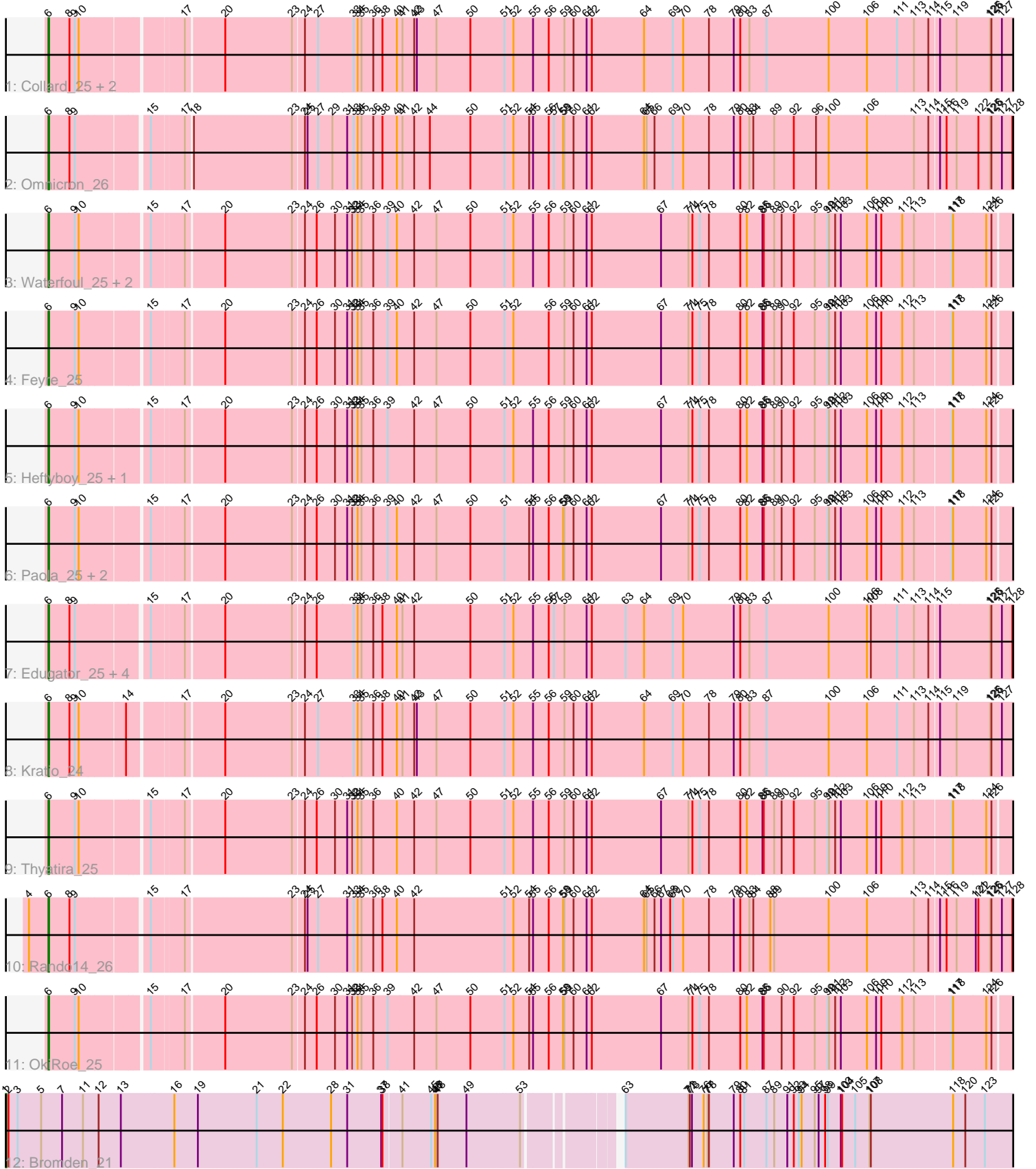


Zoomed Pham 154986



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 154986 Report

This analysis was run 04/12/24 on database version 558.

