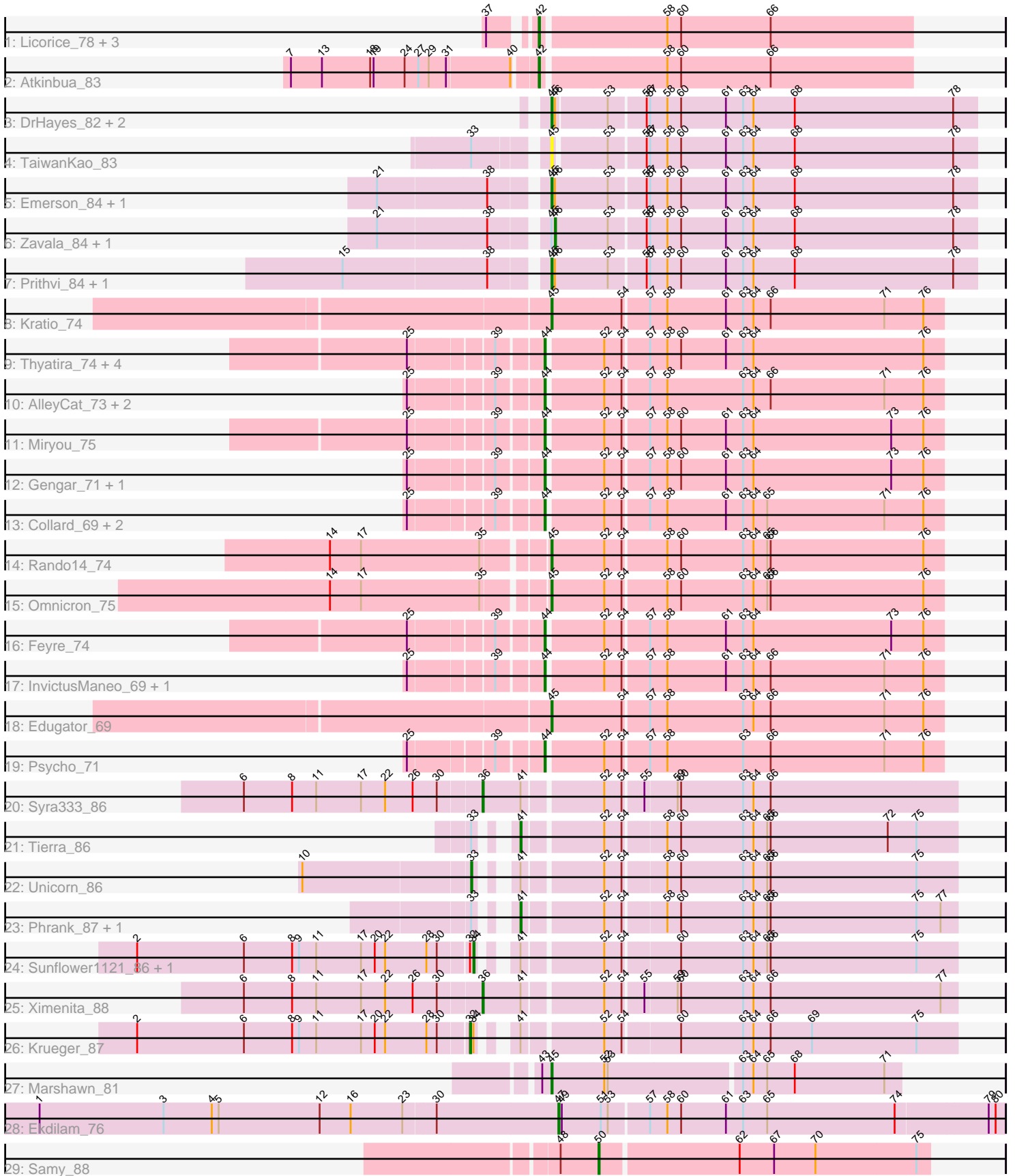


Pham 186972



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 186972 Report

This analysis was run 11/02/24 on database version 579.

