

Pham 291156



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 291156 Report

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

Pham number 291156 has 65 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Anthony_79
- Track 2 : Achebe_74
- Track 3 : ArV1_067b
- Track 4 : DrYang_78
- Track 5 : KBurroustX_80
- Track 6 : Chocolat_81, Scavito_82, Kabreeze_81, Chipper1996_820, Mordred_81, JaNo_80, Tophat_82
- Track 7 : Conboy_79, MoyaNatalis_80, HumptyDumpty_81, Linus_81, PrincessTrina_82, EdgarPoe_80, RosiePosie_81
- Track 8 : JayCookie_81
- Track 9 : Chubster_82
- Track 10 : Colucci_83
- Track 11 : Lymara_77
- Track 12 : Westrich_49, KendraB23_51, Pelletreau_50, Gravel_50, Amanises_50
- Track 13 : Niblet_44, Chicken_41
- Track 14 : Jamun_40
- Track 15 : TaylorSipht_41
- Track 16 : Toad24_43, Zixiang_44, Shen_40
- Track 17 : WileyE_42
- Track 18 : Orcanus_41
- Track 19 : Cygnet_43
- Track 20 : Laphuphu24k_42, Oppalora_42, Fingolfin_43, Juno112_42, HamCheese_43
- Track 21 : Rattail_43
- Track 22 : Andrew_44
- Track 23 : Azaz_44, Leona_42
- Track 24 : DanHam62_43, AmiCi24_42, Atlantica_43
- Track 25 : StuartMinion_35
- Track 26 : McKinley_5
- Track 27 : Geodirt_4
- Track 28 : Sedona_6
- Track 29 : Poenanya_74, Doomphist_74, Empress_69, RedBird_72
- Track 30 : PhlipPhlop_69, EmiMonkey_67
- Track 31 : GigiOuiOui_66
- Track 32 : Ovechkin_70
- Track 33 : Jinkies_3
- Track 34 : Bubbykins_90

- Track 35 : Samy_50

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

The start number called the most often in the published annotations is 61, it was called in 17 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Chipper1996_820, Chocolat_81, Chubster_82, Colucci_83, Conboy_79, EdgarPoe_80, HumptyDumpty_81, JaNo_80, JayCookie_81, Kabreeze_81, Linus_81, Lymara_77, Mordred_81, MoyaNatalis_80, PrincessTrina_82, RosiePosie_81, Scavito_82, Tophat_82,

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

- ArV1_067b, Bubbykins_90,

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

- Achebe_74, Amanises_50, AmiCi24_42, Andrew_44, Anthony_79, Atlantica_43, Azaz_44, Chicken_41, Cygnet_43, DanHam62_43, Doomphist_74, DrYang_78, EmiMonkey_67, Empress_69, Fingolfin_43, Geodirt_4, GigiOuiOui_66, Gravel_50, HamCheese_43, Jamun_40, Jinkies_3, Juno112_42, KBurroustX_80, KendraB23_51, Laphuphu24k_42, Leona_42, McKinley_5, Niblet_44, Oppalora_42, Orcanus_41, Ovechkin_70, Pelletreau_50, PhilipPhlop_69, Poenanya_74, Rattail_43, RedBird_72, Samy_50, Sedona_6, Shen_40, StuartMinion_35, TaylorSipt_41, Toad24_43, Westrich_49, WileyE_42, Zixiang_44,

Summary by start number:

Start 26:

- Found in 3 of 65 (4.6%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: ArV1_067b (AR),

Start 32:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jinkies_3 (FL),

Start 34:

- Found in 28 of 65 (43.1%) of genes in pham
- Manual Annotations of this start: 11 of 47
- Called 67.9% of time when present
- Phage (with cluster) where this start called: AmiCi24_42 (AS3), Andrew_44 (AS3), Atlantica_43 (AS3), Azaz_44 (AS3), Chicken_41 (AS1), Cygnet_43 (AS2), DanHam62_43 (AS3), Fingolfin_43 (AS3), HamCheese_43 (AS3), Juno112_42 (AS3), Laphuphu24k_42 (AS3), Leona_42 (AS3), Niblet_44 (AS1), Oppalora_42 (AS3), Shen_40 (AS1), StuartMinion_35 (AS3), Toad24_43 (AS1), WileyE_42 (AS1), Zixiang_44 (AS1),

Start 35:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Geodirt_4 (DE1),

Start 45:

- Found in 5 of 65 (7.7%) of genes in pham
- Manual Annotations of this start: 5 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Doomphist_74 (F1), Empress_69 (F1), GigiOuiOui_66 (F1), Poenanya_74 (F1), RedBird_72 (F1),

Start 47:

- Found in 21 of 65 (32.3%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 4.8% of time when present
- Phage (with cluster) where this start called: Anthony_79 (A20),

Start 51:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Achebe_74 (A4),

Start 55:

- Found in 8 of 65 (12.3%) of genes in pham
- Manual Annotations of this start: 2 of 47
- Called 37.5% of time when present
- Phage (with cluster) where this start called: EmiMonkey_67 (F1), Ovechkin_70 (F1), PhlipPhlop_69 (F1),

Start 56:

- Found in 46 of 65 (70.8%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 2.2% of time when present
- Phage (with cluster) where this start called: DrYang_78 (AR),

Start 60:

- Found in 26 of 65 (40.0%) of genes in pham
- No Manual Annotations of this start.
- Called 23.1% of time when present
- Phage (with cluster) where this start called: Amanises_50 (AS1), Gravel_50 (AS1), KendraB23_51 (AS1), Pelletreau_50 (AS1), Rattail_43 (AS3), Westrich_49 (AS1),

Start 61:

- Found in 20 of 65 (30.8%) of genes in pham
- Manual Annotations of this start: 17 of 47
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Chipper1996_820 (AR), Chocolat_81 (AR), Chubster_82 (AR), Colucci_83 (AR), Conboy_79 (AR), EdgarPoe_80 (AR), HumptyDumpty_81 (AR), JaNo_80 (AR), JayCookie_81 (AR), Kabreeze_81 (AR),

Linus_81 (AR), Lymara_77 (AR), Mordred_81 (AR), MoyaNatalis_80 (AR), PrincessTrina_82 (AR), RosiePosie_81 (AR), Scavito_82 (AR), Tophat_82 (AR),

Start 68:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KBurrousTX_80 (AR),

Start 70:

- Found in 1 of 65 (1.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bubbykins_90 (UNK),

Start 75:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: McKinley_5 (DE1),

Start 78:

- Found in 13 of 65 (20.0%) of genes in pham
- Manual Annotations of this start: 3 of 47
- Called 23.1% of time when present
- Phage (with cluster) where this start called: Jamun_40 (AS1), Orcanus_41 (AS1), TaylorSipt_41 (AS1),

Start 81:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy_50 (singleton),

Start 85:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 47
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sedona_6 (DE1),

Summary by clusters:

There are 11 clusters represented in this pham: AS3, F1, singleton, AS2, DE1, AS1, A20, AR, A4, UNK, FL,

Info for manual annotations of cluster A20:

- Start number 47 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A4:

- Start number 51 was manually annotated 1 time for cluster A4.

Info for manual annotations of cluster AR:

- Start number 56 was manually annotated 1 time for cluster AR.

- Start number 61 was manually annotated 17 times for cluster AR.
- Start number 68 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster AS1:

- Start number 34 was manually annotated 2 times for cluster AS1.
- Start number 78 was manually annotated 3 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 34 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 34 was manually annotated 8 times for cluster AS3.

Info for manual annotations of cluster DE1:

- Start number 35 was manually annotated 1 time for cluster DE1.
- Start number 75 was manually annotated 1 time for cluster DE1.
- Start number 85 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster F1:

- Start number 45 was manually annotated 5 times for cluster F1.
- Start number 55 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster FL:

- Start number 32 was manually annotated 1 time for cluster FL.

Gene Information:

Gene: Achebe_74 Start: 46689, Stop: 45955, Start Num: 51

Candidate Starts for Achebe_74:

(Start: 51 @46689 has 1 MA's), (67, 46611), (72, 46590), (86, 46542), (87, 46539), (90, 46527), (125, 46434), (143, 46362), (146, 46344), (163, 46278), (177, 46173), (184, 46113), (186, 46110), (196, 46023), (201, 46002), (204, 45966),

Gene: Amanises_50 Start: 28732, Stop: 29547, Start Num: 60

Candidate Starts for Amanises_50:

(Start: 34 @28549 has 11 MA's), (43, 28630), (48, 28666), (Start: 56 @28714 has 1 MA's), (60, 28732), (Start: 78 @28825 has 3 MA's), (84, 28843), (91, 28873), (107, 28945), (118, 29011), (149, 29158), (150, 29164), (161, 29230), (175, 29332), (184, 29407), (186, 29410), (198, 29527),

Gene: AmiCi24_42 Start: 27168, Stop: 27965, Start Num: 34

Candidate Starts for AmiCi24_42:

(Start: 34 @27168 has 11 MA's), (42, 27234), (43, 27249), (48, 27285), (Start: 56 @27333 has 1 MA's), (57, 27345), (60, 27351), (149, 27567), (150, 27573), (175, 27741), (184, 27816), (186, 27819), (196, 27927), (198, 27936), (201, 27948),

Gene: Andrew_44 Start: 27053, Stop: 27850, Start Num: 34

Candidate Starts for Andrew_44:

(Start: 34 @27053 has 11 MA's), (42, 27119), (43, 27134), (48, 27170), (Start: 56 @27218 has 1 MA's), (60, 27236), (149, 27452), (150, 27458), (166, 27563), (175, 27626), (184, 27701), (186, 27704), (195, 27788), (198, 27821),

Gene: Anthony_79 Start: 47520, Stop: 46663, Start Num: 47

Candidate Starts for Anthony_79:

(Start: 47 @47520 has 1 MA's), (67, 47415), (72, 47394), (74, 47382), (76, 47376), (113, 47298), (116, 47280), (128, 47214), (164, 47034), (174, 46965), (178, 46941), (184, 46887), (186, 46884), (190, 46863), (192, 46854), (196, 46791), (202, 46767),

Gene: ArV1_067b Start: 51785, Stop: 52711, Start Num: 26

Candidate Starts for ArV1_067b:

(26, 51785), (28, 51794), (31, 51809), (33, 51827), (41, 51887), (48, 51944), (50, 51959), (Start: 56 @51992 has 1 MA's), (Start: 61 @52016 has 17 MA's), (96, 52154), (108, 52163), (110, 52169), (126, 52256), (131, 52265), (149, 52352), (160, 52400), (165, 52424), (176, 52484), (183, 52547), (187, 52556), (189, 52559), (193, 52589), (194, 52634),

Gene: Atlantica_43 Start: 27170, Stop: 27967, Start Num: 34

Candidate Starts for Atlantica_43:

(Start: 34 @27170 has 11 MA's), (42, 27236), (43, 27251), (48, 27287), (Start: 56 @27335 has 1 MA's), (57, 27347), (60, 27353), (149, 27569), (150, 27575), (175, 27743), (184, 27818), (186, 27821), (196, 27929), (198, 27938), (201, 27950),

Gene: Azaz_44 Start: 27236, Stop: 28045, Start Num: 34

Candidate Starts for Azaz_44:

(Start: 34 @27236 has 11 MA's), (42, 27302), (43, 27317), (48, 27353), (Start: 56 @27401 has 1 MA's), (57, 27413), (60, 27419), (150, 27653), (151, 27656), (166, 27758), (175, 27821), (184, 27896), (186, 27899), (198, 28016),