Pham number 154986 has 23 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Collard_25, Agent47_25, InvictusManeo_25
- Track 2 : Omnicron_26
- Track 3 : Waterfoul_25, Miryou_25, Gengar_25
- Track 4 : Feyre_25
- Track 5 : Heftyboy_25, SoSeph_25
- Track 6 : Paola_25, Guillsminger_25, Leston_25
- Track 7 : Edugator_25, AlleyCat_26, Psycho_26, Larva_26, Dadosky_26
- Track 8 : Kratio_24
- Track 9 : Thyatira_25
- Track 10 : Rando14_26
- Track 11 : OkiRoe_25
- Track 12 : Bromden_21

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

The start number called the most often in the published annotations is 6, it was called in 20 of the 21 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agent47_25, AlleyCat_26, Collard_25, Dadosky_26, Edugator_25, Feyre_25, Gengar_25, Guillsminger_25, Heftyboy_25, InvictusManeo_25, Kratio_24, Larva_26, Leston_25, Miryou_25, OkiRoe_25, Omnicron_26, Paola_25, Psycho_26, Rando14_26, SoSeph_25, Thyatira_25, Waterfoul_25,

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

-

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

- Bromden_21,

Summary by start number:

Start 1:

- Found in 1 of 23 (4.3%) 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: Bromden_21 (L4),

Start 6:

- Found in 22 of 23 (95.7%) of genes in pham
- Manual Annotations of this start: 20 of 21
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agent47_25 (K5), AlleyCat_26 (K5), Collard_25 (K5), Dadosky_26 (K5), Edugator_25 (K5), Feyre_25 (K5), Gengar_25 (K5), Guillsminger_25 (K5), Heftyboy_25 (K5), InvictusManeo_25 (K5), Kratio_24 (K5), Larva_26 (K5), Leston_25 (K5), Miryou_25 (K5), OkiRoe_25 (K5), Omnicron_26 (K5), Paola_25 (K5), Psycho_26 (K5), Rando14_26 (K5), SoSeph_25 (K5), Thyatira_25 (K5), Waterfoul_25 (K5),

Summary by clusters:

There are 2 clusters represented in this pham: L4, K5,

Info for manual annotations of cluster K5:

- Start number 6 was manually annotated 20 times for cluster K5.

Info for manual annotations of cluster L4:

- Start number 1 was manually annotated 1 time for cluster L4.

Gene Information:

Gene: Agent47_25 Start: 21256, Stop: 23766, Start Num: 6

Candidate Starts for Agent47_25:

(Start: 6 @21256 has 20 MA's), (8, 21304), (9, 21316), (10, 21325), (17, 21535), (20, 21619), (23, 21772), (24, 21796), (27, 21826), (33, 21907), (34, 21916), (35, 21925), (36, 21952), (38, 21973), (40, 22006), (41, 22018), (42, 22045), (43, 22051), (47, 22096), (50, 22174), (51, 22252), (52, 22273), (55, 22318), (56, 22354), (59, 22390), (60, 22411), (61, 22441), (62, 22453), (64, 22573), (69, 22636), (70, 22660), (78, 22717), (79, 22774), (80, 22789), (83, 22810), (87, 22849), (100, 22990), (106, 23077), (111, 23143), (113, 23179), (114, 23212), (115, 23233), (119, 23269), (125, 23344), (126, 23347), (127, 23371), (131, 23404), (134, 23431), (137, 23452), (138, 23470), (140, 23524), (150, 23752),

Gene: AlleyCat_26 Start: 21193, Stop: 23697, Start Num: 6

Candidate Starts for AlleyCat_26:

(Start: 6 @21193 has 20 MA's), (8, 21241), (9, 21253), (15, 21400), (17, 21469), (20, 21553), (23, 21706), (24, 21730), (26, 21757), (33, 21841), (34, 21850), (35, 21859), (36, 21886), (38, 21907), (40, 21940), (41, 21952), (42, 21979), (50, 22108), (51, 22186), (52, 22207), (55, 22252), (56, 22288), (57, 22300), (59, 22324), (61, 22375), (62, 22387), (63, 22465), (64, 22507), (69, 22570), (70, 22594), (79, 22708), (80, 22723), (83, 22744), (87, 22783), (100, 22924), (106, 23011), (108, 23020), (111, 23077), (113, 23113), (114, 23146), (115, 23167), (125, 23278), (126, 23281), (127, 23305), (128, 23329), (130, 23335), (131, 23338), (134, 23365), (137, 23386), (138, 23404), (140, 23455), (144, 23536), (150, 23683),

