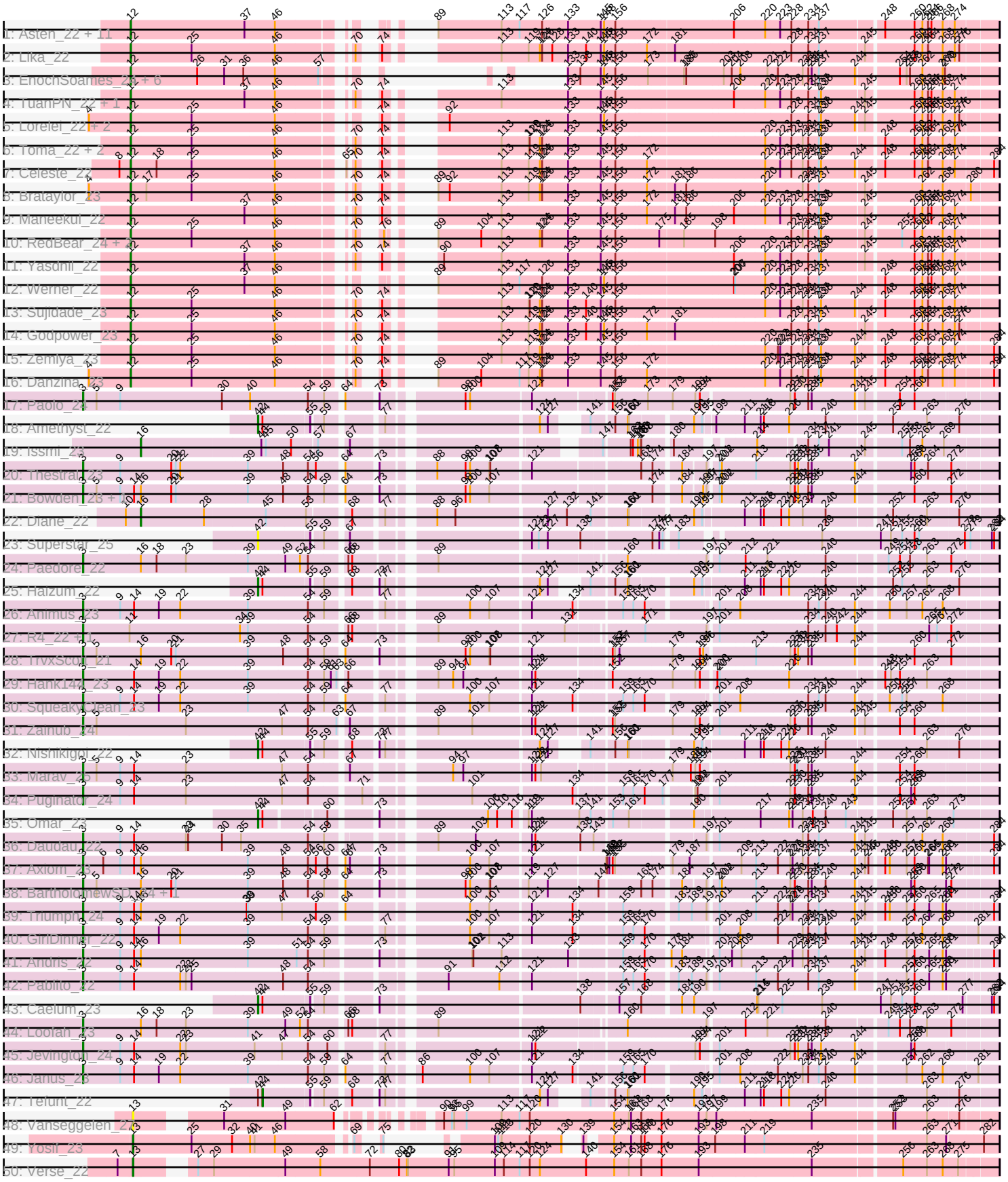
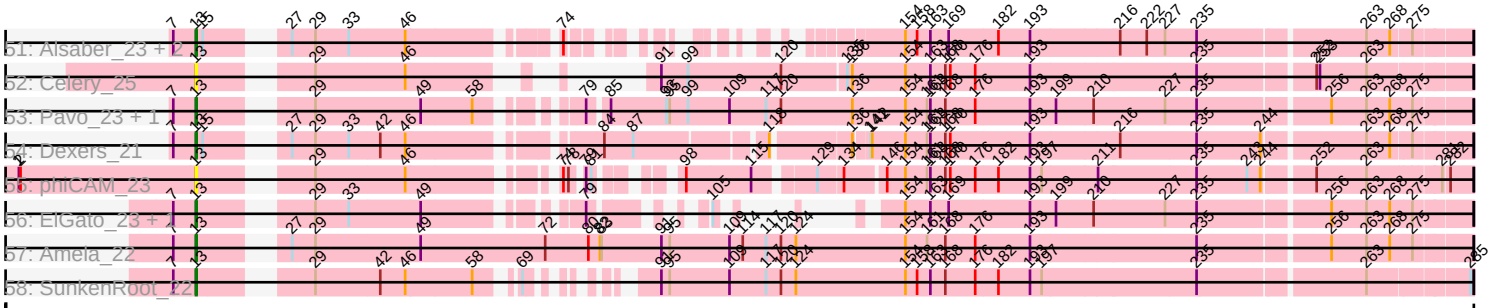
Pham 347488


1: Asten_22 + 11
2: Lika_22
3: EnochSoames_23 + 6
4: TuanPN_22 + 1
5: Lorelei_22 + 2
6: Toma_22 + 2
7: Celeste_22
8: Brataylor_23
9: Maneekul_22
10: RedBear_24 + 2
11: Yasuhil_22
12: Werner_22
13: Sujidade_23
14: Godpower_23
15: Zemlya_23
16: Danzina_23
17: Paolo_24
18: Amethyst_22
19: Issmi_23
20: Thestral_23
21: Bowden_23 + 1
22: Diane_22
23: Superstar_25
24: Paedore_22
25: Haizum_22
26: Animus_23
27: R4_22 + 1
28: TrvxScott_21
29: Hank142_23
30: SqueakyJean_23
31: Zainub_24
32: Nishikigi_22
33: Marav_23
34: Puginator_24
35: Omar_23
36: Daudau_22
37: Axiom_23
38: BartholomewSD_24 + 1
39: Triumph_24
40: GimDinna_22
41: Andris_22
42: Pablito_22
43: Caelum_23
44: Loolah_23
45: Jevington_24
46: Janus_23
47: Telunt_22
48: Vanseggelen_23
49: Yosif_23
50: Verse_22

Pham 347488


51: Alsaber_23 + 2
52: Celery_25
53: Pavo_23 + 1
54: Dexers_21
55: phiCAM_23
56: ElGato_23 + 2
57: Amela_22
58: SunkenRoot_22

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 347488 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347488 has 89 members, 5 are drafts.

Phages represented in each track:
• Track 1 : Asten_22, OzzyJ_23, Snorlax_22, Hippo_22, Dwayne_22, SarahRose_22, BarryBee_24, Chucky_22, TagePhighter_23, Whatever_22, Emaanora_24, Triste_22
• Track 2 : Lika_22
• Track 3 : EnochSoames_24, Oliynyk_23, Izzy_23, Jash_23, BryanRecycles_23, Eddasa_23, Rusticus_23
• Track 4 : TuanPN_22, Ejemplo_22
• Track 5 : Lorelei_22, Nabi_22, Rana_22
• Track 6 : Toma_22, Dattran_23, Goby_22
• Track 7 : Celeste_22
• Track 8 : Brataylor_23
• Track 9 : Maneekul_22
• Track 10 : RedBear_24, South40_23, Katalie_23
• Track 11 : Yasdnil_22
• Track 12 : Werner_22
• Track 13 : Sujidade_23
• Track 14 : Godpower_23
• Track 15 : Zemlya_23
• Track 16 : Danzina_23
• Track 17 : Paolo_24
• Track 18 : Amethyst_22
• Track 19 : Issmi_23
• Track 20 : Thestral_23
• Track 21 : Bowden_23, TinaBelcher_22
• Track 22 : Diane_22
• Track 23 : Superstar_25
• Track 24 : Paedore_22
• Track 25 : Haizum_22
• Track 26 : Animus_23
• Track 27 : R4_22, ELB20_21
• Track 28 : TrvxScott_21
• Track 29 : Hank144_23
• Track 30 : SqueakyClean_23
• Track 31 : Zainub_24
• Track 32 : Nishikigoi_22
• Track 33 : Marav_25
• Track 34 : Puginator_24
• Track 35 : Omar_23