Pham number 186972 has 49 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Licorice_78, Kanely_79, ConceptII_82, Altman_80
- Track 2 : Atkinbua_83
- Track 3 : DrHayes_82, Urkel_82, SamuelLPlaqson_82
- Track 4 : TaiwanKao_83
- Track 5 : Emerson_84, Padpat_85
- Track 6 : Zavala_84, Beezoo_85
- Track 7 : Prithvi_84, TreyKay_84
- Track 8 : Kratio_74
- Track 9 : Thyatira_74, Leston_71, Guillsminger_72, Paola_71, Waterfoul_73
- Track 10 : AlleyCat_73, Larva_72, Dadosky_73
- Track 11 : Miryou_75
- Track 12 : Gengar_71, OkiRoe_72
- Track 13 : Collard_69, SoSeph_72, Heftyboy_72
- Track 14 : Rando14_74
- Track 15 : Omnicron_75
- Track 16 : Feyre_74
- Track 17 : InvictusManeo_69, Agent47_71
- Track 18 : Edugator_69
- Track 19 : Psycho_71
- Track 20 : Syra333_86
- Track 21 : Tierra_86
- Track 22 : Unicorn_86
- Track 23 : Phrank_87, Cain_87
- Track 24 : Sunflower1121_86, Shadow1_87
- Track 25 : Ximenita_88
- Track 26 : Krueger_87
- Track 27 : Marshawn_81
- Track 28 : Ekdilam_76
- Track 29 : Samy_88

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

The start number called the most often in the published annotations is 44, it was called in 18 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agent47_71, AlleyCat_73, Collard_69, Dadosky_73, Feyre_74, Gengar_71, Guillsminger_72, Heftyboy_72, InvictusManeo_69, Larva_72, Leston_71, Miryou_75, OkiRoe_72, Paola_71, Psycho_71, SoSeph_72, Thyatira_74, Waterfoul_73,

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

-

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

- Altman_80, Atkinbua_83, Beezoo_85, Cain_87, ConceptII_82, DrHayes_82, Edugator_69, Ekdilam_76, Emerson_84, Kanely_79, Kratio_74, Krueger_87, Licorice_78, Marshawn_81, Omnicron_75, Padpat_85, Phrank_87, Prithvi_84, Rando14_74, SamuelLPlaqson_82, Samy_88, Shadow1_87, Sunflower1121_86, Syra333_86, TaiwanKao_83, Tierra_86, TreyKay_84, Unicorn_86, Urkel_82, Ximenita_88, Zavala_84,

Summary by start number:

Start 32:

- Found in 3 of 49 (6.1%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Krueger_87 (K6),

Start 33:

- Found in 5 of 49 (10.2%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Unicorn_86 (K6),

Start 34:

- Found in 3 of 49 (6.1%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Shadow1_87 (K6), Sunflower1121_86 (K6),

Start 36:

- Found in 2 of 49 (4.1%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Syra333_86 (K6), Ximenita_88 (K6),

Start 41:

- Found in 9 of 49 (18.4%) of genes in pham
- Manual Annotations of this start: 3 of 48
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Cain_87 (K6), Phrank_87 (K6), Tierra_86 (K6),

Start 42:

- Found in 5 of 49 (10.2%) of genes in pham

- Manual Annotations of this start: 5 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altman_80 (A1), Atkinbua_83 (A1), ConceptII_82 (A1), Kanely_79 (A1), Licorice_78 (A1),

Start 44:

- Found in 18 of 49 (36.7%) of genes in pham
- Manual Annotations of this start: 18 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agent47_71 (K5), AlleyCat_73 (K5), Collard_69 (K5), Dadosky_73 (K5), Feyre_74 (K5), Gengar_71 (K5), Guillsminger_72 (K5), Heftyboy_72 (K5), InvictusManeo_69 (K5), Larva_72 (K5), Leston_71 (K5), Miryou_75 (K5), OkiRoe_72 (K5), Paola_71 (K5), Psycho_71 (K5), SoSeph_72 (K5), Thyatira_74 (K5), Waterfoul_73 (K5),

Start 45:

- Found in 15 of 49 (30.6%) of genes in pham
- Manual Annotations of this start: 12 of 48
- Called 86.7% of time when present
- Phage (with cluster) where this start called: DrHayes_82 (K1), Edugator_69 (K5), Emerson_84 (K1), Kratio_74 (K5), Marshawn_81 (K6), Omnicron_75 (K5), Padpat_85 (K1), Prithvi_84 (K1), Rando14_74 (K5), SamuelLPlaqson_82 (K1), TaiwanKao_83 (K1), TreyKay_84 (K1), Urkel_82 (K1),

