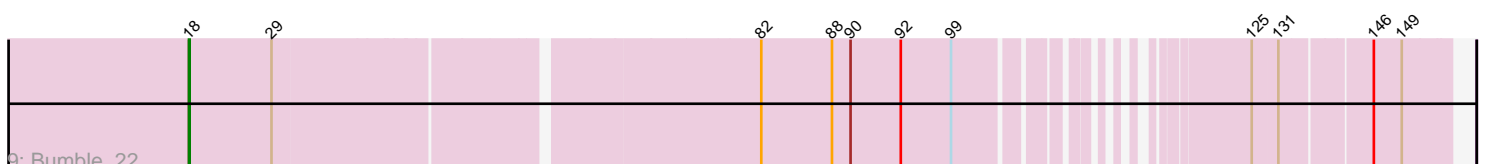
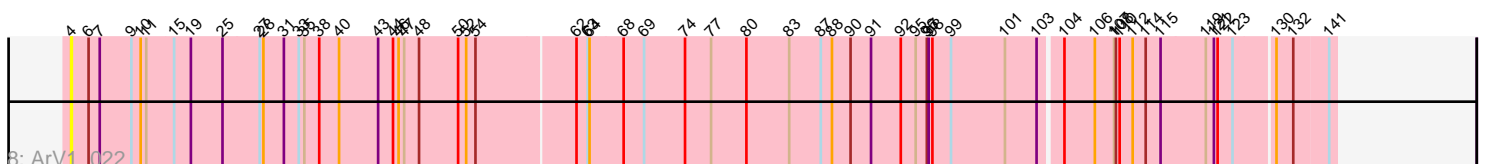
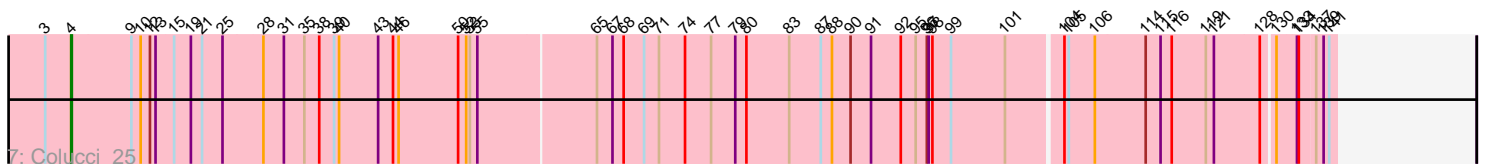
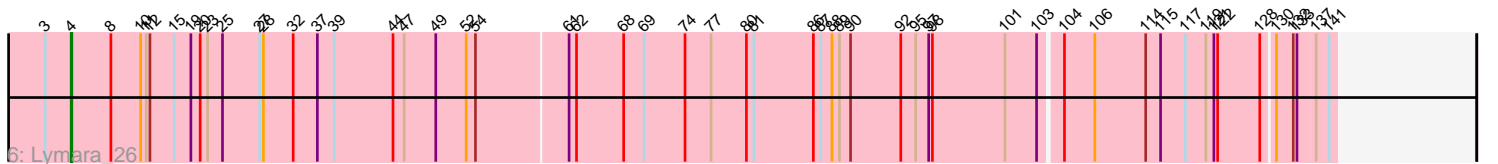
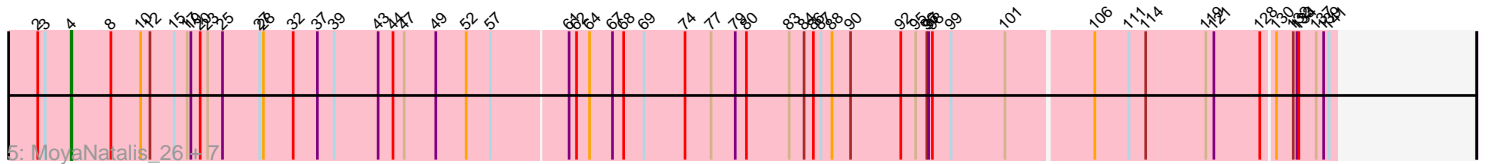
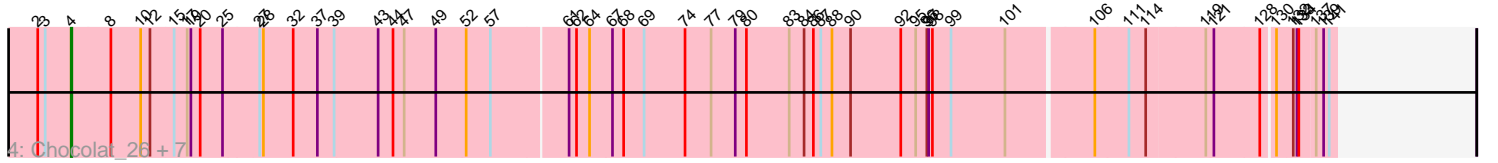
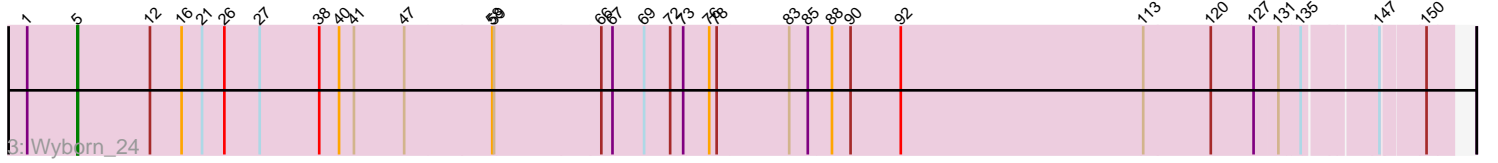
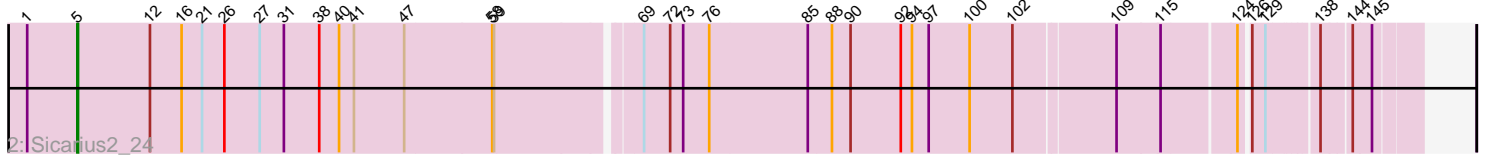
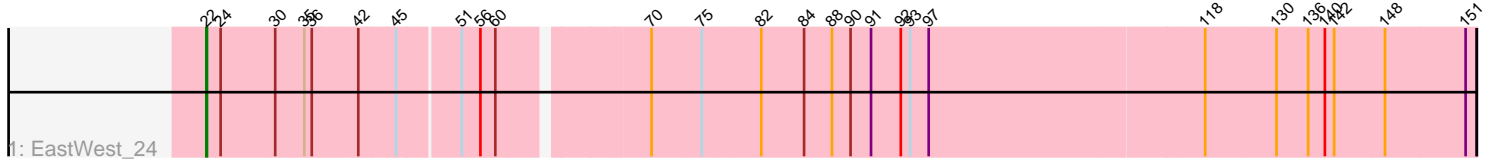