• Track 36 : Daudau_22
• Track 37 : Axiom_23
• Track 38 : BartholomewSD_24, Alvy_24
• Track 39 : Triumph_24
• Track 40 : GirlDinner_22
• Track 41 : Andris_22
• Track 42 : Pablito_22
• Track 43 : Caelum_23
• Track 44 : Loofah_23
• Track 45 : Jevington_24
• Track 46 : Janus_23
• Track 47 : Tefunt_22
• Track 48 : Vanseggelen_27
• Track 49 : Yosif_23
• Track 50 : Verse_22
• Track 51 : Alsaber_23, Sudan_22, Kaine_22
• Track 52 : Celery_25
• Track 53 : Pavo_23, Conan_23
• Track 54 : Dexers_21
• Track 55 : phiCAM_23
• Track 56 : ElGato_23, Provolone_23
• Track 57 : Amela_22
• Track 58 : SunkenRoot_22

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

The start number called the most often in the published annotations is 12, it was called in 39 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Asten_22, BarryBee_24, Brataylor_23, BryanRecycles_23, Celeste_22, Chucky_22, Danzina_23, Dattran_23, Dwayne_22, Eddasa_23, Ejemplo_22, Emaanora_24, EnochSoames_24, Goby_22, Godpower_23, Hippo_22, Izzy_23, Jash_23, Katalie_23, Lika_22, Lorelei_22, Maneekul_22, Nabi_22, Oliynyk_23, OzzyJ_23, Rana_22, RedBear_24, Rusticus_23, SarahRose_22, Snorlax_22, South40_23, Sujidade_23, TagePhighter_23, Toma_22, Triste_22, TuanPN_22, Werner_22, Whatever_22, Yasdnil_22, Zemlya_23,

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

Genes that do not have the "Most Annotated" start:
• Alsaber_23, Alvy_24, Amela_22, Amethyst_22, Andris_22, Animus_23, Axiom_23, BartholomewSD_24, Bowden_23, Caelum_23, Celery_25, Conan_23, Daudau_22, Dexers_21, Diane_22, ELB20_21, ElGato_23, GirlDinner_22, Haizum_22, Hank144_23, Issmi_23, Janus_23, Jevington_24, Kaine_22, Loofah_23, Marav_25, Nishikigoi_22, Omar_23, Pablito_22, Paedore_22, Paolo_24, Pavo_23, Provolone_23, Puginator_24, R4_22, SqueakyClean_23, Sudan_22, SunkenRoot_22, Superstar_25, Tefunt_22, Thestral_23, TinaBelcher_22, Triumph_24, TrvxScott_21, Vanseggelen_27, Verse_22, Yosif_23, Zainub_24, phiCAM_23,

Summary by start number:

Start 3:
• Found in 25 of 89 (28.1%) of genes in pham
• Manual Annotations of this start: 25 of 84
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alvy_24 (BD2), Andris_22 (BD2), Animus_23 (BD2), Axiom_23 (BD2), BartholomewSD_24 (BD2), Bowden_23 (BD2), Daudau_22 (BD2), ELB20_21 (BD2), GirlDinner_22 (BD2), Hank144_23 (BD2), Janus_23 (BD2), Jevington_24 (BD2), Loofah_23 (BD2), Marav_25 (BD2), Pablito_22 (BD2), Paedore_22 (BD2), Paolo_24 (BD2), Puginator_24 (BD2), R4_22 (BD2), SqueakyClean_23 (BD2), Thestral_23 (BD2), TinaBelcher_22 (BD2), Triumph_24 (BD2), TrvxScott_21 (BD2), Zainub_24 (BD2),

Start 12:
• Found in 40 of 89 (44.9%) of genes in pham
• Manual Annotations of this start: 39 of 84
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Asten_22 (BD1), BarryBee_24 (BD1), Brataylor_23 (BD1), BryanRecycles_23 (BD1), Celeste_22 (BD1), Chucky_22 (BD1), Danzina_23 (BD1), Dattran_23 (BD1), Dwayne_22 (BD1), Eddasa_23 (BD1), Ejemplo_22 (BD1), Emaanora_24 (BD1), EnochSoames_24 (BD1), Goby_22 (BD1), Godpower_23 (BD1), Hippo_22 (BD1), Izzy_23 (BD1), Jash_23 (BD1), Katalie_23 (BD1), Lika_22 (BD1), Lorelei_22 (BD1), Maneekul_22 (BD1), Nabi_22 (BD1), Oliynyk_23 (BD1), OzzyJ_23 (BD1), Rana_22 (BD1), RedBear_24 (BD1), Rusticus_23 (BD1), SarahRose_22 (BD1), Snorlax_22 (BD1), South40_23 (BD1), Sujidade_23 (BD1), TagePhighter_23 (BD1), Toma_22 (BD1), Triste_22 (BD1), TuanPN_22 (BD1), Werner_22 (BD1), Whatever_22 (BD1), Yasdnil_22 (BD1), Zemlya_23 (BD1),

Start 13:
• Found in 15 of 89 (16.9%) of genes in pham
• Manual Annotations of this start: 12 of 84
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alsaber_23 (BD3), Amela_22 (BD3), Celery_25 (BD3), Conan_23 (BD3), Dexers_21 (BD3), ElGato_23 (BD3), Kaine_22 (BD3), Pavo_23 (BD3), Provolone_23 (BD3), Sudan_22 (BD3), SunkenRoot_22 (BD3), Vanseggelen_27 (BD3), Verse_22 (BD3), Yosif_23 (BD3), phiCAM_23 (BD3),

Start 16:
• Found in 12 of 89 (13.5%) of genes in pham
• Manual Annotations of this start: 2 of 84
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Diane_22 (BD2), Issmi_23 (BD2),

Start 42:
• Found in 9 of 89 (10.1%) of genes in pham
• Manual Annotations of this start: 5 of 84
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Amethyst_22 (BD2), Caelum_23 (BD2), Haizum_22 (BD2), Nishikigoi_22 (BD2), Omar_23 (BD2), Superstar_25 (BD2),

Start 44:
• Found in 6 of 89 (6.7%) of genes in pham
• Manual Annotations of this start: 1 of 84
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Tefunt_22 (BD2),

Summary by clusters:

There are 3 clusters represented in this pham: BD1, BD3, BD2,

Info for manual annotations of cluster BD1:
•Start number 12 was manually annotated 39 times for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 3 was manually annotated 25 times for cluster BD2.
•Start number 16 was manually annotated 2 times for cluster BD2.
•Start number 42 was manually annotated 5 times for cluster BD2.
•Start number 44 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster BD3:
•Start number 13 was manually annotated 12 times for cluster BD3.

Gene Information:

Gene: Alsaber_23 Start: 18064, Stop: 19866, Start Num: 13
Candidate Starts for Alsaber_23:
(7, 18025), (Start: 13 @18064 has 12 MA's), (15, 18076), (27, 18172), (29, 18214), (33, 18274), (46, 18373), (74, 18589), (154, 18904), (158, 18925), (163, 18949), (169, 18982), (182, 19069), (193, 19126), (216, 19279), (222, 19327), (227, 19360), (235, 19414), (263, 19696), (268, 19738), (275, 19771),

Gene: Alvy_24 Start: 17376, Stop: 19559, Start Num: 3
Candidate Starts for Alvy_24:
(Start: 3 @17376 has 25 MA's), (5, 17412), (Start: 16 @17529 has 2 MA's), (20, 17610), (21, 17622), (39, 17811), (48, 17904), (54, 17970), (59, 18012), (64, 18045), (73, 18111), (98, 18297), (100, 18309), (107, 18360), (108, 18363), (119, 18453), (127, 18504), (144, 18618), (168, 18717), (174, 18744), (184, 18804), (197, 18858), (201, 18879), (202, 18882), (213, 18969), (227, 19059), (230, 19068), (234, 19104), (235, 19113), (240, 19149), (244, 19227), (259, 19353), (260, 19362), (271, 19443), (272, 19452),

Gene: Amela_22 Start: 18357, Stop: 20531, Start Num: 13
Candidate Starts for Amela_22:
(7, 18318), (Start: 13 @18357 has 12 MA's), (27, 18465), (29, 18507), (49, 18693), (72, 18912), (80, 18990), (82, 19011), (83, 19014), (91, 19122), (95, 19137), (109, 19245), (114, 19269), (117, 19311), (120, 19338), (124, 19365), (154, 19563), (161, 19602), (168, 19635), (176, 19689), (193, 19785), (235, 20073), (256, 20292), (263, 20355), (268, 20397), (275, 20436),

Gene: Amethyst_22 Start: 17833, Stop: 19476, Start Num: 42
Candidate Starts for Amethyst_22:
(Start: 42 @17833 has 5 MA's), (Start: 44 @17845 has 1 MA's), (55, 17953), (59, 17974), (77, 18094), (124, 18445), (127, 18466), (141, 18514), (156, 18559), (160, 18592), (161, 18595), (190, 18736),