Gene: Bubbykins_90 Start: 55572, Stop: 56735, Start Num: 70

Candidate Starts for Bubbykins_90:

(25, 55296), (33, 55341), (36, 55353), (41, 55401), (42, 55407), (44, 55428), (Start: 47 @55449 has 1 MA's), (48, 55458), (53, 55494), (Start: 61 @55530 has 17 MA's), (62, 55542), (70, 55572), (89, 55647), (94, 55665), (97, 55674), (108, 55692), (132, 55803), (138, 55836), (140, 55848), (142, 55863), (152, 55914), (154, 55929), (170, 56058), (172, 56073), (182, 56133), (199, 56262), (208, 56349), (211, 56418), (212, 56421), (216, 56559), (217, 56562), (219, 56592), (220, 56610), (222, 56658), (224, 56676), (227, 56703),

Gene: Chicken_41 Start: 27850, Stop: 28848, Start Num: 34

Candidate Starts for Chicken_41:

(Start: 34 @27850 has 11 MA's), (43, 27931), (48, 27967), (60, 28033), (Start: 78 @28126 has 3 MA's), (91, 28174), (105, 28240), (107, 28246), (127, 28354), (130, 28360), (133, 28372), (149, 28459), (150, 28465), (151, 28468), (161, 28531), (175, 28633), (179, 28660), (184, 28708), (186, 28711), (198, 28828),

Gene: Chipper1996_820 Start: 52852, Stop: 54129, Start Num: 61

Candidate Starts for Chipper1996_820:

(28, 52630), (33, 52663), (41, 52723), (Start: 47 @52771 has 1 MA's), (48, 52780), (50, 52795), (Start: 56 @52828 has 1 MA's), (Start: 61 @52852 has 17 MA's), (92, 52990), (106, 53014), (115, 53053), (120, 53086), (134, 53137), (136, 53149), (156, 53260), (158, 53272), (168, 53338), (171, 53377), (185, 53470), (189, 53476), (200, 53593), (208, 53677), (209, 53740), (210, 53800), (213, 53821), (214, 53902), (215, 53965), (216, 53974), (217, 53977), (219, 54007), (221, 54028), (222, 54073), (223, 54088), (224, 54091), (225, 54097), (226, 54103),

Gene: Chocolat_81 Start: 52559, Stop: 53836, Start Num: 61

Candidate Starts for Chocolat_81:

(28, 52337), (33, 52370), (41, 52430), (Start: 47 @52478 has 1 MA's), (48, 52487), (50, 52502), (Start: 56 @52535 has 1 MA's), (Start: 61 @52559 has 17 MA's), (92, 52697), (106, 52721), (115, 52760), (120, 52793), (134, 52844), (136, 52856), (156, 52967), (158, 52979), (168, 53045), (171, 53084), (185, 53177), (189, 53183), (200, 53300), (208, 53384), (209, 53447), (210, 53507), (213, 53528), (214, 53609), (215, 53672), (216, 53681), (217, 53684), (219, 53714), (221, 53735), (222, 53780), (223, 53795), (224, 53798), (225, 53804), (226, 53810),

Gene: Chubster_82 Start: 53253, Stop: 54518, Start Num: 61

Candidate Starts for Chubster_82:

(28, 53031), (33, 53064), (41, 53124), (Start: 47 @53172 has 1 MA's), (48, 53181), (50, 53196), (Start: 56 @53229 has 1 MA's), (Start: 61 @53253 has 17 MA's), (106, 53403), (115, 53442), (120, 53475), (134, 53526), (136, 53538), (156, 53649), (158, 53661), (168, 53727), (171, 53766), (185, 53859), (189, 53865), (200, 53982), (208, 54066), (209, 54129), (210, 54189), (213, 54210), (214, 54291), (215, 54354), (216, 54363), (217, 54366), (219, 54396), (221, 54417), (224, 54480), (225, 54486), (226, 54492),

Gene: Colucci_83 Start: 53289, Stop: 54554, Start Num: 61

Candidate Starts for Colucci_83:

(28, 53067), (33, 53100), (39, 53142), (43, 53181), (Start: 47 @53208 has 1 MA's), (48, 53217), (Start: 56 @53265 has 1 MA's), (Start: 61 @53289 has 17 MA's), (71, 53346), (96, 53427), (108, 53445), (114, 53466), (119, 53505), (120, 53508), (129, 53541), (135, 53562), (136, 53571), (156, 53685), (158, 53697), (170, 53790), (171, 53802), (185, 53895), (189, 53901), (200, 54018), (208, 54102), (209, 54165), (210, 54225), (213, 54246), (214, 54327), (215, 54390), (216, 54399), (217, 54402), (219, 54432), (221, 54453), (224, 54516), (225, 54522), (226, 54528),

Gene: Conboy_79 Start: 52341, Stop: 53618, Start Num: 61

Candidate Starts for Conboy_79:

(28, 52119), (33, 52152), (41, 52212), (Start: 47 @52260 has 1 MA's), (48, 52269), (50, 52284), (Start: 56 @52317 has 1 MA's), (Start: 61 @52341 has 17 MA's), (92, 52479), (106, 52503), (115, 52542), (120, 52575), (134, 52626), (136, 52638), (156, 52749), (158, 52761), (168, 52827), (171, 52866), (185, 52959), (189, 52965), (200, 53082), (208, 53166), (209, 53229), (210, 53289), (213, 53310), (214, 53391), (215, 53454), (216, 53463), (217, 53466), (219, 53496), (221, 53517), (224, 53580), (225, 53586), (226, 53592),

Gene: Cygnet_43 Start: 28047, Stop: 28715, Start Num: 34

Candidate Starts for Cygnet_43:

(Start: 34 @28047 has 11 MA's), (42, 28113), (49, 28167), (50, 28179), (Start: 56 @28212 has 1 MA's), (60, 28230), (149, 28431), (150, 28437), (175, 28488), (184, 28563), (186, 28566), (194, 28647), (195, 28650), (198, 28683),

Gene: DanHam62_43 Start: 27169, Stop: 27966, Start Num: 34

Candidate Starts for DanHam62_43:

(Start: 34 @27169 has 11 MA's), (42, 27235), (43, 27250), (48, 27286), (Start: 56 @27334 has 1 MA's), (57, 27346), (60, 27352), (149, 27568), (150, 27574), (175, 27742), (184, 27817), (186, 27820), (196, 27928), (198, 27937), (201, 27949),

Gene: Doomphist_74 Start: 45998, Stop: 46735, Start Num: 45

Candidate Starts for Doomphist_74:

(Start: 45 @45998 has 5 MA's), (Start: 55 @46055 has 2 MA's), (59, 46079), (63, 46097), (67, 46112), (72, 46133), (80, 46166), (88, 46184), (146, 46343), (174, 46505), (184, 46583), (186, 46586), (190, 46607), (192, 46616), (196, 46643), (206, 46724),

Gene: DrYang_78 Start: 53011, Stop: 54216, Start Num: 56

Candidate Starts for DrYang_78:

(28, 52813), (29, 52822), (31, 52828), (33, 52846), (41, 52906), (48, 52963), (50, 52978), (Start: 56 @53011 has 1 MA's), (106, 53182), (108, 53191), (117, 53236), (120, 53254), (121, 53260), (134, 53305), (136, 53317), (137, 53323), (153, 53395), (155, 53413), (160, 53434), (162, 53449), (173, 53527), (191, 53632), (197, 53713), (200, 53725), (208, 53809), (213, 53932), (215, 54052), (216, 54061), (217, 54064), (218, 54070), (219, 54094), (221, 54115), (222, 54160), (224, 54178), (225, 54184), (226, 54190),

Gene: EdgarPoe_80 Start: 52716, Stop: 53993, Start Num: 61

Candidate Starts for EdgarPoe_80:

(28, 52494), (33, 52527), (41, 52587), (Start: 47 @52635 has 1 MA's), (48, 52644), (50, 52659), (Start: 56 @52692 has 1 MA's), (Start: 61 @52716 has 17 MA's), (92, 52854), (106, 52878), (115, 52917), (120, 52950), (134, 53001), (136, 53013), (156, 53124), (158, 53136), (168, 53202), (171, 53241), (185, 53334), (189, 53340), (200, 53457), (208, 53541), (209, 53604), (210, 53664), (213, 53685), (214, 53766), (215, 53829), (216, 53838), (217, 53841), (219, 53871), (221, 53892), (224, 53955), (225, 53961), (226, 53967),

Gene: EmiMonkey_67 Start: 47844, Stop: 48557, Start Num: 55

Candidate Starts for EmiMonkey_67:

(10, 47481), (14, 47538), (16, 47580), (17, 47595), (18, 47616), (27, 47697), (Start: 55 @47844 has 2 MA's), (58, 47865), (71, 47925), (146, 48165), (184, 48405), (186, 48408), (192, 48438), (196, 48465), (206, 48546),

Gene: Empress_69 Start: 44809, Stop: 45546, Start Num: 45

Candidate Starts for Empress_69:

(Start: 45 @44809 has 5 MA's), (Start: 55 @44866 has 2 MA's), (59, 44890), (63, 44908), (67, 44923), (72, 44944), (80, 44977), (88, 44995), (146, 45154), (174, 45316), (184, 45394), (186, 45397), (190, 45418), (192, 45427), (196, 45454), (206, 45535),

Gene: Fingolfin_43 Start: 27172, Stop: 27969, Start Num: 34

Candidate Starts for Fingolfin_43:

(Start: 34 @27172 has 11 MA's), (42, 27238), (43, 27253), (48, 27289), (Start: 56 @27337 has 1 MA's), (57, 27349), (60, 27355), (149, 27571), (150, 27577), (175, 27745), (184, 27820), (186, 27823), (196, 27931), (198, 27940),

Gene: Geodirt_4 Start: 2785, Stop: 3651, Start Num: 35

Candidate Starts for Geodirt_4:

(Start: 35 @2785 has 1 MA's), (39, 2821), (46, 2884), (48, 2899), (52, 2920), (54, 2938), (79, 3049), (83, 3064), (112, 3181), (184, 3505), (186, 3508), (188, 3511), (201, 3589),

Gene: GigiOuiOui_66 Start: 44414, Stop: 45145, Start Num: 45

Candidate Starts for GigiOuiOui_66:

(Start: 45 @44414 has 5 MA's), (Start: 55 @44471 has 2 MA's), (63, 44513), (67, 44528), (72, 44549), (141, 44729), (174, 44921), (184, 45002), (186, 45005), (196, 45062), (203, 45110), (206, 45134),

Gene: Gravel_50 Start: 28545, Stop: 29360, Start Num: 60

Candidate Starts for Gravel_50:

(Start: 34 @28362 has 11 MA's), (43, 28443), (48, 28479), (Start: 56 @28527 has 1 MA's), (60, 28545), (Start: 78 @28638 has 3 MA's), (84, 28656), (91, 28686), (107, 28758), (118, 28824), (149, 28971), (150, 28977), (161, 29043), (175, 29145), (184, 29220), (186, 29223), (198, 29340),

Gene: HamCheese_43 Start: 27156, Stop: 27953, Start Num: 34

Candidate Starts for HamCheese_43:

(Start: 34 @27156 has 11 MA's), (42, 27222), (43, 27237), (48, 27273), (Start: 56 @27321 has 1 MA's), (57, 27333), (60, 27339), (149, 27555), (150, 27561), (175, 27729), (184, 27804), (186, 27807), (196, 27915), (198, 27924),

