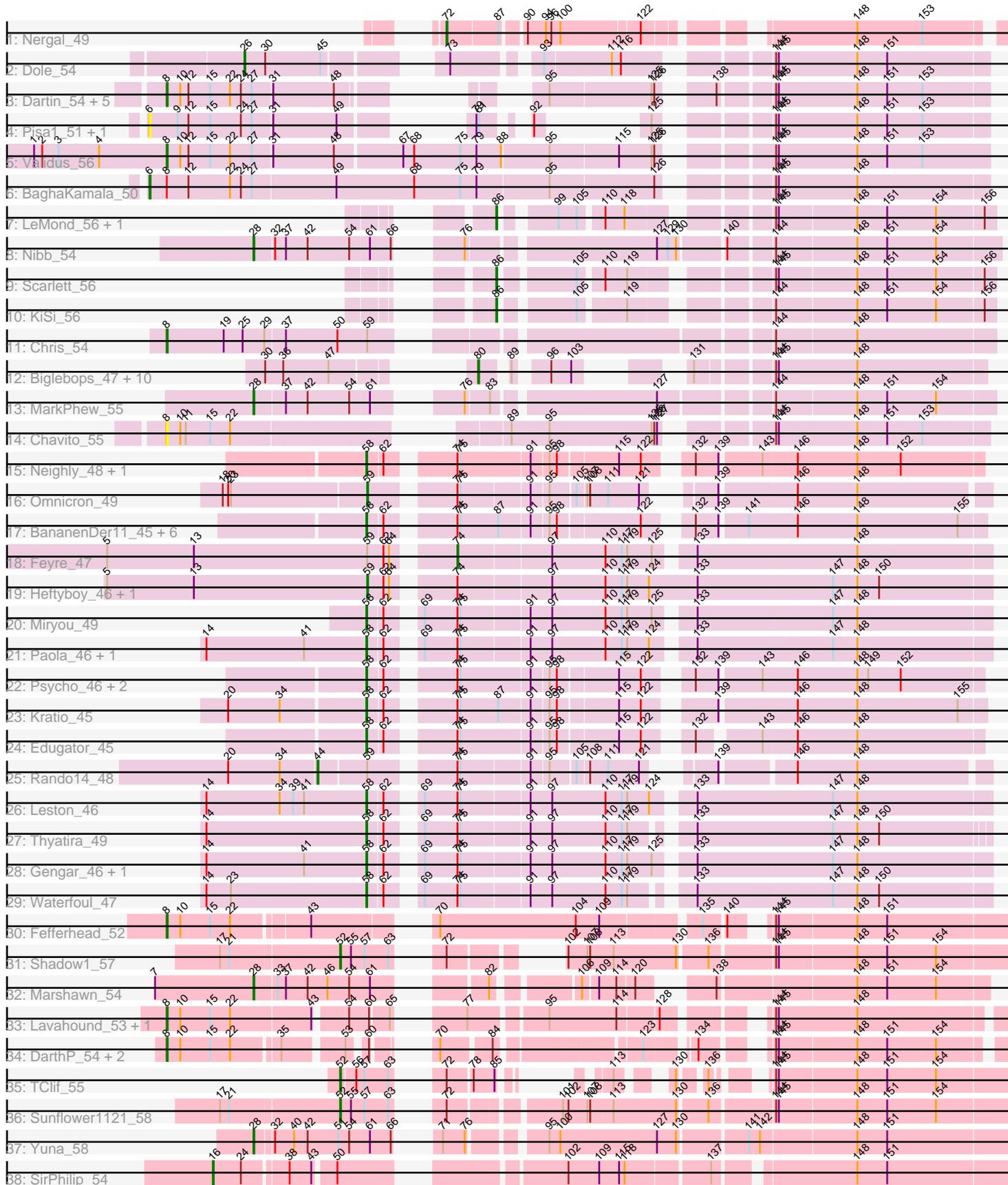Pham 287875

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 287875 Report

This analysis was run 03/28/26 on database version 641.

Pham number 287875 has 70 members, 13 are drafts.

Phages represented in each track:
• Track 1 : Nergal_49
• Track 2 : Dole_54
• Track 3 : Dartin_54, Shaobing_54, Peanam_54, Richo_54, Niklas_54, McMater_54
• Track 4 : Pisa1_51, Pisa4_45
• Track 5 : Validus_56
• Track 6 : BaghaKamala_50
• Track 7 : LeMond_56, Oscar_56
• Track 8 : Nibb_54
• Track 9 : Scarlett_56
• Track 10 : KiSi_56
• Track 11 : Chris_54
• Track 12 : Biglebops_47, Torres_50, LilPharaoh_47, Nikao_50, Trice_47, Nutello_47, Enkosi_49, SgtBeansprout_47, Teejan_49, Mdavu_48, Amelie_47
• Track 13 : MarkPhew_55
• Track 14 : Chavito_55
• Track 15 : Neighly_48, Larva_47
• Track 16 : Omnicron_49
• Track 17 : BananenDer11_45, ViviJ_47, LilDirt_45, DoubleChamp_45, Collard_46, Agent47_48, InvictusManeo_46
• Track 18 : Feyre_47
• Track 19 : Heftyboy_46, SoSeph_46
• Track 20 : Miryou_49
• Track 21 : Paola_46, Guillsminger_47
• Track 22 : Psycho_46, AlleyCat_48, Dadosky_48
• Track 23 : Kratio_45
• Track 24 : Edugator_45
• Track 25 : Rando14_48
• Track 26 : Leston_46
• Track 27 : Thyatira_49
• Track 28 : Gengar_46, OkiRoe_46
• Track 29 : Waterfoul_47
• Track 30 : Fefferhead_52
• Track 31 : Shadow1_57
• Track 32 : Marshawn_54
• Track 33 : Lavahound_53, Amgine_52
• Track 34 : DarthP_54, Hammy_54, Amohnition_54
• Track 35 : TClif_55