(195, 18757), (199, 18781), (211, 18853), (217, 18895), (218, 18904), (226, 18970), (240, 19063), (252, 19219), (263, 19306), (276, 19381),

Gene: Andris_22 Start: 17081, Stop: 19264, Start Num: 3
Candidate Starts for Andris_22:
(Start: 3 @17081 has 25 MA's), (9, 17180), (14, 17216), (Start: 16 @17234 has 2 MA's), (39, 17516), (51, 17645), (54, 17675), (59, 17717), (73, 17822), (101, 18023), (102, 18026), (113, 18101), (133, 18260), (159, 18377), (170, 18434), (178, 18485), (184, 18512), (201, 18587), (205, 18617), (209, 18641), (229, 18773), (233, 18797), (234, 18812), (237, 18839), (244, 18935), (245, 18953), (248, 18992), (257, 19049), (260, 19070), (265, 19109), (268, 19142), (271, 19151), (284, 19250),

Gene: Animus_23 Start: 17417, Stop: 19603, Start Num: 3
Candidate Starts for Animus_23:
(Start: 3 @17417 has 25 MA's), (9, 17513), (14, 17549), (19, 17615), (22, 17672), (39, 17849), (54, 18008), (59, 18050), (77, 18164), (100, 18347), (107, 18398), (121, 18500), (134, 18605), (159, 18710), (165, 18737), (170, 18767), (201, 18920), (208, 18971), (234, 19145), (237, 19172), (240, 19190), (244, 19268), (250, 19337), (257, 19382), (262, 19424), (268, 19478),

Gene: Asten_22 Start: 17336, Stop: 19312, Start Num: 12
Candidate Starts for Asten_22:
(Start: 12 @17336 has 39 MA's), (37, 17639), (46, 17717), (89, 17915), (113, 18080), (117, 18125), (126, 18185), (133, 18251), (145, 18332), (148, 18341), (156, 18371), (206, 18665), (220, 18743), (223, 18782), (228, 18812), (234, 18854), (237, 18881), (248, 19034), (260, 19112), (262, 19133), (264, 19148), (266, 19157), (268, 19187), (274, 19211),

Gene: Axiom_23 Start: 17230, Stop: 19440, Start Num: 3
Candidate Starts for Axiom_23:
(Start: 3 @17230 has 25 MA's), (6, 17284), (9, 17329), (14, 17365), (Start: 16 @17383 has 2 MA's), (39, 17665), (48, 17758), (54, 17824), (56, 17845), (60, 17875), (64, 17899), (67, 17908), (73, 17965), (100, 18163), (107, 18214), (121, 18316), (149, 18499), (150, 18502), (151, 18508), (152, 18517), (155, 18523), (179, 18655), (187, 18697), (209, 18817), (213, 18853), (222, 18910), (227, 18943), (229, 18949), (233, 18973), (234, 18988), (237, 19015), (244, 19111), (245, 19129), (246, 19138), (248, 19168), (250, 19180), (257, 19225), (260, 19246), (264, 19282), (265, 19285), (268, 19318), (271, 19327), (284, 19426),

Gene: BarryBee_24 Start: 17346, Stop: 19322, Start Num: 12
Candidate Starts for BarryBee_24:
(Start: 12 @17346 has 39 MA's), (37, 17649), (46, 17727), (89, 17925), (113, 18090), (117, 18135), (126, 18195), (133, 18261), (145, 18342), (148, 18351), (156, 18381), (206, 18675), (220, 18753), (223, 18792), (228, 18822), (234, 18864), (237, 18891), (248, 19044), (260, 19122), (262, 19143), (264, 19158), (266, 19167), (268, 19197), (274, 19221),

Gene: BartholomewSD_24 Start: 17376, Stop: 19559, Start Num: 3
Candidate Starts for BartholomewSD_24:
(Start: 3 @17376 has 25 MA's), (5, 17412), (Start: 16 @17529 has 2 MA's), (20, 17610), (21, 17622), (39, 17811), (48, 17904), (54, 17970), (59, 18012), (64, 18045), (73, 18111), (98, 18297), (100, 18309), (107, 18360), (108, 18363), (119, 18453), (127, 18504), (144, 18618), (168, 18717), (174, 18744), (184, 18804), (197, 18858), (201, 18879), (202, 18882), (213, 18969), (227, 19059), (230, 19068), (234, 19104), (235, 19113), (240, 19149), (244, 19227), (259, 19353), (260, 19362), (271, 19443), (272, 19452),

Gene: Bowden_23 Start: 17308, Stop: 19491, Start Num: 3
Candidate Starts for Bowden_23:

(Start: 3 @17308 has 25 MA's), (5, 17344), (9, 17407), (14, 17443), (Start: 16 @17461 has 2 MA's), (20, 17542), (21, 17554), (39, 17743), (48, 17836), (54, 17902), (59, 17944), (64, 17977), (73, 18043), (98, 18229), (100, 18241), (107, 18292), (174, 18676), (184, 18736), (196, 18781), (197, 18790), (201, 18811), (202, 18814), (227, 18991), (230, 19000), (232, 19009), (234, 19036), (235, 19045), (244, 19159), (260, 19294), (272, 19384),

Gene: Brataylor_23 Start: 17360, Stop: 19348, Start Num: 12
Candidate Starts for Brataylor_23:
(4, 17252), (Start: 12 @17360 has 39 MA's), (17, 17396), (25, 17516), (46, 17735), (70, 17888), (74, 17909), (89, 17942), (92, 17972), (113, 18110), (119, 18179), (124, 18209), (126, 18215), (133, 18284), (145, 18365), (156, 18404), (172, 18482), (181, 18545), (186, 18575), (220, 18776), (233, 18872), (234, 18887), (237, 18914), (245, 19028), (262, 19166), (268, 19220), (280, 19280),

Gene: BryanRecycles_23 Start: 17521, Stop: 19164, Start Num: 12
Candidate Starts for BryanRecycles_23:
(Start: 12 @17521 has 39 MA's), (26, 17692), (31, 17764), (36, 17815), (46, 17896), (57, 18007), (133, 18103), (138, 18136), (145, 18184), (148, 18193), (156, 18223), (173, 18304), (185, 18388), (186, 18394), (203, 18490), (204, 18511), (208, 18532), (221, 18601), (222, 18628), (233, 18691), (234, 18706), (235, 18715), (237, 18733), (244, 18829), (254, 18925), (257, 18943), (258, 18952), (262, 18985), (268, 19039), (270, 19045),

Gene: Caelum_23 Start: 17860, Stop: 19602, Start Num: 42
Candidate Starts for Caelum_23:
(Start: 42 @17860 has 5 MA's), (Start: 44 @17872 has 1 MA's), (55, 17980), (59, 18001), (73, 18106), (138, 18571), (157, 18655), (168, 18712), (184, 18799), (190, 18829), (214, 18997), (215, 19000), (225, 19063), (239, 19162), (247, 19315), (251, 19342), (255, 19372), (260, 19405), (277, 19525), (283, 19582), (284, 19588),

Gene: Celery_25 Start: 18018, Stop: 19919, Start Num: 13
Candidate Starts for Celery_25:
(Start: 13 @18018 has 12 MA's), (29, 18168), (46, 18327), (91, 18528), (99, 18576), (120, 18744), (135, 18855), (136, 18864), (154, 18960), (163, 19005), (168, 19032), (170, 19041), (176, 19086), (193, 19182), (235, 19470), (252, 19662), (253, 19668), (263, 19749),

Gene: Celeste_22 Start: 17352, Stop: 19334, Start Num: 12
Candidate Starts for Celeste_22:
(8, 17322), (Start: 12 @17352 has 39 MA's), (18, 17412), (25, 17505), (46, 17724), (65, 17868), (70, 17877), (74, 17898), (113, 18099), (119, 18168), (124, 18198), (126, 18204), (133, 18273), (145, 18354), (156, 18393), (172, 18471), (220, 18765), (223, 18804), (228, 18834), (233, 18861), (234, 18876), (237, 18903), (238, 18909), (244, 18999), (248, 19056), (260, 19134), (262, 19155), (264, 19170), (268, 19209), (274, 19233), (284, 19320),

Gene: Chucky_22 Start: 17347, Stop: 19323, Start Num: 12
Candidate Starts for Chucky_22:
(Start: 12 @17347 has 39 MA's), (37, 17650), (46, 17728), (89, 17926), (113, 18091), (117, 18136), (126, 18196), (133, 18262), (145, 18343), (148, 18352), (156, 18382), (206, 18676), (220, 18754), (223, 18793), (228, 18823), (234, 18865), (237, 18892), (248, 19045), (260, 19123), (262, 19144), (264, 19159), (266, 19168), (268, 19198), (274, 19222),