Gene: Bromden_21 Start: 19281, Stop: 21821, Start Num: 1

Candidate Starts for Bromden_21:

(Start: 1 @19281 has 1 MA's), (2, 19287), (3, 19308), (5, 19362), (7, 19410), (11, 19458), (12, 19494), (13, 19545), (16, 19665), (19, 19719), (21, 19854), (22, 19914), (28, 20025), (31, 20061), (37, 20139), (38, 20142), (41, 20181), (45, 20247), (46, 20256), (47, 20259), (48, 20262), (49, 20328), (53, 20442), (63, 20613), (71, 20754), (72, 20757), (73, 20760), (76, 20787), (77, 20796), (78, 20799), (79, 20856), (80, 20871), (81, 20880), (87, 20925), (89, 20943), (91, 20970), (92, 20985), (93, 20997), (94, 21003), (95, 21033), (97, 21042), (98, 21057), (99, 21063), (103, 21093), (104, 21096), (105, 21126), (107, 21156), (108, 21159), (118, 21348), (120, 21375), (123, 21420), (130, 21486), (135, 21519), (136, 21525), (139, 21564), (141, 21603), (143, 21630), (149, 21762),

Gene: Collard_25 Start: 21217, Stop: 23727, Start Num: 6

Candidate Starts for Collard_25:

(Start: 6 @21217 has 20 MA's), (8, 21265), (9, 21277), (10, 21286), (17, 21496), (20, 21580), (23, 21733), (24, 21757), (27, 21787), (33, 21868), (34, 21877), (35, 21886), (36, 21913), (38, 21934), (40, 21967), (41, 21979), (42, 22006), (43, 22012), (47, 22057), (50, 22135), (51, 22213), (52, 22234), (55, 22279), (56, 22315), (59, 22351), (60, 22372), (61, 22402), (62, 22414), (64, 22534), (69, 22597), (70, 22621), (78, 22678), (79, 22735), (80, 22750), (83, 22771), (87, 22810), (100, 22951), (106, 23038), (111, 23104), (113, 23140), (114, 23173), (115, 23194), (119, 23230), (125, 23305), (126, 23308), (127, 23332), (131, 23365), (134, 23392), (137, 23413), (138, 23431), (140, 23485), (150, 23713),

Gene: Dadosky_26 Start: 21194, Stop: 23698, Start Num: 6

Candidate Starts for Dadosky_26:

(Start: 6 @21194 has 20 MA's), (8, 21242), (9, 21254), (15, 21401), (17, 21470), (20, 21554), (23, 21707), (24, 21731), (26, 21758), (33, 21842), (34, 21851), (35, 21860), (36, 21887), (38, 21908), (40, 21941), (41, 21953), (42, 21980), (50, 22109), (51, 22187), (52, 22208), (55, 22253), (56, 22289), (57, 22301), (59, 22325), (61, 22376), (62, 22388), (63, 22466), (64, 22508), (69, 22571), (70, 22595), (79, 22709), (80, 22724), (83, 22745), (87, 22784), (100, 22925), (106, 23012), (108, 23021), (111, 23078), (113, 23114), (114, 23147), (115, 23168), (125, 23279), (126, 23282), (127, 23306), (128, 23330), (130, 23336), (131, 23339), (134, 23366), (137, 23387), (138, 23405), (140, 23456), (144, 23537), (150, 23684),

Gene: Edugator_25 Start: 21193, Stop: 23697, Start Num: 6

Candidate Starts for Edugator_25:

(Start: 6 @21193 has 20 MA's), (8, 21241), (9, 21253), (15, 21400), (17, 21469), (20, 21553), (23, 21706), (24, 21730), (26, 21757), (33, 21841), (34, 21850), (35, 21859), (36, 21886), (38, 21907), (40, 21940), (41, 21952), (42, 21979), (50, 22108), (51, 22186), (52, 22207), (55, 22252), (56, 22288), (57, 22300), (59, 22324), (61, 22375), (62, 22387), (63, 22465), (64, 22507), (69, 22570), (70, 22594), (79, 22708), (80, 22723), (83, 22744), (87, 22783), (100, 22924), (106, 23011), (108, 23020), (111, 23077), (113, 23113), (114, 23146), (115, 23167), (125, 23278), (126, 23281), (127, 23305), (128, 23329), (130, 23335), (131, 23338), (134, 23365), (137, 23386), (138, 23404), (140, 23455), (144, 23536), (150, 23683),

