

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 5098 Report

This analysis was run 04/05/24 on database version 557.

Pham number 5098 has 14 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_21
- Track 2 : MrMiyagi_21
- Track 3 : Indlulamithi_24
- Track 4 : Cuke_20
- Track 5 : Candle_27
- Track 6 : Riparian_27
- Track 7 : Papyrus_27
- Track 8 : Zenon_28
- Track 9 : Nilo_28, Weiss13_27
- Track 10 : Send513_27
- Track 11 : Yelo_27
- Track 12 : Rope_27
- Track 13 : MontyDev_27

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

The start number called the most often in the published annotations is 2, it was called in 8 of the 12 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Candle_27, MontyDev_27, Nilo_28, Papyrus_27, Riparian_27, Rope_27, Send513_27, Weiss13_27, Yelo_27, Zenon_28,

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

-

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

- Cuke_20, Fowlmouth_21, Indlulamithi_24, MrMiyagi_21,

Summary by start number:

Start 1:

- Found in 1 of 14 (7.1%) of genes in pham
- Manual Annotations of this start: 1 of 12

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi_24 (AC),

Start 2:

- Found in 10 of 14 (71.4%) of genes in pham
- Manual Annotations of this start: 8 of 12
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Candle_27 (R), MontyDev_27 (R), Nilo_28 (R), Papyrus_27 (R), Riparian_27 (R), Rope_27 (R), Send513_27 (R), Weiss13_27 (R), Yelo_27 (R), Zenon_28 (R),

Start 3:

- Found in 2 of 14 (14.3%) of genes in pham
- Manual Annotations of this start: 1 of 12
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MrMiyagi_21 (AC),

Start 4:

- Found in 1 of 14 (7.1%) of genes in pham
- Manual Annotations of this start: 1 of 12
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cuke_20 (AC),

Start 5:

- Found in 3 of 14 (21.4%) of genes in pham
- Manual Annotations of this start: 1 of 12
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Fowlmouth_21 (AC),

Summary by clusters:

There are 2 clusters represented in this pham: AC, R,

Info for manual annotations of cluster AC:

- Start number 1 was manually annotated 1 time for cluster AC.
- Start number 3 was manually annotated 1 time for cluster AC.
- Start number 4 was manually annotated 1 time for cluster AC.
- Start number 5 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster R:

- Start number 2 was manually annotated 8 times for cluster R.

Gene Information:

Gene: Candle_27 Start: 17027, Stop: 22582, Start Num: 2

Candidate Starts for Candle_27:

(Start: 2 @17027 has 8 MA's), (6, 17213), (7, 17231), (13, 17474), (15, 17489), (23, 17570), (24, 17573), (27, 17663), (30, 17708), (32, 17780), (33, 17789), (35, 17834), (41, 17981), (43, 18029), (44, 18041), (45, 18044), (47, 18056), (48, 18068), (49, 18074), (51, 18083), (53, 18128), (54, 18131), (56, 18173), (57, 18203), (60, 18257), (67, 18413), (68, 18422), (70, 18443), (73, 18464), (74, 18467), (75, 18479), (76, 18482), (78, 18602), (81, 18656), (82, 18668), (83, 18689), (86, 18839), (92, 19079), (93,

19109), (94, 19121), (97, 19172), (99, 19247), (100, 19250), (105, 19322), (108, 19355), (118, 19559), (130, 19823), (132, 19829), (133, 19850), (138, 19958), (140, 19979), (145, 20054), (147, 20159), (151, 20207), (153, 20240), (157, 20333), (159, 20429), (160, 20483), (164, 20615), (165, 20618), (166, 20642), (167, 20729), (172, 20999), (173, 21002), (174, 21008), (177, 21059), (181, 21179), (183, 21215), (186, 21248), (192, 21479), (193, 21485), (194, 21503), (195, 21506), (198, 21587), (199, 21617), (201, 21656), (207, 21698), (208, 21710), (209, 21728), (210, 21743), (211, 21752), (213, 21773), (218, 21851), (221, 21890), (223, 21950), (225, 21974), (226, 21992), (228, 22007), (232, 22136), (236, 22184), (240, 22235), (250, 22433), (252, 22466), (254, 22484), (255, 22520), (256, 22529), (257, 22532),