Gene: Conan_23 Start: 17786, Stop: 19858, Start Num: 13
Candidate Starts for Conan_23:
(7, 17747), (Start: 13 @17786 has 12 MA's), (29, 17936), (49, 18122), (58, 18212), (79, 18332), (85, 18362), (93, 18461), (95, 18467), (99, 18500), (109, 18575), (117, 18641), (120, 18668), (136, 18794),

(154, 18890), (161, 18929), (163, 18935), (168, 18962), (176, 19016), (193, 19112), (199, 19157), (210, 19223), (227, 19346), (235, 19400), (256, 19619), (263, 19682), (268, 19724), (275, 19763),

Gene: Danzina_23 Start: 17562, Stop: 19547, Start Num: 12
Candidate Starts for Danzina_23:
(4, 17454), (Start: 12 @17562 has 39 MA's), (25, 17718), (46, 17937), (70, 18090), (74, 18111), (89, 18144), (104, 18258), (117, 18357), (119, 18381), (124, 18411), (126, 18417), (133, 18486), (145, 18567), (156, 18606), (172, 18684), (220, 18978), (223, 19017), (228, 19047), (233, 19074), (234, 19089), (237, 19116), (238, 19122), (244, 19212), (248, 19269), (260, 19347), (262, 19368), (264, 19383), (268, 19422), (274, 19446), (284, 19533),

Gene: Dattran_23 Start: 17351, Stop: 19336, Start Num: 12
Candidate Starts for Dattran_23:
(Start: 12 @17351 has 39 MA's), (25, 17507), (46, 17726), (70, 17879), (74, 17900), (113, 18101), (119, 18170), (120, 18173), (124, 18200), (126, 18206), (133, 18275), (145, 18356), (156, 18395), (220, 18767), (223, 18806), (228, 18836), (233, 18863), (234, 18878), (237, 18905), (238, 18911), (248, 19058), (260, 19136), (262, 19157), (264, 19172), (268, 19211), (274, 19235),

Gene: Daudau_22 Start: 17288, Stop: 19480, Start Num: 3
Candidate Starts for Daudau_22:
(Start: 3 @17288 has 25 MA's), (9, 17387), (14, 17423), (23, 17561), (24, 17567), (30, 17657), (35, 17705), (54, 17882), (59, 17924), (89, 18134), (103, 18233), (121, 18371), (122, 18380), (138, 18494), (143, 18524), (197, 18776), (201, 18797), (233, 19007), (234, 19022), (237, 19049), (244, 19145), (245, 19163), (257, 19259), (262, 19301), (268, 19355), (284, 19466),

Gene: Dexers_21 Start: 17767, Stop: 19797, Start Num: 13
Candidate Starts for Dexers_21:
(7, 17728), (Start: 13 @17767 has 12 MA's), (15, 17779), (27, 17875), (29, 17917), (33, 17977), (Start: 42 @18031 has 5 MA's), (46, 18076), (84, 18358), (87, 18409), (118, 18622), (136, 18751), (141, 18772), (142, 18775), (154, 18835), (161, 18874), (163, 18880), (168, 18907), (170, 18916), (193, 19057), (216, 19210), (235, 19345), (244, 19459), (263, 19627), (268, 19669), (275, 19702),

Gene: Diane_22 Start: 17826, Stop: 19859, Start Num: 16
Candidate Starts for Diane_22:
(10, 17787), (Start: 16 @17826 has 2 MA's), (28, 17994), (45, 18153), (53, 18258), (68, 18348), (77, 18414), (88, 18507), (96, 18555), (127, 18783), (132, 18834), (141, 18897), (160, 18975), (161, 18978), (190, 19119), (195, 19140), (211, 19236), (217, 19278), (218, 19287), (224, 19332), (226, 19353), (233, 19386), (240, 19446), (252, 19602), (263, 19689), (276, 19764),

Gene: Dwayne_22 Start: 17343, Stop: 19310, Start Num: 12
Candidate Starts for Dwayne_22:
(Start: 12 @17343 has 39 MA's), (37, 17637), (46, 17715), (89, 17913), (113, 18078), (117, 18123), (126, 18183), (133, 18249), (145, 18330), (148, 18339), (156, 18369), (206, 18663), (220, 18741), (223, 18780), (228, 18810), (234, 18852), (237, 18879), (248, 19032), (260, 19110), (262, 19131), (264, 19146), (266, 19155), (268, 19185), (274, 19209),

Gene: ELB20_21 Start: 17412, Stop: 19601, Start Num: 3
Candidate Starts for ELB20_21:
(Start: 3 @17412 has 25 MA's), (11, 17535), (34, 17826), (39, 17847), (54, 18006), (66, 18093), (68, 18099), (89, 18273), (131, 18594), (171, 18765), (197, 18906), (201, 18927), (234, 19152), (240, 19197), (242, 19227), (244, 19275), (265, 19449), (267, 19470), (272, 19500),

Gene: Eddasa_23 Start: 17521, Stop: 19164, Start Num: 12

Candidate Starts for Eddasa_23:
(Start: 12 @17521 has 39 MA's), (26, 17692), (31, 17764), (36, 17815), (46, 17896), (57, 18007), (133, 18103), (138, 18136), (145, 18184), (148, 18193), (156, 18223), (173, 18304), (185, 18388), (186, 18394), (203, 18490), (204, 18511), (208, 18532), (221, 18601), (222, 18628), (233, 18691), (234, 18706), (235, 18715), (237, 18733), (244, 18829), (254, 18925), (257, 18943), (258, 18952), (262, 18985), (268, 19039), (270, 19045),

Gene: Ejemplo_22 Start: 17343, Stop: 19334, Start Num: 12
Candidate Starts for Ejemplo_22:
(Start: 12 @17343 has 39 MA's), (37, 17646), (46, 17724), (70, 17877), (74, 17898), (113, 18099), (133, 18273), (145, 18354), (156, 18393), (206, 18687), (220, 18765), (223, 18804), (228, 18834), (234, 18876), (237, 18903), (238, 18909), (245, 19017), (260, 19134), (262, 19155), (264, 19170), (266, 19179), (268, 19209), (274, 19233),

Gene: ElGato_23 Start: 17789, Stop: 19504, Start Num: 13
Candidate Starts for ElGato_23:
(7, 17750), (Start: 13 @17789 has 12 MA's), (29, 17939), (33, 17999), (49, 18125), (79, 18335), (105, 18452), (154, 18536), (163, 18581), (169, 18614), (193, 18758), (199, 18803), (210, 18869), (227, 18992), (235, 19046), (256, 19265), (263, 19328), (268, 19370), (275, 19409),

Gene: Emaanora_24 Start: 17346, Stop: 19322, Start Num: 12
Candidate Starts for Emaanora_24:
(Start: 12 @17346 has 39 MA's), (37, 17649), (46, 17727), (89, 17925), (113, 18090), (117, 18135), (126, 18195), (133, 18261), (145, 18342), (148, 18351), (156, 18381), (206, 18675), (220, 18753), (223, 18792), (228, 18822), (234, 18864), (237, 18891), (248, 19044), (260, 19122), (262, 19143), (264, 19158), (266, 19167), (268, 19197), (274, 19221),

Gene: EnochSoames_24 Start: 17517, Stop: 19160, Start Num: 12
Candidate Starts for EnochSoames_24:
(Start: 12 @17517 has 39 MA's), (26, 17688), (31, 17760), (36, 17811), (46, 17892), (57, 18003), (133, 18099), (138, 18132), (145, 18180), (148, 18189), (156, 18219), (173, 18300), (185, 18384), (186, 18390), (203, 18486), (204, 18507), (208, 18528), (221, 18597), (222, 18624), (233, 18687), (234, 18702), (235, 18711), (237, 18729), (244, 18825), (254, 18921), (257, 18939), (258, 18948), (262, 18981), (268, 19035), (270, 19041),

Gene: GirlDinner_22 Start: 17079, Stop: 19265, Start Num: 3
Candidate Starts for GirlDinner_22:
(Start: 3 @17079 has 25 MA's), (9, 17175), (14, 17211), (19, 17277), (22, 17334), (39, 17511), (54, 17670), (59, 17712), (77, 17826), (100, 18009), (107, 18060), (121, 18162), (134, 18267), (159, 18372), (165, 18399), (170, 18429), (201, 18582), (208, 18633), (222, 18729), (233, 18792), (234, 18807), (237, 18834), (240, 18852), (244, 18930), (257, 19044), (262, 19086), (268, 19140), (281, 19215),