Gene: HumptyDumpty_81 Start: 52519, Stop: 53796, Start Num: 61

Candidate Starts for HumptyDumpty_81:

(28, 52297), (33, 52330), (41, 52390), (Start: 47 @52438 has 1 MA's), (48, 52447), (50, 52462), (Start: 56 @52495 has 1 MA's), (Start: 61 @52519 has 17 MA's), (92, 52657), (106, 52681), (115, 52720), (120, 52753), (134, 52804), (136, 52816), (156, 52927), (158, 52939), (168, 53005), (171, 53044), (185, 53137), (189, 53143), (200, 53260), (208, 53344), (209, 53407), (210, 53467), (213, 53488), (214, 53569), (215, 53632), (216, 53641), (217, 53644), (219, 53674), (221, 53695), (224, 53758), (225, 53764), (226, 53770),

Gene: JaNo_80 Start: 52490, Stop: 53767, Start Num: 61

Candidate Starts for JaNo_80:

(28, 52268), (33, 52301), (41, 52361), (Start: 47 @52409 has 1 MA's), (48, 52418), (50, 52433), (Start: 56 @52466 has 1 MA's), (Start: 61 @52490 has 17 MA's), (92, 52628), (106, 52652), (115, 52691), (120, 52724), (134, 52775), (136, 52787), (156, 52898), (158, 52910), (168, 52976), (171, 53015), (185, 53108), (189, 53114), (200, 53231), (208, 53315), (209, 53378), (210, 53438), (213, 53459), (214, 53540), (215, 53603), (216, 53612), (217, 53615), (219, 53645), (221, 53666), (222, 53711), (223, 53726), (224, 53729), (225, 53735), (226, 53741),

Gene: Jamun_40 Start: 27823, Stop: 28545, Start Num: 78

Candidate Starts for Jamun_40:

(Start: 34 @27547 has 11 MA's), (42, 27613), (43, 27628), (48, 27664), (Start: 56 @27712 has 1 MA's), (57, 27724), (60, 27730), (Start: 78 @27823 has 3 MA's), (84, 27841), (91, 27871), (107, 27943), (130, 28057), (133, 28069), (149, 28156), (150, 28162), (151, 28165), (161, 28228), (175, 28330), (184, 28405), (186, 28408), (198, 28525),

Gene: JayCookie_81 Start: 53052, Stop: 54329, Start Num: 61

Candidate Starts for JayCookie_81:

(26, 52821), (28, 52830), (29, 52839), (31, 52845), (33, 52863), (41, 52923), (Start: 47 @52971 has 1 MA's), (48, 52980), (50, 52995), (Start: 56 @53028 has 1 MA's), (Start: 61 @53052 has 17 MA's), (92, 53190), (106, 53214), (115, 53253), (120, 53286), (134, 53337), (136, 53349), (156, 53460), (158, 53472), (168, 53538), (171, 53577), (185, 53670), (189, 53676), (200, 53793), (208, 53877), (209, 53940), (210, 54000), (213, 54021), (214, 54102), (215, 54165), (216, 54174), (217, 54177), (219, 54207), (221, 54228), (224, 54291), (225, 54297), (226, 54303),

Gene: Jinkies_3 Start: 2349, Stop: 3125, Start Num: 32

Candidate Starts for Jinkies_3:

(Start: 32 @2349 has 1 MA's), (43, 2442), (44, 2448), (48, 2478), (50, 2493), (65, 2571), (73, 2616), (87, 2649), (93, 2670), (95, 2676), (98, 2685), (111, 2700), (124, 2784), (128, 2793), (145, 2871), (159, 2952), (160, 2955), (169, 3015), (177, 3072),

Gene: Juno112_42 Start: 27172, Stop: 27969, Start Num: 34

Candidate Starts for Juno112_42:

(Start: 34 @27172 has 11 MA's), (42, 27238), (43, 27253), (48, 27289), (Start: 56 @27337 has 1 MA's), (57, 27349), (60, 27355), (149, 27571), (150, 27577), (175, 27745), (184, 27820), (186, 27823), (196, 27931), (198, 27940),

Gene: KBurrousTX_80 Start: 54664, Stop: 55992, Start Num: 68

Candidate Starts for KBurrousTX_80:

(24, 54379), (26, 54403), (28, 54412), (33, 54445), (39, 54487), (41, 54505), (Start: 47 @54553 has 1 MA's), (48, 54562), (50, 54577), (Start: 56 @54610 has 1 MA's), (Start: 68 @54664 has 1 MA's), (92, 54760), (99, 54847), (100, 54859), (106, 54880), (108, 54889), (113, 54907), (115, 54919), (120, 54952), (121, 54958), (136, 55015), (156, 55126), (169, 55210), (171, 55243), (181, 55309), (185, 55336), (189, 55342), (207, 55534), (209, 55606), (210, 55666), (213, 55687), (215, 55828), (216, 55837), (217, 55840), (218, 55846), (219, 55870), (221, 55891), (226, 55966),

Gene: Kabreeze_81 Start: 52576, Stop: 53853, Start Num: 61

Candidate Starts for Kabreeze_81:

(28, 52354), (33, 52387), (41, 52447), (Start: 47 @52495 has 1 MA's), (48, 52504), (50, 52519), (Start: 56 @52552 has 1 MA's), (Start: 61 @52576 has 17 MA's), (92, 52714), (106, 52738), (115, 52777), (120, 52810), (134, 52861), (136, 52873), (156, 52984), (158, 52996), (168, 53062), (171, 53101), (185, 53194), (189, 53200), (200, 53317), (208, 53401), (209, 53464), (210, 53524), (213, 53545), (214, 53626), (215, 53689), (216, 53698), (217, 53701), (219, 53731), (221, 53752), (222, 53797), (223, 53812), (224, 53815), (225, 53821), (226, 53827),