- Track 36 : Sunflower1121_58
- Track 37 : Yuna_58
- Track 38 : SirPhilip_54

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

The start number called the most often in the published annotations is 58, it was called in 18 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Agent47_48, AlleyCat_48, BananenDer11_45, Collard_46, Dadosky_48, DoubleChamp_45, Edugator_45, Gengar_46, Guillsminger_47, InvictusManeo_46, Kratio_45, Larva_47, Leston_46, LilDirt_45, Miryou_49, Neighly_48, OkiRoe_46, Paola_46, Psycho_46, Thyatira_49, ViviJ_47, Waterfoul_47,

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

Genes that do not have the "Most Annotated" start:
- Amelie_47, Amgine_52, Amohnition_54, BaghaKamala_50, Biglebops_47, Chavito_55, Chris_54, DarthP_54, Dartin_54, Dole_54, Enkosi_49, Fefferhead_52, Feyre_47, Hammy_54, Heftyboy_46, KiSi_56, Lavahound_53, LeMond_56, LilPharaoh_47, MarkPhew_55, Marshawn_54, McMater_54, Mdavu_48, Nergal_49, Nibb_54, Nikao_50, Niklas_54, Nutello_47, Omnicron_49, Oscar_56, Peanam_54, Pisa1_51, Pisa4_45, Rando14_48, Richo_54, Scarlett_56, SgtBeansprout_47, Shadow1_57, Shaobing_54, SirPhilip_54, SoSeph_46, Sunflower1121_58, TClif_55, Teejan_49, Torres_50, Trice_47, Validus_56, Yuna_58,

Summary by start number:

Start 6:
- Found in 3 of 70 (4.3%) of genes in pham
- Manual Annotations of this start: 1 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BaghaKamala_50 (K1), Pisa1_51 (K1), Pisa4_45 (K1),

Start 8:
- Found in 16 of 70 (22.9%) of genes in pham
- Manual Annotations of this start: 10 of 57
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Amgine_52 (K6), Amohnition_54 (K6), Chavito_55 (K1), Chris_54 (K1), DarthP_54 (K6), Dartin_54 (K1), Fefferhead_52 (K6), Hammy_54 (K6), Lavahound_53 (K6), McMater_54 (K1), Niklas_54 (K1), Peanam_54 (K1), Richo_54 (K1), Shaobing_54 (K1), Validus_56 (K1),

Start 16:
- Found in 1 of 70 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 57
- Called 100.0% of time when present

• Phage (with cluster) where this start called: SirPhilip_54 (K6),

Start 26:
• Found in 1 of 70 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Dole_54 (K1),

Start 28:
• Found in 4 of 70 (5.7%) of genes in pham
• Manual Annotations of this start: 4 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: MarkPhew_55 (K1), Marshawn_54 (K6), Nibb_54 (K1), Yuna_58 (K6),

Start 44:
• Found in 1 of 70 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Rando14_48 (K5),

Start 52:
• Found in 3 of 70 (4.3%) of genes in pham
• Manual Annotations of this start: 3 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shadow1_57 (K6), Sunflower1121_58 (K6), TClif_55 (K6),

Start 58:
• Found in 22 of 70 (31.4%) of genes in pham
• Manual Annotations of this start: 18 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Agent47_48 (K5), AlleyCat_48 (K5), BananenDer11_45 (K5), Collard_46 (K5), Dadosky_48 (K5), DoubleChamp_45 (K5), Edugator_45 (K5), Gengar_46 (K5), Guillsminger_47 (K5), InvictusManeo_46 (K5), Kratio_45 (K5), Larva_47 (K5), Leston_46 (K5), LilDirt_45 (K5), Miryou_49 (K5), Neighly_48 (K3), OkiRoe_46 (K5), Paola_46 (K5), Psycho_46 (K5), Thyatira_49 (K5), ViviJ_47 (K5), Waterfoul_47 (K5),

Start 59:
• Found in 6 of 70 (8.6%) of genes in pham
• Manual Annotations of this start: 3 of 57
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Heftyboy_46 (K5), Omnicron_49 (K5), SoSeph_46 (K5),

Start 72:
• Found in 4 of 70 (5.7%) of genes in pham
• Manual Annotations of this start: 1 of 57
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Nergal_49 (AG),

Start 74:

• Found in 27 of 70 (38.6%) of genes in pham
• Manual Annotations of this start: 1 of 57
• Called 3.7% of time when present
• Phage (with cluster) where this start called: Feyre_47 (K5),