Gene: Goby_22 Start: 17357, Stop: 19342, Start Num: 12
Candidate Starts for Goby_22:
(Start: 12 @17357 has 39 MA's), (25, 17513), (46, 17732), (70, 17885), (74, 17906), (113, 18107), (119, 18176), (120, 18179), (124, 18206), (126, 18212), (133, 18281), (145, 18362), (156, 18401), (220, 18773), (223, 18812), (228, 18842), (233, 18869), (234, 18884), (237, 18911), (238, 18917), (248, 19064), (260, 19142), (262, 19163), (264, 19178), (268, 19217), (274, 19241),

Gene: Godpower_23 Start: 17368, Stop: 19353, Start Num: 12
Candidate Starts for Godpower_23:

(Start: 12 @17368 has 39 MA's), (25, 17524), (46, 17743), (70, 17896), (74, 17917), (113, 18118), (119, 18187), (124, 18217), (126, 18223), (133, 18292), (140, 18340), (145, 18373), (148, 18382), (156, 18412), (172, 18490), (181, 18553), (228, 18853), (234, 18895), (237, 18922), (245, 19036), (260, 19153), (262, 19174), (264, 19189), (268, 19228), (274, 19252), (276, 19261),

Gene: Haizum_22 Start: 17858, Stop: 19498, Start Num: 42
Candidate Starts for Haizum_22:
(Start: 42 @17858 has 5 MA's), (Start: 44 @17870 has 1 MA's), (55, 17978), (59, 17999), (68, 18053), (73, 18104), (77, 18119), (124, 18467), (127, 18488), (141, 18536), (156, 18581), (160, 18614), (161, 18617), (190, 18758), (195, 18779), (211, 18875), (217, 18917), (218, 18926), (224, 18971), (226, 18992), (240, 19085), (252, 19241), (255, 19262), (263, 19328), (276, 19403),

Gene: Hank144_23 Start: 17474, Stop: 19687, Start Num: 3
Candidate Starts for Hank144_23:
(Start: 3 @17474 has 25 MA's), (14, 17609), (19, 17675), (22, 17732), (39, 17909), (54, 18068), (59, 18110), (61, 18125), (63, 18140), (66, 18152), (89, 18320), (94, 18359), (97, 18386), (121, 18557), (122, 18566), (152, 18743), (179, 18896), (191, 18950), (194, 18962), (200, 18995), (201, 19001), (226, 19181), (248, 19409), (251, 19421), (254, 19445), (263, 19517),

Gene: Hippo_22 Start: 17346, Stop: 19322, Start Num: 12
Candidate Starts for Hippo_22:
(Start: 12 @17346 has 39 MA's), (37, 17649), (46, 17727), (89, 17925), (113, 18090), (117, 18135), (126, 18195), (133, 18261), (145, 18342), (148, 18351), (156, 18381), (206, 18675), (220, 18753), (223, 18792), (228, 18822), (234, 18864), (237, 18891), (248, 19044), (260, 19122), (262, 19143), (264, 19158), (266, 19167), (268, 19197), (274, 19221),

Gene: Issmi_23 Start: 18292, Stop: 20220, Start Num: 16
Candidate Starts for Issmi_23:
(Start: 16 @18292 has 2 MA's), (43, 18607), (45, 18619), (50, 18685), (57, 18748), (67, 18808), (147, 19330), (162, 19390), (164, 19396), (166, 19405), (167, 19411), (168, 19414), (180, 19480), (214, 19648), (234, 19759), (237, 19786), (241, 19813), (245, 19900), (255, 19984), (258, 20005), (262, 20038), (269, 20092),

Gene: Izzy_23 Start: 17568, Stop: 19211, Start Num: 12
Candidate Starts for Izzy_23:
(Start: 12 @17568 has 39 MA's), (26, 17739), (31, 17811), (36, 17862), (46, 17943), (57, 18054), (133, 18150), (138, 18183), (145, 18231), (148, 18240), (156, 18270), (173, 18351), (185, 18435), (186, 18441), (203, 18537), (204, 18558), (208, 18579), (221, 18648), (222, 18675), (233, 18738), (234, 18753), (235, 18762), (237, 18780), (244, 18876), (254, 18972), (257, 18990), (258, 18999), (262, 19032), (268, 19086), (270, 19092),

Gene: Janus_23 Start: 17417, Stop: 19603, Start Num: 3
Candidate Starts for Janus_23:
(Start: 3 @17417 has 25 MA's), (9, 17513), (14, 17549), (19, 17615), (22, 17672), (39, 17849), (54, 18008), (59, 18050), (64, 18083), (77, 18164), (86, 18221), (100, 18347), (107, 18398), (121, 18500), (134, 18605), (159, 18710), (165, 18737), (170, 18767), (201, 18920), (208, 18971), (222, 19067), (233, 19130), (234, 19145), (237, 19172), (240, 19190), (244, 19268), (257, 19382), (262, 19424), (268, 19478), (281, 19553),

Gene: Jash_23 Start: 17521, Stop: 19164, Start Num: 12
Candidate Starts for Jash_23:
(Start: 12 @17521 has 39 MA's), (26, 17692), (31, 17764), (36, 17815), (46, 17896), (57, 18007), (133, 18103), (138, 18136), (145, 18184), (148, 18193), (156, 18223), (173, 18304), (185, 18388), (186,

18394), (203, 18490), (204, 18511), (208, 18532), (221, 18601), (222, 18628), (233, 18691), (234, 18706), (235, 18715), (237, 18733), (244, 18829), (254, 18925), (257, 18943), (258, 18952), (262, 18985), (268, 19039), (270, 19045),

Gene: Jevington_24 Start: 17726, Stop: 19936, Start Num: 3
Candidate Starts for Jevington_24:
(Start: 3 @17726 has 25 MA's), (9, 17825), (14, 17861), (22, 17984), (23, 17999), (41, 18179), (47, 18251), (54, 18320), (60, 18371), (77, 18476), (121, 18815), (122, 18824), (191, 19208), (194, 19220), (201, 19259), (227, 19442), (230, 19451), (232, 19460), (234, 19487), (235, 19496), (238, 19520), (244, 19610), (259, 19736), (260, 19745),

Gene: Kaine_22 Start: 17767, Stop: 19569, Start Num: 13
Candidate Starts for Kaine_22:
(7, 17728), (Start: 13 @17767 has 12 MA's), (15, 17779), (27, 17875), (29, 17917), (33, 17977), (46, 18076), (74, 18292), (154, 18607), (158, 18628), (163, 18652), (169, 18685), (182, 18772), (193, 18829), (216, 18982), (222, 19030), (227, 19063), (235, 19117), (263, 19399), (268, 19441), (275, 19474),

Gene: Katalie_23 Start: 17609, Stop: 19588, Start Num: 12
Candidate Starts for Katalie_23:
(Start: 12 @17609 has 39 MA's), (25, 17771), (46, 17987), (70, 18140), (76, 18164), (89, 18185), (104, 18299), (113, 18353), (124, 18452), (126, 18458), (133, 18527), (145, 18608), (156, 18647), (175, 18755), (185, 18812), (198, 18893), (228, 19088), (233, 19115), (234, 19130), (237, 19157), (238, 19163), (245, 19271), (255, 19355), (260, 19388), (262, 19409), (268, 19463), (274, 19487),

Gene: Lika_22 Start: 17372, Stop: 19357, Start Num: 12
Candidate Starts for Lika_22:
(Start: 12 @17372 has 39 MA's), (25, 17528), (46, 17747), (70, 17900), (74, 17921), (113, 18122), (119, 18191), (124, 18221), (126, 18227), (128, 18254), (133, 18296), (140, 18344), (145, 18377), (148, 18386), (156, 18416), (172, 18494), (181, 18557), (228, 18857), (234, 18899), (237, 18926), (245, 19040), (260, 19157), (262, 19178), (264, 19193), (268, 19232), (274, 19256), (276, 19265),

Gene: Loofah_23 Start: 17341, Stop: 19530, Start Num: 3
Candidate Starts for Loofah_23:
(Start: 3 @17341 has 25 MA's), (Start: 16 @17494 has 2 MA's), (18, 17536), (23, 17614), (39, 17776), (49, 17875), (52, 17914), (54, 17935), (66, 18022), (68, 18028), (89, 18202), (160, 18649), (197, 18835), (212, 18919), (221, 18976), (240, 19123), (249, 19264), (254, 19294), (258, 19321), (263, 19366), (272, 19426),

Gene: Lorelei_22 Start: 17342, Stop: 19327, Start Num: 12
Candidate Starts for Lorelei_22:
(4, 17234), (Start: 12 @17342 has 39 MA's), (25, 17498), (46, 17717), (74, 17891), (92, 17954), (133, 18266), (145, 18347), (148, 18356), (156, 18386), (228, 18827), (234, 18869), (237, 18896), (238, 18902), (244, 18992), (245, 19010), (260, 19127), (262, 19148), (264, 19163), (266, 19172), (268, 19202), (274, 19226), (276, 19235),

