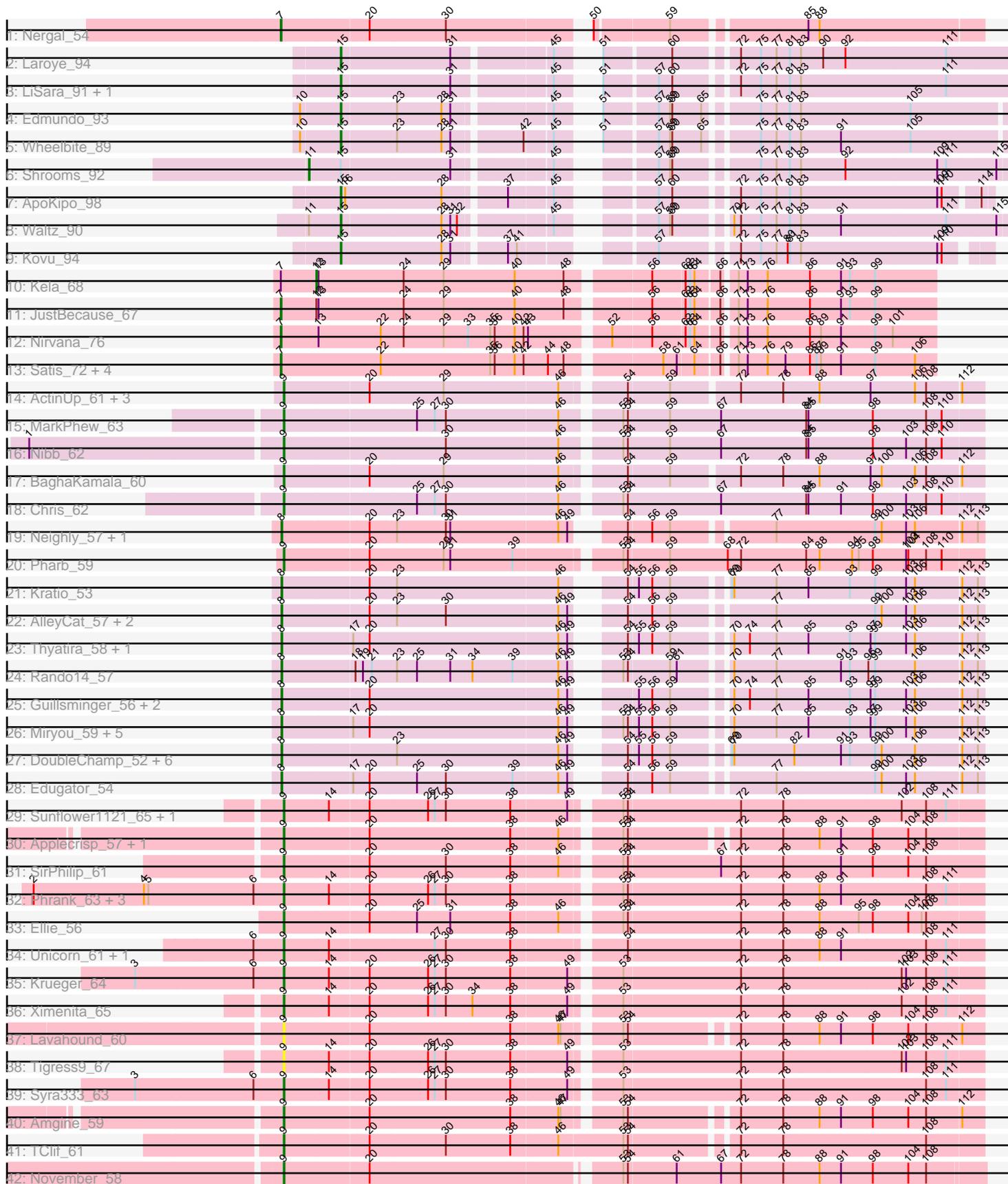


Pham 283763



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 283763 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283763 has 73 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Nergal_54
- Track 2 : Laroye_94
- Track 3 : LiSara_91, Salgado_94
- Track 4 : Edmundo_93
- Track 5 : Wheelbite_89
- Track 6 : Shrooms_92
- Track 7 : ApoKipo_98
- Track 8 : Waltz_90
- Track 9 : Kovu_94
- Track 10 : Kela_68
- Track 11 : JustBecause_67
- Track 12 : Nirvana_76
- Track 13 : Satis_72, EhyElimayoE_72, Quantum_71, Kradal_72, Sarkar_76
- Track 14 : ActinUp_61, Zabiza_56, Ramen_62, HedwigODU_61
- Track 15 : MarkPheW_63
- Track 16 : Nibb_62
- Track 17 : BaghaKamala_60
- Track 18 : Chris_62
- Track 19 : Neighly_57, Larva_56
- Track 20 : Pharb_59
- Track 21 : Kratio_53
- Track 22 : AlleyCat_57, Psycho_55, Dadosky_57
- Track 23 : Thyatira_58, Feyre_58
- Track 24 : Rando14_57
- Track 25 : Guillsminger_56, Leston_55, Paola_55
- Track 26 : Miryou_59, Gengar_55, OkiRoe_56, SoSeph_56, Heftyboy_56, Waterfoul_57
- Track 27 : DoubleChamp_52, BananenDer11_52, LilDirt_52, ViviJ_54, InvictusManeo_53, Collard_53, Agent47_55
- Track 28 : Edugator_54
- Track 29 : Sunflower1121_65, Shadow1_64
- Track 30 : Applecrisp_57, Fefferhead_58
- Track 31 : SirPhilip_61
- Track 32 : Phrank_63, Tierra_63, Bryler_63, Cain_63
- Track 33 : Ellie_56
- Track 34 : Unicorn_61, PhelpsODU_61
- Track 35 : Krueger_64