Gene: Cuke_20 Start: 12188, Stop: 17680, Start Num: 4

Candidate Starts for Cuke_20:

(Start: 4 @12188 has 1 MA's), (Start: 5 @12194 has 1 MA's), (10, 12341), (11, 12485), (12, 12488), (14, 12512), (18, 12560), (19, 12566), (25, 12680), (31, 12746), (33, 12818), (34, 12851), (37, 12893), (42, 13019), (52, 13115), (53, 13157), (57, 13235), (58, 13268), (62, 13325), (63, 13358), (64, 13406), (69, 13463), (78, 13637), (80, 13682), (84, 13775), (87, 13913), (89, 14078), (95, 14165), (96, 14174), (101, 14291), (102, 14351), (103, 14354), (110, 14480), (111, 14495), (113, 14597), (114, 14645), (115, 14663), (119, 14798), (121, 14816), (124, 14942), (126, 14990), (127, 15005), (128, 15014), (134, 15107), (135, 15137), (136, 15146), (137, 15179), (139, 15206), (141, 15236), (142, 15245), (143, 15254), (147, 15404), (150, 15422), (153, 15461), (155, 15536), (156, 15542), (161, 15698), (163, 15752), (164, 15791), (166, 15818), (167, 15905), (169, 15995), (176, 16217), (179, 16298), (186, 16400), (188, 16454), (189, 16469), (201, 16766), (205, 16802), (210, 16844), (213, 16874), (219, 16955), (221, 16991), (222, 17009), (227, 17105), (235, 17282), (236, 17288), (239, 17330), (242, 17378), (244, 17441), (245, 17450), (246, 17462), (248, 17504), (250, 17537), (255, 17621), (257, 17633), (258, 17642), (259, 17666),

Gene: Fowlmouth_21 Start: 12300, Stop: 17813, Start Num: 5

Candidate Starts for Fowlmouth_21:

(Start: 3 @12294 has 1 MA's), (Start: 5 @12300 has 1 MA's), (9, 12411), (11, 12591), (16, 12627), (18, 12666), (25, 12786), (26, 12792), (28, 12810), (33, 12924), (34, 12957), (39, 13074), (42, 13125), (53, 13263), (57, 13341), (63, 13464), (64, 13512), (65, 13533), (76, 13623), (77, 13722), (78, 13743), (79, 13752), (80, 13788), (85, 13926), (88, 14058), (95, 14271), (99, 14388), (102, 14457), (103, 14460), (107, 14505), (111, 14601), (121, 14922), (124, 15054), (129, 15129), (135, 15249), (137, 15291), (141, 15348), (142, 15357), (147, 15516), (148, 15522), (150, 15534), (153, 15573), (154, 15606), (155, 15648), (156, 15654), (163, 15882), (167, 16035), (168, 16092), (169, 16125), (170, 16206), (171, 16275), (186, 16530), (188, 16584), (197, 16785), (198, 16830), (201, 16893), (204, 16926), (210, 16971), (213, 17001), (222, 17136), (235, 17409), (236, 17415), (239, 17457), (240, 17466), (241, 17484), (242, 17505), (245, 17577), (248, 17631), (250, 17664), (255, 17748), (257, 17760),

Gene: Indlulamithi_24 Start: 14450, Stop: 20038, Start Num: 1

Candidate Starts for Indlulamithi_24:

(Start: 1 @14450 has 1 MA's), (8, 14702), (17, 14996), (20, 15032), (21, 15038), (28, 15173), (29, 15179), (31, 15221), (36, 15347), (38, 15431), (39, 15443), (40, 15452), (41, 15485), (43, 15533), (45, 15548), (46, 15554), (50, 15581), (51, 15587), (53, 15632), (54, 15635), (55, 15650), (56, 15677), (57, 15707), (59, 15743), (61, 15776), (64, 15872), (66, 15902), (71, 15947), (72, 15950), (75, 15971), (78, 16091), (82, 16154), (90, 16538), (91, 16547), (98, 16724), (104, 16808), (106, 16829), (109, 16892), (112, 16994), (115, 17042), (116, 17048), (117, 17063), (120, 17153), (122, 17207), (123, 17237), (127, 17351), (129, 17363), (131, 17417), (132, 17423), (136, 17495), (137, 17528), (139, 17555), (142, 17594), (144, 17618), (146, 17669), (149, 17777), (152, 17810), (157, 17936), (158, 17951), (162, 18089), (168, 18302), (175, 18530), (178, 18584), (182, 18701), (184, 18731), (185, 18743), (190, 18836), (191, 18875), (196, 18998), (200, 19118), (202, 19130), (203, 19139), (206, 19157), (207, 19160), (212, 19226), (215, 19280), (216, 19292), (217, 19301), (220, 19331), (221, 19352),

(222, 19370), (224, 19427), (229, 19478), (230, 19496), (231, 19556), (233, 19610), (234, 19616), (236, 19634), (237, 19652), (238, 19661), (243, 19730), (246, 19808), (249, 19862), (251, 19889), (253, 19934), (255, 19976), (257, 19988),

Gene: MontyDev_27 Start: 16668, Stop: 22223, Start Num: 2

Candidate Starts for MontyDev_27:

(Start: 2 @16668 has 8 MA's), (6, 16854), (7, 16872), (13, 17115), (15, 17130), (23, 17211), (24, 17214), (27, 17304), (30, 17349), (32, 17421), (33, 17430), (35, 17475), (41, 17622), (43, 17670), (44, 17682), (45, 17685), (47, 17697), (48, 17709), (49, 17715), (51, 17724), (53, 17769), (54, 17772), (56, 17814), (57, 17844), (60, 17898), (67, 18054), (68, 18063), (70, 18084), (73, 18105), (74, 18108), (75, 18120), (76, 18123), (78, 18243), (81, 18297), (82, 18309), (86, 18480), (92, 18720), (93, 18750), (94, 18762), (97, 18813), (99, 18888), (100, 18891), (105, 18963), (108, 18996), (118, 19200), (130, 19464), (132, 19470), (133, 19491), (138, 19599), (140, 19620), (145, 19695), (147, 19800), (151, 19848), (153, 19881), (157, 19974), (159, 20070), (160, 20124), (164, 20256), (165, 20259), (166, 20283), (167, 20370), (172, 20640), (173, 20643), (174, 20649), (177, 20700), (181, 20820), (183, 20856), (186, 20889), (187, 20952), (192, 21120), (193, 21126), (194, 21144), (195, 21147), (198, 21228), (199, 21258), (201, 21297), (207, 21339), (208, 21351), (209, 21369), (210, 21384), (211, 21393), (218, 21492), (221, 21531), (223, 21591), (225, 21615), (226, 21633), (228, 21648), (232, 21777), (236, 21825), (240, 21876), (250, 22074), (252, 22107), (254, 22125), (255, 22161), (256, 22170), (257, 22173),

Gene: MrMiyagi_21 Start: 12314, Stop: 17833, Start Num: 3

Candidate Starts for MrMiyagi_21:

(Start: 3 @12314 has 1 MA's), (Start: 5 @12320 has 1 MA's), (9, 12431), (11, 12611), (16, 12647), (18, 12686), (25, 12806), (26, 12812), (28, 12830), (33, 12944), (34, 12977), (39, 13094), (42, 13145), (53, 13283), (57, 13361), (63, 13484), (64, 13532), (65, 13553), (76, 13643), (77, 13742), (78, 13763), (79, 13772), (80, 13808), (85, 13946), (88, 14078), (95, 14291), (99, 14408), (102, 14477), (103, 14480), (107, 14525), (111, 14621), (121, 14942), (124, 15074), (129, 15149), (135, 15269), (137, 15311), (141, 15368), (142, 15377), (147, 15536), (148, 15542), (150, 15554), (153, 15593), (154, 15626), (155, 15668), (156, 15674), (163, 15902), (167, 16055), (168, 16112), (169, 16145), (170, 16226), (171, 16295), (186, 16550), (188, 16604), (197, 16805), (198, 16850), (201, 16913), (204, 16946), (210, 16991), (213, 17021), (221, 17138), (235, 17429), (236, 17435), (239, 17477), (240, 17486), (241, 17504), (242, 17525), (245, 17597), (248, 17651), (250, 17684), (255, 17768), (257, 17780),

Gene: Nilo_28 Start: 17024, Stop: 22579, Start Num: 2

Candidate Starts for Nilo_28:

(Start: 2 @17024 has 8 MA's), (6, 17210), (7, 17228), (13, 17471), (15, 17486), (23, 17567), (24, 17570), (27, 17660), (30, 17705), (32, 17777), (33, 17786), (35, 17831), (41, 17978), (43, 18026), (44, 18038), (45, 18041), (47, 18053), (48, 18065), (49, 18071), (51, 18080), (53, 18125), (54, 18128), (56, 18170), (57, 18200), (60, 18254), (67, 18410), (68, 18419), (70, 18440), (73, 18461), (74, 18464), (75, 18476), (76, 18479), (78, 18599), (81, 18653), (82, 18665), (83, 18686), (86, 18836), (92, 19076), (93, 19106), (94, 19118), (97, 19169), (99, 19244), (100, 19247), (105, 19319), (108, 19352), (118, 19556), (130, 19820), (133, 19847), (138, 19955), (140, 19976), (145, 20051), (147, 20156), (151, 20204), (153, 20237), (157, 20330), (159, 20426), (160, 20480), (164, 20612), (165, 20615), (166, 20639), (167, 20726), (172, 20996), (173, 20999), (174, 21005), (177, 21056), (181, 21176), (183, 21212), (186, 21245), (192, 21476), (193, 21482), (194, 21500), (195, 21503), (198, 21584), (199, 21614), (201, 21653), (207, 21695), (208, 21707), (209, 21725), (210, 21740), (211, 21749), (213, 21770), (218, 21848), (221, 21887), (223, 21947), (225, 21971), (226, 21989), (228, 22004), (232, 22133), (236, 22181), (240, 22232), (250, 22430), (252, 22463), (254, 22481), (255, 22517), (256, 22526), (257, 22529),

Gene: Papyrus_27 Start: 16686, Stop: 22244, Start Num: 2

Candidate Starts for Papyrus_27:

(Start: 2 @16686 has 8 MA's), (6, 16872), (7, 16890), (13, 17133), (15, 17148), (23, 17229), (24, 17232), (27, 17322), (30, 17367), (32, 17439), (33, 17448), (35, 17493), (41, 17640), (43, 17688), (44, 17700), (45, 17703), (47, 17715), (48, 17727), (49, 17733), (51, 17742), (53, 17787), (54, 17790), (56, 17832), (57, 17862), (60, 17916), (67, 18072), (68, 18081), (70, 18102), (73, 18123), (74, 18126), (75, 18138), (76, 18141), (78, 18261), (81, 18315), (82, 18327), (83, 18348), (86, 18498), (92, 18738), (93, 18768), (94, 18780), (97, 18831), (99, 18906), (100, 18909), (105, 18981), (108, 19014), (118, 19218), (130, 19482), (132, 19488), (133, 19509), (138, 19617), (140, 19638), (145, 19713), (147, 19818), (151, 19866), (153, 19899), (157, 19992), (159, 20088), (160, 20142), (164, 20274), (165, 20277), (166, 20301), (167, 20388), (172, 20658), (173, 20661), (174, 20667), (177, 20718), (180, 20805), (181, 20841), (186, 20910), (187, 20973), (192, 21141), (193, 21147), (194, 21165), (195, 21168), (198, 21249), (199, 21279), (201, 21318), (207, 21360), (208, 21372), (209, 21390), (210, 21405), (211, 21414), (218, 21513), (221, 21552), (223, 21612), (225, 21636), (226, 21654), (228, 21669), (232, 21798), (236, 21846), (240, 21897), (250, 22095), (252, 22128), (254, 22146), (255, 22182), (256, 22191), (257, 22194),