Gene: Maneekul_22 Start: 17342, Stop: 19333, Start Num: 12
Candidate Starts for Maneekul_22:
(Start: 12 @17342 has 39 MA's), (37, 17645), (46, 17723), (70, 17876), (74, 17897), (113, 18098), (133, 18272), (145, 18353), (156, 18392), (172, 18470), (181, 18533), (186, 18563), (206, 18686), (220, 18764), (223, 18803), (228, 18833), (234, 18875), (237, 18902), (238, 18908), (245, 19016), (260, 19133), (262, 19154), (264, 19169), (266, 19178), (268, 19208), (274, 19232),

Gene: Marav_25 Start: 18076, Stop: 20283, Start Num: 3
Candidate Starts for Marav_25:
(Start: 3 @18076 has 25 MA's), (5, 18112), (9, 18175), (14, 18211), (23, 18349), (47, 18601), (54, 18670), (67, 18754), (94, 18961), (97, 18988), (121, 19162), (122, 19171), (125, 19186), (179, 19501), (188, 19546), (191, 19555), (194, 19567), (227, 19789), (230, 19798), (231, 19804), (234, 19834), (235, 19843), (244, 19957), (254, 20053), (260, 20092),

Gene: Nabi_22 Start: 17342, Stop: 19327, Start Num: 12
Candidate Starts for Nabi_22:
(4, 17234), (Start: 12 @17342 has 39 MA's), (25, 17498), (46, 17717), (74, 17891), (92, 17954), (133, 18266), (145, 18347), (148, 18356), (156, 18386), (228, 18827), (234, 18869), (237, 18896), (238, 18902), (244, 18992), (245, 19010), (260, 19127), (262, 19148), (264, 19163), (266, 19172), (268, 19202), (274, 19226), (276, 19235),

Gene: Nishikigoi_22 Start: 17858, Stop: 19498, Start Num: 42
Candidate Starts for Nishikigoi_22:
(Start: 42 @17858 has 5 MA's), (Start: 44 @17870 has 1 MA's), (55, 17978), (59, 17999), (68, 18053), (73, 18104), (77, 18119), (124, 18467), (127, 18488), (141, 18536), (156, 18581), (160, 18614), (161, 18617), (190, 18758), (195, 18779), (211, 18875), (217, 18917), (218, 18926), (224, 18971), (226, 18992), (240, 19085), (263, 19328), (276, 19403),

Gene: Oliynyk_23 Start: 17521, Stop: 19164, Start Num: 12
Candidate Starts for Oliynyk_23:
(Start: 12 @17521 has 39 MA's), (26, 17692), (31, 17764), (36, 17815), (46, 17896), (57, 18007), (133, 18103), (138, 18136), (145, 18184), (148, 18193), (156, 18223), (173, 18304), (185, 18388), (186, 18394), (203, 18490), (204, 18511), (208, 18532), (221, 18601), (222, 18628), (233, 18691), (234, 18706), (235, 18715), (237, 18733), (244, 18829), (254, 18925), (257, 18943), (258, 18952), (262, 18985), (268, 19039), (270, 19045),

Gene: Omar_23 Start: 18196, Stop: 19896, Start Num: 42
Candidate Starts for Omar_23:
(Start: 42 @18196 has 5 MA's), (Start: 44 @18208 has 1 MA's), (60, 18337), (73, 18433), (106, 18676), (110, 18700), (116, 18739), (119, 18769), (121, 18778), (137, 18904), (141, 18934), (153, 18973), (161, 19015), (190, 19156), (217, 19315), (226, 19390), (229, 19399), (233, 19423), (236, 19450), (240, 19483), (243, 19537), (252, 19639), (257, 19672), (263, 19726), (273, 19789),

Gene: OzzyJ_23 Start: 17337, Stop: 19313, Start Num: 12
Candidate Starts for OzzyJ_23:
(Start: 12 @17337 has 39 MA's), (37, 17640), (46, 17718), (89, 17916), (113, 18081), (117, 18126), (126, 18186), (133, 18252), (145, 18333), (148, 18342), (156, 18372), (206, 18666), (220, 18744), (223, 18783), (228, 18813), (234, 18855), (237, 18882), (248, 19035), (260, 19113), (262, 19134), (264, 19149), (266, 19158), (268, 19188), (274, 19212),

Gene: Pablito_22 Start: 17181, Stop: 19376, Start Num: 3
Candidate Starts for Pablito_22:
(Start: 3 @17181 has 25 MA's), (9, 17280), (14, 17316), (22, 17439), (23, 17454), (25, 17469), (48, 17709), (54, 17775), (91, 18060), (112, 18195), (121, 18270), (159, 18480), (165, 18507), (170, 18537), (183, 18606), (189, 18639), (197, 18678), (201, 18699), (213, 18789), (222, 18846), (234, 18924), (237, 18951), (244, 19047), (257, 19161), (260, 19182), (265, 19221), (268, 19254), (271, 19263),

Gene: Paedore_22 Start: 17341, Stop: 19530, Start Num: 3
Candidate Starts for Paedore_22:

(Start: 3 @17341 has 25 MA's), (Start: 16 @17494 has 2 MA's), (18, 17536), (23, 17614), (39, 17776), (49, 17875), (52, 17914), (54, 17935), (66, 18022), (68, 18028), (89, 18202), (160, 18649), (197, 18835), (201, 18856), (212, 18919), (221, 18976), (240, 19123), (249, 19264), (254, 19294), (258, 19321), (263, 19366), (272, 19426),

Gene: Paolo_24 Start: 17738, Stop: 19948, Start Num: 3
Candidate Starts for Paolo_24:
(Start: 3 @17738 has 25 MA's), (5, 17774), (9, 17837), (30, 18107), (40, 18179), (54, 18332), (59, 18374), (64, 18407), (73, 18473), (98, 18659), (100, 18671), (121, 18827), (152, 19013), (155, 19019), (173, 19103), (179, 19166), (191, 19220), (194, 19232), (227, 19454), (230, 19463), (234, 19499), (235, 19508), (244, 19622), (245, 19640), (254, 19718), (260, 19757),

Gene: Pavo_23 Start: 18059, Stop: 20131, Start Num: 13
Candidate Starts for Pavo_23:
(7, 18020), (Start: 13 @18059 has 12 MA's), (29, 18209), (49, 18395), (58, 18485), (79, 18605), (85, 18635), (93, 18734), (95, 18740), (99, 18773), (109, 18848), (117, 18914), (120, 18941), (136, 19067), (154, 19163), (161, 19202), (163, 19208), (168, 19235), (176, 19289), (193, 19385), (199, 19430), (210, 19496), (227, 19619), (235, 19673), (256, 19892), (263, 19955), (268, 19997), (275, 20036),

Gene: Provolone_23 Start: 17789, Stop: 19504, Start Num: 13
Candidate Starts for Provolone_23:
(7, 17750), (Start: 13 @17789 has 12 MA's), (29, 17939), (33, 17999), (49, 18125), (79, 18335), (105, 18452), (154, 18536), (163, 18581), (169, 18614), (193, 18758), (199, 18803), (210, 18869), (227, 18992), (235, 19046), (256, 19265), (263, 19328), (268, 19370), (275, 19409),

Gene: Puginator_24 Start: 17783, Stop: 19963, Start Num: 3
Candidate Starts for Puginator_24:
(Start: 3 @17783 has 25 MA's), (9, 17882), (14, 17918), (23, 18056), (47, 18308), (54, 18377), (71, 18500), (101, 18725), (134, 18974), (159, 19079), (165, 19106), (170, 19136), (177, 19181), (191, 19238), (192, 19244), (201, 19289), (227, 19469), (230, 19478), (234, 19514), (235, 19523), (244, 19637), (254, 19733), (259, 19763), (260, 19772),

Gene: R4_22 Start: 17423, Stop: 19612, Start Num: 3
Candidate Starts for R4_22:
(Start: 3 @17423 has 25 MA's), (11, 17546), (34, 17837), (39, 17858), (54, 18017), (66, 18104), (68, 18110), (89, 18284), (131, 18605), (171, 18776), (197, 18917), (201, 18938), (234, 19163), (240, 19208), (242, 19238), (244, 19286), (265, 19460), (267, 19481), (272, 19511),

Gene: Rana_22 Start: 17342, Stop: 19327, Start Num: 12
Candidate Starts for Rana_22:
(4, 17234), (Start: 12 @17342 has 39 MA's), (25, 17498), (46, 17717), (74, 17891), (92, 17954), (133, 18266), (145, 18347), (148, 18356), (156, 18386), (228, 18827), (234, 18869), (237, 18896), (238, 18902), (244, 18992), (245, 19010), (260, 19127), (262, 19148), (264, 19163), (266, 19172), (268, 19202), (274, 19226), (276, 19235),