Pham 163902



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 163902 Report

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

Pham number 163902 has 24 members, 3 are drafts.

Phages represented in each track:

- Track 1 : EastWest_24
- Track 2 : Sicarius2_24
- Track 3 : Wyborn_24
- Track 4 : Chocolat_26, Kabreeze_26, Scavito_26, Mordred_26, Chipper1996_260, JaNo_26, Tophat_26, HumptyDumpty_26
- Track 5 : MoyaNatalis_26, Conboy_26, PrincessTrina_26, Chubster_26, RosiePosie_26, EdgarPoe_26, Linus_26, JayCookie_26
- Track 6 : Lymara_26
- Track 7 : Colucci_25
- Track 8 : ArV1_022
- Track 9 : Bumble_22
- Track 10 : Altadena_22

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

The start number called the most often in the published annotations is 4, it was called in 16 of the 21 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ArV1_022, Chipper1996_260, Chocolat_26, Chubster_26, Colucci_25, Conboy_26, EdgarPoe_26, HumptyDumpty_26, JaNo_26, JayCookie_26, Kabreeze_26, Linus_26, Lymara_26, Mordred_26, MoyaNatalis_26, PrincessTrina_26, RosiePosie_26, Scavito_26, Tophat_26,

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

-

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

- Altadena_22, Bumble_22, EastWest_24, Sicarius2_24, Wyborn_24,

Summary by start number:

Start 4:

- Found in 19 of 24 (79.2%) of genes in pham

- Manual Annotations of this start: 16 of 21
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArV1_022 (AR), Chipper1996_260 (AR), Chocolat_26 (AR), Chubster_26 (AR), Colucci_25 (AR), Conboy_26 (AR), EdgarPoe_26 (AR), HumptyDumpty_26 (AR), JaNo_26 (AR), JayCookie_26 (AR), Kabreeze_26 (AR), Linus_26 (AR), Lymara_26 (AR), Mordred_26 (AR), MoyaNatalis_26 (AR), PrincessTrina_26 (AR), RosiePosie_26 (AR), Scavito_26 (AR), Tophat_26 (AR),

Start 5:

- Found in 2 of 24 (8.3%) of genes in pham
- Manual Annotations of this start: 2 of 21
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sicarius2_24 (AO2), Wyborn_24 (AO2),

Start 18:

- Found in 2 of 24 (8.3%) of genes in pham
- Manual Annotations of this start: 2 of 21
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena_22 (FH), Bumble_22 (FH),

Start 22:

- Found in 1 of 24 (4.2%) of genes in pham
- Manual Annotations of this start: 1 of 21
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EastWest_24 (AO),

Summary by clusters:

There are 4 clusters represented in this pham: FH, AR, AO2, AO,

Info for manual annotations of cluster AO:

- Start number 22 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO2:

- Start number 5 was manually annotated 2 times for cluster AO2.

Info for manual annotations of cluster AR:

- Start number 4 was manually annotated 16 times for cluster AR.

Info for manual annotations of cluster FH:

- Start number 18 was manually annotated 2 times for cluster FH.

Gene Information:

Gene: Altadena_22 Start: 18121, Stop: 20040, Start Num: 18

Candidate Starts for Altadena_22:

(14, 18082), (Start: 18 @18121 has 2 MA's), (34, 18295), (82, 18976), (85, 19051), (88, 19087), (90, 19117), (93, 19213), (99, 19279), (131, 19801), (132, 19819), (143, 19882),

Gene: ArV1_022 Start: 20005, Stop: 21969, Start Num: 4

Candidate Starts for ArV1_022:

(Start: 4 @20005 has 16 MA's), (6, 20026), (7, 20044), (9, 20095), (10, 20110), (11, 20119), (15, 20161), (19, 20188), (25, 20239), (27, 20293), (28, 20299), (31, 20332), (33, 20356), (35, 20365), (38, 20389), (40, 20419), (43, 20482), (44, 20506), (46, 20515), (47, 20524), (48, 20548), (50, 20611), (52, 20623), (54, 20638), (62, 20791), (63, 20809), (64, 20812), (68, 20866), (69, 20899), (74, 20965), (77, 21007), (80, 21064), (83, 21133), (87, 21181), (88, 21199), (90, 21229), (91, 21262), (92, 21310), (95, 21334), (96, 21352), (97, 21355), (98, 21361), (99, 21391), (101, 21478), (103, 21529), (104, 21562), (106, 21610), (107, 21640), (108, 21643), (110, 21649), (112, 21670), (114, 21691), (115, 21709), (119, 21781), (121, 21793), (122, 21799), (123, 21823), (130, 21883), (132, 21904), (141, 21958),

Gene: Bumble_22 Start: 18132, Stop: 19916, Start Num: 18

Candidate Starts for Bumble_22:

(Start: 18 @18132 has 2 MA's), (29, 18264), (82, 18984), (88, 19098), (90, 19128), (92, 19209), (99, 19290), (125, 19623), (131, 19662), (146, 19794), (149, 19839),

Gene: Chipper1996_260 Start: 21687, Stop: 23657, Start Num: 4

Candidate Starts for Chipper1996_260:

(2, 21633), (3, 21645), (Start: 4 @21687 has 16 MA's), (8, 21750), (10, 21798), (12, 21813), (15, 21849), (17, 21870), (19, 21876), (20, 21891), (25, 21927), (27, 21981), (28, 21987), (32, 22035), (37, 22074), (39, 22101), (43, 22170), (44, 22194), (47, 22212), (49, 22263), (52, 22311), (57, 22350), (61, 22467), (62, 22479), (64, 22500), (67, 22536), (68, 22554), (69, 22587), (74, 22653), (77, 22695), (79, 22734), (80, 22752), (83, 22821), (84, 22845), (86, 22860), (87, 22869), (88, 22887), (90, 22917), (92, 22998), (95, 23022), (96, 23040), (97, 23043), (98, 23049), (99, 23079), (101, 23166), (106, 23298), (111, 23352), (114, 23379), (119, 23469), (121, 23481), (128, 23553), (130, 23571), (132, 23592), (133, 23598), (134, 23601), (137, 23625), (139, 23637), (141, 23646),