Gene: Riparian_27 Start: 16485, Stop: 22040, Start Num: 2

Candidate Starts for Riparian_27:

(Start: 2 @16485 has 8 MA's), (6, 16671), (7, 16689), (13, 16932), (15, 16947), (23, 17028), (24, 17031), (27, 17121), (30, 17166), (32, 17238), (33, 17247), (35, 17292), (41, 17439), (43, 17487), (44, 17499), (45, 17502), (47, 17514), (48, 17526), (49, 17532), (51, 17541), (53, 17586), (54, 17589), (56, 17631), (57, 17661), (60, 17715), (67, 17871), (68, 17880), (70, 17901), (73, 17922), (74, 17925), (75, 17937), (76, 17940), (78, 18060), (81, 18114), (82, 18126), (83, 18147), (86, 18297), (92, 18537), (93, 18567), (94, 18579), (97, 18630), (99, 18705), (100, 18708), (105, 18780), (108, 18813), (118, 19017), (125, 19185), (130, 19281), (133, 19308), (138, 19416), (140, 19437), (145, 19512), (147, 19617), (151, 19665), (153, 19698), (157, 19791), (159, 19887), (160, 19941), (164, 20073), (165, 20076), (166, 20100), (167, 20187), (172, 20457), (173, 20460), (174, 20466), (177, 20517), (181, 20637), (183, 20673), (186, 20706), (192, 20937), (193, 20943), (194, 20961), (195, 20964), (198, 21045), (199, 21075), (201, 21114), (207, 21156), (208, 21168), (209, 21186), (210, 21201), (211, 21210), (213, 21231), (218, 21309), (223, 21408), (226, 21450), (228, 21465), (232, 21594), (236, 21642), (240, 21693), (250, 21891), (252, 21924), (254, 21942), (255, 21978), (256, 21987), (257, 21990),

Gene: Rope_27 Start: 16677, Stop: 22226, Start Num: 2

Candidate Starts for Rope_27:

(Start: 2 @16677 has 8 MA's), (6, 16863), (7, 16881), (13, 17124), (15, 17139), (22, 17214), (23, 17220), (24, 17223), (27, 17313), (30, 17358), (32, 17430), (33, 17439), (35, 17484), (41, 17631), (43, 17679), (44, 17691), (45, 17694), (47, 17706), (48, 17718), (49, 17724), (52, 17736), (53, 17778), (54, 17781), (56, 17823), (57, 17853), (60, 17907), (67, 18063), (68, 18072), (70, 18093), (73, 18114), (74, 18117), (75, 18129), (76, 18132), (78, 18252), (81, 18306), (82, 18318), (83, 18339), (92, 18729), (93, 18759), (94, 18771), (97, 18822), (99, 18897), (100, 18900), (105, 18972), (108, 19005), (118, 19209), (130, 19467), (132, 19473), (133, 19494), (138, 19602), (140, 19623), (145, 19698), (147, 19803), (151, 19851), (153, 19884), (157, 19977), (159, 20073), (160, 20127), (164, 20259), (165, 20262), (166, 20286), (167, 20373), (172, 20643), (173, 20646), (177, 20703), (180, 20787), (186, 20892), (187, 20955), (192, 21123), (193, 21129), (194, 21147), (195, 21150), (198, 21231), (199, 21261), (201, 21300), (207, 21342), (208, 21354), (209, 21372), (210, 21387), (211, 21396), (213, 21417), (214, 21438), (218, 21495), (221, 21534), (223, 21594), (225, 21618), (226, 21636), (228, 21651), (232, 21780), (236, 21828), (240, 21879), (247, 22014), (250, 22077), (252, 22110), (254, 22128), (255, 22164), (256, 22173), (257, 22176),