Gene: Feyre_25 Start: 21078, Stop: 23576, Start Num: 6

Candidate Starts for Feyre_25:

(Start: 6 @21078 has 20 MA's), (9, 21138), (10, 21147), (15, 21288), (17, 21357), (20, 21441), (23, 21594), (24, 21618), (26, 21645), (30, 21687), (31, 21714), (32, 21726), (33, 21729), (34, 21738), (35, 21747), (36, 21774), (39, 21807), (40, 21828), (42, 21867), (47, 21918), (50, 21996), (51, 22074), (52, 22095), (56, 22176), (59, 22212), (60, 22233), (61, 22263), (62, 22275), (67, 22434), (71, 22494), (74, 22503), (75, 22518), (78, 22539), (80, 22611), (82, 22626), (85, 22656), (86, 22659), (89, 22683), (90, 22698), (92, 22725), (95, 22773), (99, 22803), (101, 22806), (102, 22818), (103, 22830), (106, 22887), (109, 22908), (110, 22920), (112, 22968), (113, 22995), (117, 23073), (118, 23076), (124, 23151), (126, 23163), (129, 23205), (130, 23208), (133, 23220), (145, 23421), (146, 23445), (147, 23454), (148, 23469), (150, 23562), (151, 23565),

Gene: Gengar_25 Start: 21185, Stop: 23683, Start Num: 6

Candidate Starts for Gengar_25:

(Start: 6 @21185 has 20 MA's), (9, 21245), (10, 21254), (15, 21395), (17, 21464), (20, 21548), (23, 21701), (24, 21725), (26, 21752), (30, 21794), (31, 21821), (32, 21833), (33, 21836), (34, 21845), (35, 21854), (36, 21881), (39, 21914), (40, 21935), (42, 21974), (47, 22025), (50, 22103), (51, 22181), (52, 22202), (55, 22247), (56, 22283), (59, 22319), (60, 22340), (61, 22370), (62, 22382), (67, 22541), (71, 22601), (74, 22610), (75, 22625), (78, 22646), (80, 22718), (82, 22733), (85, 22763), (86, 22766), (89, 22790), (90, 22805), (92, 22832), (95, 22880), (99, 22910), (101, 22913), (102, 22925), (103, 22937), (106, 22994), (109, 23015), (110, 23027), (112, 23075), (113, 23102), (117, 23180), (118, 23183), (124, 23258), (126, 23270), (129, 23312), (130, 23315), (133, 23327), (145, 23528), (146, 23552), (147, 23561), (148, 23576), (150, 23669), (151, 23672),

Gene: Guillsminger_25 Start: 21160, Stop: 23658, Start Num: 6

Candidate Starts for Guillsminger_25:

(Start: 6 @21160 has 20 MA's), (9, 21220), (10, 21229), (15, 21370), (17, 21439), (20, 21523), (23, 21676), (24, 21700), (26, 21727), (30, 21769), (31, 21796), (32, 21808), (33, 21811), (34, 21820), (35, 21829), (36, 21856), (39, 21889), (40, 21910), (42, 21949), (47, 22000), (50, 22078), (51, 22156), (54, 22213), (55, 22222), (56, 22258), (58, 22291), (59, 22294), (60, 22315), (61, 22345), (62, 22357), (67, 22516), (71, 22576), (74, 22585), (75, 22600), (78, 22621), (80, 22693), (82, 22708), (85, 22738), (86, 22741), (89, 22765), (90, 22780), (92, 22807), (95, 22855), (99, 22885), (101, 22888), (102, 22900), (103, 22912), (106, 22969), (109, 22990), (110, 23002), (112, 23050), (113, 23077), (117, 23155), (118, 23158), (124, 23233), (126, 23245), (129, 23287), (130, 23290), (133, 23302), (145, 23503), (146, 23527), (147, 23536), (148, 23551), (150, 23644), (151, 23647),

Gene: Heftyboy_25 Start: 21308, Stop: 23806, Start Num: 6

Candidate Starts for Heftyboy_25:

(Start: 6 @21308 has 20 MA's), (9, 21368), (10, 21377), (15, 21518), (17, 21587), (20, 21671), (23, 21824), (24, 21848), (26, 21875), (30, 21917), (31, 21944), (32, 21956), (33, 21959), (34, 21968), (35, 21977), (36, 22004), (39, 22037), (42, 22097), (47, 22148), (50, 22226), (51, 22304), (52, 22325), (55, 22370), (56, 22406), (59, 22442), (60, 22463), (61, 22493), (62, 22505), (67, 22664), (71, 22724), (74, 22733), (75, 22748), (78, 22769), (80, 22841), (82, 22856), (85, 22886), (86, 22889), (89, 22913), (90, 22928), (92, 22955), (95, 23003), (99, 23033), (101, 23036), (102, 23048), (103, 23060), (106, 23117), (109, 23138), (110, 23150), (112, 23198), (113, 23225), (117, 23303), (118, 23306), (124, 23381), (126, 23393), (129, 23435), (130, 23438), (133, 23450), (145, 23651), (146, 23675), (147, 23684), (148, 23699), (150, 23792), (151, 23795),

Gene: InvictusManeo_25 Start: 21260, Stop: 23770, Start Num: 6

Candidate Starts for InvictusManeo_25:

(Start: 6 @21260 has 20 MA's), (8, 21308), (9, 21320), (10, 21329), (17, 21539), (20, 21623), (23, 21776), (24, 21800), (27, 21830), (33, 21911), (34, 21920), (35, 21929), (36, 21956), (38, 21977), (40, 22010), (41, 22022), (42, 22049), (43, 22055), (47, 22100), (50, 22178), (51, 22256), (52, 22277), (55, 22322), (56, 22358), (59, 22394), (60, 22415), (61, 22445), (62, 22457), (64, 22577), (69, 22640), (70, 22664), (78, 22721), (79, 22778), (80, 22793), (83, 22814), (87, 22853), (100, 22994), (106, 23081), (111, 23147), (113, 23183), (114, 23216), (115, 23237), (119, 23273), (125, 23348), (126, 23351), (127, 23375), (131, 23408), (134, 23435), (137, 23456), (138, 23474), (140, 23528), (150, 23756),

Gene: Kratio_24 Start: 20891, Stop: 23401, Start Num: 6

Candidate Starts for Kratio_24:

(Start: 6 @20891 has 20 MA's), (8, 20939), (9, 20951), (10, 20960), (14, 21059), (17, 21170), (20, 21254), (23, 21407), (24, 21431), (27, 21461), (33, 21542), (34, 21551), (35, 21560), (36, 21587), (38, 21608), (40, 21641), (41, 21653), (42, 21680), (43, 21686), (47, 21731), (50, 21809), (51, 21887), (52, 21908), (55, 21953), (56, 21989), (59, 22025), (60, 22046), (61, 22076), (62, 22088), (64, 22208), (69, 22271), (70, 22295), (78, 22352), (79, 22409), (80, 22424), (83, 22445), (87, 22484), (100, 22625),

(106, 22712), (111, 22778), (113, 22814), (114, 22847), (115, 22868), (119, 22904), (125, 22979), (126, 22982), (127, 23006), (131, 23039), (134, 23066), (137, 23087), (138, 23105), (140, 23159), (150, 23387),

Gene: Larva_26 Start: 21061, Stop: 23565, Start Num: 6

Candidate Starts for Larva_26:

(Start: 6 @21061 has 20 MA's), (8, 21109), (9, 21121), (15, 21268), (17, 21337), (20, 21421), (23, 21574), (24, 21598), (26, 21625), (33, 21709), (34, 21718), (35, 21727), (36, 21754), (38, 21775), (40, 21808), (41, 21820), (42, 21847), (50, 21976), (51, 22054), (52, 22075), (55, 22120), (56, 22156), (57, 22168), (59, 22192), (61, 22243), (62, 22255), (63, 22333), (64, 22375), (69, 22438), (70, 22462), (79, 22576), (80, 22591), (83, 22612), (87, 22651), (100, 22792), (106, 22879), (108, 22888), (111, 22945), (113, 22981), (114, 23014), (115, 23035), (125, 23146), (126, 23149), (127, 23173), (128, 23197), (130, 23203), (131, 23206), (134, 23233), (137, 23254), (138, 23272), (140, 23323), (144, 23404), (150, 23551),

