14158), (175, 14182), (176, 14194), (178, 14206), (179, 14212), (182, 14251), (184, 14269), (203, 14512), (210, 14614), (234, 14836), (235, 14875), (236, 14887), (241, 15061), (246, 15130), (249, 15256), (250, 15259),

Gene: SunsetPointe_18 Start: 11659, Stop: 14979, Start Num: 5
Candidate Starts for SunsetPointe_18:
(Start: 5 @11659 has 51 MA's), (13, 11803), (19, 11914), (21, 11926), (24, 11995), (26, 12001), (30, 12022), (37, 12157), (42, 12220), (46, 12256), (47, 12259), (57, 12424), (61, 12463), (66, 12520), (75, 12724), (87, 13027), (88, 13060), (93, 13123), (95, 13156), (99, 13234), (102, 13270), (103, 13273), (105, 13291), (106, 13315), (108, 13336), (110, 13369), (115, 13387), (118, 13423), (127, 13477), (129, 13516), (133, 13540), (142, 13606), (149, 13642), (155, 13714), (160, 13738), (161, 13744), (163, 13768), (165, 13789), (175, 13891), (176, 13903), (180, 13939), (184, 13978), (190, 14011), (200, 14182), (203, 14221), (210, 14323), (212, 14344), (216, 14356), (233, 14533), (235, 14584), (236, 14596), (241, 14770), (246, 14839), (248, 14878), (249, 14965), (250, 14968),

Gene: TagePhighter_19 Start: 11646, Stop: 14969, Start Num: 5
Candidate Starts for TagePhighter_19:
(Start: 5 @11646 has 51 MA's), (13, 11793), (19, 11904), (21, 11916), (22, 11928), (28, 12003), (38, 12168), (42, 12210), (45, 12240), (46, 12246), (50, 12303), (68, 12531), (70, 12591), (75, 12714), (87, 13017), (93, 13113), (95, 13146), (103, 13263), (105, 13281), (108, 13326), (110, 13359), (115, 13377), (124, 13452), (133, 13530), (136, 13551), (145, 13614), (149, 13632), (165, 13779), (172, 13857), (175, 13881), (176, 13893), (178, 13905), (179, 13911), (182, 13950), (184, 13968), (203, 14211), (210, 14313), (219, 14355), (233, 14523), (235, 14574), (236, 14586), (246, 14829), (249, 14955), (250, 14958),

Gene: Thestral_19 Start: 11634, Stop: 14933, Start Num: 6
Candidate Starts for Thestral_19:
(Start: 6 @11634 has 25 MA's), (Start: 10 @11673 has 3 MA's), (13, 11769), (14, 11790), (15, 11832), (17, 11847), (31, 12009), (42, 12180), (46, 12216), (56, 12354), (61, 12423), (73, 12672), (75, 12684), (87, 12987), (93, 13083), (95, 13116), (98, 13188), (99, 13194), (102, 13230), (105, 13251), (106, 13275), (107, 13293), (108, 13296), (110, 13329), (115, 13347), (129, 13476), (136, 13521), (145, 13584), (147, 13590), (165, 13749), (167, 13761), (176, 13863), (184, 13938), (193, 14010), (209, 14277), (226, 14403), (229, 14427), (235, 14544), (236, 14556), (237, 14625), (238, 14634), (240, 14697), (244, 14775), (245, 14787), (246, 14799),

Gene: TinaBelcher_18 Start: 11621, Stop: 14881, Start Num: 10
Candidate Starts for TinaBelcher_18:

(Start: 6 @11582 has 25 MA's), (Start: 10 @11621 has 3 MA's), (13, 11717), (14, 11738), (15, 11780), (17, 11795), (31, 11957), (42, 12128), (46, 12164), (63, 12383), (65, 12389), (68, 12449), (75, 12632), (87, 12935), (93, 13031), (95, 13064), (98, 13136), (99, 13142), (104, 13190), (106, 13223), (107, 13241), (108, 13244), (110, 13277), (115, 13295), (129, 13424), (136, 13469), (145, 13532), (147, 13538), (165, 13697), (167, 13709), (176, 13811), (181, 13865), (184, 13886), (193, 13958), (209, 14225), (226, 14351), (229, 14375), (235, 14492), (236, 14504), (237, 14573), (238, 14582), (240, 14645), (244, 14723), (245, 14735), (246, 14747),