Gene: Send513_27 Start: 17027, Stop: 22582, Start Num: 2

Candidate Starts for Send513_27:

(Start: 2 @17027 has 8 MA's), (6, 17213), (7, 17231), (13, 17474), (15, 17489), (23, 17570), (24, 17573), (27, 17663), (30, 17708), (32, 17780), (33, 17789), (35, 17834), (41, 17981), (43, 18029), (44,

18041), (47, 18056), (48, 18068), (49, 18074), (51, 18083), (53, 18128), (54, 18131), (56, 18173), (57, 18203), (60, 18257), (70, 18443), (72, 18458), (74, 18467), (75, 18479), (76, 18482), (78, 18602), (82, 18668), (86, 18839), (92, 19079), (93, 19109), (94, 19121), (97, 19172), (99, 19247), (100, 19250), (105, 19322), (108, 19355), (118, 19559), (130, 19823), (133, 19850), (138, 19958), (140, 19979), (145, 20054), (147, 20159), (151, 20207), (153, 20240), (157, 20333), (159, 20429), (160, 20483), (164, 20615), (165, 20618), (166, 20642), (167, 20729), (172, 20999), (173, 21002), (174, 21008), (177, 21059), (181, 21179), (183, 21215), (186, 21248), (192, 21479), (193, 21485), (194, 21503), (195, 21506), (198, 21587), (199, 21617), (201, 21656), (207, 21698), (208, 21710), (209, 21728), (210, 21743), (211, 21752), (213, 21773), (218, 21851), (221, 21890), (223, 21950), (225, 21974), (226, 21992), (228, 22007), (232, 22136), (236, 22184), (240, 22235), (250, 22433), (252, 22466), (254, 22484), (255, 22520), (256, 22529), (257, 22532),

Gene: Weiss13_27 Start: 16717, Stop: 22272, Start Num: 2

Candidate Starts for Weiss13_27:

(Start: 2 @16717 has 8 MA's), (6, 16903), (7, 16921), (13, 17164), (15, 17179), (23, 17260), (24, 17263), (27, 17353), (30, 17398), (32, 17470), (33, 17479), (35, 17524), (41, 17671), (43, 17719), (44, 17731), (45, 17734), (47, 17746), (48, 17758), (49, 17764), (51, 17773), (53, 17818), (54, 17821), (56, 17863), (57, 17893), (60, 17947), (67, 18103), (68, 18112), (70, 18133), (73, 18154), (74, 18157), (75, 18169), (76, 18172), (78, 18292), (81, 18346), (82, 18358), (83, 18379), (86, 18529), (92, 18769), (93, 18799), (94, 18811), (97, 18862), (99, 18937), (100, 18940), (105, 19012), (108, 19045), (118, 19249), (130, 19513), (133, 19540), (138, 19648), (140, 19669), (145, 19744), (147, 19849), (151, 19897), (153, 19930), (157, 20023), (159, 20119), (160, 20173), (164, 20305), (165, 20308), (166, 20332), (167, 20419), (172, 20689), (173, 20692), (174, 20698), (177, 20749), (181, 20869), (183, 20905), (186, 20938), (192, 21169), (193, 21175), (194, 21193), (195, 21196), (198, 21277), (199, 21307), (201, 21346), (207, 21388), (208, 21400), (209, 21418), (210, 21433), (211, 21442), (213, 21463), (218, 21541), (221, 21580), (223, 21640), (225, 21664), (226, 21682), (228, 21697), (232, 21826), (236, 21874), (240, 21925), (250, 22123), (252, 22156), (254, 22174), (255, 22210), (256, 22219), (257, 22222),