Start 46:

- Found in 9 of 49 (18.4%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Beezoo_85 (K1), Zavala_84 (K1),

Start 47:

- Found in 1 of 49 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ekdilam_76 (K6),

Start 50:

- Found in 1 of 49 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy_88 (singleton),

Summary by clusters:

There are 5 clusters represented in this pham: A1, K1, K6, K5, singleton,

Info for manual annotations of cluster A1:

- Start number 42 was manually annotated 5 times for cluster A1.

Info for manual annotations of cluster K1:

- Start number 45 was manually annotated 7 times for cluster K1.
- Start number 46 was manually annotated 2 times for cluster K1.

Info for manual annotations of cluster K5:

- Start number 44 was manually annotated 18 times for cluster K5.
- Start number 45 was manually annotated 4 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 32 was manually annotated 1 time for cluster K6.
- Start number 33 was manually annotated 1 time for cluster K6.
- Start number 34 was manually annotated 2 times for cluster K6.
- Start number 36 was manually annotated 2 times for cluster K6.
- Start number 41 was manually annotated 3 times for cluster K6.
- Start number 45 was manually annotated 1 time for cluster K6.
- Start number 47 was manually annotated 1 time for cluster K6.

Gene Information:

Gene: Agent47_71 Start: 48634, Stop: 48969, Start Num: 44

Candidate Starts for Agent47_71:

(25, 48532), (39, 48598), (Start: 44 @48634 has 18 MA's), (52, 48679), (54, 48694), (57, 48715), (58, 48730), (61, 48781), (63, 48796), (64, 48805), (66, 48820), (71, 48919), (76, 48952),

Gene: AlleyCat_73 Start: 48977, Stop: 49312, Start Num: 44

Candidate Starts for AlleyCat_73:

(25, 48875), (39, 48941), (Start: 44 @48977 has 18 MA's), (52, 49022), (54, 49037), (57, 49058), (58, 49073), (63, 49139), (64, 49148), (66, 49163), (71, 49262), (76, 49295),

Gene: Altman_80 Start: 48154, Stop: 47840, Start Num: 42

Candidate Starts for Altman_80:

(37, 48184), (Start: 42 @48154 has 5 MA's), (58, 48052), (60, 48040), (66, 47962),

Gene: Atkinbua_83 Start: 48481, Stop: 48167, Start Num: 42

Candidate Starts for Atkinbua_83:

(7, 48688), (13, 48661), (18, 48619), (19, 48616), (24, 48589), (27, 48577), (29, 48568), (31, 48553), (40, 48499), (Start: 42 @48481 has 5 MA's), (58, 48379), (60, 48367), (66, 48289),

Gene: Beezoo_85 Start: 53916, Stop: 54278, Start Num: 46

Candidate Starts for Beezoo_85:

(21, 53778), (38, 53871), (Start: 45 @53913 has 12 MA's), (Start: 46 @53916 has 2 MA's), (53, 53961), (56, 53991), (57, 53994), (58, 54009), (60, 54021), (61, 54060), (63, 54075), (64, 54084), (68, 54120), (78, 54258),

Gene: Cain_87 Start: 53307, Stop: 53669, Start Num: 41

Candidate Starts for Cain_87:

(Start: 33 @53289 has 1 MA's), (Start: 41 @53307 has 3 MA's), (52, 53370), (54, 53385), (58, 53418), (60, 53430), (63, 53484), (64, 53493), (65, 53505), (66, 53508), (75, 53634), (77, 53655),

Gene: Collard_69 Start: 48595, Stop: 48930, Start Num: 44

Candidate Starts for Collard_69:

(25, 48493), (39, 48559), (Start: 44 @48595 has 18 MA's), (52, 48640), (54, 48655), (57, 48676), (58, 48691), (61, 48742), (63, 48757), (64, 48766), (65, 48778), (71, 48880), (76, 48913),