Gene: KendraB23_51 Start: 28732, Stop: 29547, Start Num: 60

Candidate Starts for KendraB23_51:

(Start: 34 @28549 has 11 MA's), (43, 28630), (48, 28666), (Start: 56 @28714 has 1 MA's), (60, 28732), (Start: 78 @28825 has 3 MA's), (84, 28843), (91, 28873), (107, 28945), (118, 29011), (149, 29158), (150, 29164), (161, 29230), (175, 29332), (184, 29407), (186, 29410), (198, 29527),

Gene: Laphuphu24k_42 Start: 27156, Stop: 27953, Start Num: 34

Candidate Starts for Laphuphu24k_42:

(Start: 34 @27156 has 11 MA's), (42, 27222), (43, 27237), (48, 27273), (Start: 56 @27321 has 1 MA's), (57, 27333), (60, 27339), (149, 27555), (150, 27561), (175, 27729), (184, 27804), (186, 27807), (196, 27915), (198, 27924),

Gene: Leona_42 Start: 27237, Stop: 28046, Start Num: 34

Candidate Starts for Leona_42:

(Start: 34 @27237 has 11 MA's), (42, 27303), (43, 27318), (48, 27354), (Start: 56 @27402 has 1 MA's), (57, 27414), (60, 27420), (150, 27654), (151, 27657), (166, 27759), (175, 27822), (184, 27897), (186, 27900), (198, 28017),

Gene: Linus_81 Start: 53024, Stop: 54301, Start Num: 61

Candidate Starts for Linus_81:

(28, 52802), (33, 52835), (41, 52895), (Start: 47 @52943 has 1 MA's), (48, 52952), (50, 52967), (Start: 56 @53000 has 1 MA's), (Start: 61 @53024 has 17 MA's), (92, 53162), (106, 53186), (115, 53225), (120, 53258), (134, 53309), (136, 53321), (156, 53432), (158, 53444), (168, 53510), (171, 53549), (185, 53642), (189, 53648), (200, 53765), (208, 53849), (209, 53912), (210, 53972), (213, 53993), (214, 54074), (215, 54137), (216, 54146), (217, 54149), (219, 54179), (221, 54200), (224, 54263), (225, 54269), (226, 54275),

Gene: Lymara_77 Start: 51381, Stop: 52658, Start Num: 61

Candidate Starts for Lymara_77:

(28, 51159), (33, 51192), (41, 51252), (Start: 47 @51300 has 1 MA's), (48, 51309), (50, 51324), (Start: 56 @51357 has 1 MA's), (Start: 61 @51381 has 17 MA's), (92, 51519), (106, 51543), (120, 51615), (134, 51666), (136, 51678), (156, 51789), (168, 51867), (170, 51894), (171, 51906), (185, 51999), (189, 52005), (200, 52122), (208, 52206), (209, 52269), (210, 52329), (213, 52350), (214, 52431), (215, 52494), (216, 52503), (217, 52506), (219, 52536), (221, 52557), (224, 52620), (225, 52626), (226, 52632),

Gene: McKinley_5 Start: 3198, Stop: 3983, Start Num: 75

Candidate Starts for McKinley_5:

(66, 3156), (69, 3165), (Start: 75 @3198 has 1 MA's), (77, 3204), (83, 3228), (101, 3327), (139, 3495), (144, 3516), (148, 3537), (184, 3786), (186, 3789), (188, 3792), (190, 3810), (195, 3873), (201, 3921),

Gene: Mordred_81 Start: 52615, Stop: 53892, Start Num: 61

Candidate Starts for Mordred_81:

(28, 52393), (33, 52426), (41, 52486), (Start: 47 @52534 has 1 MA's), (48, 52543), (50, 52558), (Start: 56 @52591 has 1 MA's), (Start: 61 @52615 has 17 MA's), (92, 52753), (106, 52777), (115, 52816), (120, 52849), (134, 52900), (136, 52912), (156, 53023), (158, 53035), (168, 53101), (171, 53140), (185, 53233), (189, 53239), (200, 53356), (208, 53440), (209, 53503), (210, 53563), (213, 53584), (214, 53665), (215, 53728), (216, 53737), (217, 53740), (219, 53770), (221, 53791), (222, 53836), (223, 53851), (224, 53854), (225, 53860), (226, 53866),

Gene: MoyaNatalis_80 Start: 52498, Stop: 53775, Start Num: 61

Candidate Starts for MoyaNatalis_80:

(28, 52276), (33, 52309), (41, 52369), (Start: 47 @52417 has 1 MA's), (48, 52426), (50, 52441), (Start: 56 @52474 has 1 MA's), (Start: 61 @52498 has 17 MA's), (92, 52636), (106, 52660), (115, 52699), (120, 52732), (134, 52783), (136, 52795), (156, 52906), (158, 52918), (168, 52984), (171, 53023), (185, 53116), (189, 53122), (200, 53239), (208, 53323), (209, 53386), (210, 53446), (213, 53467), (214, 53548), (215, 53611), (216, 53620), (217, 53623), (219, 53653), (221, 53674), (224, 53737), (225, 53743), (226, 53749),

Gene: Niblet_44 Start: 27937, Stop: 28935, Start Num: 34

Candidate Starts for Niblet_44:

(Start: 34 @27937 has 11 MA's), (43, 28018), (48, 28054), (60, 28120), (Start: 78 @28213 has 3 MA's), (91, 28261), (105, 28327), (107, 28333), (127, 28441), (130, 28447), (133, 28459), (149, 28546), (150, 28552), (151, 28555), (161, 28618), (175, 28720), (179, 28747), (184, 28795), (186, 28798), (198, 28915),

Gene: Oppalora_42 Start: 27170, Stop: 27967, Start Num: 34

Candidate Starts for Oppalora_42:

(Start: 34 @27170 has 11 MA's), (42, 27236), (43, 27251), (48, 27287), (Start: 56 @27335 has 1 MA's), (57, 27347), (60, 27353), (149, 27569), (150, 27575), (175, 27743), (184, 27818), (186, 27821), (196, 27929), (198, 27938),

Gene: Orcanus_41 Start: 28182, Stop: 28904, Start Num: 78

Candidate Starts for Orcanus_41:

(Start: 34 @27906 has 11 MA's), (43, 27987), (48, 28023), (Start: 56 @28071 has 1 MA's), (60, 28089), (Start: 78 @28182 has 3 MA's), (84, 28200), (91, 28230), (107, 28302), (147, 28503), (149, 28515), (150, 28521), (151, 28524), (161, 28587), (175, 28689), (184, 28764), (186, 28767), (198, 28884),

Gene: Ovechkin_70 Start: 44498, Stop: 45319, Start Num: 55

Candidate Starts for Ovechkin_70:

(10, 44057), (14, 44114), (15, 44138), (16, 44156), (17, 44171), (18, 44192), (19, 44210), (20, 44225), (21, 44243), (Start: 55 @44498 has 2 MA's), (58, 44519), (71, 44579), (102, 44735), (146, 44927), (174, 45089), (184, 45167), (186, 45170), (192, 45200), (196, 45227), (206, 45308),

Gene: Pelletreau_50 Start: 28545, Stop: 29360, Start Num: 60

Candidate Starts for Pelletreau_50:

(Start: 34 @28362 has 11 MA's), (43, 28443), (48, 28479), (Start: 56 @28527 has 1 MA's), (60, 28545), (Start: 78 @28638 has 3 MA's), (84, 28656), (91, 28686), (107, 28758), (118, 28824), (149, 28971), (150, 28977), (161, 29043), (175, 29145), (184, 29220), (186, 29223), (198, 29340),

Gene: PhilipPhlop_69 Start: 47844, Stop: 48557, Start Num: 55

Candidate Starts for PhilipPhlop_69:

(10, 47481), (14, 47538), (16, 47580), (17, 47595), (18, 47616), (27, 47697), (Start: 55 @47844 has 2 MA's), (58, 47865), (71, 47925), (146, 48165), (184, 48405), (186, 48408), (192, 48438), (196, 48465), (206, 48546),

Gene: Poenanya_74 Start: 45998, Stop: 46735, Start Num: 45

Candidate Starts for Poenanya_74:

(Start: 45 @45998 has 5 MA's), (Start: 55 @46055 has 2 MA's), (59, 46079), (63, 46097), (67, 46112), (72, 46133), (80, 46166), (88, 46184), (146, 46343), (174, 46505), (184, 46583), (186, 46586), (190, 46607), (192, 46616), (196, 46643), (206, 46724),

Gene: PrincessTrina_82 Start: 52920, Stop: 54197, Start Num: 61

Candidate Starts for PrincessTrina_82:

(28, 52698), (33, 52731), (41, 52791), (Start: 47 @52839 has 1 MA's), (48, 52848), (50, 52863), (Start: 56 @52896 has 1 MA's), (Start: 61 @52920 has 17 MA's), (92, 53058), (106, 53082), (115, 53121), (120, 53154), (134, 53205), (136, 53217), (156, 53328), (158, 53340), (168, 53406), (171, 53445), (185, 53538), (189, 53544), (200, 53661), (208, 53745), (209, 53808), (210, 53868), (213, 53889), (214, 53970), (215, 54033), (216, 54042), (217, 54045), (219, 54075), (221, 54096), (224, 54159), (225, 54165), (226, 54171),

Gene: Rattail_43 Start: 27437, Stop: 28150, Start Num: 60

Candidate Starts for Rattail_43:

(Start: 34 @27254 has 11 MA's), (42, 27320), (43, 27335), (48, 27371), (Start: 56 @27419 has 1 MA's), (57, 27431), (60, 27437), (64, 27461), (103, 27530), (109, 27548), (149, 27752), (150, 27758), (175, 27926), (184, 28001), (186, 28004), (196, 28112), (198, 28121),

Gene: RedBird_72 Start: 44502, Stop: 45227, Start Num: 45

Candidate Starts for RedBird_72:

(Start: 45 @44502 has 5 MA's), (Start: 55 @44559 has 2 MA's), (59, 44583), (63, 44589), (67, 44604), (72, 44625), (80, 44658), (88, 44676), (146, 44835), (174, 44997), (184, 45075), (186, 45078), (190, 45099), (192, 45108), (196, 45135), (206, 45216),

Gene: RosiePosie_81 Start: 52704, Stop: 53981, Start Num: 61

Candidate Starts for RosiePosie_81:

(28, 52482), (33, 52515), (41, 52575), (Start: 47 @52623 has 1 MA's), (48, 52632), (50, 52647), (Start: 56 @52680 has 1 MA's), (Start: 61 @52704 has 17 MA's), (92, 52842), (106, 52866), (115, 52905), (120, 52938), (134, 52989), (136, 53001), (156, 53112), (158, 53124), (168, 53190), (171, 53229), (185, 53322), (189, 53328), (200, 53445), (208, 53529), (209, 53592), (210, 53652), (213, 53673), (214, 53754), (215, 53817), (216, 53826), (217, 53829), (219, 53859), (221, 53880), (224, 53943), (225, 53949), (226, 53955),

Gene: Samy_50 Start: 33615, Stop: 34364, Start Num: 81

Candidate Starts for Samy_50:

(30, 33303), (37, 33345), (44, 33414), (48, 33444), (54, 33483), (Start: 81 @33615 has 1 MA's), (82, 33618), (83, 33621), (104, 33735), (122, 33819), (123, 33822), (148, 33933), (168, 34071), (175, 34122), (179, 34152), (186, 34203), (190, 34224), (196, 34260), (201, 34281), (202, 34284), (205, 34320),