Gene: Yelo_27 Start: 17010, Stop: 22565, Start Num: 2

Candidate Starts for Yelo_27:

(Start: 2 @17010 has 8 MA's), (6, 17196), (7, 17214), (13, 17457), (15, 17472), (23, 17553), (24, 17556), (27, 17646), (30, 17691), (32, 17763), (33, 17772), (35, 17817), (41, 17964), (43, 18012), (44, 18024), (47, 18039), (48, 18051), (49, 18057), (51, 18066), (53, 18111), (54, 18114), (56, 18156), (57, 18186), (60, 18240), (70, 18426), (72, 18441), (74, 18450), (75, 18462), (76, 18465), (78, 18585), (82, 18651), (86, 18822), (92, 19062), (93, 19092), (94, 19104), (97, 19155), (99, 19230), (100, 19233), (105, 19305), (108, 19338), (118, 19542), (130, 19806), (133, 19833), (138, 19941), (140, 19962), (147, 20142), (151, 20190), (153, 20223), (157, 20316), (159, 20412), (160, 20466), (164, 20598), (165, 20601), (166, 20625), (167, 20712), (172, 20982), (173, 20985), (174, 20991), (177, 21042), (181, 21162), (183, 21198), (186, 21231), (192, 21462), (193, 21468), (194, 21486), (195, 21489), (198, 21570), (199, 21600), (201, 21639), (207, 21681), (208, 21693), (210, 21726), (211, 21735), (212, 21747), (218, 21834), (223, 21933), (226, 21975), (228, 21990), (232, 22119), (236, 22167), (240, 22218), (250, 22416), (252, 22449), (254, 22467), (255, 22503), (256, 22512), (257, 22515),

Gene: Zenon_28 Start: 17029, Stop: 22584, Start Num: 2

Candidate Starts for Zenon_28:

(Start: 2 @17029 has 8 MA's), (6, 17215), (7, 17233), (13, 17476), (15, 17491), (23, 17572), (24, 17575), (27, 17665), (30, 17710), (32, 17782), (33, 17791), (35, 17836), (41, 17983), (43, 18031), (44, 18043), (47, 18058), (48, 18070), (49, 18076), (51, 18085), (53, 18130), (54, 18133), (56, 18175), (57, 18205), (60, 18259), (67, 18415), (68, 18424), (70, 18445), (73, 18466), (74, 18469), (75, 18481), (76, 18484), (78, 18604), (81, 18658), (82, 18670), (83, 18691), (86, 18841), (92, 19081), (93, 19111), (94, 19123), (97, 19174), (99, 19249), (100, 19252), (105, 19324), (108, 19357), (118, 19561), (130, 19825), (132, 19831), (133, 19852), (138, 19960), (140, 19981), (145, 20056), (147, 20161), (151,

20209), (153, 20242), (157, 20335), (159, 20431), (160, 20485), (164, 20617), (165, 20620), (166, 20644), (167, 20731), (172, 21001), (173, 21004), (174, 21010), (177, 21061), (181, 21181), (183, 21217), (186, 21250), (192, 21481), (193, 21487), (194, 21505), (195, 21508), (198, 21589), (199, 21619), (201, 21658), (207, 21700), (208, 21712), (210, 21745), (211, 21754), (212, 21766), (218, 21853), (221, 21892), (223, 21952), (225, 21976), (226, 21994), (228, 22009), (232, 22138), (236, 22186), (240, 22237), (250, 22435), (252, 22468), (254, 22486), (255, 22522), (256, 22531), (257, 22534),