Gene: Leston_25 Start: 21290, Stop: 23788, Start Num: 6

Candidate Starts for Leston_25:

(Start: 6 @21290 has 20 MA's), (9, 21350), (10, 21359), (15, 21500), (17, 21569), (20, 21653), (23, 21806), (24, 21830), (26, 21857), (30, 21899), (31, 21926), (32, 21938), (33, 21941), (34, 21950), (35, 21959), (36, 21986), (39, 22019), (40, 22040), (42, 22079), (47, 22130), (50, 22208), (51, 22286), (54, 22343), (55, 22352), (56, 22388), (58, 22421), (59, 22424), (60, 22445), (61, 22475), (62, 22487), (67, 22646), (71, 22706), (74, 22715), (75, 22730), (78, 22751), (80, 22823), (82, 22838), (85, 22868), (86, 22871), (89, 22895), (90, 22910), (92, 22937), (95, 22985), (99, 23015), (101, 23018), (102, 23030), (103, 23042), (106, 23099), (109, 23120), (110, 23132), (112, 23180), (113, 23207), (117, 23285), (118, 23288), (124, 23363), (126, 23375), (129, 23417), (130, 23420), (133, 23432), (145, 23633), (146, 23657), (147, 23666), (148, 23681), (150, 23774), (151, 23777),

Gene: Miryou_25 Start: 21145, Stop: 23643, Start Num: 6

Candidate Starts for Miryou_25:

(Start: 6 @21145 has 20 MA's), (9, 21205), (10, 21214), (15, 21355), (17, 21424), (20, 21508), (23, 21661), (24, 21685), (26, 21712), (30, 21754), (31, 21781), (32, 21793), (33, 21796), (34, 21805), (35, 21814), (36, 21841), (39, 21874), (40, 21895), (42, 21934), (47, 21985), (50, 22063), (51, 22141), (52, 22162), (55, 22207), (56, 22243), (59, 22279), (60, 22300), (61, 22330), (62, 22342), (67, 22501), (71, 22561), (74, 22570), (75, 22585), (78, 22606), (80, 22678), (82, 22693), (85, 22723), (86, 22726), (89, 22750), (90, 22765), (92, 22792), (95, 22840), (99, 22870), (101, 22873), (102, 22885), (103, 22897), (106, 22954), (109, 22975), (110, 22987), (112, 23035), (113, 23062), (117, 23140), (118, 23143), (124, 23218), (126, 23230), (129, 23272), (130, 23275), (133, 23287), (145, 23488), (146, 23512), (147, 23521), (148, 23536), (150, 23629), (151, 23632),

Gene: OkiRoe_25 Start: 21161, Stop: 23659, Start Num: 6

Candidate Starts for OkiRoe_25:

(Start: 6 @21161 has 20 MA's), (9, 21221), (10, 21230), (15, 21371), (17, 21440), (20, 21524), (23, 21677), (24, 21701), (26, 21728), (30, 21770), (31, 21797), (32, 21809), (33, 21812), (34, 21821), (35, 21830), (36, 21857), (39, 21890), (42, 21950), (47, 22001), (50, 22079), (51, 22157), (52, 22178), (54, 22214), (55, 22223), (56, 22259), (58, 22292), (59, 22295), (60, 22316), (61, 22346), (62, 22358), (67, 22517), (71, 22577), (74, 22586), (75, 22601), (78, 22622), (80, 22694), (82, 22709), (85, 22739), (86, 22742), (90, 22781), (92, 22808), (95, 22856), (99, 22886), (101, 22889), (102, 22901), (103, 22913), (106, 22970), (109, 22991), (110, 23003), (112, 23051), (113, 23078), (117, 23156), (118, 23159), (124, 23234), (126, 23246), (129, 23288), (130, 23291), (133, 23303), (145, 23504), (146, 23528), (147, 23537), (148, 23552), (150, 23645), (151, 23648),

Gene: Omnicron_26 Start: 19980, Stop: 22484, Start Num: 6

Candidate Starts for Omnicron_26:

(Start: 6 @19980 has 20 MA's), (8, 20028), (9, 20040), (15, 20187), (17, 20256), (18, 20268), (23, 20493), (24, 20517), (25, 20523), (27, 20547), (29, 20580), (31, 20613), (33, 20628), (34, 20637), (35, 20646), (36, 20673), (38, 20694), (40, 20727), (41, 20739), (42, 20766), (44, 20802), (50, 20895), (51, 20973), (52, 20994), (54, 21030), (55, 21039), (56, 21075), (57, 21087), (58, 21108), (59, 21111), (60, 21132), (61, 21162), (62, 21174), (64, 21294), (65, 21300), (66, 21315), (69, 21357), (70, 21381), (78, 21438), (79, 21495), (80, 21510), (83, 21531), (84, 21540), (89, 21588), (92, 21633), (96, 21684), (100, 21711), (106, 21798), (113, 21900), (114, 21933), (115, 21954), (116, 21969), (119, 21990), (122, 22038), (125, 22065), (126, 22068), (127, 22092), (128, 22116), (130, 22122), (131, 22125), (132, 22128), (138, 22191), (140, 22242), (150, 22470),

Gene: Paola_25 Start: 21160, Stop: 23658, Start Num: 6

Candidate Starts for Paola_25:

(Start: 6 @21160 has 20 MA's), (9, 21220), (10, 21229), (15, 21370), (17, 21439), (20, 21523), (23, 21676), (24, 21700), (26, 21727), (30, 21769), (31, 21796), (32, 21808), (33, 21811), (34, 21820), (35, 21829), (36, 21856), (39, 21889), (40, 21910), (42, 21949), (47, 22000), (50, 22078), (51, 22156), (54, 22213), (55, 22222), (56, 22258), (58, 22291), (59, 22294), (60, 22315), (61, 22345), (62, 22357), (67, 22516), (71, 22576), (74, 22585), (75, 22600), (78, 22621), (80, 22693), (82, 22708), (85, 22738), (86, 22741), (89, 22765), (90, 22780), (92, 22807), (95, 22855), (99, 22885), (101, 22888), (102, 22900), (103, 22912), (106, 22969), (109, 22990), (110, 23002), (112, 23050), (113, 23077), (117, 23155), (118, 23158), (124, 23233), (126, 23245), (129, 23287), (130, 23290), (133, 23302), (145, 23503), (146, 23527), (147, 23536), (148, 23551), (150, 23644), (151, 23647),

Gene: Psycho_26 Start: 21191, Stop: 23695, Start Num: 6

Candidate Starts for Psycho_26:

(Start: 6 @21191 has 20 MA's), (8, 21239), (9, 21251), (15, 21398), (17, 21467), (20, 21551), (23, 21704), (24, 21728), (26, 21755), (33, 21839), (34, 21848), (35, 21857), (36, 21884), (38, 21905), (40, 21938), (41, 21950), (42, 21977), (50, 22106), (51, 22184), (52, 22205), (55, 22250), (56, 22286), (57, 22298), (59, 22322), (61, 22373), (62, 22385), (63, 22463), (64, 22505), (69, 22568), (70, 22592), (79, 22706), (80, 22721), (83, 22742), (87, 22781), (100, 22922), (106, 23009), (108, 23018), (111, 23075), (113, 23111), (114, 23144), (115, 23165), (125, 23276), (126, 23279), (127, 23303), (128, 23327), (130, 23333), (131, 23336), (134, 23363), (137, 23384), (138, 23402), (140, 23453), (144, 23534), (150, 23681),

Gene: Rando14_26 Start: 19880, Stop: 22384, Start Num: 6

Candidate Starts for Rando14_26:

(4, 19835), (Start: 6 @19880 has 20 MA's), (8, 19928), (9, 19940), (15, 20087), (17, 20156), (23, 20393), (24, 20417), (25, 20423), (27, 20447), (31, 20513), (33, 20528), (34, 20537), (35, 20546), (36, 20573), (38, 20594), (40, 20627), (42, 20666), (51, 20873), (52, 20894), (54, 20930), (55, 20939), (56, 20975), (58, 21008), (59, 21011), (60, 21032), (61, 21062), (62, 21074), (64, 21194), (65, 21200), (66, 21215), (67, 21230), (68, 21251), (69, 21257), (70, 21281), (78, 21338), (79, 21395), (80, 21410), (83, 21431), (84, 21440), (88, 21479), (89, 21488), (100, 21611), (106, 21698), (113, 21800), (114, 21833), (115, 21854), (116, 21869), (119, 21890), (121, 21932), (122, 21938), (125, 21965), (126, 21968), (127, 21992), (128, 22016), (130, 22022), (131, 22025), (132, 22028), (140, 22142), (142, 22160), (144, 22223), (150, 22370),