Start 80:
• Found in 11 of 70 (15.7%) of genes in pham
• Manual Annotations of this start: 9 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amelie_47 (K1), Biglebops_47 (K1),
Enkosi_49 (K1), LilPharaoh_47 (K1), Mdavu_48 (K1), Nikao_50 (K1), Nutello_47
(K1), SgtBeansprout_47 (K1), Teejan_49 (K1), Torres_50 (K1), Trice_47 (K1),

Start 86:
• Found in 4 of 70 (5.7%) of genes in pham
• Manual Annotations of this start: 4 of 57
• Called 100.0% of time when present
• Phage (with cluster) where this start called: KiSi_56 (K1), LeMond_56 (K1),
Oscar_56 (K1), Scarlett_56 (K1),

Summary by clusters:

There are 5 clusters represented in this pham: AG, K3, K1, K6, K5,

Info for manual annotations of cluster AG:
•Start number 72 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:
•Start number 6 was manually annotated 1 time for cluster K1.
•Start number 8 was manually annotated 5 times for cluster K1.
•Start number 26 was manually annotated 1 time for cluster K1.
•Start number 28 was manually annotated 2 times for cluster K1.
•Start number 80 was manually annotated 9 times for cluster K1.
•Start number 86 was manually annotated 4 times for cluster K1.

Info for manual annotations of cluster K5:
•Start number 44 was manually annotated 1 time for cluster K5.
•Start number 58 was manually annotated 18 times for cluster K5.
•Start number 59 was manually annotated 3 times for cluster K5.
•Start number 74 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster K6:
•Start number 8 was manually annotated 5 times for cluster K6.
•Start number 16 was manually annotated 1 time for cluster K6.
•Start number 28 was manually annotated 2 times for cluster K6.
•Start number 52 was manually annotated 3 times for cluster K6.

Gene Information:
Gene: Agent47_48 Start: 36423, Stop: 37028, Start Num: 58

Candidate Starts for Agent47_48:
(Start: 58 @36423 has 18 MA's), (62, 36438), (Start: 74 @36498 has 1 MA's), (75, 36501), (87, 36543), (91, 36576), (95, 36594), (98, 36600), (122, 36684), (132, 36720), (139, 36744), (141, 36771), (146, 36822), (148, 36888), (155, 36999),

Gene: AlleyCat_48 Start: 36277, Stop: 36879, Start Num: 58
Candidate Starts for AlleyCat_48:
(Start: 58 @36277 has 18 MA's), (62, 36292), (Start: 74 @36352 has 1 MA's), (75, 36355), (91, 36430), (95, 36448), (98, 36454), (115, 36514), (122, 36538), (132, 36574), (139, 36598), (143, 36640), (146, 36676), (148, 36742), (149, 36754), (152, 36790),

Gene: Amelie_47 Start: 37306, Stop: 37731, Start Num: 80
Candidate Starts for Amelie_47:
(30, 37171), (36, 37189), (47, 37234), (Start: 80 @37306 has 9 MA's), (89, 37327), (96, 37354), (103, 37375), (131, 37429), (144, 37501), (145, 37504), (148, 37591),

Gene: Amgine_52 Start: 38804, Stop: 39586, Start Num: 8
Candidate Starts for Amgine_52:
(Start: 8 @38804 has 10 MA's), (10, 38819), (15, 38852), (22, 38873), (43, 38960), (54, 38990), (60, 39011), (65, 39029), (77, 39071), (95, 39146), (114, 39218), (128, 39260), (144, 39341), (145, 39344), (148, 39431),

Gene: Amohnition_54 Start: 38811, Stop: 39545, Start Num: 8
Candidate Starts for Amohnition_54:
(Start: 8 @38811 has 10 MA's), (10, 38826), (15, 38859), (22, 38880), (35, 38928), (53, 38988), (60, 39003), (70, 39027), (84, 39075), (123, 39213), (134, 39255), (144, 39306), (145, 39309), (148, 39393), (151, 39426), (154, 39480),

Gene: BaghaKamala_50 Start: 37051, Stop: 37917, Start Num: 6
Candidate Starts for BaghaKamala_50:
(Start: 6 @37051 has 1 MA's), (Start: 8 @37069 has 10 MA's), (12, 37093), (22, 37138), (24, 37150), (27, 37162), (49, 37252), (68, 37336), (75, 37387), (79, 37405), (95, 37483), (126, 37594), (144, 37684), (145, 37687), (148, 37774),

Gene: BananenDer11_45 Start: 36384, Stop: 36989, Start Num: 58
Candidate Starts for BananenDer11_45:
(Start: 58 @36384 has 18 MA's), (62, 36399), (Start: 74 @36459 has 1 MA's), (75, 36462), (87, 36504), (91, 36537), (95, 36555), (98, 36561), (122, 36645), (132, 36681), (139, 36705), (141, 36732), (146, 36783), (148, 36849), (155, 36960),

Gene: Biglebops_47 Start: 37306, Stop: 37731, Start Num: 80
Candidate Starts for Biglebops_47:
(30, 37171), (36, 37189), (47, 37234), (Start: 80 @37306 has 9 MA's), (89, 37327), (96, 37354), (103, 37375), (131, 37429), (144, 37501), (145, 37504), (148, 37591),

Gene: Chavito_55 Start: 39204, Stop: 39977, Start Num: 8
Candidate Starts for Chavito_55:
(Start: 8 @39204 has 10 MA's), (10, 39219), (11, 39225), (15, 39252), (22, 39273), (89, 39498), (95, 39540), (125, 39648), (126, 39651), (127, 39654), (144, 39744), (145, 39747), (148, 39834), (151, 39867), (153, 39906),