- Track 36 : Ximenita_65
- Track 37 : Lavahound_60
- Track 38 : Tigress9_67
- Track 39 : Syra333_63
- Track 40 : Amgine_59
- Track 41 : TClif_61
- Track 42 : November_58

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

The start number called the most often in the published annotations is 9, it was called in 27 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp_61, Amgine_59, Applecrisp_57, BaghaKamala_60, Bryler_63, Cain_63, Chris_62, Ellie_56, Fefferhead_58, HedwigODU_61, Krueger_64, Lavahound_60, MarkPhew_63, Nibb_62, November_58, Pharb_59, PhelpsODU_61, Phrank_63, Ramen_62, Shadow1_64, SirPhilip_61, Sunflower1121_65, Syra333_63, TClif_61, Tierra_63, Tigress9_67, Unicorn_61, Ximenita_65, Zabiza_56,

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

-

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

- Agent47_55, AlleyCat_57, ApoKipo_98, BananenDer11_52, Collard_53, Dadosky_57, DoubleChamp_52, Edmundo_93, Edugator_54, EhyElimayoE_72, Feyre_58, Gengar_55, Guillsminger_56, Heftyboy_56, InvictusManeo_53, JustBecause_67, Kela_68, Kovu_94, Kradal_72, Kratio_53, Laroye_94, Larva_56, Leston_55, LiSara_91, LilDirt_52, Miryou_59, Neighly_57, Nergal_54, Nirvana_76, OkiRoe_56, Paola_55, Psycho_55, Quantum_71, Rando14_57, Salgado_94, Sarkar_76, Satis_72, Shrooms_92, SoSeph_56, Thyatira_58, ViviJ_54, Waltz_90, Waterfoul_57, Wheelbite_89,

Summary by start number:

Start 7:

- Found in 9 of 73 (12.3%) of genes in pham
- Manual Annotations of this start: 7 of 66
- Called 88.9% of time when present
- Phage (with cluster) where this start called: EhyElimayoE_72 (BM), JustBecause_67 (BM), Kradal_72 (BM), Nergal_54 (AG), Nirvana_76 (BM), Quantum_71 (BM), Sarkar_76 (BM), Satis_72 (BM),

Start 8:

- Found in 26 of 73 (35.6%) of genes in pham
- Manual Annotations of this start: 22 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agent47_55 (K5), AlleyCat_57 (K5), BananenDer11_52 (K5), Collard_53 (K5), Dadosky_57 (K5), DoubleChamp_52 (K5), Edugator_54 (K5), Feyre_58 (K5), Gengar_55 (K5), Guillsminger_56 (K5),

Heftyboy_56 (K5), InvictusManeo_53 (K5), Kratio_53 (K5), Larva_56 (K5), Leston_55 (K5), LilDirt_52 (K5), Miryou_59 (K5), Neighly_57 (K3), OkiRoe_56 (K5), Paola_55 (K5), Psycho_55 (K5), Rando14_57 (K5), SoSeph_56 (K5), Thyatira_58 (K5), ViviJ_54 (K5), Waterfoul_57 (K5),

Start 9:

- Found in 29 of 73 (39.7%) of genes in pham
- Manual Annotations of this start: 27 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ActinUp_61 (K1), Amgine_59 (K6), Applecrisp_57 (K6), BaghaKamala_60 (K1), Bryler_63 (K6), Cain_63 (K6), Chris_62 (K1), Ellie_56 (K6), Fefferhead_58 (K6), HedwigODU_61 (K1), Krueger_64 (K6), Lavahound_60 (K6), MarkPhew_63 (K1), Nibb_62 (K1), November_58 (K6), Pharb_59 (K3), PhelpsODU_61 (K6), Phrank_63 (K6), Ramen_62 (K1), Shadow1_64 (K6), SirPhilip_61 (K6), Sunflower1121_65 (K6), Syra333_63 (K6), TClif_61 (K6), Tierra_63 (K6), Tigress9_67 (K6), Unicorn_61 (K6), Ximenita_65 (K6), Zabiza_56 (K1),

Start 11:

- Found in 2 of 73 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Shrooms_92 (AL),

Start 12:

- Found in 2 of 73 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Kela_68 (BM),

Start 15:

- Found in 9 of 73 (12.3%) of genes in pham
- Manual Annotations of this start: 8 of 66
- Called 88.9% of time when present
- Phage (with cluster) where this start called: ApoKipo_98 (AL), Edmundo_93 (AL), Kovu_94 (AL), Laroye_94 (AL), LiSara_91 (AL), Salgado_94 (AL), Waltz_90 (AL), Wheelbite_89 (AL),

Summary by clusters:

There are 7 clusters represented in this pham: AG, BM, AL, K3, K1, K6, K5,

Info for manual annotations of cluster AG:

- Start number 7 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AL:

- Start number 11 was manually annotated 1 time for cluster AL.
- Start number 15 was manually annotated 8 times for cluster AL.

Info for manual annotations of cluster BM:

- Start number 7 was manually annotated 6 times for cluster BM.
- Start number 12 was manually annotated 1 time for cluster BM.

Info for manual annotations of cluster K1:

- Start number 9 was manually annotated 8 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 9 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K5:

- Start number 8 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 9 was manually annotated 18 times for cluster K6.