Gene: Chocolat_26 Start: 21687, Stop: 23657, Start Num: 4

Candidate Starts for Chocolat_26:

(2, 21633), (3, 21645), (Start: 4 @21687 has 16 MA's), (8, 21750), (10, 21798), (12, 21813), (15, 21849), (17, 21870), (19, 21876), (20, 21891), (25, 21927), (27, 21981), (28, 21987), (32, 22035), (37, 22074), (39, 22101), (43, 22170), (44, 22194), (47, 22212), (49, 22263), (52, 22311), (57, 22350), (61, 22467), (62, 22479), (64, 22500), (67, 22536), (68, 22554), (69, 22587), (74, 22653), (77, 22695), (79, 22734), (80, 22752), (83, 22821), (84, 22845), (86, 22860), (87, 22869), (88, 22887), (90, 22917), (92, 22998), (95, 23022), (96, 23040), (97, 23043), (98, 23049), (99, 23079), (101, 23166), (106, 23298), (111, 23352), (114, 23379), (119, 23469), (121, 23481), (128, 23553), (130, 23571), (132, 23592), (133, 23598), (134, 23601), (137, 23625), (139, 23637), (141, 23646),

Gene: Chubster_26 Start: 21458, Stop: 23428, Start Num: 4

Candidate Starts for Chubster_26:

(2, 21404), (3, 21416), (Start: 4 @21458 has 16 MA's), (8, 21521), (10, 21569), (12, 21584), (15, 21620), (17, 21641), (19, 21647), (20, 21662), (23, 21674), (25, 21698), (27, 21752), (28, 21758), (32, 21806), (37, 21845), (39, 21872), (43, 21941), (44, 21965), (47, 21983), (49, 22034), (52, 22082), (57, 22121), (61, 22238), (62, 22250), (64, 22271), (67, 22307), (68, 22325), (69, 22358), (74, 22424), (77, 22466), (79, 22505), (80, 22523), (83, 22592), (84, 22616), (86, 22631), (87, 22640), (88, 22658), (90, 22688), (92, 22769), (95, 22793), (96, 22811), (97, 22814), (98, 22820), (99, 22850), (101, 22937), (106, 23069), (111, 23123), (114, 23150), (119, 23240), (121, 23252), (128, 23324), (130, 23342), (132, 23363), (133, 23369), (134, 23372), (137, 23396), (139, 23408), (141, 23417),

Gene: Colucci_25 Start: 21154, Stop: 23121, Start Num: 4

Candidate Starts for Colucci_25:

(3, 21112), (Start: 4 @21154 has 16 MA's), (9, 21247), (10, 21262), (12, 21277), (13, 21286), (15, 21313), (19, 21340), (21, 21358), (25, 21391), (28, 21451), (31, 21484), (35, 21517), (38, 21541), (39, 21565), (40, 21571), (43, 21634), (44, 21658), (46, 21667), (50, 21763), (52, 21775), (53, 21781), (55,

21793), (65, 21976), (67, 22000), (68, 22018), (69, 22051), (71, 22075), (74, 22117), (77, 22159), (79, 22198), (80, 22216), (83, 22285), (87, 22333), (88, 22351), (90, 22381), (91, 22414), (92, 22462), (95, 22486), (96, 22504), (97, 22507), (98, 22513), (99, 22543), (101, 22630), (104, 22714), (105, 22720), (106, 22762), (114, 22843), (115, 22861), (116, 22879), (119, 22933), (121, 22945), (128, 23017), (130, 23035), (133, 23062), (134, 23065), (137, 23089), (139, 23101), (141, 23110),

Gene: Conboy_26 Start: 21686, Stop: 23656, Start Num: 4

Candidate Starts for Conboy_26:

(2, 21632), (3, 21644), (Start: 4 @21686 has 16 MA's), (8, 21749), (10, 21797), (12, 21812), (15, 21848), (17, 21869), (19, 21875), (20, 21890), (23, 21902), (25, 21926), (27, 21980), (28, 21986), (32, 22034), (37, 22073), (39, 22100), (43, 22169), (44, 22193), (47, 22211), (49, 22262), (52, 22310), (57, 22349), (61, 22466), (62, 22478), (64, 22499), (67, 22535), (68, 22553), (69, 22586), (74, 22652), (77, 22694), (79, 22733), (80, 22751), (83, 22820), (84, 22844), (86, 22859), (87, 22868), (88, 22886), (90, 22916), (92, 22997), (95, 23021), (96, 23039), (97, 23042), (98, 23048), (99, 23078), (101, 23165), (106, 23297), (111, 23351), (114, 23378), (119, 23468), (121, 23480), (128, 23552), (130, 23570), (132, 23591), (133, 23597), (134, 23600), (137, 23624), (139, 23636), (141, 23645),

Gene: EastWest_24 Start: 18793, Stop: 20760, Start Num: 22

Candidate Starts for EastWest_24:

(Start: 22 @18793 has 1 MA's), (24, 18814), (30, 18901), (35, 18946), (36, 18958), (42, 19027), (45, 19084), (51, 19180), (56, 19210), (60, 19234), (70, 19453), (75, 19531), (82, 19621), (84, 19690), (88, 19735), (90, 19765), (91, 19798), (92, 19846), (93, 19861), (97, 19891), (118, 20326), (130, 20440), (136, 20491), (140, 20518), (142, 20533), (148, 20614), (151, 20743),

Gene: EdgarPoe_26 Start: 21686, Stop: 23656, Start Num: 4

Candidate Starts for EdgarPoe_26:

(2, 21632), (3, 21644), (Start: 4 @21686 has 16 MA's), (8, 21749), (10, 21797), (12, 21812), (15, 21848), (17, 21869), (19, 21875), (20, 21890), (23, 21902), (25, 21926), (27, 21980), (28, 21986), (32, 22034), (37, 22073), (39, 22100), (43, 22169), (44, 22193), (47, 22211), (49, 22262), (52, 22310), (57, 22349), (61, 22466), (62, 22478), (64, 22499), (67, 22535), (68, 22553), (69, 22586), (74, 22652), (77, 22694), (79, 22733), (80, 22751), (83, 22820), (84, 22844), (86, 22859), (87, 22868), (88, 22886), (90, 22916), (92, 22997), (95, 23021), (96, 23039), (97, 23042), (98, 23048), (99, 23078), (101, 23165), (106, 23297), (111, 23351), (114, 23378), (119, 23468), (121, 23480), (128, 23552), (130, 23570), (132, 23591), (133, 23597), (134, 23600), (137, 23624), (139, 23636), (141, 23645),

Gene: HumptyDumpty_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for HumptyDumpty_26:

(2, 21631), (3, 21643), (Start: 4 @21685 has 16 MA's), (8, 21748), (10, 21796), (12, 21811), (15, 21847), (17, 21868), (19, 21874), (20, 21889), (25, 21925), (27, 21979), (28, 21985), (32, 22033), (37, 22072), (39, 22099), (43, 22168), (44, 22192), (47, 22210), (49, 22261), (52, 22309), (57, 22348), (61, 22465), (62, 22477), (64, 22498), (67, 22534), (68, 22552), (69, 22585), (74, 22651), (77, 22693), (79, 22732), (80, 22750), (83, 22819), (84, 22843), (86, 22858), (87, 22867), (88, 22885), (90, 22915), (92, 22996), (95, 23020), (96, 23038), (97, 23041), (98, 23047), (99, 23077), (101, 23164), (106, 23296), (111, 23350), (114, 23377), (119, 23467), (121, 23479), (128, 23551), (130, 23569), (132, 23590), (133, 23596), (134, 23599), (137, 23623), (139, 23635), (141, 23644),

Gene: JaNo_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for JaNo_26:

(2, 21631), (3, 21643), (Start: 4 @21685 has 16 MA's), (8, 21748), (10, 21796), (12, 21811), (15, 21847), (17, 21868), (19, 21874), (20, 21889), (25, 21925), (27, 21979), (28, 21985), (32, 22033), (37, 22072), (39, 22099), (43, 22168), (44, 22192), (47, 22210), (49, 22261), (52, 22309), (57, 22348), (61, 22465), (62, 22477), (64, 22498), (67, 22534), (68, 22552), (69, 22585), (74, 22651), (77, 22693), (79, 22732), (80, 22750), (83, 22819), (84, 22843), (86, 22858), (87, 22867), (88, 22885), (90, 22915), (92,