Gene: RedBear_24 Start: 17609, Stop: 19588, Start Num: 12
Candidate Starts for RedBear_24:
(Start: 12 @17609 has 39 MA's), (25, 17771), (46, 17987), (70, 18140), (76, 18164), (89, 18185), (104, 18299), (113, 18353), (124, 18452), (126, 18458), (133, 18527), (145, 18608), (156, 18647), (175, 18755), (185, 18812), (198, 18893), (228, 19088), (233, 19115), (234, 19130), (237, 19157), (238, 19163), (245, 19271), (255, 19355), (260, 19388), (262, 19409), (268, 19463), (274, 19487),

Gene: Rusticus_23 Start: 17521, Stop: 19164, Start Num: 12

Candidate Starts for Rusticus_23:
(Start: 12 @17521 has 39 MA's), (26, 17692), (31, 17764), (36, 17815), (46, 17896), (57, 18007), (133, 18103), (138, 18136), (145, 18184), (148, 18193), (156, 18223), (173, 18304), (185, 18388), (186, 18394), (203, 18490), (204, 18511), (208, 18532), (221, 18601), (222, 18628), (233, 18691), (234, 18706), (235, 18715), (237, 18733), (244, 18829), (254, 18925), (257, 18943), (258, 18952), (262, 18985), (268, 19039), (270, 19045),

Gene: SarahRose_22 Start: 17343, Stop: 19319, Start Num: 12
Candidate Starts for SarahRose_22:
(Start: 12 @17343 has 39 MA's), (37, 17646), (46, 17724), (89, 17922), (113, 18087), (117, 18132), (126, 18192), (133, 18258), (145, 18339), (148, 18348), (156, 18378), (206, 18672), (220, 18750), (223, 18789), (228, 18819), (234, 18861), (237, 18888), (248, 19041), (260, 19119), (262, 19140), (264, 19155), (266, 19164), (268, 19194), (274, 19218),

Gene: Snorlax_22 Start: 17346, Stop: 19322, Start Num: 12
Candidate Starts for Snorlax_22:
(Start: 12 @17346 has 39 MA's), (37, 17649), (46, 17727), (89, 17925), (113, 18090), (117, 18135), (126, 18195), (133, 18261), (145, 18342), (148, 18351), (156, 18381), (206, 18675), (220, 18753), (223, 18792), (228, 18822), (234, 18864), (237, 18891), (248, 19044), (260, 19122), (262, 19143), (264, 19158), (266, 19167), (268, 19197), (274, 19221),

Gene: South40_23 Start: 17609, Stop: 19588, Start Num: 12
Candidate Starts for South40_23:
(Start: 12 @17609 has 39 MA's), (25, 17771), (46, 17987), (70, 18140), (76, 18164), (89, 18185), (104, 18299), (113, 18353), (124, 18452), (126, 18458), (133, 18527), (145, 18608), (156, 18647), (175, 18755), (185, 18812), (198, 18893), (228, 19088), (233, 19115), (234, 19130), (237, 19157), (238, 19163), (245, 19271), (255, 19355), (260, 19388), (262, 19409), (268, 19463), (274, 19487),

Gene: SqueakyClean_23 Start: 17343, Stop: 19529, Start Num: 3
Candidate Starts for SqueakyClean_23:
(Start: 3 @17343 has 25 MA's), (9, 17439), (14, 17475), (19, 17541), (22, 17598), (39, 17775), (54, 17934), (59, 17976), (64, 18009), (77, 18090), (100, 18273), (107, 18324), (121, 18426), (134, 18531), (159, 18636), (165, 18663), (170, 18693), (201, 18846), (208, 18897), (234, 19071), (237, 19098), (240, 19116), (244, 19194), (250, 19263), (255, 19296), (257, 19308), (268, 19404),

Gene: Sudan_22 Start: 18054, Stop: 19856, Start Num: 13
Candidate Starts for Sudan_22:
(7, 18015), (Start: 13 @18054 has 12 MA's), (15, 18066), (27, 18162), (29, 18204), (33, 18264), (46, 18363), (74, 18579), (154, 18894), (158, 18915), (163, 18939), (169, 18972), (182, 19059), (193, 19116), (216, 19269), (222, 19317), (227, 19350), (235, 19404), (263, 19686), (268, 19728), (275, 19761),

Gene: Sujidade_23 Start: 17648, Stop: 19633, Start Num: 12
Candidate Starts for Sujidade_23:
(Start: 12 @17648 has 39 MA's), (25, 17804), (46, 18023), (70, 18176), (74, 18197), (113, 18398), (119, 18467), (120, 18470), (124, 18497), (126, 18503), (133, 18572), (140, 18620), (145, 18653), (156, 18692), (220, 19064), (223, 19103), (228, 19133), (233, 19160), (234, 19175), (237, 19202), (238, 19208), (244, 19298), (248, 19355), (260, 19433), (262, 19454), (264, 19469), (268, 19508), (274, 19532),

Gene: SunkenRoot_22 Start: 18350, Stop: 20338, Start Num: 13
Candidate Starts for SunkenRoot_22:

(7, 18311), (Start: 13 @18350 has 12 MA's), (29, 18500), (Start: 42 @18614 has 5 MA's), (46, 18659), (58, 18776), (69, 18824), (91, 18935), (95, 18950), (109, 19058), (117, 19124), (120, 19151), (124, 19178), (154, 19376), (158, 19397), (163, 19421), (168, 19448), (176, 19502), (182, 19541), (193, 19598), (197, 19619), (235, 19886), (263, 20168), (285, 20333),

Gene: Superstar_25 Start: 19064, Stop: 20764, Start Num: 42
Candidate Starts for Superstar_25:
(Start: 42 @19064 has 5 MA's), (55, 19184), (59, 19205), (67, 19253), (121, 19655), (123, 19673), (127, 19697), (138, 19775), (174, 19937), (175, 19955), (177, 19964), (183, 19988), (239, 20312), (247, 20465), (251, 20492), (255, 20522), (260, 20555), (261, 20567), (278, 20681), (279, 20696), (283, 20744), (284, 20750),

Gene: TagePhighter_23 Start: 17346, Stop: 19322, Start Num: 12
Candidate Starts for TagePhighter_23:
(Start: 12 @17346 has 39 MA's), (37, 17649), (46, 17727), (89, 17925), (113, 18090), (117, 18135), (126, 18195), (133, 18261), (145, 18342), (148, 18351), (156, 18381), (206, 18675), (220, 18753), (223, 18792), (228, 18822), (234, 18864), (237, 18891), (248, 19044), (260, 19122), (262, 19143), (264, 19158), (266, 19167), (268, 19197), (274, 19221),

Gene: Tefunt_22 Start: 17870, Stop: 19501, Start Num: 44
Candidate Starts for Tefunt_22:
(Start: 42 @17858 has 5 MA's), (Start: 44 @17870 has 1 MA's), (55, 17978), (59, 17999), (68, 18053), (73, 18104), (77, 18119), (124, 18470), (127, 18491), (141, 18539), (156, 18584), (160, 18617), (161, 18620), (190, 18761), (195, 18782), (211, 18878), (217, 18920), (218, 18929), (224, 18974), (226, 18995), (240, 19088), (263, 19331), (276, 19406),

Gene: Thestral_23 Start: 17311, Stop: 19494, Start Num: 3
Candidate Starts for Thestral_23:
(Start: 3 @17311 has 25 MA's), (9, 17410), (20, 17545), (21, 17557), (22, 17569), (39, 17746), (48, 17839), (54, 17905), (56, 17926), (64, 17980), (73, 18046), (88, 18157), (98, 18232), (100, 18244), (107, 18295), (108, 18298), (121, 18397), (168, 18652), (174, 18679), (184, 18739), (197, 18793), (201, 18814), (202, 18817), (213, 18904), (227, 18994), (230, 19003), (232, 19012), (234, 19039), (235, 19048), (244, 19162), (259, 19288), (260, 19297), (264, 19333), (272, 19387),

Gene: TinaBelcher_22 Start: 17259, Stop: 19442, Start Num: 3
Candidate Starts for TinaBelcher_22:
(Start: 3 @17259 has 25 MA's), (5, 17295), (9, 17358), (14, 17394), (Start: 16 @17412 has 2 MA's), (20, 17493), (21, 17505), (39, 17694), (48, 17787), (54, 17853), (59, 17895), (64, 17928), (73, 17994), (98, 18180), (100, 18192), (107, 18243), (174, 18627), (184, 18687), (196, 18732), (197, 18741), (201, 18762), (202, 18765), (227, 18942), (230, 18951), (232, 18960), (234, 18987), (235, 18996), (244, 19110), (260, 19245), (272, 19335),