Gene: Chris_54 Start: 38558, Stop: 39373, Start Num: 8
Candidate Starts for Chris_54:

(Start: 8 @38558 has 10 MA's), (19, 38618), (25, 38639), (29, 38663), (37, 38684), (50, 38741), (Start: 59 @38774 has 3 MA's), (144, 39137), (148, 39224),

Gene: Collard_46 Start: 36384, Stop: 36989, Start Num: 58
Candidate Starts for Collard_46:
(Start: 58 @36384 has 18 MA's), (62, 36399), (Start: 74 @36459 has 1 MA's), (75, 36462), (87, 36504), (91, 36537), (95, 36555), (98, 36561), (122, 36645), (132, 36681), (139, 36705), (141, 36732), (146, 36783), (148, 36849), (155, 36960),

Gene: Dadosky_48 Start: 36279, Stop: 36881, Start Num: 58
Candidate Starts for Dadosky_48:
(Start: 58 @36279 has 18 MA's), (62, 36294), (Start: 74 @36354 has 1 MA's), (75, 36357), (91, 36432), (95, 36450), (98, 36456), (115, 36516), (122, 36540), (132, 36576), (139, 36600), (143, 36642), (146, 36678), (148, 36744), (149, 36756), (152, 36792),

Gene: DarthP_54 Start: 38695, Stop: 39429, Start Num: 8
Candidate Starts for DarthP_54:
(Start: 8 @38695 has 10 MA's), (10, 38710), (15, 38743), (22, 38764), (35, 38812), (53, 38872), (60, 38887), (70, 38911), (84, 38959), (123, 39097), (134, 39139), (144, 39190), (145, 39193), (148, 39277), (151, 39310), (154, 39364),

Gene: Dartin_54 Start: 38545, Stop: 39252, Start Num: 8
Candidate Starts for Dartin_54:
(Start: 8 @38545 has 10 MA's), (10, 38560), (12, 38569), (15, 38593), (22, 38614), (24, 38626), (27, 38638), (31, 38659), (48, 38725), (95, 38818), (125, 38926), (126, 38929), (138, 38968), (144, 39019), (145, 39022), (148, 39109), (151, 39142), (153, 39181),

Gene: Dole_54 Start: 38618, Stop: 39307, Start Num: 26
Candidate Starts for Dole_54:
(Start: 26 @38618 has 1 MA's), (30, 38639), (45, 38699), (73, 38792), (93, 38870), (112, 38939), (116, 38948), (144, 39074), (145, 39077), (148, 39164), (151, 39197),

Gene: DoubleChamp_45 Start: 36384, Stop: 36989, Start Num: 58
Candidate Starts for DoubleChamp_45:
(Start: 58 @36384 has 18 MA's), (62, 36399), (Start: 74 @36459 has 1 MA's), (75, 36462), (87, 36504), (91, 36537), (95, 36555), (98, 36561), (122, 36645), (132, 36681), (139, 36705), (141, 36732), (146, 36783), (148, 36849), (155, 36960),

Gene: Edugator_45 Start: 36704, Stop: 37297, Start Num: 58
Candidate Starts for Edugator_45:
(Start: 58 @36704 has 18 MA's), (62, 36719), (Start: 74 @36779 has 1 MA's), (75, 36782), (91, 36857), (95, 36875), (98, 36881), (115, 36941), (122, 36965), (132, 37001), (143, 37058), (146, 37094), (148, 37160),

Gene: Enkosi_49 Start: 39919, Stop: 40344, Start Num: 80
Candidate Starts for Enkosi_49:
(30, 39784), (36, 39802), (47, 39847), (Start: 80 @39919 has 9 MA's), (89, 39940), (96, 39967), (103, 39988), (131, 40042), (144, 40114), (145, 40117), (148, 40204),

Gene: Fefferhead_52 Start: 37942, Stop: 38751, Start Num: 8
Candidate Starts for Fefferhead_52:
(Start: 8 @37942 has 10 MA's), (10, 37957), (15, 37990), (22, 38011), (43, 38089), (70, 38182), (104, 38329), (109, 38353), (135, 38449), (140, 38470), (144, 38497), (145, 38500), (148, 38584), (151,

38617),

Gene: Feyre_47 Start: 37611, Stop: 38171, Start Num: 74
Candidate Starts for Feyre_47:
(5, 37245), (13, 37341), (Start: 59 @37533 has 3 MA's), (62, 37551), (64, 37557), (Start: 74 @37611 has 1 MA's), (97, 37710), (110, 37767), (117, 37785), (119, 37791), (125, 37818), (133, 37851), (148, 38025),

Gene: Gengar_46 Start: 36147, Stop: 36782, Start Num: 58
Candidate Starts for Gengar_46:
(14, 35970), (41, 36078), (Start: 58 @36147 has 18 MA's), (62, 36162), (69, 36186), (Start: 74 @36222 has 1 MA's), (75, 36225), (91, 36297), (97, 36321), (110, 36378), (117, 36396), (119, 36402), (125, 36429), (133, 36462), (147, 36609), (148, 36636),