Gene: SoSeph_25 Start: 21308, Stop: 23806, Start Num: 6

Candidate Starts for SoSeph_25:

(Start: 6 @21308 has 20 MA's), (9, 21368), (10, 21377), (15, 21518), (17, 21587), (20, 21671), (23, 21824), (24, 21848), (26, 21875), (30, 21917), (31, 21944), (32, 21956), (33, 21959), (34, 21968), (35, 21977), (36, 22004), (39, 22037), (42, 22097), (47, 22148), (50, 22226), (51, 22304), (52, 22325), (55, 22370), (56, 22406), (59, 22442), (60, 22463), (61, 22493), (62, 22505), (67, 22664), (71, 22724), (74, 22733), (75, 22748), (78, 22769), (80, 22841), (82, 22856), (85, 22886), (86, 22889), (89, 22913), (90, 22928), (92, 22955), (95, 23003), (99, 23033), (101, 23036), (102, 23048), (103, 23060), (106, 23117),

(109, 23138), (110, 23150), (112, 23198), (113, 23225), (117, 23303), (118, 23306), (124, 23381), (126, 23393), (129, 23435), (130, 23438), (133, 23450), (145, 23651), (146, 23675), (147, 23684), (148, 23699), (150, 23792), (151, 23795),

Gene: Thyatira_25 Start: 21160, Stop: 23658, Start Num: 6

Candidate Starts for Thyatira_25:

(Start: 6 @21160 has 20 MA's), (9, 21220), (10, 21229), (15, 21370), (17, 21439), (20, 21523), (23, 21676), (24, 21700), (26, 21727), (30, 21769), (31, 21796), (32, 21808), (33, 21811), (34, 21820), (35, 21829), (36, 21856), (40, 21910), (42, 21949), (47, 22000), (50, 22078), (51, 22156), (52, 22177), (55, 22222), (56, 22258), (59, 22294), (60, 22315), (61, 22345), (62, 22357), (67, 22516), (71, 22576), (74, 22585), (75, 22600), (78, 22621), (80, 22693), (82, 22708), (85, 22738), (86, 22741), (89, 22765), (90, 22780), (92, 22807), (95, 22855), (99, 22885), (101, 22888), (102, 22900), (103, 22912), (106, 22969), (109, 22990), (110, 23002), (112, 23050), (113, 23077), (117, 23155), (118, 23158), (124, 23233), (126, 23245), (129, 23287), (130, 23290), (133, 23302), (145, 23503), (146, 23527), (147, 23536), (148, 23551), (150, 23644), (151, 23647),

Gene: Waterfoul_25 Start: 21181, Stop: 23679, Start Num: 6

Candidate Starts for Waterfoul_25:

(Start: 6 @21181 has 20 MA's), (9, 21241), (10, 21250), (15, 21391), (17, 21460), (20, 21544), (23, 21697), (24, 21721), (26, 21748), (30, 21790), (31, 21817), (32, 21829), (33, 21832), (34, 21841), (35, 21850), (36, 21877), (39, 21910), (40, 21931), (42, 21970), (47, 22021), (50, 22099), (51, 22177), (52, 22198), (55, 22243), (56, 22279), (59, 22315), (60, 22336), (61, 22366), (62, 22378), (67, 22537), (71, 22597), (74, 22606), (75, 22621), (78, 22642), (80, 22714), (82, 22729), (85, 22759), (86, 22762), (89, 22786), (90, 22801), (92, 22828), (95, 22876), (99, 22906), (101, 22909), (102, 22921), (103, 22933), (106, 22990), (109, 23011), (110, 23023), (112, 23071), (113, 23098), (117, 23176), (118, 23179), (124, 23254), (126, 23266), (129, 23308), (130, 23311), (133, 23323), (145, 23524), (146, 23548), (147, 23557), (148, 23572), (150, 23665), (151, 23668),