Gene: ConceptII_82 Start: 49255, Stop: 48941, Start Num: 42

Candidate Starts for ConceptII_82:

(37, 49285), (Start: 42 @49255 has 5 MA's), (58, 49153), (60, 49141), (66, 49063),

Gene: Dadosky_73 Start: 48979, Stop: 49314, Start Num: 44

Candidate Starts for Dadosky_73:

(25, 48877), (39, 48943), (Start: 44 @48979 has 18 MA's), (52, 49024), (54, 49039), (57, 49060), (58, 49075), (63, 49141), (64, 49150), (66, 49165), (71, 49264), (76, 49297),

Gene: DrHayes_82 Start: 53398, Stop: 53760, Start Num: 45

Candidate Starts for DrHayes_82:

(Start: 45 @53398 has 12 MA's), (Start: 46 @53401 has 2 MA's), (53, 53443), (56, 53473), (57, 53476), (58, 53491), (60, 53503), (61, 53542), (63, 53557), (64, 53566), (68, 53602), (78, 53740),

Gene: Edugator_69 Start: 50149, Stop: 50484, Start Num: 45

Candidate Starts for Edugator_69:

(Start: 45 @50149 has 12 MA's), (54, 50209), (57, 50230), (58, 50245), (63, 50311), (64, 50320), (66, 50335), (71, 50434), (76, 50467),

Gene: Ekdilam_76 Start: 53484, Stop: 53864, Start Num: 47

Candidate Starts for Ekdilam_76:

(1, 53037), (3, 53145), (4, 53187), (5, 53193), (12, 53280), (16, 53307), (23, 53352), (30, 53379), (Start: 47 @53484 has 1 MA's), (49, 53487), (51, 53520), (53, 53526), (57, 53559), (58, 53574), (60, 53586), (61, 53625), (63, 53640), (65, 53661), (74, 53772), (79, 53850), (80, 53856),

Gene: Emerson_84 Start: 53319, Stop: 53684, Start Num: 45

Candidate Starts for Emerson_84:

(21, 53184), (38, 53277), (Start: 45 @53319 has 12 MA's), (Start: 46 @53322 has 2 MA's), (53, 53367), (56, 53397), (57, 53400), (58, 53415), (60, 53427), (61, 53466), (63, 53481), (64, 53490), (68, 53526), (78, 53664),

Gene: Feyre_74 Start: 52395, Stop: 52730, Start Num: 44

Candidate Starts for Feyre_74:

(25, 52293), (39, 52359), (Start: 44 @52395 has 18 MA's), (52, 52440), (54, 52455), (57, 52476), (58, 52491), (61, 52542), (63, 52557), (64, 52566), (73, 52686), (76, 52713),

Gene: Gengar_71 Start: 50405, Stop: 50740, Start Num: 44

Candidate Starts for Gengar_71:

(25, 50303), (39, 50369), (Start: 44 @50405 has 18 MA's), (52, 50450), (54, 50465), (57, 50486), (58, 50501), (60, 50513), (61, 50552), (63, 50567), (64, 50576), (73, 50696), (76, 50723),

Gene: Guillsminger_72 Start: 50326, Stop: 50661, Start Num: 44

Candidate Starts for Guillsminger_72:

(25, 50224), (39, 50290), (Start: 44 @50326 has 18 MA's), (52, 50371), (54, 50386), (57, 50407), (58, 50422), (60, 50434), (61, 50473), (63, 50488), (64, 50497), (76, 50644),

Gene: Heftyboy_72 Start: 50674, Stop: 51009, Start Num: 44

Candidate Starts for Heftyboy_72:

(25, 50572), (39, 50638), (Start: 44 @50674 has 18 MA's), (52, 50719), (54, 50734), (57, 50755), (58, 50770), (61, 50821), (63, 50836), (64, 50845), (65, 50857), (71, 50959), (76, 50992),

Gene: InvictusManeo_69 Start: 48638, Stop: 48973, Start Num: 44

Candidate Starts for InvictusManeo_69:

(25, 48536), (39, 48602), (Start: 44 @48638 has 18 MA's), (52, 48683), (54, 48698), (57, 48719), (58, 48734), (61, 48785), (63, 48800), (64, 48809), (66, 48824), (71, 48923), (76, 48956),

