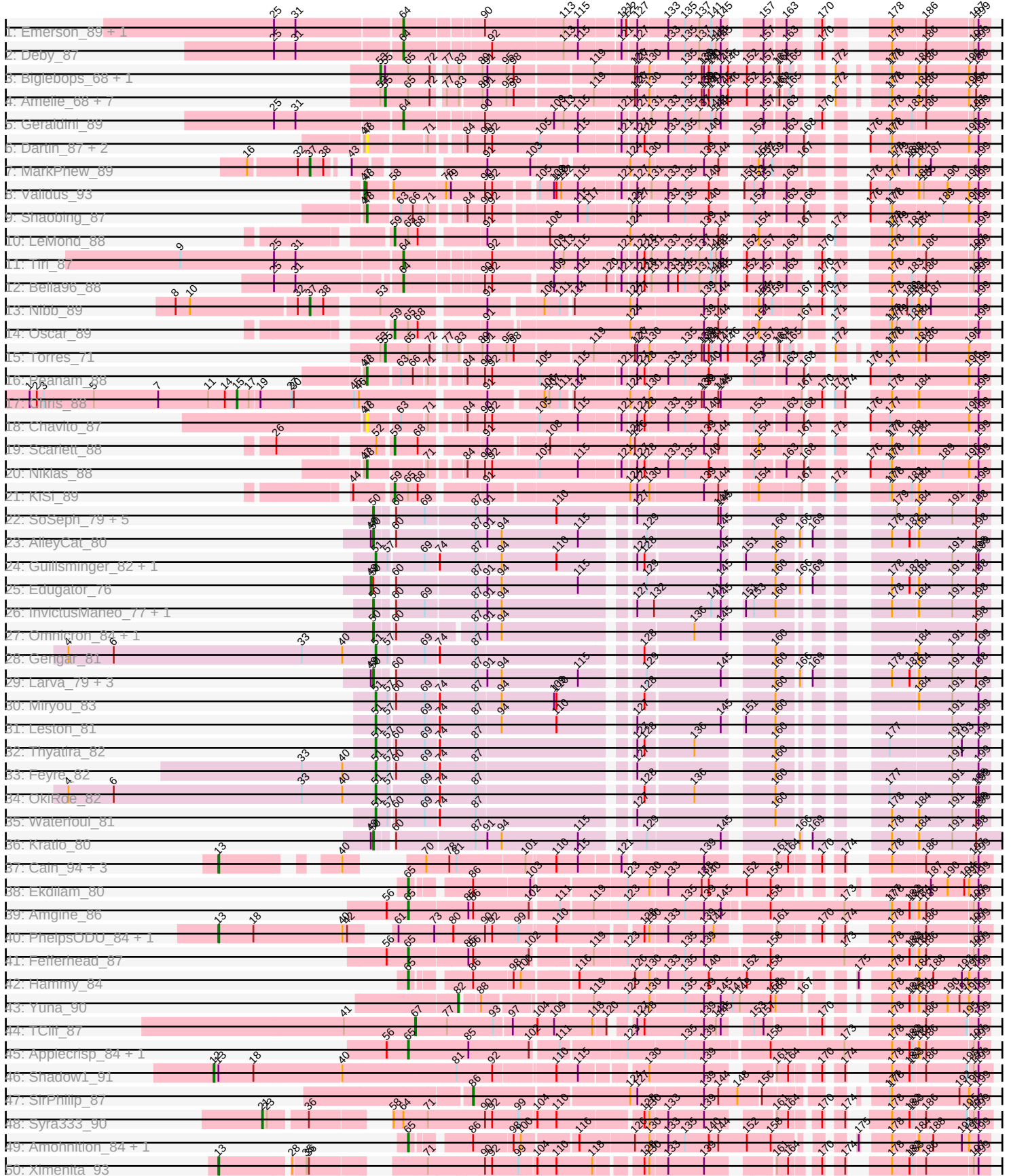
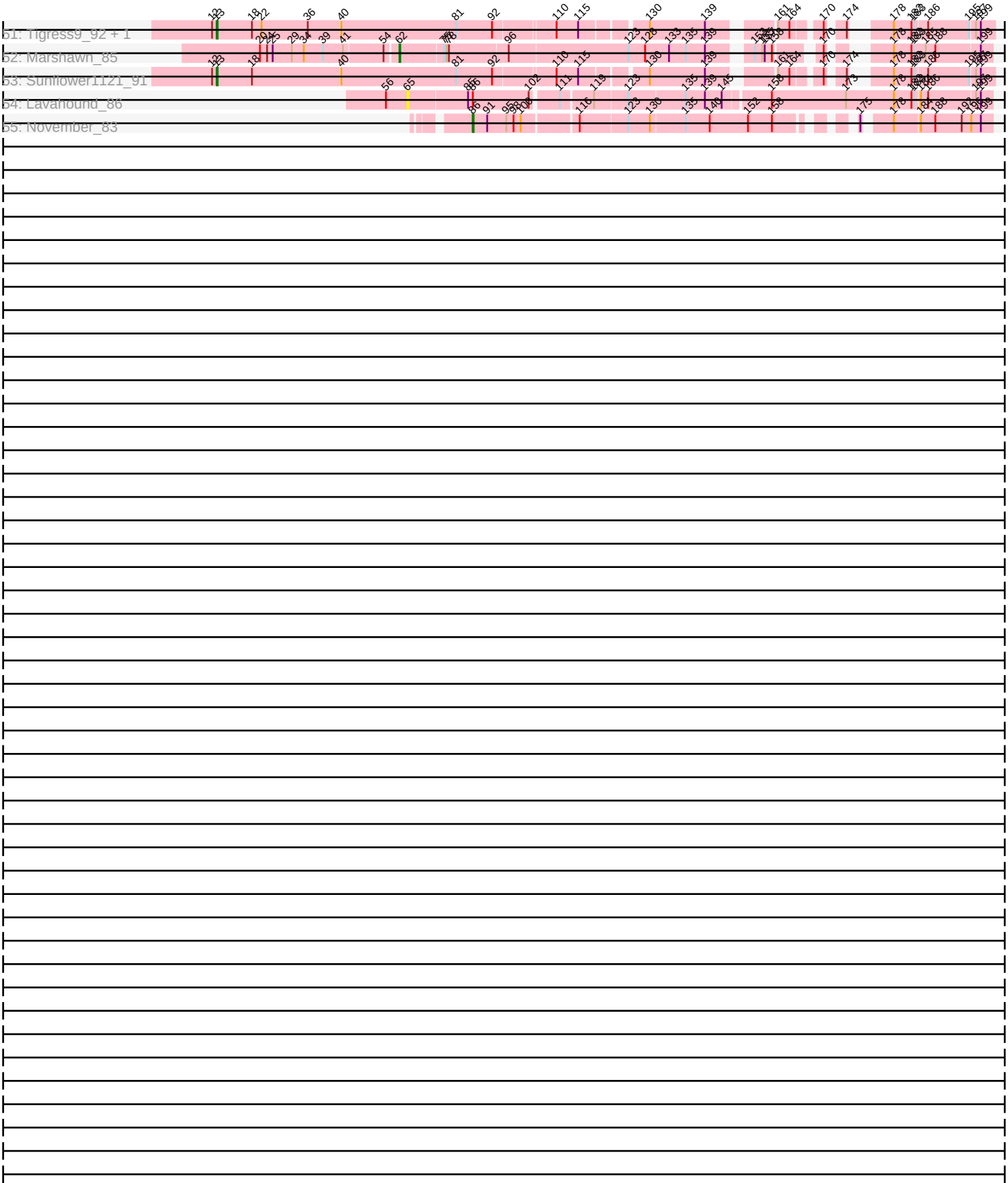