Gene: Scavito_82 Start: 52664, Stop: 53941, Start Num: 61

Candidate Starts for Scavito_82:

(28, 52442), (33, 52475), (41, 52535), (Start: 47 @52583 has 1 MA's), (48, 52592), (50, 52607), (Start: 56 @52640 has 1 MA's), (Start: 61 @52664 has 17 MA's), (92, 52802), (106, 52826), (115, 52865),

(120, 52898), (134, 52949), (136, 52961), (156, 53072), (158, 53084), (168, 53150), (171, 53189), (185, 53282), (189, 53288), (200, 53405), (208, 53489), (209, 53552), (210, 53612), (213, 53633), (214, 53714), (215, 53777), (216, 53786), (217, 53789), (219, 53819), (221, 53840), (222, 53885), (223, 53900), (224, 53903), (225, 53909), (226, 53915),

Gene: Sedona_6 Start: 4350, Stop: 5051, Start Num: 85

Candidate Starts for Sedona_6:

(1, 3228), (2, 3420), (3, 3450), (4, 3477), (5, 3513), (6, 3549), (7, 3666), (8, 3678), (9, 3765), (11, 3807), (12, 3819), (13, 3825), (22, 3969), (23, 3993), (38, 4089), (40, 4110), (58, 4245), (Start: 85 @4350 has 1 MA's), (101, 4446), (139, 4614), (144, 4635), (148, 4656), (184, 4905), (186, 4908), (188, 4911), (201, 4989),

Gene: Shen_40 Start: 26463, Stop: 27461, Start Num: 34

Candidate Starts for Shen_40:

(Start: 34 @26463 has 11 MA's), (43, 26544), (48, 26580), (Start: 56 @26628 has 1 MA's), (60, 26646), (Start: 78 @26739 has 3 MA's), (84, 26757), (91, 26787), (107, 26859), (118, 26925), (149, 27072), (150, 27078), (161, 27144), (175, 27246), (184, 27321), (186, 27324), (198, 27441),

Gene: StuartMinion_35 Start: 24235, Stop: 25020, Start Num: 34

Candidate Starts for StuartMinion_35:

(Start: 34 @24235 has 11 MA's), (39, 24274), (42, 24301), (48, 24352), (50, 24367), (53, 24388), (Start: 56 @24400 has 1 MA's), (60, 24418), (112, 24430), (132, 24526), (150, 24625), (157, 24676), (168, 24745), (175, 24796), (180, 24844), (184, 24871), (186, 24874), (195, 24958), (198, 24991), (201, 25003),

Gene: TaylorSipht_41 Start: 27587, Stop: 28306, Start Num: 78

Candidate Starts for TaylorSipht_41:

(Start: 34 @27311 has 11 MA's), (43, 27392), (48, 27428), (Start: 78 @27587 has 3 MA's), (84, 27605), (91, 27635), (107, 27707), (150, 27923), (167, 28034), (175, 28091), (184, 28166), (186, 28169), (198, 28286),

Gene: Toad24_43 Start: 28602, Stop: 29600, Start Num: 34

Candidate Starts for Toad24_43:

(Start: 34 @28602 has 11 MA's), (43, 28683), (48, 28719), (Start: 56 @28767 has 1 MA's), (60, 28785), (Start: 78 @28878 has 3 MA's), (84, 28896), (91, 28926), (107, 28998), (118, 29064), (149, 29211), (150, 29217), (161, 29283), (175, 29385), (184, 29460), (186, 29463), (198, 29580),

Gene: Tophat_82 Start: 52853, Stop: 54130, Start Num: 61

Candidate Starts for Tophat_82:

(28, 52631), (33, 52664), (41, 52724), (Start: 47 @52772 has 1 MA's), (48, 52781), (50, 52796), (Start: 56 @52829 has 1 MA's), (Start: 61 @52853 has 17 MA's), (92, 52991), (106, 53015), (115, 53054), (120, 53087), (134, 53138), (136, 53150), (156, 53261), (158, 53273), (168, 53339), (171, 53378), (185, 53471), (189, 53477), (200, 53594), (208, 53678), (209, 53741), (210, 53801), (213, 53822), (214, 53903), (215, 53966), (216, 53975), (217, 53978), (219, 54008), (221, 54029), (222, 54074), (223, 54089), (224, 54092), (225, 54098), (226, 54104),

Gene: Westrich_49 Start: 28469, Stop: 29284, Start Num: 60

Candidate Starts for Westrich_49:

(Start: 34 @28286 has 11 MA's), (43, 28367), (48, 28403), (Start: 56 @28451 has 1 MA's), (60, 28469), (Start: 78 @28562 has 3 MA's), (84, 28580), (91, 28610), (107, 28682), (118, 28748), (149, 28895), (150, 28901), (161, 28967), (175, 29069), (184, 29144), (186, 29147), (198, 29264),

Gene: WileyE_42 Start: 27504, Stop: 28385, Start Num: 34

Candidate Starts for WileyE_42:

(Start: 34 @27504 has 11 MA's), (43, 27585), (48, 27621), (Start: 56 @27669 has 1 MA's), (107, 27783), (149, 27996), (150, 28002), (151, 28005), (161, 28068), (175, 28170), (184, 28245), (186, 28248), (198, 28365),

Gene: Zixiang_44 Start: 27967, Stop: 28965, Start Num: 34

Candidate Starts for Zixiang_44:

(Start: 34 @27967 has 11 MA's), (43, 28048), (48, 28084), (Start: 56 @28132 has 1 MA's), (60, 28150), (Start: 78 @28243 has 3 MA's), (84, 28261), (91, 28291), (107, 28363), (118, 28429), (149, 28576), (150, 28582), (161, 28648), (175, 28750), (184, 28825), (186, 28828), (198, 28945),