Gene: Kanely_79 Start: 47931, Stop: 47617, Start Num: 42

Candidate Starts for Kanely_79:

(37, 47961), (Start: 42 @47931 has 5 MA's), (58, 47829), (60, 47817), (66, 47739),

Gene: Kratio_74 Start: 50196, Stop: 50531, Start Num: 45

Candidate Starts for Kratio_74:

(Start: 45 @50196 has 12 MA's), (54, 50256), (57, 50277), (58, 50292), (61, 50343), (63, 50358), (64, 50367), (66, 50382), (71, 50481), (76, 50514),

Gene: Krueger_87 Start: 53565, Stop: 53948, Start Num: 32

Candidate Starts for Krueger_87:

(2, 53280), (6, 53373), (8, 53415), (9, 53421), (11, 53436), (17, 53475), (20, 53487), (22, 53496), (28, 53532), (30, 53541), (Start: 32 @53565 has 1 MA's), (Start: 34 @53568 has 2 MA's), (Start: 41 @53586 has 3 MA's), (52, 53649), (54, 53664), (60, 53709), (63, 53763), (64, 53772), (66, 53787), (69, 53823), (75, 53913),

Gene: Larva_72 Start: 49851, Stop: 50186, Start Num: 44

Candidate Starts for Larva_72:

(25, 49749), (39, 49815), (Start: 44 @49851 has 18 MA's), (52, 49896), (54, 49911), (57, 49932), (58, 49947), (63, 50013), (64, 50022), (66, 50037), (71, 50136), (76, 50169),

Gene: Leston_71 Start: 50443, Stop: 50778, Start Num: 44

Candidate Starts for Leston_71:

(25, 50341), (39, 50407), (Start: 44 @50443 has 18 MA's), (52, 50488), (54, 50503), (57, 50524), (58, 50539), (60, 50551), (61, 50590), (63, 50605), (64, 50614), (76, 50761),

Gene: Licorice_78 Start: 49232, Stop: 48918, Start Num: 42

Candidate Starts for Licorice_78:

(37, 49262), (Start: 42 @49232 has 5 MA's), (58, 49130), (60, 49118), (66, 49040),

Gene: Marshawn_81 Start: 53759, Stop: 54055, Start Num: 45

Candidate Starts for Marshawn_81:

(43, 53756), (Start: 45 @53759 has 12 MA's), (52, 53804), (53, 53807), (63, 53918), (64, 53927), (65, 53939), (68, 53963), (71, 54041),

Gene: Miryou_75 Start: 53062, Stop: 53397, Start Num: 44

Candidate Starts for Miryou_75:

(25, 52960), (39, 53026), (Start: 44 @53062 has 18 MA's), (52, 53107), (54, 53122), (57, 53143), (58, 53158), (60, 53170), (61, 53209), (63, 53224), (64, 53233), (73, 53353), (76, 53380),

Gene: OkiRoe_72 Start: 50747, Stop: 51082, Start Num: 44

Candidate Starts for OkiRoe_72:

(25, 50645), (39, 50711), (Start: 44 @50747 has 18 MA's), (52, 50792), (54, 50807), (57, 50828), (58, 50843), (60, 50855), (61, 50894), (63, 50909), (64, 50918), (73, 51038), (76, 51065),

Gene: Omnicron_75 Start: 51710, Stop: 52045, Start Num: 45

Candidate Starts for Omnicron_75:

(14, 51533), (17, 51560), (35, 51662), (Start: 45 @51710 has 12 MA's), (52, 51755), (54, 51770), (58, 51806), (60, 51818), (63, 51872), (64, 51881), (65, 51893), (66, 51896), (76, 52028),

Gene: Padpat_85 Start: 53319, Stop: 53684, Start Num: 45

Candidate Starts for Padpat_85:

(21, 53184), (38, 53277), (Start: 45 @53319 has 12 MA's), (Start: 46 @53322 has 2 MA's), (53, 53367), (56, 53397), (57, 53400), (58, 53415), (60, 53427), (61, 53466), (63, 53481), (64, 53490), (68, 53526), (78, 53664),

Gene: Paola_71 Start: 50326, Stop: 50661, Start Num: 44

Candidate Starts for Paola_71:

(25, 50224), (39, 50290), (Start: 44 @50326 has 18 MA's), (52, 50371), (54, 50386), (57, 50407), (58, 50422), (60, 50434), (61, 50473), (63, 50488), (64, 50497), (76, 50644),

Gene: Phrank_87 Start: 53294, Stop: 53656, Start Num: 41

Candidate Starts for Phrank_87:

(Start: 33 @53276 has 1 MA's), (Start: 41 @53294 has 3 MA's), (52, 53357), (54, 53372), (58, 53405), (60, 53417), (63, 53471), (64, 53480), (65, 53492), (66, 53495), (75, 53621), (77, 53642),

Gene: Prithvi_84 Start: 53449, Stop: 53814, Start Num: 45

Candidate Starts for Prithvi_84:

(15, 53284), (38, 53407), (Start: 45 @53449 has 12 MA's), (Start: 46 @53452 has 2 MA's), (53, 53497), (56, 53527), (57, 53530), (58, 53545), (60, 53557), (61, 53596), (63, 53611), (64, 53620), (68, 53656), (78, 53794),

Gene: Psycho_71 Start: 48976, Stop: 49311, Start Num: 44

Candidate Starts for Psycho_71:

(25, 48874), (39, 48940), (Start: 44 @48976 has 18 MA's), (52, 49021), (54, 49036), (57, 49057), (58, 49072), (63, 49138), (66, 49162), (71, 49261), (76, 49294),

Gene: Rando14_74 Start: 50386, Stop: 50721, Start Num: 45

Candidate Starts for Rando14_74:

(14, 50209), (17, 50236), (35, 50338), (Start: 45 @50386 has 12 MA's), (52, 50431), (54, 50446), (58, 50482), (60, 50494), (63, 50548), (64, 50557), (65, 50569), (66, 50572), (76, 50704),

Gene: SamuelLPlaqson_82 Start: 53398, Stop: 53760, Start Num: 45

Candidate Starts for SamuelLPlaqson_82:

(Start: 45 @53398 has 12 MA's), (Start: 46 @53401 has 2 MA's), (53, 53443), (56, 53473), (57, 53476), (58, 53491), (60, 53503), (61, 53542), (63, 53557), (64, 53566), (68, 53602), (78, 53740),

Gene: Samy_88 Start: 54138, Stop: 54419, Start Num: 50

Candidate Starts for Samy_88:

(48, 54105), (Start: 50 @54138 has 1 MA's), (62, 54255), (67, 54285), (70, 54321), (75, 54408),

Gene: Shadow1_87 Start: 53708, Stop: 54088, Start Num: 34

Candidate Starts for Shadow1_87:

(2, 53420), (6, 53513), (8, 53555), (9, 53561), (11, 53576), (17, 53615), (20, 53627), (22, 53636), (28, 53672), (30, 53681), (Start: 32 @53705 has 1 MA's), (Start: 34 @53708 has 2 MA's), (Start: 41 @53726 has 3 MA's), (52, 53789), (54, 53804), (60, 53849), (63, 53903), (64, 53912), (65, 53924), (66, 53927), (75, 54053),

Gene: SoSeph_72 Start: 50674, Stop: 51009, Start Num: 44

Candidate Starts for SoSeph_72:

(25, 50572), (39, 50638), (Start: 44 @50674 has 18 MA's), (52, 50719), (54, 50734), (57, 50755), (58, 50770), (61, 50821), (63, 50836), (64, 50845), (65, 50857), (71, 50959), (76, 50992),

Gene: Sunflower1121_86 Start: 53252, Stop: 53632, Start Num: 34

Candidate Starts for Sunflower1121_86:

(2, 52964), (6, 53057), (8, 53099), (9, 53105), (11, 53120), (17, 53159), (20, 53171), (22, 53180), (28, 53216), (30, 53225), (Start: 32 @53249 has 1 MA's), (Start: 34 @53252 has 2 MA's), (Start: 41 @53270 has 3 MA's), (52, 53333), (54, 53348), (60, 53393), (63, 53447), (64, 53456), (65, 53468), (66, 53471), (75, 53597),