Gene: Guillsminger_47 Start: 36118, Stop: 36753, Start Num: 58
Candidate Starts for Guillsminger_47:
(14, 35941), (41, 36049), (Start: 58 @36118 has 18 MA's), (62, 36133), (69, 36157), (Start: 74 @36193 has 1 MA's), (75, 36196), (91, 36268), (97, 36292), (110, 36349), (117, 36367), (119, 36373), (124, 36397), (133, 36433), (147, 36580), (148, 36607),

Gene: Hammy_54 Start: 38683, Stop: 39417, Start Num: 8
Candidate Starts for Hammy_54:
(Start: 8 @38683 has 10 MA's), (10, 38698), (15, 38731), (22, 38752), (35, 38800), (53, 38860), (60, 38875), (70, 38899), (84, 38947), (123, 39085), (134, 39127), (144, 39178), (145, 39181), (148, 39265), (151, 39298), (154, 39352),

Gene: Heftyboy_46 Start: 36269, Stop: 36925, Start Num: 59
Candidate Starts for Heftyboy_46:
(5, 35981), (13, 36077), (Start: 59 @36269 has 3 MA's), (62, 36287), (64, 36293), (Start: 74 @36347 has 1 MA's), (97, 36446), (110, 36503), (117, 36521), (119, 36527), (124, 36551), (133, 36605), (147, 36752), (148, 36779), (150, 36803),

Gene: InvictusManeo_46 Start: 36427, Stop: 37032, Start Num: 58
Candidate Starts for InvictusManeo_46:
(Start: 58 @36427 has 18 MA's), (62, 36442), (Start: 74 @36502 has 1 MA's), (75, 36505), (87, 36547), (91, 36580), (95, 36598), (98, 36604), (122, 36688), (132, 36724), (139, 36748), (141, 36775), (146, 36826), (148, 36892), (155, 37003),

Gene: KiSi_56 Start: 38953, Stop: 39420, Start Num: 86
Candidate Starts for KiSi_56:
(Start: 86 @38953 has 4 MA's), (105, 39016), (119, 39061), (144, 39184), (148, 39271), (151, 39304), (154, 39358), (156, 39409),

Gene: Kratio_45 Start: 35977, Stop: 36582, Start Num: 58
Candidate Starts for Kratio_45:
(20, 35833), (34, 35890), (Start: 58 @35977 has 18 MA's), (62, 35992), (Start: 74 @36052 has 1 MA's), (75, 36055), (87, 36097), (91, 36130), (95, 36148), (98, 36154), (115, 36214), (122, 36238), (139, 36298), (146, 36376), (148, 36442), (155, 36553),

Gene: Larva_47 Start: 36146, Stop: 36748, Start Num: 58
Candidate Starts for Larva_47:
(Start: 58 @36146 has 18 MA's), (62, 36161), (Start: 74 @36221 has 1 MA's), (75, 36224), (91, 36299), (95, 36317), (98, 36323), (115, 36383), (122, 36407), (132, 36443), (139, 36467), (143, 36509), (146,

36545), (148, 36611), (152, 36659),

Gene: Lavahound_53 Start: 38925, Stop: 39707, Start Num: 8
Candidate Starts for Lavahound_53:
(Start: 8 @38925 has 10 MA's), (10, 38940), (15, 38973), (22, 38994), (43, 39081), (54, 39111), (60, 39132), (65, 39150), (77, 39192), (95, 39267), (114, 39339), (128, 39381), (144, 39462), (145, 39465), (148, 39552),

Gene: LeMond_56 Start: 38937, Stop: 39401, Start Num: 86
Candidate Starts for LeMond_56:
(Start: 86 @38937 has 4 MA's), (99, 38982), (105, 38997), (110, 39018), (118, 39039), (144, 39165), (145, 39168), (148, 39252), (151, 39285), (154, 39339), (156, 39390),

Gene: Leston_46 Start: 36247, Stop: 36882, Start Num: 58
Candidate Starts for Leston_46:
(14, 36070), (34, 36151), (39, 36166), (41, 36178), (Start: 58 @36247 has 18 MA's), (62, 36262), (69, 36286), (Start: 74 @36322 has 1 MA's), (75, 36325), (91, 36397), (97, 36421), (110, 36478), (117, 36496), (119, 36502), (124, 36526), (133, 36562), (147, 36709), (148, 36736),

Gene: LilDirt_45 Start: 36185, Stop: 36790, Start Num: 58
Candidate Starts for LilDirt_45:
(Start: 58 @36185 has 18 MA's), (62, 36200), (Start: 74 @36260 has 1 MA's), (75, 36263), (87, 36305), (91, 36338), (95, 36356), (98, 36362), (122, 36446), (132, 36482), (139, 36506), (141, 36533), (146, 36584), (148, 36650), (155, 36761),

Gene: LilPharaoh_47 Start: 37034, Stop: 37459, Start Num: 80
Candidate Starts for LilPharaoh_47:
(30, 36899), (36, 36917), (47, 36962), (Start: 80 @37034 has 9 MA's), (89, 37055), (96, 37082), (103, 37103), (131, 37157), (144, 37229), (145, 37232), (148, 37319),

Gene: MarkPhew_55 Start: 38390, Stop: 39106, Start Num: 28
Candidate Starts for MarkPhew_55:
(Start: 28 @38390 has 4 MA's), (37, 38423), (42, 38447), (54, 38492), (61, 38513), (76, 38570), (83, 38594), (127, 38759), (144, 38870), (148, 38957), (151, 38990), (154, 39044),