Gene Information:

Gene: ActinUp_61 Start: 41286, Stop: 42173, Start Num: 9

Candidate Starts for ActinUp_61:

(Start: 9 @41286 has 27 MA's), (20, 41397), (29, 41496), (46, 41646), (54, 41718), (59, 41772), (72, 41856), (78, 41913), (88, 41961), (97, 42027), (106, 42087), (108, 42102), (112, 42144),

Gene: Agent47_55 Start: 38528, Stop: 39388, Start Num: 8

Candidate Starts for Agent47_55:

(Start: 8 @38528 has 22 MA's), (23, 38678), (46, 38891), (49, 38903), (54, 38942), (55, 38954), (56, 38972), (59, 38996), (69, 39059), (70, 39062), (82, 39143), (91, 39203), (93, 39215), (99, 39248), (100, 39257), (106, 39302), (112, 39359), (113, 39380),

Gene: AlleyCat_57 Start: 38832, Stop: 39692, Start Num: 8

Candidate Starts for AlleyCat_57:

(Start: 8 @38832 has 22 MA's), (20, 38946), (23, 38982), (30, 39048), (46, 39195), (49, 39207), (54, 39246), (56, 39276), (59, 39300), (77, 39423), (99, 39552), (100, 39561), (103, 39594), (106, 39606), (112, 39663), (113, 39684),

Gene: Amgine_59 Start: 41956, Stop: 42834, Start Num: 9

Candidate Starts for Amgine_59:

(Start: 9 @41956 has 27 MA's), (20, 42067), (38, 42256), (46, 42316), (47, 42319), (53, 42382), (54, 42388), (72, 42517), (78, 42574), (88, 42622), (91, 42649), (98, 42691), (104, 42739), (108, 42763), (112, 42805),

Gene: ApoKipo_98 Start: 55915, Stop: 56679, Start Num: 15

Candidate Starts for ApoKipo_98:

(Start: 15 @55915 has 8 MA's), (16, 55921), (28, 56050), (37, 56122), (45, 56176), (57, 56266), (60, 56284), (72, 56356), (75, 56383), (77, 56404), (81, 56422), (83, 56437), (109, 56620), (110, 56626), (114, 56665),

Gene: Applecrisp_57 Start: 41096, Stop: 41974, Start Num: 9

Candidate Starts for Applecrisp_57:

(Start: 9 @41096 has 27 MA's), (20, 41207), (38, 41396), (46, 41456), (53, 41522), (54, 41528), (72, 41657), (78, 41714), (88, 41762), (91, 41789), (98, 41831), (104, 41879), (108, 41903),

Gene: BaghaKamala_60 Start: 40637, Stop: 41524, Start Num: 9

Candidate Starts for BaghaKamala_60:

(Start: 9 @40637 has 27 MA's), (20, 40748), (29, 40847), (46, 40997), (54, 41069), (59, 41123), (72, 41207), (78, 41264), (88, 41312), (97, 41378), (100, 41393), (106, 41438), (108, 41453), (112, 41495),

Gene: BananenDer11_52 Start: 38489, Stop: 39349, Start Num: 8

Candidate Starts for BananenDer11_52:

(Start: 8 @38489 has 22 MA's), (23, 38639), (46, 38852), (49, 38864), (54, 38903), (55, 38915), (56, 38933), (59, 38957), (69, 39020), (70, 39023), (82, 39104), (91, 39164), (93, 39176), (99, 39209), (100, 39218), (106, 39263), (112, 39320), (113, 39341),

Gene: Bryler_63 Start: 40754, Stop: 41653, Start Num: 9

Candidate Starts for Bryler_63:

(2, 40424), (4, 40571), (5, 40577), (6, 40715), (Start: 9 @40754 has 27 MA's), (14, 40814), (20, 40865), (26, 40943), (27, 40952), (30, 40967), (38, 41054), (53, 41180), (54, 41186), (72, 41336), (78, 41393), (88, 41441), (91, 41468), (108, 41582), (111, 41606),

Gene: Cain_63 Start: 40742, Stop: 41641, Start Num: 9

Candidate Starts for Cain_63:

(2, 40412), (4, 40559), (5, 40565), (6, 40703), (Start: 9 @40742 has 27 MA's), (14, 40802), (20, 40853), (26, 40931), (27, 40940), (30, 40955), (38, 41042), (53, 41168), (54, 41174), (72, 41324), (78, 41381), (88, 41429), (91, 41456), (108, 41570), (111, 41594),

Gene: Chris_62 Start: 41865, Stop: 42770, Start Num: 9

Candidate Starts for Chris_62:

(Start: 9 @41865 has 27 MA's), (25, 42039), (27, 42063), (30, 42078), (46, 42225), (53, 42294), (54, 42300), (67, 42426), (84, 42540), (85, 42543), (91, 42585), (98, 42627), (103, 42672), (108, 42699), (110, 42717),

Gene: Collard_53 Start: 38489, Stop: 39349, Start Num: 8

Candidate Starts for Collard_53:

(Start: 8 @38489 has 22 MA's), (23, 38639), (46, 38852), (49, 38864), (54, 38903), (55, 38915), (56, 38933), (59, 38957), (69, 39020), (70, 39023), (82, 39104), (91, 39164), (93, 39176), (99, 39209), (100, 39218), (106, 39263), (112, 39320), (113, 39341),

Gene: Dadosky_57 Start: 38834, Stop: 39694, Start Num: 8

Candidate Starts for Dadosky_57:

(Start: 8 @38834 has 22 MA's), (20, 38948), (23, 38984), (30, 39050), (46, 39197), (49, 39209), (54, 39248), (56, 39278), (59, 39302), (77, 39425), (99, 39554), (100, 39563), (103, 39596), (106, 39608), (112, 39665), (113, 39686),

Gene: DoubleChamp_52 Start: 38489, Stop: 39349, Start Num: 8

Candidate Starts for DoubleChamp_52:

(Start: 8 @38489 has 22 MA's), (23, 38639), (46, 38852), (49, 38864), (54, 38903), (55, 38915), (56, 38933), (59, 38957), (69, 39020), (70, 39023), (82, 39104), (91, 39164), (93, 39176), (99, 39209), (100, 39218), (106, 39263), (112, 39320), (113, 39341),

Gene: Edmundo_93 Start: 54507, Stop: 55298, Start Num: 15

Candidate Starts for Edmundo_93:

(10, 54456), (Start: 15 @54507 has 8 MA's), (23, 54579), (28, 54639), (31, 54651), (45, 54765), (51, 54789), (57, 54855), (59, 54870), (60, 54873), (65, 54912), (75, 54972), (77, 54993), (81, 55011), (83, 55026), (105, 55173),

Gene: Edugator_54 Start: 40255, Stop: 41115, Start Num: 8

Candidate Starts for Edugator_54:

(Start: 8 @40255 has 22 MA's), (17, 40348), (20, 40369), (25, 40432), (30, 40471), (39, 40561), (46, 40618), (49, 40630), (54, 40669), (56, 40699), (59, 40723), (77, 40846), (99, 40975), (100, 40984), (103, 41017), (106, 41029), (112, 41086), (113, 41107),

Gene: EhyElimayoE_72 Start: 53494, Stop: 52652, Start Num: 7

Candidate Starts for EhyElimayoE_72:

(Start: 7 @53494 has 7 MA's), (22, 53359), (35, 53212), (36, 53206), (40, 53179), (42, 53167), (44, 53134), (48, 53113), (58, 52999), (61, 52981), (64, 52960), (66, 52930), (71, 52915), (73, 52903), (76, 52876), (79, 52852), (86, 52819), (87, 52810), (89, 52804), (91, 52777), (99, 52732), (106, 52678),

Gene: Ellie_56 Start: 40800, Stop: 41699, Start Num: 9

Candidate Starts for Ellie_56:

(Start: 9 @40800 has 27 MA's), (20, 40911), (25, 40974), (31, 41019), (38, 41100), (46, 41160), (53, 41226), (54, 41232), (72, 41382), (78, 41439), (88, 41487), (95, 41538), (98, 41556), (104, 41604), (107, 41622), (108, 41628),

Gene: Fefferhead_58 Start: 40735, Stop: 41613, Start Num: 9

Candidate Starts for Fefferhead_58:

(Start: 9 @40735 has 27 MA's), (20, 40846), (38, 41035), (46, 41095), (53, 41161), (54, 41167), (72, 41296), (78, 41353), (88, 41401), (91, 41428), (98, 41470), (104, 41518), (108, 41542),

Gene: Feyre_58 Start: 42214, Stop: 43074, Start Num: 8

Candidate Starts for Feyre_58:

(Start: 8 @42214 has 22 MA's), (17, 42307), (20, 42328), (46, 42577), (49, 42589), (54, 42628), (55, 42640), (56, 42658), (59, 42682), (70, 42748), (74, 42769), (77, 42805), (85, 42847), (93, 42901), (97, 42928), (99, 42934), (103, 42976), (106, 42988), (112, 43045), (113, 43066),

Gene: Gengar_55 Start: 40233, Stop: 41093, Start Num: 8

Candidate Starts for Gengar_55:

(Start: 8 @40233 has 22 MA's), (17, 40326), (20, 40347), (46, 40596), (49, 40608), (53, 40641), (54, 40647), (55, 40659), (56, 40677), (59, 40701), (70, 40767), (77, 40824), (85, 40866), (93, 40920), (97, 40947), (99, 40953), (103, 40995), (106, 41007), (112, 41064), (113, 41085),

Gene: Guillsminger_56 Start: 40204, Stop: 41064, Start Num: 8

Candidate Starts for Guillsminger_56:

(Start: 8 @40204 has 22 MA's), (20, 40318), (46, 40567), (49, 40579), (55, 40630), (56, 40648), (59, 40672), (70, 40738), (74, 40759), (77, 40795), (85, 40837), (93, 40891), (97, 40918), (99, 40924), (103, 40966), (106, 40978), (112, 41035), (113, 41056),

Gene: HedwigODU_61 Start: 41286, Stop: 42173, Start Num: 9

Candidate Starts for HedwigODU_61:

(Start: 9 @41286 has 27 MA's), (20, 41397), (29, 41496), (46, 41646), (54, 41718), (59, 41772), (72, 41856), (78, 41913), (88, 41961), (97, 42027), (106, 42087), (108, 42102), (112, 42144),

Gene: Heftyboy_56 Start: 40576, Stop: 41436, Start Num: 8

Candidate Starts for Heftyboy_56:

(Start: 8 @40576 has 22 MA's), (17, 40669), (20, 40690), (46, 40939), (49, 40951), (53, 40984), (54, 40990), (55, 41002), (56, 41020), (59, 41044), (70, 41110), (77, 41167), (85, 41209), (93, 41263), (97, 41290), (99, 41296), (103, 41338), (106, 41350), (112, 41407), (113, 41428),

Gene: InvictusManeo_53 Start: 38532, Stop: 39392, Start Num: 8

Candidate Starts for InvictusManeo_53:

(Start: 8 @38532 has 22 MA's), (23, 38682), (46, 38895), (49, 38907), (54, 38946), (55, 38958), (56, 38976), (59, 39000), (69, 39063), (70, 39066), (82, 39147), (91, 39207), (93, 39219), (99, 39252), (100, 39261), (106, 39306), (112, 39363), (113, 39384),

Gene: JustBecause_67 Start: 50858, Stop: 50016, Start Num: 7

Candidate Starts for JustBecause_67:

(Start: 7 @50858 has 7 MA's), (Start: 12 @50810 has 1 MA's), (13, 50807), (24, 50693), (29, 50639), (40, 50543), (48, 50477), (56, 50378), (62, 50336), (63, 50330), (64, 50324), (66, 50294), (71, 50279), (73, 50267), (76, 50240), (86, 50183), (91, 50141), (93, 50129), (99, 50096),

Gene: Kela_68 Start: 50675, Stop: 49881, Start Num: 12

Candidate Starts for Kela_68:

(Start: 7 @50723 has 7 MA's), (Start: 12 @50675 has 1 MA's), (13, 50672), (24, 50558), (29, 50504), (40, 50408), (48, 50342), (56, 50243), (62, 50201), (63, 50195), (64, 50189), (66, 50159), (71, 50144), (73, 50132), (76, 50105), (86, 50048), (91, 50006), (93, 49994), (99, 49961),

Gene: Kovu_94 Start: 55384, Stop: 56145, Start Num: 15

Candidate Starts for Kovu_94:

(Start: 15 @55384 has 8 MA's), (28, 55519), (31, 55531), (37, 55591), (41, 55603), (57, 55735), (72, 55825), (75, 55852), (77, 55873), (80, 55888), (81, 55891), (83, 55906), (109, 56089), (110, 56095),

Gene: Kradal_72 Start: 53494, Stop: 52652, Start Num: 7

Candidate Starts for Kradal_72:

(Start: 7 @53494 has 7 MA's), (22, 53359), (35, 53212), (36, 53206), (40, 53179), (42, 53167), (44, 53134), (48, 53113), (58, 52999), (61, 52981), (64, 52960), (66, 52930), (71, 52915), (73, 52903), (76, 52876), (79, 52852), (86, 52819), (87, 52810), (89, 52804), (91, 52777), (99, 52732), (106, 52678),

Gene: Kratio_53 Start: 38274, Stop: 39134, Start Num: 8

Candidate Starts for Kratio_53:

(Start: 8 @38274 has 22 MA's), (20, 38388), (23, 38424), (46, 38637), (54, 38688), (55, 38700), (56, 38718), (59, 38742), (69, 38805), (70, 38808), (77, 38865), (85, 38907), (93, 38961), (99, 38994), (103, 39036), (106, 39048), (112, 39105), (113, 39126),

Gene: Krueger_64 Start: 41010, Stop: 41909, Start Num: 9

Candidate Starts for Krueger_64:

(3, 40815), (6, 40971), (Start: 9 @41010 has 27 MA's), (14, 41070), (20, 41121), (26, 41199), (27, 41208), (30, 41223), (38, 41310), (49, 41382), (53, 41436), (72, 41592), (78, 41649), (102, 41805), (103, 41811), (108, 41838), (111, 41862),

Gene: Laroye_94 Start: 54308, Stop: 55111, Start Num: 15

Candidate Starts for Laroye_94:

(Start: 15 @54308 has 8 MA's), (31, 54452), (45, 54569), (51, 54593), (60, 54677), (72, 54749), (75, 54776), (77, 54797), (81, 54815), (83, 54830), (90, 54860), (92, 54890), (111, 55025),

Gene: Larva_56 Start: 39706, Stop: 40566, Start Num: 8

Candidate Starts for Larva_56:

(Start: 8 @39706 has 22 MA's), (20, 39820), (23, 39856), (30, 39922), (31, 39928), (46, 40069), (49, 40081), (54, 40120), (56, 40150), (59, 40174), (77, 40297), (99, 40426), (100, 40435), (103, 40468), (106, 40480), (112, 40537), (113, 40558),

Gene: Lavahound_60 Start: 42095, Stop: 42973, Start Num: 9

Candidate Starts for Lavahound_60:

(Start: 9 @42095 has 27 MA's), (20, 42206), (38, 42395), (46, 42455), (47, 42458), (53, 42521), (54, 42527), (72, 42656), (78, 42713), (88, 42761), (91, 42788), (98, 42830), (104, 42878), (108, 42902), (112, 42944),

Gene: Leston_55 Start: 40333, Stop: 41193, Start Num: 8

Candidate Starts for Leston_55:

(Start: 8 @40333 has 22 MA's), (20, 40447), (46, 40696), (49, 40708), (55, 40759), (56, 40777), (59, 40801), (70, 40867), (74, 40888), (77, 40924), (85, 40966), (93, 41020), (97, 41047), (99, 41053), (103, 41095), (106, 41107), (112, 41164), (113, 41185),

Gene: LiSara_91 Start: 54440, Stop: 55243, Start Num: 15

Candidate Starts for LiSara_91:

(Start: 15 @54440 has 8 MA's), (31, 54584), (45, 54701), (51, 54725), (57, 54791), (60, 54809), (72, 54881), (75, 54908), (77, 54929), (81, 54947), (83, 54962), (111, 55157),

Gene: LilDirt_52 Start: 38290, Stop: 39150, Start Num: 8

Candidate Starts for LilDirt_52:

(Start: 8 @38290 has 22 MA's), (23, 38440), (46, 38653), (49, 38665), (54, 38704), (55, 38716), (56, 38734), (59, 38758), (69, 38821), (70, 38824), (82, 38905), (91, 38965), (93, 38977), (99, 39010), (100, 39019), (106, 39064), (112, 39121), (113, 39142),

Gene: MarkPhew_63 Start: 41511, Stop: 42416, Start Num: 9

Candidate Starts for MarkPhew_63:

(Start: 9 @41511 has 27 MA's), (25, 41685), (27, 41709), (30, 41724), (46, 41871), (53, 41940), (54, 41946), (59, 42003), (67, 42072), (84, 42186), (85, 42189), (98, 42273), (108, 42345), (110, 42363),

Gene: Miryou_59 Start: 42930, Stop: 43790, Start Num: 8

Candidate Starts for Miryou_59:

(Start: 8 @42930 has 22 MA's), (17, 43023), (20, 43044), (46, 43293), (49, 43305), (53, 43338), (54, 43344), (55, 43356), (56, 43374), (59, 43398), (70, 43464), (77, 43521), (85, 43563), (93, 43617), (97, 43644), (99, 43650), (103, 43692), (106, 43704), (112, 43761), (113, 43782),

Gene: Neighly_57 Start: 39705, Stop: 40565, Start Num: 8

Candidate Starts for Neighly_57:

(Start: 8 @39705 has 22 MA's), (20, 39819), (23, 39855), (30, 39921), (31, 39927), (46, 40068), (49, 40080), (54, 40119), (56, 40149), (59, 40173), (77, 40296), (99, 40425), (100, 40434), (103, 40467), (106, 40479), (112, 40536), (113, 40557),

Gene: Nergal_54 Start: 38056, Stop: 38922, Start Num: 7

Candidate Starts for Nergal_54:

(Start: 7 @38056 has 7 MA's), (20, 38167), (30, 38269), (50, 38437), (59, 38530), (85, 38695), (88, 38710),

Gene: Nibb_62 Start: 41203, Stop: 42108, Start Num: 9

Candidate Starts for Nibb_62:

(1, 40876), (Start: 9 @41203 has 27 MA's), (30, 41416), (46, 41563), (53, 41632), (54, 41638), (59, 41695), (67, 41764), (84, 41878), (85, 41881), (98, 41965), (103, 42010), (108, 42037), (110, 42055),

Gene: Nirvana_76 Start: 55587, Stop: 54745, Start Num: 7

Candidate Starts for Nirvana_76:

(Start: 7 @55587 has 7 MA's), (13, 55536), (22, 55452), (24, 55422), (29, 55368), (33, 55335), (35, 55305), (36, 55299), (40, 55272), (42, 55260), (43, 55254), (52, 55158), (56, 55107), (62, 55065), (63, 55059), (64, 55053), (66, 55023), (71, 55008), (73, 54996), (76, 54969), (86, 54912), (89, 54897), (91,

54870), (99, 54825), (101, 54801),

Gene: November_58 Start: 41306, Stop: 42199, Start Num: 9

Candidate Starts for November_58:

(Start: 9 @41306 has 27 MA's), (20, 41417), (53, 41726), (54, 41732), (61, 41795), (67, 41855), (72, 41882), (78, 41939), (88, 41987), (91, 42014), (98, 42056), (104, 42104), (108, 42128),

Gene: OkiRoe_56 Start: 40601, Stop: 41461, Start Num: 8

Candidate Starts for OkiRoe_56:

(Start: 8 @40601 has 22 MA's), (17, 40694), (20, 40715), (46, 40964), (49, 40976), (53, 41009), (54, 41015), (55, 41027), (56, 41045), (59, 41069), (70, 41135), (77, 41192), (85, 41234), (93, 41288), (97, 41315), (99, 41321), (103, 41363), (106, 41375), (112, 41432), (113, 41453),

Gene: Paola_55 Start: 40204, Stop: 41064, Start Num: 8

Candidate Starts for Paola_55:

(Start: 8 @40204 has 22 MA's), (20, 40318), (46, 40567), (49, 40579), (55, 40630), (56, 40648), (59, 40672), (70, 40738), (74, 40759), (77, 40795), (85, 40837), (93, 40891), (97, 40918), (99, 40924), (103, 40966), (106, 40978), (112, 41035), (113, 41056),

Gene: Pharb_59 Start: 40578, Stop: 41477, Start Num: 9

Candidate Starts for Pharb_59:

(Start: 9 @40578 has 27 MA's), (20, 40689), (29, 40788), (31, 40797), (39, 40881), (53, 41004), (54, 41010), (59, 41064), (68, 41142), (72, 41160), (84, 41247), (88, 41265), (94, 41307), (95, 41316), (98, 41334), (103, 41379), (104, 41382), (108, 41406), (110, 41424),

Gene: PhelpsODU_61 Start: 40671, Stop: 41570, Start Num: 9

Candidate Starts for PhelpsODU_61:

(6, 40632), (Start: 9 @40671 has 27 MA's), (14, 40731), (27, 40869), (30, 40884), (38, 40971), (54, 41103), (72, 41253), (78, 41310), (88, 41358), (91, 41385), (108, 41499), (111, 41523),

Gene: Phrank_63 Start: 40732, Stop: 41631, Start Num: 9

Candidate Starts for Phrank_63:

(2, 40402), (4, 40549), (5, 40555), (6, 40693), (Start: 9 @40732 has 27 MA's), (14, 40792), (20, 40843), (26, 40921), (27, 40930), (30, 40945), (38, 41032), (53, 41158), (54, 41164), (72, 41314), (78, 41371), (88, 41419), (91, 41446), (108, 41560), (111, 41584),