Gene: Syra333_86 Start: 53606, Stop: 54001, Start Num: 36

Candidate Starts for Syra333_86:

(6, 53402), (8, 53444), (11, 53465), (17, 53504), (22, 53525), (26, 53549), (30, 53570), (Start: 36 @53606 has 2 MA's), (Start: 41 @53639 has 3 MA's), (52, 53702), (54, 53717), (55, 53732), (59, 53759), (60, 53762), (63, 53816), (64, 53825), (66, 53840),

Gene: TaiwanKao_83 Start: 53164, Stop: 53523, Start Num: 45

Candidate Starts for TaiwanKao_83:

(Start: 33 @53110 has 1 MA's), (Start: 45 @53164 has 12 MA's), (53, 53206), (56, 53236), (57, 53239), (58, 53254), (60, 53266), (61, 53305), (63, 53320), (64, 53329), (68, 53365), (78, 53503),

Gene: Thyatira_74 Start: 52678, Stop: 53013, Start Num: 44

Candidate Starts for Thyatira_74:

(25, 52576), (39, 52642), (Start: 44 @52678 has 18 MA's), (52, 52723), (54, 52738), (57, 52759), (58, 52774), (60, 52786), (61, 52825), (63, 52840), (64, 52849), (76, 52996),

Gene: Tierra_86 Start: 53708, Stop: 54070, Start Num: 41

Candidate Starts for Tierra_86:

(Start: 33 @53690 has 1 MA's), (Start: 41 @53708 has 3 MA's), (52, 53771), (54, 53786), (58, 53819), (60, 53831), (63, 53885), (64, 53894), (65, 53906), (66, 53909), (72, 54011), (75, 54035),

Gene: TreyKay_84 Start: 53449, Stop: 53814, Start Num: 45

Candidate Starts for TreyKay_84:

(15, 53284), (38, 53407), (Start: 45 @53449 has 12 MA's), (Start: 46 @53452 has 2 MA's), (53, 53497), (56, 53527), (57, 53530), (58, 53545), (60, 53557), (61, 53596), (63, 53611), (64, 53620), (68, 53656), (78, 53794),

Gene: Unicorn_86 Start: 53416, Stop: 53796, Start Num: 33

Candidate Starts for Unicorn_86:

(10, 53275), (Start: 33 @53416 has 1 MA's), (Start: 41 @53434 has 3 MA's), (52, 53497), (54, 53512), (58, 53545), (60, 53557), (63, 53611), (64, 53620), (65, 53632), (66, 53635), (75, 53761),

Gene: Urkel_82 Start: 53398, Stop: 53760, Start Num: 45

Candidate Starts for Urkel_82:

(Start: 45 @53398 has 12 MA's), (Start: 46 @53401 has 2 MA's), (53, 53443), (56, 53473), (57, 53476), (58, 53491), (60, 53503), (61, 53542), (63, 53557), (64, 53566), (68, 53602), (78, 53740),

Gene: Waterfoul_73 Start: 50748, Stop: 51083, Start Num: 44

Candidate Starts for Waterfoul_73:

(25, 50646), (39, 50712), (Start: 44 @50748 has 18 MA's), (52, 50793), (54, 50808), (57, 50829), (58, 50844), (60, 50856), (61, 50895), (63, 50910), (64, 50919), (76, 51066),

Gene: Ximenita_88 Start: 53930, Stop: 54325, Start Num: 36

Candidate Starts for Ximenita_88:

(6, 53726), (8, 53768), (11, 53789), (17, 53828), (22, 53849), (26, 53873), (30, 53894), (Start: 36 @53930 has 2 MA's), (Start: 41 @53963 has 3 MA's), (52, 54026), (54, 54041), (55, 54056), (59,

54083), (60, 54086), (63, 54140), (64, 54149), (66, 54164), (77, 54311),

Gene: Zavala_84 Start: 53392, Stop: 53754, Start Num: 46

Candidate Starts for Zavala_84:

(21, 53254), (38, 53347), (Start: 45 @53389 has 12 MA's), (Start: 46 @53392 has 2 MA's), (53, 53437), (56, 53467), (57, 53470), (58, 53485), (60, 53497), (61, 53536), (63, 53551), (64, 53560), (68, 53596), (78, 53734),