Gene: Marshawn_54 Start: 38519, Stop: 39190, Start Num: 28
Candidate Starts for Marshawn_54:
(7, 38411), (Start: 28 @38519 has 4 MA's), (33, 38543), (37, 38552), (42, 38576), (46, 38597), (54, 38621), (61, 38642), (82, 38723), (106, 38801), (109, 38816), (114, 38834), (120, 38852), (138, 38903), (148, 39047), (151, 39080), (154, 39134),

Gene: McMater_54 Start: 38545, Stop: 39252, Start Num: 8
Candidate Starts for McMater_54:
(Start: 8 @38545 has 10 MA's), (10, 38560), (12, 38569), (15, 38593), (22, 38614), (24, 38626), (27, 38638), (31, 38659), (48, 38725), (95, 38818), (125, 38926), (126, 38929), (138, 38968), (144, 39019), (145, 39022), (148, 39109), (151, 39142), (153, 39181),

Gene: Mdavu_48 Start: 37295, Stop: 37720, Start Num: 80
Candidate Starts for Mdavu_48:
(30, 37160), (36, 37178), (47, 37223), (Start: 80 @37295 has 9 MA's), (89, 37316), (96, 37343), (103, 37364), (131, 37418), (144, 37490), (145, 37493), (148, 37580),

Gene: Miryou_49 Start: 38449, Stop: 39084, Start Num: 58

Candidate Starts for Miryou_49:
(Start: 58 @38449 has 18 MA's), (62, 38464), (69, 38488), (Start: 74 @38524 has 1 MA's), (75, 38527), (91, 38599), (97, 38623), (110, 38680), (117, 38698), (119, 38704), (125, 38731), (133, 38764), (147, 38911), (148, 38938),

Gene: Neighly_48 Start: 36145, Stop: 36747, Start Num: 58
Candidate Starts for Neighly_48:
(Start: 58 @36145 has 18 MA's), (62, 36160), (Start: 74 @36220 has 1 MA's), (75, 36223), (91, 36298), (95, 36316), (98, 36322), (115, 36382), (122, 36406), (132, 36442), (139, 36466), (143, 36508), (146, 36544), (148, 36610), (152, 36658),

Gene: Nergal_49 Start: 36269, Stop: 36790, Start Num: 72
Candidate Starts for Nergal_49:
(Start: 72 @36269 has 1 MA's), (87, 36323), (90, 36344), (94, 36362), (96, 36368), (100, 36377), (122, 36455), (148, 36641), (153, 36713),

Gene: Nibb_54 Start: 38079, Stop: 38801, Start Num: 28
Candidate Starts for Nibb_54:
(Start: 28 @38079 has 4 MA's), (32, 38100), (37, 38112), (42, 38136), (54, 38181), (61, 38202), (66, 38223), (76, 38259), (127, 38448), (129, 38460), (130, 38469), (140, 38514), (144, 38559), (148, 38646), (151, 38679), (154, 38733),

Gene: Nikao_50 Start: 39919, Stop: 40344, Start Num: 80
Candidate Starts for Nikao_50:
(30, 39784), (36, 39802), (47, 39847), (Start: 80 @39919 has 9 MA's), (89, 39940), (96, 39967), (103, 39988), (131, 40042), (144, 40114), (145, 40117), (148, 40204),

Gene: Niklas_54 Start: 38606, Stop: 39313, Start Num: 8
Candidate Starts for Niklas_54:
(Start: 8 @38606 has 10 MA's), (10, 38621), (12, 38630), (15, 38654), (22, 38675), (24, 38687), (27, 38699), (31, 38720), (48, 38786), (95, 38879), (125, 38987), (126, 38990), (138, 39029), (144, 39080), (145, 39083), (148, 39170), (151, 39203), (153, 39242),

Gene: Nutello_47 Start: 37306, Stop: 37731, Start Num: 80
Candidate Starts for Nutello_47:
(30, 37171), (36, 37189), (47, 37234), (Start: 80 @37306 has 9 MA's), (89, 37327), (96, 37354), (103, 37375), (131, 37429), (144, 37501), (145, 37504), (148, 37591),

Gene: OkiRoe_46 Start: 36120, Stop: 36755, Start Num: 58
Candidate Starts for OkiRoe_46:
(14, 35943), (41, 36051), (Start: 58 @36120 has 18 MA's), (62, 36135), (69, 36159), (Start: 74 @36195 has 1 MA's), (75, 36198), (91, 36270), (97, 36294), (110, 36351), (117, 36369), (119, 36375), (125, 36402), (133, 36435), (147, 36582), (148, 36609),

Gene: Omnicron_49 Start: 35732, Stop: 36313, Start Num: 59
Candidate Starts for Omnicron_49:
(18, 35576), (20, 35582), (23, 35585), (Start: 59 @35732 has 3 MA's), (Start: 74 @35810 has 1 MA's), (75, 35813), (91, 35885), (95, 35903), (105, 35927), (107, 35936), (108, 35939), (111, 35957), (121, 35990), (139, 36032), (146, 36110), (148, 36176),