Pham 280344



Pham 280344



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 280344 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280344 has 84 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Emerson_89, Padpat_90
- Track 2 : Deby_87
- Track 3 : Biglebops_68, LilPharaoh_69
- Track 4 : Amelie_68, SgtBeansprout_69, Mdavu_69, Enkosi_70, Nutello_68, Nikao_71, Teejan_70, Trice_68
- Track 5 : Geraldini_89
- Track 6 : Dartin_87, McMater_87, Richo_87
- Track 7 : MarkPhew_89
- Track 8 : Validus_93
- Track 9 : Shaobing_87
- Track 10 : LeMond_88
- Track 11 : Tiri_87
- Track 12 : Bella96_88
- Track 13 : Nibb_89
- Track 14 : Oscar_89
- Track 15 : Torres_71
- Track 16 : Peanam_88
- Track 17 : Chris_88
- Track 18 : Chavito_87
- Track 19 : Scarlett_88
- Track 20 : Niklas_88
- Track 21 : KiSi_89
- Track 22 : SoSeph_79, BananenDer11_76, ViviJ_85, DoubleChamp_76, Collard_77, Heftyboy_79
- Track 23 : AlleyCat_80
- Track 24 : Guillsminger_82, Paola_81
- Track 25 : Edugator_76
- Track 26 : InvictusManeo_77, Agent47_79
- Track 27 : Omnicron_84, Rando14_81
- Track 28 : Gengar_81
- Track 29 : Larva_79, Dadosky_80, Neighly_80, Psycho_78
- Track 30 : Miryou_83
- Track 31 : Leston_81
- Track 32 : Thyatira_82
- Track 33 : Feyre_82
- Track 34 : OkiRoe_82
- Track 35 : Waterfoul_81

- Track 36 : Kratio_80
- Track 37 : Cain_94, Bryler_86, Tierra_94, Phrank_94
- Track 38 : Ekdilam_80
- Track 39 : Amgine_86
- Track 40 : PhelpsODU_84, Unicorn_94
- Track 41 : Fefferhead_87
- Track 42 : Hammy_84
- Track 43 : Yuna_90
- Track 44 : TClif_87
- Track 45 : Applecrisp_84, Ellie_85
- Track 46 : Shadow1_91
- Track 47 : SirPhilip_87
- Track 48 : Syra333_90
- Track 49 : Amohnition_84, DarthP_84
- Track 50 : Ximenita_93
- Track 51 : Tigress9_92, Krueger_91
- Track 52 : Marshawn_85
- Track 53 : Sunflower1121_91
- Track 54 : Lavahound_86
- Track 55 : November_83

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

The start number called the most often in the published annotations is 50, it was called in 13 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agent47_79, AlleyCat_80, BananenDer11_76, Collard_77, Dadosky_80, DoubleChamp_76, Heftyboy_79, InvictusManeo_77, Kratio_80, Larva_79, Neighly_80, Omnicron_84, Psycho_78, Rando14_81, SoSeph_79, ViviJ_85,

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

- Edugator_76,

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

- Amelie_68, Amgine_86, Amohnition_84, Applecrisp_84, Bella96_88, Biglebops_68, Bryler_86, Cain_94, Chavito_87, Chris_88, DarthP_84, Dartin_87, Deby_87, Ekdilam_80, Ellie_85, Emerson_89, Enkosi_70, Fefferhead_87, Feyre_82, Gengar_81, Geraldini_89, Guillsminger_82, Hammy_84, KiSi_89, Krueger_91, Lavahound_86, LeMond_88, Leston_81, LilPharaoh_69, MarkPhew_89, Marshawn_85, McMater_87, Mdavu_69, Miryou_83, Nibb_89, Nikao_71, Niklas_88, November_83, Nutello_68, OkiRoe_82, Oscar_89, Padpat_90, Paola_81, Peanam_88, PhelpsODU_84, Phrank_94, Richo_87, Scarlett_88, SgtBeansprout_69, Shadow1_91, Shaobing_87, SirPhilip_87, Sunflower1121_91, Syra333_90, TClif_87, Teejan_70, Thyatira_82, Tierra_94, Tigress9_92, Tiri_87, Torres_71, Trice_68, Unicorn_94, Validus_93, Waterfoul_81, Ximenita_93, Yuna_90,

Summary by start number:

Start 12:

- Found in 4 of 84 (4.8%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Shadow1_91 (K6),

Start 13:

- Found in 11 of 84 (13.1%) of genes in pham
- Manual Annotations of this start: 9 of 73
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Bryler_86 (K6), Cain_94 (K6), Krueger_91 (K6), PhelpsODU_84 (K6), Phrank_94 (K6), Sunflower1121_91 (K6), Tierra_94 (K6), Tigress9_92 (K6), Unicorn_94 (K6), Ximenita_93 (K6),

Start 15:

- Found in 1 of 84 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chris_88 (K1),

Start 21:

- Found in 1 of 84 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Syra333_90 (K6),

Start 37:

- Found in 2 of 84 (2.4%) of genes in pham
- Manual Annotations of this start: 2 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MarkPhew_89 (K1), Nibb_89 (K1),

Start 47:

- Found in 8 of 84 (9.5%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Validus_93 (K1),

Start 48:

- Found in 8 of 84 (9.5%) of genes in pham
- Manual Annotations of this start: 3 of 73
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Chavito_87 (K1), Dartin_87 (K1), McMater_87 (K1), Niklas_88 (K1), Peanam_88 (K1), Richo_87 (K1), Shaobing_87 (K1),

Start 49:

- Found in 7 of 84 (8.3%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Edugator_76 (K5),

Start 50:

- Found in 17 of 84 (20.2%) of genes in pham

- Manual Annotations of this start: 13 of 73
- Called 94.1% of time when present
- Phage (with cluster) where this start called: Agent47_79 (K5), AlleyCat_80 (K5), BananenDer11_76 (K5), Collard_77 (K5), Dadosky_80 (K5), DoubleChamp_76 (K5), Heftyboy_79 (K5), InvictusManeo_77 (K5), Kratio_80 (K5), Larva_79 (K5), Neighly_80 (K3), Omnicron_84 (K5), Psycho_78 (K5), Rando14_81 (K5), SoSeph_79 (K5), ViviJ_85 (K5),

Start 51:

- Found in 9 of 84 (10.7%) of genes in pham
- Manual Annotations of this start: 9 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Feyre_82 (K5), Gengar_81 (K5), Guillsminger_82 (K5), Leston_81 (K5), Miryou_83 (K5), OkiRoe_82 (K5), Paola_81 (K5), Thyatira_82 (K5), Waterfoul_81 (K5),

Start 53:

- Found in 12 of 84 (14.3%) of genes in pham
- Manual Annotations of this start: 2 of 73
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Biglebops_68 (K1), LilPharaoh_69 (K1),

Start 55:

- Found in 11 of 84 (13.1%) of genes in pham
- Manual Annotations of this start: 7 of 73
- Called 81.8% of time when present
- Phage (with cluster) where this start called: Amelie_68 (K1), Enkosi_70 (K1), Mdavu_69 (K1), Nikao_71 (K1), Nutello_68 (K1), SgtBeansprout_69 (K1), Teejan_70 (K1), Torres_71 (K1), Trice_68 (K1),

Start 59:

- Found in 4 of 84 (4.8%) of genes in pham
- Manual Annotations of this start: 4 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KiSi_89 (K1), LeMond_88 (K1), Oscar_89 (K1), Scarlett_88 (K1),

Start 62:

- Found in 1 of 84 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn_85 (K6),

Start 64:

- Found in 7 of 84 (8.3%) of genes in pham
- Manual Annotations of this start: 6 of 73
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Bella96_88 (K1), Deby_87 (K1), Emerson_89 (K1), Geraldini_89 (K1), Padpat_90 (K1), Tiri_87 (K1),

Start 65:

- Found in 23 of 84 (27.4%) of genes in pham
- Manual Annotations of this start: 8 of 73