22996), (95, 23020), (96, 23038), (97, 23041), (98, 23047), (99, 23077), (101, 23164), (106, 23296), (111, 23350), (114, 23377), (119, 23467), (121, 23479), (128, 23551), (130, 23569), (132, 23590), (133, 23596), (134, 23599), (137, 23623), (139, 23635), (141, 23644),

Gene: JayCookie_26 Start: 21688, Stop: 23658, Start Num: 4

Candidate Starts for JayCookie_26:

(2, 21634), (3, 21646), (Start: 4 @21688 has 16 MA's), (8, 21751), (10, 21799), (12, 21814), (15, 21850), (17, 21871), (19, 21877), (20, 21892), (23, 21904), (25, 21928), (27, 21982), (28, 21988), (32, 22036), (37, 22075), (39, 22102), (43, 22171), (44, 22195), (47, 22213), (49, 22264), (52, 22312), (57, 22351), (61, 22468), (62, 22480), (64, 22501), (67, 22537), (68, 22555), (69, 22588), (74, 22654), (77, 22696), (79, 22735), (80, 22753), (83, 22822), (84, 22846), (86, 22861), (87, 22870), (88, 22888), (90, 22918), (92, 22999), (95, 23023), (96, 23041), (97, 23044), (98, 23050), (99, 23080), (101, 23167), (106, 23299), (111, 23353), (114, 23380), (119, 23470), (121, 23482), (128, 23554), (130, 23572), (132, 23593), (133, 23599), (134, 23602), (137, 23626), (139, 23638), (141, 23647),

Gene: Kabreeze_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for Kabreeze_26:

(2, 21631), (3, 21643), (Start: 4 @21685 has 16 MA's), (8, 21748), (10, 21796), (12, 21811), (15, 21847), (17, 21868), (19, 21874), (20, 21889), (25, 21925), (27, 21979), (28, 21985), (32, 22033), (37, 22072), (39, 22099), (43, 22168), (44, 22192), (47, 22210), (49, 22261), (52, 22309), (57, 22348), (61, 22465), (62, 22477), (64, 22498), (67, 22534), (68, 22552), (69, 22585), (74, 22651), (77, 22693), (79, 22732), (80, 22750), (83, 22819), (84, 22843), (86, 22858), (87, 22867), (88, 22885), (90, 22915), (92, 22996), (95, 23020), (96, 23038), (97, 23041), (98, 23047), (99, 23077), (101, 23164), (106, 23296), (111, 23350), (114, 23377), (119, 23467), (121, 23479), (128, 23551), (130, 23569), (132, 23590), (133, 23596), (134, 23599), (137, 23623), (139, 23635), (141, 23644),

Gene: Linus_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for Linus_26:

(2, 21631), (3, 21643), (Start: 4 @21685 has 16 MA's), (8, 21748), (10, 21796), (12, 21811), (15, 21847), (17, 21868), (19, 21874), (20, 21889), (23, 21901), (25, 21925), (27, 21979), (28, 21985), (32, 22033), (37, 22072), (39, 22099), (43, 22168), (44, 22192), (47, 22210), (49, 22261), (52, 22309), (57, 22348), (61, 22465), (62, 22477), (64, 22498), (67, 22534), (68, 22552), (69, 22585), (74, 22651), (77, 22693), (79, 22732), (80, 22750), (83, 22819), (84, 22843), (86, 22858), (87, 22867), (88, 22885), (90, 22915), (92, 22996), (95, 23020), (96, 23038), (97, 23041), (98, 23047), (99, 23077), (101, 23164), (106, 23296), (111, 23350), (114, 23377), (119, 23467), (121, 23479), (128, 23551), (130, 23569), (132, 23590), (133, 23596), (134, 23599), (137, 23623), (139, 23635), (141, 23644),

Gene: Lymara_26 Start: 21683, Stop: 23653, Start Num: 4

Candidate Starts for Lymara_26:

(3, 21641), (Start: 4 @21683 has 16 MA's), (8, 21746), (10, 21794), (11, 21803), (12, 21809), (15, 21845), (19, 21872), (20, 21887), (23, 21899), (25, 21923), (27, 21977), (28, 21983), (32, 22031), (37, 22070), (39, 22097), (44, 22190), (47, 22208), (49, 22259), (52, 22307), (54, 22322), (61, 22463), (62, 22475), (68, 22550), (69, 22583), (74, 22649), (77, 22691), (80, 22748), (81, 22760), (86, 22856), (87, 22865), (88, 22883), (89, 22895), (90, 22913), (92, 22994), (95, 23018), (97, 23039), (98, 23045), (101, 23162), (103, 23213), (104, 23246), (106, 23294), (114, 23375), (115, 23393), (117, 23432), (119, 23465), (121, 23477), (122, 23483), (128, 23549), (130, 23567), (132, 23588), (133, 23594), (137, 23621), (141, 23642),