Gene: Oscar_56 Start: 38839, Stop: 39306, Start Num: 86
Candidate Starts for Oscar_56:

(Start: 86 @38839 has 4 MA's), (99, 38887), (105, 38902), (110, 38923), (118, 38944), (144, 39070), (145, 39073), (148, 39157), (151, 39190), (154, 39244), (156, 39295),

Gene: Paola_46 Start: 36118, Stop: 36753, Start Num: 58
Candidate Starts for Paola_46:
(14, 35941), (41, 36049), (Start: 58 @36118 has 18 MA's), (62, 36133), (69, 36157), (Start: 74 @36193 has 1 MA's), (75, 36196), (91, 36268), (97, 36292), (110, 36349), (117, 36367), (119, 36373), (124, 36397), (133, 36433), (147, 36580), (148, 36607),

Gene: Peanam_54 Start: 38564, Stop: 39271, Start Num: 8
Candidate Starts for Peanam_54:
(Start: 8 @38564 has 10 MA's), (10, 38579), (12, 38588), (15, 38612), (22, 38633), (24, 38645), (27, 38657), (31, 38678), (48, 38744), (95, 38837), (125, 38945), (126, 38948), (138, 38987), (144, 39038), (145, 39041), (148, 39128), (151, 39161), (153, 39200),

Gene: Pisa1_51 Start: 38887, Stop: 39528, Start Num: 6
Candidate Starts for Pisa1_51:
(Start: 6 @38887 has 1 MA's), (9, 38917), (12, 38929), (15, 38953), (24, 38986), (27, 38998), (31, 39019), (49, 39088), (79, 39148), (81, 39151), (92, 39178), (125, 39202), (144, 39295), (145, 39298), (148, 39385), (151, 39418), (153, 39457),

Gene: Pisa4_45 Start: 34256, Stop: 34897, Start Num: 6
Candidate Starts for Pisa4_45:
(Start: 6 @34256 has 1 MA's), (9, 34286), (12, 34298), (15, 34322), (24, 34355), (27, 34367), (31, 34388), (49, 34457), (79, 34517), (81, 34520), (92, 34547), (125, 34571), (144, 34664), (145, 34667), (148, 34754), (151, 34787), (153, 34826),

Gene: Psycho_46 Start: 36276, Stop: 36878, Start Num: 58
Candidate Starts for Psycho_46:
(Start: 58 @36276 has 18 MA's), (62, 36291), (Start: 74 @36351 has 1 MA's), (75, 36354), (91, 36429), (95, 36447), (98, 36453), (115, 36513), (122, 36537), (132, 36573), (139, 36597), (143, 36639), (146, 36675), (148, 36741), (149, 36753), (152, 36789),

Gene: Rando14_48 Start: 35246, Stop: 35872, Start Num: 44
Candidate Starts for Rando14_48:
(20, 35150), (34, 35207), (Start: 44 @35246 has 1 MA's), (Start: 59 @35297 has 3 MA's), (Start: 74 @35375 has 1 MA's), (75, 35378), (91, 35450), (95, 35468), (105, 35492), (108, 35504), (111, 35522), (121, 35555), (139, 35597), (146, 35669), (148, 35735),

Gene: Richo_54 Start: 38545, Stop: 39252, Start Num: 8
Candidate Starts for Richo_54:
(Start: 8 @38545 has 10 MA's), (10, 38560), (12, 38569), (15, 38593), (22, 38614), (24, 38626), (27, 38638), (31, 38659), (48, 38725), (95, 38818), (125, 38926), (126, 38929), (138, 38968), (144, 39019), (145, 39022), (148, 39109), (151, 39142), (153, 39181),

Gene: Scarlett_56 Start: 38831, Stop: 39301, Start Num: 86
Candidate Starts for Scarlett_56:
(Start: 86 @38831 has 4 MA's), (105, 38897), (110, 38918), (119, 38942), (144, 39065), (145, 39068), (148, 39152), (151, 39185), (154, 39239), (156, 39290),

Gene: SgtBeansprout_47 Start: 37306, Stop: 37731, Start Num: 80
Candidate Starts for SgtBeansprout_47:

(30, 37171), (36, 37189), (47, 37234), (Start: 80 @37306 has 9 MA's), (89, 37327), (96, 37354), (103, 37375), (131, 37429), (144, 37501), (145, 37504), (148, 37591),

Gene: Shadow1_57 Start: 38538, Stop: 39143, Start Num: 52
Candidate Starts for Shadow1_57:
(17, 38412), (21, 38421), (Start: 52 @38538 has 3 MA's), (55, 38550), (57, 38565), (63, 38589), (Start: 72 @38610 has 1 MA's), (102, 38676), (107, 38697), (108, 38700), (113, 38724), (130, 38793), (136, 38823), (144, 38889), (145, 38892), (148, 38976), (151, 39009), (154, 39063),

Gene: Shaobing_54 Start: 38582, Stop: 39289, Start Num: 8
Candidate Starts for Shaobing_54:
(Start: 8 @38582 has 10 MA's), (10, 38597), (12, 38606), (15, 38630), (22, 38651), (24, 38663), (27, 38675), (31, 38696), (48, 38762), (95, 38855), (125, 38963), (126, 38966), (138, 39005), (144, 39056), (145, 39059), (148, 39146), (151, 39179), (153, 39218),