Gene: Toma_18 Start: 11655, Stop: 14978, Start Num: 5
Candidate Starts for Toma_18:
(Start: 5 @11655 has 51 MA's), (Start: 9 @11691 has 4 MA's), (13, 11802), (19, 11913), (21, 11925), (22, 11937), (28, 12012), (31, 12048), (38, 12177), (42, 12219), (45, 12249), (46, 12255), (48, 12267), (50, 12312), (68, 12540), (75, 12723), (89, 13062), (93, 13122), (95, 13155), (103, 13272), (105, 13290), (108, 13335), (110, 13368), (115, 13386), (124, 13461), (133, 13539), (136, 13560), (140, 13581), (145, 13623), (149, 13641), (165, 13788), (172, 13866), (175, 13890), (176, 13902), (178, 13914), (179, 13920), (182, 13959), (184, 13977), (203, 14220), (210, 14322), (234, 14544), (235, 14583), (236, 14595), (241, 14769), (246, 14838), (249, 14964), (250, 14967),

Gene: Triste_18 Start: 11637, Stop: 14960, Start Num: 5
Candidate Starts for Triste_18:
(Start: 5 @11637 has 51 MA's), (13, 11784), (19, 11895), (21, 11907), (22, 11919), (28, 11994), (31, 12030), (42, 12201), (45, 12231), (46, 12237), (50, 12294), (68, 12522), (70, 12582), (75, 12705), (87, 13008), (93, 13104), (95, 13137), (103, 13254), (105, 13272), (108, 13317), (110, 13350), (115, 13368), (124, 13443), (133, 13521), (136, 13542), (145, 13605), (149, 13623), (165, 13770), (172, 13848), (175, 13872), (176, 13884), (178, 13896), (179, 13902), (182, 13941), (184, 13959), (203, 14202), (210, 14304), (219, 14346), (233, 14514), (235, 14565), (236, 14577), (241, 14751), (246, 14820), (249, 14946), (250, 14949),

Gene: Triumph_20 Start: 11576, Stop: 14881, Start Num: 6
Candidate Starts for Triumph_20:
(Start: 6 @11576 has 25 MA's), (Start: 10 @11615 has 3 MA's), (13, 11714), (14, 11735), (18, 11807), (19, 11825), (31, 11957), (32, 11969), (41, 12119), (45, 12158), (46, 12164), (47, 12167), (50, 12221), (75, 12632), (87, 12935), (93, 13031), (95, 13064), (105, 13199), (106, 13223), (108, 13244), (109, 13247), (110, 13277), (115, 13295), (118, 13331), (133, 13448), (135, 13460), (142, 13514), (149, 13550), (165, 13697), (172, 13775), (175, 13799), (176, 13811), (182, 13868), (189, 13916), (193, 13958), (197, 14048), (216, 14264), (233, 14441), (235, 14492), (236, 14504), (240, 14645), (241, 14678), (244, 14723), (247, 14759),

Gene: TrvxScott_17 Start: 11584, Stop: 14883, Start Num: 6
Candidate Starts for TrvxScott_17:
(Start: 6 @11584 has 25 MA's), (Start: 10 @11623 has 3 MA's), (13, 11719), (14, 11740), (15, 11782), (17, 11797), (31, 11959), (42, 12130), (46, 12166), (75, 12634), (87, 12937), (93, 13033), (95, 13066), (98, 13138), (99, 13144), (106, 13225), (107, 13243), (108, 13246), (110, 13279), (115, 13297), (129, 13426), (136, 13471), (145, 13534), (147, 13540), (165, 13699), (167, 13711), (170, 13756), (176, 13813), (184, 13888), (186, 13894), (193, 13960), (209, 14227), (226, 14353), (229, 14377), (235, 14494), (236, 14506), (237, 14575), (238, 14584), (240, 14647), (242, 14701), (244, 14725), (246, 14749),

Gene: TuanPN_18 Start: 11643, Stop: 14966, Start Num: 5
Candidate Starts for TuanPN_18:
(Start: 5 @11643 has 51 MA's), (13, 11790), (19, 11901), (21, 11913), (22, 11925), (28, 12000), (31, 12036), (42, 12207), (45, 12237), (46, 12243), (48, 12255), (50, 12300), (55, 12354), (65, 12468), (68, 12528), (74, 12702), (75, 12711), (87, 13014), (89, 13050), (93, 13110), (95, 13143), (99, 13221), (103,

13260), (105, 13278), (108, 13323), (110, 13356), (115, 13374), (124, 13449), (133, 13527), (136, 13548), (140, 13569), (145, 13611), (149, 13629), (155, 13701), (165, 13776), (172, 13854), (175, 13878), (176, 13890), (178, 13902), (179, 13908), (182, 13947), (184, 13965), (203, 14208), (205, 14253), (210, 14310), (233, 14520), (235, 14571), (246, 14826), (249, 14952), (250, 14955),