- Called 39.1% of time when present
- Phage (with cluster) where this start called: Amgine_86 (K6), Amohnition_84 (K6), Applecrisp_84 (K6), DarthP_84 (K6), Ekdilam_80 (K6), Ellie_85 (K6), Fefferhead_87 (K6), Hammy_84 (K6), Lavahound_86 (K6),

Start 67:

- Found in 1 of 84 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TClif_87 (K6),

Start 82:

- Found in 1 of 84 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yuna_90 (K6),

Start 86:

- Found in 9 of 84 (10.7%) of genes in pham
- Manual Annotations of this start: 2 of 73
- Called 22.2% of time when present
- Phage (with cluster) where this start called: November_83 (K6), SirPhilip_87 (K6),

Summary by clusters:

There are 4 clusters represented in this pham: K3, K1, K6, K5,

Info for manual annotations of cluster K1:

- Start number 15 was manually annotated 1 time for cluster K1.
- Start number 37 was manually annotated 2 times for cluster K1.
- Start number 47 was manually annotated 1 time for cluster K1.
- Start number 48 was manually annotated 3 times for cluster K1.
- Start number 53 was manually annotated 2 times for cluster K1.
- Start number 55 was manually annotated 7 times for cluster K1.
- Start number 59 was manually annotated 4 times for cluster K1.
- Start number 64 was manually annotated 6 times for cluster K1.

Info for manual annotations of cluster K5:

- Start number 49 was manually annotated 1 time for cluster K5.
- Start number 50 was manually annotated 13 times for cluster K5.
- Start number 51 was manually annotated 9 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 12 was manually annotated 1 time for cluster K6.
- Start number 13 was manually annotated 9 times for cluster K6.
- Start number 21 was manually annotated 1 time for cluster K6.
- Start number 62 was manually annotated 1 time for cluster K6.
- Start number 65 was manually annotated 8 times for cluster K6.
- Start number 67 was manually annotated 1 time for cluster K6.
- Start number 82 was manually annotated 1 time for cluster K6.
- Start number 86 was manually annotated 2 times for cluster K6.

Gene Information:

Gene: Agent47_79 Start: 51751, Stop: 52398, Start Num: 50

Candidate Starts for Agent47_79:

(Start: 50 @51751 has 13 MA's), (60, 51769), (69, 51805), (87, 51865), (91, 51880), (94, 51898), (127, 52045), (132, 52066), (141, 52138), (145, 52150), (151, 52162), (153, 52171), (160, 52198), (178, 52279), (184, 52309), (191, 52351), (198, 52381),

Gene: AlleyCat_80 Start: 52608, Stop: 53252, Start Num: 50

Candidate Starts for AlleyCat_80:

(Start: 49 @52605 has 1 MA's), (Start: 50 @52608 has 13 MA's), (60, 52626), (87, 52722), (91, 52737), (94, 52755), (115, 52851), (129, 52914), (145, 53004), (160, 53052), (166, 53076), (169, 53079), (178, 53133), (182, 53154), (184, 53163), (198, 53235),

Gene: Amelie_68 Start: 51228, Stop: 51872, Start Num: 55

Candidate Starts for Amelie_68:

(Start: 53 @51222 has 2 MA's), (Start: 55 @51228 has 7 MA's), (Start: 65 @51255 has 8 MA's), (72, 51282), (77, 51294), (83, 51309), (89, 51333), (91, 51339), (95, 51363), (98, 51372), (119, 51462), (126, 51507), (127, 51510), (130, 51525), (135, 51567), (138, 51588), (139, 51591), (140, 51597), (141, 51600), (145, 51612), (146, 51621), (152, 51645), (157, 51666), (161, 51678), (162, 51681), (165, 51690), (172, 51711), (177, 51750), (178, 51753), (184, 51783), (186, 51792), (196, 51846), (198, 51855),

Gene: Amgine_86 Start: 56691, Stop: 57377, Start Num: 65

Candidate Starts for Amgine_86:

(56, 56667), (Start: 65 @56691 has 8 MA's), (85, 56763), (Start: 86 @56769 has 2 MA's), (102, 56838), (111, 56868), (119, 56904), (123, 56940), (135, 57009), (139, 57033), (145, 57054), (158, 57108), (173, 57201), (177, 57258), (178, 57261), (182, 57282), (183, 57285), (184, 57291), (186, 57300), (197, 57357), (199, 57363),

Gene: Amohnition_84 Start: 55743, Stop: 56357, Start Num: 65

Candidate Starts for Amohnition_84:

(Start: 65 @55743 has 8 MA's), (Start: 86 @55800 has 2 MA's), (98, 55848), (100, 55857), (116, 55917), (126, 55980), (130, 55998), (133, 56019), (135, 56040), (140, 56070), (144, 56082), (152, 56118), (158, 56148), (175, 56211), (178, 56238), (184, 56268), (188, 56286), (193, 56322), (196, 56331), (199, 56343),

Gene: Applecrisp_84 Start: 55868, Stop: 56557, Start Num: 65

Candidate Starts for Applecrisp_84:

(56, 55844), (Start: 65 @55868 has 8 MA's), (85, 55943), (102, 56018), (111, 56048), (123, 56120), (135, 56189), (139, 56213), (158, 56288), (173, 56381), (178, 56441), (182, 56462), (183, 56465), (184, 56471), (186, 56480), (197, 56537), (199, 56543),

Gene: BananenDer11_76 Start: 51715, Stop: 52362, Start Num: 50

Candidate Starts for BananenDer11_76:

(Start: 50 @51715 has 13 MA's), (60, 51733), (69, 51769), (87, 51829), (91, 51844), (110, 51931), (127, 52009), (144, 52111), (145, 52114), (179, 52249), (184, 52273), (191, 52315), (198, 52345),

Gene: Bella96_88 Start: 55904, Stop: 56509, Start Num: 64

Candidate Starts for Bella96_88:

(25, 55757), (31, 55784), (Start: 64 @55904 has 6 MA's), (90, 55991), (92, 56000), (109, 56069), (115, 56099), (120, 56132), (121, 56147), (127, 56162), (128, 56171), (131, 56177), (133, 56198), (134, 56210), (135, 56219), (137, 56237), (141, 56252), (143, 56258), (145, 56264), (152, 56276), (157, 56297), (163, 56321), (170, 56348), (171, 56351), (178, 56393), (183, 56417), (186, 56432), (197, 56489), (199, 56495),

Gene: Binglebops_68 Start: 51237, Stop: 51887, Start Num: 53

Candidate Starts for Binglebops_68:

(Start: 53 @51237 has 2 MA's), (Start: 55 @51243 has 7 MA's), (Start: 65 @51270 has 8 MA's), (72, 51297), (77, 51309), (83, 51324), (89, 51348), (91, 51354), (95, 51378), (98, 51387), (119, 51477), (126, 51522), (127, 51525), (130, 51540), (135, 51582), (138, 51603), (139, 51606), (140, 51612), (141, 51615), (145, 51627), (146, 51636), (152, 51660), (157, 51681), (161, 51693), (162, 51696), (165, 51705), (172, 51726), (177, 51765), (178, 51768), (184, 51798), (186, 51807), (196, 51861), (198, 51870),

Gene: Bryler_86 Start: 53452, Stop: 54183, Start Num: 13

Candidate Starts for Bryler_86:

(Start: 13 @53452 has 9 MA's), (40, 53560), (70, 53599), (78, 53626), (81, 53635), (101, 53713), (110, 53746), (115, 53773), (121, 53818), (139, 53914), (161, 53977), (164, 53989), (170, 54019), (174, 54034), (178, 54064), (186, 54103), (197, 54160), (199, 54166),

Gene: Cain_94 Start: 56599, Stop: 57330, Start Num: 13

Candidate Starts for Cain_94:

(Start: 13 @56599 has 9 MA's), (40, 56707), (70, 56746), (78, 56773), (81, 56782), (101, 56860), (110, 56893), (115, 56920), (121, 56965), (139, 57061), (161, 57124), (164, 57136), (170, 57166), (174, 57181), (178, 57211), (186, 57250), (197, 57307), (199, 57313),

Gene: Chavito_87 Start: 56767, Stop: 57426, Start Num: 48

Candidate Starts for Chavito_87:

(Start: 47 @56764 has 1 MA's), (Start: 48 @56767 has 3 MA's), (63, 56803), (71, 56833), (84, 56866), (90, 56887), (92, 56896), (105, 56953), (115, 57001), (121, 57049), (127, 57064), (128, 57073), (133, 57100), (135, 57121), (140, 57151), (153, 57187), (163, 57223), (168, 57244), (176, 57280), (177, 57304), (196, 57400), (199, 57412),

Gene: Chris_88 Start: 55802, Stop: 56641, Start Num: 15

Candidate Starts for Chris_88:

(1, 55541), (2, 55550), (3, 55559), (5, 55622), (7, 55703), (11, 55766), (14, 55787), (Start: 15 @55802 has 1 MA's), (17, 55817), (19, 55829), (27, 55868), (30, 55871), (45, 55946), (46, 55952), (91, 56099), (106, 56159), (107, 56165), (111, 56177), (114, 56189), (124, 56255), (130, 56279), (138, 56342), (139, 56345), (144, 56363), (145, 56366), (167, 56465), (170, 56483), (171, 56486), (174, 56498), (178, 56525), (184, 56555), (199, 56627),

Gene: Collard_77 Start: 51715, Stop: 52362, Start Num: 50

Candidate Starts for Collard_77:

(Start: 50 @51715 has 13 MA's), (60, 51733), (69, 51769), (87, 51829), (91, 51844), (110, 51931), (127, 52009), (144, 52111), (145, 52114), (179, 52249), (184, 52273), (191, 52315), (198, 52345),

Gene: Dadosky_80 Start: 52609, Stop: 53253, Start Num: 50

Candidate Starts for Dadosky_80:

(Start: 49 @52606 has 1 MA's), (Start: 50 @52609 has 13 MA's), (60, 52627), (87, 52723), (91, 52738), (94, 52756), (115, 52852), (129, 52915), (145, 53005), (160, 53053), (166, 53077), (169, 53080), (178, 53134), (182, 53155), (184, 53164), (191, 53206), (198, 53236),

Gene: DarthP_84 Start: 55596, Stop: 56210, Start Num: 65

Candidate Starts for DarthP_84:

(Start: 65 @55596 has 8 MA's), (Start: 86 @55653 has 2 MA's), (98, 55701), (100, 55710), (116, 55770), (126, 55833), (130, 55851), (133, 55872), (135, 55893), (140, 55923), (144, 55935), (152, 55971), (158, 56001), (175, 56064), (178, 56091), (184, 56121), (188, 56139), (193, 56175), (196, 56184), (199, 56196),

Gene: Dartin_87 Start: 56409, Stop: 57068, Start Num: 48

Candidate Starts for Dartin_87:

(Start: 47 @56406 has 1 MA's), (Start: 48 @56409 has 3 MA's), (71, 56475), (84, 56508), (90, 56529), (92, 56538), (105, 56595), (115, 56643), (121, 56691), (127, 56706), (128, 56715), (133, 56742), (135, 56763), (140, 56793), (153, 56829), (163, 56865), (168, 56886), (176, 56922), (177, 56946), (178, 56949), (196, 57042), (199, 57054),

Gene: Deby_87 Start: 56043, Stop: 56654, Start Num: 64

Candidate Starts for Deby_87:

(25, 55890), (31, 55917), (Start: 64 @56043 has 6 MA's), (92, 56139), (113, 56226), (115, 56244), (121, 56292), (127, 56307), (133, 56343), (135, 56364), (137, 56382), (141, 56397), (143, 56403), (145, 56409), (157, 56442), (163, 56466), (170, 56493), (178, 56538), (186, 56577), (197, 56634), (199, 56640),

Gene: DoubleChamp_76 Start: 51715, Stop: 52362, Start Num: 50

Candidate Starts for DoubleChamp_76:

(Start: 50 @51715 has 13 MA's), (60, 51733), (69, 51769), (87, 51829), (91, 51844), (110, 51931), (127, 52009), (144, 52111), (145, 52114), (179, 52249), (184, 52273), (191, 52315), (198, 52345),

Gene: Edugator_76 Start: 53777, Stop: 54424, Start Num: 49

Candidate Starts for Edugator_76:

(Start: 49 @53777 has 1 MA's), (Start: 50 @53780 has 13 MA's), (60, 53798), (87, 53894), (91, 53909), (94, 53927), (115, 54023), (129, 54086), (145, 54176), (160, 54224), (166, 54248), (169, 54251), (178, 54305), (182, 54326), (184, 54335), (191, 54377), (198, 54407),

Gene: Ekdilam_80 Start: 55444, Stop: 56052, Start Num: 65

Candidate Starts for Ekdilam_80:

(Start: 65 @55444 has 8 MA's), (Start: 86 @55501 has 2 MA's), (103, 55567), (123, 55666), (130, 55693), (133, 55714), (138, 55756), (140, 55765), (152, 55813), (158, 55843), (187, 55978), (190, 55999), (194, 56020), (196, 56026), (199, 56038),

Gene: Ellie_85 Start: 55858, Stop: 56547, Start Num: 65

Candidate Starts for Ellie_85:

(56, 55834), (Start: 65 @55858 has 8 MA's), (85, 55933), (102, 56008), (111, 56038), (123, 56110), (135, 56179), (139, 56203), (158, 56278), (173, 56371), (178, 56431), (182, 56452), (183, 56455), (184, 56461), (186, 56470), (197, 56527), (199, 56533),

Gene: Emerson_89 Start: 55720, Stop: 56331, Start Num: 64

Candidate Starts for Emerson_89:

(25, 55567), (31, 55594), (Start: 64 @55720 has 6 MA's), (90, 55807), (113, 55903), (115, 55921), (121, 55969), (122, 55975), (127, 55984), (133, 56020), (135, 56041), (137, 56059), (141, 56074), (145, 56086), (157, 56119), (163, 56143), (170, 56170), (178, 56215), (186, 56254), (197, 56311), (199, 56317),

Gene: Enkosi_70 Start: 53841, Stop: 54485, Start Num: 55

Candidate Starts for Enkosi_70:

(Start: 53 @53835 has 2 MA's), (Start: 55 @53841 has 7 MA's), (Start: 65 @53868 has 8 MA's), (72, 53895), (77, 53907), (83, 53922), (89, 53946), (91, 53952), (95, 53976), (98, 53985), (119, 54075), (126, 54120), (127, 54123), (130, 54138), (135, 54180), (138, 54201), (139, 54204), (140, 54210), (141, 54213), (145, 54225), (146, 54234), (152, 54258), (157, 54279), (161, 54291), (162, 54294), (165, 54303), (172, 54324), (177, 54363), (178, 54366), (184, 54396), (186, 54405), (196, 54459), (198, 54468),

Gene: Fefferhead_87 Start: 55655, Stop: 56341, Start Num: 65

Candidate Starts for Fefferhead_87:

(56, 55631), (Start: 65 @55655 has 8 MA's), (85, 55727), (Start: 86 @55733 has 2 MA's), (102, 55802), (119, 55868), (123, 55904), (135, 55973), (139, 55997), (158, 56072), (173, 56165), (178, 56225), (182, 56246), (183, 56249), (184, 56255), (186, 56264), (197, 56321), (199, 56327),

Gene: Feyre_82 Start: 55415, Stop: 56056, Start Num: 51

Candidate Starts for Feyre_82:

(33, 55322), (40, 55373), (Start: 51 @55415 has 9 MA's), (57, 55430), (60, 55436), (69, 55472), (74, 55487), (87, 55532), (127, 55709), (160, 55856), (191, 56009), (199, 56042),