Gene: SirPhilip_54 Start: 38933, Stop: 39697, Start Num: 16
Candidate Starts for SirPhilip_54:
(Start: 16 @38933 has 1 MA's), (24, 38963), (38, 39008), (43, 39032), (50, 39053), (102, 39245), (109, 39278), (115, 39299), (118, 39305), (137, 39392), (148, 39530), (151, 39563),

Gene: SoSeph_46 Start: 36269, Stop: 36925, Start Num: 59
Candidate Starts for SoSeph_46:
(5, 35981), (13, 36077), (Start: 59 @36269 has 3 MA's), (62, 36287), (64, 36293), (Start: 74 @36347 has 1 MA's), (97, 36446), (110, 36503), (117, 36521), (119, 36527), (124, 36551), (133, 36605), (147, 36752), (148, 36779), (150, 36803),

Gene: Sunflower1121_58 Start: 38639, Stop: 39289, Start Num: 52
Candidate Starts for Sunflower1121_58:
(17, 38513), (21, 38522), (Start: 52 @38639 has 3 MA's), (55, 38651), (57, 38666), (63, 38690), (Start: 72 @38711 has 1 MA's), (101, 38816), (102, 38822), (107, 38843), (108, 38846), (113, 38870), (130, 38939), (136, 38969), (144, 39035), (145, 39038), (148, 39122), (151, 39155), (154, 39209),

Gene: TClif_55 Start: 38682, Stop: 39194, Start Num: 52
Candidate Starts for TClif_55:
(Start: 52 @38682 has 3 MA's), (56, 38697), (57, 38706), (63, 38730), (Start: 72 @38751 has 1 MA's), (78, 38775), (85, 38796), (113, 38832), (130, 38868), (136, 38889), (144, 38925), (145, 38928), (148, 39012), (151, 39045), (154, 39099),

Gene: Teejan_49 Start: 39919, Stop: 40344, Start Num: 80
Candidate Starts for Teejan_49:
(30, 39784), (36, 39802), (47, 39847), (Start: 80 @39919 has 9 MA's), (89, 39940), (96, 39967), (103, 39988), (131, 40042), (144, 40114), (145, 40117), (148, 40204),

Gene: Thyatira_49 Start: 38470, Stop: 39090, Start Num: 58
Candidate Starts for Thyatira_49:
(14, 38293), (Start: 58 @38470 has 18 MA's), (62, 38485), (69, 38509), (Start: 74 @38545 has 1 MA's), (75, 38548), (91, 38620), (97, 38644), (110, 38701), (117, 38719), (119, 38725), (133, 38776), (147, 38923), (148, 38950), (150, 38974),

Gene: Torres_50 Start: 39920, Stop: 40345, Start Num: 80
Candidate Starts for Torres_50:
(30, 39785), (36, 39803), (47, 39848), (Start: 80 @39920 has 9 MA's), (89, 39941), (96, 39968), (103, 39989), (131, 40043), (144, 40115), (145, 40118), (148, 40205),

Gene: Trice_47 Start: 37307, Stop: 37732, Start Num: 80
Candidate Starts for Trice_47:
(30, 37172), (36, 37190), (47, 37235), (Start: 80 @37307 has 9 MA's), (89, 37328), (96, 37355), (103, 37376), (131, 37430), (144, 37502), (145, 37505), (148, 37592),

Gene: Validus_56 Start: 38620, Stop: 39468, Start Num: 8
Candidate Starts for Validus_56:
(1, 38473), (2, 38482), (3, 38500), (4, 38545), (Start: 8 @38620 has 10 MA's), (10, 38635), (12, 38644), (15, 38668), (22, 38689), (27, 38713), (31, 38734), (48, 38800), (67, 38869), (68, 38881), (75, 38932), (79, 38950), (88, 38977), (95, 39028), (115, 39100), (125, 39136), (126, 39139), (144, 39232), (145, 39235), (148, 39322), (151, 39355), (153, 39394),

Gene: ViviJ_47 Start: 36184, Stop: 36789, Start Num: 58
Candidate Starts for ViviJ_47:
(Start: 58 @36184 has 18 MA's), (62, 36199), (Start: 74 @36259 has 1 MA's), (75, 36262), (87, 36304), (91, 36337), (95, 36355), (98, 36361), (122, 36445), (132, 36481), (139, 36505), (141, 36532), (146, 36583), (148, 36649), (155, 36760),

Gene: Waterfoul_47 Start: 36361, Stop: 36987, Start Num: 58
Candidate Starts for Waterfoul_47:
(14, 36184), (23, 36211), (Start: 58 @36361 has 18 MA's), (62, 36376), (69, 36400), (Start: 74 @36436 has 1 MA's), (75, 36439), (91, 36511), (97, 36535), (110, 36592), (117, 36610), (119, 36616), (133, 36667), (147, 36814), (148, 36841), (150, 36865),

Gene: Yuna_58 Start: 39426, Stop: 40163, Start Num: 28
Candidate Starts for Yuna_58:
(Start: 28 @39426 has 4 MA's), (32, 39444), (40, 39465), (42, 39480), (51, 39513), (54, 39525), (61, 39546), (66, 39567), (71, 39579), (76, 39603), (95, 39672), (100, 39684), (127, 39789), (130, 39810), (141, 39879), (142, 39891), (148, 39993), (151, 40026),