Gene: Unstoppable_18 Start: 11660, Stop: 14980, Start Num: 5
Candidate Starts for Unstoppable_18:
(Start: 5 @11660 has 51 MA's), (13, 11804), (19, 11915), (21, 11927), (24, 11996), (26, 12002), (30, 12023), (37, 12158), (42, 12221), (46, 12257), (47, 12260), (57, 12425), (61, 12464), (66, 12521), (75, 12725), (87, 13028), (88, 13061), (93, 13124), (95, 13157), (99, 13235), (102, 13271), (103, 13274), (105, 13292), (106, 13316), (108, 13337), (110, 13370), (115, 13388), (118, 13424), (127, 13478), (129, 13517), (133, 13541), (142, 13607), (149, 13643), (155, 13715), (160, 13739), (161, 13745), (163, 13769), (165, 13790), (175, 13892), (176, 13904), (180, 13940), (184, 13979), (190, 14012), (200, 14183), (203, 14222), (210, 14324), (212, 14345), (216, 14357), (233, 14534), (235, 14585), (236, 14597), (241, 14771), (246, 14840), (248, 14879), (249, 14966), (250, 14969),

Gene: Urza_18 Start: 11942, Stop: 15343, Start Num: 6
Candidate Starts for Urza_18:
(Start: 6 @11942 has 25 MA's), (8, 11957), (13, 12077), (18, 12170), (19, 12188), (22, 12212), (33, 12368), (48, 12545), (50, 12590), (56, 12671), (60, 12734), (63, 12752), (69, 12875), (75, 12998), (76, 13070), (79, 13082), (84, 13211), (87, 13304), (92, 13376), (93, 13400), (97, 13475), (104, 13559), (108, 13613), (110, 13646), (112, 13652), (116, 13673), (117, 13685), (122, 13724), (125, 13742), (137, 13907), (143, 13976), (146, 13991), (149, 14006), (152, 14027), (156, 14081), (163, 14132), (165, 14153), (176, 14267), (184, 14342), (187, 14351), (195, 14465), (203, 14585), (214, 14717), (216, 14720), (223, 14771), (230, 14837), (231, 14840), (235, 14948), (237, 15029), (239, 15056), (243, 15173), (248, 15245), (249, 15332),

Gene: VieEnRose_18 Start: 12008, Stop: 15409, Start Num: 6
Candidate Starts for VieEnRose_18:
(Start: 6 @12008 has 25 MA's), (8, 12023), (13, 12143), (18, 12236), (19, 12254), (22, 12278), (33, 12434), (42, 12563), (48, 12611), (50, 12656), (56, 12737), (60, 12800), (63, 12818), (69, 12941), (75, 13064), (76, 13136), (79, 13148), (84, 13277), (87, 13370), (92, 13442), (93, 13466), (104, 13625), (108, 13679), (110, 13712), (112, 13718), (116, 13739), (120, 13784), (125, 13808), (131, 13874), (132, 13919), (138, 13994), (143, 14042), (146, 14057), (149, 14072), (150, 14081), (156, 14147), (163, 14198), (165, 14219), (176, 14333), (184, 14408), (187, 14417), (193, 14480), (203, 14651), (214, 14783), (216, 14786), (220, 14807), (221, 14828), (235, 15014), (236, 15026), (237, 15095), (238, 15104), (239, 15122), (243, 15239), (248, 15311), (249, 15398),

Gene: Werner_18 Start: 11647, Stop: 14970, Start Num: 5
Candidate Starts for Werner_18:
(Start: 5 @11647 has 51 MA's), (13, 11794), (19, 11905), (21, 11917), (22, 11929), (28, 12004), (31, 12040), (38, 12169), (42, 12211), (45, 12241), (46, 12247), (50, 12304), (68, 12532), (70, 12592), (75, 12715), (87, 13018), (93, 13114), (95, 13147), (103, 13264), (105, 13282), (108, 13327), (110, 13360), (115, 13378), (124, 13453), (133, 13531), (136, 13552), (145, 13615), (149, 13633), (165, 13780), (172, 13858), (175, 13882), (176, 13894), (178, 13906), (179, 13912), (182, 13951), (184, 13969), (203, 14212), (210, 14314), (219, 14356), (233, 14524), (235, 14575), (236, 14587), (241, 14761), (246, 14830), (249, 14956), (250, 14959),

Gene: Whatever_18 Start: 11647, Stop: 14970, Start Num: 5
Candidate Starts for Whatever_18:
(Start: 5 @11647 has 51 MA's), (13, 11794), (14, 11815), (19, 11905), (21, 11917), (22, 11929), (28, 12004), (31, 12040), (38, 12169), (42, 12211), (45, 12241), (46, 12247), (50, 12304), (68, 12532), (70, 12592), (75, 12715), (87, 13018), (93, 13114), (95, 13147), (103, 13264), (105, 13282), (108, 13327),