Gene: Toma_22 Start: 17357, Stop: 19342, Start Num: 12
Candidate Starts for Toma_22:
(Start: 12 @17357 has 39 MA's), (25, 17513), (46, 17732), (70, 17885), (74, 17906), (113, 18107), (119, 18176), (120, 18179), (124, 18206), (126, 18212), (133, 18281), (145, 18362), (156, 18401), (220, 18773), (223, 18812), (228, 18842), (233, 18869), (234, 18884), (237, 18911), (238, 18917), (248, 19064), (260, 19142), (262, 19163), (264, 19178), (268, 19217), (274, 19241),

Gene: Triste_22 Start: 17337, Stop: 19313, Start Num: 12
Candidate Starts for Triste_22:
(Start: 12 @17337 has 39 MA's), (37, 17640), (46, 17718), (89, 17916), (113, 18081), (117, 18126), (126, 18186), (133, 18252), (145, 18333), (148, 18342), (156, 18372), (206, 18666), (220, 18744),

(223, 18783), (228, 18813), (234, 18855), (237, 18882), (248, 19035), (260, 19113), (262, 19134), (264, 19149), (266, 19158), (268, 19188), (274, 19212),

Gene: Triumph_24 Start: 17260, Stop: 19452, Start Num: 3
Candidate Starts for Triumph_24:
(Start: 3 @17260 has 25 MA's), (9, 17359), (14, 17395), (Start: 16 @17413 has 2 MA's), (38, 17692), (39, 17695), (47, 17785), (56, 17875), (64, 17929), (100, 18193), (107, 18244), (121, 18346), (134, 18451), (159, 18556), (183, 18682), (189, 18715), (197, 18754), (201, 18775), (213, 18865), (222, 18922), (227, 18955), (229, 18961), (234, 19000), (237, 19027), (244, 19123), (245, 19141), (248, 19180), (250, 19192), (257, 19237), (260, 19258), (265, 19297), (268, 19330), (271, 19339), (284, 19438),

Gene: TrvxScott_21 Start: 17261, Stop: 19474, Start Num: 3
Candidate Starts for TrvxScott_21:
(Start: 3 @17261 has 25 MA's), (5, 17297), (Start: 16 @17414 has 2 MA's), (20, 17495), (21, 17507), (39, 17696), (48, 17789), (54, 17855), (59, 17897), (64, 17930), (73, 17996), (98, 18182), (100, 18194), (107, 18245), (108, 18248), (121, 18347), (152, 18533), (155, 18539), (157, 18548), (179, 18686), (194, 18752), (196, 18761), (213, 18884), (227, 18974), (230, 18983), (232, 18992), (234, 19019), (235, 19028), (244, 19142), (260, 19277), (272, 19367),

Gene: TuanPN_22 Start: 17343, Stop: 19334, Start Num: 12
Candidate Starts for TuanPN_22:
(Start: 12 @17343 has 39 MA's), (37, 17646), (46, 17724), (70, 17877), (74, 17898), (113, 18099), (133, 18273), (145, 18354), (156, 18393), (206, 18687), (220, 18765), (223, 18804), (228, 18834), (234, 18876), (237, 18903), (238, 18909), (245, 19017), (260, 19134), (262, 19155), (264, 19170), (266, 19179), (268, 19209), (274, 19233),

Gene: Vanseggelen_27 Start: 17719, Stop: 19728, Start Num: 13
Candidate Starts for Vanseggelen_27:
(Start: 13 @17719 has 12 MA's), (31, 17896), (49, 18058), (62, 18184), (90, 18316), (93, 18337), (95, 18343), (99, 18376), (113, 18469), (117, 18517), (120, 18544), (154, 18769), (161, 18808), (163, 18814), (168, 18841), (176, 18895), (193, 18991), (197, 19012), (199, 19036), (235, 19279), (252, 19471), (253, 19477), (263, 19558), (276, 19636),

Gene: Verse_22 Start: 18351, Stop: 20525, Start Num: 13
Candidate Starts for Verse_22:
(7, 18312), (Start: 13 @18351 has 12 MA's), (27, 18459), (29, 18501), (49, 18687), (58, 18777), (72, 18906), (80, 18984), (82, 19005), (83, 19008), (91, 19116), (95, 19131), (109, 19239), (114, 19263), (117, 19305), (120, 19332), (124, 19359), (140, 19482), (154, 19557), (161, 19596), (168, 19629), (176, 19683), (193, 19779), (235, 20067), (256, 20286), (263, 20349), (268, 20391), (275, 20430),

Gene: Werner_22 Start: 17347, Stop: 19323, Start Num: 12
Candidate Starts for Werner_22:
(Start: 12 @17347 has 39 MA's), (37, 17650), (46, 17728), (89, 17926), (113, 18091), (117, 18136), (126, 18196), (133, 18262), (145, 18343), (148, 18352), (156, 18382), (206, 18676), (207, 18679), (220, 18754), (223, 18793), (228, 18823), (234, 18865), (237, 18892), (248, 19045), (260, 19123), (262, 19144), (264, 19159), (266, 19168), (268, 19198), (274, 19222),

Gene: Whatever_22 Start: 17347, Stop: 19323, Start Num: 12
Candidate Starts for Whatever_22:
(Start: 12 @17347 has 39 MA's), (37, 17650), (46, 17728), (89, 17926), (113, 18091), (117, 18136), (126, 18196), (133, 18262), (145, 18343), (148, 18352), (156, 18382), (206, 18676), (220, 18754), (223, 18793), (228, 18823), (234, 18865), (237, 18892), (248, 19045), (260, 19123), (262, 19144),

(264, 19159), (266, 19168), (268, 19198), (274, 19222),

Gene: Yasdnil_22 Start: 17339, Stop: 19330, Start Num: 12
Candidate Starts for Yasdnil_22:
(Start: 12 @17339 has 39 MA's), (37, 17642), (46, 17720), (70, 17873), (74, 17894), (90, 17942), (113, 18095), (133, 18269), (145, 18350), (156, 18389), (206, 18683), (220, 18761), (223, 18800), (228, 18830), (234, 18872), (237, 18899), (238, 18905), (245, 19013), (260, 19130), (262, 19151), (264, 19166), (266, 19175), (268, 19205), (274, 19229),

Gene: Yosif_23 Start: 18289, Stop: 20154, Start Num: 13
Candidate Starts for Yosif_23:
(Start: 13 @18289 has 12 MA's), (25, 18442), (32, 18550), (40, 18595), (41, 18607), (46, 18661), (69, 18826), (75, 18847), (109, 18949), (111, 18958), (113, 18967), (120, 19042), (130, 19126), (139, 19132), (154, 19180), (163, 19225), (168, 19252), (170, 19261), (176, 19306), (193, 19402), (198, 19444), (211, 19519), (219, 19567), (263, 19972), (271, 20023), (282, 20113),

Gene: Zainub_24 Start: 17696, Stop: 19903, Start Num: 3
Candidate Starts for Zainub_24:
(Start: 3 @17696 has 25 MA's), (5, 17732), (23, 17969), (47, 18221), (54, 18290), (63, 18362), (67, 18374), (89, 18542), (101, 18632), (121, 18782), (122, 18791), (152, 18968), (155, 18974), (179, 19121), (191, 19175), (194, 19187), (201, 19226), (227, 19409), (230, 19418), (234, 19454), (235, 19463), (244, 19577), (245, 19595), (254, 19673), (260, 19712),

Gene: Zemlya_23 Start: 17368, Stop: 19353, Start Num: 12
Candidate Starts for Zemlya_23:
(Start: 12 @17368 has 39 MA's), (25, 17524), (46, 17743), (70, 17896), (74, 17917), (113, 18118), (119, 18187), (124, 18217), (126, 18223), (133, 18292), (145, 18373), (156, 18412), (220, 18784), (222, 18817), (223, 18823), (228, 18853), (233, 18880), (234, 18895), (237, 18922), (238, 18928), (244, 19018), (248, 19075), (260, 19153), (264, 19189), (268, 19228), (274, 19252), (284, 19339),

Gene: phiCAM_23 Start: 20017, Stop: 21960, Start Num: 13
Candidate Starts for phiCAM_23:
(1, 19699), (2, 19702), (Start: 13 @20017 has 12 MA's), (29, 20167), (46, 20326), (74, 20536), (78, 20545), (79, 20560), (81, 20569), (98, 20659), (115, 20770), (129, 20860), (134, 20902), (146, 20968), (154, 20998), (161, 21037), (163, 21043), (168, 21070), (170, 21079), (176, 21124), (182, 21163), (193, 21220), (197, 21241), (211, 21337), (235, 21508), (243, 21598), (244, 21622), (252, 21700), (263, 21790), (281, 21910), (282, 21919),