Gene: Mordred_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for Mordred_26:

(2, 21631), (3, 21643), (Start: 4 @21685 has 16 MA's), (8, 21748), (10, 21796), (12, 21811), (15, 21847), (17, 21868), (19, 21874), (20, 21889), (25, 21925), (27, 21979), (28, 21985), (32, 22033), (37, 22072), (39, 22099), (43, 22168), (44, 22192), (47, 22210), (49, 22261), (52, 22309), (57, 22348), (61,

22465), (62, 22477), (64, 22498), (67, 22534), (68, 22552), (69, 22585), (74, 22651), (77, 22693), (79, 22732), (80, 22750), (83, 22819), (84, 22843), (86, 22858), (87, 22867), (88, 22885), (90, 22915), (92, 22996), (95, 23020), (96, 23038), (97, 23041), (98, 23047), (99, 23077), (101, 23164), (106, 23296), (111, 23350), (114, 23377), (119, 23467), (121, 23479), (128, 23551), (130, 23569), (132, 23590), (133, 23596), (134, 23599), (137, 23623), (139, 23635), (141, 23644),

Gene: MoyaNatalis_26 Start: 21688, Stop: 23658, Start Num: 4

Candidate Starts for MoyaNatalis_26:

(2, 21634), (3, 21646), (Start: 4 @21688 has 16 MA's), (8, 21751), (10, 21799), (12, 21814), (15, 21850), (17, 21871), (19, 21877), (20, 21892), (23, 21904), (25, 21928), (27, 21982), (28, 21988), (32, 22036), (37, 22075), (39, 22102), (43, 22171), (44, 22195), (47, 22213), (49, 22264), (52, 22312), (57, 22351), (61, 22468), (62, 22480), (64, 22501), (67, 22537), (68, 22555), (69, 22588), (74, 22654), (77, 22696), (79, 22735), (80, 22753), (83, 22822), (84, 22846), (86, 22861), (87, 22870), (88, 22888), (90, 22918), (92, 22999), (95, 23023), (96, 23041), (97, 23044), (98, 23050), (99, 23080), (101, 23167), (106, 23299), (111, 23353), (114, 23380), (119, 23470), (121, 23482), (128, 23554), (130, 23572), (132, 23593), (133, 23599), (134, 23602), (137, 23626), (139, 23638), (141, 23647),

Gene: PrincessTrina_26 Start: 21688, Stop: 23658, Start Num: 4

Candidate Starts for PrincessTrina_26:

(2, 21634), (3, 21646), (Start: 4 @21688 has 16 MA's), (8, 21751), (10, 21799), (12, 21814), (15, 21850), (17, 21871), (19, 21877), (20, 21892), (23, 21904), (25, 21928), (27, 21982), (28, 21988), (32, 22036), (37, 22075), (39, 22102), (43, 22171), (44, 22195), (47, 22213), (49, 22264), (52, 22312), (57, 22351), (61, 22468), (62, 22480), (64, 22501), (67, 22537), (68, 22555), (69, 22588), (74, 22654), (77, 22696), (79, 22735), (80, 22753), (83, 22822), (84, 22846), (86, 22861), (87, 22870), (88, 22888), (90, 22918), (92, 22999), (95, 23023), (96, 23041), (97, 23044), (98, 23050), (99, 23080), (101, 23167), (106, 23299), (111, 23353), (114, 23380), (119, 23470), (121, 23482), (128, 23554), (130, 23572), (132, 23593), (133, 23599), (134, 23602), (137, 23626), (139, 23638), (141, 23647),

Gene: RosiePosie_26 Start: 21688, Stop: 23658, Start Num: 4

Candidate Starts for RosiePosie_26:

(2, 21634), (3, 21646), (Start: 4 @21688 has 16 MA's), (8, 21751), (10, 21799), (12, 21814), (15, 21850), (17, 21871), (19, 21877), (20, 21892), (23, 21904), (25, 21928), (27, 21982), (28, 21988), (32, 22036), (37, 22075), (39, 22102), (43, 22171), (44, 22195), (47, 22213), (49, 22264), (52, 22312), (57, 22351), (61, 22468), (62, 22480), (64, 22501), (67, 22537), (68, 22555), (69, 22588), (74, 22654), (77, 22696), (79, 22735), (80, 22753), (83, 22822), (84, 22846), (86, 22861), (87, 22870), (88, 22888), (90, 22918), (92, 22999), (95, 23023), (96, 23041), (97, 23044), (98, 23050), (99, 23080), (101, 23167), (106, 23299), (111, 23353), (114, 23380), (119, 23470), (121, 23482), (128, 23554), (130, 23572), (132, 23593), (133, 23599), (134, 23602), (137, 23626), (139, 23638), (141, 23647),

Gene: Scavito_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for Scavito_26:

(2, 21631), (3, 21643), (Start: 4 @21685 has 16 MA's), (8, 21748), (10, 21796), (12, 21811), (15, 21847), (17, 21868), (19, 21874), (20, 21889), (25, 21925), (27, 21979), (28, 21985), (32, 22033), (37, 22072), (39, 22099), (43, 22168), (44, 22192), (47, 22210), (49, 22261), (52, 22309), (57, 22348), (61, 22465), (62, 22477), (64, 22498), (67, 22534), (68, 22552), (69, 22585), (74, 22651), (77, 22693), (79, 22732), (80, 22750), (83, 22819), (84, 22843), (86, 22858), (87, 22867), (88, 22885), (90, 22915), (92, 22996), (95, 23020), (96, 23038), (97, 23041), (98, 23047), (99, 23077), (101, 23164), (106, 23296), (111, 23350), (114, 23377), (119, 23467), (121, 23479), (128, 23551), (130, 23569), (132, 23590), (133, 23596), (134, 23599), (137, 23623), (139, 23635), (141, 23644),

Gene: Sicarius2_24 Start: 19283, Stop: 21313, Start Num: 5

Candidate Starts for Sicarius2_24:

(1, 19202), (Start: 5 @19283 has 2 MA's), (12, 19400), (16, 19451), (21, 19484), (26, 19520), (27, 19577), (31, 19616), (38, 19673), (40, 19703), (41, 19727), (47, 19808), (58, 19946), (59, 19949), (69, 20159), (72, 20201), (73, 20222), (76, 20261), (85, 20417), (88, 20453), (90, 20483), (92, 20564), (94, 20582), (97, 20609), (100, 20675), (102, 20744), (109, 20897), (115, 20966), (124, 21077), (126, 21089), (129, 21110), (138, 21170), (144, 21212), (145, 21242),

Gene: Tophat_26 Start: 21687, Stop: 23657, Start Num: 4

Candidate Starts for Tophat_26:

(2, 21633), (3, 21645), (Start: 4 @21687 has 16 MA's), (8, 21750), (10, 21798), (12, 21813), (15, 21849), (17, 21870), (19, 21876), (20, 21891), (25, 21927), (27, 21981), (28, 21987), (32, 22035), (37, 22074), (39, 22101), (43, 22170), (44, 22194), (47, 22212), (49, 22263), (52, 22311), (57, 22350), (61, 22467), (62, 22479), (64, 22500), (67, 22536), (68, 22554), (69, 22587), (74, 22653), (77, 22695), (79, 22734), (80, 22752), (83, 22821), (84, 22845), (86, 22860), (87, 22869), (88, 22887), (90, 22917), (92, 22998), (95, 23022), (96, 23040), (97, 23043), (98, 23049), (99, 23079), (101, 23166), (106, 23298), (111, 23352), (114, 23379), (119, 23469), (121, 23481), (128, 23553), (130, 23571), (132, 23592), (133, 23598), (134, 23601), (137, 23625), (139, 23637), (141, 23646),

Gene: Wyborn_24 Start: 19141, Stop: 21291, Start Num: 5

Candidate Starts for Wyborn_24:

(1, 19060), (Start: 5 @19141 has 2 MA's), (12, 19258), (16, 19309), (21, 19342), (26, 19378), (27, 19435), (38, 19531), (40, 19561), (41, 19585), (47, 19666), (58, 19804), (59, 19807), (66, 19975), (67, 19993), (69, 20044), (72, 20086), (73, 20107), (76, 20146), (78, 20158), (83, 20272), (85, 20302), (88, 20338), (90, 20368), (92, 20449), (113, 20839), (120, 20947), (127, 21016), (131, 21052), (135, 21082), (147, 21187), (150, 21250),