Gene: Psycho_55 Start: 38831, Stop: 39691, Start Num: 8

Candidate Starts for Psycho_55:

(Start: 8 @38831 has 22 MA's), (20, 38945), (23, 38981), (30, 39047), (46, 39194), (49, 39206), (54, 39245), (56, 39275), (59, 39299), (77, 39422), (99, 39551), (100, 39560), (103, 39593), (106, 39605), (112, 39662), (113, 39683),

Gene: Quantum_71 Start: 53494, Stop: 52652, Start Num: 7

Candidate Starts for Quantum_71:

(Start: 7 @53494 has 7 MA's), (22, 53359), (35, 53212), (36, 53206), (40, 53179), (42, 53167), (44, 53134), (48, 53113), (58, 52999), (61, 52981), (64, 52960), (66, 52930), (71, 52915), (73, 52903), (76, 52876), (79, 52852), (86, 52819), (87, 52810), (89, 52804), (91, 52777), (99, 52732), (106, 52678),

Gene: Ramen_62 Start: 41288, Stop: 42175, Start Num: 9

Candidate Starts for Ramen_62:

(Start: 9 @41288 has 27 MA's), (20, 41399), (29, 41498), (46, 41648), (54, 41720), (59, 41774), (72, 41858), (78, 41915), (88, 41963), (97, 42029), (106, 42089), (108, 42104), (112, 42146),

Gene: Rando14_57 Start: 38404, Stop: 39264, Start Num: 8

Candidate Starts for Rando14_57:

(Start: 8 @38404 has 22 MA's), (18, 38500), (19, 38509), (21, 38521), (23, 38554), (25, 38581), (31, 38626), (34, 38656), (39, 38710), (46, 38767), (49, 38779), (53, 38812), (54, 38818), (59, 38872), (61, 38881), (70, 38938), (77, 38995), (91, 39079), (93, 39091), (96, 39115), (99, 39124), (106, 39178), (112, 39235), (113, 39256),

Gene: Salgado_94 Start: 54110, Stop: 54913, Start Num: 15

Candidate Starts for Salgado_94:

(Start: 15 @54110 has 8 MA's), (31, 54254), (45, 54371), (51, 54395), (57, 54461), (60, 54479), (72, 54551), (75, 54578), (77, 54599), (81, 54617), (83, 54632), (111, 54827),

Gene: Sarkar_76 Start: 53494, Stop: 52652, Start Num: 7

Candidate Starts for Sarkar_76:

(Start: 7 @53494 has 7 MA's), (22, 53359), (35, 53212), (36, 53206), (40, 53179), (42, 53167), (44, 53134), (48, 53113), (58, 52999), (61, 52981), (64, 52960), (66, 52930), (71, 52915), (73, 52903), (76, 52876), (79, 52852), (86, 52819), (87, 52810), (89, 52804), (91, 52777), (99, 52732), (106, 52678),

Gene: Satis_72 Start: 53490, Stop: 52648, Start Num: 7

Candidate Starts for Satis_72:

(Start: 7 @53490 has 7 MA's), (22, 53355), (35, 53208), (36, 53202), (40, 53175), (42, 53163), (44, 53130), (48, 53109), (58, 52995), (61, 52977), (64, 52956), (66, 52926), (71, 52911), (73, 52899), (76, 52872), (79, 52848), (86, 52815), (87, 52806), (89, 52800), (91, 52773), (99, 52728), (106, 52674),

Gene: Shadow1_64 Start: 41184, Stop: 42083, Start Num: 9

Candidate Starts for Shadow1_64:

(Start: 9 @41184 has 27 MA's), (14, 41244), (20, 41295), (26, 41373), (27, 41382), (30, 41397), (38, 41484), (49, 41556), (53, 41610), (54, 41616), (72, 41766), (78, 41823), (102, 41979), (108, 42012), (111, 42036),

Gene: Shrooms_92 Start: 53698, Stop: 54537, Start Num: 11

Candidate Starts for Shrooms_92:

(Start: 11 @53698 has 1 MA's), (Start: 15 @53740 has 8 MA's), (31, 53884), (45, 53998), (57, 54088), (59, 54103), (60, 54106), (75, 54205), (77, 54226), (81, 54244), (83, 54259), (92, 54319), (109, 54442), (111, 54454), (115, 54520),

Gene: SirPhilip_61 Start: 41827, Stop: 42729, Start Num: 9

Candidate Starts for SirPhilip_61:

(Start: 9 @41827 has 27 MA's), (20, 41938), (30, 42040), (38, 42127), (46, 42187), (53, 42253), (54, 42259), (67, 42382), (72, 42409), (78, 42466), (91, 42541), (98, 42583), (104, 42631), (108, 42655),

Gene: SoSeph_56 Start: 40576, Stop: 41436, Start Num: 8

Candidate Starts for SoSeph_56:

(Start: 8 @40576 has 22 MA's), (17, 40669), (20, 40690), (46, 40939), (49, 40951), (53, 40984), (54, 40990), (55, 41002), (56, 41020), (59, 41044), (70, 41110), (77, 41167), (85, 41209), (93, 41263), (97, 41290), (99, 41296), (103, 41338), (106, 41350), (112, 41407), (113, 41428),

Gene: Sunflower1121_65 Start: 41330, Stop: 42229, Start Num: 9

Candidate Starts for Sunflower1121_65:

(Start: 9 @41330 has 27 MA's), (14, 41390), (20, 41441), (26, 41519), (27, 41528), (30, 41543), (38, 41630), (49, 41702), (53, 41756), (54, 41762), (72, 41912), (78, 41969), (102, 42125), (108, 42158), (111, 42182),

Gene: Syra333_63 Start: 41022, Stop: 41921, Start Num: 9

Candidate Starts for Syra333_63:

(3, 40827), (6, 40983), (Start: 9 @41022 has 27 MA's), (14, 41082), (20, 41133), (26, 41211), (27, 41220), (30, 41235), (38, 41322), (49, 41394), (53, 41448), (72, 41604), (78, 41661), (108, 41850), (111, 41874),

Gene: TClif_61 Start: 40980, Stop: 41876, Start Num: 9

Candidate Starts for TClif_61:

(Start: 9 @40980 has 27 MA's), (20, 41091), (30, 41193), (38, 41280), (46, 41340), (53, 41424), (54, 41430), (72, 41559), (78, 41616), (108, 41805),

Gene: Thyatira_58 Start: 42534, Stop: 43394, Start Num: 8

Candidate Starts for Thyatira_58:

(Start: 8 @42534 has 22 MA's), (17, 42627), (20, 42648), (46, 42897), (49, 42909), (54, 42948), (55, 42960), (56, 42978), (59, 43002), (70, 43068), (74, 43089), (77, 43125), (85, 43167), (93, 43221), (97, 43248), (99, 43254), (103, 43296), (106, 43308), (112, 43365), (113, 43386),

Gene: Tierra_63 Start: 41543, Stop: 42442, Start Num: 9

Candidate Starts for Tierra_63:

(2, 41213), (4, 41360), (5, 41366), (6, 41504), (Start: 9 @41543 has 27 MA's), (14, 41603), (20, 41654), (26, 41732), (27, 41741), (30, 41756), (38, 41843), (53, 41969), (54, 41975), (72, 42125), (78, 42182), (88, 42230), (91, 42257), (108, 42371), (111, 42395),

Gene: Tigress9_67 Start: 41339, Stop: 42238, Start Num: 9

Candidate Starts for Tigress9_67:

(Start: 9 @41339 has 27 MA's), (14, 41399), (20, 41450), (26, 41528), (27, 41537), (30, 41552), (38, 41639), (49, 41711), (53, 41765), (72, 41921), (78, 41978), (102, 42134), (103, 42140), (108, 42167), (111, 42191),

Gene: Unicorn_61 Start: 40671, Stop: 41570, Start Num: 9

Candidate Starts for Unicorn_61:

(6, 40632), (Start: 9 @40671 has 27 MA's), (14, 40731), (27, 40869), (30, 40884), (38, 40971), (54, 41103), (72, 41253), (78, 41310), (88, 41358), (91, 41385), (108, 41499), (111, 41523),

Gene: ViviJ_54 Start: 38289, Stop: 39149, Start Num: 8

Candidate Starts for ViviJ_54:

(Start: 8 @38289 has 22 MA's), (23, 38439), (46, 38652), (49, 38664), (54, 38703), (55, 38715), (56, 38733), (59, 38757), (69, 38820), (70, 38823), (82, 38904), (91, 38964), (93, 38976), (99, 39009), (100, 39018), (106, 39063), (112, 39120), (113, 39141),

Gene: Waltz_90 Start: 52528, Stop: 53325, Start Num: 15

Candidate Starts for Waltz_90:

(Start: 11 @52486 has 1 MA's), (Start: 15 @52528 has 8 MA's), (28, 52660), (31, 52672), (32, 52681), (45, 52786), (57, 52876), (59, 52891), (60, 52894), (70, 52957), (72, 52966), (75, 52993), (77, 53014), (81, 53032), (83, 53047), (91, 53101), (111, 53242), (115, 53308),

Gene: Waterfoul_57 Start: 40638, Stop: 41498, Start Num: 8

Candidate Starts for Waterfoul_57:

(Start: 8 @40638 has 22 MA's), (17, 40731), (20, 40752), (46, 41001), (49, 41013), (53, 41046), (54, 41052), (55, 41064), (56, 41082), (59, 41106), (70, 41172), (77, 41229), (85, 41271), (93, 41325), (97, 41352), (99, 41358), (103, 41400), (106, 41412), (112, 41469), (113, 41490),

Gene: Wheelbite_89 Start: 54204, Stop: 54995, Start Num: 15

Candidate Starts for Wheelbite_89:

(10, 54153), (Start: 15 @54204 has 8 MA's), (23, 54276), (28, 54336), (31, 54348), (42, 54429), (45, 54462), (51, 54486), (57, 54552), (59, 54567), (60, 54570), (65, 54609), (75, 54669), (77, 54690), (81, 54708), (83, 54723), (91, 54777), (105, 54870),

Gene: Ximenita_65 Start: 41348, Stop: 42247, Start Num: 9

Candidate Starts for Ximenita_65:

(Start: 9 @41348 has 27 MA's), (14, 41408), (20, 41459), (26, 41537), (27, 41546), (30, 41561), (34, 41597), (38, 41648), (49, 41720), (53, 41774), (72, 41930), (78, 41987), (102, 42143), (108, 42176), (111, 42200),

Gene: Zabiza_56 Start: 37591, Stop: 38478, Start Num: 9

Candidate Starts for Zabiza_56:

(Start: 9 @37591 has 27 MA's), (20, 37702), (29, 37801), (46, 37951), (54, 38023), (59, 38077), (72, 38161), (78, 38218), (88, 38266), (97, 38332), (106, 38392), (108, 38407), (112, 38449),