Gene: Gengar_81 Start: 54230, Stop: 54871, Start Num: 51

Candidate Starts for Gengar_81:

(4, 53843), (6, 53900), (33, 54137), (40, 54188), (Start: 51 @54230 has 9 MA's), (57, 54245), (69, 54287), (74, 54302), (87, 54347), (128, 54533), (160, 54671), (184, 54782), (191, 54824), (199, 54857),

Gene: Geraldini_89 Start: 55561, Stop: 56172, Start Num: 64

Candidate Starts for Geraldini_89:

(25, 55408), (31, 55435), (Start: 64 @55561 has 6 MA's), (90, 55648), (109, 55732), (113, 55744), (115, 55762), (121, 55810), (127, 55825), (131, 55840), (133, 55861), (135, 55882), (137, 55900), (141, 55915), (143, 55921), (145, 55927), (157, 55960), (163, 55984), (170, 56011), (178, 56056), (183, 56080), (186, 56095), (197, 56152), (199, 56158),

Gene: Guillsminger_82 Start: 54078, Stop: 54719, Start Num: 51

Candidate Starts for Guillsminger_82:

(Start: 51 @54078 has 9 MA's), (57, 54093), (69, 54135), (74, 54150), (87, 54195), (94, 54225), (110, 54294), (127, 54372), (128, 54381), (145, 54471), (151, 54483), (160, 54519), (191, 54672), (198, 54702), (199, 54705),

Gene: Hammy_84 Start: 55586, Stop: 56200, Start Num: 65

Candidate Starts for Hammy_84:

(Start: 65 @55586 has 8 MA's), (Start: 86 @55643 has 2 MA's), (98, 55691), (100, 55700), (116, 55760), (126, 55823), (130, 55841), (133, 55862), (135, 55883), (140, 55913), (152, 55961), (158, 55991), (175, 56054), (178, 56081), (184, 56111), (188, 56129), (193, 56165), (196, 56174), (199, 56186),

Gene: Heftyboy_79 Start: 53442, Stop: 54089, Start Num: 50

Candidate Starts for Heftyboy_79:

(Start: 50 @53442 has 13 MA's), (60, 53460), (69, 53496), (87, 53556), (91, 53571), (110, 53658), (127, 53736), (144, 53838), (145, 53841), (179, 53976), (184, 54000), (191, 54042), (198, 54072),

Gene: InvictusManeo_77 Start: 51755, Stop: 52402, Start Num: 50

Candidate Starts for InvictusManeo_77:

(Start: 50 @51755 has 13 MA's), (60, 51773), (69, 51809), (87, 51869), (91, 51884), (94, 51902), (127, 52049), (132, 52070), (141, 52142), (145, 52154), (151, 52166), (153, 52175), (160, 52202), (178,

52283), (184, 52313), (191, 52355), (198, 52385),

Gene: KiSi_89 Start: 55752, Stop: 56375, Start Num: 59

Candidate Starts for KiSi_89:

(44, 55710), (Start: 59 @55752 has 4 MA's), (Start: 65 @55767 has 8 MA's), (68, 55779), (91, 55851), (124, 56016), (127, 56025), (130, 56040), (139, 56106), (144, 56124), (154, 56151), (167, 56199), (171, 56220), (177, 56256), (178, 56259), (183, 56283), (184, 56289), (199, 56361),

Gene: Kratio_80 Start: 52503, Stop: 53210, Start Num: 50

Candidate Starts for Kratio_80:

(Start: 49 @52500 has 1 MA's), (Start: 50 @52503 has 13 MA's), (60, 52521), (87, 52617), (91, 52632), (94, 52650), (115, 52746), (129, 52809), (145, 52899), (166, 52971), (169, 52974), (178, 53028), (184, 53058), (191, 53100), (198, 53130),

Gene: Krueger_91 Start: 55693, Stop: 56526, Start Num: 13

Candidate Starts for Krueger_91:

(Start: 12 @55687 has 1 MA's), (Start: 13 @55693 has 9 MA's), (18, 55735), (22, 55747), (36, 55804), (40, 55843), (81, 55978), (92, 56020), (110, 56089), (115, 56116), (130, 56188), (139, 56257), (161, 56320), (164, 56332), (170, 56362), (174, 56377), (178, 56407), (182, 56428), (183, 56431), (186, 56446), (195, 56497), (197, 56503), (199, 56509),

Gene: Larva_79 Start: 53481, Stop: 54125, Start Num: 50

Candidate Starts for Larva_79:

(Start: 49 @53478 has 1 MA's), (Start: 50 @53481 has 13 MA's), (60, 53499), (87, 53595), (91, 53610), (94, 53628), (115, 53724), (129, 53787), (145, 53877), (160, 53925), (166, 53949), (169, 53952), (178, 54006), (182, 54027), (184, 54036), (191, 54078), (198, 54108),

Gene: Lavahound_86 Start: 56824, Stop: 57510, Start Num: 65

Candidate Starts for Lavahound_86:

(56, 56800), (Start: 65 @56824 has 8 MA's), (85, 56896), (Start: 86 @56902 has 2 MA's), (102, 56971), (111, 57001), (119, 57037), (123, 57073), (135, 57142), (139, 57166), (145, 57187), (158, 57241), (173, 57334), (178, 57394), (182, 57415), (183, 57418), (184, 57424), (186, 57433), (197, 57490), (199, 57496),

Gene: LeMond_88 Start: 55714, Stop: 56331, Start Num: 59

Candidate Starts for LeMond_88:

(Start: 59 @55714 has 4 MA's), (Start: 65 @55729 has 8 MA's), (68, 55741), (91, 55813), (108, 55882), (124, 55972), (139, 56062), (144, 56080), (154, 56107), (167, 56155), (171, 56176), (177, 56212), (178, 56215), (179, 56221), (183, 56239), (184, 56245), (199, 56317),

Gene: Leston_81 Start: 54195, Stop: 54836, Start Num: 51

Candidate Starts for Leston_81:

(Start: 51 @54195 has 9 MA's), (57, 54210), (69, 54252), (74, 54267), (87, 54312), (94, 54342), (110, 54411), (127, 54489), (145, 54588), (151, 54600), (160, 54636), (191, 54789), (199, 54822),

Gene: LilPharaoh_69 Start: 50950, Stop: 51600, Start Num: 53

Candidate Starts for LilPharaoh_69:

(Start: 53 @50950 has 2 MA's), (Start: 55 @50956 has 7 MA's), (Start: 65 @50983 has 8 MA's), (72, 51010), (77, 51022), (83, 51037), (89, 51061), (91, 51067), (95, 51091), (98, 51100), (119, 51190), (126, 51235), (127, 51238), (130, 51253), (135, 51295), (138, 51316), (139, 51319), (140, 51325), (141, 51328), (145, 51340), (146, 51349), (152, 51373), (157, 51394), (161, 51406), (162, 51409), (165, 51418), (172, 51439), (177, 51478), (178, 51481), (184, 51511), (186, 51520), (196, 51574), (198, 51583),

Gene: MarkPhew_89 Start: 55775, Stop: 56458, Start Num: 37

Candidate Starts for MarkPhew_89:

(16, 55703), (32, 55760), (Start: 37 @55775 has 2 MA's), (38, 55790), (43, 55802), (91, 55940), (103, 55994), (124, 56099), (130, 56123), (139, 56189), (144, 56207), (154, 56234), (157, 56240), (159, 56249), (167, 56282), (178, 56342), (179, 56348), (181, 56363), (183, 56366), (184, 56372), (187, 56387), (199, 56444),

Gene: Marshawn_85 Start: 55928, Stop: 56566, Start Num: 62

Candidate Starts for Marshawn_85:

(20, 55766), (24, 55775), (25, 55781), (29, 55805), (34, 55820), (39, 55844), (41, 55868), (54, 55913), (Start: 62 @55928 has 1 MA's), (75, 55979), (77, 55982), (78, 55985), (96, 56054), (123, 56201), (128, 56222), (133, 56252), (135, 56273), (139, 56297), (153, 56339), (155, 56348), (157, 56351), (158, 56360), (170, 56402), (178, 56447), (182, 56468), (183, 56471), (185, 56486), (188, 56498), (199, 56552),

Gene: McMater_87 Start: 56409, Stop: 57068, Start Num: 48

Candidate Starts for McMater_87:

(Start: 47 @56406 has 1 MA's), (Start: 48 @56409 has 3 MA's), (71, 56475), (84, 56508), (90, 56529), (92, 56538), (105, 56595), (115, 56643), (121, 56691), (127, 56706), (128, 56715), (133, 56742), (135, 56763), (140, 56793), (153, 56829), (163, 56865), (168, 56886), (176, 56922), (177, 56946), (178, 56949), (196, 57042), (199, 57054),

Gene: Mdavu_69 Start: 51232, Stop: 51876, Start Num: 55

Candidate Starts for Mdavu_69:

(Start: 53 @51226 has 2 MA's), (Start: 55 @51232 has 7 MA's), (Start: 65 @51259 has 8 MA's), (72, 51286), (77, 51298), (83, 51313), (89, 51337), (91, 51343), (95, 51367), (98, 51376), (119, 51466), (126, 51511), (127, 51514), (130, 51529), (135, 51571), (138, 51592), (139, 51595), (140, 51601), (141, 51604), (145, 51616), (146, 51625), (152, 51649), (157, 51670), (161, 51682), (162, 51685), (165, 51694), (172, 51715), (177, 51754), (178, 51757), (184, 51787), (186, 51796), (196, 51850), (198, 51859),

Gene: Miryou_83 Start: 56053, Stop: 56694, Start Num: 51

Candidate Starts for Miryou_83:

(Start: 51 @56053 has 9 MA's), (57, 56068), (60, 56074), (69, 56110), (74, 56125), (87, 56170), (94, 56200), (109, 56266), (110, 56269), (128, 56356), (160, 56494), (184, 56605), (191, 56647), (199, 56680),

Gene: Neighly_80 Start: 53480, Stop: 54124, Start Num: 50

Candidate Starts for Neighly_80:

(Start: 49 @53477 has 1 MA's), (Start: 50 @53480 has 13 MA's), (60, 53498), (87, 53594), (91, 53609), (94, 53627), (115, 53723), (129, 53786), (145, 53876), (160, 53924), (166, 53948), (169, 53951), (178, 54005), (182, 54026), (184, 54035), (191, 54077), (198, 54107),

Gene: Nibb_89 Start: 55433, Stop: 56137, Start Num: 37

Candidate Starts for Nibb_89:

(8, 55271), (10, 55289), (32, 55418), (Start: 37 @55433 has 2 MA's), (38, 55448), (Start: 53 @55502 has 2 MA's), (91, 55622), (106, 55682), (111, 55700), (114, 55712), (124, 55778), (127, 55787), (139, 55868), (144, 55886), (154, 55913), (157, 55919), (159, 55928), (167, 55961), (170, 55979), (171, 55982), (178, 56021), (180, 56039), (183, 56045), (184, 56051), (187, 56066), (199, 56123),

Gene: Nikao_71 Start: 53841, Stop: 54485, Start Num: 55

Candidate Starts for Nikao_71:

(Start: 53 @53835 has 2 MA's), (Start: 55 @53841 has 7 MA's), (Start: 65 @53868 has 8 MA's), (72, 53895), (77, 53907), (83, 53922), (89, 53946), (91, 53952), (95, 53976), (98, 53985), (119, 54075), (126, 54120), (127, 54123), (130, 54138), (135, 54180), (138, 54201), (139, 54204), (140, 54210), (141, 54213), (145, 54225), (146, 54234), (152, 54258), (157, 54279), (161, 54291), (162, 54294), (165, 54303), (172, 54324), (177, 54363), (178, 54366), (184, 54396), (186, 54405), (196, 54459), (198, 54468),

Gene: Niklas_88 Start: 56449, Stop: 57108, Start Num: 48

Candidate Starts for Niklas_88:

(Start: 47 @56446 has 1 MA's), (Start: 48 @56449 has 3 MA's), (71, 56515), (84, 56548), (90, 56569), (92, 56578), (105, 56635), (115, 56683), (121, 56731), (127, 56746), (128, 56755), (133, 56782), (135, 56803), (140, 56833), (153, 56869), (163, 56905), (168, 56926), (176, 56962), (177, 56986), (178, 56989), (189, 57049), (196, 57082), (199, 57094),

Gene: November_83 Start: 55714, Stop: 56274, Start Num: 86

Candidate Starts for November_83:

(Start: 86 @55714 has 2 MA's), (91, 55732), (95, 55756), (98, 55765), (100, 55774), (116, 55834), (123, 55888), (130, 55915), (135, 55957), (140, 55987), (152, 56035), (158, 56065), (175, 56128), (178, 56155), (184, 56185), (188, 56203), (192, 56236), (196, 56248), (199, 56260),

Gene: Nutello_68 Start: 51228, Stop: 51872, Start Num: 55

Candidate Starts for Nutello_68:

(Start: 53 @51222 has 2 MA's), (Start: 55 @51228 has 7 MA's), (Start: 65 @51255 has 8 MA's), (72, 51282), (77, 51294), (83, 51309), (89, 51333), (91, 51339), (95, 51363), (98, 51372), (119, 51462), (126, 51507), (127, 51510), (130, 51525), (135, 51567), (138, 51588), (139, 51591), (140, 51597), (141, 51600), (145, 51612), (146, 51621), (152, 51645), (157, 51666), (161, 51678), (162, 51681), (165, 51690), (172, 51711), (177, 51750), (178, 51753), (184, 51783), (186, 51792), (196, 51846), (198, 51855),

Gene: OkiRoe_82 Start: 55193, Stop: 55834, Start Num: 51

Candidate Starts for OkiRoe_82:

(4, 54806), (6, 54863), (33, 55100), (40, 55151), (Start: 51 @55193 has 9 MA's), (57, 55208), (69, 55250), (74, 55265), (87, 55310), (128, 55496), (136, 55553), (160, 55634), (177, 55712), (191, 55787), (198, 55817), (199, 55820),

Gene: Omnicron_84 Start: 56077, Stop: 56712, Start Num: 50

Candidate Starts for Omnicron_84:

(Start: 50 @56077 has 13 MA's), (60, 56098), (87, 56185), (91, 56200), (94, 56218), (136, 56431), (145, 56464), (198, 56695),

Gene: Oscar_89 Start: 55635, Stop: 56255, Start Num: 59

Candidate Starts for Oscar_89:

(Start: 59 @55635 has 4 MA's), (Start: 65 @55650 has 8 MA's), (68, 55662), (91, 55734), (124, 55896), (139, 55986), (144, 56004), (154, 56031), (167, 56079), (171, 56100), (177, 56136), (178, 56139), (179, 56145), (183, 56163), (184, 56169), (199, 56241),

Gene: Padpat_90 Start: 55720, Stop: 56331, Start Num: 64

Candidate Starts for Padpat_90:

(25, 55567), (31, 55594), (Start: 64 @55720 has 6 MA's), (90, 55807), (113, 55903), (115, 55921), (121, 55969), (122, 55975), (127, 55984), (133, 56020), (135, 56041), (137, 56059), (141, 56074), (145, 56086), (157, 56119), (163, 56143), (170, 56170), (178, 56215), (186, 56254), (197, 56311), (199, 56317),

Gene: Paola_81 Start: 54078, Stop: 54719, Start Num: 51

Candidate Starts for Paola_81:

(Start: 51 @54078 has 9 MA's), (57, 54093), (69, 54135), (74, 54150), (87, 54195), (94, 54225), (110, 54294), (127, 54372), (128, 54381), (145, 54471), (151, 54483), (160, 54519), (191, 54672), (198, 54702), (199, 54705),

Gene: Peanam_88 Start: 56428, Stop: 57087, Start Num: 48

Candidate Starts for Peanam_88:

(Start: 47 @56425 has 1 MA's), (Start: 48 @56428 has 3 MA's), (63, 56464), (66, 56479), (71, 56494), (84, 56527), (90, 56548), (92, 56557), (105, 56614), (115, 56662), (121, 56710), (127, 56725), (128, 56734), (133, 56761), (135, 56782), (140, 56812), (153, 56848), (163, 56884), (168, 56905), (176, 56941), (177, 56965), (196, 57061), (199, 57073),

Gene: PhelpsODU_84 Start: 52304, Stop: 53098, Start Num: 13

Candidate Starts for PhelpsODU_84:

(Start: 13 @52304 has 9 MA's), (18, 52346), (40, 52454), (42, 52457), (61, 52484), (73, 52526), (80, 52547), (90, 52583), (92, 52592), (99, 52625), (110, 52664), (128, 52757), (130, 52763), (133, 52784), (139, 52829), (142, 52841), (161, 52892), (170, 52934), (174, 52949), (178, 52979), (186, 53018), (197, 53075), (199, 53081),

Gene: Phrank_94 Start: 56586, Stop: 57317, Start Num: 13

Candidate Starts for Phrank_94:

(Start: 13 @56586 has 9 MA's), (40, 56694), (70, 56733), (78, 56760), (81, 56769), (101, 56847), (110, 56880), (115, 56907), (121, 56952), (139, 57048), (161, 57111), (164, 57123), (170, 57153), (174, 57168), (178, 57198), (186, 57237), (197, 57294), (199, 57300),

Gene: Psycho_78 Start: 52606, Stop: 53250, Start Num: 50

Candidate Starts for Psycho_78:

(Start: 49 @52603 has 1 MA's), (Start: 50 @52606 has 13 MA's), (60, 52624), (87, 52720), (91, 52735), (94, 52753), (115, 52849), (129, 52912), (145, 53002), (160, 53050), (166, 53074), (169, 53077), (178, 53131), (182, 53152), (184, 53161), (191, 53203), (198, 53233),

Gene: Rando14_81 Start: 54488, Stop: 55123, Start Num: 50

Candidate Starts for Rando14_81:

(Start: 50 @54488 has 13 MA's), (60, 54509), (87, 54596), (91, 54611), (94, 54629), (136, 54842), (145, 54875), (198, 55106),

Gene: Richo_87 Start: 56409, Stop: 57068, Start Num: 48

Candidate Starts for Richo_87:

(Start: 47 @56406 has 1 MA's), (Start: 48 @56409 has 3 MA's), (71, 56475), (84, 56508), (90, 56529), (92, 56538), (105, 56595), (115, 56643), (121, 56691), (127, 56706), (128, 56715), (133, 56742), (135, 56763), (140, 56793), (153, 56829), (163, 56865), (168, 56886), (176, 56922), (177, 56946), (178, 56949), (196, 57042), (199, 57054),

Gene: Scarlett_88 Start: 55509, Stop: 56123, Start Num: 59

Candidate Starts for Scarlett_88:

(26, 55389), (52, 55494), (Start: 59 @55509 has 4 MA's), (68, 55536), (91, 55608), (108, 55674), (124, 55764), (126, 55770), (139, 55854), (144, 55872), (154, 55899), (167, 55947), (171, 55968), (177, 56004), (178, 56007), (183, 56031), (184, 56037), (199, 56109),

Gene: SgtBeansprout_69 Start: 51228, Stop: 51872, Start Num: 55

Candidate Starts for SgtBeansprout_69:

(Start: 53 @51222 has 2 MA's), (Start: 55 @51228 has 7 MA's), (Start: 65 @51255 has 8 MA's), (72, 51282), (77, 51294), (83, 51309), (89, 51333), (91, 51339), (95, 51363), (98, 51372), (119, 51462), (126, 51507), (127, 51510), (130, 51525), (135, 51567), (138, 51588), (139, 51591), (140, 51597), (141, 51600), (145, 51612), (146, 51621), (152, 51645), (157, 51666), (161, 51678), (162, 51681), (165, 51690), (172, 51711), (177, 51750), (178, 51753), (184, 51783), (186, 51792), (196, 51846), (198, 51855),

Gene: Shadow1_91 Start: 55827, Stop: 56666, Start Num: 12

Candidate Starts for Shadow1_91:

(Start: 12 @55827 has 1 MA's), (Start: 13 @55833 has 9 MA's), (18, 55875), (40, 55983), (81, 56118), (92, 56160), (110, 56229), (115, 56256), (130, 56328), (139, 56397), (161, 56460), (164, 56472), (170, 56502), (174, 56517), (178, 56547), (182, 56568), (183, 56571), (186, 56586), (195, 56637), (197, 56643), (199, 56649),

Gene: Shaobing_87 Start: 56496, Stop: 57149, Start Num: 48

Candidate Starts for Shaobing_87:

(Start: 47 @56493 has 1 MA's), (Start: 48 @56496 has 3 MA's), (63, 56532), (66, 56547), (71, 56562), (84, 56595), (90, 56616), (92, 56625), (115, 56721), (117, 56733), (125, 56781), (127, 56787), (133, 56823), (135, 56844), (140, 56874), (153, 56910), (163, 56946), (168, 56967), (176, 57003), (177, 57027), (178, 57030), (189, 57090), (196, 57123), (199, 57135),

Gene: SirPhilip_87 Start: 55717, Stop: 56277, Start Num: 86

Candidate Starts for SirPhilip_87:

(Start: 86 @55717 has 2 MA's), (124, 55894), (127, 55903), (139, 55984), (144, 56002), (148, 56026), (156, 56053), (177, 56155), (178, 56158), (192, 56239), (196, 56251), (199, 56263),

Gene: SoSeph_79 Start: 53442, Stop: 54089, Start Num: 50

Candidate Starts for SoSeph_79:

(Start: 50 @53442 has 13 MA's), (60, 53460), (69, 53496), (87, 53556), (91, 53571), (110, 53658), (127, 53736), (144, 53838), (145, 53841), (179, 53976), (184, 54000), (191, 54042), (198, 54072),

Gene: Sunflower1121_91 Start: 55592, Stop: 56425, Start Num: 13

Candidate Starts for Sunflower1121_91:

(Start: 12 @55586 has 1 MA's), (Start: 13 @55592 has 9 MA's), (18, 55634), (40, 55742), (81, 55877), (92, 55919), (110, 55988), (115, 56015), (130, 56087), (139, 56156), (161, 56219), (164, 56231), (170, 56261), (174, 56276), (178, 56306), (182, 56327), (183, 56330), (186, 56345), (195, 56396), (197, 56402), (199, 56408),

Gene: Syra333_90 Start: 55739, Stop: 56482, Start Num: 21

Candidate Starts for Syra333_90:

(Start: 21 @55739 has 1 MA's), (23, 55745), (36, 55787), (58, 55856), (Start: 64 @55868 has 6 MA's), (71, 55895), (90, 55961), (92, 55970), (99, 56003), (104, 56018), (110, 56042), (128, 56141), (130, 56147), (133, 56168), (139, 56213), (161, 56276), (164, 56288), (170, 56318), (174, 56333), (178, 56363), (182, 56384), (183, 56387), (186, 56402), (195, 56453), (197, 56459), (199, 56465),

Gene: TClif_87 Start: 55031, Stop: 55636, Start Num: 67

Candidate Starts for TClif_87:

(41, 54941), (Start: 67 @55031 has 1 MA's), (77, 55070), (93, 55124), (97, 55145), (104, 55172), (109, 55193), (118, 55241), (120, 55256), (127, 55274), (128, 55283), (139, 55358), (143, 55373), (145, 55379), (153, 55400), (157, 55412), (170, 55475), (178, 55520), (186, 55559), (195, 55610), (199, 55622),

Gene: Teejan_70 Start: 53841, Stop: 54485, Start Num: 55

Candidate Starts for Teejan_70:

(Start: 53 @53835 has 2 MA's), (Start: 55 @53841 has 7 MA's), (Start: 65 @53868 has 8 MA's), (72, 53895), (77, 53907), (83, 53922), (89, 53946), (91, 53952), (95, 53976), (98, 53985), (119, 54075), (126, 54120), (127, 54123), (130, 54138), (135, 54180), (138, 54201), (139, 54204), (140, 54210), (141, 54213), (145, 54225), (146, 54234), (152, 54258), (157, 54279), (161, 54291), (162, 54294), (165, 54303), (172, 54324), (177, 54363), (178, 54366), (184, 54396), (186, 54405), (196, 54459), (198, 54468),

Gene: Thyatira_82 Start: 55790, Stop: 56431, Start Num: 51

Candidate Starts for Thyatira_82:

(Start: 51 @55790 has 9 MA's), (57, 55805), (60, 55811), (69, 55847), (74, 55862), (87, 55907), (127, 56084), (128, 56093), (136, 56150), (160, 56231), (177, 56309), (191, 56384), (193, 56396), (199, 56417),

Gene: Tierra_94 Start: 57212, Stop: 57943, Start Num: 13

Candidate Starts for Tierra_94:

(Start: 13 @57212 has 9 MA's), (40, 57320), (70, 57359), (78, 57386), (81, 57395), (101, 57473), (110, 57506), (115, 57533), (121, 57578), (139, 57674), (161, 57737), (164, 57749), (170, 57779), (174, 57794), (178, 57824), (186, 57863), (197, 57920), (199, 57926),

Gene: Tigress9_92 Start: 56021, Stop: 56854, Start Num: 13

Candidate Starts for Tigress9_92:

(Start: 12 @56015 has 1 MA's), (Start: 13 @56021 has 9 MA's), (18, 56063), (22, 56075), (36, 56132), (40, 56171), (81, 56306), (92, 56348), (110, 56417), (115, 56444), (130, 56516), (139, 56585), (161, 56648), (164, 56660), (170, 56690), (174, 56705), (178, 56735), (182, 56756), (183, 56759), (186, 56774), (195, 56825), (197, 56831), (199, 56837),

Gene: Tiri_87 Start: 55187, Stop: 55798, Start Num: 64

Candidate Starts for Tiri_87:

(9, 54917), (25, 55034), (31, 55061), (Start: 64 @55187 has 6 MA's), (92, 55283), (109, 55358), (113, 55370), (115, 55388), (121, 55436), (127, 55451), (128, 55460), (131, 55466), (133, 55487), (135, 55508), (137, 55526), (141, 55541), (143, 55547), (145, 55553), (152, 55565), (157, 55586), (163, 55610), (170, 55637), (178, 55682), (186, 55721), (197, 55778), (199, 55784),

Gene: Torres_71 Start: 53842, Stop: 54486, Start Num: 55

Candidate Starts for Torres_71:

(Start: 53 @53836 has 2 MA's), (Start: 55 @53842 has 7 MA's), (Start: 65 @53869 has 8 MA's), (72, 53896), (77, 53908), (83, 53923), (89, 53947), (91, 53953), (95, 53977), (98, 53986), (119, 54076), (126, 54121), (127, 54124), (130, 54139), (135, 54181), (138, 54202), (139, 54205), (140, 54211), (141, 54214), (145, 54226), (146, 54235), (152, 54259), (157, 54280), (161, 54292), (162, 54295), (165, 54304), (172, 54325), (177, 54364), (178, 54367), (184, 54397), (186, 54406), (196, 54460),

Gene: Trice_68 Start: 51229, Stop: 51873, Start Num: 55

Candidate Starts for Trice_68:

(Start: 53 @51223 has 2 MA's), (Start: 55 @51229 has 7 MA's), (Start: 65 @51256 has 8 MA's), (72, 51283), (77, 51295), (83, 51310), (89, 51334), (91, 51340), (95, 51364), (98, 51373), (119, 51463), (126, 51508), (127, 51511), (130, 51526), (135, 51568), (138, 51589), (139, 51592), (140, 51598), (141, 51601), (145, 51613), (146, 51622), (152, 51646), (157, 51667), (161, 51679), (162, 51682), (165, 51691), (172, 51712), (177, 51751), (178, 51754), (184, 51784), (186, 51793), (196, 51847), (198, 51856),

Gene: Unicorn_94 Start: 56932, Stop: 57726, Start Num: 13

Candidate Starts for Unicorn_94:

(Start: 13 @56932 has 9 MA's), (18, 56974), (40, 57082), (42, 57085), (61, 57112), (73, 57154), (80, 57175), (90, 57211), (92, 57220), (99, 57253), (110, 57292), (128, 57385), (130, 57391), (133, 57412), (139, 57457), (142, 57469), (161, 57520), (170, 57562), (174, 57577), (178, 57607), (186, 57646), (197, 57703), (199, 57709),

Gene: Validus_93 Start: 57272, Stop: 57934, Start Num: 47

Candidate Starts for Validus_93:

(Start: 47 @57272 has 1 MA's), (Start: 48 @57275 has 3 MA's), (58, 57302), (76, 57365), (79, 57371), (90, 57410), (92, 57419), (105, 57464), (109, 57482), (110, 57485), (112, 57491), (115, 57512), (121, 57557), (127, 57572), (131, 57587), (133, 57608), (135, 57629), (140, 57659), (150, 57683), (153, 57695), (157, 57707), (163, 57731), (176, 57788), (177, 57812), (184, 57845), (185, 57851), (190, 57881), (196, 57908), (199, 57920),

Gene: ViviJ_85 Start: 53804, Stop: 54451, Start Num: 50

Candidate Starts for ViviJ_85:

(Start: 50 @53804 has 13 MA's), (60, 53822), (69, 53858), (87, 53918), (91, 53933), (110, 54020), (127, 54098), (144, 54200), (145, 54203), (179, 54338), (184, 54362), (191, 54404), (198, 54434),

Gene: Waterfoul_81 Start: 53860, Stop: 54501, Start Num: 51

Candidate Starts for Waterfoul_81:

(Start: 51 @53860 has 9 MA's), (57, 53875), (60, 53881), (69, 53917), (74, 53932), (87, 53977), (127, 54154), (160, 54301), (178, 54382), (184, 54412), (191, 54454), (198, 54484), (199, 54487),

Gene: Ximenita_93 Start: 56440, Stop: 57225, Start Num: 13

Candidate Starts for Ximenita_93:

(Start: 13 @56440 has 9 MA's), (28, 56521), (35, 56536), (36, 56539), (71, 56647), (90, 56713), (92, 56722), (99, 56755), (104, 56770), (110, 56794), (118, 56839), (128, 56887), (130, 56893), (133, 56914), (139, 56959), (161, 57022), (164, 57034), (170, 57064), (174, 57079), (178, 57109), (182, 57130), (183, 57133), (186, 57148), (197, 57205), (199, 57211),

Gene: Yuna_90 Start: 57455, Stop: 58021, Start Num: 82

Candidate Starts for Yuna_90:

(Start: 82 @57455 has 1 MA's), (88, 57473), (119, 57587), (123, 57623), (130, 57650), (135, 57692), (139, 57716), (145, 57737), (147, 57752), (149, 57761), (158, 57800), (160, 57806), (167, 57839), (178, 57902), (182, 57923), (183, 57926), (184, 57932), (186, 57941), (190, 57968), (192, 57983), (196, 57995), (199, 58007),