(110, 13360), (115, 13378), (124, 13453), (133, 13531), (136, 13552), (145, 13615), (149, 13633), (165, 13780), (172, 13858), (175, 13882), (176, 13894), (178, 13906), (179, 13912), (182, 13951), (184, 13969), (203, 14212), (210, 14314), (219, 14356), (233, 14524), (235, 14575), (236, 14587), (241, 14761), (246, 14830), (249, 14956), (250, 14959),

Gene: Yasdnil_18 Start: 11639, Stop: 14962, Start Num: 5
Candidate Starts for Yasdnil_18:
(Start: 5 @11639 has 51 MA's), (13, 11786), (19, 11897), (21, 11909), (22, 11921), (28, 11996), (31, 12032), (42, 12203), (45, 12233), (46, 12239), (48, 12251), (50, 12296), (55, 12350), (65, 12464), (68, 12524), (74, 12698), (75, 12707), (87, 13010), (89, 13046), (93, 13106), (95, 13139), (99, 13217), (103, 13256), (105, 13274), (108, 13319), (110, 13352), (115, 13370), (124, 13445), (133, 13523), (136, 13544), (140, 13565), (145, 13607), (149, 13625), (155, 13697), (165, 13772), (172, 13850), (175, 13874), (176, 13886), (178, 13898), (179, 13904), (182, 13943), (184, 13961), (203, 14204), (205, 14249), (210, 14306), (233, 14516), (235, 14567), (246, 14822), (249, 14948), (250, 14951),

Gene: Zainub_20 Start: 12120, Stop: 15311, Start Num: 6
Candidate Starts for Zainub_20:
(Start: 6 @12120 has 25 MA's), (Start: 10 @12159 has 3 MA's), (12, 12246), (13, 12255), (14, 12276), (15, 12318), (31, 12495), (37, 12603), (39, 12633), (41, 12657), (46, 12702), (47, 12705), (50, 12759), (75, 13170), (82, 13293), (87, 13473), (90, 13536), (91, 13542), (93, 13569), (102, 13716), (105, 13737), (106, 13761), (108, 13782), (109, 13785), (110, 13815), (115, 13833), (141, 13980), (159, 14094), (160, 14097), (169, 14175), (170, 14205), (175, 14250), (176, 14262), (182, 14319), (183, 14322), (189, 14367), (191, 14373), (204, 14529), (207, 14604), (219, 14703), (224, 14769), (232, 14823), (235, 14922), (241, 15108), (242, 15129), (244, 15153), (245, 15165),

Gene: Zemlya_19 Start: 11666, Stop: 14989, Start Num: 5
Candidate Starts for Zemlya_19:
(Start: 5 @11666 has 51 MA's), (Start: 9 @11702 has 4 MA's), (13, 11813), (19, 11924), (21, 11936), (22, 11948), (28, 12023), (31, 12059), (38, 12188), (42, 12230), (45, 12260), (46, 12266), (48, 12278), (50, 12323), (65, 12491), (68, 12551), (74, 12725), (75, 12734), (87, 13037), (89, 13073), (92, 13109), (93, 13133), (95, 13166), (103, 13283), (105, 13301), (108, 13346), (110, 13379), (115, 13397), (124, 13472), (133, 13550), (136, 13571), (140, 13592), (145, 13634), (149, 13652), (165, 13799), (172, 13877), (175, 13901), (176, 13913), (178, 13925), (179, 13931), (182, 13970), (184, 13988), (203, 14231), (210, 14333), (235, 14594), (236, 14606), (238, 14684), (239, 14702), (241, 14780), (246, 14849), (249, 14975), (250, 14978),

Gene: phiHau3_20 Start: 11837, Stop: 15658, Start Num: 1
Candidate Starts for phiHau3_20:
(Start: 1 @11837 has 3 MA's), (2, 12173), (3, 12218), (4, 12311), (7, 12335), (8, 12344), (13, 12470), (16, 12554), (20, 12593), (27, 12680), (31, 12737), (35, 12830), (36, 12839), (38, 12866), (40, 12884), (43, 12917), (46, 12944), (50, 13001), (51, 13010), (62, 13157), (63, 13163), (64, 13166), (72, 13385), (75, 13412), (78, 13493), (85, 13631), (87, 13715), (93, 13811), (94, 13820), (101, 13955), (102, 13958), (104, 13970), (110, 14057), (111, 14060), (113, 14066), (134, 14231), (139, 14258), (158, 14417), (160, 14426), (165, 14477), (168, 14501), (171, 14549), (174, 14576), (176, 14591), (184, 14666), (192, 14717), (213, 15035), (222, 15089), (224, 15119), (235, 15272), (237, 15353), (238, 15362), (239, 15380), (249, 15647),